Project #C19E00211 Construction Documents Submittal Project Manual

Fire Alarm System Audio/ Mass Notification System Upgrade Red Rocks Community College, Lakewood Campus, CO

> Prepared for Red Rocks Community College

# By

Matsuo Engineering, LLC 760 Devinney Court, Golden, CO 80401 (303) 231-8890 (303) 672-8290 fax

07/27/2020

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BID

Institution/Agency:	
Project No./Name:	
Bidder Acknowledges Receipt of Addenda Numbers: Bidder Anticipates Services outside the United States or Colorado:* Bidder will comply with 80% Colorado Labor on project above \$500,000: Bidder is a Service-Disabled Veteran Owned Small Business:*	No       Yes       If Yes see 3A below         Yes       No       If No see 3B below         No       Yes       If Yes see 3C below
Base Bid	\$
(Refer to Bid Alternate Form SC-6.13.1 Attached, If Applicable)	
Bidder's Time of Completion a. Time Period from Notice to Proceed to Substantial Completion:	
b. Time Period from Substantial Completion to Final Acceptance:	

- c. Total Time of Completion of Entire Project (a + b):
- 1. BID: Pursuant to the advertisement by the State of Colorado dated \_\_\_\_\_\_\_ the undersigned bidder hereby proposes to furnish all the labor and materials and to perform all the work required for the complete and prompt execution of everything described or shown in or reasonably implied from the Bidding Documents, including the Drawings and Specifications, for the work and for the base bid indicated above. Bidders should include all taxes that are applicable.
- 2. EXAMINATION OF DOCUMENTS AND SITE: The bidder has carefully examined the Bidding Documents, including the Drawings and Specifications, and has examined the site of the Work, so as to make certain of the conditions at the site and to gain a clear understanding of the work to be done.
- **3. PARTIES INTERESTED IN BID:** The bidder hereby certifies that the only persons or parties interested in this Bid are those named herein, and that no other bidder or prospective bidder has given any information concerning this Bid.
  - A. If the bidder anticipates services under the contract or any subcontracts will be performed outside the United States or Colorado, the bidder shall provide in a written statement which must include, but need not be limited to the type of services that will be performed at a location outside the United States or Colorado and the reason why it is necessary or advantageous to go outside the United States or Colorado to perform such services. (Does not apply to any project that receives federal moneys) \*
  - **B.** For State Public Works projects per C.R.S. 8-17-101, Colorado labor shall be employed to perform at least 80% of the work. Colorado Labor means any person who is a resident of the state of Colorado at the time of the Public Works project. Bidders indicating that their bid proposal will not comply with the 80% Colorado Labor requirement are required to submit written justification along with the bid submission. (Does not apply to any project that receives federal moneys) \*
  - **C.** A Service-Disabled Veteran Owned Small Business (SDVOSB) per C.R.S. 24-103-211, means a business that is incorporated or organized in Colorado or maintains a place of business or has an office in Colorado and is officially registered and verified by the Center for Veteran Enterprise within the U.S. Department of Veteran Affairs. Attach proof of certification along with the bid submission. \*
- **4. BID GUARANTEE:** This Bid is accompanied by the required Bid Guarantee. You are authorized to hold said Bid Guarantee for a period of not more than thirty (30) days after the opening of the Bids for the work above indicated, unless the undersigned bidder is awarded the Contract, within said period, in which event the Director, State Buildings Programs, may retain said Bid Guarantee, until the undersigned bidder has executed the required Agreement and furnished the required Performance Bond, Labor and Material Payment Bond, Insurance Policy and Certificates of Insurance and Affidavit Regarding Unauthorized Immigrants.
- 5. TIME OF COMPLETION: The bidder agrees to achieve Substantial Completion of the Project from the date of the Notice to Proceed within the number of calendar days entered above, and in addition, further agrees that the period between Substantial Completion and Final Acceptance of the Project will not exceed the number of calendar days noted above. If awarded the Work, the bidder agrees to begin performance within ten (10) days from

the date of the Notice to Proceed subject to Article 46, Time of Completion and Liquidated Damages of the General Conditions of the Contract, and agrees to prosecute the Work with due diligence to completion. The bidder represents that Article 7D of the Contractor's Agreement (SC-6.21) has been reviewed to determine the type and amount of any liquidated damages that may be specified for this contract.

- 6. EXECUTION OF DOCUMENTS: The bidder understands that if this Bid is accepted, bidder must execute the required Agreement and furnish the required Performance Bond, Labor and Material Payment Bond, Insurance Policy and Certificates of Insurance and Affidavit Regarding Unauthorized Immigrants within ten (10) days from the date of the Notice of Award, and that the bidder will be required to sign to acknowledge and accept the Contract Documents, including the Drawings and Specifications.
- **7. ALTERNATES:** Refer to the Information for Bidders (SC-6.12) for Method of Award for Alternates and use State Form SBP-6.13.1 Bid Alternates form to be submitted with this bid form if alternates are requested by the institution/agency in the solicitation documents.
- 8. Submit wage rates (direct labor costs) for prime contractor and subcontractor as requested by the institution/agency in the solicitation documents.
- 9. The right is reserved to waive informalities and to reject any and all Bids.

\*Does not apply to projects for Institutions of Higher Education that have opted out of the State Procurement Code.

SIGNATURES: If the Bid is being submitted by a Corporation, the Bid shall be signed by an officer, i.e., President or Vice-President. If a sole proprietorship or a partnership is submitting the Bid, the Bid shall so indicate and be properly signed.

Dated this \_\_\_\_\_ Day of \_\_\_\_\_ , 20\_\_\_\_

THE BIDDER:

Company Name

Address (including city, state and zip)

Phone number:

Name (Print) and Title

Signature



# **BID BOND**

Institution/Agency:			
Project No./Name:			

#### KNOW ALL MEN BY THESE PRESENTS:

WHEREAS, \_\_\_\_\_\_\_\_\_ hereinafter called the "PRINCIPAL", is submitting a PROPOSAL for the above described project, to the STATE OF COLORADO, hereinafter called the "OBLIGEE".

WHEREAS, the Advertisement for Bids has required as a condition of receiving the Proposals that the Principal submit with the PROPOSAL GUARANTY in an amount not less than five per cent (5%) of the Proposal, which sum it is specifically agreed is to be forfeited as Liquidated Damages in the event that the Principal defaults in his obligation as hereinafter specified, and, in pursuance of which Requirement, this Bid is made, executed and delivered.

**NOW THEREFORE**, the Principal and \_\_\_\_\_\_\_ a corporation of the State of \_\_\_\_\_\_\_, duly authorized to transact business in Colorado, as Surety, are held and firmly bound unto the Obligee, in the sum of five per cent (5%) of the Principal's total bid price, lawful money of the United States for the payment of which sum, well and truly to be made to the Obligee, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

**FURTHER THAT,** a condition of the obligation that the Principal shall maintain his Proposal in full force and effect for thirty (30) days after the opening of the proposals for the project, or, if the Principal's Proposal is accepted, the Principal shall, within the prescribed time, execute the required Agreement, furnish the required Performance Bond, Labor and Material Payment Bond, Insurance Policy, Certificates of Insurance and Certification and Affidavit Regarding Illegal Aliens, then this obligation shall be null and void, otherwise it shall remain in full force and effect, and subject to forfeiture upon demand as Liquidated Damages.

N WITNESS WHEREOF said Prince	cipal and Surety	have executed this Bond, this	day	/ of	, A.D., 20	
		/ -				

(Corporate S	eal)	THE PRINCIPAL	
ATTEST		Company Name	
Socretory		Address (including city, state and zip)	
Secretary			
Name (Print)		Signature	
		Name (Print) and Title	
SIGNATURES	If the "Principal" is doing busine Vice President. The signature	ess as a Corporation, the Bid Bond shall be signed by an officer, i.e., President or of the officer shall be attested to by the Secretary and properly sealed.	
	If the "Principal" is an individual or a partnership, the Bid Bond shall so indicate and be properly signed.		
	(Corporate Seal)	THE SURETY	
		Ву	
	Secretary	Attorney-in-Fact	

THIS BOND MUST BE ACCOMPANIED BY POWER OF ATTORNEY, EFFECTIVELY DATED. FAILURE TO PROVIDE A PROPERLY EXECUTED BID BOND WITH A PROPERLY EXECUTED POWER OF ATTORNEY WILL RESULT IN THE BIDDER'S PROPOSAL BEING DEEMED NON-RESPONSIVE.



# NOTICE OF AWARD

(Design/Bid/Build and Design/Build Lump Sum Agreements)

Date of Notice:	
	Date to be inserted by the Agency/Institution
Agency/Institution:	
Project No./Name:	
-	

TO:

The State of Colorado, represented by the undersigned, has considered the Proposals submitted for the above described work.

You **are** required to execute the approved Agreement and to furnish the Performance Bond, Labor and Material Payment Bond, Insurance Policy and Certificates of Insurance, Certification and Affidavit Regarding Unauthorized Immigrants and Labor Overhead (Direct Labor Burdens) for Work performed by Contractor and major Subcontractors within ten (10) days from the date of this Notice.

If you fail to execute said Agreement and to furnish said Performance Bond, Labor and Material Payment Bond, Insurance Policy, Certificates of Insurance, Certification and Affidavit Regarding Unauthorized Immigrants, and Labor Overhead (Direct Labor Burdens) as described above within ten (10) days from the date of this Notice, the State Controller is entitled to retain the amount of the Proposal Guaranty submitted with your Proposal as Liquidated Damages. In this event, the right is reserved to consider all of your rights arising out of the acceptance of your Proposal as abandoned and to award the work covered by your Proposal to another, or to re-advertise the Project, or otherwise dispose thereof.

By\_

State Buildings Programs (or Authorized Delegate) \_By \_

Date

Principal Representative (Agency/Institution)

Date

When completely executed, this form is to be sent by <u>certified mail</u> to the Contractor by the Principal Representative or delivered by any other means to which the parties agree.



**CERTIFICATION AND AFFIDAVIT REGARDING UNAUTHORIZED IMMIGRANTS** 

Institution/Agency:	
Project No./Name:	
-	

#### A. CERTIFICATION STATEMENT CRS 8-17.5-101 & 102 (HB 06-1343, SB 08-193)

The Vendor, whose name and signature appear below, certifies and agrees as follows:

1. The Vendor shall comply with the provisions of CRS 8-17.5-101 et seq. The Vendor shall not knowingly employ or contract with an unauthorized immigrant to perform work for the State or enter into a contract with a subcontractor that knowingly employs or contracts with an unauthorized immigrant.

2. The Vendor certifies that it does not now knowing employ or contract with and unauthorized immigrant who will perform work under this contract, and that it will participate in either (i) the "E-Verify Program", jointly administered by the United States Department of Homeland Security and the Social Security Administration, or (ii) the "Department Program" administered by the Colorado Department of Labor and Employment in order to confirm the employment eligibility of all employees who are newly hired to perform work under this contract.

3. The Vendor shall comply with all reasonable requests made in the course of an investigation under CRS 8-17.5-102 by the Colorado Department of Labor and Employment. If the Vendor fails to comply with any requirement of this provision or CRS 8-17.5-101 et seq., the State may terminate work for breach and the Vendor shall be liable for damages to the State.

B. AFFIDAVIT CRS 24-76.5-101 (HB 06S-1023)

1. If the Vendor is a <u>sole proprietor</u>, the undersigned hereby swears or affirms under penalty of perjury under the laws of the State of Colorado that (check one):

- □ I am a United States citizen, or
- $\hfill\square$  I am a Permanent Resident of the United States, or
- □ I am lawfully present in the United States pursuant to Federal law.

I understand that this sworn statement is required by law because I am a sole proprietor entering into a contract to perform work for the State of Colorado. I understand that state law requires me to provide proof that I am lawfully present in the United States prior to starting work for the State. I further acknowledge that I will comply with the requirements of CRS 24-76.5-101 et seq. and will produce the required form of identification prior to starting work. I acknowledge that making a false, fictitious, or fraudulent statement or representation in this sworn affidavit is punishable under the criminal laws of Colorado as perjury in the second degree under CRS 18-8-503 and it shall constitute a separate criminal offense each time a public benefit is fraudulently received.

CERTIFIED and AGREED to this day of	,
VENDOR:	
Vendor Full Legal Name	
BY :	
Signature of Authorized Representative	Title



# **CONTRACTOR'S DESIGN/BID/BUILD (D/B/B) AGREEMENT** (STATE FORM SC-6.21)

DEPARTMENT ID:	
CONTRACT ID #:	
PROJECT #:	
PROJECT NAME:	
VENDOR NAME:	

# CONTRACTOR'S DESIGN/BID/BUILD AGREEMENT

(STATE FORM SC-6.21)

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#### EXHIBITS:

- A. Contractor's Bid (Form SC-6.13)
- **B.** Performance Bond (Form SC-6.22)
- C. Labor and Material Payment Bond (Form SC-6.221)
- D. Insurance Certificates
- E. Certification and Affidavit Regarding Unauthorized Immigrants (State Form UI 1), (required at contract signing prior to commencing work)
- F. Building Code Compliance Policy: Coordination of Approved Building Codes, Plan Reviews and Building Inspections.

CONTRACTOR'S DESIGN/BID/BUILD (D/B/B) AGREEMENT

(STATE FORM SC-6.21)

 Department ID:
 Contract ID #:
 Project #:

**1. PARTIES**. THIS AGREEMENT is entered into by and between the STATE OF COLORADO, acting by and through the <u>(agency)</u>, hereinafter referred to as the Principal Representative, and <u>(vendor name)</u> having its offices at <u>(vendor address)</u> hereinafter referred to as the Contractor.

**2. EFFECTIVE DATE AND NOTICE OF NONLIABILITY.** This Agreement shall not be effective or enforceable until it is approved and signed by the State Controller or its designee (hereinafter called the "Effective Date"), but shall be effective and enforceable thereafter in accordance with its provisions. The State shall not be liable to pay or reimburse Contractor for any performance hereunder or be bound by any provision hereof prior to the Effective Date.

# RECITALS:

**WHEREAS**, the Principal Representative intends to procure <u>(project name)</u> hereinafter called the Project; and

WHEREAS, authority exists in the Law and Funds have been budgeted, appropriated, and otherwise made available, and a sufficient unencumbered balance thereof remains available for payment In Fund Number \_\_\_\_\_\_, Account Number \_\_\_\_\_\_; and

WHEREAS, this is a phase one waived contract, waiver number 156 Contractors Agreement for Capital Construction Form SC6.21.

**WITNESSETH**, that the State of Colorado and the Contractor agree as follows:

# ARTICLE 1. PERFORMANCE OF THE WORK

The Contractor shall perform all of the Work required for the complete and prompt execution of everything described or shown in, or reasonably implied from the Contract Documents for the above referenced Project.

# ARTICLE 2. PROVISIONS OF THE CONTRACT DOCUMENTS

The Contractor agrees to perform the Work to the highest industry standards and to the satisfaction of the State of Colorado and its Architect/Engineer in strict accordance with the provisions of the Contract Documents.

# ARTICLE 3. TIME OF COMPLETION

The Contractor agrees to Substantially Complete the Project within \_\_\_\_\_ calendar days from the date of the Notice to Proceed, in addition, the Contractor agrees to finally complete the Project from Substantial Completion to Final Acceptance within \_\_\_\_\_ calendar days for a total time of completion of the entire Project of \_\_\_\_\_ calendar days. The Contractor shall perform the Work with due diligence to completion.

# **ARTICLE 4. ESSENTIAL CONDITION**

Timely completion of the Project is an essential condition of this Agreement. The Contractor shall be subject to any liquidated damages described in Article 7.4 for failure to satisfactorily complete the Work within the time periods in Article 3 above.

#### ARTICLE 5. CONTRACT SUM

The Contractor shall be paid for	or the performance of this Agreement, subject to any additions and
deductions as provided for in A	Articles 32, 34 and 35 of The General Conditions of the Construction
Contract SC-6.23, the sum of	DOLLARS
AND NO/100* (\$*).	

#### ARTICLE 6. CONTRACT DOCUMENTS

The Contract Documents, as enumerated in Article 1 of The General Conditions of the Contractor's Design/Bid/Build (D/B/B) Agreement SC-6.23, are all essential parts of this Agreement and are fully incorporated herein.

#### ARTICLE 7. OPTIONAL PROVISIONS AND ELECTIONS

The provisions of this Article 7 alter the Articles (The General Conditions of the Contractor's Design/Bid/Build Agreement SC-6.23) or enlarge upon them as indicated:

The Principal Representative and or the State Buildings Program shall mark boxes and initial where applicable.

1. MODIFICATION OF ARTICLE 45. GUARANTEE INSPECTIONS AFTER COMPLETION

If the box below is marked the six month guarantee inspection is not required.

Principal Representative initial

#### 2. MODIFICATION OF ARTICLE 27. LABOR AND WAGES

If the box is marked the Federal Davis-Bacon Act shall be applicable to the Project. The minimum wage rates to be paid on the Project shall be furnished by the Principal Representative and included in the Contract Documents.

Principal Representative initial

3. MODIFICATION OF ARTICLE 39. NON-BINDING DISPUTE RESOLUTION – FACILITATED NEGOTIATIONS

If the box is marked, and initialed by the State as noted, the requirement to participate in facilitated negotiations shall be deleted from this Contract. Article 39, Non-Binding Dispute Resolution – Facilitated Negotiations, shall be deleted in its entirety and all references to the right to the same where ever they appear in the contract shall be similarly deleted.

The box may be marked only for projects with an estimated value of less than \$500,000.

Principal Representative initial

# 4. MODIFICATION OF ARTICLE 46. TIME OF COMPLETION AND LIQUIDATED DAMAGES

If an amount is indicated immediately below, liquidated damages shall be applicable to this Project as, and to, the extent shown below. Where an amount is indicated below, liquidated damages shall be assessed in accordance with and pursuant to the terms of The General Conditions of the Design/Bid/Build Agreement Article 46, Time of Completion And Liquidated Damages, in the amounts and as here indicated. The election of liquidated damages shall limit and control the parties right to damages only to the extent noted.

4.1. For the inability to use the Project, for each day after the number of calendar days specified in the Contractor's bid for the Project and the Agreement for achievement of Substantial Completion, until the day that the Project has achieved Substantial Completion and the Notice of Substantial Completion is issued, the Contractor agrees that an amount equal to \_\_\_\_\_\_

(\$ ) shall be assessed against Contractor from amounts due and payable to the Contractor under the Contract, or the Contractor and the Contractor's Surety shall pay to the Principal Representative such sum for any deficiency, if amounts on account thereof are deducted from remaining amounts due, but amounts remaining are insufficient to cover the entire assessment.

# ARTICLE 8. NOTICE IDENTIFICATION

All Notices pertaining to General Conditions or otherwise required to be given shall be transmitted in writing, to the individuals at the addresses listed below, and shall be deemed duly given when received by the parties at their addresses below or any subsequent persons or addresses provided to the other party in writing.

Notice to Principal Representative:

With copies to (State Buildings Program (or Delegate) State of Colorado):

Notice to Contractor:

With copies to:

### SIGNATURE APPROVALS:

#### THE PARTIES HERETO HAVE EXECUTED THIS CONTRACT

\*Persons signing for Contractor hereby swear and affirm that they are authorized to act on Contractor's behalf and acknowledge that the State is relying on their representations to that effect. **Principal is not a recognized title and will not be accepted** 

THE CONTRACTOR	<b>STATE OF COLORADO</b> , acting by and through: (Insert Name of Agency or IHE)	
Legal Name of Contracting Entity	By: (Insert Name & Title of Principal Representative for Agency or IHE)	
	Date:	
*Signature By Name (print) Title	<b>APPROVED</b> DEPARTMENT OF PERSONNEL & ADMINISTRATION STATE BUILDINGS PROGRAM State Architect (or authorized Delegate)	
Date:	By: (Insert Name of Authorized Individual) Date:	

# ALL CONTRACTS MUST BE APPROVED BY THE STATE CONTROLLER:

C.R.S. § 24-30-202 requires the State Controller to approve all State Contracts. This Contract is not valid until signed and dated below by the State Controller or delegate. Contractor is not authorized to begin performance until such time. If Contractor begins performing prior thereto, the State of Colorado is not obligated to pay Contactor for such performance or for any goods and/or services provided hereunder.

#### **APPROVED:**

STATE OF COLORADO STATE CONTROLLER'S OFFICE State Controller (or authorized Delegate)

By:

(Insert Name & Title of Authorized Individual)

Date:

#### **CONTRACTOR'S DESIGN/BID/BUILD AGREEMENT** (STATE FORM SC-6.21)

# EXHIBIT A

CONTRACTOR'S BID (Form SBP-6.13)

#### **CONTRACTOR'S DESIGN/BID/BUILD AGREEMENT** (STATE FORM SC-6.21)

# EXHIBIT B

PERFORMANCE BOND (Form SC-6.22)

#### **CONTRACTOR'S DESIGN/BID/BUILD AGREEMENT** (STATE FORM SC-6.21)

# **EXHIBIT C**

LABOR AND MATERIAL PAYMENT BOND (Form SC-6.221)

#### **CONTRACTOR'S DESIGN/BID/BUILD AGREEMENT** (STATE FORM SC-6.21)

# EXHIBIT D

INSURANCE CERTIFICATE(S) (attached)

#### **CONTRACTOR'S DESIGN/BID/BUILD AGREEMENT** (STATE FORM SC-6.21)

# EXHIBIT E

**Certification and Affidavit Regarding Unauthorized Immigrants** (State Form UI-1), (required at contract signing prior to commencing work)

**CONTRACTOR'S DESIGN/BID/BUILD AGREEMENT** (STATE FORM SC-6.21)

# **EXHIBIT F**

Building Code Compliance Policy: Coordination of Approved Building Codes, Plan Reviews and Building Inspections



# PERFORMANCE BOND

Institution/Agency:	
Project No./Name:	

#### BONDING COMPANY: DO NOT MAKE ANY CHANGES TO THE LANGUAGE IN THIS BOND.

#### KNOW ALL PERSONS BY THESE PRESENTS:

That the Contractor

as Principal and hereinafter called "Principal,"

and

as Surety and hereinafter called "Surety," a corporation organized and existing under the laws of \_\_\_\_\_\_ are held and firmly bound unto the STATE OF COLORADO

acting by and through\_\_\_\_\_\_ (AGENCY OR INSTITUTION) hereinafter called the "Principal Representative", in the sum of \_\_\_\_\_\_ Dollars (\$\_\_\_\_\_\_)

for the payment whereof the Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly, by these presents.

WHEREAS, the Principal and the State of Colorado acting by and through the Principal Representative have entered into a certain Contract, hereinafter called "Contract," dated \_\_\_\_\_\_\_\_, 20\_\_\_\_\_, for the construction of a PROJECT described as

which Contract is hereby by reference made a part hereof;

**NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION,** is such that, if the Principal shall promptly, fully and faithfully perform all the undertakings, covenants, terms, conditions and agreements of said Contract during the original term of said Contract any extensions thereof that may be granted by the Principal Representative with or without notice to the Surety, and during the life of any guaranty required under the Contract, and shall also well and truly perform and fulfill all undertakings, covenants, terms, conditions and agreements of any and all duly authorized modifications of said Contract that may hereafter be made, notice of which modifications to the Surety being hereby waived, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

**AND THE SAID SURETY**, for value received hereby stipulates and agrees that whenever the Principal shall be, and declared by the Principal Representative to be in default under said Contract, the State of Colorado having performed its obligations thereunder, the Surety may promptly remedy the default or shall promptly (1) Complete the Contract in accordance with its terms and conditions, or (2) Obtain a bid or bids for submittal to the Principal Representative for completing the Contract in accordance with its terms and conditions, and upon determination by the Principal Representative and Surety of the lowest responsible bidder, arrange for a contract between such bidder and the State of Colorado acting by and through the Principal Representative and make available as work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion, less the balance of the contract price but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount hereinbefore set forth. The term "balance of the contract price" as herein used shall mean the total amount payable to the Principal under the Contract and any amendments thereto, less the amount properly paid by the State of Colorado to the Contractor.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the State of Colorado.

of , A.D.,	SWHEREOF said Principal and 2020	Surety have executed this Bond, this	day
	(Corporate Seal)	THE PRINCIPAL	
ATTEST:		By:	
	Secretary	Title:	
	(Corporate Seal)	SURETY	
		Ву:	
		Attorney-in-fact	
THIS B	OND MUST BE ACCOMPANIE	D BY POWER OF ATTORNEY, EFFECTIVELY D	ATED

Note: This bond is issued simultaneously with another bond conditioned for the full and faithful payment for all labor and material of the contract.



# LABOR AND MATERIAL BOND

Institution/Agency: \_\_\_\_\_ Project No./Name: \_\_\_\_\_

#### BONDING COMPANY: DO NOT MAKE ANY CHANGES TO THE LANGUAGE IN THIS BOND.

KNOW ALL PERSONS BY THESE PRESENTS:

That the Contractor

as Principal and hereinafter called "Principal,"

and

as Surety and hereinafter called "Surety," a corporation organized and existing under the laws of \_\_\_\_\_\_ are held and firmly bound unto the STATE OF COLORADO

acting by and through \_\_

(agency or institution)

together with interest at the rate of eight per cent (8%) per annum on all payments becoming due in accordance with said Contract, from the time such payments shall become due until such payment shall be made, for the payment of which, well and truly made to the Obligees, the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly, by these presents.

WHEREAS, the Principal and the State of Colorado acting by and through the Principal Representative have entered into a certain Contract, hereinafter called "Contract," dated \_\_\_\_\_\_, 20\_\_\_ for the construction of a PROJECT described as

which Contract is hereby by reference made a part hereof;

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal and the Surety shall fully indemnify and save harmless the State of Colorado and the Principal Representative from and against any and all costs and damages, including patent infringements, which either may suffer by reason of any failure or failures of the Principal promptly and faithfully to perform all terms and conditions of said Contract and shall fully reimburse and repay the State of Colorado and the Principal Representative all outlay and expense which the State of Colorado and the Principal Representative may incur in making good any such failure or failures, and further, if the Principal and his subcontractors shall duly and promptly pay for any and all labor, materials, team hire, sustenance, provisions, provender, rental machinery, tools, or equipment and other supplies which have been or shall be used or consumed by said Principal or his subcontractors in the performance of the work of said Contract, and it said Principal shall duly and promptly pay all his subcontractors the sums due them for any and all materials, rental machinery, tools, or equipment and labor that have been or shall be furnished, supplied, performed or used in connection with performance of said Contract, and shall also fully indemnify and save harmless the State of Colorado and the Principal Representative to the extent of any and all expenditures which either or both of them may be required to make by reason of any failures or defaults by the Principal or any subcontractor in connection with such payments; then this obligation shall be null and void, otherwise it shall remain in full force and effect.

It is expressly understood and agreed that any alterations which may be made in the terms of said Contract or in the work to be done under said Contract, or any extension(s) of time for the performance of the Contract, or any forebearance on the part of either the State of Colorado or the Principal to any of the others, shall not in any way release the Principal and the Surety, or either of them, their heirs, executors, administrators, successors or assigns from their liability hereunder, notice to the Surety of any such alteration, extension or forbearance being hereby waived.

IN WITNESS WHEREOF, the Principal and the Surety have executed this Bond, this	day of
, A.D., 20	

(Corporate Seal)	THE PRINCIPAL
ATTEST:	
Secretary	Title:
(Corporate Seal)	SURETY
	By: Attorney-in-fact
THIS BOND MUST BE ACCOMPANIED	BY POWER OF ATTORNEY, EFFECTIVELY DATED

Note: This bond is issued simultaneously with another bond conditioned for the full and faithful performance of the contract.



# THE GENERAL CONDITIONS OF THE CONTRACTOR'S DESIGN/BID/BUILD (D/B/B) AGREEMENT (STATE FORM SC-6.23)

THE GENERAL CONDITIONS OF THE CONTRACTOR'S DESIGN/BID/BUILD AGREEMENT (STATE FORM SC-6.23)

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# THE GENERAL CONDITIONS OF THE CONTRACTOR'S DESIGN/BID/BUILD AGREEMENT (STATE FORM SC-6.23)

# ARTICLE 1. DEFINITIONS

CONTRACT DOCUMENTS

The Contract Documents consist of the following some of which are procedural documents used in the administration and performance of the Agreement:

- 1. Contractor's Design/Bid/Build Agreement; (SC-6.21);
- 2. Performance Bond (SC-6.22) and Labor and Material Payment Bond (SC-6.221);
- 3. General Conditions of the Contractor's Design/Bid/Build Agreement (SC- 6.23) and if applicable, Supplementary General Conditions;
- 4. Detailed Specification Requirements, including all addenda issued prior to the opening of the bids; and,
- 5. Drawings, including all addenda issued prior to the opening of the bids.
- 6. Change Orders (SC-6.31) and Amendments (SC-6.0), if any, when properly executed.
- 7. Authorization to Bid (SBP-6.10)
- 8. Information for Bidders (SBP-6.12);
- 9. Bid (SBP-6.13);
- 10. Bid Bond (SBP-6.14);
- 11. Notice of Award (SBP-6.15);
- 12. Builder's risk insurance certificates of insurance (ACORD 25-S);
- 13. Liability and Workers' compensation certificates of insurance;
- 14. Notice to Proceed (Design/Bid/Build) (SBP-6.26);
- 15. Notice of Approval of Occupancy/Use (SBP-01);
- 16. Notice of Partial Substantial Completion (SBP-071);
- 17. Notice of Substantial Completion (SBP-07);
- 18. Notice of Partial Final Acceptance (SC-6.27);
- 19. Notice of Final Acceptance (SBP-6.271);
- 20. Notice of Partial Contractor's Settlement (SC-7.3);
- 21. Notice of Contractor's Settlement (SBP-7.31);
- 22. Application and Certificate for Contractor's Payment (SBP-7.2);
- 23. Other procedural and reporting documents or forms referred to in the General Conditions, the Supplementary General Conditions, the Specifications or required by the State Buildings Program or the Principal Representative, including but not necessarily limited to Pre-Acceptance Check List (SBP-05) and the Building Inspection Record (SBP-BIR). A list of the current standard State Buildings Program forms applicable to this Contract may be obtained from the Principal Representative on request.

#### DEFINITIONS OF WORDS AND TERMS USED

- AGREEMENT. The term "Agreement" shall mean the written agreement entered into by the State
  of Colorado acting by and through the Principal Representative and the Contractor for the
  performance of the Work and payment therefore, on State Form SC-6.21. The term Agreement
  when used without reference to State Form SC-6.21 may also refer to the entirety of the parties'
  agreement to perform the Work described in the Contract Documents or reasonably inferable
  there from. The term "Contract" shall be interchangeable with this latter meaning of the term
  Agreement
- 2. AMENDMENT: The term "Amendment" means a written order signed by the Principal Representative or its authorized agent, issued after the execution of this Agreement, authorizing a change in the Work, the method or manner of performance, an adjustment in the Contract Sum, or the Contract Time as required by State Building Program's policy Contract Modification Guidelines.

- 3. ARCHITECT/ENGINEER. The term "Architect/Engineer" shall mean either the architect of record or the engineer of record under contract to the State of Colorado for the Project identified in the Contract Documents.
- 4. CHANGE ORDER. The term "Change Order" means a written order directing the Contractor to make changes in the Work, in accordance with Article 35A, The Value of Changed Work.
- 5. COLORADO LABOR. The term "Colorado labor", as provided in C.R.S. § 8-17-101(2)(a), as amended, means any person who is a resident of the state of Colorado, at the time of the public Works project, without discrimination as to race, color, creed, sex, sexual orientation, marital status, national origin, ancestry, age, or religion except when sex or age is a bona fide occupational qualification. A resident of the state of Colorado is a person who can provide a valid Colorado driver's license, a valid Colorado state-issued photo identification, or documentation that he or she has resided in Colorado for the last thirty days.
- 6. CONTRACTOR. The word "Contractor" shall mean the person, company, firm, corporation or other legal entity entering into a contract with the State of Colorado acting by and through the Principal Representative
- 7. DAYS. The term "days" whether singular or plural shall mean calendar days unless expressly stated otherwise. Where the term "business days" is used it shall mean business days of the State of Colorado.
- 8. DRAWINGS. The term "Drawings" shall mean all drawings approved by appropriate State officials which have been prepared by the Architect/Engineer showing the Work to be done, except that where a list of drawings is specifically enumerated in the Supplementary General Conditions or division 1 of the Specifications, the term shall mean the drawings so enumerated, including all addenda drawings.
- 9. EMERGENCY FIELD CHANGE ORDER. The term "Emergency Field Change Order" shall mean a written change order for extra Work or a change in the Work necessitated by an emergency as defined in Article 35D executed on State form SC 6.31 and identified as an Emergency Field Change Order. The use of such orders is limited to emergencies and to the amounts shown in Article 35D.
- 10. FINAL ACCEPTANCE. The terms "final acceptance" or "finally complete" mean the stage in the progress of the Work, after substantial completion, when all remaining items of Work have been completed, all requirements of the Contract Documents are satisfied and the Notice of Acceptance can be issued. Discrete physical portions of the Project may be separately and partially deemed finally complete at the discretion of the Principal Representative when that portion of the Project reaches such stage of completion and a partial Notice of Acceptance can be issued.
- 11. FIXED LIMIT OF CONSTRUCTION COST. The term "Fixed Limit of Construction Cost" shall set forth a dollar amount available for the total Construction Cost of all elements of the Work as specified by the Principal Representative.
- 12. NOTICE. The term "Notice" shall mean any communication in writing from either contracting party to the other by such means of delivery that receipt cannot properly be denied. Notice shall be provided to the person identified to receive it in Article 8 of the Agreement. Notice Identification, or to such other person as either party identifies in writing to receive Notice. Notice by facsimile transmission where proper transmission is evidence shall be adequate where facsimile numbers are included in Article 8 of the Agreement. Notwithstanding an email delivery or return receipt, email Notice shall not be adequate. Acknowledgment of receipt of a voice message shall not be deemed to waive the requirement that Notice, where required, shall be in writing.
- 13. OCCUPANCY. The term "Occupancy" means occupancy taken by the State as Owner after the Date of Substantial Completion at a time when a building or other discrete physical portion of the Project is used for the purpose intended. The Date of Occupancy shall be the date of such first use, but shall not be prior to the date of execution of the Notice of Approval of Occupancy/Use. Prior to the date of execution of a Notice of Approval of Occupancy/Use, the state shall have no right to occupy and the project may not be considered safe for occupancy for the intended use.

- 14. OWNER. The term "Owner" shall mean the Principal Representative.
- 15. PRINCIPAL REPRESENTATIVE. The term "Principal Representative" shall be defined, as provided in C.R.S. § 24-30-1301(14), as the governing board of a state department, institution, or agency; or if there is no governing board, then the executive head of a state department, institution, or agency, as designated by the governor or the general assembly and as specifically identified in the Contract Documents, or shall have such other meaning as the term may otherwise be given in C.R.S. § 24-30-1301(14), as amended. The Principal Representative may delegate authority. The Contractor shall have the right to inquire regarding the delegated authority of any of the Principal Representative's representatives on the project and shall be provided with a response in writing when requested.
- 16. PRODUCT DATA. The term "Product Data" shall mean all submittals in the form of printed manufacturer's literature, manufacturer's specifications, and catalog cuts.
- 17. PROJECT. The "Project" is the total construction of which the Work performed under the Contract Documents is a part, and may include construction by the Principal Representative or by separate contractors.
- 18. REASONABLY INFERABLE. The phrase "reasonably inferable" means that if an item or system is either shown or specified, all material and equipment normally furnished with such items or systems and needed to make a complete installation shall be provided whether mentioned or not, omitting only such parts as are specifically excepted, and shall include only components which the Contractor could reasonably anticipate based on his or her skill and knowledge using an objective, industry standard, not a subjective standard. This term takes into consideration the normal understanding that not every detail is to be given on the Drawings and Specifications If there is a difference of opinion, the Principal Representative shall make the determination as to the standards of what reasonably inferable.
- 19. SAMPLES. The term "Samples" shall mean examples of materials or Work provided to establish the standard by which the Work will be judged.
- 20. SBP. The term "SBP" means "State Buildings", which is used in connection with labeling applicable State form documents (e.g., "SBP-01" is the form number for Notice of Approval of Occupancy/Use).
- 21. SC. The term "SC" means "State Contract" which is used in connection with labeling applicable State form documents (e.g. "SC 6.23" is the State form number for these General Conditions of the Contractor's Design/Bid/Build Agreement).
- 22. SCHEDULE OF VALUES. The term "Schedule of Values" is defined as the itemized listing of description of the Work by Division and Section of the Specifications. The format shall be the same as Form SC-7.2. Included shall be the material costs, and the labor and other costs plus the sum of both.
- 23. SHOP DRAWINGS. The term "Shop Drawings" shall mean any and all detailed drawings prepared and submitted by Contractor, Subcontractor at any tier, vendors or manufacturers providing the products and equipment specified on the Drawings or called for in the Specifications.
- 24. SPECIFICATIONS. The term "Specifications" shall mean the requirements of the CSI divisions of the project manual prepared by the Architect/Engineer describing the Work to be accomplished.
- 25. STATE BUILDINGS PROGRAM. Shall refer to the Office of the State Architect within the Department of Personnel & Administration of Colorado State government responsible for project administration, review, approval and coordination of plans, construction procurement policy, contractual procedures, and code compliance and inspection of all buildings, public Works and improvements erected for state purposes; except public roads and highways and projects under the supervision of the division of wildlife and the division of parks and outdoor recreation as provided in C.R.S. § 24-30-1301, *et seq.* The term State Buildings Program shall also mean that individual within a State Department agency or institution, including institutions of higher education, who has signed an agreement accepting delegation to perform all or part of the responsibilities and functions of State Buildings Program.
- 26. SUBCONTRACTOR. The term "Subcontractor" shall mean a person, firm or corporation supplying labor, materials, equipment and/or Services for Work at the site of the Project for, and under separate contract or agreement with the Contractor.
- 27. SUBMITTALS. The term "submittals" means drawings, lists, tables, documents and samples prepared by the Contractor to facilitate the progress of the Work as required by these General

Conditions or the Drawings and Specifications. They consist of Shop Drawings, Product Data, Samples, and various administrative support documents including but not limited to lists of subcontractors, construction progress schedules, schedules of values, applications for payment, inspection and test results, requests for information, various document logs, and as-built drawings. Submittals are re*quired* by the Contract Documents, but except to the extent expressly specified otherwise are not themselves a part of the Contract Documents.

- 28. SUBSTANTIAL COMPLETION. The terms "substantial completion" or "substantially complete" mean the stage in the progress of the Work when the construction is sufficiently complete, in accordance with the Contract Documents as modified by any Change Orders, so that the Work, or at the discretion of the Principal Representative, any designated portion thereof, is available for its intended use by the Principal Representative and a Notice of Substantial Completion can be issued. Portions of the Project may, at the discretion of the Principal Representative, be designated as substantially complete.
- 29. SUPPLIER. The term "Supplier" shall mean any manufacturer, fabricator, distributor, material man or vendor.
- 30. SURETY. The term "Surety" shall mean the company providing the labor and material payment and performance bonds for the Contractor as obligor.
- 31. VALUE ENGINEERING. "Value Engineering" or "VE" is defined as an analysis and comparison of cost versus value of building materials, equipment, and systems. VE considers the initial cost of construction, coupled with the estimated cost of maintenance, energy use, life expectancy and replacement cost. VE related to this Project shall include the analysis and comparison of building elements in an effort to reduce overall Project costs, while maintaining or enhancing the quality of the design intent, whenever possible.
- 32. WORK. The term "Work" shall mean all or part of the labor, materials, equipment, and other services required by the Contract Documents or otherwise required to be provided by the Contractor to meet the Contractor's obligations under the Contract.

#### ARTICLE 2. EXECUTION, CORRELATION, INTENT OF DOCUMENTS, COMMUNICATION AND COOPERATION

#### A. EXECUTION

- The Contractor, within ten (10) days from the date of Notice of Award, will be required to:
- 1. Execute the Agreement, State Form SC-6.21;
- 2. Furnish fully executed Performance and Labor and Material Payment Bonds on State Form s SC-6.22 and SC-6.221; and
- 3. Furnish certificates of insurance evidencing all required insurance on standard Acord forms designed for such purpose.
- 4. Furnish certified copies of any insurance policies requested by the Principal Representative.

#### B. CORRELATION

By execution of the Agreement the Contractor represents that the Contractor has visited the site, has become familiar with local conditions and local requirements under which the Work is to be performed, including the building code programs of the State Buildings Program as implemented by the Principal Representative, and has correlated personal observations with the requirements of the Contract Documents.

#### C. INTENT OF DOCUMENTS

The Contract Documents are complementary, and what is called for by any one document shall be as binding as if called for by all. The intention of the documents is to include all labor, materials, equipment and transportation necessary for the proper execution of the Work. Words describing materials or Work which have a well-known technical or trade meaning shall be held to refer to such recognized standards.

In any event, if any error exists, or appears to exist, in the requirements of the Drawings or Specifications, or if any disagreement exists as to such requirements, the Contractor shall have the same explained or adjusted by the Architect/Engineer before proceeding with the Work in question. In the event of the Contractor's failure to give prior written Notice of any such errors or disagreements of which the Contractor or the Subcontractors at any tier are aware, the Contractor shall, at no additional

cost to the Principal Representative, make good any damage to, or defect in, Work which is caused by such omission.

Where a conflict occurs between or within standards, Specifications or Drawings, which is not resolved by reference to the precedence between the Contract Documents, the more stringent or higher quality requirements shall apply so long as such more stringent or higher quality requirements are reasonably inferable. The Architect/Engineer shall decide which requirements will provide the best installation.

With the exception noted in the following paragraph, the precedence of the Contract Documents is in the following sequence:

- 1. The Agreement (SC-6.21);
- 2. The Supplementary General Conditions, if any;
- 3. The General Conditions (SC-6.23); and
- 4. Drawings and Specifications, all as modified by any addenda.

Change Orders and Amendments, if any, to the Contract Documents take precedence over the original Contract Documents.

Notwithstanding the foregoing order of precedence, the Special Provisions of Article 52 of the General Conditions, Special Provisions, shall take precedence, rule and control over all other provisions of the Contract Documents.

Unless the context otherwise requires, form numbers in this document are for convenience only. In the event of any conflict between the form required by name or context and the form required by number, the form required by name or context shall control. The Contractor may obtain State forms from the Principal Representative upon request.

#### D. PARTNERING, COMMUNICATIONS AND COOPERATION

In recognition of the fact that conflicts, disagreements and disputes often arise during the performance of construction contracts, the Contractor and the Principal Representative aspire to encourage a relationship of open communication and cooperation between the employees and personnel of both, in which the objectives of the Contract may be better achieved and issues resolved in a more fully informed atmosphere.

The Contractor and the Principal Representative each agree to assign an individual who shall be fully authorized to negotiate and implement a voluntary partnering plan for the purpose of facilitating open communications between them. Within thirty days (30) of the Notice to Proceed, the assigned individuals shall meet to discuss development of an informal agreement to accomplish these goals.

The assigned individuals shall endeavor to reach an informal agreement, but shall have no such obligation. Any plans these parties voluntarily agree to implement shall result in no change to the contract amount, and no costs associated with such plan or its development shall be recoverable under any contract clause. In addition, no plan developed to facilitate open communication and cooperation shall alter, amend or waive any of the rights or duties of either party under the Contract unless and except by written Amendment to the Contract, nor shall anything in this clause or any subsequently developed partnering plan be deemed to create fiduciary duties between the parties unless expressly agreed in a written Amendment to the Contract. It is also recognized that projects with relatively low contract values may not justify the expense or special efforts required. In the case of small projects with an initial Contract value under \$500,000, the requirements of the preceding paragraph shall not apply.

#### ARTICLE 3. COPIES FURNISHED

The Contractor will be furnished, free of charge, the number of copies of Drawings and Specifications as specified in the Contract Documents, or if no number is specified, all copies reasonably necessary for the execution of the Work.

#### ARTICLE 4. OWNERSHIP OF DRAWINGS

Drawings or Specifications, or copies of either, furnished by the Architect/Engineer, are not to be used on any other Work. At the completion of the Work, at the written request of the Architect/Engineer, the Contractor shall endeavor to return all Drawings and Specifications.

The Contractor may retain the Contractor's Contract Document set, copies of Drawings and Specifications used to contract with others for any portion of the Work and a marked up set of as-built drawings.

#### ARTICLE 5. ARCHITECT/ENGINEER'S STATUS

The Architect/Engineer is the representative of the Principal Representative for purposes of administration of the Contract, as provided in the Contract Documents and the Agreement. In case of termination of employment or the death of the Architect/Engineer, the Principal Representative will appoint a capable Architect/Engineer against whom the Contractor makes no reasonable objection, whose status under the Contract shall be the same as that of the former Architect/Engineer.

# ARTICLE 6. ARCHITECT/ENGINEER DECISIONS AND JUDGMENTS, ACCESS TO WORK AND INSPECTION

#### A. DECISIONS

The Architect/Engineer shall, within a reasonable time, make decisions on all matters relating to the execution and progress of the Work or the interpretation of the Contract Documents, and in the exercise of due diligence shall be reasonably available to the Contractor to timely interpret and make decisions with respect to questions relating to the design or concerning the Contract Documents.

#### B. JUDGMENTS

The Architect/Engineer is, in the first instance, the judge of the performance required by the Contract Documents as it relates to compliance with the Drawings and Specifications and quality of Workmanship and materials.

The Architect/Engineer shall make judgments regarding whether directed Work is extra or outside the scope of Work required by the Contract Documents at the time such direction is first given. If, in the Contractor's judgment, any performance directed by the Architect/Engineer is not required by the Contract Documents or if the Architect/Engineer does not make the judgment required, it shall be a condition precedent to the filing of any claim for additional cost related to such directed Work that the Contractor, before performing such Work, shall first obtain in writing, the Architect/Engineer's written decision that such directed Work is included in the performance required by the Contract Documents. If the Architect/Engineer's direction to perform the Work does not state that the Work is within the performance required by the Contract Documents, the Contractor shall, in writing, request the Architect/Engineer to advise in writing whether the directed Work will be considered extra Work or Work included in the performance required by the Contract Documents.

The Architect/Engineer shall respond to any such written request for such a decision within three (3) business days and if no response is provided, or if the Architect/Engineer's written decision is to the effect that the Work is included in the performance required by the Contract Documents, the Contractor may file with the Principal Representative and the Architect/Engineer a Notice of claim in accordance with Article 36, Claims. Whether or not a Notice of claim is filed, the Contractor shall proceed with the ordered Work. Disagreement with the decision of the Architect/Engineer shall not be grounds for the Contractor to refuse to perform the Work directed or to suspend or terminate performance.

#### C. ACCESS TO WORK

The Architect/Engineer, the Principal Representative and representatives of State Buildings Program shall at all times have access to the Work. The Contractor shall provide proper facilities for such access and for their observations or inspection of the Work.

#### D. INSPECTION

The Architect/Engineer has agreed to make, or that structural, mechanical, electrical engineers or other consultants will make, periodic visits to the site to generally observe the progress and quality of the

Work to determine in general if the Work is proceeding in accordance with the Contract Documents. Observation may extend to all or any part of the Work and to the preparation, fabrication or manufacture of materials.

Without in any way meaning to be exclusive or to limit the responsibilities of the Architect/Engineer or the Contractor, the Architect/Engineer has agreed to observe, among other aspects of the Work, the following for compliance with the Contract Documents:

- 1. Compaction testing reports based upon the findings and recommendations of the Principal Representative's testing consultant;
- 2. Bearing surfaces of excavations before concrete is placed based upon the findings and recommendations of the Principal Representative's soils engineering consultant;
- 3. Reinforcing steel after installation and before concrete is poured;
- 4. Structural concrete;
- 5. Laboratory reports on all concrete testing based upon the findings and recommendations of the Principal Representative's testing consultant;
- 6. Structural steel during and after erection and prior to its being covered or enclosed;
- 7. Steel welding; Principal Representative will furnish steel welding inspection consultant/agency if required or necessary for the project;
- 8. Mechanical and plumbing Work following its installation and prior to its being covered or enclosed;
- 9. Electrical Work following its installation and prior to its being covered or enclosed; and
- 10. Any special or quality control testing required in the Contract Documents provided by the Principal Representative's testing consultant.

If the Specifications, the Architect/Engineer's instructions, laws, ordinances of any public authority require any Work to be specifically tested or approved, the Contractor shall give the Principal Representative, Architect/Engineer and appropriate testing agency (if necessary) timely notice of its readiness for observation by the Architect/Engineer or inspection by another authority, and if the inspection is by another authority, of the date fixed for such inspection, required certificates of inspection being secured by the Contractor. The Contractor shall give all required Notices to the Principal Representative or his or her designee for inspections required for the building inspection program. It shall be the responsibility of the Contractor to determine the Notice required by the State pursuant to Building Inspection Record for the Project, according to State form SBP-B.I.R., or the equivalent form required by the Principal Representative as approved by the State Buildings Program. If any portion of the Work should be covered contrary to the reasonable request of the Architect/Engineer, or to requirements specifically expressed in the Contract Documents, it must, if required in writing by the Architect/Engineer, be uncovered for its observation and shall be replaced at the Contractor's expense.

If any other portion of the Work has been covered which the Architect/Engineer has not specifically requested to observe prior to it's being covered, it may request to see such work and it shall be uncovered by the Contractor. If such work is found in accordance with the Contract Documents, the cost of uncovering and replacement shall, by appropriate Amendment or Change Order, be charged to the Principal Representative. If such work is found not in accordance with the Contract Documents, the Contractor shall pay such costs unless it is found that this condition was caused by the Principal Representative or a separate Contractor as provided in Article 18, in which event, the Principal Representative shall be responsible for the payment of such costs.

#### ARTICLE 7. CONTRACTOR'S SUPERINTENDENCE AND SUPERVISION

The Contractor shall employ, and keep present (as applicable) on the Project during its progress, a competent project manager as satisfactory to the Principal Representative. The project manager shall not be changed except with the consent of the Principal Representative, unless the project manager proves to be unsatisfactory to the Contractor and ceases to be in his or her employ. The project manager shall represent the Contractor for the Project, and in the absence of the Contractor, all directions given to the project manager shall be as binding as if given to the Contractor. Directions received by the project manager shall be documented by the project manager and communicated in writing with the Contractor.

The Contractor shall employ, and keep present on the Project during its progress, a competent superintendent and any necessary assistants, all satisfactory to the Architect/Engineer and the Principal Representative. The superintendent shall not be changed except with the consent of the Architect/Engineer and the Principal Representative, unless the superintendent proves to be unsatisfactory to the Project Manager/Contractor and ceases to be in his or her employ. The superintendent shall represent the Project Manager/Contractor in his or her absence and all directions given to the superintendent shall be as binding as if given to the Project Manager/Contractor. Directions received by the superintendent shall be documented by the superintendent and confirmed in writing with the Project Manager/Contractor.

The Contractor shall give efficient supervision to the Work, using his or her best skill and attention. He or she shall carefully study and compare all Drawings, Specifications and other written instructions and shall without delay report any error, inconsistency or omission which he or she may discover in writing to the Architect/Engineer. The Contractor shall not be liable to the Principal Representative for damage to the extent it results from errors or deficiencies in the Contract Documents or other instructions by the Architect/Engineer, unless the Contractor knew or had reason to know, that damage would result by proceeding and the Contractor fails to so advise the Architect/Engineer.

The superintendent shall see that the Work is carried out in accordance with the Contract Documents and in a uniform, thorough and first-class manner in every respect. The Contractor's superintendent shall establish all lines, levels, and marks necessary to facilitate the operations of all concerned in the Contractor's Work. The Contractor shall lay out all Work in a manner satisfactory to the Architect/Engineer, making permanent records of all lines and levels required for excavation, grading, foundations, and for all other parts of the Work.

#### ARTICLE 8. MATERIALS AND EMPLOYEES

Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labor, water, tools, equipment, light, power, transportation and other facilities necessary for the execution and completion of the Work.

Unless otherwise specified, all materials shall be new and both workmanship and materials shall be first class and of uniform quality. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials.

The Contractor is fully responsible for all acts and omissions of the Contractor's employees and shall at all times enforce strict discipline and good order among employees on the site. The Contractor shall not employ on the Work any person reasonably deemed unfit by the Principal Representative or anyone not skilled in the Work assigned to him.

#### ARTICLE 9. SURVEYS, PERMITS, LAWS, TAXES AND REGULATIONS

#### A. SURVEYS

The Principal Representative shall furnish all surveys, property lines and bench marks deemed necessary by the Architect/Engineer, unless otherwise specified.

#### B. PERMITS AND LICENSES

Permits and licenses necessary for the prosecution of the Work shall be secured and paid for by the Contractor. Unless otherwise specified in the Specifications, no local municipal or county building permit shall be required. However, State Buildings Program requires each Principal Representative to administer a building code inspection program, the implementation of which may vary at each agency or institution of the State. The Contractors' employees shall become personally familiar with these local conditions and requirements and shall fully comply with such requirements. State electrical and plumbing permits are required, unless the requirement to obtain such permits is altered by State Building's Programs. The Contractor shall obtain and pay for such permits.

Easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by the Principal Representative, unless otherwise specified.
# C. TAXES

- 1. Refund of Sales and Use Taxes
  - The Contractor shall pay all local taxes required to be paid, including but not necessarily limited to all sales and use taxes. If requested by the Principal Representative prior to issuance of the Notice to Proceed or directed in the Supplementary General Conditions or the Specifications, the Contractor shall maintain records of such payments in respect to the Work, which shall be separate and distinct from all other records maintained by the Contractor, and the Contractor shall furnish such data as may be necessary to enable the State of Colorado, acting by and through the Principal Representative, to obtain any refunds of such taxes which may be available under the laws, ordinances, rules or regulations applicable to such taxes. When so requested or directed, the Contractor shall require Subcontractors at all tiers to pay all local sales and use taxes required to be paid and to maintain records and furnish the Contractor. No State sales and use taxes are to be paid on material to be used in this Project. On application by the purchaser or seller, the Department of Revenue shall issue to a Contractor or to a Subcontractor at any tier, a certificate or certificates of exemption per C.R.S. § 39-26-703(2)(b), and C.R.S. § 39-26-708.
- 2. Federal Taxes

The Contractor shall exclude the amount of any applicable federal excise or manufacturers' taxes from the proposal. The Principal Representative will furnish the Contractor, on request exemption certificates.

# D. LAWS AND REGULATIONS

The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the Work as drawn or specified. If the Contractor observes that the Drawings or Specifications require Work which is at variance therewith, the Contractor shall without delay notify the Architect/Engineer in writing and any necessary changes shall be adjusted as provided in Article 35, Changes In The Work.

The Contractor shall bear all costs arising from the performance of Work required by the Drawings or Specifications that the Contractor knows to be contrary to such laws, ordinances, rules or regulations, if such Work is performed without giving Notice to the Architect/Engineer.

# ARTICLE 10. PROTECTION OF WORK AND PROPERTY

# A. GENERAL PROVISIONS

The Contractor shall continuously maintain adequate protection of all Work and materials, protect the property from injury or loss arising in connection with this Contract and adequately protect adjacent property as provided by law and the Contract Documents. The Contractor shall make good any damage, injury or loss, except to the extent:

- 1. Directly due to errors in the Contract Documents;
- 2. Caused by agents or employees of the Principal Representative; and,
- 3. Due to causes beyond the Contractor's control and not to fault or negligence; provided such damage, injury or loss would not be covered by the insurance required to be carried by the Contractor;

# B. SAFETY PRECAUTIONS

The Contractor shall take all necessary precautions for the safety of employees on the Project, and shall comply with all applicable provisions of federal, State and municipal safety laws and building codes to prevent accidents or injury to persons on, about or adjacent to the premises where the Work is being performed. He or she shall erect and properly maintain at all times, as required by the conditions and progress of the Work, all necessary safeguards for the protection of Workers and the public and shall post danger signs warning against the hazards created by such features of construction as protruding nails, hoists, well holes, elevator hatchways, scaffolding, window openings, stairways and falling materials; and he or she shall designate a responsible member of his or her organization on the Project,

whose duty shall be the prevention of accidents. The name and position of any person so designated shall be reported to the Architect/Engineer by the Contractor.

The Contractor shall provide all necessary bracing, shoring and tying of all structures, decks and framing to prevent any structural failure of any material which could result in damage to property or the injury or death of persons; take all precautions to insure that no part of any structure of any description is loaded beyond its carrying capacity with anything that will endanger its safety at any time during the execution of this Contract; and provide for the adequacy and safety of all scaffolding and hoisting equipment. The Contractor shall not permit open fires within the building enclosure. The Contractor shall construct and maintain all necessary temporary drainage and do all pumping necessary to keep excavations and floors, pits and trenches free of water. The Contractor shall be solely responsible for all construction means, methods, techniques, sequences and procedures, and for coordinating all portions of the Work, except as otherwise noted.

The Contractor shall take due precautions when obstructing sidewalks, streets or other public ways in any manner, and shall provide, erect and maintain barricades, temporary walkways, roadways, trench covers, colored lights or danger signals and any other devices necessary or required to assure the safe passage of pedestrians and automobiles.

C. EMERGENCIES

In an emergency affecting the safety of life or of the Work or of adjoining property, the Contractor without special instruction or authorization from the Architect/Engineer or Principal Representative, is hereby permitted to act, at his or her discretion, to prevent such threatened loss or injury; and he or she shall so act, without appeal, if so authorized or instructed. Provided the Contractor has no responsibilities for the emergency, if the Contractor incurs additional cost not otherwise recoverable from insurance or others on account of any such emergency Work, the Contract sum shall be equitably adjusted in accordance with Article 35, Changes In The Work.

# ARTICLE 11. DRAWINGS AND SPECIFICATIONS ON THE WORK

The Contractor shall keep on the job site one copy of the Contract Documents in good order, including current copies of all Drawings and Specifications for the Work, and any approved Shop Drawings, Product Data or Samples, and as-built drawings. As-built drawings shall be updated weekly by the Contractor and Subcontractors to reflect actual constructed conditions including dimensioned locations of underground Work and the Contractor's failure to maintain such updates may be grounds to withhold portions of payments otherwise due in accordance with Article 33, Payments Withheld. All such documents shall be available to the Architect/Engineer and representatives of the State. In addition, the Contractor shall keep on the job site one copy of all approved addenda, Change Orders and requests for information issued for the Work.

The Contractor shall develop procedures to insure the currency and accuracy of as-built drawings and shall maintain on a current basis a log of requests for information and responses thereto, a Shop Drawing and Product Data submittal log, and a Sample submittal log to record the status of all necessary and required submittals.

# ARTICLE 12. REQUESTS FOR INFORMATION AND SCHEDULES

A. REQUESTS FOR INFORMATION

The Architect/Engineer shall furnish additional instructions with reasonable promptness, by means of drawings or otherwise, necessary for the proper execution of the Work. All such drawings and instructions shall be consistent with the Contract Documents and reasonably inferable there from. The Architect/Engineer shall determine what additional instructions or drawings are necessary for the proper execution of the Work.

The Work shall be executed in conformity with such instructions and the Contractor shall do no Work without proper drawings, specifications or instructions. If the Contractor believes additional instructions, specifications or drawings are needed for the performance of any portion of the Work, the Contractor shall give Notice of such need in writing through a request for information furnished to the Architect/Engineer sufficiently in advance of the need for such additional instructions, specifications or

drawings to avoid delay and to allow the Architect/Engineer a reasonable time to respond. The Contractor shall maintain a log of the requests for information and the responses provided.

## B. SCHEDULES

1. Submittal Schedules

Prior to filing the Contractor's first application for payment, a schedule shall be prepared which may be preliminary to the extent required, fixing the dates for the submission and initial review of required Shop Drawings, Product Data and Samples for the beginning of manufacture and installation of materials, and for the completion of the various parts of the Work. It shall be prepared so as to cause no delay in the Work or in the Work of any other contractor. The schedule shall be subject to change from time to time in accordance with the progress of the Work, and it shall be subject to the review and approval by the Architect/Engineer. It shall fix the dates at which the various Shop Drawings Product Data and Samples will be required from the Architect/Engineer. The Architect/Engineer, after review and agreement as to the time provided for initial review, shall review and comment on the Shop Drawings, Product Data and Samples in accordance with that schedule. The schedule shall be finalized, prepared and submitted with respect to each of the elements of the Work in time to avoid delay, considering reasonable periods for review, manufacture or installation.

At the time the schedule is prepared, the Contractor, the Architect/Engineer and Principal Representative shall jointly identify the Shop Drawing, Product Data and Samples, if any, which the Principal Representative shall receive simultaneously with the Architect/Engineer for the purposes of owner coordination with existing facility standards and systems. The Contractor shall furnish a copy for the Principal Representative when so requested. Transmittal of Shop Drawings and Product Data copies to the Principal Representative shall be solely for the convenience of the Principal Representative and shall neither create nor imply responsibility or duty of review by the Principal Representative.

The Contractor may also, or at the direction of the Principal Representative at any time shall, prepare and maintain a schedule, which may also be preliminary and subject to change to the extent required, fixing the dates for the initial responses to requests for information or for detail drawings which will be required from the Architect/Engineer to allow the beginning of manufacture, installation of materials and for the completion of the various parts of the Work. The schedule shall be subject to review and approval by the Architect/Engineer. The Architect/Engineer shall, after review and agreement, furnish responses and detail drawings in accordance with that schedule. Any such schedule shall be prepared and approved in time to avoid delay, considering reasonable periods for review, manufacture or installation, but so long as the request for information schedule is being maintained, it shall not be deemed to transfer responsibility to the Contractor for errors or omissions in the Contract Documents where circumstances make timely review and performance impossible.

The Architect/Engineer shall not unreasonably withhold approval of the Contractor's schedules and shall inform the Contractor and the Principal Representative of the basis of any refusal to agree to the Contractor's schedules. The Principal Representative shall attempt to resolve any disagreements.

2. Schedule of Values

Within twenty-one (21) calendar days after the date of the Notice to Proceed, the Contractor shall submit to the Architect/Engineer and Principal Representative, for approval, and to the State Buildings Program when specifically requested, a complete itemized schedule of the values of the various parts of the Work, as estimated by the Contractor, aggregating the total price. The schedule of values shall be in such detail as the Architect/Engineer or the Principal Representative shall require, prepared on forms acceptable to the Principal Representative. It shall, at a minimum, identify on a separate line each division of the Specifications including the general conditions costs to be charged to the Project. The Contractor shall revise and resubmit the schedule of values for approval when, in the opinion of the Architect/Engineer or the Principal

Representative, such resubmittal is required due to changes or modifications to the Contract Documents or the Contract sum.

The total cost of each line item so separately identified shall, when requested by the Architect/Engineer or the Principal Representative, be broken down into reasonable estimates of the value of:

- a. Material, which shall include the cost of material actually built into the Project plus any local sales or use tax paid thereon; and,
- b. Labor and other costs.

The cost of subcontracts shall be incorporated in the Contractor's schedule of values, and when requested by the Architect/Engineer or the Principal Representative, shall be separately shown as line items.

The Architect/Engineer shall review the proposed schedules and approve it after consultation with the Principal Representative, or advise the Contractor of any required revisions within ten (10) days of its receipt. In the event no action is taken on the submittal within ten days, the Contractor may utilize the schedule of values as its submittal for payment until it is approved or until revisions are requested.

When the Architect/Engineer deems it appropriate to facilitate certification of the amounts due to the Contractor, further breakdown of subcontracts, including breakdown by labor and materials, may be directed.

This schedule of values, when approved, will be used in preparing Contractor's applications for payment on State Form SC-7.2, Application for Payment.

## 3. Construction Schedules

Within twenty-one (21) calendar days after the date of the Notice to Proceed, the Contractor shall submit to the Architect/Engineer and the Principal Representative, and to the State Buildings Program when specifically requested, on a form acceptable to them, an overall timetable of the construction schedule for the Project. Unless the Supplementary General Conditions or the Specifications allow scheduling with bar charts or other less sophisticated scheduling tools, the Contractor's schedule shall be a critical-path method (CPM) construction schedule. The CPM schedule shall start with the date of the Notice to Proceed and include submittals activities, the various construction activities, change order Work (when applicable), close-out, testing, demonstration of equipment operation when called for in the Specifications, and acceptance. The CPM schedule shall at a minimum correlate to the schedule of values line items and shall be cost loaded if requested by the Architect/Engineer or Principal Representative. The completion time shall be the time specified in the Agreement and all Project scheduling shall allocate float utilizing the full period available for construction as specified in the Agreement on State Form SC 6.13, without indication of early completion, unless such earlier completion is approved in writing by the Principal Representative and State Building Programs.

The time shown between the starting and completion dates of the various elements within the construction schedule shall represent one hundred per cent (100%) completion of each element.

All other elements of the CPM schedule shall be as required by the Specifications. In addition, the Contractor shall submit monthly updates or more frequently, if required by the Principal Representative, updates of the construction schedule. These updates shall reflect the Contractor's "Work in place" progress.

When requested by the Architect/Engineer, the Principal Representative or the State Buildings Program, the Contractor shall revise the construction schedule to reflect changes in the schedule of values.

When the testing of materials is required by the Specifications, the Contractor shall also prepare and submit to the Architect/Engineer and the Principal Representative a schedule for testing in accordance with Article 14, Samples and Testing.

# ARTICLE 13. SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

# A. SUBMITTAL PROCESS

The Contractor shall check and field verify all dimensions. The Contractor shall check, approve and submit to the Architect/Engineer in accordance with the schedule described in Article 12, Requests for Information and Schedules, all Shop Drawings, Product Data and Samples required by the specifications or required by the Contractor for the Work of the various trades. All Drawings and Product Data shall contain identifying nomenclature and each submittal shall be accompanied by a letter of transmittal identifying in detail all enclosures. The number of copies of Shop Drawings and Product Data to be submitted shall be as specified in the Specifications and if no number is specified then three copies shall be submitted.

The Architect/Engineer shall review and comment on the Shop Drawings and Product Data within the time provided in the agreed upon schedule for conformance with information given and the design concept expressed in, or reasonably inferred from, the Contract Documents. The nature of all corrections to be made to the Shop Drawings and Product Data, if any, shall be clearly noted, and the submittals shall be returned to the Contractor for such corrections. If a change in the scope of the Work is intended by revisions requested to any Shop Drawings and Product Data, the Contractor shall be requested to prepare a change proposal in accordance with Article 35, Changes In The Work. On resubmitted Shop Drawings, Product Data or Samples, the Contractor shall direct specific attention in writing on the transmittal cover to revisions other than those corrections requested by the Architect/Engineer on any previously checked submittal. The Architect/Engineer shall promptly review and comment on, and return, the resubmitted items.

The Contractor shall thereafter furnish such other copies in the form approved by the Architect/Engineer as may be needed for the prosecution of the Work.

# B. FABRICATION AND ORDERING

Fabrication shall be started by the Contractor only after receiving approved Shop Drawings from the Architect/Engineer. Materials shall be ordered in accordance with approved Product Data. Work which is improperly fabricated, whether through incorrect Shop Drawings, faulty workmanship or materials, will not be acceptable.

#### C. DEVIATIONS FROM DRAWINGS OR SPECIFICATIONS

The review and comments of the Architect/Engineer of Shop Drawings, Product Data or Samples shall not relieve the Contractor from responsibility for deviations from the Drawings or Specifications, unless he or she has in writing called the attention of the Architect/Engineer to such deviations at the time of submission, nor shall it relieve the Contractor from responsibility for errors of any sort in Shop Drawings or Product Data. Review and comments on Shop Drawings or Product Data containing identified deviations from the Contract Documents shall not be the basis for a Change Order or a claim based on a change in the scope of the Work unless Notice is given to the Architect/Engineer and Principal Representative of all additional costs, time and other impacts of the identified deviation by bring it to their attention in writing at the time the submittals are made, and any subsequent change in the Contract sum or the Contract time shall be limited to cost, time and impacts so identified.

#### D. CONTRACTOR REPRESENTATIONS

By preparing, approving, and/or submitting Shop Drawings, Product Data and Samples, the Contractor represents that the Contractor has determined and verified all materials, field measurements, and field construction criteria related thereto, and has checked and coordinated the information contained within each submittal with the requirements of the Work, the Project and the Contract Documents and prior reviews and approvals.

# ARTICLE 14. SAMPLES AND TESTING

# A. SAMPLES

The Contractor shall furnish for approval, with such promptness as to cause no delay in his or her Work or in that of any other Contractor, all Samples as directed by the Architect/Engineer. The Architect/Engineer shall check and approve such Samples, with reasonable promptness, but only for conformance with the design intent of the Contract Documents and the Project, and for compliance with any submission requirements given in the Contract Documents.

## B. TESTING - GENERAL

The Contractor shall provide such equipment and facilities as the Architect/Engineer may require for conducting field tests and for collecting and forwarding samples to be tested. Samples themselves shall not be incorporated into the Work after approval without the permission of the Architect/Engineer.

All materials or equipment proposed to be used may be tested at any time during their preparation or use. The Contractor shall furnish the required samples without charge and shall give sufficient Notice of the placing of orders to permit the testing thereof. Products may be sampled either prior to shipment or after being received at the site of the Work.

Tests shall be made by an accredited testing laboratory. Except as otherwise provided in the Specifications, sampling and testing of all materials, and the laboratory methods and testing equipment, shall be in accordance with the latest standards and tentative methods of the American Society of Testing Materials (ASTM). The cost of testing which is in addition to the requirements of the Specifications shall be paid by the Contractor if so directed by the Architect/Engineer, and the Contract sum shall be adjusted accordingly by Change Order; provided however, that whenever testing shows portions of the Work to be deficient, all costs of testing including that required to verify the adequacy of repair or replacement Work shall be the responsibility of the Contractor.

# C. TESTING - CONCRETE AND SOILS

Unless otherwise specified or provided elsewhere in the Contract Documents, the Principal Representative will contract for and pay for the testing of concrete and for soils compaction testing through an independent laboratory or laboratories selected and approved by the Principal Representative. The Contractor shall assume the responsibility of arranging, scheduling and coordinating the concrete sample collection efforts and soils compaction efforts in an efficient and cost effective manner. Testing shall be performed in accordance with the requirements of the Specifications, and if no requirements are specified, the Contractor shall request instructions and testing shall be as directed by the Architect/Engineer or the soils engineer, as applicable, and in accordance with standard industry practices.

The Principal Representative and the Architect/Engineer shall be given reasonable advance notice of each concrete pour and reserve the right to either increase or decrease the number of cylinders or the frequency of tests.

Soil compaction testing shall be at random locations selected by the soils engineer. In general, soils compaction testing shall be as directed by the soils engineer and shall include all substrate prior to backfill or construction.

# D. TESTING - OTHER

Additional testing required by the Specifications will be accomplished and paid for by the Principal Representative in a manner similar to that for concrete and soils unless noted otherwise in the Specifications. In any case, the Contractor will be responsible for arranging, scheduling and coordinating additional tests. Where the additional testing will be contracted and paid for by the Principal Representative the Contractor shall give the Principal Representative not less than one-month advance written Notice of the date the first such test will be required.

# ARTICLE 15. SUBCONTRACTS

A. CONTRACT PERFORMANCE OUTSIDE OF THE UNITED STATES OR COLORADO

After the contract is awarded, Contractor is required to provide written notice to the Principal Representative no later than twenty (20) days after deciding to perform services under this contract outside the United States or Colorado or to subcontract services under this contract to a subcontractor that will perform such services outside the United States or Colorado. The written notification must include, but need not be limited to, a statement of the type of services that will be performed at a location outside the United States or Colorado and the reason why it is necessary or advantageous to go outside the United States or Colorado to perform the services. All notices received by the State pursuant to outsourced services shall be posted on the Colorado Department of Personnel & Administration's website. If Contractor knowingly fails to notify the Principal Representative of any outsourced services as specified herein, the Principal Representative, at its discretion, may terminate this contract as provided in the Colorado Procurement Code or the applicable procurement code for institutions of higher education (Does not apply to any project that receives federal moneys)

# B. SUBCONTRACTOR LIST

Prior to the Notice to Proceed to commence construction, the Contractor shall submit to the Architect/Engineer, the Principal Representative and State Buildings Program a preliminary list of Subcontractors. It shall be as complete as possible at the time, showing all known Subcontractors planned for the Work. The list shall be supplemented as other Subcontractors are determined by the Contractor and any such supplemental list shall be submitted to the Architect/Engineer, the Principal Representative and State Buildings Program not less than ten (10) days before the Subcontractor commences Work.

## C. SUBCONTRACTOR SUBSTITUTIONS

The Contractor's list shall include those Subcontractors, if any, which the Contractor indicated in its bid, would be employed for specific portions of the Work if such indication was requested in the bid documents issued by the State. The substitution of any Subcontractor listed in the Contractor's bid shall be justified in writing not less than ten (10) days after the date of the Notice to Proceed to commence construction, and shall be subject to the approval of the Principal Representative. For reasons such as the Subcontractor's refusal to perform as agreed, subsequent unavailability or later discovered bid errors, or other similar reasons, but not including the availability of a lower Subcontract price, such substitution may be approved. The Contractor shall bear any additional cost incurred by such substitutions.

# D. CONTRACTOR RESPONSIBLE FOR SUBCONTRACTORS

The Contractor shall not employ any Subcontractor that the Architect/Engineer, within ten (10) days after the date of receipt of the Contractor's list of Subcontractors or any supplemental list, objects to in writing as being unacceptable to either the Architect/Engineer, the Principal Representative or State Buildings Program. If a Subcontractor is deemed unacceptable, the Contractor shall propose a substitute Subcontractor and the Contract sum shall be adjusted by any demonstrated difference between the Subcontractor's bids, except where the Subcontractor has been debarred by the State or fails to meet qualifications of the Contract Documents to perform the Work proposed.

The Contractor shall be fully responsible to the Principal Representative for the acts and omissions of Subcontractors and of persons either directly or indirectly employed by them. All instructions or orders in respect to Work to be done by Subcontractors shall be given to the Contractor.

# ARTICLE 16. RELATIONS OF CONTRACTOR AND SUBCONTRACTOR

The Contractor agrees to bind each Subcontractor to the terms of these General Conditions and to the requirements of the Drawings and Specifications, and any Addenda thereto, and also all the other Contract Documents, so far as applicable to the Work of such Subcontractor. The Contractor further agrees to bind each Subcontractor to those terms of the General Conditions which expressly require that Subcontractors also be bound, including without limitation, requirements that Subcontractors waive all rights of subrogation, provide adequate general commercial liability and property insurance, automobile insurance and workers' compensation insurance as provided in Article 25, Insurance.

Nothing contained in the Contract Documents shall be deemed to create any contractual relationship whatsoever between any Subcontractor and the State of Colorado acting by and through its Principal Representative.

# ARTICLE 17. MUTUAL RESPONSIBILITY OF CONTRACTORS

Should the Contractor cause damage to any separate contractor on the Work, the Contractor agrees, upon due Notice, to settle with such contractor by agreement, if he or she will so settle. If such separate contractor sues the Principal Representative on account of any damage alleged to have been so sustained, the Principal Representative shall notify the Contractor, who shall defend such proceedings if requested to do so by Principal Representative. If any judgment against the Principal Representative arises there from, the Contractor shall pay or satisfy it and pay all costs and reasonable attorney fees incurred by the Principal Representative, in accordance with Article 52C, Indemnification, provided the Contractor was given due Notice of an opportunity to settle.

# ARTICLE 18. SEPARATE CONTRACTS

The Principal Representative reserves the right to enter into other contracts in connection with the Project or the Contract. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their Work, and shall properly connect and coordinate his or her Work with theirs. If any part of the Contractor's Work depends, for proper execution or results, upon the Work of any other contractor, the Contractor shall inspect and promptly report to the Architect/Engineer any defects in such Work that render it unsuitable for such proper execution and results. Failure of the Contractor to so inspect and report shall constitute an acceptance of the other contractor's Work as fit and proper for the reception of Work, except as to defects which may develop in the other Contractor's Work after the execution of the Contractor's Work.

To insure the proper execution of subsequent Work, the Contractor shall measure Work already in place and shall at once report to the Architect/Engineer any discrepancy between the executed Work and the Drawings.

# ARTICLE 19. USE OF PREMISES

The Contractor shall confine apparatus, the storage of materials and the operations of workmen to limits indicated by law, ordinances, permits and any limits lines shown on the Drawings. The Contractor shall not unreasonably encumber the premises with materials.

The Contractor shall enforce all of the Architect/Engineer's instructions and prohibitions regarding, without limitation, such matters as signs, advertisements, fires and smoking.

# ARTICLE 20. CUTTING, FITTING OR PATCHING

The Contractor shall do all cutting, fitting or patching of Work that may be required to make its several parts come together properly and fit it to receive or be received by Work of other Contractors shown upon, or reasonably inferred from, the Drawings and Specifications for the complete structure, and shall provide for such finishes to patched or fitted Work as the Architect/Engineer may direct. The Contractor shall not endanger any Work by cutting, excavating or otherwise altering the Work and shall not cut or alter the Work of any other Contractor save with the consent of the Architect/Engineer.

# ARTICLE 21. UTILITIES

# A. TEMPORARY UTILITIES

Unless otherwise specifically stated in the Specifications or on the Drawings, the Principal Representative shall be responsible for the locations of all utilities as shown on the Drawings or indicated elsewhere in the Specifications, subject to the Contractor's compliance with all statutory or regulatory requirements to call for utility locates. When actual conditions deviate from those shown the Contractor shall comply with the requirements of Article 37, Differing Site Conditions. The Contractor shall provide and pay for the installation of all temporary utilities required to supply all the power, light and water needed by him and other Contractors for their Work and shall install and maintain all such utilities in such manner as to protect the public and Workmen and conform with any applicable laws and regulations. Upon completion of the Work, he or she shall remove all such temporary utilities from the site. The Contractor shall pay for all consumption of power, light and water used by him or her and the

other Contractors, without regard to whether such items are metered by temporary or permanent meters. The Superintendent shall have full authority over all trades and Subcontractors at any tier to prevent waste. The cut-off date on permanent meters shall be either the agreed date of the date of the Notice of Substantial Completion or the Notice of Approval of Occupancy/Use of the Project.

# B. PROTECTION OF EXISTING UTILITIES

Where existing utilities, such as water mains, sanitary sewers, storm sewers and electrical conduits, are shown on the Drawings, the Contractor shall be responsible for the protection thereof, without regard to whether any such utilities are to be relocated or removed as a part of the Work. If any utilities are to be moved, the moving must be conducted in such manner as not to cause undue interruption or delay in the operation of the same.

## C. CROSSING OF UTILITIES

When new construction crosses highways, railroads, streets, or utilities under the jurisdiction of State, city or other public agency, public utility or private entity, the Contractor shall secure proper written permission before executing such new construction. The Contractor will be required to furnish a proper release before final acceptance of the Work.

## ARTICLE 22. UNSUITABLE CONDITIONS

The Contractor shall not Work at any time, or permit any Work to be done, under any conditions contrary to those recommended by manufacturers or industry standards which are otherwise proper, unsuited for proper execution, safety and performance. Any cost caused by ill-timed Work shall be borne by the Contractor unless the timing of such Work shall have been directed by the Architect/Engineer or the Principal Representative, after the award of the Contract, and the Contractor provided Notice of any additional cost.

Architect/Engineer, representatives of the Principal Representative and State Buildings Program.

# ARTICLE 23. TEMPORARY FACILITIES

A. OFFICE FACILITIES The Contractor shall provide and maintain without additional expense for the duration of the Project temporary office facilities, as required and as specified, for its own use and the use of the

# B. TEMPORARY HEAT

The Contractor shall furnish and pay for all the labor, facilities, equipment, fuel and power necessary to supply temporary heating, ventilating and air conditioning, except to the extent otherwise specified, and shall be responsible for the installation, operation, maintenance and removal of such facilities and equipment. Unless otherwise specified, the permanent HVAC system shall not be used for temporary heat in whole or in part. If the Contractor desires to put the permanent system into use, in whole or in part, the Contractor shall set it into operation and furnish the necessary fuel and manpower to safely operate, protect and maintain that HVAC system. Any operation of all or any part of the permanent HVAC system including operation for testing purposes shall not constitute acceptance of the system, nor shall it relieve the Contractor of his or her one-year guarantee of the system from the date of the Notice of Substantial Completion of the entire Project, and if necessary due to prior operation, the Contractor shall provide manufacturers' extended warranties from the date of the Contractor's use prior to the date of the Notice of Substantial Completion.

#### C. WEATHER PROTECTION

The Contractor shall, at all times, provide protection against weather, so as to maintain all Work, materials, apparatus and fixtures free from injury or damages.

#### D. DUST PARTITIONS

If the Work involves Work in an occupied existing building, the Contractor shall erect and maintain during the progress of the Work, suitable dust-proof temporary partitions, or more permanent partitions as specified, to protect such building and the occupants thereof.

# E. BENCH MARKS

The Contractor shall maintain any site bench marks provided by the Principal Representative and shall establish any additional benchmarks specified by the Architect/Engineer as necessary for the Contractor to layout the Work and ascertain all grades and levels as needed.

## F. SIGN

The Contractor shall erect and permit one 4' x 8' sign only at the site to identify the Project as specified or directed by the Architect/Engineer which shall be maintained in good condition during the life of the Project.

## G. SANITARY PROVISION

The Contractor shall provide and maintain suitable, clean, temporary sanitary toilet facilities for any and all workmen engaged on the Work, for the entire construction period, in strict compliance with the requirement of all applicable codes, regulations, laws and ordinances, and no other facilities, new or existing, may be used by any person on the Project. When the Project is complete the Contractor shall promptly remove them from the site, disinfect, and clean or treat the areas as required. If any new construction surfaces in the Project other than the toilet facilities provided for herein are soiled at any time, the entire areas so soiled shall be completely removed from the Project and rebuilt. In no event may present toilet facilities of any existing building at the site of the Work be used by employees of any contractor.

## ARTICLE 24. CLEANING UP

The Contractor shall keep the building and premises free from all surplus material, waste material, dirt and rubbish caused by employees or Work, and at the completion of the Work shall remove all such surplus material, waste material, dirt, and rubbish, as well as all tools, equipment and scaffolding, and shall wash and clean all window glass and plumbing fixtures, perform cleanup and cleaning required by the Specifications and leave all of the Work clean unless more exact requirements are specified.

## ARTICLE 25. INSURANCE

#### A. GENERAL

The Contractor shall procure and maintain all insurance requirements and limits as set forth below, at his or her own expense, for the length of time set forth in Contract requirements. The Contractor shall continue to provide evidence of such coverage to State of Colorado on an annual basis during the aforementioned period including all of the terms of the insurance and indemnification requirements of this agreement. All below insurance policies shall include a provision preventing cancellation without thirty (30) days' prior notice by certified mail. A completed Certificate of Insurance shall be filed with the Principal Representative and State Buildings Program within ten (10) days after the date of the Notice of Award, said Certificate to specifically state the inclusion of the coverages and provisions set forth herein and shall state whether the coverage is "claims made" or "per occurrence".

#### B. COMMERCIAL GENERAL LIABILITY INSURANCE (CGL)

This insurance must protect the Contractor from all claims for bodily injury, including death and all claims for destruction of or damage to property (other than the Work itself), arising out of or in connection with any operations under this Contract, whether such operations be by the Contractor or by any Subcontractor under him or anyone directly or indirectly employed by the Contractor or by a Subcontractor. All such insurance shall be written with limits and coverages as specified below and shall be written on an occurrence form.

General Aggregate	\$2,000,000
Products – Completed Operations Aggregate	\$2,000,000
Each Occurrence	\$1,000,000
Personal Injury	\$1,000,000

The following coverages shall be included in the CGL:

1. Per project general aggregate (CG 25 03 or similar)

- Additional Insured status in favor of the State of Colorado and any other parties as outlined in The Contract and must include both ONGOING Operations AND COMPLETED Operations per CG2010 10/01 and CG 2037 10/01 or equivalent as permitted by law.
- 3. The policy shall be endorsed to be **primary and non-contributory** with any insurance maintained by Additional Insureds.
- 4. A waiver of Subrogation in favor of all Additional Insured parties.
- 5. Personal Injury Liability
- 6. Contractual Liability coverage to support indemnification obligation per Article 53.I
- 7. Explosion, collapse and underground (xcu)

The following exclusionary endorsements are prohibited in the CGL policy:

- 1. Damage to Work performed by Subcontract/Vendor (CG 22-94 or similar)
- 2. Contractual Liability Coverage Exclusion modifying or deleting the definition of an "insured contract" from the unaltered SO CG 0001 1001 policy from (CG 24 26 or similar)
- 3. If applicable to the Work to be performed: Residential or multi-family
- 4. If applicable to the Work to be performed: Exterior insulation finish systems
- 5. If applicable to the Work to be performed: Subsidence or Earth Movement

The Contractor shall maintain general liability coverage including Products and Completed Operations insurance, and the Additional Insured with primary and non-contributory coverage as specified in this Contract for three (3) years after completion of the project.

C. AUTOMOBILE LIABILITY INSURANCE and business auto liability covering liability arising out of any auto (including owned, hired and non-owned autos).

Combined Bodily Injury and Property Damage Liability (Combined Single Limit):

\$1,000,000 each accident

Coverages: Specific waiver of subrogation

D. WORKERS' COMPENSATION INSURANCE

The Contractor shall procure and maintain Workers' Compensation Insurance at his or her own expense during the life of this Contract, including occupational disease provisions for all employees per statutory requirements. Policy shall contain a waiver of subrogation in favor of the State of Colorado.

The Contractor shall also require each Subcontractor to furnish Workers' Compensation Insurance, including occupational disease provisions for all of the latter's employees, and to the extent not furnished, the Contractor accepts full liability and responsibility for Subcontractor's employees.

In cases where any class of employees engaged in hazardous Work under this Contract at the site of the Project is not protected under the Workers' Compensation statute, the Contractor shall provide, and shall cause each Subcontractor to provide, adequate and suitable insurance for the protection of employees not otherwise protected.

E. UMBRELLA LIABILITY INSURANCE (for construction projects exceeding \$10,000,000, provide the following coverage):

The Contractor shall maintain umbrella/excess liability insurance on an occurrence basis in excess of the underlying insurance described in Section B-D above. Coverage shall follow the terms of the underlying insurance, included the additional insured and waiver of subrogation provisions. The amounts of insurance required in Sections above may be satisfied by the Contractor purchasing coverage for the limits specified or by any combination of underlying and umbrella limits, so long as the total amount of insurance is not less than the limits specified in each section previously mentioned.

Each occurrence

\$5,000,000

Aggregate

## F. BUILDER'S RISK INSURANCE

Unless otherwise expressly stated in the Supplementary General Conditions (e.g. where the State elects to provide for projects with a completed value of less than \$1,000,000), the Contractor shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made or until no person or entity other than the Owner has an insurable interest in the property, or the Date of Notice specified on the Notice of Acceptance, State Form SBP-6.27 or whichever is later.

This insurance shall include interests of the Owner, the Contractor, Subcontractors and Subsubcontractors in the Project as named insureds.

All associated deductibles shall be the responsibility of the Contractor. Such policy may have a deductible clause but not to exceed ten thousand dollars (\$10,000.00).

Property insurance shall be on an "all risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, false Work, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.

Contractor shall maintain Builders Risk coverage including partial use by Owner.

The Contractor shall waive all rights of subrogation as regards the State of Colorado and the Principal Representative, its officials, its officers, its agents and its employees, all while acting within the scope and course of their employment for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section or other property insurance applicable to the Work. The Contractor shall require all Subcontractors at any tier to similarly waive all such rights of subrogation and shall expressly include such a waiver in all subcontracts.

Upon request, the amount of such insurance shall be increased to include the cost of any additional Work to be done on the Project, or materials or equipment to be incorporated in the Project, under other independent contracts let or to be let. In such event, the Contractor shall be reimbursed for this cost as his or her share of the insurance in the same ratio as the ratio of the insurance represented by such independent contracts let or to be let to the total insurance carried.

The Principal Representative, with approval of the State Controller, shall have the power to adjust and settle any loss. Unless it is agreed otherwise, all monies received shall be applied first on rebuilding or repairing the destroyed or injured Work.

# G. POLLUTION LIABILITY INSURANCE

If Contractor is providing directly or indirectly Work with pollution/environmental hazards, the Contractor must provide or cause those conducting the Work to provide Pollution Liability Insurance coverage. Pollution Liability policy must include contractual liability coverage. State of Colorado must be included as additional insureds on the policy. The policy limits shall be in the amount of \$1,000,000 with maximum deductible of \$25,000 to be paid by the Subcontractor/Vendor.

# H. ADDITIONAL MISCELLANEOUS INSURANCE PROVISIONS

Certificates of Insurance and/or insurance policies required under this Contract shall be subject to the following stipulations and additional requirements:

- 1. Any and all deductibles or self-insured retentions contained in any Insurance policy shall be assumed by and at the sole risk of the Contractor;
- 2. If any of the said policies shall fail at any time to meet the requirements of the Contract Documents as to form or substance, or if a company issuing any such policy shall be or at any time cease to be approved by the Division of Insurance of the State of Colorado, or be or cease to be in compliance with any stricter requirements of the Contract Documents, the Contractor shall promptly obtain a new policy, submit the same to the Principal Representative and State Building Programs for approval if requested, and submit a Certificate of Insurance as hereinbefore provided. Upon failure of the Contractor to furnish, deliver and maintain such insurance as provided herein, this Contract, in the sole discretion of the State of Colorado, may be immediately declared suspended, discontinued, or terminated. Failure of the Contractor in obtaining and/or maintaining any required insurance shall not relieve the Contractor from any liability under the Contract, nor shall the insurance requirements be construed to conflict with the obligations of the Contractor concerning indemnification;
- 3. All requisite insurance shall be obtained from financially responsible insurance companies, authorized to do business in the State of Colorado and acceptable to the Principal Representative;
- 4. Receipt, review or acceptance by the Principal Representative of any insurance policies or certificates of insurance required by this Contract shall not be construed as a waiver or relieve the Contractor from its obligation to meet the insurance requirements contained in these General Conditions.

# ARTICLE 26. CONTRACTOR'S PERFORMANCE AND PAYMENT BONDS

The Contractor shall furnish a Performance Bond and a Labor and Material Payment Bond on State Forms SC-6.22, Performance Bond, and SC-6.221, Labor and Material Payment Bond, or such other forms as State Buildings Program may approve for the Project, executed by a corporate Surety authorized to do business in the State of Colorado and in the full amount of the Contract sum. The expense of these bonds shall be borne by the Contractor and the bonds shall be filed with State Buildings Program.

If, at any time, a Surety on such a bond is found to be, or ceases to be in strict compliance with any qualification requirements of the Contract Documents or the bid documents, or loses its right to do business in the State of Colorado, another Surety will be required, which the Contractor shall furnish to State Buildings Program within ten (10) days after receipt of Notice from the State or after the Contractor otherwise becomes aware of such conditions.

#### ARTICLE 27. LABOR AND WAGES

In accordance with laws of Colorado, C.R.S. § 8-17-101(1), as amended, Colorado labor shall be employed to perform at least eighty percent of the Work. If the Federal Davis-Bacon Act shall be applicable to the Project, as indicated in Article 6B (Design/Bid/Build Agreement SC-6.21), Modification of Article 27, the minimum wage rates to be paid on the Project will be specified in the Contract Documents.

# ARTICLE 28. ROYALTIES AND PATENTS

The Contractor shall be responsible for assuring that all rights to use of products and systems have been properly arranged and shall take such action as may be necessary to avoid delay, at no additional charge to the Principal Representative, where such right is challenged during the course of the Work. The Contractor shall pay all royalties and license fees required to be paid and shall defend all suits or claims for infringement of any patent rights and shall save the State of Colorado harmless from loss on account thereof, in accordance with Article 52C, Indemnification; provided, however, the Contractor shall not be responsible for such loss or defense for any copyright violations contained in the Contract Documents prepared by the Architect/Engineer or the Principal Representative of which the Contractor is unaware, or for any patent violations based on

specified processes that the Contractor is unaware are patented or that the Contractor should not have had reason to believe were patented.

# ARTICLE 29. ASSIGNMENT

Except as otherwise provided hereafter the Contractor shall not assign the whole or any part of this Contract without the written consent of the Principal Representative. This provision shall not be construed to prohibit assignments of the right to payment to the extent permitted by C.R.S. § 4-9-406, et. seq., as amended, provided that written Notice of assignment adequate to identify the rights assigned is received by the Principal Representative and the controller for the agency, department, or institution executing this Contract (as distinguished from the State Controller). Such assignment of the right to payment shall not be deemed valid until receipt by the Principal Representative and such controller and the Contractor assumes the risk that such written Notice of assignment is received by the Principal Representative and the controller for the agency, department, or institution involved. In case the Contractor assigns all or part of any moneys due or to become due under this Contract, the instrument of assignment shall contain a clause substantially to the effect that it is agreed that the right of the assignee in and to any moneys due or to become due to the Contractor shall be subject to all claims of all persons, firms, and corporations for services rendered or materials supplied for the performance of the Work called for in this Contract, whether said service or materials were supplied prior to or after the assignment. Nothing in this Article shall be deemed a waiver of any other defenses available to the State against the Contractor or the assignee.

# ARTICLE 30. CORRECTION OF WORK BEFORE ACCEPTANCE

The Contractor shall promptly remove from the premises all Work or materials condemned or declared irreparably defective as failing to conform to the Contract Documents on receipt of written Notice from the Architect/Engineer or the Principal Representative, whether incorporated in the Work or not. If such materials shall have been incorporated in the Work, or if any unsatisfactory Work is discovered, the Contractor shall promptly replace and re-execute his or her Work in accordance with the requirements of the Contract Documents without expense to the Principal Representative, and shall also bear the expense of making good all Work of other contractors destroyed or damaged by the removal or replacement of such defective material or Work.

Should any defective Work or material be discovered during the process of construction, or should reasonable doubt arise as to whether certain material or Work is in accordance with the Contract Documents, the value of such defective or questionable material or Work shall not be included in any application for payment, or if previously included, shall be deducted by the Architect/Engineer from the next application submitted by the Contractor.

If the Contractor does not perform repair, correction and replacement of defective Work, in lieu of proceeding by issuance of a Notice of intent to remove condemned Work as outlined above, the Principal Representative may, not less than seven (7) days after giving the original written Notice of the need to repair, correct, or replace defective Work, deduct all costs and expenses of replacement or correction as instructed by the Architect/Engineer from the Contractor's next application for payment in addition to the value of the defective Work or material. The Principal Representative may also make an equitable deduction from the Contract sum by unilateral Change Order, in accordance with Article 33, Payments Withheld and Article 35, Changes In The Work.

If the Contractor does not remove such condemned or irreparably defective Work or material within a reasonable time, the Principal Representative may, after giving a second seven (7) day advance Notice to the Contractor and the Surety, remove them and may store the material at the Contractor's expense. The Principal Representative may accomplish the removal and replacement with its own forces or with another Contractor. If the Contractor does not pay the expense of such removal and pay all storage charges within ten (10) days thereafter, the Principal Representative may, upon ten (10) days' written Notice, sell such material at auction or at private sale and account for the net proceeds thereof, after deducting all costs and expenses which should have been borne by the Contractor. If the Contractor shall commence and diligently pursue such removal and replacement before the expiration of the seven-day period, or if the Contractor shall show good cause in conjunction with submittal of a revised CPM schedule showing when the Work will be performed and

why such removal of condemned Work should be scheduled for a later date, the Principal Representative shall not proceed to remove or replace the condemned Work.

If the Contractor disagrees with the Notice to remove Work or materials condemned or declared irreparably defective, the Contractor may request facilitated negotiation of the issue and the Principal Representative's right to proceed with removal and to deduct costs and expenses of repair shall be suspended and tolled until such time as the parties meet and negotiate the issue

During construction, whenever the Architect/Engineer has advised the Contractor in writing, in the Specifications, by reference to Article 6, Architect/Engineer Decisions and Judgments, of these General Conditions or elsewhere in the Contract Documents of a need to observe materials in place prior to their being permanently covered up, it shall be the Contractor's responsibility to notify the Architect/Engineer at least forty-eight (48) hours in advance of such covering operation. If the Contractor fails to provide such notification, Contractor shall, at his or her expense, uncover such portions of the Work as required by the Architect/Engineer for observation, and reinstall such covering after observation. When a covering operation is continued from day to day, notification of the commencement of a single continuing covering operation shall suffice for the activity specified so long as it proceeds regularly and without interruption from day to day, in which event the Contractor shall coordinate with the Architect/Engineer regarding the continuing covering operation.

# ARTICLE 31. APPLICATIONS FOR PAYMENTS

## A. CONTRACTOR'S SUBMITTALS

On or before the first day of each month and no more than five days prior thereto, the Contractor may submit applications for payment for the Work performed during such month covering the portion of the Work completed as of the date indicated, and payments on account of this Contract shall be due per C.R.S. § 24-30-202(24) (correct notice of amount due), within forty-five (45) days of receipt by the Principal Representative of application for payments that have been certified by the Architect/Engineer. The Contractor shall submit the application for payment to the Architect/Engineer on State forms SBP-7.2, Certificate for Contractor's Payment, or such other format as the State Buildings Program shall approve, in an itemized format in accordance with the schedule of values or a cost loaded CPM schedule when required, supported to the extent reasonably required by the Architect/Engineer or the Principal Representative by receipts or other vouchers, showing payments for materials and labor, prior payments and payments to be made to Subcontractors and such other evidence of the Contractor's right to payments as the Architect/Engineer or Principal Representative may direct.

If payments are made on account of materials not incorporated in the Work but delivered and suitably stored at the site, or at some other location agreed upon in writing, such payments shall be conditioned upon submission by the Contractor of bills of sale or such other procedure as will establish the Principal Representative's title to such material or otherwise adequately protect the Principal Representative or the Architect/Engineer, and shall be subject to the right to inspect the materials at the request of either the Architect/Engineer or the Principal Representative.

All applications for payment, except the final application, and the payments there under, shall be subject to correction in the next application rendered following the discovery of any error.

# B. ARCHITECT/ENGINEER CERTIFICATION

In accordance with the Architect/Engineer's agreement with the Principal Representative, the Architect/Engineer after appropriate observation of the progress of the Work shall certify to the Principal Representative the amount that the Contractor is entitled to, and forward the application to the Principal Representative. If the Architect/Engineer certifies an amount different from the amount requested or otherwise alters the Contractor's application for payment, a copy shall be forwarded to the Contractor.

If the Architect/Engineer is unable to certify all or portions of the amount requested due to the absence or lack of required supporting evidence, the Architect/Engineer shall advise the Contractor of the deficiency. If the deficiency is not corrected at the end of ten (10) days, the Architect/Engineer may either certify the remaining amounts properly supported to which the Contractor is entitled, or return the application for payment to the Contractor for revision with a written explanation as to why it could not be certified.

# C. RETAINAGE WITHHELD

Unless otherwise provided in the Supplementary General Conditions, an amount equivalent to five percent (5%) of the amount shown to be due the Contractor on each application for payment shall be withheld until the Work required by the Contract has been performed. The withheld percentage of the contract price of any such Work, improvement, or construction shall be administered according to C.R.S. § 24-91-103, as amended, and C.R.S. § 38-26-107, as amended, and Article 31D, shall be retained until the Work or discrete portions of the Work, have been completed satisfactorily, finally or partially accepted, and advertised for final settlement as further provided in Article 41.

## D. RELEASE OF RETAINAGE

The Contractor may, for satisfactory and substantial reasons shown to the Principal Representative's satisfaction, make a written request to the Principal Representative and the Architect/Engineer for release of part or all of the withheld percentage applicable to the Work of a Subcontractor which has completed the subcontracted Work in a manner finally acceptable to the Architect/Engineer, the Contractor, and the Principal Representative. Any such request shall be supported by a written approval from the Surety furnishing the Contractor's bonds and any surety that has provided a bond for the Subcontractor. The release of any such withheld percentage shall be further supported by such other evidence as the Architect/Engineer or the Principal Representative may require, including but not limited to, evidence of prior payments made to the Subcontractor, copies of the Subcontractor's contract with the Contractor, any applicable warranties, as-built information, maintenance manuals and other customary close-out documentation. Neither the Principal Representative nor the Architect Engineer shall be obligated to review such documentation nor shall they be deemed to assume any obligations to third parties by any review undertaken.

The Contractor's obligation under these General Conditions to guarantee Work for one year from the date of the Notice of Substantial Completion or the date of any Notice of Partial Substantial Completion of the applicable portion or phase of the Project, shall be unaffected by such partial release; unless a Notice of Partial Substantial Completion is issued for the Work subject to the release of retainage.

Any rights of the Principal Representative which might be terminated by or from the date of any final acceptance of the Work, whether at common law or by the terms of this Contract, shall not be affected by such partial release of retainage prior to any final acceptance of the entire Project.

The Contractor remains fully responsible for the Subcontractor's Work and assumes any risk that might arise by virtue of the partial release to the Subcontractor of the withheld percentage, including the risk that the Subcontractor may not have fully paid for all materials, labor and equipment furnished to the Project.

If the Principal Representative considers the Contractor's request for such release satisfactory and supported by substantial reasons, the Architect/Engineer shall make a "final inspection" of the applicable portion of the Project to determine whether the Subcontractor 's Work has been completed in accordance with the Contract Documents. A final punch list shall be made for the Subcontractor's Work and the procedures of Article 41, Completion, Final Inspection, Acceptance and Settlement, shall be followed for that portion of the Work, except that advertisement of the intent to make final payment to the Subcontractor shall be required only if the Principal Representative has reason to believe that a supplier or Subcontractor to the Subcontractor for which the request is made, may not have been fully paid for all labor and materials furnished to the Project.

# ARTICLE 32. CERTIFICATES FOR PAYMENTS

State Form SBP-7.2, Certificate For Contractor's Payment, and its continuation detail sheets, when submitted, shall constitute the Certificate of Contractor's Application for Payment, and shall be a representation by the Contractor to the Principal Representative that the Work has progressed to the point indicated, the quality of

the Work is in accordance with the Contract Documents, and materials for which payment is requested have been incorporated into the Project except as noted in the application. If requested by the Principal Representative the Certificate of Contractor's Application for Payment shall be sworn under oath and notarized.

# ARTICLE 33. PAYMENTS WITHHELD

The Architect/Engineer, the Principal Representative or State Buildings Program may withhold, or on account of subsequently discovered evidence nullify, the whole or any part of any application on account of, but not limited to any of the following:

- 1. Defective Work not remedied;
- 2. Claims filed or reasonable evidence indicating probable filing of claims;
- 3. Failure of the Contractor to make payments to Subcontractors for material or labor;
- 4. A reasonable doubt that the Contract can be completed for the balance of the contract price then unpaid;
- 5. Damage or injury to another contractor or any other person, persons or property except to the extent of coverage by a policy of insurance;
- 6. Failure to obtain necessary permits or licenses or to comply with applicable laws, ordinances, codes, rules or regulations or the directions of the Architect/Engineer;
- 7. Failure to submit a monthly construction schedule;
- 8. Failure of the Contractor to keep Work progressing in accordance with the time schedule;
- 9. Failure to keep a superintendent on the Work;
- 10. Failure to maintain as built drawings of the Work in progress;
- 11. Unauthorized deviations by the Contractor from the Contract Documents; or
- 12. On account of liquidated damages.

In addition, the Architect Engineer, Principal Representative or State Buildings Program may withhold or nullify the whole or any part of any application for any reason noted elsewhere in these General Conditions of the Contractor's Design/Bid/Build Agreement. Nullification shall mean reduction of amounts shown as previously paid on the application. The amount withheld or nullified may be in such amount as the Architect/Engineer or the Principal Representative estimates to be required to allow the State to accomplish the Work, cure the failure and cover any damages or injuries, including an allowance for attorneys' fees and costs where appropriate. When the grounds for such withholding or nullifying are removed, payment shall be made for the amounts thus withheld or nullified on such grounds.

# ARTICLE 34. DEDUCTIONS FOR UNCORRECTED WORK

If the Architect/Engineer and the Principal Representative deem it inexpedient to correct Work damaged or not performed in accordance with the Contract Documents, the Principal Representative may, after consultation with the Architect/Engineer and ten (10) days' Notice to the Contractor of intent to do so, make reasonable reductions from the amounts otherwise due the Contractor on the next application for payment. Notice shall specify the amount or terms of any contemplated reduction. The Contractor may during this period correct or perform the Work. If the Contractor does not correct or perform the Work, an equitable deduction from the Contract sum shall be made by Change Order, in accordance with Article 35, Changes in The Work, unilaterally if necessary. If either party elects' facilitation of this issue after Notice is given, the ten-day (10) notice period shall be extended and tolled until facilitation has occurred.

# ARTICLE 35. CHANGES IN THE WORK

The Principal Representative may designate, without invalidating the Agreement, and with the approval of State Buildings Program and the State Controller, may order extra Work or make changes with or without the consent of the Contractor as hereafter provided, by altering, adding to or deducting from the Work, the Contract sum being adjusted accordingly. All such changes in the Work shall be within the general scope of and be executed under the conditions of the Contract, except that any claim for extension of time made necessary due to the change or any claim of other delay or other impacts caused by or resulting from the change in the Work shall be presented by the Contractor and adjusted by Change Order to the extent known at the time such change is ordered and before proceeding with the extra or changed Work. Any claims for extension of time or of delay or other impacts, and any costs associated with extension of time, delay or other impacts,

which are not presented before proceeding with the change in the Work, and which are not adjusted by Change Order to the extent known, shall be waived.

The Architect/Engineer shall have authority to make minor changes in the Work, not involving extra cost, and not inconsistent with the intent of the Contract Documents, but otherwise, except in an emergency endangering life or property, no extra Work or change in the Contract Documents shall be made unless by 1) a written Change Order, approved by the Principal Representative, State Buildings Program, and the State Controller prior to proceeding with the changed Work; or 2) by an Emergency Field Change Order approved by the Principal Representative and State Buildings Program as hereafter provided in Article 35C, Emergency Field Ordered Changed Work; or 3) by an allocation in writing of any allowance already provided in the encumbered contract amount, the Contract sum being later adjusted to decrease the Contract sum by any unallocated or unexpended amounts remaining in such allowance. No change to the Contract sum shall be valid unless so ordered.

# A. THE VALUE OF CHANGED WORK

- 1. The value of any extra Work or changes in the Work shall be determined by agreement in one or more of the following ways:
  - a. By estimate and acceptance of a lump-sum amount;
  - b. By unit prices specified in the Agreement, or subsequently agreed upon, that are extended by specific quantities;
  - c. By actual cost plus a fixed fee in a lump sum amount for profit, overhead and all indirect and off-site home office costs, the latter amount agreed upon in writing prior to starting the extra or changed Work.
- 2. Where the Contractor and the Principal Representative cannot agree on the value of extra Work, the Principal Representative may order the Contractor to perform the changes in the Work and a Change Order may be unilaterally issued based on an estimate of the change in the Work prepared by the Architect/Engineer. The value of the change in the Work shall be the Principal Representative's determination of the amount of equitable adjustment attributable to the extra Work or change. The Principal Representative's determination shall be subject to appeal by the Contractor pursuant to the claims process in Article 36, Claims.
- 3. Except as otherwise provided in Article 35B, Detailed Breakdown, the Cost Principles of the Colorado Procurement Code or the applicable procurement code for institutions of higher education, shall govern all Contract changes.

# B. DETAILED BREAKDOWN

In all cases where the value of the extra or changed Work is not known based on unit prices in the Contractor's bid or the Agreement, a detailed change proposal shall be submitted by the Contractor on a Change Order Proposal (SC-6.312), or in such other format as the State Buildings Program approves, with which the Principal Representative may require an itemized list of materials, equipment and labor, indicating quantities, time and cost for completion of the changed Work.

Such detailed change proposals shall be stated in lump sum amounts and shall be supported by a separate breakdown, which shall include estimates of all or part of the following when requested by the Architect/Engineer or the Principal Representative:

- 1. Materials, indicating quantities and unit prices including taxes and delivery costs if any (separated where appropriate into general, mechanical and electrical and/or other Subcontractors' Work; and the Principal Representative may require in its discretion any significant subcontract costs to be similarly and separately broken down).
- 2. Labor costs, indicating hourly rates and time and labor burden to include Social Security and other payroll taxes such as unemployment, benefits and other customary burdens.
- 3. Costs of project management time and superintendence time of personnel stationed at the site, and other field supervision time, but only where a time extension, other than a weather delay, is

approved as part of the Change Order, and only where such project management time and superintendence time is directly attributable to and required by the change; provided however that additional cost of on-site superintendence shall be allowable whenever in the opinion of the Architect/Engineer the impact of multiple change requests to be concurrently performed will result in inadequate levels of supervision to assure a proper result unless additional superintendence is provided.

- 4. Construction equipment (including small tools). Expenses for equipment and fuel shall be based on customary commercially reasonable rental rates and schedules. Equipment and hand tool costs shall not include the cost of items customarily owned by workers.
- 5. Workers' compensation costs, if not included in labor burden.
- 6. The cost of commercial general liability and property damage insurance premiums but only to the extent charged the Contractor as a result of the changed Work.
- 7. Overhead and profit, as hereafter specified.
- 8. Builder's risk insurance premium costs.
- 9. Bond premium costs.
- 10. Testing costs not otherwise excluded by these General Conditions.
- 11. Subcontract costs.

Unless modified in the Supplementary General Conditions, overhead and profit shall not exceed the percentages set forth in the table below.

	OVERHEAD	PROFIT	COMMISSION
To the Contractor or to Subcontractors for the portion of Work performed with their own forces:	10%	5%	0%
To the Contractor or to Subcontractors for Work performed by others at a tier immediately below either of them:	5%	0%	5%

Overhead shall include: a) insurance premium for policies not purchased for the Project and itemized above, b) home office costs for office management, administrative and supervisory personnel and assistants, c) estimating and change order preparation costs, d) incidental job burdens, e) legal costs, f) data processing costs, g) interest costs on capital, h) general office expenses except those attributable to increased rental expenses for temporary facilities, and all other indirect costs, but shall not include the Social Security tax and other direct labor burdens. The term "Work" as used in the proceeding table shall include labor, materials and equipment and the "Commission" shall include all costs and profit for carrying the subcontracted Work at the tiers below except direct costs as listed in items 1 through 11 above if any.

On proposals for Work involving both additions and credits in the amount of the Contract sum, the overhead and profit will be allowed on the net increase only. On proposals resulting in a net deduct to the amount of the Contract sum, profit on the deducted amount shall be returned to the Principal Representative at fifty percent (50%) of the rate specified. The inadequacy of the profit specified shall not be a basis for refusal to submit a proposal.

Except in the case of Change Orders or Emergency Field Change Orders agreed to on the basis of a lump sum amount or unit prices as described in paragraphs 35A1 and 35A2 above, The Value of Changed Work, the Contractor shall keep and present a correct and fully auditable account of the several items of cost, together with vouchers, receipts, time cards and other proof of costs incurred, summarized on a Change Order form (SC-6.31) using such format for supporting documentation as the Principal Representative and State Buildings Program approve. This requirement applies equally to Work done by Subcontractors. Only auditable costs shall be reimbursable on Change Orders where the value is determined on the basis of actual cost plus a fixed fee pursuant to paragraph 35A3 above, or where unilaterally determined by the Principal Representative on the basis of an equitable adjustment

in accordance with the Procurement Rules, as described above in Article 35A, The Value Of Changed Work.

Except for proposals for Work involving both additions and credits, changed Work shall be adjusted and considered separately for Work either added or omitted. The amount of adjustment for Work omitted shall be estimated at the time it is directed to be omitted, and when reasonable to do so, the agreed adjustment shall be reflected on the schedule of values used for the next Contractor's application for payment.

The Principal Representative reserves the right to contract with any person or firm other than the Contractor for any or all extra Work; however, unless specifically required in the Contract Documents, the Contractor shall have no responsibility without additional compensation to supervise or coordinate the Work of persons or firms separately contracted by the Principal Representative.

# C. HAZARDOUS MATERIALS

- 1. The Principal Representative represents that it has undertaken an examination of the site of the Work and has determined that there are no hazardous substances, as defined below, which the Contractor could reasonably encounter in its performance of the Work. In the event the Principal Representative so discovers hazardous substances, the Principal Representative shall render harmless such hazards before the Contractor commences the Work.
- 2. In the event the Contractor encounters any materials reasonably believed to be hazardous substances which have not been rendered harmless, the Contractor shall immediately stop Work in the area affected and report the condition to the Principal Representative, in writing. For purposes of this Agreement, "hazardous substances" shall include asbestos, lead, polychlorinated biphenyl (PCB) and any or all of those substances defined as "hazardous substance", "hazardous waste", or "dangerous or extremely hazardous wastes" as those terms are used in the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA), and shall also include materials regulated by the Toxic Substances Control Act (TSCA), the Clean Air Act, the Air Quality Act, the Clean Water Act, and the Occupational Safety and Health Act. The Work in the affected area shall not therefore be resumed except by written agreement of the Principal Representative and the Contractor, if in fact materials that are hazardous substances have not been rendered harmless. The Work in the affected area shall be resumed only in the absence of the hazardous substances or when it has been rendered harmless or by written agreement of the Principal Representative and the Contractor.

# 3. The contractor shall not be required to perform Work without consent in any areas where it reasonably believes hazardous substances that have not been rendered harmless are present.

# D. EMERGENCY FIELD CHANGE ORDERED WORK

The Principal Representative, without invalidating the Agreement, and with the approval of State Buildings Program and without the approval of the State Controller, may order extra Work or make changes in the case of an emergency that is a threat to life or property or where the likelihood of delays in processing a normal Change Order will result in substantial delays and or significant cost increases for the Project. Emergency Field Orders are not to be used solely to expedite normal Change Order processing absent a clear showing of a high potential for significant and substantial cost or delay. Such changes in the Work may be directed through issuance of an Emergency Field Change Order signed by the Contractor, the Principal Representative (or by a designee specifically appointed to do so in writing), and approved by the Director of State Buildings Program or his or her delegate. The change shall be directed using an Emergency Field Change Order form (SC-6.31E).

If the amount of the adjustment of the Contract price and time for completion can be determined at the time of issuance of the Emergency Field Change Order, those adjustments shall be reflected on the

face of the Emergency Field Change Order. Otherwise, the Emergency Field Change Order shall reflect a not to exceed (NTE) amount for any schedule adjustment (increasing or decreasing the time for completion) and an NTE amount for any adjustment to Contract sum, which NTE amount shall represent the maximum amount of adjustment to which the Contractor will be entitled, including direct and indirect costs of changed Work, as well as any direct or indirect costs attributable to delays, inefficiencies or other impacts arising out of the change. Emergency Field Change Orders directed in accordance with this provision need not bear the approval signatures of the State Controller.

On Emergency Field Change Orders where the price and schedule have not been finally determined, the Contractor shall submit final costs for adjustment as soon as practicable. No later than seven (7) days after issuance, except as otherwise permitted, and every seven days thereafter, the Contractor shall report all costs to the Principal Representative and the Architect/Engineer. The final adjustment of the Emergency Field Change Order amount and the adjustment to the Project time for completion shall be prepared on a normal Change Order from (SC-6.31) in accordance with the procedures described in Article 35A, The Value of Changed Work, and B, Detailed Breakdown, above. Unless otherwise provided in writing signed by the Director of State Buildings Program to the Principal Representative and the Contractor, describing the extent and limits of any greater authority, individual Emergency Field Change Orders shall not be issued for more than \$25,000, nor shall the cumulative value of Emergency Field Change Orders exceed an amount of \$100,000.

# E. APPROPRIATION LIMITATIONS - C.R.S. § 24-91-103.6, as amended

The amount of money appropriated, as shown on the Contractor's Design/Bid/Build Agreement (SC 6.21), is equal to or in excess of the Contract amount. No Change Order, Emergency Field Change Order, or other type of order or directive shall be issued by the Principal Representative, or any agent acting on his or her behalf, which directs additional compensable Work to be performed, which Work causes the aggregate amount payable under the Contract to exceed the amount appropriated for the original Contract, as shown on the Agreement (SC-6.21), unless one of the following occurs: (1) the Contractor is provided written assurance from the Principal Representative that sufficient additional lawful appropriations exist to cover the cost of the additional Work; or (2) the Work is covered by a contractor remedy provision under the Contract, such as a claim for extra cost. By way of example only, no assurance is required for any order, directive or instruction by the Architect/Engineer or the Principal Representative to perform Work which is determined to be within the performance required by the Contract Documents; the Contractor's remedy shall be as described elsewhere in these General Conditions.

Written assurance shall be in the form of an Amendment to the Contract reciting the source and amount of such appropriation available for the Project. No remedy granting provision of this Contract shall obligate the Principal Representative to seek appropriations to cover costs in excess of the amounts recited as available to pay for the Work to be performed.

# ARTICLE 36. CLAIMS

It is the intent of these General Conditions to provide procedures for speedy and timely resolution of disagreements and disputes at the lowest level possible. In the spirit of on the job resolution of job site issues, the parties are encouraged to use the partnering processes of Article 2D, Partnering, Communications and Cooperation, before turning to the more formal claims processes described in this Article 36, Claims. The use of non-binding dispute resolution, whether through the formal processes described in Article 39, Non-Binding Dispute Resolution – Facilitated Negotiations, or through less formal alternative processes developed as part of a partnering plan, are also encouraged. Where such process cannot resolve the issues in dispute, the claims process that follows is intended to cause the issues to be presented, decided and where necessary, documented in close proximity to the events from which the issues arise. To that end, and in summary of the remedy granting process that follows commencing with the next paragraph of this Article 36, Claims, the Contractor shall 1) first, seek a decision by the Architect/Engineer, and 2) shall second, informally present the claim to Principal Representative as described hereafter, and 3) failing resolution in the field, give Notice of intent to exercise statutory rights of review of a formal contract controversy, and 4) seek resolution outside the Contract as provided by the Colorado Procurement Code or the applicable procurement code for institutions of higher education.

If the Contractor claims that any instructions, by detailed drawings, or otherwise, or any other act or omission of the Architect/Engineer or Principal Representative affecting the scope of the Contractor's Work, involve extra cost, extra time or changes in the scope of the Work under this Contract, the Contractor shall have the right to assert a claim for such costs or time, provided that before either proceeding to execute such Work (except in an emergency endangering life or property), or filing a Notice of claim, the Contractor shall have obtained or requested a written decision of the Architect/Engineer following the procedures as provided in Article 6A and B, Architect/Engineer Decisions and Judgments, respectively; provided, however, that in the case of a directed change in the Work pursuant to Article 35, no written judgment or decision of the Architect/Engineer is required. If the Contractor shall give Notice in accordance with Article 38, Delays and Extensions of Time.

Unless it is the Architect/Engineer's judgment and determination that the Work is not included in the performance required by the Contract Documents, the Contractor shall proceed with the Work as originally directed. Where the Contractor's claim involves a dispute concerning the value of Work unilaterally directed pursuant to Article 35.A.2 the Contractor shall also proceed with the Work as originally directed while his or her claim is being considered.

The Contractor shall give the Principal Representative and the Architect/Engineer Notice of any claim promptly after the receipt of the Architect/Engineer's decision, but in no case later than three (3) business days after receipt of the Architect/Engineer's decision (or no later than ten (10) days from the date of the Contractor's request for a decision when the Architect/Engineer fails to decide as provided in Article 6). The Notice of claim shall state the grounds for the claim and the amount of the claim to the extent known in accordance with the procedures of Article 35, Changes in the Work. The period in which Notice must be given may be extended by the Principal Representative if requested in writing by the Contractor with good cause shown, but any such extension to be effective shall be in writing.

The Principal Representative shall respond in writing, with a copy to the Architect/Engineer, within a reasonable time, and except where a request for facilitation of negotiation has been made as hereafter provided, in no case later than seven (7) business days (or at such other time as the Contractor and Principal Representative agree) after receipt of the Contractor's Notice of claim regarding such instructions or alleged act or omission. If no response to the Contractor's claim is received within seven (7) business days of Contractor's Notice (or at such other time as the Contractor and Principal Representative agree) and the instructions have not been retracted, it shall be deemed that the Principal Representative has denied the claim.

The Principal Representative may grant or deny the claim in whole or in part, and a Change Order shall be issued if the claim is granted. To the extent any portion of claim is granted where costs are not clearly shown, the Principal Representative may direct that the value of that portion of the Work be determined by any method allowed in Article 35A, The Value of Changed Work. Except in the case of a deemed denial, the Principal Representative shall provide a written explanation regarding any portion of the Contractor's claim that is denied.

If the Contractor disagrees with the Principal Representative's judgment and determination on the claim and seeks an equitable adjustment of the Contract sum or time for performance, he or she shall give Notice of intent to exercise his or her statutory right to seek a decision on the contract controversy within ten (10) days of receipt of the Principal Representative's decision denying the claim. A "contract controversy," as such term is used in the Colorado Procurement Code or the applicable procurement code for institutions of higher education, shall not arise until the initial claim process described above in this Article 36 has been properly exhausted by the Contractor. The Contractor's failure to proceed with Work directed by the Architect/Engineer or to exhaust the claim process provided above in this Article 36, shall constitute an abandonment of the claim by the Contractor and a waiver of the right to contest the decision in any forum.

At the time of filing the Notice of intent to exercise his or her statutory right to seek a decision on the contract controversy, the Contractor may request that the Principal Representative defer a decision on the contract controversy until a later date or until the end of the Project. If the Principal Representative agrees, he or she

shall so advise the Contractor in writing. If no such request is made, or if the Principal Representative does not agree to such a request, the Principal Representative shall render a written decision within twenty (20) business days and advise the Contractor of the reasons for any denial. Unless the claim has been decided by the Principal Representative (as opposed to delegates of the Principal Representative), the person who renders the decision on this statutory contract controversy shall not be the same person who decided the claim. To the extent any portion of the contract controversy is granted where costs are not clearly shown, the Principal Representative may direct that the value of that portion of the Work be determined by any method allowed in Article 35A, The Value of Changed Work. In the event of a denial the Principal Representative shall give Notice to the Contractor of his or her right to administrative and judicial reviews as provided in the Colorado Procurement Code or the applicable procurement code for institutions of higher education. If no decision regarding the contract controversy is issued within twenty (20) business days of the Contractor's giving Notice (or such other date as the Contractor and Principal Representative have agreed), and the instructions have not been retracted or the alleged act or omission have not been corrected, it shall be deemed that the Principal Representative has ruled by denial on the contract controversy. Except in the case of a deemed denial, the Principal Representative shall provide an explanation regarding any portion of the contract controversy that involves denial of the Contractor's claim.

Either the Contractor or the Principal Representative may request facilitation of negotiations concerning the claim or the contract controversy, and if requested, the parties shall consult and negotiate before the Principal Representative decides the issue. Any request for facilitation by the Contractor shall be made at the time of the giving of Notice of the claim or Notice of the contract controversy. Facilitation shall extend the time for the Principal Representative to respond by commencing the applicable period at the completion of the facilitated negotiation, which shall be the last day of the parties' meeting, unless otherwise agreed in writing.

Disagreement with the decision of the Architect Engineer, or the decision of the Principal Representative to deny any claim or denying the contract controversy, shall not be grounds for the Contractor to refuse to perform the Work directed or to suspend or terminate performance. During the period that any claim or contract controversy decision is pending under this Article 36, Claims, the Contractor shall proceed diligently with the Work directed.

In all cases where the Contractor proceeds with the Work and seeks equitable adjustment by filing a claim and or statutory appeal, the Contractor shall keep a correct account of the extra cost, in accordance with Article 35B, Detailed Breakdown supported by receipts. The Principal Representative shall be entitled to reject any claim or contract controversy whenever the foregoing procedures are not followed and such accounts and receipts are not presented.

The payments to the Contractor in respect of such extra costs shall be limited to reimbursement for the current additional expenditure by the Contractor made necessary by the change in the Work, plus a reasonable amount for overhead and profit, determined in accordance with Article 35B, Detailed Breakdown, determined solely with reference to the additional Work, if any, required by the change.

# ARTICLE 37. DIFFERING SITE CONDITIONS

A. NOTICE IN WRITING

The Contractor shall promptly, and where possible before conditions are disturbed, give the Architect/Engineer and the Principal Representative Notice in writing of:

- 1. subsurface or latent physical conditions at the site differing materially from those indicated in or reasonably assumed from the information provided in the Contract Documents; and,
- 2. unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in Work of the character provided for in the Contract Documents.

The Architect/Engineer shall promptly investigate the conditions, and if it is found that such conditions do materially so differ and cause an increase or decrease in the Contractor 's costs of performance of any part of the Work required by the Contract Documents, whether or not such Work is changed as a result of such conditions, an equitable adjustment shall be made and the Contract sum shall be modified in accordance with Article 35, Changes in the Work.

If the time required for completion of the Work affected by such materially differing conditions will extend the Work on the critical path as indicated on the CPM schedule, the time for completion shall also be equitably adjusted.

## B. LIMITATIONS

No claim of the Contractor under this clause shall be allowed unless the Contractor has given the Notice required in Article 37A, Notice in Writing, above. The time prescribed for presentation and adjustment in Articles 36, Claims and 38, Delays and Extensions of Time, shall be reasonably extended by the State to the extent required by the nature of the differing conditions; provided, however, that even when so extended no claim by the Contractor for an equitable adjustment hereunder shall be allowed if not quantified and presented prior to the date the Contractor requests a final inspection pursuant to Article 41A, Notice Of Completion.

# ARTICLE 38. DELAYS AND EXTENSIONS OF TIME

If the Contractor is delayed at any time in the progress of the Work by any act or neglect of the State of Colorado or the Architect/Engineer, or of any employee or agent of either, or by any separately employed Contractor or by strikes, lockouts, fire, unusual delay in transportation, unavoidable casualties or any other causes beyond the Contractor's control, including weather delays as defined below, the time of Completion of the Work shall be extended for a period equal to such portion of the period of delays directly affecting the completion of the Work as the Contractor shall be able to show he or she could not have avoided by the exercise of due diligence.

The Contractor shall provide Notice in writing to the Architect/Engineer, the Principal Representative and State Buildings Program within three (3) business days from the beginning of such delay and shall file a written claim for an extension of time within seven (7) business days after the period of such delay has ceased, otherwise, any claim for an extension of time is waived.

Provided that the Contractor has submitted reasonable schedules for approval when required by Article 12, Requests for Information and Schedules, if no schedule is agreed to fixing the dates on which the responses to requests for information or detail drawings will be needed, or Shop Drawings, Product Data or Samples are to be reviewed as required or allowed by Article 12B, Schedules, no extension of time will be allowed for the Architect/ Engineer's failure to furnish such detail drawings as needed, or for the failure to initially review Shop Drawings, Product Data or Samples, except in respect of that part of any delay in furnishing detail drawings or instructions extending beyond a reasonable period after written demand for such detailed drawings or instructions is received by the Architect/Engineer. In any event, any claim for an extension of time for such cause will be recognized only to the extent of delay directly caused by failure to furnish detail drawings or instructions or to review Shop Drawings, Product Data or Samples, Product Data or Samples.

All claims for extension of time due to a delay claimed to arise or result from ordered changes in the scope of the Work, or due to instructions claimed to increase the scope of the Work, shall be presented to the Architect/Engineer, the Principal Representative and State Buildings Program as part of a claim for extra cost, if any, in accordance with Article 36, Claims, and in accordance with the Change Order procedures required by Article 35, Changes in The Work.

Except as otherwise provided in this paragraph, no extension of time shall be granted when the Contractor has failed to utilize a CPM schedule or otherwise identify the Project's critical path as specified in Article 12, Requests for Information and Schedules, or has elected not to do so when allowed by the Supplementary General Conditions or the Specifications to use less sophisticated scheduling tools, or has failed to maintain such a schedule. Delay directly affecting the completion of the Work shall result in an extension of time only to the extent that completion of the Work was affected by impacts to the critical path shown on Contractor's CPM schedule. Where the circumstances make it indisputable in the opinion of the Architect/Engineer that the delay affected the completion of the Work so directly that the additional notice of the schedule impact by reference to a CPM schedule was unnecessary, a reasonable extension of time may be granted.

Extension of the time for completion of the Work will be granted for delays due to weather conditions only when the Contractor demonstrates that such conditions were more severe and extended than those reflected by the ten-year average for the month, as evidenced by the Climatological Data, U. S. Department of Commerce, for the Project area.

Extensions of the time for completion of the Work due to weather will be granted on the basis of one and three tenths (1.3) calendar days for every day that the Contractor would have Worked but was unable to Work, with each separate extension figured to the nearest whole calendar day.

For weather delays and delays caused by events, acts or omissions not within the control of the Principal Representative or any person acting on the Principal Representative's behalf, the Contractor shall be entitled to an extension of time only and shall not be entitled to recovery of additional cost due to or resulting from such delays. This Article does not, however, preclude the recovery of damages for delay by either party under other provisions in the Contract Documents.

# ARTICLE 39. NON-BINDING DISPUTE RESOLUTION – FACILITATED NEGOTIATIONS

The Contractor and Principal Representative agree to designate one or more mutually acceptable persons willing and able to facilitate negotiations and communications for the resolution of conflicts, disagreements or disputes between them at the specific request of either party with regard to any Project decision of either of them or any decision of the Architect/Engineer. The designation of such person(s) shall not carry any obligation to use their services except that each party agrees that if the other party requests the intervention of such person(s) with respect to any such conflict, dispute or disagreement, the non-requesting party shall participate in good faith attempts to negotiate a resolution of the issue in dispute. If the parties cannot agree on a mutually acceptable person to serve in this capacity one shall be so appointed; provided, however, that either party may request the director of State Buildings Program to appoint such a person, who, if appointed, shall be accepted for this purpose by both the Contractor and the Principal Representative.

The cost, if any, of the facilitative services of the person(s) so designated shall be shared if the parties so agree in any partnering plan; or in the absence of agreement the cost shall be borne by the party requesting the facilitation of negotiation.

Any dispute, claim, question or disagreement arising from or relating to the Contract or an alleged breach of the Contract may be subject to a request by either party for facilitated negotiation subject to the limitations hereafter listed, and the parties shall participate by consultation and negotiation with each other, as guided by the facilitator and with recognition of their mutual interests, in an attempt to reach an equitable solution satisfactory to both parties.

The obligation to participate in facilitated negotiations shall be as described above and elsewhere in these General Conditions, as by way of example in Article 36, Claims, or Article 34, Deductions for Uncorrected Work and to the extent not more particularly described or limited elsewhere, each party's obligations shall be as follows:

- 1. a party shall not initiate communication with the facilitator regarding the issues in dispute; except that any request for facilitation shall be made in writing with copies sent, faxed or delivered to the other party;
- a party shall prepare a brief written description of its position if so requested by the facilitator (who may elect to first discuss the parties' positions with each party separately in the interest of time and expense);
- 3. a party shall respond to any reasonable request for copies of documents requested by the facilitator, but such requests, if voluminous, may consist of an offer to allow the facilitator access to the parties' documents;
- 4. a party shall review any meeting agenda proposed by a facilitator and endeavor to be informed on the subjects to be discussed;
- 5. a party shall meet with the other party and the facilitator at a mutually acceptable place and time, or, if none can be agreed to, at the time and place designated by the facilitator for a period not to exceed four hours unless the parties agree to a longer period;

- 6. a party shall endeavor to assure that any facilitation meeting shall be attended by any other persons in their employ that the facilitator requests be present, if reasonably available, including the Architect/Engineer;
- 7. each party shall participate in such facilitated face-to-face negotiations of the issues in dispute through persons fully authorized to resolve the issue in dispute;
- 8. each party shall be obligated to participate in negotiations requested by the other party and to perform the specific obligations described in paragraphs (1) through (10) this Article 39, Facilitated Negotiation, no more than three times during the course of the Project;
- 9. neither party shall be under any obligation to resolve any issue by facilitated negotiation, but each agrees to participate in good faith and the Principal Representative shall direct the Architect/Engineer to appropriately document any resolution or agreement reached and to execute any Amendment or Change Order to the Contract necessary to implement their agreement; and,
- 10. any discussions and documents prepared exclusively for use in the negotiations shall be deemed to be matters pertaining to settlement negotiations and shall not be subsequently available in further proceedings except to the extent of any documented agreement.

In accordance with State Fiscal Rules and Article 52F, Choice of Law; No Arbitration, nothing in this Article 39 shall be deemed to call for arbitration or otherwise obligate the State to participate in any form of binding alternative dispute resolution.

A partnering plan developed as described in Article 2D, Communications and Cooperation, may modify or expand the requirements of this Article but may not reduce the obligation to participate in facilitated negotiations when applicable. In the case of small projects estimated to be valued under \$500,000, the requirements of this Article may be deleted from this Contract, by modification in Article 7 (Contractor's Agreement SC-6.21), Optional Provisions and Elections. When so modified, the references to the parties' right to elect facilitated negotiation elsewhere in these General Conditions shall be deleted.

# ARTICLE 40. RIGHT OF OCCUPANCY

The Principal Representative shall have the right to take possession of and to use any completed or partially completed portions of the Work, even if the time for completing the entire Work or portions of the Work has not expired and even if the Work has not been finally accepted, and the Contractor shall fully cooperate with the Principal Representative to allow such possession and use. Such possession and use shall not constitute an acceptance of such portions of the Work.

Prior to any occupancy of the Project, an inspection shall be made by the Principal Representative, State Buildings Program and the Contractor. Such inspection shall be made for the purpose of ensuring that the building is secure, protected by operation safety systems as designed, operable exits, power, lighting and HVAC systems, and otherwise ready for the occupancy intended and the Notice of Substantial Completion has been issued for the occupancy intended. The inspection shall also document existing finish conditions to allow assessment of any damage by occupants. The Contractor shall assist the Principal Representative in completing and executing State Form SBP-01, Approval of Occupancy/Use, prior to the Principal Representative's possession and use. Any and all areas so occupied will be subject to a final inspection when the Contractor complies with Article 41, Completion, Final Inspection, Acceptance and Settlement.

# ARTICLE 41. COMPLETION, FINAL INSPECTION, ACCEPTANCE AND SETTLEMENT

A. NOTICE OF COMPLETION

When the Work, or a discrete physical portion of the Work (as hereafter described) which the Principal Representative has agreed to accept separately, is substantially complete and ready for final inspection, the Contractor shall file a written Notice with the Architect/Engineer that the Work, or such discrete physical portion, in the opinion of the Contractor, is substantially complete under the terms of the Contract. The Contractor shall prepare and submit with such Notice a comprehensive list of items to be completed or corrected prior to final payment, which shall be subject to review and additions as the Architect/Engineer or the Principal Representative shall determine after inspection. If the Architect/Engineer or the Principal Representative believe that any of the items on the list of items submitted, or any other item of Work to be corrected or completed, or the cumulative number of items

of Work to be corrected or completed, will prevent a determination that the Work is substantially complete, those items shall be completed by the Contractor and the Notice shall then be resubmitted.

# B. FINAL INSPECTION

Within ten (10) days after the Contractor files written Notice that the Work is substantially complete, the Architect/Engineer, the Principal Representative, and the Contractor shall make a "final inspection" of the Project to determine whether the Work is substantially complete and has been completed in accordance with the Contract Documents. State Buildings Program shall be notified of the inspection not less than three (3) business days in advance of the inspection. The Contractor shall provide the Principal Representative and the Architect/Engineer an updated punch list in sufficient detail to fully outline the following:

- 1. Work to be completed, if any; and
- 2. Work not in compliance with the Drawings or Specifications, if any.

A final punch list shall be made by the Architect/Engineer in sufficient detail to fully outline to the Contractor:

- 1. Work to be completed, if any;
- 2. Work not in compliance with the Drawings or Specifications, if any; and
- 3. unsatisfactory Work for any reason, if any.

The required number of copies of the final punch list will be countersigned by the authorized representative of the Principal Representative and will then be transmitted by the Architect/Engineer to the Contractor, the Principal Representative, and State Buildings Program. The Architect/Engineer's final punch list shall control over the Contractor's preliminary punch list.

## C. NOTICE OF SUBSTANTIAL COMPLETION

Notice of Substantial Completion shall establish the date of substantial completion of the Project. The Contractor acknowledges and agrees that because the departments, agencies and institutions of the State of Colorado are generally involved with the business of the public at large, greater care must be taken in establishing the date of substantial completion than might otherwise be the case to ensure that a project or building or discrete physical portion of the Work is fully usable and safe for public use, and that such care necessarily raises the standard by which the concept of substantial completion is applied for a public building.

The Notice of Substantial Completion shall not be issued until the following have been fully established:

- 1. All required building code inspections have been called for and the appropriate code officials have affixed their signatures to the Building Inspection Record indicating successful completion of all required code inspections;
- 2. All required corrections noted on the Building Inspection Record shall have been completed unless the Architect/Engineer, the Principal Representative and State Buildings Program, in their complete and absolute discretion, all concur that the condition requiring the remaining correction is not in any way life threatening, does not otherwise endanger persons or property, and does not result in any undue inconvenience or hardship to the Principal Representative or the public;
- 3. The building, structure or Project can be fully and comfortably used by the Principal Representative and the public without undue interference by the Contractor's employees and Workers during the completion of the final punch list taking into consideration the nature of the public uses intended and taking into consideration any stage or level of completion of HVAC system commissioning or other system testing required by the Specifications to be completed prior to issuance of the Notice of Substantial Completion;
- 4. The Project has been fully cleaned as required by these General Conditions, and as required by any stricter requirements of the Specifications, and the overall state of completion is appropriate for presentation to the public; and

5. The Contractor has provided a schedule for the completion of each and every item identified on the punch list which specifies the Subcontractor or trade responsible for the Work, and the dates the completion or correction of the item will be commenced and finished; such schedule will show completion of all remaining final punch list items within the period indicated in the Contract for final punch list completion prior to Final Acceptance, with the exception of only those items which are beyond the control of the Contractor despite due diligence. The schedule shall provide for a reasonable punch list inspection process. Unless liquidated damages have been specified in Article 7.4 of the Contractor's Design/Bid/Build Agreement SC-6.21), the cost to the Principal Representative, if any, for re-inspections due to failure to adhere to the Contractor's proposed punch-list completion schedule shall be the responsibility of the Contractor and may be deducted by the Principal Representative from final amounts due to the Contractor.

Substantial completion of the entire Project shall not be conclusively established by a decision by the Principal Representative to take possession and use of a portion, or all of the Project, where portions of the Project cannot meet all the criteria noted above. Notice of Substantial Completion for the entire Project shall, however, only be withheld for substantial reasons when the Principal Representative has taken possession and uses all of the Project in accordance with the terms of Article 40, Right of Occupancy. Failure to furnish the required completion schedule shall constitute a substantial reason for withholding the issuance of any Notice of Substantial Completion.

The Contractor shall have the right to request a final inspection of any discrete physical portion of the Project when in the opinion of the Principal Representative, The Architect/Engineer and State Buildings Program a final punch list can be reasonably prepared, without confusion as to which portions of the Project are referred to in any subsequent Notice of Partial Final Settlement which might be issued after such portion is finally accepted. Discrete physical portions of the Project may be, but shall not necessarily be limited to, such portions of the Project as separate buildings where a Project consists of multiple buildings. Similarly, an addition to an existing building where the Project also calls for renovation or remodeling of the existing building may constitute a discrete physical portion of the Project. In such circumstances, when in the opinion of the Principal Representative, the Architect/Engineer and State Buildings Program, the requirements for issuance of a Notice of Substantial Completion can be satisfied with respect to the discrete portion of the Project, a partial Notice of Substantial Completion may be issued for such discrete physical portion of the Project.

#### D. NOTICE OF ACCEPTANCE

The Notice of Acceptance shall establish the completion date of the Project. It shall not be authorized until the Contractor shall have performed all of the Work to allow completion and approval of the Pre-Acceptance Checklist (SBP-05).

Where partial Notices of Substantial Completion have been issued, partial Notices of Final Acceptance may be similarly issued when appropriate for that portion of the Work. Partial Notice of Final Acceptance may also be issued to exclude the Work described in Change Orders executed during late stages of the Project where a later completion date for the Change Ordered Work is expressly provided for in the Contract as amended by the Change Order, provided the Work can be adequately described to allow partial advertisement of any Notice of Partial Final Settlement to be issued without confusion as to the Work included for which final payment will be made.

#### E. SETTLEMENT

Final payment and settlement shall be made on the date fixed and published for such payment except as hereafter provided. The Principal Representative shall not authorize final payment until all items on the Pre-Acceptance check list (SBP-05) have been completed, the Notice of Acceptance issued, and the Notice of Contractors Settlement published. If the Work shall be substantially completed, but Final Acceptance and completion thereof shall be prevented through delay in correction of minor defects, or unavailability of materials or other causes beyond the control of the Contractor, the Principal Representative in his or her discretion may release all amounts due to the Contractor except such amounts as may be in excess of three times the cost of completing the unfinished Work or the cost of correcting the defective Work, as estimated by the Architect/Engineer and approved by State Buildings Program. Before the Principal Representative may issue the Notice of Contractor's Settlement and advertise the Project for final payment, the Contractor shall have corrected all items on the punch list except those items for which delayed performance is expressly permitted, subject to withholding for the cost thereof, and shall have:

- 1. Delivered to the Principal Representative:
  - a. All guarantees and warranties;
  - b. All statements to support local sales tax refunds, if any;
  - c. Required operating maintenance instructions as per the Principal Representative; and,
  - d. One (1) set of hard copy as-built Contract Documents, and one (1) electronic copy showing all job changes.
- 2. Demonstrated to the operating personnel of the Principal Representative the proper operation and maintenance of all equipment.
- 3. Delivered to the State of Colorado Department of Personnel & Administration in accordance with the Colorado Procurement Code or the applicable procurement code for institutions of higher education:
  - a. A written disclosure of the five most costly goods incorporated into the project, including iron, steel, or related manufactured goods and the total cost and country of origin of those five goods and whether the project was subject to any existing domestic content preferences.

Upon completion of the foregoing the Project shall be advertised in accordance with the Notice of Contractor's Settlement by two publications of Notice, the last publication appearing at least ten (10) days prior to the time of final settlement. Publication and final settlement should not be postponed or delayed solely by virtue of unresolved claims against the Project or the Contractor from Subcontractors, suppliers or materialmen based on good faith disputes; the resolution of the question of payment in such cases being directed by statute.

Except as hereafter provided, on the date of final settlement thus advertised, provided the Contractor has submitted a written Notice to the Architect/Engineer that no claims have been filed, and further provided the Principal Representative shall have received no claims, final payments and settlement shall be made in full. If any unpaid claim for labor, materials, rental machinery, tools, supplies or equipment is filed before payment in full of all sums due the Contractor, the Principal Representative and the State Controller shall withhold from the Contractor on the date established for final settlement, sufficient funds to insure the payment of such claim, until the same shall have been paid or withdrawn, such payment or withdrawal to be evidenced by filing a receipt in full or an order for withdrawal signed by the claimant or his or her duly authorized agent or assignee. The amount so withheld may be in the amount of 125% of the claims or such other amount as the Principal Representative reasonably deems necessary to cover expected legal expenses. Such withheld amounts shall be in addition to any amount withheld based on the cost to compete unfinished Work or the cost to repair defective Work. However, as provided by statute, such funds shall not be withheld longer than ninety (90) days following the date fixed for final settlement with the Contractor, as set forth in the published Notice of Contractor's Settlement, unless an action at law shall be commenced within that time to enforce such unpaid claim and a Notice of such action at law shall have been filed with the Principal Representative and the State Controller. At the expiration of the ninety (90) day period, the Principal Representative shall authorize the State Controller to release to the Contractor all other money not the subject of such action at law or withheld based on the cost to compete unfinished Work or the cost to repair defective Work.

Notices of Partial Final Settlement may be similarly advertised, provided all conditions precedent have been satisfied as though that portion of the Work affected stood alone, a Notice of Partial Acceptance has been issued, and the consent of surety to the partial final settlement has been obtained in writing. Thereafter, partial final payments may be made to the Contractor subject to the same conditions regarding unpaid claims.

# ARTICLE 42. GENERAL WARRANTY AND CORRECTION OF WORK AFTER ACCEPTANCE

The Contractor warrants that the materials used and the equipment furnished shall be new and of good quality unless specified to the contrary. The Contractor further warrants that the Work shall, in all respects, be free from material defects not permitted by the Specifications and shall be in accordance with the requirements of the Contract Documents. Neither the final certificate for payment nor any provision in the Contract Documents shall relieve the Contractor of responsibility for defects or faulty materials or Workmanship. The Contractor shall be responsible to the Principal Representative for such warranties for the longest period permitted by any applicable statute of limitations.

In addition to these general warranties, and without limitation of these general warranties, for a period of one year after the date of any Notice of Substantial Completion, or any Notice of Partial Substantial Completion if applicable, the Contractor shall remedy defects, and faulty Workmanship or materials, and Work not in accordance with the Contract Documents which was not accepted at the time of the Notice of Final Acceptance, all in accordance with the provisions of Article 44, One-Year Guarantee And Special Guarantees And Warranties.

# ARTICLE 43. LIENS

Colorado statutes do not provide for any right of lien against public buildings. In lieu thereof, C.R.S. § 38-26-107, provides adequate relief for any claimant having furnished labor, materials, rental machinery, tools, equipment, or services toward construction of the particular public Work in that final payment may not be made to a Contractor until all such creditors have been put on Notice by publication in the public press of such pending payment and given opportunity for a period of up to ninety (90) days to stop payment to the Contractor in the amount of such claims.

# ARTICLE 44. ONE-YEAR GUARANTEE AND SPECIAL GUARANTEES AND WARRANTIES

# A. ONE-YEAR GUARANTEE OF THE WORK

The Contractor shall guarantee to remedy defects and repair or replace the Work for a period of one year from the date of the Notice of Substantial Completion or from the dates of any partial Notices of Substantial Completion issued for discrete physical portions of the Work. The Contractor shall remedy any defects due to faulty materials or Workmanship and shall pay for, repair and replace any damage to other Work resulting there from, which shall appear within a period of one year from the date of such Notice(s) of Substantial Completion. The Contractor shall also remedy any deviation from the requirements of the Contract Documents which shall later be discovered within a period of one year from the date of such served dete of the Notice of Substantial Completion; provided, however, that the Contractor shall not be required to remedy deviations from the requirements of the Contract Documents which shall accepted by the Architect/Engineer or the Principal Representative at the time of the Notice of Final Acceptance. The Principal Representative shall give Notice of observed defects or other Work requiring correction with reasonable promptness. Such Notice shall be in writing to the Architect/Engineer and the Contractor.

The one year guarantee of the Contractor's Work may run separately for discrete physical portions of the Work for which partial Notices of Substantial Completion have been issued, however, it shall run from the last Notice of Substantial Completion with respect to all or any systems common to the Work to which more than one Notice of Substantial Completion may apply.

This one-year guarantee shall not be construed to limit the Contractor's general warranty described in Article 42, General Warranty and Correction of Work After Acceptance, that all materials and equipment are new and of good quality, unless specified to the contrary, and that the Work shall in all respects be free from material defects not permitted by the Specifications and in accordance with the requirements of the Contract Documents.

# B. SPECIAL GUARANTEES AND WARRANTIES

In case of Work performed for which product, manufacturers or other special warranties are required by the Specifications, the Contractor shall secure the required warranties and deliver copies thereof to the Principal Representative through the Architect/Engineer upon completion of the Work.

These product, manufacturers or other special warranties, as such, do not in any way lessen the Contractor's responsibilities under the Contract. Whenever guarantees or warranties are required by the Specifications for a longer period than one year, such longer period shall govern.

# ARTICLE 45. GUARANTEE INSPECTIONS AFTER COMPLETION

The Architect/Engineer, the Principal Representative and the Contractor together shall make at least two (2) complete inspections of the Work after the Work has been determined to be substantially complete and accepted. One such inspection, the "Six-Month Guarantee Inspection," shall be made approximately six (6) months after date of the Notice of Substantial Completion, unless in the case of smaller projects valued under \$500,000 this inspection is declined in Article 7A (Contractor's Agreement SC-6.21), Modification of Article 45, in which case the inspection to occur at six months shall not be required. Another such inspection, the "Eleven-Month Guaranty Inspection" shall be made approximately eleven (11) months after the date of the Notice of Substantial Completion. The Contractor shall schedule and so notify all parties concerned, and the Principal Representative shall so notify State Buildings Program, of these inspections. If more than one Notice of Substantial Completion has been issued at the reasonable discretion of the Principal Representative separate eleven month inspections may be required where the one year guarantees do not run reasonably concurrent.

Written punch lists and reports of these inspections shall be made by the Architect/Engineer and forwarded to the Contractor, the Principal Representative, State Buildings Program, and all other participants within ten (10) days after the completion of the inspections. The punch list shall itemize all guarantee items, prior punch list items still to be corrected or completed and any other requirements of the Contract Documents to be completed which were not waived by final acceptance because they were not obvious or could not reasonably have been previously observed. The Contractor shall immediately initiate such remedial Work as may be necessary to correct any deficiencies or defective Work shown by this report, and shall promptly complete all such remedial Work in a manner satisfactory to the Architect/Engineer, the Principal Representative and State Buildings Program.

If the Contractor fails to promptly correct all deficiencies and defects shown by this report, the Principal Representative may do so, after giving the Contractor ten (10) days written Notice of intention to do so.

The State of Colorado, acting by and through the Principal Representative, shall be entitled to collect from the Contractor all costs and expenses incurred by it in correcting such deficiencies and defects, as well as all damages resulting from such deficiencies and defects.

#### ARTICLE 46. TIME OF COMPLETION AND LIQUIDATED DAMAGES

It is hereby understood and mutually agreed, by and between the parties hereto, that the date of beginning, rate of progress, and the time for completion of the Work to be done hereunder are ESSENTIAL CONDITIONS of this Agreement, and it is understood and agreed that the Work embraced in this Contract shall be commenced at the time specified in the Notice to Proceed (SC-6.26).

It is further agreed that time is of the essence of each and every portion of this Contract, and of any portion of the Work described on the Drawings or Specifications, wherein a definite and certain length of time is fixed for the performance of any act whatsoever. The parties further agree that where under the Contract additional time is allowed for the completion of the Work or any identified portion of the Work, the new time limit or limits fixed by such extension of the time for completion shall be of the essence of this Agreement.

The Contractor acknowledges that subject to any limitations in the Advertisement for Bids, issued for the Project, the Contractor's bid is consistent with and considers the number of days to substantially complete the Project and the number of days to finally complete the Project to which the parties may have stipulated in the Agreement, which stipulation was based on the Contractor's bid. The Contractor agrees that Work shall be prosecuted regularly, diligently and uninterruptedly at such rate of progress as will ensure the Project will be substantially complete, and fully and finally complete, as recognized by the issuance of all required Notices of Substantial Completion and Notices of Final Acceptance, within any times stipulated and specified in the Agreement, as the same may be amended by Change Order or other written modification, and that the Principal Representative will be damaged if the times of completion are delayed.

It is expressly understood and agreed, by and between the parties hereto, that the times for the Substantial Completion of the Work or for the final acceptance of the Work as may be stipulated in the Agreement, and as applied here and in Article 7.4 of the Contractor's Design/Bid/Build Agreement SC-6.21), Modifications of Article 46, are reasonable times for these stages of completion of the Work, taking into such consideration all factors, including the average climatic range and usual industrial conditions prevailing in the locality of the building operations.

If the Contractor shall neglect, fail or refuse to complete the Work within the times specified in the Agreement, such failure shall constitute a breach of the terms of the Contract and the State of Colorado, acting by and through the Principal Representative, shall be entitled to liquidated damages for such neglect, failure or refusal, as specified in Article 7.4 of the Contractor's Design/Bid/Build Agreement SC-6.21, Modification of Article 46.

The Contractor and the Contractor's Surety shall be jointly liable for and shall pay the Principal Representative, or the Principal Representative may withhold, the sums hereinafter stipulated as liquidated damages for each calendar day of delay until the entire Project is 1) substantially completed, and the Notice (or all Notices) of Substantial Completion are issued, 2) finally complete and accepted and the Notice (or all Notices) of Acceptance are issued, or 3) both. Delay in substantial completion shall be measured from the Date of the Notice to Proceed and delay in final completion and acceptance shall be measured from the Date of the Notice of Substantial Completion.

In the first instance, specified in Article 7.4.1 of the Contractor's Design/Bid/Build Agreement SC-6.21, Modification of Article 46, liquidated damages, if any, shall be the amount specified therein, for each calendar day of delay beginning after the stipulated number of days for Substantial Completion from the date of the Notice to Proceed, until the date of the Notice of Substantial Completion. Unless otherwise specified in any Supplementary General Conditions, in the event of any partial Notice of Substantial Completion, liquidated damages shall accrue until all required Notices of Substantial Completion are issued.

In the second instance, specified in Article 7.4.2 of the Contractor's Design/Bid/Build Agreement SC-6.21, Modification of Article 46, liquidated damages, if any, shall be the amount specified in Article 7.4.2 of the Contractor's Design/Bid/Build Agreement SC-6.21, Modification of Article 46, for each calendar day in excess of the number of calendar days specified in the Contractor's bid for the Project and stipulated in the Agreement to finally complete the Project (as defined by the issuance of the Notice of Acceptance) after the final Notice of Substantial Completion has been issued.

In the third instance, when so specified in both Articles 7.4.1 and 7.4.2 of the Contractor's Agreement SC-6.21, both types of liquidated damages shall be separately assessed where those delays have occurred.

The parties expressly agree that said amounts are a reasonable estimate of the presumed actual damages that would result from any of the breaches listed, and that any liquidated damages that are assessed have been agreed to in light of the difficulty of ascertaining the actual damages that would be caused by any of these breaches at the time this Contract was formed; the liquidated damages in the first instance representing an estimate of damages due to the inability to use the Project; the liquidated damages in the second instance representing an estimate of damages due to the additional administrative, technical, supervisory and professional expenses related to and arising from the extended closeout period including delivery of any or all guarantees and warranties, the submittals of sales and use tax payment forms, the calling for the final inspection and the completion of the final punch list.

The parties also agree and understand that the liquidated damages to be assessed in each instance are separate and distinct, although potentially cumulative, damages for the separate and distinct breaches of delayed substantial completion or final acceptance. Such liquidated damages shall not be avoided by virtue of the fact of concurrent delay caused by the Principal Representative, or anyone acting on behalf of the Principal Representative, but in such event the period of delay for which liquidated damages are assessed shall be equitably adjusted in accordance with Article 38, Delays and Extensions Of Time.

## ARTICLE 47. DAMAGES

If either party to this Contract shall suffer damage under this Contract in any manner because of any wrongful act or neglect of the other party or of anyone employed by either of them, then the party suffering damage shall be reimbursed by the other party for such damage. Except to the extent of damages liquidated for the Contractor's failure to achieve timely completion as set forth in Article 46, Time of Completion and Liquidated Damages, the Principal Representative shall be responsible for, and at his or her option may insure against, loss of use of any existing property not included in the Work, due to fire or otherwise, however caused. Notwithstanding the foregoing, or any other provision of this Contract, to the contrary, no term or condition of this contract shall be construed or interpreted as a waiver, express or implied, of any of the immunities, rights, benefits, protection, or other provisions of the Colorado Governmental Immunity Act, Section 24-10-101, *et seq.*, CRS, as now or hereafter amended. The parties understand and agree that liability for claims for injuries to persons arising out of negligence of the State of Colorado, its departments, institutions, agencies, boards, officials and employees is controlled and limited by the provisions of Section 24-101-101, *et seq.*, CRS, as now or hereafter amended and the risk management statutes, Section 24-30-1501, *et seq.*, CRS, as now or hereafter amended.

Notice of intent to file a claim under this clause shall be made in writing to the party liable within a reasonable time of the first observance of such damage and not later than the time of final payment, except that in the case of claims by the Principal Representative involving warranties against faulty Work or materials Notice shall be required only to the extent stipulated elsewhere in these General Conditions. Claims made to the Principal Representative involving extra cost or extra time arising by virtue of instructions to the Contractor to which Article 36, Claims, applies shall be made in accordance with Article 36. Other claims arising under the Contract involving extra cost or extra time which are made to the Principal Representative under this clause shall also be made in accordance with the procedures of Article 36, whether or not arising by virtue of instructions to the Contractor; provided however that it shall not be necessary to first obtain or request a written judgment of the Architect/Engineer.

Provided written Notice of intent to file a claim is provided as required in the preceding paragraph, nothing in this Article shall limit or restrict the rights of either party to bring an action at law or to seek other relief to which either party may be entitled, including consequential damages, if any, and shall not be construed to limit the time during which any action might be brought. Nothing in these General Conditions shall be deemed to limit the period of time during which any action may be brought as a matter of contract, tort, warranty or otherwise, it being the intent of the parties to allow any and all actions at law or in equity for such periods as the law permits. All such rights shall, however be subject to the obligation to assert claims and to appeal denials pursuant to Article 36, Claims, where applicable.

## ARTICLE 48. STATE'S RIGHT TO DO THE WORK; TEMPORARY SUSPENSION OF WORK; DELAY DAMAGES

# A. STATE'S RIGHT TO DO THE WORK

If after receipt of Notice to do so, the Contractor should neglect to prosecute the Work properly or fail to perform any provision of the Contract, the Principal Representative, after a second seven (7) days' advance written Notice to the Contractor and the Surety may, without prejudice to any other remedy the Principal Representative may have, take control of all or a portion of the Work, as the Principal Representative deems necessary and make good such deficiencies deducting the cost thereof from the payment then or thereafter due the Contractor, as provided in Article 30, Correction Of Work Before Acceptance and Article 33, Payments Withheld, provided, however, that the Architect/Engineer shall approve the amount charged to the Contractor by approval of the Change Order.

#### B. TEMPORARY SUSPENSION OF WORK

The State, acting for itself or by and through the Architect/Engineer, shall have the authority to suspend the Work, either wholly or in part, for such period or periods as may be deemed necessary due to:

- 1. Unsuitable weather;
- 2. Faulty Workmanship;
- 3. Improper superintendence or project management;
- 4. Contractor's failure to carry out orders or to perform any provision of the Contract Documents;

- 5: Loss of, or restrictions to, appropriations;
- 6. Conditions, which may be considered unfavorable for the prosecution of the Work.

If it should become necessary to stop Work for an indefinite period, the Contractor shall store materials in such manner that they will not become an obstruction or become damaged in any way; and he or she shall take every precaution to prevent damage to or deterioration of the Work, provide suitable drainage and erect temporary structures where necessary.

Notice of suspension of Work shall be provided to the Contractor in writing stating the reasons therefore. The Contractor shall again proceed with the Work when so notified in writing.

The Contractor understands and agrees that the State of Colorado cannot predict with certainty future revenues and could ultimately lack the revenue to fund the appropriations applicable to this Contract. The Contractor further acknowledges and agrees that in such event that State may, upon Notice to the Contractor, suspend the Work in anticipation of a termination of the Contract for the convenience of the State, pursuant to Article 50, Termination for Convenience of State. If the Contract is not so terminated the Contract sum and the Contract time shall be equitably adjusted at the time the Principal Representative directs the Work to be recommenced and gives Notice that the revenue to fund the appropriation is available.

## C. DELAY DAMAGES

The Principal Representative and the State of Colorado shall be liable to the Contractor for the payment of any claim for extra costs, extra compensation or damages occasioned by hindrances or delays encountered in the Work only when and to the limited extent that such hindrance or delay is caused by an act or omission within the control of the Principal Representative, the Architect/Engineer or other persons or entities acting on behalf of the Principal Representative. Further, the Principal Representative and the State of Colorado shall be liable to the Contractor for the payment of such a claim only if the Contractor has provided required Notice of the delay or impact, or has presented its claim for an extension of time or claim of other delay or other impact due to changes ordered in the Work before proceeding with the changed Work. Except as otherwise provided, claims for extension of time shall be Noticed and filed in accordance with Article 38, Delays and Extensions of Time, within three (3) business days of the beginning of the delay with any claim filed within seven (7) days after the delay has ceased, or such claim is waived. Claims for extension of time or for other delay or other impact resulting from changes ordered in the Work shall be presented and adjusted as provided in Article 35, Changes in the Work.

# ARTICLE 49. STATE'S RIGHTS TO TERMINATE CONTRACT

#### A. GENERAL

If the Contractor should be adjudged bankrupt, or if he or she should make a general assignment for the benefit of his or her creditors, or if a receiver should be appointed to take over his affairs, or if he or she should fail to prosecute his or her Work with due diligence and carry the Work forward in accordance with the construction schedule and the time limits set forth in the Contract Documents, or if he or she should fail to subsequently perform one or more of the provisions of the Contract Documents to be performed by him, the Principal Representative may serve written Notice on the Contractor and the Surety on performance and payment bonds, stating his or her intention to exercise one of the remedies hereinafter set forth and the grounds upon which the Principal Representative bases his or her right to exercise such remedy.

In such event, unless the matter complained of is satisfactorily cleared within ten (10) days after delivery of such Notice, the Principal Representative may, without prejudice to any other right or remedy, exercise one of such remedies at once, having first obtained the concurrence of the Architect/Engineer in writing that sufficient cause exists to justify such action.

# B. CONDITIONS AND PROCEDURES

1. The Principal Representative may terminate the services of the Contractor, which termination shall take effect immediately upon service of Notice thereof on the Contractor and his or her

Surety, whereupon the Surety shall have the right to take over and perform the Contract. If the Surety does not provide Notice to the Principal Representative of its intent to commence performance of the Contract within ten (10) days after delivery of the Notice of termination, the Principal Representative may take over the Work, take possession of and use all materials, tools, equipment and appliances on the premises and prosecute the Work to completion by such means as he or she shall deem best. In the event of such termination of his or her service, the Contractor shall not be entitled to any further payment under the Contract until the Work is completed and accepted. If the Principal Representative takes over the Work, including compensation for any damages or expenses incurred by the Principal Representative through the default of the Contractor, such excess shall be paid to the Contractor. If, however, the cost, expenses and damages as certified by the Architect/Engineer exceed such unpaid balance of the contract price, the Contractor and his or her Surety shall pay the difference to the Principal Representative.

- 2. The Principal Representative may require the Surety on the Contractor 's bond to take control of the Work and see to it that all the deficiencies of the Contractor are made good, with due diligence within ten (10) days of delivery of Notice to the Surety to do so. As between the Principal Representative and the Surety, the cost of making good such deficiencies shall all be borne by the Surety. If the Surety takes over the Work, either by election upon termination of the services of the Contractor pursuant to Section B(1) of this Article 49, State's Right To Terminate Contract, or upon instructions from the Principal Representative to do so, the provisions of the Contract Documents shall govern the Work to be done by the Surety, the Surety being substituted for the Contractor as to such provisions, including provisions as to payment for the Work, the times of completion and provisions of this Article as to the right of the Principal Representative to do the Work or to take control of all or a portion of the Work.
- 3. The Principal Representative may take control of all or a portion of the Work and make good the deficiencies of the Contractor, or the Surety if the Surety has been substituted for the Contractor, with or without terminating the Contract, employing such additional help as the Principal Representative deems advisable in accordance with the provisions of Article 48A, State's Right to Do the Work; Temporary Suspension of Work; Delay Damages. In such event, the Principal Representative shall be entitled to collect from the Contractor and his or her Surety, or to deduct from any payment then or thereafter due the Contractor, the costs incurred in having such deficiencies made good and any damages or expenses incurred through the default of Contractor, provided the Architect/Engineer approves the amount thus charged to the Contractor. If the Contract is not terminated, a Change Order to the Contract shall be executed, unilaterally if necessary, in accordance with the procedures of Article 35, Changes in The Work.

# C. ADDITIONAL CONDITIONS

If any termination by the Principal Representative for cause is later determined to have been improper, the termination shall be automatically converted to and deemed to be a termination by the Principal Representative for convenience and the Contractor shall be limited in recovery to the compensation provided for in Article 50, Termination for Convenience of State. Termination by the Contractor shall not be subject to such conversion.

#### ARTICLE 50. TERMINATION FOR CONVENIENCE OF STATE

A. NOTICE OF TERMINATION

The performance of Work under this Contract may be terminated, in whole or from time to time in part, by the State whenever for any reason the Principal Representative shall determine that such termination is in the best interest of State. Termination of Work hereunder shall be effected by delivery to the Contractor of a Notice of such termination specifying the extent to which the performance of Work under the Contract is terminated and the date upon which such termination becomes effective.

#### B. PROCEDURES

After receipt of the Notice of termination, the Contractor shall, to the extent appropriate to the termination, cancel outstanding commitments hereunder covering the procurement of materials, supplies, equipment and miscellaneous items. In addition, the Contractor shall exercise all reasonable diligence to accomplish the cancellation or diversion of all applicable outstanding commitments covering

personal performance of any Work terminated by the Notice. With respect to such canceled commitments, the Contractor agrees to:

- 1. settle all outstanding liabilities and all claims arising out of such cancellation of commitments, with approval or ratification of the Principal Representative, to the extent he or she may require, which approval or ratification shall be final for all purposes of this clause; and,
- 2. assign to the State, in the manner, at the time, and to the extent directed by the Principal Representative, all of the right, title, and interest of the Contractor under the orders and subcontracts so terminated, in which case the State shall have the right, in its discretion, to settle or pay any or all claims arising out of the termination of such orders and subcontracts.

The Contractor shall submit his or her termination claim to the Principal Representative promptly after receipt of a Notice of termination, but in no event later than three (3) months from the effective date thereof, unless one or more extensions in writing are granted by the Principal Representative upon written request of the Contractor within such three-month period or authorized extension thereof. Upon failure of the Contractor to submit his or her termination claim within the time allowed, the Principal Representative may determine, on the basis of information available to him, the amount, if any, due to the Contractor by reason of the termination and shall thereupon pay to the Contractor the amount so determined.

Costs claimed, agreed to, or determined pursuant to the preceding and following paragraph shall be in accordance with the provisions of the Colorado Procurement Code or the applicable procurement code for institutions of higher education.

Subject to the preceding provisions, the Contractor and the Principal Representative may agree upon the whole or any part of the amount or amounts to be paid to the Contractor by reason of the termination under this clause, which amount or amounts may include any reasonable cancellation charges thereby incurred by the Contractor and any reasonable loss upon outstanding commitments for personal services which he or she is unable to cancel; provided, however, that in connection with any outstanding commitments for personal services which the Contractor is unable to cancel, the Contractor shall have exercised reasonable diligence to divert such commitments to other activities and operations. Any such agreement shall be embodied in an Amendment to this Contract and the Contractor shall be paid the agreed amount.

The State may from time to time, under such terms and conditions as it may prescribe, make partial payments against costs incurred by the Contractor in connection with the termination portion of this Contract, whenever, in the opinion of the Principal Representative, the aggregate of such payments is within the amount to which the Contractor will be entitled hereunder.

The Contractor agrees to transfer title and deliver to the State, in the manner, at the time, and to the extent, if any, directed by the Principal Representative, such information and items which, if the Contract had been completed, would have been required to be furnished to the State, including:

- a. completed or partially completed plans, Drawings and information; and,
- b. materials or equipment produced or in process or acquired in connection with the performance of the Work terminated by the Notice.

Other than the above, any termination inventory resulting from the termination of the Contract may, with written approval of the Principal Representative, be sold or acquired by the Contractor under the conditions prescribed by and at a price or prices approved by the Principal Representative. The proceeds of any such disposition shall be applied in reduction of any payments to be made by the State to the Contractor under this Contract or shall otherwise be credited to the price or cost of Work covered by this Contract or paid in such other manners as the Principal Representative may direct. Pending final disposition of property arising from the termination, the Contractor agrees to take such action as may be necessary, or as the Principal Representative may direct, for the protection and preservation of
the property related to this Contract which is in the possession of the Contractor and in which the State has or may acquire an interest.

Any disputes as to questions of fact, which may arise hereunder, shall be subject to the Remedies provisions of the Colorado Procurement Code or the applicable procurement code for institutions of higher education.

### ARTICLE 51. CONTRACTOR'S RIGHT TO STOP WORK AND/OR TERMINATE CONTRACT

If the Work shall be stopped under an order of any court or other public authority for a period of three (3) months through no act or fault of the Contractor or of any one employed by him, then the Contractor may on seven (7) days' written Notice to the Principal Representative and the Architect/Engineer stop Work or terminate this Contract and recover from the Principal Representative payment for all Work executed, any losses sustained on any plant or material, and a reasonable profit only for the Work completed. If the Architect/Engineer shall fail to issue or otherwise act in writing upon any certificate for payment within ten (10) days after it is presented and received by the Architect/Engineer, as provided in Article 31, Applications For Payments, or if the Principal Representative shall fail to pay the Contractor any sum certified that is not disputed in whole or in part by the Principal Representative in writing to the Contractor and the Architect/Engineer within thirty (30) days after the Architect/Engineer's certification, then the Contractor may on ten (10) days' written Notice to the Principal Representative and the Architect/Engineer stop Work and/or give written Notice of intention to terminate this Contract.

If the Principal Representative shall thereafter fail to pay the Contractor any amount certified by the Architect/Engineer and not disputed in writing by the Principal Representative within ten (10) days after receipt of such Notice, then the Contractor may terminate this Contract and recover from the Principal Representative payment for all Work executed, any losses sustained upon any plant or materials, and a reasonable profit only for the Work completed. The Principal Representative's right to dispute an amount certified by the Architect/Engineer shall not relieve the Principal Representative of the obligation to pay amounts not in dispute as certified by the Architect/Engineer.

# ARTICLE 52. SPECIAL PROVISIONS

- A. CONTROLLER'S APPROVAL C.R.S. § 24-30-202(1) This contract shall not be valid until it has been approved by the Colorado State Controller or designee.
- B. FUND AVAILABILITY C.R.S. § 24-30-202(5.5) Financial obligations of the State payable after the current fiscal year are contingent upon funds for that purpose being appropriated, budgeted, and otherwise made available.
- C. GOVERNMENTAL IMMUNITY

Liability for claims for injuries to persons or property arising from the negligence of the State, its departments, boards, commissions committees, bureaus, offices, employees and officials shall be controlled and limited by the provisions of the Colorado Governmental Immunity Act, C.R.S. § 24-10-101 et seq.; the Federal Tort Claims Act, 28 U.S.C. Pt. VI, Ch. 171 and 28 U.S.C. 1346(b), and the State's risk management statutes, §§24-30-1501, et seq. C.R.S. No term or condition of this contract shall be construed or interpreted as a waiver, express or implied, of any of the immunities, rights, benefits, protections, or other provisions, contained in these statutes.

#### D. INDEPENDENT CONTRACTOR

Contractor shall perform its duties hereunder as an independent contractor and not as an employee. Neither Contractor nor any agent or employee of Contractor shall be deemed to be an agent or employee of the State. Contractor shall not have authorization, express or implied, to bind the State to any agreement, liability, or understanding, except as expressly set forth herein. Contractor and its employees and agents are not entitled to unemployment insurance or workers compensation benefits through the State and the State shall not pay for or otherwise provide such coverage for Contractor or any of its agents or employees. Contractor shall pay when due all applicable employment taxes and income taxes and local head taxes incurred pursuant to this contract. Contractor shall (a) provide and keep in force workers' compensation and

unemployment compensation insurance in the amounts required by law, (b) provide proof thereof when requested by the State, and (c) be solely responsible for its acts and those of its employees and agents.

### E. COMPLIANCE WITH LAW

Contractor shall comply with all applicable federal and State laws, rules, and regulations in effect or hereafter established, including, without limitation, laws applicable to discrimination and unfair employment practices.

### F. CHOICE OF LAW, JURISDICTION, AND VENUE

Colorado law, and rules and regulations issued pursuant thereto, shall be applied in the interpretation, execution, and enforcement of this Contract. Any provision included or incorporated herein by reference which conflicts with said laws, rules, and regulations shall be null and void. All suits or actions related to this Contract shall be filed and proceedings held in the State of Colorado and exclusive venue shall be in the City and County of Denver.

#### G. PROHIBITED TERMS

Any term included in this Contract that requires the State to indemnify or hold Contractor harmless; requires the State to agree to binding arbitration; limits Contractor's liability for damages resulting from death, bodily injury, or damage to tangible property; or that conflicts with this provision in any way shall be void ab initio. Nothing in this Contract shall be construed as a waiver of any provision of C.R.S. §24-106-109. Any term included in this Contract that limits Contractor's liability that is not void under this section shall apply only in excess of any insurance to be maintained under this Contract, and no insurance policy shall be interpreted as being subject to any limitations of liability of this Contract.

### H. SOFTWARE PIRACY PROHIBITION.

State or other public funds payable under this Contract shall not be used for the acquisition, operation, or maintenance of computer software in violation of federal copyright laws or applicable licensing restrictions. Contractor hereby certifies and warrants that, during the term of this Contract and any extensions, Contractor has and shall maintain in place appropriate systems and controls to prevent such improper use of public funds. If the State determines that Contractor is in violation of this provision, the State may exercise any remedy available at law or in equity or under this Contract, including, without limitation, immediate termination of this contract and any remedy consistent with federal copyright laws or applicable licensing restrictions.

### I. EMPLOYEE FINANCIAL INTEREST/CONFLICT OF INTEREST C.R.S. § 24-18-201 & C.R.S. § 24-50-507

The signatories aver that to their knowledge, no employee of the State has any personal or beneficial interest whatsoever in the service or property described in this contract. Contractor has no interest and shall not acquire any interest, direct or indirect, that would conflict in any manner or degree with the performance of Contractor's services and Contractor shall not employ any person having such known interests.

#### J. VENDOR OFFSET AND ERRONEOUS PAYMENTS C.R.S. § 24-30-202(1) & C.R.S. § 24-30-202.4 The State Controller may withhold payment under the State's vendor offset intercept system for debts owed to State Agencies for: (a) unpaid child support debts or child support arrearages; (b) unpaid balances of tax, accrued interest, or other charges specified in §39-21-101, et seq. C.R.S.; (c) unpaid loans due to the Student Loan Division of the Department of Higher Education; (d) amounts required to be paid to the Unemployment Compensation Fund; and (e) other unpaid debts owing to the State as a result of final agency determination or judicial action. The State may also recover, at the State's discretion, payments made to Contractor in error for any reason, including, but not limited to, overpayments or improper payments, and unexpended or excess funds received by Contractor by deduction from subsequent payments under this Contract, deduction from any payment due under any other contracts, grants or agreements between the State and Contractor, or by any other appropriate method for collecting debts owed to the State.

- K. PUBLIC CONTRACTS FOR SERVICES. C.R.S. § 8-17.5-101.
  - Contractor certifies, warrants, and agrees that it does not knowingly employ or contract with an illegal alien who will perform work under this Contract and will confirm the employment eligibility of all employees who are newly hired for employment in the United States to perform work under this contract, through participation in the E-Verify Program or the Department program established pursuant to C.R.S. § 8-17.5-102(5)(c), Contractor shall not knowingly employ or contract with an illegal alien to perform work under this Contract or enter into a contract with a subcontractor that fails to certify to Contractor that the subcontractor shall not knowingly employ or contract with an illegal alien to perform work under this Contract. Contractor (a) shall not use E-Verify Program or Department program procedures to undertake pre-employment screening of job applicants while this Contract is being performed, (b) shall notify the subcontractor and the contracting State Agency within three days if Contractor has actual knowledge that a subcontractor is employing or contracting with an illegal alien for work under this Contract, (c) shall terminate the subcontract if a subcontractor does not stop employing or contracting with the illegal alien within three days of receiving the notice, and (d) shall comply with reasonable requests made in the course of an investigation, undertaken pursuant to C.R.S. § 8-17.5-102(5), by the Colorado Department of Labor and Employment. If Contractor participates in the Department program, Contractor shall deliver to the contracting State Agency, Institution of Higher Education or political subdivision a written, notarized affirmation, affirming that Contractor has examined the legal work status of such employee, and shall comply with all of the other requirements of the Department program. If Contractor fails to comply with any requirement of this provision or C.R.S.§ 8-17.5-101 et seq., the contracting State Agency, Institution of Higher Education or political subdivision may terminate this Contract for breach and, if so terminated, Contractor shall be liable for damages.

# L. PUBLIC CONTRACTS WITH NATURAL PERSONS. C.R.S. § 24-76.5-101.

Contractor, if a natural person eighteen (18) years of age or older, hereby swears and affirms under penalty of perjury that Contractor (a) is a citizen or otherwise lawfully present in the United States pursuant to federal law, (b) shall comply with the provisions of C.R.S. § 24-76.5-101 et seq., and (c) has produced one form of identification required by C.R.S. § 24-76.5-103 prior to the effective date of this Contract.

# ARTICLE 53. MISCELLANEOUS PROVISIONS

# A. CONSTRUCTION OF LANGUAGE

The language used in these General Conditions shall be construed as a whole according to its plain meaning, and not strictly for or against any party. Such construction shall, however, construe language to interpret the intent of the parties giving due consideration to the order of precedence noted in Article 2C, Intent of Documents.

# B. SEVERABILITY

Provided this Agreement can be executed and performance of the obligations of the Parties accomplished within its intent, the provisions hereof are severable and any provision that is declared invalid or becomes inoperable for any reason shall not affect the validity of any other provision hereof, provided that the Parties can continue to perform their obligations under this Agreement in accordance with its intent.

# C. SECTION HEADINGS

The captions and headings in this Agreement are for convenience of reference only, and shall not be used to interpret, define, or limit its provisions.

# D. AUTHORITY

Each person executing the Agreement and its Exhibits in a representative capacity expressly represents and warrants that he or she has been duly authorized by one of the parties to execute the Agreement and has authority to bind said party to the terms and conditions hereof.

# E. INTEGRATION OF UNDERSTANDING

This Contract is intended as the complete integration of all understandings between the parties and supersedes all prior negotiations, representations, or agreements, whether written or oral. No prior or contemporaneous addition, deletion, or other amendment hereto shall have any force or affect whatsoever, unless embodied herein in writing. No subsequent novation, renewal, addition, deletion, or other amendment hereto shall have any force or effect unless embodied in a written Change Order or Amendment to this Contract.

# F. NO THIRD PARTY BENEFICIARIES

Enforcement of this Agreement and all rights and obligations hereunder are reserved solely to the Parties. Any services or benefits which third parties receive as a result of this Contract are incidental to the Contract, and do not create any rights for such third parties.

# G. WAIVER

Waiver of any breach under a term, provision, or requirement of this Agreement, or any right or remedy hereunder, whether explicitly or by lack of enforcement, shall not be construed or deemed as a waiver of any subsequent breach of such term, provision or requirement, or of any other term, provision, or requirement.

### H. INDEMNIFICATION

Contractor shall indemnify, save, and hold harmless the State, its employees and agents, against any and all claims, damages, liability and court awards including costs, expenses, and attorney fees, to the extent such claims are caused by any negligent act or omission of the Contractor, its employees, agents, subcontractors or assignees pursuant to the terms of this Contract, but not to the extent such claims are caused by any negligent act or omission of, or breach of contract by, the State, its employees, agents, other contractors or assignees, or other parties not under control of or responsible to the Contractor.

# I. STATEWIDE CONTRACT MANAGEMENT SYSTEM

If the maximum amount payable to Contractor under this Contract is \$100,000 or greater, either on the Effective Date or at anytime thereafter, this shall apply. Contractor agrees to be governed by and comply with the Colorado Procurement Code or the applicable procurement code for institutions of higher education, regarding the monitoring of vendor performance and the reporting of contract performance information in the State's contract management system ("Contract Management System" or "CMS"). Contractor performance shall be subject to evaluation and review in accordance with the terms and conditions of this Contract, Colorado statutes governing CMS, and State Fiscal Rules and State Controller policies.

# J. CORA DISCLOSURE

To the extent not prohibited by federal law, this Agreement and the performance measures and standards under the Colorado Procurement Code or the applicable procurement code for institutions of higher education, if any, are subject to public release through the Colorado Open Records Act, C.R.S. § 24-72-201, et seq.



6 N I

# STATE OF COLORADO OFFICE OF THE STATE ARCHITECT STATE BUILDINGS PROGRAM

# NOTICE TO PROCEED (DESIGN/BID/BUILD CONTRACT)

Date of Notice:	
	Date to be inserted by the Principal Representative
Date/Description of	Contract Documents:
Institution/Agency:	
Project No./Name:	

Attach Notice of Code Compliance from Code Review Agent/Building Official for Documents Listed Above

To:

This is to advise you that your Performance Bond, Labor and Material Payment Bond, Insurance Policy and Certificates of Insurance, and Affidavit Regarding Unauthorized Immigrants have been received. Our issuance of this Notice does not relieve you of responsibility to assure that the bond and insurance requirements of the Contract Documents are met for the duration of the Agreement. The Agreement dated \_\_\_\_\_\_ covering the above described work has been fully executed.

You are hereby authorized and directed to proceed within ten (10) days from date of this Notice as required in the Agreement. Any liquidated damages for failure to achieve Substantial Completion by the date agreed that may be applicable to this Contract will be calculated using the date of this Notice for the date of the commencement of the Work.

#### The total completion date (including close-out) of the Project is \_\_\_\_\_ (M/D/YYYY).

By

State Buildings Program (or Authorized Delegate)

Date

By \_\_\_\_\_ Principal Representative (Institution or Agency)

Date

When completely executed, this form is to be sent by <u>certified mail</u> to the Contractor by the Principal Representative; or delivered by any other means to which the parties agree.



# STATE OF COLORADO OFFICE OF THE STATE ARCHITECT STATE BUILDINGS PROGRAM

# CHANGE ORDER BULLETIN

Change Order Bulletin No:	Date
Contractor:	
Institution or Agency:	
Project No./Name:	
Description of Work:	
Description of Work:	

This bulletin is issued to define the scope of revision in drawings and/or specifications for a contemplated change order. The work called for by these revisions shall be in accordance with the requirements of the original contract documents.

Please prepare and submit a proposal for the changes described below. For pricing use State Form SC-6.312. A formal change order State Form SC-6.31 will be issued after approval of your proposal by State Buildings Program and the Architect. Your proposal shall include a statement as to the effect this change will have on the time for completion of the project.

This bulletin is **NOT** an authorization to proceed.

DESCRIPTION OF CHANGE:

SPECIFICATION REVISIONS:

STATUS OF EXISTING WORK:

PREPARED BY:

ARCHITECT/ENGINEER OR CONTRACTOR

APPROVED BY:

STATE BUILDINGS PROGRAM (or Authorized Delegate)



STATE OF COLORADO OFFICE OF THE STATE ARCHITECT STATE BUILDINGS PROGRAMS

* 1876	CHANGE ORDER PROPOSAL	(enter information ONLY in YELLOW	(ED cells)
Change Or	der Proposal No Date	Change Order Bulletin No: Description of Work: (enter into text box)	Date <mark></mark>
Contractor			
Institution or	r Agency		
Project No./N	lame	L	İ
PART I -	(Before completing this WORK PERFORMED BY CONTRACTOR	s form, read instructions on reverse side.)	
Line 1.	Direct Labor Costs	\$	
Line 2.	Labor Overhead (Direct Labor Burdens)	x Line 1) \$ 0.00	
Line 3.	Total Contractor's Labor Costs (Lines 1 and 2)	\$0.	00
Line 4.	Direct Materials Costs	\$	
Line 5.	Materials Overhead (Delivery Costs & Taxes)	_ x Line 4)\$0.00	00
Line 6.	Total Materials Costs (Lines 4 and 5)	\$	00
Line 8	PART L- TOTAL CONTRACTOR'S L. M & E COSTS (Lin	●	\$ 0.00
PART II -	WORK PERFORMED BY SUBCONTRACTOR		φ 0.00
Line 9.	Direct Labor Costs	\$	
Line 10.	Labor Overhead (Direct Labor Burdens) (	x Line 9) \$ 0.00	
Line 11.	Total Subcontractor's Labor Costs (Lines 9 and 10)	\$\$	00
Line 12.	Direct Materials Costs		
Line 13.	Materials Overhead (Delivery Costs & Taxes)	x Line 12)\$0.00	
Line 14.	Total Subcontractor's Materials Costs (Lines 12 and 13)	\$0.	00
Line 15.	Total Subcontractor's Equipment Costs	\$	00
Line 10.	Subcontractor's Overhead (Indirect Costs) (10.0%	)⊅ ↓ino.16)	00
Line 17.	Subcontractor's Profit (on line 16) Addition or Deduc	\$ 0.00	
Line 19.	PART II - TOTAL SUBCONTRACTOR'S COSTS (Lines 1	6. 17 and 18)	\$ 0.00
PART III -	CONTRACTOR'S OVERHEAD & PROFIT		·
Line 20.	Contractor's Overhead (Indirect Costs) (10.0%	x Part I Total) \$ 0.00	
Line 21.	Contractor's Profit (5.0%	x Part I Total) \$ 0.00	
Line 22.	PART III - TOTAL CONTRACTOR OVERHEAD & PROFI	IT (Lines 20 and 21) Part III	\$ 0.00
PART IV -	CONTRACTOR'S MARKUP ON SUBCONTRACTOR		
Line 23.	Contractor's Commission on Subcontractor ( 5.0%	$\Rightarrow$ x Part II Total) $\Rightarrow$ 0.00	
Line 24. Line 25		p = 0.00	\$ 0.00
PART V -	SUBTOTAL C.O. PROPOSAL (Parts I and II and III and	IV) Part V (sub	ototal) \$ 0.00
PART VI -	CONTRACTOR'S BOND COST	x Part V Total) Part VI	\$ 0.00
PART VII -	GRAND TOTAL CHANGE ORDER PROPOSAL (Sum of	Totals: Parts V and VI) Grand To	tal \$ 0.00
PART VIII -	CONTRACT TIME (CALENDAR DAYS CHANGED)	EXTENDED NO CHANGE REDUCE	D Davs
	THE TIME OF COMPLETION MAY CHANGE BY THE C	CALENDAR DAYS INDICATED (ABOVE) FROM TH	E TOTAL NUMBER OF
	DAYS LISTED IN THE CONTRACTOR	'S AGREEMENT TO COMPLETE THE ENTIRE PR	OJECT.
CONTRACT	OR'S CERTIFICATE:	ARCHITECT/ENGINEER'S CERTIFICATE:	ad find to the best of my
cost/price d	ating trial, to the best of my knowledge and belief, the	knowledge and belief that the proposal represents of	surrent fair factual and
are accurate	e. complete and current as of	competitive cost/price data.	
	·, · · · · · · · · · · · · · · · · · ·		
Firm:		_ Firm:	
Name & title	2	Name & title:	
Signature:		Signature:	
*Date:		_ Date:	
The propos	sai shali remain in tuli force and effect for a period of Ca	ienual uays from date of signature.	

STATE BUILDINGS PROGRAMS (or Authorized Delegate)

#### INSTRUCTIONS FOR COMPLETING "CHANGE ORDER PROPOSAL" COST/PRICE DATA SUMMARY (STATE FORM SC-6.312) (enter information only in YELLOWED cells)

Enter Change Order Proposal Number, Date Created, Contractor's Name, Agency/Institution, State Project Number and Name. REFERENCE: Enter Change Order Bulletin Number, Date Issued, and Description of Changes from Bulletin, noting exceptions which are listed in the Bulletin but are excluded, i.e., not priced on this form.

#### PART I - WORK PERFORMED BY CONTRACTOR:

Line 1. Direct Labor Costs: Fill in subtotal of direct labor costs which includes base rates plus applicable fringe benefits. On Contractor's (or Sub's) letterhead show costs as follows:



Line 2. Labor Overhead (Direct Labor Burdens, etc.): Enter percentage (as submitted in Schedule of Values) of Line 1 as applicable. (Spreac Line 3. Total Contractor's Labor Costs: Total of Lines 1 and 2. (Spreadsheet calculates the total)

Line 4. Direct Material Cost: Support with quotes or invoices. Fill in subtotal of direct materials costs.



Line 5. Materials Overhead (Delivery, taxes, insurance, etc. - as mutually agreed upon at contract signing): Enter percentage as applicable. (Spreadsheet calculates the value)

Line 6. Total Contractor's Material Costs: Total of Lines 4 and 5. (Spreadsheet calculates the total)

Line 7. Total Contractor's Equipment Costs: Enter total equipment costs including indirect overhead costs in hourly rate - except indirect labor costs. On Contractor's letterhead show total equipment costs as follows:



Line 8. TOTAL CONTRACTOR'S Labor, Materials & Equipment (L, M & E) Costs: Add Lines 3, 6 and 7 of Part I. (Spreadsheet form calculates totals)

#### PART II - WORK PERFORMED BY SUBCONTRACTOR:

Line 9. Direct Labor Costs: See Line 1 instructions.

Line 10. Labor Overhead (Direct Labor Burdens, etc.): Enter percentage (as submitted in Schedule of Values) of Line 9 as applicable. (Spreadsheet calculates the value)

- Line 11. Total Contractor's Labor Costs: Total of Lines 9 and 10. (Spreadsheet calculates the total)
- Line 12. Direct Material Cost: See Line 4 instructions.
- Line 13. Materials Overhead (Delivery, taxes, insurance, etc.) Enter percentage as applicable. (Spreadsheet calculates the value)
- Line 14. Total Subcontractor's Material Costs: Total of Lines 12 and 13. (Spreadsheet calculates the total)
- Line 15. Total Subcontractor's Equipment Costs: See Line 7 instructions.
- Line 16. TOTAL SUBCONTRACTOR'S Labor, Materials & Equipment (L, M & E) Costs: Add Lines 11, 14 and 15 of Part II.
- Line 17. Subcontractor's Overhead (Indirect costs). Edit percentage of Line 16 if applicable See Article 35 of General Conditions.
- Line 18. Subcontractor's Profit: Enter a "1" in appropriate cell. For an addition, Edit E37, a deduct, Edit I37, See Article 35 General Condition
- Line 19. TOTAL SUBCONTRACTOR'S Labor, Materials & Equipment (L, M & E) Costs: Add Lines 16, 17 and 18 of Part II.

#### PARTS III THROUGH VIII - CERTIFICATIONS - Self Explanatory.

- Part 3. Edit percentages for Line 20 or 21 if applicable. See Article 35 of General Conditions.
- Part 4. Line 23, Edit percentages applicable to Line 18. See Article 35 of General Conditions.
- Part 4. Line 24, Enter a "1" in appropriate cell. For an addition, edit E45, a deduct edit I45. See Article 35 of General Conditions.
- Part 5. SUBTOTAL OF CHANGE ORDER PROPOSAL (sum of lines 8, 19, 22, and 25 applicable)
- Part 6. Contractor's Bond Cost: Enter percentage value of Part 5 as applicable. (spreadsheet calculates the value)
- Part 7. GRAND TOTAL OF THE CHANGE ORDER PROPOSAL. (spreadsheet calculates the sum of parts 5 and 6)
- Part 8. Contract time change. Place an "X" in appropriate cell and edit the cell to indicate the number of days changed.

A. The Contractor, who prepares this proposal form, certifies the cost/price data by signing, dating, and forwarding same to the Architect/Engineer (or Consultant) for further action.

B. The Architect/Engineer (or Consultant) reviews and analyzes the cost/price data for the requirements that these are: 1) currently prevalent, 2) reasonably fair, 3) factually applicable, and 4) equivalently competitive market selling prices. The Architect/Engineer (or Consultant) may negotiate - after receipt of the cost proposal - any or all of the cost elements of the proposal to support a recommendation of acceptance to the Principal Representative. Certification by the A/E (or Consultant) of the above requirements is made upon his signature. The Architect/Engineer (or Consultant) forwards the proposal with the supporting back-up to the Agency.

C. Authority for the Institution or Agency (usually the Principal Representative) reviews the proposal, signs, dates, and forwards to Office of the State Architect for final action.

D. State Buildings Division reviews the cost proposal, with all supporting back-up, for technical and procedural requirements and, if in order, signs and dates the proposal.



# STATE OF COLORADO OFFICE OF THE STATE ARCHITECT STATE BUILDINGS PROGRAM

# EMERGENCY FIELD CHANGE ORDER

Emergency Field Change Order No:	Contract ID No.	Date
Contractor:		
Institution or Agency:		
Project No./Name:		

Your Emergency Field Change Order Proposal(s), dated \_\_\_\_\_\_ is hereby being designated for approval of the following work:

(Note: If more space is needed for description of work, attach additional 8-1/2" x 11" sheets hereto.)

This change order was originated by the Contractor , Architect/Engineer , State , and I/We do hereby recommend acceptance and approval of the change to the Contractor's Agreement Dated \_\_\_\_\_ which is by this reference, made a part hereof, and identified as Exhibit \_\_\_\_\_ with an increase , a decrease , no change , of \_\_\_\_\_.

The Time of Completion is extended \_\_\_\_\_ calendar days \_\_\_, is unchanged \_\_\_, Is reduced \_\_\_, calendar days, from the total number of days listed in the Contractor's Agreement to complete the entire Project. The revised total number of days to complete the entire Project aggregating this Change Order and previously approved Change Order(s) per the Summary of Changes chart below, is \_\_\_\_\_ calendar days. If the completion date was extended or reduced, the new completion date of the Project is \_\_\_\_\_ (M/D/YYYY).

	SUMMARY OF CHANGES				
		Time of Completion/			
	Description of Work/Date	Extended/Reduced	Dollar Amounts		
Original Contract					
Change Order #1					
Change Order #2					
Current Totals					

\*Persons signing for Architect/Engineer/Contractor hereby swear and affirm that they are authorized to act on Architect/Engineer/Contractor's behalf and acknowledge that the State is relying on their representations to that effect. **Principal is not a recognized title and will not be accepted.** 

Architect/Engineer Firm Name and Title (print)			Date
	Signature		
Contractor (Name of Firm) Name and Title (print			Date
	Signature		
Institution or Agency	Name and Title (print)	Principal Representative (Signature)	Date
CONTRACT STATUS			
Original Contract Value			
Previous increases by CO/Amend		STATE BUILDINGS PROGRAM (or Authorized Delegate)	DATE
Previous decreases by CO/Amend			
Value After Prior CO's/Amend This CO/Amend		NOT REQUIRED PER GENERAL CONDITIONS	
		STATE CONTROLLER (or Authorized Delegate)	DATE
CURRENT CONTRACT VALUE		(Verification)	



# STATE OF COLORADO OFFICE OF THE STATE ARCHITECT STATE BUILDINGS PROGRAM

# CHANGE ORDER

Change Order No:	Contract ID No.	Date
Contractor:		
Institution or Agency:		
Project No./Name:		

Your Change Order Proposal(s), dated \_\_\_\_\_\_ is hereby being designated for approval of the following work:

(Note: If more space is needed for description of work, attach additional 8-1/2" x 11" sheets hereto.)

This change order was originated by the Contractor , Architect/Engineer , State , and I/We do hereby recommend acceptance and approval of the change to the Contractor's Agreement Dated \_\_\_\_\_ which is by this reference, made a part hereof, and identified as Exhibit \_\_\_\_ with an increase , a decrease , no change , of \_\_\_\_.

The Time of Completion is extended \_\_\_\_\_\_ calendar days \_\_\_\_, is unchanged \_\_\_\_, is reduced \_\_\_\_\_ calendar days, from the total number of days listed in the Contractor's Agreement to complete the entire Project. The revised total number of days to complete the entire Project aggregating this Change Order and previously approved Change Order(s) per the Summary of Changes chart below, is \_\_\_\_\_\_ calendar days. If the completion date was extended or reduced, the new completion date of the Project is \_\_\_\_\_\_ (M/D/YYYY).

	SUMMARY OF CHANGES			
	Description of Work/Date	Time of Completion/ Calendar Days Extended/Reduced	Dollar Amounts	
Original Contract				
Change Order #1				
Change Order #2				
Current Totals				

\*Persons signing for Architect/Engineer/Contractor hereby swear and affirm that they are authorized to act on Architect/Engineer/Contractor's behalf and acknowledge that the State is relying on their representations to that effect. **Principal is not a recognized title and will not be accepted.** 

Architect/Engineer Firm Name and Title (print)			Date
	Signature		
Contractor (Name of Firm) Name and Title (print)			Date
	Signature		
Institution or Agency Name and Title (prin		Principal Representative (Signature)	Date
CONTRACT STATUS			
Original Contract Value			
Previous increases by CO/Amend		(or Authorized Delegate)	DATE
Previous decreases by CO/Amend			
Value After Prior CO's/Amend This CO/Amend			
Increases Decreases		STATE CONTROLLER (or Authorized Delegate)	DATE
CURRENT CONTRACT VALUE		(Verification)	



# STATE OF COLORADO OFFICE OF THE STATE ARCHITECT STATE BUILDINGS PROGRAM

# NOTICE OF SUBSTANTIAL COMPLETION

Date of Substantial Completion:

Date to be inserted by the Principal Representative

TO:

**Principal Representative** 

and

Contractor

This is to advise you that the Work has been reviewed, inspected and determined, to the best knowledge, information and belief of the Architect/Engineer, to be substantially complete as of the date noted above in accordance with the criteria outlined in Article 41 of The General Conditions of the Contract in SC-6.23 and SC-8.1 or Article 17.3 in SC-6.4 and the Specifications, including without limitation a) suitable for occupancy, b) inspected for code compliance with Building Inspection Records signed by code officials for the State, c) determined to be fully and comfortably usable, and d) fully cleaned and appropriate for presentation to the public.

A punch list of work to be completed, work not in compliance with the Drawings or Specifications, and unsatisfactory work is attached hereto, along with the Contractor's schedule for the completion of each and every item identified on the punch list specifying the Subcontractor or trade responsible for the work, and the dates the completion or correction will be commenced and finished within any period indicated in the Agreement for punch list completion prior to Final Acceptance.

Except as stated on the reverse side of this Notice of Substantial Completion, all manufacturers' warranties, other special warranties and the Contractor's one-year obligation to perform remedial work, shall commence on the Date of Substantial Completion noted above.

This Notice of Substantial Completion shall be effective and establish the Date of Substantial Completion only when fully executed by the Contractor and the Principal Representative. The Principal Representative accepts the Work as substantially complete as of the Date of Substantial Completion herein noted. The Contractor agrees to complete or correct the Work identified on the attached punch list and to do so in accordance with attached punch list completion schedule

Architect/Engineer	Date	Contractor	Date
State Buildings Program	Date	Principal Representative	Date

(or Authorized Delegate)

(Institution or Agency)

The responsibilities of the Principal Representative and the Contractor for security, maintenance, heat, utilities, and insurance shall be as specified in the Contract Documents or as otherwise hereafter noted:

Exceptions, if any, to the commencement of warranties shall be:

The attached final punch list consists of \_\_\_\_\_\_ pages, and the attached Contractor's schedule showing the dates of commencement and completion of each punch list item consists of \_\_\_\_\_\_ pages.

When completely executed, this form shall be sent to the Contractor and the Principal Representative with a copy to State Buildings Program.



# STATE OF COLORADO OFFICE OF THE STATE ARCHITECT STATE BUILDINGS PROGRAMS

# PRE-ACCEPTANCE CHECKLIST\*

Institution or Agency:	Final Punch List Date
Architect/Engineer:	
Contractor:	
Project No./Name:	

After Contractor is satisfied that work is complete as per Notice of Substantial Completion Punch List, a date for final review is established. Architect/Engineer inspection is made with Contractor(s) and Principal Representative and State Buildings Programs (SBP) present. Forms are processed as required.

		DATE COMPLETED	A/E SIGNOFF	REMARKS
1.	The Notice of Approval of Occupancy/Use has been fully executed.			
2.	Schedule for corrections, deficiencies, and items to be supplied are established by Contractor.			
3.	Final Change Orders are processed (work must be completed prior to Notice of Acceptance).			
4.	Punch list work is completed and accepted			
5.	Permanent keying, keys and keying instructions have been performed.			
6.	Extra materials as per specifications are delivered to Principal Representative.			
7.	As-built drawings have been submitted to Architect/Engineer.			
8.	Guarantee/Warranty documentation requirements are met.			
9.	Five Most Costly Goods form is completed by Contractor and received			
10.	Removal of Contractor's temporary work including cleanup and debris removal.			
11.	State personnel are instructed in system and equipment operations as required by contract.			
12.	All Instructions, manuals, guides, and charts have been transmitted to Principal Representative.			

Architect/Engineer

Date

Contractor

Date

State Buildings Programs (or Authorized Delegate)

Date

Principal Representative (Institution or Agency)

Date



# STATE OF COLORADO OFFICE OF THE STATE ARCHITECT STATE BUILDINGS PROGRAM

# NOTICE OF FINAL ACCEPTANCE

Date of Notice of Acceptance:	
	Date to be inserted by A/E after consultation with the Principal Representative
Institution/Agency:	
Project No./Name:	

TO:

Notice is hereby given that the State of Colorado, acting by and through the \_\_\_\_\_\_ accepts as complete\* the above numbered project.

State Buildings Program (or Authorized Delegate) Date

Principal Representative (Institution or Agency) Date

\*When completely executed, this form is to be sent by <u>certified mail</u> to the Contractor by the Principal Representative or delivered by any other means to which the parties agree.



# STATE OF COLORADO OFFICE OF THE STATE ARCHITECT STATE BUILDINGS PROGRAM

# NOTICE OF CONTRACTOR'S SETTLEMENT

Institution/Agency:	
Notice Number:	
Project No./Title:	

Notice is hereby given that on <u>date</u> at <u>address</u> Colorado, final settlement will be made by the STATE OF COLORADO with <u>vendor name</u>, hereinafter called the "CONTRACTOR", for and on account of the contract for the construction of a PROJECT as referenced above.

- Any person, co-partnership, association or corporation who has an unpaid claim against the said project, for or on account of the furnishing of labor, materials, team hire, sustenance, provisions, provender, rental machinery, tools. or equipment and other supplies used or consumed by such Contractor or any of his subcontractors In or about the performance of said work, may at any time up to and including said time of such final settlement, file a verified statement of the amount due and unpaid on account of such claim
- 2. All such claims shall be filed with the Authority for College, Institution, Department or Agency.
- 3. Failure on the part of a creditor to file such statement prior to such final settlement will relieve the State of Colorado from any and all liability for such claim

#### Authorized Facility Manager or Authorized Individual

Name:	
Approval Date:	
Agency:	
Phone:	
Fax:	
Email:	

#### **MEDIA OF PUBLICATION:**

# PUBLICATION DATES:

First:

Second:

(At least ten (10) days prior to above settlement date)

#### NOTES TO EDITOR:

Transmit two (2) copies of the Affidavit of Publication, and invoice, to:

# SECTION 002600- PROCUREMENT SUBSTITUTION PROCEDURES

### PART 1- Procurement Substitution Procedures

### 1.1 DEFINITIONS

- A. Procurement Substitution Requests: Requests for changes in products, materials, equipment, and methods of construction from those indicated in the Procurement and Contracting Documents, submitted prior to receipt of bids.
- B. Substitution Requests: Requests for changes in products, materials, equipment, and methods of construction from those indicated in the Contract Documents, submitted following Contract award. See Section 012500 "Substitution Procedures" for conditions under which Substitution requests will be considered following Contract award.

### 1.2 PROCUREMENT SUBSTITUTIONS

- A. Procurement Substitutions, General: By submitting a bid, the Bidder represents that its bid is based on materials and equipment described in the Procurement and Contracting Documents, including Addenda. Bidders are encouraged to request approval of qualifying substitute materials and equipment when the Specifications Sections list materials and equipment by product or manufacturer name.
- B. Procurement Substitution Requests will be received and considered by Owner when the following conditions are satisfied, as determined by Architect; otherwise requests will be returned without action:
  - 1. Extensive revisions to the Contract Documents are not required.
  - 2. Proposed changes are in keeping with the general intent of the Contract Documents, including the level of quality of the Work represented by the requirements therein.
  - 3. The request is fully documented and properly submitted.

#### 1.3 SUBMITTALS

- A. Procurement Substitution Request: Submit to Architect. Procurement Substitution Request must be made in writing in compliance with the following requirements:
  - 1. Requests for substitution of materials and equipment will be considered if received no later than 10 days prior to date of bid opening.
  - 2. Submittal Format: Submit electronic copy of Procurement Substitution Request, using CSI Substitution Request Form 1.5C, or included substitution request form.
    - a. Identify the product or the fabrication or installation method to be replaced in each request. Include related Specifications Sections and drawing numbers.
    - b. Provide complete documentation on both the product specified and the proposed substitute, including the following information as appropriate:
      - 1) Point-by-point comparison of specified and proposed substitute product data, fabrication drawings, and installation procedures.
      - 2) Copies of current, independent third-party test data of salient product or system characteristics.
      - 3) Samples where applicable or when requested by Architect.

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- 4) Detailed comparison of significant qualities of the proposed substitute with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
- 5) Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
- 6) Research reports, where applicable, evidencing compliance with building code in effect for Project, from ICC-ES.
- 7) Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors which will become necessary to accommodate the proposed substitute.
- c. Provide certification by manufacturer that the substitute proposed is equal to or superior to that required by the Procurement and Contracting Documents, and that its in-place performance will be equal to or superior to the product or equipment specified in the application indicated.
- d. Bidder, in submitting the Procurement Substitution Request, waives the right to additional payment or an extension of Contract Time because of the failure of the substitute to perform as represented in the Procurement Substitution Request.
- B. Architect's Action:
  - 1. Architect may request additional information or documentation necessary for evaluation of the Procurement Substitution Request. Architect will notify all bidders of acceptance of the proposed substitute by means of an Addendum to the Procurement and Contracting Documents.
- C. Architect's approval of a substitute during bidding does not relieve Contractor of the responsibility to submit required shop drawings and to comply with all other requirements of the Contract Documents.

END OF SECTION 002600

Date:		SR No:
Project: Red Rocks Community College Fire Alarm Audio/Mass	Notification Syste	em Upgrade
То:		
From:		
CC:		
Re:		
Specification Section:	Page:	Paragraph:
PROPOSED SUBSTITUTION:		

Manufacturer & Model Number: Manufacturer Address & Phone: Point-by-point comparative data attached (Required by A/E).

Differences between proposed solution and specified product:

Similar Installation contact:

Changes required to Contract Documents:

Savings to Owner for accepting substitution: \$

Proposed substitution changes Contract Time: Adds \_\_\_\_\_days Deducts \_\_\_\_\_ days

The undersigned certifies that the proposed substitution:

- Is equal or superior in all respects to the specified product.
- Will furnish the same warranty or better than the specified product.
- Does not affect dimensions or functional clearances.
- Has spare parts and maintenance service available locally.
- Will have no adverse effect on other trades and will not delay progress schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may arise are to be waived.
- Provides compensation to the design team for changes in building design, engineering, and documentation.
- Coordination, installation, and changes in the work are complete in all respects.

Signed:

Date:

Firm:

Project Red Rocks Community College Fire Alarm Audio/Mass Notification System Upgrade SR No.:

#### ARCHITECT/ENGINEER REVIEW

The Architect has reviewed the Substitution Request in accordance with the Specifications and recommends:

Acceptance - Make submittals in accordance with Specifications.

Acceptance as noted - Make submittals in accordance with Specifications.

Resubmission - Unable to evaluate due to incomplete data.

Rejection - Use specified materials.

Rejection - Substitution Request received too late, use specified materials.

Comments:

Architect's Signature:

Date:

**OWNER'S REVIEW** 

Owner has reviewed Substitution Request and the Architect's recommendation and hereby.

Accepts this substitution

Rejects this substitution

Owner's Signature:

Date:

### SECTION 00 70 00 – CONTRACTOR'S WARRANTY

#### WARRANTY FOR

#### FIRE ALARM AUDIO / MASS NOTIFICATION UPGRADE AT Arvada Campus RED ROCKS COMMUNITY COLLEGE

We hereby warrant the materials and workmanship of the Work which we have installed at the abovenamed Project have been provided in accordance with the Contract Documents and that the Work as installed will fulfill the requirements of the warranties included in the Project Manual. We agree to repair or replace any or all our Work that may prove to be defective in its workmanship or materials within a period of two (2) years from date of final acceptance of the above-named Work, without any expense to the Owner, unusual abuse or neglect excepted.

In the event of our failure to comply with the foregoing conditions, within three business (3) days after being notified in writing by the Owner, we collectively or separately do hereby authorize the Owner or his successor in interest to proceed to have said defects repaired and made good at our expense, and we will honor and pay the costs and charges therefore upon demand.

Date of Final Acceptance of above-named Work:

Signature:

(Contractor)

Typed name and title of Company official signing above and issuing this Warranty:

Name:

Title:

Date of Signature:

END OF SECTION 00 70 00

#### SECTION 01 10 00 - SUMMARY

PART 1- GENERAL

#### **1.1 RELATED DOCUMENTS**

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

#### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Work covered by the Contract Documents.
  - 2. Type of the Contract.
  - 3. Work phases.
  - 4. Work under other contracts.
  - 5. Products ordered in advance.
  - 6. Owner-furnished products.
  - 7. Use of premises.
  - 8. Owner's occupancy requirements.
  - 9. Work restrictions.
  - 10. Specification formats and conventions.

# 1.3 WORK COVERED BY CONTRACT DOCUMENTS

- A. Project Identification: Red Rocks Community College Mass Notification System
  - 1. Project Location: Red Rocks Community College, Lakewood campus, Colorado
- B. Owner: Red Rocks Community College
- C. Architect/Engineer: Matsuo Engineering, LLC 760 Devinney Court Golden, CO 80401
- D. The Work consists of the following:

1. Project type & size: New mass notification system/modification to existing fire alarm system in existing building/campus.

- 2. Construction type & occupancy: Existing building, Group B
  - A. Contractor: To be determined.

### 1.4 TYPE OF CONTRACT

- A. State of Colorado, Office of the State Architect, State Buildings Program, Contractor's Design/Bid/Build (D/B/B) Agreement (State Form SC-6.21).
- 1.5 OWNER-FURNISHED PRODUCTS
  - A. N/A.

### 1.6 OWNER'S OCCUPANCY REQUIREMENTS

- A. The existing building shall remain operational throughout the course of the project.
  - 1. Any outages of the existing infrastructure shall be coordinated with owner. Contractor shall provide a minimum of 10 working days advance notice.

#### **1.7 SPECIFICATION FORMATS AND CONVENTIONS**

- A. Specification Format: The Specifications are organized into Divisions and Sections using the 50division format and CSI/CSC's "MasterFormat" numbering system.
  - 1. Section Identification: The Specifications use Section numbers and titles to help crossreferencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete because all available Section numbers are not used. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of Sections in the Contract Documents.
  - 2. Division 01: Sections in Division 01 govern the execution of the Work of all Sections in the Specifications.
- B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
  - Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
  - Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
     a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

PART 2- PRODUCTS (Not Used)

PART 3- EXECUTION (Not Used)

END OF SECTION 011000

# SECTION 01 26 00- CONTRACT MODIFICATION PROCEDURES

#### PART 1- GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Requirements:
  - 1. Section 002600 "Procurement Substitution Procedures" for administrative procedures for handling requests for substitutions made after the Contract award.

### 1.3 MINOR CHANGES IN THE WORK

A. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time.

### 1.4 CHANGE ORDER BULLETIN

- A. Owner-Initiated Change Order Bulletin: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
  - 1. Change Order bulletins issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
  - 2. Within 10 days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
    - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
    - c. Include costs of labor and supervision directly attributable to the change.
    - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
    - e. Quotation Form: Use Colorado State Buildings Change Order Proposal Form.
      - 1) Quotation must be submitted using the format outlined on the worksheet tab of the change order proposal.
- B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.

- 1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
- 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
- 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
- 4. Include costs of labor and supervision directly attributable to the change.
- 5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- 6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
- 7. Proposal Request Form: Use Colorado State Buildings Change Order Proposal Form.

# 1.5 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Changes Order Proposal, Architect will issue a Change Order for signatures of Architect and Contractor on Colorado State buildings Form.

# 1.6 EMERGENCY FIELD CHANGE ORDER

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

PART 2- PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 26 00

#### SECTION 012900- PAYMENT PROCEDURES

### PART 1- GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Requirements:
  - 1. Section 012600 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.

### 1.3 DEFINITIONS

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

#### 1.4 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
  - 1. Coordinate line items in the schedule of values with other required administrative forms and schedules, including the following:
    - a. Application for Payment forms with continuation sheets.
  - 2. Submit the schedule of values to Architect for approval at earliest possible date, but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
- B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
  - 1. Identification: Include the following Project identification on the schedule of values:
    - a. Project name and location.
    - b. Contractor's name and address.
    - c. Date of submittal.
  - 2. Arrange schedule of values consistent with format of Colorado State Buildings Form.
  - 3. Arrange the schedule of values in tabular form with separate columns to indicate the following for each item listed:
    - a. Related Specification Section or Division.
    - b. Description of the Work.
    - c. Name of subcontractor.

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- d. Dollar value of the following, as a percentage of the Contract Sum to nearest one- hundredth percent, adjusted to total 100 percent.
  - 1) Labor.
  - 2) Materials.
  - 3) Equipment.
- 4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with Project Manual table of contents. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
- 5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
- 6. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
  - a. Differentiate between items stored on-site and items stored off-site. For materials stored off site, include evidence of insurance, bill of sale, and schedule an inspection of the materials, see section 1.5E.
- 7. Provide separate line items in the schedule of values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
- 8. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

#### 1.5 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Owner and paid for by Owner.
  - 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.
- C. Application for Payment Forms: Use forms provided by Owner for Applications for Payment.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
  - 1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
  - Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
  - 3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.

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- 4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.
- E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.
  - 1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment, for stored materials.
  - 2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
  - 3. Provide summary documentation for stored materials indicating the following:
    - a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
    - b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
    - c. Value of materials stored since date of previous Application for Payment remaining stored as of date of current Application for Payment.
    - d. Provide photographic documentation of stored materials.
- F. Transmittal: Submit electronic signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt. One copy shall include waivers of lien and similar at-tachments if required.
  - 1. Transmit with a transmittal form listing attachments and recording appropriate information about application.
- G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
  - 1. List of subcontractors.
  - 2. Approved schedule of values.
  - 3. Contractor's construction schedule (preliminary if not final).
  - 4. Submittal schedule (preliminary if not final).
  - 5. List of Contractor's staff assignments.
  - 6. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
  - 7. Certificates of insurance and insurance policies.
  - 8. Performance and payment bonds.
  - 9. Data needed to acquire Owner's insurance.
  - 10. Preconstruction photographs.
- H. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
  - 1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
  - 2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- I. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

- 1. Evidence of completion of Project closeout requirements.
- 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
- 3. Updated final statement, accounting for final changes to the Contract Sum.
- 4. Evidence that claims have been settled.
- 5. Final liquidated damages settlement statement.

PART 2- PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

### SECTION 0140 00 - QUALITY REQUIREMENTS

#### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
  - 1. Specified tests, inspections, and related actions do not limit Contractor's other qualityassurance and -control procedures that facilitate compliance with the Contract Document requirements.
  - 2. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- B. See Divisions 2 through 49 Sections for specific test and inspection requirements.

#### **1.2 DEFINITIONS**

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.

#### 1.3 SUBMITTALS

- A. Reports: Prepare and submit certified written reports that include the following:
  - 1. Date of issue.
  - 2. Project title and number.
  - 3. Name, address, and telephone number of testing agency.
  - 4. Dates and locations of samples and tests or inspections.
  - 5. Names of individuals making tests and inspections.
  - 6. Description of the Work and test and inspection method.
  - 7. Identification of product and Specification Section.
  - 8. Complete test or inspection data.
  - 9. Test and inspection results and an interpretation of test results.
  - 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
  - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
  - 12. Name and signature of laboratory inspector.
  - 13. Recommendations on retesting and reinspecting.
- B. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

# 1.4 QUALITY ASSURANCE

- A. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
  - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
  - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

### 1.5 QUALITY CONTROL

- A. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
  - 1. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
  - 2. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
  - 3. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
  - 4. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- B. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- C. Testing Agency Responsibilities: Cooperate with Owner and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
  - 1. Notify Owner and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
  - 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
  - 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
  - 4. Submit a certified written report, in duplicate, of each test, inspection, and similar qualitycontrol service through Contractor.
  - 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
  - 6. Do not perform any duties of Contractor.
- D. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
  - 1. Access to the Work.
  - 2. Incidental labor and facilities necessary to facilitate tests and inspections.
  - 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
  - 4. Facilities for storage and field curing of test samples.
  - 5. Delivery of samples to testing agencies.
  - 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
  - 7. Security and protection for samples and for testing and inspecting equipment at Project site.

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E. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

# 1.6 SPECIAL TESTS AND INSPECTIONS

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

#### PART 2- PRODUCTS (Not Used)

#### PART 3- EXECUTION

- 3.1 REPAIR AND PROTECTION
  - A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
  - B. Protect construction exposed by or for quality-control service activities.
  - C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000-4

#### SECTION 0142 00 - REFERENCES

#### PART 1- GENERAL

#### **1.1 DEFINITIONS**

- A. Wherever in the Project Manual or upon the Drawings the words "directed", "required", "permitted", "ordered", "designated", "described", or words of like import are used, it shall be understood that the direction, requirements, permission, order, designation, or description of the Owner and Architect is intended; and, similarly, the words "reviewed", "acceptable", "satisfactory", or words of like import, shall mean reviewed by, acceptable to, or satisfactory to the Owner and Architect unless otherwise expressly stated.
- B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "approved," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

#### **1.2 INDUSTRY STANDARDS**

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents, unless otherwise indicated.
- C. Qualifications of Standard Specifications: Wherever references are made in the Building Code to Standard Specifications or methods of the ASTM, and the corresponding materials of tests are specified herein by reference to the current Serial Designations of the ASTM, the require-

ments of the latter shall govern insofar as the same are not in contravention with the maxima or minima prescribed by the documents designated in the Building Code.

D. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

#### **1.3 ABBREVIATIONS AND ACRONYMS**

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale Research's "Encyclopedia of Associations" or in Columbia Books' "National Trade & Professional Associations of the U.S."
- B. Abbreviations: The use of the following abbreviations in the Specifications is hereby defined:
  - A.A.M.A Architectural Aluminum Manufacturer's Association
  - A.I.A. American Institute of Architects
  - A.C.I. American Concrete Institute
  - A.I.E.E. American Institute of Electrical Engineers
  - A.I.S.C. American Institute of Steel Construction
  - A.N.S.I. American National Standards Institute, New York City
  - A.W.I. Architectural Woodwork Institute
    - (Millwork Quality Standards Adopted by A.I.A. and P.C.)
  - A.S.M.E. American Society of Mechanical Engineers
  - A.S.T.M. American Society of Testing & Materials
  - A.W.S.C. American Welding Society Code
  - C.I.S.P.I. Cast Iron Soil Pipe Institute
  - C.R.S.I. Concrete Reinforcing Steel Institute
  - C.S.I. Construction Specifications Institute
  - Fed. Spec. Federal Specification
  - I.E.C.C. International Energy Conservation Code
  - I.B.C. International Building Code
  - I.F.C. International Fire Code
  - I.M.C. International Mechanical Code
  - N.I.C. Not In Contract
  - N.F.P.A. National Fire Protection Association
  - N.B.S. National Bureau of Standards
  - N.E.C. National Electrical Code
  - N.W.M.A. National Woodwork Manufacturer's Association
  - O.F.C.I. Owner Furnished Contractor Installed
  - O.F.O.I. Owner Furnished Owner Installed
  - O.S .A. Office of the State Architect
  - O.S.H.A. Occupational Safety and Health Act
  - P.C. Producers Council
  - S.C.A.C.M. Southern California Association of Cabinet Manufacturers
  - S.M.A.C.N.A. Sheet Metal and Air Conditioning Contractor's National Association
  - U.B.C. Uniform Building Code
  - U.L. Underwriters' Laboratories, Inc.

# PART 2- PRODUCTS (Not Used)

#### PART 3- EXECUTION (Not Used)

# END OF SECTION 014200-3

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### SECTION 01 60 00 - PRODUCT REQUIREMENTS

#### PART 1- GENERAL

#### 1.1 SUMMARY

A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.

#### 1.2 DEFINITIONS

A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

#### **1.3 SUBSTITUTION SUBMITTALS**

A. The contract for construction is based upon the standards of quality established in the contract documents. Refer to Section 002600 "Procurement Substitution Procedures."

#### **1.4 QUALITY ASSURANCE**

A. Standards: Unless otherwise specifically provided for in the Project Manual, all Equipment, Materials, and Articles incorporated in the Work covered by this Agreement are to be new, free from defects and imperfections, of current manufacturer, and of the most suitable grade of their respective kinds for the purpose, and all workmanship shall be of the highest grade and in accordance with the best standard practice in the Southern California area.

#### 1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
  - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
  - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
  - 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
  - 4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
  - 5. Provide protection for finished floor surfaces prior to allowing equipment or materials to be moved over such surfaces.
  - 6. Protect finished surfaces through which equipment & materials are handled.
- C. Storage:
  - 1. Store products to allow for inspection and measurement of quantity or counting of units.
  - 2. Store materials in a manner that will not endanger Project structure.
  - 3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
  - 4. Store cementitious products and materials on elevated platforms.

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- 5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
- 6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
- 7. Protect stored products from damage and liquids from freezing.

# PART 2- PRODUCTS

#### 2.1 PRODUCT SELECTION

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
  - 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
  - 2. Contractor shall order all materials and equipment for the Work as soon as possible for the award of the Contract. It shall be the duty of the Contractor to keep the Owner continuously informed of the availability of all specified materials and equipment.

# 2.2 PRODUCT SUBSTITUTIONS

- A. Timing: Architect will consider requests for substitution if received within 60 days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect.
- B. Conditions: Architect will consider Contractor's request for substitution when the 'following conditions are satisfied. If the following conditions are not satisfied, Architect will. return requests without action, except to record noncompliance with these requirements:
  - Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
  - 2. Requested substitution does not require extensive revisions to the Contract Documents.
  - 3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
  - 4. Substitution request is fully documented and properly submitted.
  - 5. Requested substitution will not adversely affect Contractor's Construction Schedule.
  - 6. Requested substitution has received necessary approvals of authorities having jurisdiction.
  - 7. Requested substitution is compatible with other portions of the Work.
  - 8. Requested substitution has been coordinated with other portions of the Work.
  - 9. Requested substitution provides specified warranty.

#### PART 3- EXECUTION (Not Used)

# SECTION 01 73 29 - CUTTING AND PATCHING

## PART 1- GENERAL

## 1.1 SUMMARY

A. This Section includes procedural requirements for cutting and patching.

## **1.2 DEFINITIONS**

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

#### 1.3 SUBMITTALS

- A. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
  - 1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
  - 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
  - 3. Products: List products to be used and firms or entities that will perform the Work.
  - 4. Dates: Indicate when cutting and patching will be performed.
  - 5. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.
  - 6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
  - 7. Architect's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

#### 1.4 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operating elements include the following:
  - 1. Primary operational systems and equipment.
  - 2. Air or smoke barriers.
  - 3. Fire-suppression systems.
  - 4. Mechanical systems piping and ducts.
  - 5. Control systems.
  - 6. Conveying systems.
  - 7. Electrical wiring systems.

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- 8. Operating systems of special construction in Division 13 Sections.
- C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Miscellaneous elements include the following:
  - 1. Water, moisture, or vapor barriers.
  - 2. Membranes and flashings.
  - 3. Exterior curtain-wall construction.
  - 4. Equipment supports.
  - 5. Piping, ductwork, vessels, and equipment.
  - 6. Noise- and vibration-control elements and systems.
- D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- E. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

#### 1.5 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

#### PART 2- PRODUCTS

#### 2.1 MATERIALS

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

#### PART 3- EXECUTION

#### 3.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
  - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
  - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

#### 3.2 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut.

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- B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

## 3.3 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
  - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
  - 3. Concrete: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
  - 4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
  - 5. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
  - Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
  - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

a. Clean piping, conduit, and similar features before applying paint or other finishing materials.

b. Restore damaged pipe covering to its original condition.

- 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
  - a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
- 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
- 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.
- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

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# SECTION 017700- CLOSEOUT PROCEDURES

## PART 1- GENERAL

## 1.1 RELATED DOCUMENTS

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

## 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
  - 1. Substantial Completion procedures.
  - 2. Final completion procedures.
  - 3. Warranties.
  - 4. Final cleaning.
  - 5. Repair of the Work.
- B. Related Requirements:
  - 1. Section 017300 "Execution Requirements" for progress cleaning of Project site.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For cleaning agents.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at Final Completion.
- 1.4 MAINTENANCE MATERIAL SUBMITTALS
  - A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.
- 1.5 SUBSTANTIAL COMPLETION PROCEDURES
  - A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.
  - B. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
    - 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
    - 2. Results of completed inspection will form the basis of requirements for final completion.

# 1.6 FINAL COMPLETION PROCEDURES

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- A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:
  - 1. Submit a final Application for Payment according to Section 012900 "Payment Procedures."
  - Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
  - 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
- 1.7 LIST OF INCOMPLETE ITEMS (PUNCH LIST)
  - A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
    - 1. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
    - 2. Include the following information at the top of each page:
      - a. Project name.
      - b. Date.
      - c. Name of Architect.
      - d. Name of Contractor.
      - e. Page number.
- 1.8 SUBMITTAL OF PROJECT WARRANTIES
  - A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.
  - B. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
    - 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (215-by-280-mm) paper.
    - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
    - 3. Identify each binder on the front and spine with the typed or printed "WARRANTIES," Project name, and name of Contractor.
  - C. Provide additional copies of each warranty to include in operation and maintenance manuals.

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# PART 2 - PRODUCTS

#### 2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

#### PART 3 - EXECUTION

#### 3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
  - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
    - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
    - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
    - c. Remove tools, construction equipment, machinery, and surplus material from Project site.
    - d. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
    - e. Leave Project clean and ready for occupancy.
- C. Construction Waste Disposal: Comply with waste disposal requirements in Section 017419 "Construction Waste Management."

# 3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
  - 1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
  - 2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.
    - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.

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

# SECTION 017839- PROJECT RECORD DOCUMENTS

PART 1- GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
  - 1. Record Drawings.
  - 2. Record Specifications.
  - 3. Record Product Data.
  - 4. Miscellaneous record submittals.
- B. Related Requirements:
  - 1. Section 017700 "Closeout Procedures" for general closeout procedures.

## 1.3 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
  - 1. Number of Copies: Submit one set(s) of marked-up record prints.
- B. Record Specifications: Submit one paper copy of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit one paper copy of each submittal.
  - 1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

#### PART 2 - PRODUCTS

#### 2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
  - 1. Preparation: Mark record prints to show the actual installation where installation varies shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
    - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    - b. Accurately record information in an acceptable drawing technique.
    - c. Record data as soon as possible after obtaining it.
    - d. Record and check the markup before enclosing concealed installations.
    - e. Cross-reference record prints to corresponding archive photographic documentation.
  - 2. Content: Types of items requiring marking include, but are not limited to, the following:
    - a. Dimensional changes to Drawings.
    - b. Revisions to details shown on Drawings.
    - c. Depths of foundations below first floor.

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- d. Locations and depths of underground utilities.
- e. Revisions to routing of piping and conduits.
- f. Revisions to electrical circuitry.
- g. Actual equipment locations.
- h. Duct size and routing.
- i. Locations of concealed internal utilities.
- j. Changes made by Change Order.
- k. Changes made following Architect's written orders.
- I. Details not on the original Contract Drawings.
- m. Field records for variable and concealed conditions.
- n. Record information on the Work that is shown only schematically.
- 3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
- 4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
- 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
- 6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
  - 1. Record Prints: Organize record prints and newly prepared record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.

# 2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
  - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  - 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
  - 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
  - 4. For each principal product, indicate whether record Product Data has been submitted in operation and maintenance manuals instead of submitted as record Product Data.
  - 5. Note related Change Orders and record Drawings where applicable.
- B. Format: Submit record Specifications as paper copy.
- 2.3 RECORD PRODUCT DATA
  - A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
    - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
    - 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
    - 3. Note related Change Orders and record Drawings where applicable.

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- B. Format: Submit record Product Data as paper copy.
  - 1. Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.

## 2.4 MISCELLANEOUS RECORD SUBMITTALS

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

# PART 3 - EXECUTION

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

# SECTION 270500 - COMMON WORK RESULTS FOR COMMUNICATIONS

# PART 1 - GENERAL

## 1.1 SUMMARY

- A. Section Includes:
  - 1. Sleeves for pathways and cables.
  - 2. Common communications installation requirements.

#### 1.2 SUBMITTALS

A. Product Data: For sleeve seals.

# PART 2 - PRODUCTS

# 2.1 SLEEVES FOR PATHWAYS AND CABLES

- A. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, galvanized steel, plain ends.
- B. Cast-Iron Pipe Sleeves: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop, unless otherwise indicated.
- C. Sleeves for Rectangular Openings: Galvanized sheet steel.
  - 1. Minimum Metal Thickness:
    - a. For sleeve cross-section rectangle perimeter less than 50 inches (1270 mm) and no side more than 16 inches (400 mm), thickness shall be 0.052 inch (1.3 mm).
    - b. For sleeve cross-section rectangle perimeter equal to, or more than, 50 inches (1270 mm) and 1 or more sides equal to, or more than, 16 inches (400 mm), thickness shall be 0.138 inch (3.5 mm).

#### PART 3 - EXECUTION

## 3.1 COMMON REQUIREMENTS FOR COMMUNICATIONS INSTALLATION

- A. Comply with NECA 1.
- B. Measure indicated mounting heights to bottom of unit for suspended items and to center of unit for wall-mounting items.

- C. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide maximum possible headroom consistent with these requirements.
- D. Equipment: Install to facilitate service, maintenance, and repair or replacement of components of both communications equipment and other nearby installations. Connect in such a way as to facilitate future disconnecting with minimum interference with other items in the vicinity.
- E. Right of Way: Give to piping systems installed at a required slope.

# 3.2 SLEEVE INSTALLATION FOR COMMUNICATIONS PENETRATIONS

- A. Communications penetrations occur when pathways, cables, wireways, or cable trays penetrate concrete slabs, concrete or masonry walls, or fire-rated floor and wall assemblies.
- B. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of slabs and walls.
- C. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.
- D. Fire-Rated Assemblies: Install sleeves for penetrations of fire-rated floor and wall assemblies unless openings compatible with firestop system used are fabricated during construction of floor or wall.
- E. Cut sleeves to length for mounting flush with both surfaces of walls.
- F. Size pipe sleeves to provide 1/4-inch (6.4-mm) annular clear space between sleeve and pathway or cable, unless indicated otherwise.
- G. Seal space outside of sleeves with grout for penetrations of concrete and masonry
  - 1. Promptly pack grout solidly between sleeve and wall so no voids remain. Tool exposed surfaces smooth; protect grout while curing.
- H. Interior Penetrations of Non-Fire-Rated Walls and Floors: Seal annular space between sleeve and pathway or cable, using joint sealant appropriate for size, depth, and location of joint. Comply with requirements in Division 07 Section "Joint Sealants.".
- I. Fire-Rated-Assembly Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at pathway and cable penetrations. Install sleeves and seal pathway and cable penetration sleeves with firestop materials. Comply with requirements in Division 07 Section "Penetration Firestopping."

#### 3.3 FIRESTOPPING

A. Apply firestopping to penetrations of fire-rated floor and wall assemblies for communications installations to restore original fire-resistance rating of assembly. Firestopping materials and installation requirements are specified in Division 07 Section "Penetration Firestopping."

# SECTION 271100 - COMMUNICATIONS EQUIPMENT ROOM FITTINGS

# PART 1 - GENERAL

## 1.1 SUMMARY

- A. Section Includes:
  - 1. Telecommunications mounting elements.
  - 2. Backboards.
  - 3. Telecommunications service entrance pathways.
  - 4. Grounding.
- B. Related Sections:
  - 1. Division 27 Section "Communications Horizontal Cabling" for voice and data cabling associated with system panels and devices.

## 1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For communications equipment room fittings. Include plans, elevations, sections, details, and attachments to other work.
  - 1. Detail equipment assemblies, and location and size of each field connection.
  - 2. Equipment racks and cabinets: Include workspace requirements and access for cable connections.
  - 3. Grounding: Indicate location of grounding bus bar and its mounting detail.
- C. Qualification Data: For Installer, qualified layout technician, installation supervisor, and field inspector.

# 1.3 QUALITY ASSURANCE

- A. Installer Qualifications: Cabling Installer must have personnel certified by BICSI on staff.
  - 1. Layout Responsibility: Preparation of Shop Drawings shall be under the direct supervision of RCDD/NTS or Commercial Installer, Level 2.
  - 2. Installation Supervision: Installation shall be under the direct supervision of Registered Technician or Level 2 Installer, who shall be present at all times when Work of this Section is performed at Project site.
  - 3. Field Inspector: Currently registered by BICSI as Commercial Installer, Level 2 to perform the on-site inspection.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. Telecommunications Pathways and Spaces: Comply with TIA/EIA-569-A.

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# 1.4 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install equipment frames and cable trays until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and work above ceilings is complete.

## 1.5 COORDINATION

- A. Coordinate layout and installation of communications equipment with Owner's telecommunications and LAN equipment and service suppliers. Coordinate service entrance arrangement with local exchange carrier.
  - 1. Meet jointly with telecommunications and LAN equipment suppliers, local exchange carrier representatives, and Owner to exchange information and agree on details of equipment arrangements and installation interfaces.
  - 2. Record agreements reached in meetings and distribute them to other participants.
  - 3. Adjust arrangements and locations of distribution frames, cross-connects, and patch panels in equipment rooms to accommodate and optimize arrangement and space requirements of telephone switch and LAN equipment.

# PART 2 - PRODUCTS

#### 2.1 PATHWAYS

- A. Cable Support: NRTL labeled. Cable support brackets shall be designed to prevent degradation of cable performance and pinch points that could damage cable. Cable tie slots fasten cable ties to brackets.
  - 1. Comply with NFPA 70 and UL 2043 for fire-resistant and low-smoke-producing characteristics.
  - 2. Support brackets with cable tie slots for fastening cable ties to brackets.
  - 3. Lacing bars, spools, J-hooks, and D-rings.
  - 4. Straps and other devices.
- B. Conduit and Boxes: Comply with requirements in Division 26 Section "Raceway and Boxes for Electrical Systems.".
  - 1. Outlet boxes shall be no smaller than 2 inches (50 mm) wide, 3 inches (75 mm) high, and 2-1/2 inches (64 mm) deep.

#### 2.2 GROUNDING

- A. Comply with requirements in Division 26 Section "Grounding and Bonding for Electrical Systems" for grounding conductors and connectors.
- B. Comply with ANSI-J-STD-607-A.

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## 2.3 LABELING

A. Comply with TIA/EIA-606-A and UL 969 for a system of labeling materials, including label stocks, laminating adhesives, and inks used by label printers.

# PART 3 - EXECUTION

#### 3.1 ENTRANCE FACILITIES

A. Contact telecommunications service provider and arrange for installation of demarcation point, protected entrance terminals, and a housing when so directed by service provider.

#### 3.2 FIRESTOPPING

- A. Comply with requirements in Division 07 Section "Penetration Firestopping."Comply with TIA/EIA-569-A, Annex A, "Firestopping."
- B. Comply with BICSI TDMM, "Firestopping Systems" Article.

# 3.3 GROUNDING

- A. Install grounding according to BICSI TDMM, "Grounding, Bonding, and Electrical Protection" Chapter.
- B. Comply with ANSI-J-STD-607-A.
- C. Bond metallic equipment to the grounding bus bar, using not smaller than No.6 AWG equipment grounding conductor.

#### 3.4 IDENTIFICATION

- A. Identify system components, wiring, and cabling complying with TIA/EIA-606-A. Comply with requirements in Division 26 Section "Identification for Electrical Systems."Comply with requirements in Division 09 Section "Interior Painting" for painting backboards. For fire-resistant plywood, do not paint over manufacturer's label.
- B. See Division 27 Section "Communications Horizontal Cabling" for additional identification requirements. See Evaluations for discussion of TIA/EIA standard as it applies to this Section.Paint and label colors for equipment identification shall comply with TIA/EIA-606-A for Class 2 level of administration[including optional identification requirements of this standard].
- C. Labels shall be preprinted or computer-printed type.

# SECTION 271300 - COMMUNICATIONS BACKBONE CABLING

PART 1 - GENERAL

- 1.1 RELATED DOCUMENTS
  - A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- 1.2 SUMMARY
  - A. Section Includes:
    - 1. UTP backbone cable.
    - 2. Optical fiber backbone cable.
    - 3. Cable connecting hardware, patch panels, and cross-connects.
    - 5. Cabling identification products.
- 1.3 DEFINITIONS
  - A. BICSI: Building Industry Consulting Service International.
  - B. Cross-Connect: A facility enabling the termination of cable elements and their interconnection or cross-connection.
  - C. EMI: Electromagnetic interference.
  - D. IDC: Insulation displacement connector.
  - E. LAN: Local area network.
  - F. RCDD: Registered Communications Distribution Designer.
  - G. UTP: Unshielded twisted pair.
  - H. EMT: Electrical metallic conduit.
  - I. AHJ: Authorities Having Jurisdiction
  - J. Backbone Cable: 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.
- 1.4 PERFORMANCE REQUIREMENTS
- A. General Performance: Backbone cabling system shall comply with transmission standards in TIA/EIA-568.1-D, when tested according to test procedures of this standard.

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- 1.5 SUBMITTALS
  - A. Refer to section 270500 "Common Work Results for Technology Systems" for Submittal Procedures.
- 1.6 QUALITY ASSURANCE
  - A. Refer to section 270500 "Common Work Results for Technology Systems" for Quality Assurance and Contractor Qualifications.

# PART 2- PRODUCTS

# 2.1 UTP CABLE

- A. Manufacturers: provide products by the following:
  - 1. Belden CDT Inc.; Electronics Division.
  - 2. Berk-Tek; a Nexans company.
  - 3. CommScope, Inc.
  - 4. Draka USA.
  - 5. Genesis Cable Products; Honeywell International, Inc.
  - 6. KRONE Incorporated.
  - 7. Mohawk; a division of Belden CDT.
  - 8. 3M.
  - 9. Tyco Electronics/AMP Netconnect; Tyco International Ltd.
- B. Description: 100-ohm, multi-pair UTP, formed into 25-pair binder groups covered with a thermoplastic jacket.
  - 1. Comply with ICEA 5-90-661 for mechanical properties.
  - 2. Comply with TIA-568.2-D for performance specifications.
  - 3. Listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with UL 444 and NFPA 70 for the following types:
    - a. Communications, Plenum Rated: Type CMP, complying with NFPA 262.
    - b. Communications, Riser Rated: Type CMR, complying with UL 1666.
      - 1) CMP/Plenum may be required by local AHJ. Installing contractor shall be responsible for coordinating the requirements with the local AHJ
- C. 25 Pair UTP Cable Category 3
- D. 50 Pair UTP Cable Category 3
- E. 100 Pair UTP Cable Category 3
- 2.2 UTP CABLE HARDWARE
  - A. Manufacturers: provide products by the following:

- 1. Belden CDT Inc.; Electronics Division.
- 2. Berk-Tek; a Nexans company.
- 3. CommScope, Inc.
- 4. Draka USA.
- 5. Genesis Cable Products; Honeywell International, Inc.
- 6. KRONE Incorporated.
- 7. Mohawk; a division of Belden CDT.
- 8. 3M.
- B. General Requirements for Cable Connecting Hardware: Comply with TIA-568.2-D, IOC type, with modules designed for punch-down caps or tools. Cables shall be terminated with connecting hardware of same category or higher.
- C. Voice Connecting Blocks: 110-style IDC.
  - 1. 100 pair connector block equipped with 5 pair connector blocks.
  - 2. 300 pair connector block equipped with 5 pair connector blocks.
- D. Patch Panel: Modular panels housing multiple-numbered color-coded jack assemblies with IDCtype connectors at each jack for permanent termination of pair groups of installed cables.
  - 1. Cat 5e 48 Position Patch panel:
    - a. Modular, 48 position.
  - 2. Cat 5e 24 Position Patch panel:
    - a. Modular, 24 position.
- 2.3 OPTICAL FIBER CABLE
  - A. Manufacturers: provide products by the following:
    - 1. Belden CDT Inc.; Electronics Division.
    - 2. Berk-Tek; a Nexans company.
    - 3. CommScope, Inc.
    - 4. Draka USA.
    - 5. Genesis Cable Products; Honeywell International, Inc.
    - 6. KRONE Incorporated.
    - 7. Mohawk; a division of Belden CDT.
    - 8. 3M.
  - B. Description: Singlemode, 24 strand, interlocking armored, tight buffer, optical fiber cable.
    - 1. Comply with TIA-568.3-D for performance specifications.
    - 2. 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:
      - a. Plenum Rated, Conductive: Type OFCP, complying with NFPA 262.
    - 3. Conductive cable shall be aluminum armored type.

- C. 24 Fiber:
  - 1. 24 strand OS2 Singlemode tight buffer interlock armored fiber cable, Belden part number FISD024A9, or equal.
- D. 48 Fiber:
  - 1. 12 strand OS2 Singlemode tight buffer interlock armored fiber cable, Belden part number FISD048AK, or equal.
- E. 96 Fiber
  - 1. 24 strand OS2 Singlemode tight buffer interlock armored fiber cable, Belden part number FISD096AK, or equal.
- 2.4 OPTICAL FIBER CABLE HARDWARE
  - A. Manufacturers: provide products by the following:
    - 1. Belden CDT Inc.; Electronics Division.
    - 2. Berk-Tek; a Nexans company.
    - 3. CommScope, Inc.
    - 4. Draka USA.
    - 5. Genesis Cable Products; Honeywell International, Inc.
    - 6. KRONE Incorporated.
    - 7. Mohawk; a division of Belden CDT.
    - 8. 3M.
  - B. Fiber Connecting Enclosures: Modular panels housing multiple fiber cable adapter panels.
    - 1. 4 adapter panel enclosure:
      - a. Rack mounted enclosure capable of housing 4 fiber cable adapter panels, Belden AX105563, or equal.
      - b. Wall mount enclosure cable of housing 2 fiber cable adapter panels, Belden AX100495, or equal.
    - 2. 16 adapter panel enclosure:
      - a. Rack mounted enclosure capable of housing 8 fiber cable adapter panels, Belden M100116, or equal.
  - C. Fiber Cable Adapter Panels: Panel housing multiple fiber connectors housed within the fiber connecting enclosure.
    - 1. 12 Fiber Adapter Panel:
      - a. Adapter panel loaded with LC-style duplex connectors, Belden Part Number AX101731, or equal.
    - 2. 24 Fiber Adapter Panel:

- a. Adapter panel loaded with LC-style duplex connectors, Belden Part Number FFSU12LD, or equal.
- D. Cable Connecting Hardware:
  - 1. Comply with TIA-568.3-D.
  - 2. FX Brilliance Universal LC Field Installable Connector, Belden Part Number AX105203, or equal.
- 2.5 IDENTIFICATION PRODUCTS
  - A. Comply with TIA-606-C and UL 969 for a system of labeling materials, including label stocks, laminating adhesives, and inks used by label printers.

PART 3- EXECUTION

- 3.1 INSTALLATION OF CABLES
  - A. Comply with NECA 1.
  - B. General Requirements for Cabling:
    - 1. Comply with TIA-568.1-D.
    - 2. Comply with BICSI ITSIMM, 7th Edition.
    - 3. Terminate all conductors; no cable shall contain unterminated elements. Make terminations only at indicated cross-connects and patch panels.
    - 4. Cables may not be spliced.
    - 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 cables to termination points without exceeding manufacturer's limitations on bending radii.
    - 7. Wiring within Racks and Enclosures:
      - a. Bundle, lace, and train cables to termination points with no excess and without exceeding manufacturer's limitations on bending radii.
      - b. Install lacing bars and distribution spools.
      - c. Install conductors parallel with or at right angles to sides and back of rack or enclosure.
    - 8. 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.
    - 9. Install a 10-foot (3m) long service loop on each end of cable.

- 10. Pulling Cable: Monitor cable pull tensions being careful not to exceed manufacturer's limitations on pulling tension.
- 11. Cable shall not be run through structural members or in contact with pipes, ducts, or other potentially damaging items.
- 12. Separation from EMI Sources:
  - a. Comply with BICSI TDMM and TIA-569-E for separating unshielded copper voice and data communication cable from potential EMI sources, including electrical power lines and equipment.
  - b. Separation between open communications/low voltage cables or cables in nonmetallic raceways and unshielded power conductors and electrical equipment shall be as follows:
    - 1) Electrical Equipment Rating Less Than 2 kVA: A minimum of 5 inches (127 mm).
    - 2) Electrical Equipment Rating between 2 and 5 kVA: A minimum of 12 inches (300 mm).
    - 3) Electrical Equipment Rating More Than 5 kVA: A minimum of 24 inches (610 mm).
  - c. Separation between communications/low voltage cables in grounded metallic raceways and unshielded power lines or electrical equipment shall be as follows:
    - 1) Electrical Equipment Rating Less Than 2 kVA: A minimum of 2-1/2 inches (64 mm).
    - 2) Electrical Equipment Rating between 2 and 5 kVA: A minimum of 6 inches (150 mm).
    - 3) Electrical Equipment Rating More Than 5 kVA: A minimum of 12 inches (300 mm).
  - d. Separation between communications/low voltage cables in grounded metallic raceways and power lines and electrical equipment located in grounded metallic conduits or enclosures shall be as follows:
    - 1) Electrical Equipment Rating Less Than 2 kVA: No requirement.
    - 2) Electrical Equipment Rating between 2 and 5 kVA: A minimum of 3 inches (76 mm).
    - 3) Electrical Equipment Rating More Than 5 kVA: A minimum of 6 inches (150 mm).
  - e. Separation between Communications/Low Voltage Cables and Electrical Motors and Transformers, 5 kVA or HP and Larger: A minimum of 48 inches (1200 mm).
  - f. Separation between Communications/Low Voltage Cables and Fluorescent Fixtures: A minimum of 5 inches (127 mm).
- C. UTP Backbone Cable Installation and Termination:
  - 1. Comply with TIA-568.2-D.
  - 2. UTP backbone cabling shall be supported using non-continuous J-Hook style hangers mounted above accessible ceiling areas.
    - a. UTP backbone cable is permitted to share cable supports with fiber backbone.

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- 3. UTP backbone cabling shall be installed within conduit pathways in areas where cable will be inaccessible.
- 4. Refer to contract drawings for UTP pair count.
- 5. Patch Panel: UTP backbone cable connecting the main distribution frame within the MDF to each communication room shall be terminated using rack mounted 48 or 24 position patch panels within the communication room.
  - a. One pair per port shall be terminated on pins 4-5, leaving the violet-slate pair unterminated.
  - b. Coordinate with Owner's IT personnel for exact placement of patch panel within equipment racks.
- 6. Connecting Blocks: UTP backbone cable connecting the main distribution frame within the MDF to each communication room shall be terminated using wall mount connector blocks within the MDF room.
  - a. Coordinate with Owner's IT personnel for exact placement of connecting block within MDF room.
  - b. Provide cross connect wire manager above each column of 110 blocks
- D. Optical Fiber Backbone Cable Installation and Termination:
  - 1. Comply with TIA-568.3-D.
  - 2. Fiber backbone cabling shall be supported using J-Hook style hangers mounted above accessible ceiling areas.
    - a. Fiber Backbone Cable permitted to share cable supports with UTP copper backbone.
  - 3. Fiber backbone cabling shall be installed within conduit pathways in areas where cable will be inaccessible.
  - 4. Refer to contract drawings for fiber strand count.
  - 5. Panels and Enclosures:
    - a. Provide 4U fiber enclosures within the MDF room.
      - 1) Enclosures shall be equipped with 24 or 12 fiber, LC-style duplex adapter panels.
      - 2) Provide blank panel adapters for enclosure slots not used.
      - 3) Enclosures to include clear plastic door covering connector panels.
      - 4) Coordinate with owner's IT personnel for exact placement within room and equipment racks.
    - b. Provide 1U fiber enclosures within the IDF rooms.
      - 1) Enclosures shall be equipped with 24 or 12 fiber, LC-style duplex adapter panels.

- 2) Provide blank panel adapters for enclosure slots not used.
- 3) Enclosures to include clear plastic door covering connector panels.
- 4) Coordinate with owner's IT personnel for exact placement within room and equipment racks.
- c. Provide wall mount fiber enclosure where called out on contract drawings.
  - 1) Enclosures shall be equipped with 24 or 12 fiber, LC-style duplex adapter panels.
  - 2) Provide blank panel adapters for enclosure slots not used.
  - 3) Coordinate with owner's IT personnel for exact placement within room

# 3.2 FIRESTOPPING

- A. Comply with:
  - 1. Section 270500 "COMMON WORK FOR TECHNOLOGY SYSTEMS"

# 3.3 IDENTIFICATION

- A. Identify system components, wiring, and cabling complying with TIA-606-C.
  - 1. Administration Class. 2
- B. Cable and Wire Identification:
  - 1. Label each cable within 4 inches (100 mm) of each termination.
  - 2. Fiber Backbone Cable: Label each cable at intervals not exceeding 15 feet (4.5 m).
  - 3. Identification within Connector Fields in communication rooms: Label each connector and each discrete unit of cable-terminating and connecting hardware.
- C. 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-C, for the following:
  - 1. Cables use flexible vinyl or polyester that flexes as cables are bent.

#### 3.4 FIELD QUALITY CONTROL

- A. Perform tests and inspections:
  - 1. Visually inspect UTP and optical fiber jacket.
  - 2. Inspect cabling terminations in communications rooms for compliance with color-coding for pin assignments, and inspect cabling connections for compliance with TIA-568.1-D.
  - 3. Visually inspect cable placement, cable termination, and labeling of all components.

- 4. Test UTP copper backbone cabling for shorts, opens, intermittent faults, and polarity between conductors. Test cables after termination but not cross-connection.
- 5. Optical Fiber Cable Tests.
  - a. Test instruments shall meet or exceed applicable requirements in TIA-568.1-D. Use only test cords and adapters that are qualified by test equipment manufacturer for channel or link test configuration.
  - b. Link End-to-End Attenuation Tests:
    - 1) Multimode backbone link measurements: Test at 850 or 1300 nm in 1 direction according to TIA-526-14.C, Method B, One Reference Jumper.
    - 2) Attenuation test results for backbone links shall be less than 2.0 dB. Attenuation test results shall be less than that calculated according to equation in TIA-568.1-D.
- 6. Coaxial Cable Tests: Visually inspect cable placement and labeling of all components.
- B. Data for each measurement shall be documented. Data for submittals shall be transferred from the test instrument to the computer, saved as text files, and printed and submitted.
- C. End-to-end cabling will be considered defective if it does not pass tests and inspections.

# SECTION 280500 - COMMON WORK RESULTS FOR ELECTRONIC SAFETY AND SECURITY

#### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Sleeves for raceways and cables.
  - 2. Sleeve seals.
  - 3. Grout.
  - 4. Common electronic safety and security installation requirements.

#### 1.2 SUBMITTALS

A. Product Data: For sleeve seals.

#### PART 2 - PRODUCTS

#### 2.1 SLEEVES FOR RACEWAYS AND CABLES

- A. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, galvanized steel, plain ends.
- B. Cast-Iron Pipe Sleeves: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop, unless otherwise indicated.
- C. Sleeves for Rectangular Openings: Galvanized sheet steel.
  - 1. Minimum Metal Thickness:
    - a. For sleeve cross-section rectangle perimeter less than 50 inches (1270 mm) and no side more than 16 inches (400 mm), thickness shall be 0.052 inch (1.3 mm).
    - b. For sleeve cross-section rectangle perimeter equal to, or more than, 50 inches (1270 mm) and 1 or more sides equal to, or more than, 16 inches (400 mm), thickness shall be 0.138 inch (3.5 mm).

## 2.2 SLEEVE SEALS

- A. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and raceway or cable.
  - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

- a. Advance Products & Systems, Inc.
- b. Calpico, Inc.
- c. Metraflex Co.
- d. Pipeline Seal and Insulator, Inc.
- 2. Sealing Elements: **EPDM** interlocking links shaped to fit surface of cable or conduit. Include type and number required for material and size of raceway or cable.
- 3. Pressure Plates: **Carbon steel**. Include two for each sealing element.
- 4. Connecting Bolts and Nuts: **Carbon steel with corrosion-resistant coating** of length required to secure pressure plates to sealing elements. Include one for each sealing element.

#### 2.3 GROUT

A. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107, factory-packaged, nonmetallic aggregate grout, noncorrosive, nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

# PART 3 - EXECUTION

# 3.1 COMMON REQUIREMENTS FOR ELECTRONIC SAFETY AND SECURITY INSTALLATION

- A. Comply with NECA 1.
- B. Measure indicated mounting heights to bottom of unit for suspended items and to center of unit for wall-mounting items.
- C. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide maximum possible headroom consistent with these requirements.
- D. Equipment: Install to facilitate service, maintenance, and repair or replacement of components of both electronic safety and security equipment and other nearby installations. Connect in such a way as to facilitate future disconnecting with minimum interference with other items in the vicinity.
- E. Right of Way: Give to piping systems installed at a required slope.

## 3.2 SLEEVE INSTALLATION FOR ELECTRONIC SAFETY AND SECURITY PENETRATIONS

- A. Electronic safety and security penetrations occur when raceways, pathways, cables, wireways, or cable trays penetrate concrete slabs, concrete or masonry walls, or fire-rated floor and wall assemblies.
- B. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of slabs and walls.
- C. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.

- D. Fire-Rated Assemblies: Install sleeves for penetrations of fire-rated floor and wall assemblies unless openings compatible with firestop system used are fabricated during construction of floor or wall.
- E. Cut sleeves to length for mounting flush with both surfaces of walls.
- F. Extend sleeves installed in floors [2 inches (50 mm)] above finished floor level.
- G. Size pipe sleeves to provide [1/4-inch (6.4-mm)] annular clear space between sleeve and raceway or cable, unless indicated otherwise.
- H. Seal space outside of sleeves with grout for penetrations of concrete and masonry
  - 1. Promptly pack grout solidly between sleeve and wall so no voids remain. Tool exposed surfaces smooth; protect grout while curing.
- I. Interior Penetrations of Non-Fire-Rated Walls and Floors: Seal annular space between sleeve and raceway or cable, using joint sealant appropriate for size, depth, and location of joint. Comply with requirements in Division 07 Section "Joint Sealants.".
- J. Fire-Rated-Assembly Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at raceway and cable penetrations. Install sleeves and seal raceway and cable penetration sleeves with firestop materials. Comply with requirements in Division 07 Section "Penetration Firestopping."
- K. Roof-Penetration Sleeves: Seal penetration of individual raceways and cables with flexible boot-type flashing units applied in coordination with roofing work.
- L. Aboveground, Exterior-Wall Penetrations: Seal penetrations using [steel] [cast-iron] pipe sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch (25-mm) annular clear space between pipe and sleeve for installing mechanical sleeve seals.
- M. Underground, Exterior-Wall Penetrations: Install cast-iron pipe sleeves. Size sleeves to allow for 1-inch (25-mm) annular clear space between raceway or cable and sleeve for installing mechanical sleeve seals.

#### 3.3 SLEEVE-SEAL INSTALLATION

- A. Install to seal exterior wall penetrations.
- B. Use type and number of sealing elements recommended by manufacturer for raceway or cable material and size. Position raceway or cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway or cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

#### 3.4 FIRESTOPPING

A. Apply firestopping to penetrations of fire-rated floor and wall assemblies for electronic safety and security installations to restore original fire-resistance rating of assembly.

# END OF SECTION 280500

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# SECTION 280513 - CONDUCTORS AND CABLES FOR ELECTRONIC SAFETY AND SECURITY

# PART 1 - GENERAL

## 1.1 SUMMARY

- A. Section Includes:
  - 1. Coaxial cabling.
  - 2. RS-232 cabling.
  - 3. RS-485 cabling.
  - 4. Low-voltage control cabling.
  - 5. Control-circuit conductors.
  - 6. Fire alarm wire and cable.
  - 7. Identification products.

#### 1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
  - 1. For coaxial cable, include the following installation data for each type used:
    - a. Nominal OD.
    - b. Minimum bending radius.
    - c. Maximum pulling tension.
- B. Shop Drawings: Cable tray layout, showing cable tray route to scale, with relationship between the tray and adjacent structural, electrical, and mechanical elements.
- C. Qualification Data: For qualified layout technician, installation supervisor, and field inspector.
- D. Source quality-control reports.
- E. Field quality-control reports.
- F. Maintenance data.

#### 1.3 QUALITY ASSURANCE

- A. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
  - 1. Flame-Spread Index: **25** or less.
  - 2. Smoke-Developed Index: **450** or less.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

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## PART 2 - PRODUCTS

#### 2.1 PATHWAYS

- A. Support of Open Cabling: NRTL labeled for support of cabling, designed to prevent degradation of cable performance and pinch points that could damage cable.
  - 1. Support brackets with cable tie slots for fastening cable ties to brackets.
  - 2. Lacing bars, spools, J-hooks, and D-rings.
  - 3. Straps and other devices.
- B. Cable Trays:
  - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Cable Management Solutions, Inc.
    - b. Cablofil Inc.
    - c. Cooper B-Line, Inc.
    - d. Cope Tyco/Allied Tube & Conduit.
    - e. GS Metals Corp.
- C. Conduit and Boxes: Comply with requirements in NFPA 70 and 72 for wiring methods
  - 1. Outlet boxes shall be no smaller than 2 inches (50 mm) wide, 3 inches (75 mm) high, and 2-1/2 inches (64 mm) deep.

#### 2.2 COAXIAL CABLE

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - 1. Alpha Wire Company.
  - 2. Belden CDT Inc.; Electronics Division.
  - 3. Coleman Cable, Inc.
  - 4. CommScope, Inc.
  - 5. Draka USA.
- B. General Coaxial Cable Requirements: Broadband type, recommended by cable manufacturer specifically for broadband data transmission applications. Coaxial cable and accessories shall have 75-ohm nominal impedance with a return loss of 20 dB maximum from 7 to 806 MHz.
- C. RG-6/U: NFPA 70, Type CATV or CM.
  - 1. No. **16** AWG, solid, copper-covered steel conductor; gas-injected, foam-PE insulation.
  - 2. Double shielded with 100 percent aluminum-foil shield and 60 percent aluminum braid.
  - 3. Jacketed with black PVC or PE.
  - 4. Suitable for indoor installations.

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- D. RG59/U (Plenum Rated): NFPA 70, Type CMP.
  - 1. No. 20 AWG, solid, copper-covered steel conductor; foam fluorinated ethylene propylene insulation.
  - 2. Double shielded with 100 percent aluminum-foil shield and 65 percent aluminum braid.
  - 3. Copolymer jacket.
- E. NFPA and UL compliance, listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with UL 1655, and with NFPA 70 "Radio and Television Equipment" and "Community Antenna Television and Radio Distribution" Articles. Types are as follows:
  - 1. CATV Cable: Type CATV, or CATVP or CATVR.
  - 2. CATV Plenum Rated: Type CATVP, complying with NFPA 262.
  - 3. CATV Riser Rated: Type CATVR; or CATVP, CATVR, or CATV, complying with UL 1666.
  - 4. CATV Limited Rating: Type CATVX.

# 2.3 COAXIAL CABLE HARDWARE

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - 1. Aim Electronics; a brand of Emerson Electric Co.
  - 2. Leviton Voice & Data Division.
  - 3. Siemon Co. (The).
- B. Coaxial-Cable Connectors: Type BNC, 75 ohms.

#### 2.4 RS-232 CABLE

- A. Standard Cable: NFPA 70, Type CM.
  - 1. Paired, 2 pairs, No. 22 AWG, stranded (7x30) tinned copper conductors.
  - 2. Polypropylene insulation.
  - 3. Individual aluminum foil-polyester tape shielded pairs with 100 percent shield coverage.
  - 4. PVC jacket.
  - 5. Pairs are cabled on common axis with No. 24 AWG, stranded (7x32) tinned copper drain wire.
  - 6. Flame Resistance: Comply with UL 1581.
- B. Plenum-Type Cable: NFPA 70, Type CMP.
  - 1. Paired, 2 pairs, No. 22 AWG, stranded (7x30) tinned copper conductors.
  - 2. Plastic insulation.
  - 3. Individual aluminum foil-polyester tape shielded pairs with 100 percent shield coverage.
  - 4. Plastic jacket.
  - 5. Pairs are cabled on common axis with No. 24 AWG, stranded (7x32) tinned copper drain wire.
  - 6. Flame Resistance: Comply with NFPA 262.

#### 2.5 RS-485 CABLE

- A. Standard Cable: NFPA 70, Type CM or CMG.
  - 1. Paired, 2 pairs, twisted, No. 22 AWG, stranded (7x30) tinned copper conductors.
  - 2. PVC insulation.
  - 3. Unshielded.
  - 4. PVC jacket.
  - 5. Flame Resistance: Comply with UL 1581.
- B. Plenum-Type Cable: NFPA 70, Type CMP.
  - 1. Paired, 2 pairs, No. 22 AWG, stranded (7x30) tinned copper conductors.
  - 2. Fluorinated ethylene propylene insulation.
  - 3. Unshielded.
  - 4. Fluorinated ethylene propylene jacket.
  - 5. Flame Resistance: NFPA 262, Flame Test.

# 2.6 LOW-VOLTAGE CONTROL CABLE

- A. Paired Lock Cable: NFPA 70, Type CMG.
  - 1. 1 pair, twisted, No. 18 AWG, stranded (19x30) tinned copper conductors.
  - 2. PVC insulation.
  - 3. Unshielded.
  - 4. PVC jacket.
  - 5. Flame Resistance: Comply with UL 1581.
- B. Plenum-Type, Paired Lock Cable: NFPA 70, Type CMP.
  - 1. 1 pair, twisted, No. 18 AWG, stranded (19x30) tinned copper conductors.
  - 2. Fluorinated ethylene propylene insulation.
  - 3. Unshielded.
  - 4. Plastic jacket.
  - 5. Flame Resistance: NFPA 262, Flame Test.

#### 2.7 CONTROL-CIRCUIT CONDUCTORS

- A. Class 1 Control Circuits: Stranded copper, Type THHN-THWN, in raceway complying with UL 83.
- B. Class 2 Control Circuits: Stranded copper, **power-limited cable, concealed in building finishes** complying with UL 83.
- C. Class 3 Remote-Control and Signal Circuits: Stranded copper, Type TW or TF, complying with UL 83.

## 2.8 FIRE ALARM WIRE AND CABLE

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - 1. Comtran Corp.
  - 2. Draka USA.
  - 3. Genesis Cable Products; Honeywell International, Inc.
  - 4. Rockbestos-Suprenant Cable Corporation.
  - 5. West Penn Wire/CDT; a division of Cable Design Technologies.
- B. General Wire and Cable Requirements: NRTL listed and labeled as complying with NFPA 70, Article 760.
- C. Signaling Line Circuits: Twisted, shielded pair, not less than No. 18 AWG, or size as recommended by system manufacturer.
  - 1. Circuit Integrity Cable: Twisted shielded pair, NFPA 70, Article 760, Classification CI, for power-limited fire alarm signal service Type FPL. NRTL listed and labeled as complying with UL 1424 and UL 2196 for a 2-hour rating.
- D. Non-Power-Limited Circuits: Solid-copper conductors with 600-V rated, 75 deg C, color-coded insulation.
  - 1. Low-Voltage Circuits: No. 16 AWG, minimum.
  - 2. Line-Voltage Circuits: No. 12 AWG, minimum.
  - 3. Multiconductor Armored Cable: NFPA 70, Type MC, copper conductors, Type TFN/THHN conductor insulation, copper drain wire, copper armor[with outer jacket] with red identifier stripe, NTRL listed for fire alarm and cable tray installation, plenum rated, and complying with requirements in UL 2196 for a 2-hour rating.

#### 2.9 IDENTIFICATION PRODUCTS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - 1. Brady Corporation
  - 2. HellermannTyton.
  - 3. Kroy LLC.
  - 4. Panduit Corp.
- B. Comply with UL 969 for a system of labeling materials, including label stocks, laminating adhesives, and inks used by label printers.
- C. Comply with requirements in Division 26 Section "Identification for Electrical Systems."

# 2.10 SOURCE QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to evaluate cables.

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- B. Factory sweep test coaxial cables at frequencies from 5 MHz to 1 GHz. Sweep test shall test the frequency response, or attenuation over frequency, of a cable by generating a voltage whose frequency is varied through the specified frequency range and graphing the results.
- C. Cable will be considered defective if it does not pass tests and inspections.
- D. Prepare test and inspection reports.

## PART 3 - EXECUTION

#### 3.1 INSTALLATION OF PATHWAYS

- A. Comply with TIA/EIA-569-A for pull-box sizing and length of conduit and number of bends between pull points.
- B. Pathway Installation in Equipment Rooms:
  - 1. Position conduit ends adjacent to a corner on backboard where a single piece of plywood is installed or in the corner of room where multiple sheets of plywood are installed around perimeter walls of room.
  - 2. Install cable trays to route cables if conduits cannot be located in these positions.
  - 3. Secure conduits to backboard when entering room from overhead.
  - 4. Extend conduits [3 inches (75 mm)] above finished floor.
  - 5. Install metal conduits with grounding bushings and connect with grounding conductor to grounding system.

#### 3.2 INSTALLATION OF CONDUCTORS AND CABLES

- A. Comply with NECA 1.
- B. General Requirements for Cabling:
  - 1. Terminate all conductors; no cable shall contain unterminated elements. Make terminations only at indicated outlets or terminals.
  - 2. Cables may not be spliced. Secure and support cables at intervals not exceeding 30 inches (760 mm) and not more than 6 inches (150 mm) from cabinets, boxes, fittings, outlets, and terminals.
  - 3. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii. Install lacing bars and distribution spools.
  - 4. 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.
  - 5. Cold-Weather Installation: Bring cable to room temperature before dereeling. Heat lamps shall not be used for heating.
  - 6. Pulling Cable: Do not exceed manufacturer's instructions as to allowable pulling tension. Monitor cable pull tensions.
- C. Open-Cable Installation:

- 1. Install cabling with horizontal and vertical cable guides in telecommunications spaces with terminating hardware and interconnection equipment.
- 2. Suspend copper cable not in a wireway or pathway a minimum of 8 inches (200 mm) above ceilings by cable supports not more than [60 inches (1525 mm)] apart.
- 3. Cable shall not be run through structural members or in contact with pipes, ducts, or other potentially damaging items.
- D. Outdoor Coaxial Cable Installation:
  - 1. Install outdoor connections in enclosures complying with NEMA 250, Type 4X. Install corrosion-resistant connectors with properly designed O-rings to keep out moisture.
  - 2. Attach antenna lead-in cable to support structure at intervals not exceeding 36 inches (915 mm).

# 3.3 FIRE ALARM WIRING INSTALLATION

- A. Comply with NECA 1 and NFPA 72.
- B. Wiring Method: Install wiring in metal raceway according to Division 26 Section "Raceway and Boxes for Electrical Systems."
  - 1. Install plenum cable in environmental air spaces, including plenum ceilings.
  - 2. Fire alarm circuits and equipment control wiring associated with the fire alarm system shall be installed in a dedicated raceway system. This system shall not be used for any other wire or cable.
- C. Wiring Method:
  - 1. Cables and raceways used for fire alarm circuits, and equipment control wiring associated with the fire alarm system, may not contain any other wire or cable.
  - 2. Fire-Rated Cables: Use of 2-hour, fire-rated fire alarm cables, NFPA 70, Types MI and CI, is[ **not**] permitted.
  - 3. Signaling Line Circuits: Power-limited fire alarm cables **may** be installed in the same cable or raceway as signaling line circuits.
- D. Wiring within Enclosures: Separate power-limited and non-power-limited conductors as recommended by manufacturer. Install conductors parallel with or at right angles to sides and back of the enclosure. Bundle, lace, and train conductors to terminal points with no excess. Connect conductors that are terminated, spliced, or interrupted in any enclosure associated with the fire alarm system to terminal blocks. Mark each terminal according to the system's wiring diagrams. Make all connections with approved crimp-on terminal spade lugs, pressure-type terminal blocks, or plug connectors.
- E. Cable Taps: Use numbered terminal strips in junction, pull, and outlet boxes, cabinets, or equipment enclosures where circuit connections are made.
- F. Color-Coding: Color-code fire alarm conductors differently from the normal building power wiring. Use one color-code for alarm circuit wiring and another for supervisory circuits. Color-code audible alarm-indicating circuits differently from alarm-initiating circuits. Use different colors for visible alarm-indicating devices. Paint fire alarm system junction boxes and covers red.
- G. Risers: Install at least two vertical cable risers to serve the fire alarm system. Separate risers in close proximity to each other with a minimum one-hour-rated wall, so the loss of one riser does not prevent the receipt or transmission of signals from other floors or zones.
- H. Wiring to Remote Alarm Transmitting Device: 1-inch (25-mm) conduit between the fire alarm control panel and the transmitter. Install number of conductors and electrical supervision for connecting wiring as needed to suit monitoring function.

# 3.4 CONTROL-CIRCUIT CONDUCTORS

- A. Minimum Conductor Sizes:
  - 1. Class 1 remote-control and signal circuits, No. 14 AWG.
  - 2. Class 2 low-energy, remote-control and signal circuits, No. 16 AWG.
  - 3. Class 3 low-energy, remote-control, alarm and signal circuits, No. 12 AWG.

#### 3.5 CONNECTIONS

A. Comply with requirements in Division 28 Section "Fire Detection and Alarm" for connecting, terminating, and identifying wires and cables.

#### 3.6 FIRESTOPPING

A. Install to restore fire-rating at any penetrations.

#### 3.7 GROUNDING

A. For low-voltage wiring and cabling, comply with requirements in Division 26 Section "Grounding and Bonding for Electrical Systems."

#### 3.8 IDENTIFICATION

A. Comply with requirements for identification specified in Division 28 Section "Common Work."

# 3.9 FIELD QUALITY CONTROL

- A. Tests and Inspections:
  - 1. Visually inspect cable jacket materials for UL or third-party certification markings. Inspect cabling terminations to confirm color-coding.
  - 2. Visually inspect cable placement, cable termination, grounding, and bonding.
- B. Prepare test and inspection reports.

END OF SECTION 280513

# SECTION 283111 - DIGITAL, ADDRESSABLE FIRE-ALARM SYSTEM

# PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Fire-alarm control unit.
  - 2. Manual fire-alarm boxes.
  - 3. System smoke detectors.
  - 4. Nonsystem smoke detectors.
  - 5. Heat detectors.
  - 6. Notification appliances.
  - 7. Magnetic door holders.
  - 8. Remote annunciator.
  - 9. Addressable interface device.
  - 10. Digital alarm communicator transmitter.

# 1.2 SYSTEM DESCRIPTION

A. Noncoded, addressable system, with multiplexed signal transmission, dedicated to fire-alarm service only.

#### 1.3 SUBMITTALS

- A. General Submittal Requirements:
  - 1. Submittals shall be approved by authorities having jurisdiction prior to submitting them to Architect.
  - 2. Shop Drawings shall be prepared by persons with the following qualifications:
    - a. Trained and certified by manufacturer in fire-alarm system design.
- B. Product Data: For each type of product indicated.
- C. Shop Drawings: For fire-alarm system. Include plans, elevations, sections, details, and attachments to other work.
  - 1. Comply with recommendations in the "Documentation" Section of the "Fundamentals of Fire Alarm Systems" Chapter in NFPA 72.
  - 2. Include voltage drop calculations for notification appliance circuits.
  - 3. Include battery-size calculations.
  - 4. Include performance parameters and installation details for each detector, verifying that each detector is listed for complete range of air velocity, temperature, and humidity possible when air-handling system is operating.
  - 5. Include plans, sections, and elevations of heating, ventilating, and air-conditioning ducts, drawn to scale and coordinating installation of duct smoke detectors and access to them.

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Show critical dimensions that relate to placement and support of sampling tubes, detector housing, and remote status and alarm indicators. Locate detectors according to manufacturer's written recommendations.

- 6. Include floor plans to indicate final outlet locations showing address of each addressable device. Show size and route of cable and conduits.
- D. Delegated-Design Submittal: For smoke and heat detectors indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
  - 1. Drawings showing the location of each smoke and heat detector, ratings of each, and installation details as needed to comply with listing conditions of the detector.
- E. Qualification Data: For qualified Installer.
- F. Operation and Maintenance Data: For fire-alarm systems and components to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 01 Section "Operation and Maintenance Data," include the following:
  - 1. Comply with the "Records" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72.
  - 2. Provide "Record of Completion Documents" according to NFPA 72 article "Permanent Records" in the "Records" Section of the "Inspection, Testing and Maintenance" Chapter.
  - 3. Record copy of site-specific software.
  - 4. Provide "Maintenance, Inspection and Testing Records" according to NFPA 72 article of the same name and include the following:
    - a. Frequency of testing of installed components.
    - b. Frequency of inspection of installed components.
    - c. Requirements and recommendations related to results of maintenance.
    - d. Manufacturer's user training manuals.
  - 5. Manufacturer's required maintenance related to system warranty requirements.
  - 6. Abbreviated operating instructions for mounting at fire-alarm control unit.
  - 7. Copy of NFPA 25.

## 1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Personnel shall be trained and certified by manufacturer for installation of units required for this Project. Personnel shall be qualified to work on existing fire alarm system.
- B. Source Limitations for Fire-Alarm System and Components: Obtain fire-alarm system from single source from single manufacturer. Components shall be compatible with, and operate as, an extension of existing system.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

## PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

A. Manufacturers: All products shall be compatible with the existing EST-3 Fire Alarm Control Panel System.

#### 2.2 SYSTEMS OPERATIONAL DESCRIPTION

- A. Fire-alarm signal initiation shall be by one or more of the following devices **and systems**:
  - 1. Manual stations.
  - 2. Heat detectors.
  - 3. Smoke detectors.
  - 4. Duct smoke detectors.
  - 5. Automatic sprinkler system water flow.
  - 6. Heat detectors in elevator shaft and pit.
  - 7. Fire-extinguishing system operation.
  - 8. Fire standpipe system.
- B. Fire-alarm signal shall initiate the following actions:
  - 1. Continuously operate alarm-notification appliances.
  - 2. Identify alarm at the fire-alarm control unit[ and remote annunciators].
  - 3. Transmit an alarm signal to the remote alarm receiving station.
  - 4. Unlock electric door locks in designated egress paths.
  - 5. Release fire and smoke doors held open by magnetic door holders.
  - 6. Switch heating, ventilating, and air-conditioning equipment controls to fire-alarm mode.
  - 7. Recall elevators to primary or alternate recall floors.
  - 8. Activate emergency lighting control.
  - 9. Activate emergency shutoffs for gas and fuel supplies.
  - 10. Record events in the system memory.
- C. Supervisory signal initiation shall be by one or more of the following devices and actions:
  - 1. Valve supervisory switch.
  - 2. Low-air-pressure switch of a dry-pipe sprinkler system.
  - 3. Elevator shunt-trip supervision.
- D. System trouble signal initiation shall be by one or more of the following devices and actions:
  - 1. Open circuits, shorts, and grounds in designated circuits.
  - 2. Opening, tampering with, or removing alarm-initiating and supervisory signal-initiating devices.
  - 3. Loss of primary power at fire-alarm control unit.
  - 4. Ground or a single break in fire-alarm control unit internal circuits.
  - 5. Abnormal ac voltage at fire-alarm control unit.
  - 6. Break in standby battery circuitry.
  - 7. Failure of battery charging.
  - 8. Abnormal position of any switch at fire-alarm control unit or annunciator.
  - 9. Fire-pump power failure, including a dead-phase or phase-reversal condition.

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- 10. Low-air-pressure switch operation on a dry-pipe or preaction sprinkler system.
- E. System Trouble and Supervisory Signal Actions: Initiate notification appliance and annunciate at fire-alarm control unit **and remote annunciators**.

# 2.3 FIRE-ALARM CONTROL UNIT

- A. General Requirements for Fire-Alarm Control Unit:
  - 1. Field-programmable, microprocessor-based, modular, power-limited design with electronic modules, complying with UL 864 and listed and labeled by an NRTL.
    - a. System software and programs shall be held in flash electrically erasable programmable read-only memory (EEPROM), retaining the information through failure of primary and secondary power supplies.
    - b. Include a real-time clock for time annotation of events on the event recorder and printer.
  - 2. Addressable control circuits for operation of mechanical equipment.
  - 3. Compatible with the existing EST-3 Fire Alarm Control Panel and networked system.

#### 2.4 MANUAL FIRE-ALARM BOXES

- A. General Requirements for Manual Fire-Alarm Boxes: Comply with UL 38. Boxes shall be finished in red with molded, raised-letter operating instructions in contrasting color; shall show visible indication of operation; and shall be mounted on recessed outlet box. If indicated as surface mounted, provide manufacturer's surface back box.
  - 1. Double-action mechanism requiring two actions to initiate an alarm, **pull-lever** type; with integral addressable module arranged to communicate manual-station status (normal, alarm, or trouble) to fire-alarm control unit.
  - 2. Station Reset: Key- or wrench-operated switch.
  - 3. Indoor Protective Shield: Factory-fabricated clear plastic enclosure hinged at the top to permit lifting for access to initiate an alarm. Lifting the cover actuates an integral battery-powered audible horn intended to discourage false-alarm operation.
  - 4. Weatherproof Protective Shield: Factory-fabricated clear plastic enclosure hinged at the top to permit lifting for access to initiate an alarm.

# 2.5 SYSTEM SMOKE DETECTORS

- A. General Requirements for System Smoke Detectors:
  - 1. Comply with UL 268; operating at 24-V dc, nominal.
  - 2. Detectors shall be **two**-wire type.
  - 3. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control unit.
  - 4. Base Mounting: Detector and associated electronic components shall be mounted in a twist-lock module that connects to a fixed base. Provide terminals in the fixed base for connection to building wiring.

- 5. Self-Restoring: Detectors do not require resetting or readjustment after actuation to restore them to normal operation.
- 6. Integral Visual-Indicating Light: LED type indicating detector has operated **and power-on status**.
- B. Photoelectric Smoke Detectors:
  - 1. Detector address shall be accessible from fire-alarm control unit and shall be able to identify the detector's location within the system and its sensitivity setting.
  - 2. An operator at fire-alarm control unit, having the designated access level, shall be able to manually access the following for each detector:
    - a. Primary status.
    - b. Device type.
    - c. Present average value.
    - d. Present sensitivity selected.
    - e. Sensor range (normal, dirty, etc.).
- C. Duct Smoke Detectors: Photoelectric type complying with UL 268A.
  - 1. Detector address shall be accessible from fire-alarm control unit and shall be able to identify the detector's location within the system and its sensitivity setting.
  - 2. An operator at fire-alarm control unit, having the designated access level, shall be able to manually access the following for each detector:
    - a. Primary status.
    - b. Device type.
    - c. Present average value.
    - d. Present sensitivity selected.
    - e. Sensor range (normal, dirty, etc.).
  - 3. Weatherproof Duct Housing Enclosure: NEMA 250, Type 4X; NRTL listed for use with the supplied detector.
  - 4. Each sensor shall have multiple levels of detection sensitivity.
  - 5. Sampling Tubes: Design and dimensions as recommended by manufacturer for specific duct size, air velocity, and installation conditions where applied.
  - 6. Relay Fan Shutdown: Rated to interrupt fan motor-control circuit.

# 2.6 HEAT DETECTORS

- A. General Requirements for Heat Detectors: Comply with UL 521.
- B. Heat Detector, Combination Type: Actuated by either a fixed temperature of [35 deg F (57 deg C) or a rate of rise that exceeds 15 deg F (8 deg C) per minute unless otherwise indicated.
  - 1. Mounting: Twist-lock base interchangeable with smoke-detector bases.
  - 2. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control unit.
- C. Heat Detector, Fixed-Temperature Type: Actuated by temperature that exceeds a fixed temperature of [190 deg F (88 deg C)].

- 1. Mounting: Twist-lock base interchangeable with smoke-detector bases.
- 2. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control unit.

## 2.7 NOTIFICATION APPLIANCES

- A. General Requirements for Notification Appliances: Connected to notification appliance signal circuits, zoned as indicated, equipped for mounting as indicated and with screw terminals for system connections.
  - 1. Combination Devices: Factory-integrated audible and visible devices in a singlemounting assembly, equipped for mounting as indicated and with screw terminals for system connections.
- B. Chimes, Low-Level Output: Vibrating type, 75-dBA minimum rated output.
- C. Chimes, High-Level Output: Vibrating type, 81-dBA minimum rated output.
- D. Horns: Electric-vibrating-polarized type, 24-V dc; with provision for housing the operating mechanism behind a grille. Comply with UL 464. Horns shall produce a sound-pressure level of 90 dBA, measured 10 feet (3 m) from the horn, using the coded signal prescribed in UL 464 test protocol.
- E. Visible Notification Appliances: Xenon strobe lights comply with UL 1971, with clear or nominal white polycarbonate lens mounted on an aluminum faceplate. The word "FIRE" is engraved in minimum 1-inch- (25-mm-) high letters on the lens.
  - 1. Rated Light Output:
    - a. 15/30/75/110 cd, selectable in the field.
  - 2. Mounting: Wall mounted unless otherwise indicated.
  - 3. For units with guards to prevent physical damage, light output ratings shall be determined with guards in place.
  - 4. Flashing shall be in a temporal pattern, synchronized with other units.
  - 5. Strobe Leads: Factory connected to screw terminals.
  - 6. Mounting Faceplate: Factory finished, white.

#### 2.8 MAGNETIC DOOR HOLDERS

- A. Description: Units are equipped for wall or floor mounting as indicated and are complete with matching doorplate.
  - 1. Electromagnet: Requires no more than 3 W to develop 25-lbf (111-N) holding force.
  - 2. Wall-Mounted Units: Flush mounted unless otherwise indicated.
  - 3. Rating: 24-V ac or dc.
  - 4. Rating: 120-V ac.
- B. Material and Finish: Match door hardware.

#### 2.9 REMOTE ANNUNCIATOR

- A. Description: Annunciator functions shall match those of fire-alarm control unit for alarm, supervisory, and trouble indications. Manual switching functions shall match those of fire-alarm control unit, including acknowledging, silencing, resetting, and testing.
  - 1. Mounting: **Surface** cabinet, NEMA 250, Type 1.
- B. Display Type and Functional Performance: Alphanumeric display and LED indicating lights shall match those of fire-alarm control unit. Provide controls to acknowledge, silence, reset, and test functions for alarm, supervisory, and trouble signals.

# 2.10 ADDRESSABLE INTERFACE DEVICE

- A. Description: Microelectronic monitor module, NRTL listed for use in providing a system address for alarm-initiating devices for wired applications with normally open contacts.
- B. Integral Relay: Capable of providing a direct signal.

# 2.11 DIGITAL ALARM COMMUNICATOR TRANSMITTER

- A. Digital alarm communicator transmitter shall be acceptable to the remote central station and shall comply with UL 632 and be listed and labeled by an NRTL.
- B. Functional Performance: Unit shall receive an alarm, supervisory, or trouble signal from firealarm control unit and automatically capture **[one] [two]** telephone line(s) and dial a preset number for a remote central station. When contact is made with central station(s), signals shall be transmitted. If service on **[either]** line is interrupted for longer than 45 seconds, transmitter shall initiate a local trouble signal and transmit the signal indicating loss of telephone line to the remote alarm receiving station over the remaining line. Transmitter shall automatically report telephone service restoration to the central station. If service is lost on both telephone lines, transmitter shall initiate the local trouble signal.
- C. Local functions and display at the digital alarm communicator transmitter shall include the following:
  - 1. Verification that both telephone lines are available.
  - 2. Programming device.
  - 3. LED display.
  - 4. Manual test report function and manual transmission clear indication.
  - 5. Communications failure with the central station or fire-alarm control unit.
- D. Secondary Power: Integral rechargeable battery and automatic charger.
- E. Self-Test: Conducted automatically every 24 hours with report transmitted to central station.

# PART 3 - EXECUTION

## 3.1 EQUIPMENT INSTALLATION

- A. Comply with NFPA 72 for installation of fire-alarm equipment.
- B. Connecting to Existing Equipment: Verify that existing fire-alarm system is operational before making changes or connections.
  - 1. Connect new equipment to existing control panel in existing part of the building.
  - 2. Connect new equipment to existing monitoring equipment at the supervising station.
  - 3. Expand, modify, and supplement existing equipment as necessary to extend existing functions to the new points. New components shall be capable of merging with existing configuration without degrading the performance of either system.
- C. Smoke- or Heat-Detector Spacing:
  - 1. Comply with NFPA 72, "Smoke-Sensing Fire Detectors" Section in the "Initiating Devices" Chapter, for smoke-detector spacing.
  - 2. Comply with NFPA 72, "Heat-Sensing Fire Detectors" Section in the "Initiating Devices" Chapter, for heat-detector spacing.
- D. Duct Smoke Detectors: Comply with NFPA 72 and NFPA 90A. Install sampling tubes so they extend the full width of duct.
- E. Heat Detectors in Elevator Shafts: Coordinate temperature rating and location with sprinkler rating and location.
- F. Single-Station Smoke Detectors: Where more than one smoke alarm is installed within a dwelling or suite, they shall be connected so that the operation of any smoke alarm causes the alarm in all smoke alarms to sound.
- G. Remote Status and Alarm Indicators: Install near each smoke detector and each sprinkler water-flow switch and valve-tamper switch that is not readily visible from normal viewing position.
- H. Audible Alarm-Indicating Devices: Install not less than 6 inches (150 mm) below the ceiling. Install bells and horns on flush-mounted back boxes with the device-operating mechanism concealed behind a grille.
- I. Visible Alarm-Indicating Devices: Install adjacent to each alarm bell or alarm horn and at least 6 inches (150 mm) below the ceiling.
- J. Device Location-Indicating Lights: Locate in public space near the device they monitor.
- K. Fire-Alarm Control Unit: Surface mounted, with tops of cabinets not more than 72 inches (1830 mm) above the finished floor.
- L. Annunciator: Install with top of panel not more than 72 inches (1830 mm) above the finished floor.

## 3.2 CONNECTIONS

- A. For fire-protection systems related to doors in fire-rated walls and partitions and to doors in smoke partitions, comply with requirements in Division 08 Section "Door Hardware." Connect hardware and devices to fire-alarm system.
  - 1. Verify that hardware and devices are NRTL listed for use with fire-alarm system in this Section before making connections.
- B. Make addressable connections with a supervised interface device to the following devices and systems. Install the interface device less than 3 feet (1 m) from the device controlled. Make an addressable confirmation connection when such feedback is available at the device or system being controlled.
  - 1. Alarm-initiating connection to smoke-control system (smoke management) at firefighter smoke-control system panel.
  - 2. Alarm-initiating connection to elevator recall system and components.
  - 3. Alarm-initiating connection to activate emergency lighting control.
  - 4. Alarm-initiating connection to activate emergency shutoffs for gas and fuel supplies.
  - 5. Supervisory connections at valve supervisory switches.
  - 6. Supervisory connections at low-air-pressure switch of each dry-pipe sprinkler system.
  - 7. Supervisory connections at elevator shunt trip breaker.
  - 8. Supervisory connections at fire-pump power failure including a dead-phase or phase-reversal condition.
  - 9. Supervisory connections at fire-pump engine control panel.

## 3.3 IDENTIFICATION

- A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Division 26 Section "Identification for Electrical Systems."
- B. Install framed instructions in a location visible from fire-alarm control unit.

#### 3.4 GROUNDING

A. Ground fire-alarm control unit and associated circuits; comply with IEEE 1100. Install a ground wire from main service ground to fire-alarm control unit.

#### 3.5 FIELD QUALITY CONTROL

- A. Field tests shall be witnessed by authorities having jurisdiction.
- B. Tests and Inspections:
  - 1. Visual Inspection: Conduct visual inspection prior to testing.
    - a. Inspection shall be based on completed Record Drawings and system documentation that is required by NFPA 72 in its "Completion Documents, Preparation" Table in the "Documentation" Section of the "Fundamentals of Fire Alarm Systems" Chapter.

- b. Comply with "Visual Inspection Frequencies" Table in the "Inspection" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72; retain the "Initial/Reacceptance" column and list only the installed components.
- 2. System Testing: Comply with "Test Methods" Table in the "Testing" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72.
- 3. Test audible appliances for the public operating mode according to manufacturer's written instructions. Perform the test using a portable sound-level meter complying with Type 2 requirements in ANSI S1.4.
- 4. Test audible appliances for the private operating mode according to manufacturer's written instructions.
- 5. Test visible appliances for the public operating mode according to manufacturer's written instructions.
- 6. Factory-authorized service representative shall prepare the "Fire Alarm System Record of Completion" in the "Documentation" Section of the "Fundamentals of Fire Alarm Systems" Chapter in NFPA 72 and the "Inspection and Testing Form" in the "Records" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72.
- C. Reacceptance Testing: Perform reacceptance testing to verify the proper operation of added or replaced devices and appliances.
- D. Fire-alarm system will be considered defective if it does not pass tests and inspections.
- E. Prepare test and inspection reports.
- F. Maintenance Test and Inspection: Perform tests and inspections listed for weekly, monthly, quarterly, and semiannual periods. Use forms developed for initial tests and inspections.
- G. Annual Test and Inspection: One year after date of Substantial Completion, test fire-alarm system complying with visual and testing inspection requirements in NFPA 72. Use forms developed for initial tests and inspections.

END OF SECTION 283111