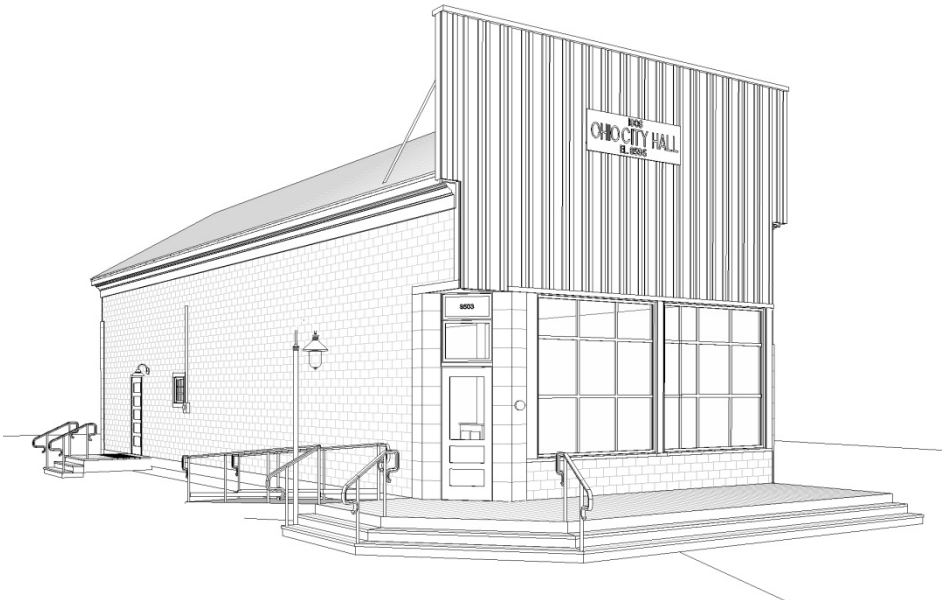
FOUNDATION STABILIZATION AND HISTORIC REHABILITATION FOR THE

OHIO CITY TOWN HALL

OHIO CITY, COLORADO



PROJECT MANUAL

ISSUE C - BID SET
DECEMBER 11, 2012

BEN WHITE
ARCHITECTURE

ISSUE LOG

** Items in Italics have not been issued.*

ISSUE NAME	DESCRIPTION	ISSUE SET	ISSUE DATE
Review Set	24x36 Drawings and Specifications	A	9/7/12
Bid Set	24x36 Drawings and Specifications	B	10/08/12
Bid Set	24x36 Drawings and Specifications	B	12/11/12

REVISION DOCUMENTS	DESCRIPTION	ISSUE SET	ISSUE DATE

END OF ISSUE LOG

DRAWING INDEX

** Items in Italics have not been issued.*
***Items in Bold have been revised.**

NUMBER	DRAWING NAME	ISSUE SET	ISSUE DATE
A0.1	Cover Sheet	C	12/11/12
A0.2	Site Plan & Code Review	C	12/11/12
A1.1	Existing Conditions	C	12/11/12
A1.2	Existing Elevations	C	12/11/12
A7.1	Details	C	12/11/12
T1.1	Foundation Stabilization	C	12/11/12
T1.2	Electrical Distribution	C	12/11/12
T1.3A	Interior Structural Rehabilitation	C	12/11/12
T1.3B	Interior Structural Rehabilitation	C	12/11/12
T2.1	Window & Door Rehabilitation	C	12/11/12
T2.2	Wood Floor Rehabilitation	C	12/11/12
T2.3	Metal Siding Repair & Rehabilitation	C	12/11/12
T2.4	Metal Ceiling Tile Rehabilitation	C	12/11/12

END OF DRAWING INDEX

SPECIFICATION INDEX

** Items in Italics have not been issued.*
***Items in Bold have been revised.**

DIV NO.	DIVISION TITLE	ISSUE SET	ISSUE DATE
BID DOCUMENTS			
	Information for Bidders	C	12/11/12
	Bid Form	C	12/11/12
	Bid Bond	C	12/11/12
	Sample Notice of Award	C	12/11/12
	Sample Notice to Proceed	C	12/11/12
	Sample Performance Bond	C	12/11/12
	Sample Contractor's Agreement	C	12/11/12
	General Conditions of the Contract	C	12/11/12
	Sample Affidavit Regarding Unauthorized Immigrants	C	12/11/12
	Sample Notice of Substantial Completion	C	12/11/12
	Sample Notice of Contractor's Settlement	C	12/11/12
	Sample Notice of Final Acceptance	C	12/11/12
HISTORIC PRESERVATION – TECHINICAL PROCEDURES			
0106001S	General Requirements for Safety and Health	C	12/11/12
0106002S	Accessibility Standards for Historic Buildings	C	12/11/12
0109104S	Secretary of the Interior's Standards for Rehabilitation	C	12/11/12
0109105S	Guidelines for Historic Buildings: General	C	12/11/12
0109107S	Guidelines for Historic Buildings: Wood	C	12/11/12
0109108S	Guidelines for Historic Buildings: Architectural Metals	C	12/11/12
0109110S	Guidelines for Historic Buildings: Windows	C	12/11/12
0109111S	Guidelines for Historic Buildings: Entries and Porches	C	12/11/12
0109113S	Guidelines for Historic Buildings: Interior Spaces	C	12/11/12
0109121S	Guidelines for Historic Buildings: Fire Safety	C	12/11/12

DIVISION 01 – GENERAL REQUIREMENTS			
011000	Summary	C	12/11/12
012300	Alternates	C	12/11/12
012900	Payment Procedures	C	12/11/12
013100	Project Management and Coordination	C	12/11/12
017123	Field Engineering	C	12/11/12
017329	Cutting and Patching Original Work	C	12/11/12
017419	Construction Waste Management	C	12/11/12
017700	Closeout Procedures	C	12/11/12
DIVISION 02 – EXISTING CONDITIONS			
020700	Deconstruction	C	12/11/12
020710	Protection and Salvage of Historic Elements	C	12/11/12
029900	Structure Moving	C	12/11/12
DIVISION 03 - CONCRETE			
033000	Cast-In-Place Concrete	C	12/11/12
DIVISION 05 - METALS			
057300	Decorative Metal Railings	C	12/11/12
057302	Installing a Tin Ceiling and Cornice	C	12/11/12
DIVISION 06 – WOOD, PLASTICS, & COMPOSITES			
061000	Rough Carpentry	C	12/11/12
062000	Finish Carpentry	C	12/11/12
062500	General Wood Restoration	C	12/11/12
063101	Applying a Water-Repellant Preservative to Wood	C	12/11/12
064023	Interior Architectural Woodwork	C	12/11/12
DIVISION 07 – THERMAL & MOISTURE PROTECTION			
071416	Fluid Applied Waterproofing	C	12/11/12
076200	Sheet Metal Flashing and Trim	C	12/11/12
DIVISION 08 – OPENINGS			
081416	Wood Doors	C	12/11/12

082103	Fabrication and Installation of Wood Windows	C	12/11/12
086100	Wood Windows	C	12/11/12
082103	Replacement of Damaged Wood Doors	C	12/11/12
087002	Installing Accessible Building Hardware	C	12/11/12
087100	Finish Hardware	C	12/11/12
DIVISION 09 – FINISHES			
095502	Stripping and Finishing Wood Floors	C	12/11/12
095600	Wood Flooring	C	12/11/12
095601	Replacing Damaged Floor Boards	C	12/11/12
DIVISION 10 – SPECIALTIES			
104416	Fire Extinguishers	C	12/11/12
DIVISION 20 – MECHANICAL, ELECTRICAL & PLUMBING			
160100	Electrical Design / Build Provisions	C	12/11/12
265100	Interior Lighting	C	12/11/12
DIVISION 30 – SITE WORK			
310000	Earthwork	C	12/11/12

END OF SPECIFICATION INDEX

STATE OF COLORADO
OFFICE OF THE STATE ARCHITECT
STATE BUILDINGS PROGRAMS

BID DOCUMENTS FOR

OHIO CITY TOWN HALL
FOUNDATION STABILIZATION & HISTORIC REHABILITATION
OHIO CITY, COLORADO

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STATE OF COLORADO
OFFICE OF THE STATE ARCHITECT
STATE BUILDINGS PROGRAMS

INFORMATION FOR BIDDERS

Institution or Agency: Gunnison County, Colorado – Public Works Department
Project No./Name: Ohio City Town Hall – Foundation Stabilization and Historic Rehabilitation

1. **BID FORM:** Bidders are required to use the Bid form attached to the bidding documents. Each bidder is required to bid on all alternates and indicate the time from the date of the Notice to Proceed to Substantial Completion in calendar days, and in addition, the bidder is required to indicate the period of time to finally complete the project from Substantial Completion to Final Acceptance, also in calendar days. Bids indicating times for Substantial Completion and Final Acceptance in excess of the number of days indicated in the Advertisement for Bids for completion of the entire Project may be found non-responsive and may be rejected. The bid shall not be modified or conditioned in any manner. Bids shall be submitted in sealed envelopes bearing the address and information shown below. If a bid is submitted by mail, this aforementioned sealed envelope should be enclosed in an outer envelope and sent to the following addressee:

   Please return the Bid Form, Bid Alternates Form (if applicable), and Bid Bond as follows:

   BIDS DUE:

   Delivery:
   Mail:

2. **INCONSISTENCIES AND OMISSIONS:** Bidders may request clarification of any seeming inconsistencies, or matters seeming to require explanation, in the bidding documents at least three (3) business days prior to the time set for the opening of Bids. Decisions of major importance on such matters will be issued in the form of addendum.

3. **APPLICABLE LAWS AND REGULATIONS:** The bidder's attention is called to the fact that all work under this Contract shall comply with the provisions of all state and local laws, approved state building codes, ordinances and regulations which might in any manner affect the work to be done or those to be employed in or about the work. Attention is also called to the fact that the use of labor for work shall be governed by the provisions of Colorado law which are hereinafter set forth in Articles 27 and 52E of the GENERAL CONDITIONS.

4. **UNAUTHORIZED IMMIGRANTS:** Note that the Special Provisions of the General Conditions of the Contract includes the following language: PUBLIC CONTRACTS FOR SERVICES - CRS 8-17.5-101 and PUBLIC CONTRACTS WITH NATURAL PERSONS - 24-76.5-101. The Contractor certifies that the Contractor shall comply with the provisions of CRS 8-17.5-101 et seq. The 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 the Contractor that the subcontractor shall not knowingly employ or contract with an illegal alien to perform work under this contract. The Contractor represents, warrants, and agrees that it (i) has verified that it does not employ any illegal aliens, through participation in the Basic Pilot Employment Verification Program administered by the Social Security Administration and Department of Homeland Security, and (ii) otherwise will comply with the requirements of CRS 8-17.5-102(2)(b). The Contractor 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 Contractor fails to comply with any requirement of this provision or CRS 8-17.5-101 et seq., the State may terminate this contract for breach and the Contractor shall be liable for actual and consequential damages to the State.

   A Contractor that operates as a sole proprietor hereby swears or affirms under penalty of perjury that the Contractor (i) is a citizen of the United States or otherwise lawfully present in the United States pursuant to

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federal law, (ii) shall comply with the provisions of CRS 24-76.5-101 et seq, and (iii) shall produce one of the forms of identification required by CRS 24-76.5-103 prior to the effective date of this Contract. Except where exempted by federal law and except as provided in CRS 24-76.5-103(3), a Contractor that receives federal or state funds under this contract must confirm that any individual natural person eighteen years of age or older is lawfully present in the United States pursuant to CRS 24-76.5-103(4) if such individual applies for public benefits provided under this contract.

5. **TAXES:** The bidder's attention is called to the fact that the Bid submitted shall exclude all applicable federal excise or manufacturers' taxes and all state sales and use taxes as hereinafter set forth in Article 9C of the GENERAL CONDITIONS.

6. **OR EQUAL:** The words "OR EQUAL" are applicable to all specifications and drawings relating to materials or equipment specified. Any material or equipment that will fully perform the duties specified, will be considered "equal", provided the bid submits proof that such material or equipment is of equivalent substance and function and is approved, in writing. Requests for the approval of "or equal" shall be made in writing at least five (5) business days prior to bid opening. During the bidding period, all approvals shall be issued by the Architect/Engineer in the form of addenda at least two (2) business days prior to the bid opening date.

7. **ADDENDA**: Owner/architect initiated addenda shall not be issued later than two (2) business days prior to bid opening date. All addenda shall become part of the Contract Documents and receipt must be acknowledged on the Bid form.

8. **METHOD OF AWARD - LOWEST RESPONSIBLE BIDDER:** If the bidding documents for this project require alternate prices, additive and/or deductible alternates shall be listed on the alternates bid form provided by the Principal Representative. Bidders should note the Method of Award is applicable to this Bid as stated below.

   A. **DEDUCTIBLE ALTERNATES:** The lowest responsible Bid, taking into account the Colorado resident bidder preference provision of Colorado law, will be determined by and the contract will be awarded on the base bid combined with deductible alternates, deducted in numerical order in which they are listed in the alternates bid form provided by the Principal Representative. The subtraction of alternates shall result in a sum total within available funds. If this bid exceeds such amount, the right is reserved to reject all bids. An equal number of alternates shall be subtracted from the base bid of each bidder within funds available for purposes of determining the lowest responsible bidder.

   B. **ADDITIVE ALTERNATES:** The lowest responsible Bid, taking into account the Colorado resident bidder preference provision of Colorado law, will be determined by and the contract will be awarded on the base bid plus all additive alternates added in the numerical order in which they are listed in the alternates bid form provided by the Principal Representative. The addition of alternates shall result in a sum total within available funds. If this bid exceeds such amount, the right is reserved to reject all bids. An equal number of alternates shall be added to the base bid of each bidder within funds available for purposes of determining the lowest responsible bidder.

   C. **DEDUCTIBLE AND ADDITIVE ALTERNATES:** Additive alternates will not be used if deductible alternates are used and deductible alternates will not be used if additive alternates are used.

9. **NOTICE OF CONTRACTOR'S SETTLEMENT** – Agencies/institutions must indicate in the initial Solicitation (Advertisement for Bids, Documented Quotes, or Requests for Proposals) whether settlement will be advertised in newspapers or electronic media.

The Advertisement for Bids can be located at the web site: www.colorado.gov/dpa/dfp/sbrep/constructdesign.htm
(Click on the link below the second paragraph Colorado Construction and Design Notices)

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STATE OF COLORADO
OFFICE OF THE STATE ARCHITECT
STATE BUILDINGS PROGRAMS

BID

Institution/Agency: Gunnison County, Colorado – Public Works Department
Project No./Name: Ohio City Town Hall – Foundation Stabilization and Historic Rehabilitation

Bidder Acknowledges Receipt of Addenda Numbers: _____

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: 10
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.
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 54D 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.**

Dated this _____ Day of _____ , 20_____

THE BIDDER:

_____
Company Name

_____
Address (including city, state and zip)
Phone number: _____

_____
Signature

_____
Name (Print) and Title

SIGNATURES: If the Bid is being submitted by a Corporation, the Bid should 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.

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STATE OF COLORADO
OFFICE OF THE STATE ARCHITECT
STATE BUILDINGS PROGRAMS

BID BOND

Institution/Agency: Gunnison County, Colorado – Public Works Department

Project No./Name: Ohio City Town Hall – Foundation Stabilization and Historic Rehabilitation

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.

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

(Corporate Seal)

ATTEST

_____
Secretary

_____
Name (Print)

THE PRINCIPAL

_____
Company Name

_____
Address (including city, state and zip)
Phone number: _____

_____
Signature

_____
Name (Print) and Title

SIGNATURES If the "Principal" is doing business as a Corporation, the Bid Bond shall be signed by an officer, i.e., President or Vice President. The signature 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)

_____
Secretary

THE SURETY

_____

By _____
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.

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STATE OF COLORADO
OFFICE OF THE STATE ARCHITECT
STATE BUILDINGS PROGRAMS

NOTICE OF AWARD

Date of Notice: _____
Date to be inserted by the Principal Representative

Institution/Agency: Gunnison County, Colorado – Public Works Department

Project No./Name: Ohio City Town Hall – Foundation Stabilization and Historic Rehabilitation

TO:

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

Your Proposal, deemed to be in the best interest of the State of Colorado, in the amount of _____ DOLLARS AND NO/100* ($_____*) is hereby accepted, pending final execution of the Agreement.

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 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 and Certificates of Insurance, and Certification and Affidavit Regarding Unauthorized Immigrants 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 _____ By _____

State Buildings Programs (of Authorized Delegate) — Date

Principal Representative (Institution or Agency) — Date

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

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STATE OF COLORADO
OFFICE OF THE STATE ARCHITECT
STATE BUILDINGS PROGRAMS

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: Gunnison County, Colorado – Public Works Department

Project No./Name: Ohio City Town Hall – Foundation Stabilization and Historic Rehabilitation

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 completion date of the Project is _____ (M/D/YYYY).

By _____
State Buildings Programs (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 by any other means to which the parties agree.

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STATE OF COLORADO
OFFICE OF THE STATE ARCHITECT
STATE BUILDINGS PROGRAMS

PERFORMANCE BOND

Institution/Agency: Gunnison County, Colorado – Public Works Department
Project No./Name: Ohio City Town Hall – Foundation Stabilization and Historic Rehabilitation

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;

SPECIMEN

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.

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

(Corporate Seal)

THE PRINCIPAL

_____

ATTEST:

By: _____

Title: _____

_____
Secretary

(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 payment for all labor and material of the contract.

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STATE OF COLORADO
OFFICE OF THE STATE ARCHITECT
STATE BUILDINGS PROGRAMS

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

CONTRACT ID NUMBER: _____

AGENCY IDENTIFICATION NUMBER: _____

PROJECT NUMBER: _____

PROJECT NAME: Ohio City Town Hall – Foundation Stabilization and Historic Rehabilitation

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SPECIMEN

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

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SIGNATURE APPROVALS		2

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 (required at contract signing prior to commencing work)
- **F** Contract Management Information Construction Contractor

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

Agency I.D. No.: _____ Contract ID No.: _____ Project No. _____

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

WHEREAS, the Principal Representative intends to *rehabilitate the Ohio City Town Hall.* Hereinafter called the Project; and

WHEREAS, authority exists in 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_____, Contract Encumbrance 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 __10____ 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 54D of The General Conditions of the Construction Contract SC-6.23 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 the performance of this Agreement, subject to any additions and deductions as provided for in 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 Construction Contract Sc-6.23, are all essential parts of this Agreement and are fully incorporated herein.

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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**

Project Name/Number: _____

Contract ID No.: _____

THE CONTRACTOR

_____
Legal Name of Contracting Entity

_____
*Signature

By _____
Name (print) Title

Date: _____

STATE OF COLORADO, acting by and through:
(Insert Name & Title of Agency or IHE)

By: _____
(Insert Name & Title of Person Signing for Agency or IHE)

Date: _____

APPROVED
DEPARTMENT OF PERSONNEL & ADMINISTRATION
STATE BUILDINGS PROGRAMS
State Architect (or authorized Delegate)

By: _____
(Insert Name of Authorized Individual)

Date: _____

ALL CONTRACTS MUST BE APPROVED BY THE STATE CONTROLLER:

CRS §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: _____

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

EXHIBIT A

CONTRACTOR'S BID (Form SBP-6.13)

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

EXHIBIT B

PERFORMANCE BOND (Form SC-6.22)

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

EXHIBIT C

LABOR AND MATERIAL PAYMENT BOND (Form SC-6.221)

SPECIMEN

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

EXHIBIT D

INSURANCE CERTIFICATE(S) (attached)

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

EXHIBIT E

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

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STATE OF COLORADO
OFFICE OF THE STATE ARCHITECT
STATE BUILDINGS PROGRAMS

THE GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT DESIGN/BID/BUILD

(STATE FORM SC-6.23)

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Note: The sections of the General Conditions indicated in *italics* (Articles 35 General and 35A, 35B, 37, 38, 46, 48B, 49 and 50) are regulatory and cannot be modified except through appropriate rule making procedures through the Division of Finance and Procurement, Department of Personnel & Administration.

General Conditions of Contract

ARTICLE 1. DEFINITIONS

A. 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. Agreement; (SC-6.21);
2. Performance Bond (SC-6.22) and Labor and Material Payment Bond (SC-6.221);
3. General Conditions of the Construction Contract (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 Programs 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 Programs forms applicable to this Contract may be obtained from the Principal Representative on request.

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B. DEFINITIONS OF WORDS AND TERMS USED

1. 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. 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.
3. 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.
4. CHANGE ORDER. The term "Change Order" means a written order, signed by a Procurement Officer, 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" shall be defined, as provided in § 8-17-101, C.R.S., as any person who is a resident of the state of Colorado, at the time of employment, without discrimination as to race, color, creed, sex, age, or religion except when sex or age is a bona fide occupational qualification, or shall have such other meaning as the term may otherwise be given in § 8-17-101, C.R.S., as amended.
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 35C 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 35C.
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. NOTICE. The term "Notice" shall mean any communication <u>in writing</u> 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 54E, 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 54E. 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.

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12. OWNER. The term “Owner” shall mean the Principal Representative.
13. PRINCIPAL REPRESENTATIVE. The term “Principal Representative ” shall be defined, as provided in § 24-30-1301(11), C.R.S., 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 § 24-30-1301(11), C.R.S., 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.
14. PROCUREMENT OFFICER. The term “Procurement Officer ” means any person duly authorized to enter into and administer contracts and make written determinations with respect thereto. “Procurement Officer” includes an authorized representative of the Principal Representative acting within the limits of his or her authority.
15. PRODUCT DATA. The term “Product Data ” shall mean all submittals in the form of printed manufacturer’s literature, manufacturer’s specifications, and catalog cuts.
16. 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. The phrase shall not, however, be construed to make the Contractor, rather than the Architect/Engineer, responsible for producing the Drawings and Specifications
17. SAMPLES. The term “Samples” shall mean examples of materials or work provided to establish the standard by which the Work will be judged.
18. 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 Contract).
19. 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).
20. 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.
21. 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.
22. STATE BUILDINGS PROGRAMS. 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 § 24-30-1301, *et seq*, C.R.S. The term State Buildings Programs 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 Programs.
23. 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-

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built drawings. Submittals are required by the Contract Documents, but except to the extent expressly specified otherwise are not themselves a part of the Contract Documents.

24. 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.
25. SURETY. The term “Surety ” shall mean the company providing the labor and material payment and performance bonds for the Contractor as obligor.
26. 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);

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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

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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 Programs 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. Bearing surfaces of excavations before concrete is placed based upon the findings and recommendations of the Principal Representative's soils engineering consultant;
2. Reinforcing steel after installation and before concrete is poured;

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3. Structural concrete;
4. Laboratory reports on all concrete testing based upon the findings and recommendations of the Principal Representative's testing consultant;
5. Structural steel during and after erection and prior to its being covered or enclosed;
6. Steel welding; Principal Representative will furnish steel welding inspection consultant/agency if required or necessary for the project;
7. Mechanical and plumbing work following its installation and prior to its being covered or enclosed;
8. Electrical work following its installation and prior to its being covered or enclosed;
9. Compaction testing reports based upon the findings and recommendations of the Principal Representative's testing consultant; 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 Architect/Engineer 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 such work is covered up without approval or consent of the Architect/Engineer or prior to any building code inspection, it must, if required by the Architect/Engineer, the Principal Representative or the State Buildings Programs, be uncovered for examination, at the Contractor's expense. If such work is found to be not in accordance with the Contract Documents, the Contractor shall pay such costs, unless he or she shall show that the defect in the work was caused by another contractor engaged by the Principal Representative. In that event, the Principal Representative shall pay such cost. In addition, examination of questioned work may be ordered, and if so ordered, the work must be uncovered by the Contractor. If such work be found in accordance with the Contract Documents, the Contractor shall be reimbursed the cost of examination and replacement.

ARTICLE 7. CONTRACTOR'S SUPERINTENDENCE AND SUPERVISION

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 Contractor and ceases to be in his or her employ. The superintendent shall represent the Contractor in his or her absence and all directions given to the superintendent shall be as binding as if given to the Contractor. Directions received by the superintendent shall be documented by the superintendent and confirmed in writing with the 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

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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 Programs 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 with such data as may be necessary to obtain refunds of the taxes paid by such Subcontractors. 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 § 39-26-114(1)(d), C.R.S., and § 39-26-203, C.R.S.

2. FEDERAL TAXES

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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.

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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.

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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 Programs 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

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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 Programs 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 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 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 Programs, 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

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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 co-ordinated 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.

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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. 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

The Contractor shall, within twenty one (21) days after the date of the Notice of Award, submit to the Architect/Engineer, the Principal Representative and State Buildings Programs 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 Programs not less than ten (10) days before the Subcontractor commences work.

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 of Award, 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.

The Contractor shall not employ any Subcontractor that the Architect/Engineer, within seven (7) 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

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Programs. 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.

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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.

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 his or her own use and the use of the Architect/Engineer, representatives of the Principal Representative and State Buildings Programs.

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

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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 Programs within ten (10) days after the date of the

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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)
2. 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.

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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	$5,000,000

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 Sub-subcontractors 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, falsework, 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 thoer causes of loss to the extent covered by property insurance obtained pursuant to this Section or other property insurance applicable

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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 Programs 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 Programs.

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

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Buildings Programs 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, et. seq., as amended, Colorado labor shall be employed to perform the work to the extent of not less than eighty percent (80%) of each type or class of labor in the several classifications of skilled and common labor employed on the Project. If the Federal Davis-Bacon Act shall be applicable to the Project, as indicated in Article 54B, 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.

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.

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 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 within thirty (30) days after the last day of the period for which payment is requested. 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 Programs shall approve, in an itemized format in accordance with the schedule of values or a cost loaded CPM 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

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Representative's interests, and shall provide proof of insurance whenever requested by 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 § 24-91-101, et seq., C.R.S., as amended, and except as provided in § 24-91-103, C.R.S., 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 Programs 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 Programs may withhold or nullify the whole or any part of any application for any reason noted elsewhere in these General Conditions of the Contract. 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.

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ARTICLE 34. DEDUCTIONS FOR UNCORRECTED WORK

If the Architect/Engineer and the Principal Representative deem it inexpedient to correct work injured 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 elect to correct or perform the work. If the Contractor does not elect to 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 notice period shall be extended and tolled until facilitation has occurred.

ARTICLE 35. CHANGES IN THE WORK

The Principal Representative, or such other Procurement Officer as the Principal Representative may designate, without invalidating the Agreement, and with the approval of State Buildings Programs 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 Programs, 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 Programs 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. The Principal Representative is the Procurement Officer for purposes of all of the remedies provisions of the Contract.*

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3. *Except as otherwise provided in Article 35B, Detailed Breakdown, below, the Cost Principles of the Colorado Procurement Rules in effect on the date of this Contract, pursuant to § 24-107-101, C.R.S., as amended, 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.*

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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%*	
To the Contractor or to Subcontractors for work performed by others at a tier immediately below either of them:	*5%*		*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 Programs 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. EMERGENCY FIELD CHANGE ORDERED WORK

The Principal Representative, without invalidating the Agreement, and with the approval of State Buildings Programs 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

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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. Weekly cost reports and the final adjustment of the Emergency Field Change Orders amount and the adjustment to the Project time for completion shall be prepared 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 Programs 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.

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

The amount of money appropriated, as shown on the 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 Procurement Code.

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 36A4, no written judgment or decision of the Architect/Engineer is required. If the Contractor is delayed by the lack of a response to a request for a decision by the Architect/Engineer, 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 35A3 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, § 24-109-106, C.R.S., 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, § 24-109-201 *et seq*, C.R.S., as amended. 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 Programs 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 pursuant to schedule, after such demand.

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 Programs 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.

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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 Programs 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;

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2. 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 54, 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 Programs 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.

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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 Programs 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 Programs. 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 Programs, in their complete and absolute discretion, all concur that the condition requiring the remaining

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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 54D(2), 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 Programs 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 Programs, 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

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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 Programs. 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 Architect/Engineer:

    a. All guarantees and warranties;
    b. All statements to support local sales tax refunds, if any;
    c. Three (3) complete bound sets of required operating maintenance instructions; and,
    d. One (1) set of as-built Contract Documents showing all job changes.

2. Demonstrated to the operating personnel of the Principal Representative the proper operation and maintenance of all equipment.

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.

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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 45, 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, § 38-26-107, C.R.S., 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 the Notice of Substantial Completion; provided, however, that the Contractor shall not be required to remedy deviations from the requirements of the Contract Documents where such deviations were obvious, apparent and 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.

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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 54A, 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 Principal Representative shall schedule and so notify all parties concerned, including State Buildings Programs, 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 Programs, 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 Programs.

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

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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 54D, 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 54D, 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 54D(1), 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 54D(2), Modification of Article 46, liquidated damages, if any, shall be the amount specified in Article 54D, 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 54D(1) and (2), 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

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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 24-10-101, *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;
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 and if the unpaid balance of the contract price exceeds the cost of completing 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 § 24-107-101, C.R.S., as amended and associated Cost Principles of the Colorado Procurement Rules as in effect on the date of this Contract.

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

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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, §§ 24-109-101, et seq., C.R.S., as amended.

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. 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. 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 CRS 24-30-202(1)

This Contract shall not be deemed valid until it has been approved by the Colorado State Controller or designee.

B. FUND AVAILABILITY CRS 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

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, of the Colorado Governmental Immunity Act, CRS §24-10-101 et seq., or the Federal Tort Claims Act, 28 U.S.C. §§1346(b) and 2671 et seq., as applicable now or hereafter amended.

D. INDEPENDENT CONTRACTOR 4 CCR 801-2

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 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. Unemployment insurance benefits will be available to Contractor and its employees and agents only if such coverage is made available by Contractor or a third party. Contractor shall pay when due all applicable

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employment taxes and income taxes and local head taxes incurred pursuant to this contract. 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 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 strictly 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

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. Any provision incorporated herein by reference which purports to negate this or any other Special Provision in whole or in part shall not be valid or enforceable or available in any action at law, whether by way of complaint, defense, or otherwise. Any provision rendered null and void by the operation of this provision shall not invalidate the remainder of this contract, to the extent capable of execution.

G. BINDING ARBITRATION PROHIBITED

The State of Colorado does not agree to binding arbitration by any extra-judicial body or person. Any provision to the contrary in this contract or incorporated herein by reference shall be null and void.

H. **SOFTWARE PIRACY PROHIBITION. Governor's Executive Order D 002 00**

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 CRS 24-18-201 & CRS 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 CRS 24-30-202(1) & CRS 24-30-202.4

Subject to CRS §24-30-202.4 (3.5), 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 CRS §39-21-101, et seq.; **(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.

K. PUBLIC CONTRACTS FOR SERVICES. **CRS §8-17.5-101**. [***Not Applicable to agreements relating to the offer, issuance, or sale of securities, investment advisory services or fund management services, sponsored projects, intergovernmental agreements, or information technology services or products and services***] 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

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States to perform work under this contract, through participation in the E-Verify Program or the Department program established pursuant to CRS §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 CRS §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 CRS §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. CRS §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 he or she (a) is a citizen or otherwise lawfully present in the United States pursuant to federal law, (b) shall comply with the provisions of CRS §24-76.5-101 et seq., and (c) has produced one form of identification required by CRS §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.

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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 effect 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. VENUE

All suits or actions related to this Agreement shall be filed and proceedings held in the State of Colorado and exclusive venue shall be in the City and County of Denver.

G. 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.

H. 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.

I. 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 and related costs, incurred as a result of any act or omission by Contractor, or its employees, agents, subcontractors, or assignees pursuant to the terms of this contract.

J. 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 section shall apply.

Contractor agrees to be governed, and to abide, by the provisions of CRS 24-102-205, 24-102-206, 24-103-601, 24-103.5-101, 24-105-101, and 24-105-102 concerning the monitoring of vendor performance on state contracts and inclusion of contract performance information in a statewide contract management system.

Contractor's performance shall be subject to Evaluation and Review in accordance with the terms and conditions of this Contract, State law, including C.R.S 24-103.5-101, and State Fiscal Rules, Policies and Guidance. Evaluation and Review of Contractor's performance shall be part of the normal contract administration process and Contractor's performance will be systematically recorded in the statewide Contract Management System. Areas of Evaluation and Review shall include, but shall not be limited to quality, cost and timeliness. Collection of information relevant to the performance of Contractor's obligations under this Contract shall be determined by the specific requirements of such obligations and shall include factors tailored to match the requirements of Contractor's obligations. Such performance information shall be entered into the statewide Contract Management System at intervals established herein and a final Evaluation, Review and Rating shall be rendered within 30 days of the end of the Contract term. Contractor shall be notified following each performance Evaluation and Review, and shall address or correct any identified problem in a timely manner and maintain work progress.

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Should the final performance Evaluation and Review determine that Contractor demonstrated a gross failure to meet the performance measures established hereunder, the Executive Director of the Colorado Department of Personnel and Administration (Executive Director), upon request by the Principal Representative, and showing of good cause, may debar Contractor and prohibit Contractor from bidding on future contracts. Contractor may contest the final Evaluation, Review and Rating by: (a) filing rebuttal statements, which may result in either removal or correction of the evaluation (CRS 24-105-102(6)), or (b) under CRS 24-105-102(6), exercising the debarment protest and appeal rights provided in CRS 24-109-106, 107, 201 or 202, which may result in the reversal of the debarment and reinstatement of Contractor, by the Executive Director, upon a showing of good cause.

K. CORA DISCLOSURE

To the extent not prohibited by federal law, this Agreement and the performance measures and standards under CRS §24-103.5-101, if any, are subject to public release through the Colorado Open Records Act, CRS §24-72-101, et seq.

ARTICLE 54. OPTIONAL PROVISIONS AND ELECTIONS

The provisions of this Article 54 alter the preceding Articles or enlarge upon them as indicated:
The Principal Representative and or the State Buildings Programs shall mark boxes and initial where applicable.

A. 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

B. 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

C. 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

D. 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 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.

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

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amounts on account thereof are deducted from remaining amounts due, but amounts remaining are insufficient to cover the entire assessment.

2. For damages related to or arising from additional administrative, technical, supervisory and professional expenses related to and arising from the extended closeout period, for each day in excess of the number of calendar days specified in the Contractor's bid for the Project and the Agreement to finally complete the Project as defined by the issuance of the Notice of Final Acceptance) after the issuance of the final Notice of Substantial Completion, 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.

E. 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:

Marlene D. Crosby
Gunnison County
Public Works Director
195 Basin Park Drive
Gunnison CO 81230

With copies to:

Notice to Contractor:

_____
_____
_____
_____

With copies to:

_____
_____
_____
_____

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STATE OF COLORADO
OFFICE OF THE STATE ARCHITECT
STATE BUILDINGS PROGRAMS

CERTIFICATION AND AFFIDAVIT REGARDING UNAUTHORIZED IMMIGRANTS

Institution/Agency: Gunnison County, Colorado – Public Works Department

Project No./Name: Ohio City Town Hall – Foundation Stabilization and Historic Rehabilitation

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)

4. If the Vendor is a sole proprietor, 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

   ☐ 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 _____, _20____.

VENDOR:

_____
Vendor Full Legal Name

BY: _____ _____
Signature of Authorized Representative Title

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STATE OF COLORADO
OFFICE OF THE STATE ARCHITECT
STATE BUILDINGS PROGRAMS

NOTICE OF SUBSTANTIAL COMPLETION

Date of Substantial Completion: _____
Date to be inserted by the Principal Representative

Institution/Agency: Gunnison County, Colorado – Public Works Department

Project No./Name: Ohio City Town Hall – Foundation Stabilization and Historic Rehabilitation

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 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 Programs	Date	Principal Representative	Date

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(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 Programs.

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STATE OF COLORADO
OFFICE OF THE STATE ARCHITECT
STATE BUILDINGS PROGRAMS

NOTICE OF CONTRACTOR'S SETTLEMENT

Institution/Agency: Gunnison County, Colorado – Public Works Department
Notice Number:
Project No./Title: Ohio City Town Hall – Foundation Stabilization and Historic Rehabilitation

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

1. 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:

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STATE OF COLORADO
OFFICE OF THE STATE ARCHITECT
STATE BUILDINGS PROGRAMS

NOTICE OF FINAL ACCEPTANCE

Date of Notice of Acceptance: _____

Date to be inserted by A/E after consultation with the Principal Representative

Institution/Agency: Gunnison County, Colorado – Public Works Department

Project No./Name: Ohio City Town Hall – Foundation Stabilization and Historic Rehabilitation

TO:

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

State Buildings Programs (or Authorized Delegate)	Date	Principal Representative (Institution or Agency)	Date

*When completely executed, this form is to be sent by certified mail to the Contractor by the Principal Representative.

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GENERAL REQUIREMENTS FOR SAFETY AND HEALTH

PART 1 GENERAL

1.01 SUMMARY

A. This procedure includes general safety and health guidelines to follow when performing any construction or demolition work on a project.

1.02 REFERENCES

A. Safety and health requirements should conform to the following:

1. Code of Federal Regulations (CFR):

a. OSHA General Industry Safety and Health Standards (29 CFR 1910), Publication V2206; OSHA Construction Industry Standards (29 CFR 1926). One source of these regulations is OSHA Publication 2207, which includes a combination of both Parts 1910 and 1925 as they relate to construction safety and health. It is for sale by the Superintendent of Documents. U.S. Government Printing Office, Washington, D.C. 20402.

b. National Emission Standards for Hazardous Air Pollutants (40 CFR, Part 61).

2. Federal Standard (Fed. Std):

a. 313A: Material Safety Data Sheets, Preparation and the Submission of.

1.03 DEFINITIONS

A. Hazardous Materials: Refer to hazardous and toxic materials/substances included in Subparts H and Z of 29 CFR 1910, and to others as additionally defined in Fed. Std. 313. Those most commonly encountered include asbestos, polychlorinated biphenyls (PCBS), explosives, and radioactive material, but may include others. The most likely products to contain asbestos are sprayed-on fireproofing, insulation, boiler lagging, and pipe covering.

1.04 SUBMITTALS

A. Design Data/Test Reports/Certificates:

1. Accident Reporting: A copy of each accident report, which the Contractor or subcontractors submit to their insurance carriers, shall be forwarded through the Construction Engineer to the Regional Historic Preservation Officer (RHPO) as soon as possible, but in no event later than seven (7) calendar days after the day the accident occurred.

2. Permits: If hazardous materials are disposed of off-site, submit copies of permits from applicable, Federal, State, or municipal authorities.

3. Other Submittals: If agreed to in writing at the preconstruction safety meeting, other submittals shall be required. One such submittal which may be included is a plan of action for handling hazardous materials to contain the following:

a. Number, type, and experience of employees to be used for the work.

b. Description of how safety and health regulations and standards shall be met.

c. Type of protective equipment and work procedures to be used.

d. Emergency procedures for accidental spills or exposures.

e. Procedures for disposing of or storing the toxic/hazardous materials.

f. Identification of possible hazards, problems, and proposed control mechanisms.

g. Protection of public or others not related to the operation.

h. Interfacing and control of subcontractors, if any.

i. Identifications of analysis, test demonstrations, and validation requirements.

j. Method of certification for compliance.

1.05 QUALITY ASSURANCE:

A. Regulatory Requirements:

1. Compliance With Regulations: All work, including the handling of hazardous materials or the disturbance or dismantling of structures containing hazardous materials shall comply with the applicable requirements of the State of Colorado Department of Health and Environment. All work shall comply with applicable state and municipal safety and health requirements. Where there is a conflict between applicable regulations, the most stringent shall apply.

2. Contractor Responsibility: The Contractor shall assume full responsibility and liability for compliance with all applicable regulations pertaining to the health and safety of personnel during the execution of work.

3. Inspections, Tests, and Reports: The required inspections, tests, and reports made by the Contractor, subcontractors, specially trained technicians, equipment manufacturers, and others as required shall be at the Contractor's expense.

4. Special facilities, devices, equipment, clothing, and similar items used by the Contractor in the execution of work shall comply with the applicable regulations.

5. The Contractor shall bring to the attention of the Owner any material suspected of being hazardous which he encounters during execution of the work. A determination will be made by the Owner as to whether the Contractor shall perform tests to determine if the material is hazardous.

7. The Contractor shall take all necessary precautions to prevent injury to the public, building occupants, or damage to property of others. For the purposes of this contract, the public or building occupants shall include all persons not employed by the Contractor or a subcontractor working under his/her direction.

8. Work shall not be performed in any area occupied by the Owner or the Owner’s employees unless specifically permitted by the contract or adequate steps are taken for the protection of the public or Owner’s employees.

9. Whenever practicable, the work area shall be fenced, barricaded, or otherwise blocked off from the public or building occupants to prevent unauthorized entry into the work area.

10. Alternate Precautions: When the nature of the work prevents isolation of the work area and the public or building occupants may be in or pass through, under or over the work area, alternate precautions such

as the posting of signs, the use of signal persons, the erection of barricades or similar protection around particularly hazardous operations shall be used as appropriate.

12. Fences and barricades shall be moved upon completion of the project, in accordance with local ordinance and to the satisfaction of the Owner.

13. Storing, positioning or use of equipment tools, materials, scraps, and trash in a manner likely to present a hazard to the public or building occupants by its accidental shifting, ignition, or other hazardous qualities is prohibited.

14. Obstructions: No corridor, aisle, stairway, door, or exit shall be obstructed or used in such a manner as to encroach upon routes of ingress or egress utilized by the public or building occupants, or to present unsafe or unhealthy conditions to the public or building occupants.

PART 2 PRODUCTS

Not Applicable

PART 3 EXECUTION

Not Applicable

END OF SECTION

UFAS 4.1.7 ACCESSIBILITY STANDARDS FOR HISTORIC BUILDINGS

This standard outlines the minimum Uniform Federal Accessibility Standards (UFAS) for Historic Buildings (Section 4.1.7 ONLY). For a complete copy of UFAS, write the following: Architectural and Transportation Barriers Compliance Board 1331 F Street, N.W., Ste. 1000 Washington, D.C. 20004-1111 800/872-2253
For guidance on developing an accessibility plan, see 01060-05-S. Accessibility standards for Historic Buildings shall conform with the Uniform Federal Accessibility Standards (UFAS),
Part II -Section 4 "Accessible Elements and Spaces: Scope and Technical Requirements".
Section 4.1 - "Minimum Requirements"
Section 4.1.6 - "Accessible Buildings: Alterations"
Section 4.3 - "Accessible Route"
Section 4.14 - "Entrances"
Section 4.22 - "Toilet Rooms"

1. As a general rule, the accessibility provisions of part 4 shall be applied to "qualified" historic buildings and facilities. "Qualified" buildings or facilities are those buildings and facilities that are eligible for listing in the National Register of Historic Places, or such properties designated as historic under a statute of the appropriate state or local government body. Comments of the Advisory Council on Historic Preservation shall be obtained when required by Section 106 of the National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470 and 36 CFR Part 800, before any alteration to a qualified historic building.

2. The Advisory Council shall determine, on a case-by-case basis, whether provisions required by part 4 for accessible routes (exterior and interior), ramps, entrances, toilets, parking, and displays and signage, would threaten or destroy the historic significance of the building or facility.

3. If the Advisory Council determines that any of the accessibility requirements for features listed in 4.1.7(1) would threaten or destroy the historic significance of a building or facility, then the special application provisions of 4.1.7(2) for that feature may be utilized. The special application provisions listed under 4.1.7(2) may only be utilized following a written determination by the Advisory Council that application of a requirement contained in part 4 would threaten or destroy the historic integrity of a qualified building or facility.

4. At least one accessible route complying with 4.3 from a site access point to an accessible entrance shall be provided.

EXCEPTION: A ramp with a slope no greater than 1:6 for a run not to exceed 2 feet (610 mm) may be used as part of an accessible route at an entrance.

5. At least one accessible entrance which is used by the public complying with 4.14 shall be provided.

EXCEPTION: If it is determined that no entrance used by the public can comply with
4.14, then access at any entrance not used by the general public but open (unlocked) with directional signs at the primary entrance may be used.

6. If toilets are provided, then at least one toilet facility complying with 4.22 and 4.1.6 shall be provided along an accessible route that complies with 4.3. Such toilet facility may be "unisex" in design.

7. Accessible routes from an accessible entrance to all publicly used spaces on at least the level of the accessible entrance shall be provided. Access should be provided to all levels of a building or facility in compliance with 4.1 whenever practical.

8. Displays and written information, documents, etc., should be located where they can be seen by a seated person. Exhibits and signage displayed horizontally, e.g., books, should be no higher than 44 inches (1120 mm) above the floor surface.

END OF SECTION

0109104S THE SECRETARY OF THE INTERIOR'S STANDARDS FOR REHABILITATION

The Secretary Of The Interior's Standards For Rehabilitation, U.S. Department of the Interior National Park Service Preservation Assistance Division Washington, D.C. The Secretary of the Interior is responsible for establishing standards for all national preservation programs under Departmental authority and for advising Federal agencies on the preservation of historic properties listed or eligible for listing in the National Register of Historic Places. The Standards for Rehabilitation, a section of the Secretary's Standards for Historic Preservation Projects, address the most prevalent preservation treatment today; rehabilitation. Rehabilitation is defined as the process of returning a property to a state of utility, through repair or alteration, which makes possible an efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architectural, and cultural values. The Standards that follow were originally published in 1977 and revised in 1990 as part of Department of the Interior regulations (36 CFR Part 67, Historic Preservation Certifications). They pertain to historic buildings of all materials, construction types, sizes, and occupancy and encompass the exterior and the interior of historic buildings. The Standards also encompass related landscape features and the building's site and environment as well as attached, adjacent or related new construction. An illustrated booklet addressing the Secretary's Standards and the guidelines is available from the U.S. Government Printing Office. The title is "The Secretary of the Interior's Standards for Rehabilitation & Illustrated Guidelines for Rehabilitating Historic Buildings", ISBN 0-16-035979-1. The following Standards are to be applied to specific rehabilitation projects in a reasonable manner, taking into consideration economic and technical feasibility.

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.

2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.

3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.

4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.

5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.

6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.

7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.

8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.

9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

Note: To be eligible for Federal tax incentives, a rehabilitation project must meet all ten Standards. The application of these Standards to rehabilitation projects is to be the same as under the previous version so that a project previously acceptable would continue to be acceptable under these Standards. Certain treatments, if improperly applied, or certain materials by their physical properties, may cause or accelerate physical deterioration of historic buildings. Inappropriate physical treatments include, but are not limited to: improper repointing techniques; improper exterior masonry cleaning methods; or improper introduction of insulation where damaged to historic fabric would result. In almost all situations, use of these materials and treatments will result in denial of certification.

In addition, every effort should be made to ensure that the new materials and workmanship are compatible with the materials and workmanship of the historic property.

Guidelines to help property owners, developers, and Federal managers apply the Secretary of the Interior's Standards for Rehabilitation are available from the National Park Service, State Historic Preservation Offices, or from the Government Printing Office. For more information write: National Park Service, Preservation Assistance Division-424, P.O. Box 37127, Washington, DC 20013-7127.

END OF SECTION

0109105S GUIDELINES FOR REHABILITATING HISTORIC BUILDINGS: GENERAL

U.S. Department of the Interior
National Park Service
Preservation Assistance Division
Washington, D.C.

An illustrated booklet addressing the Secretary's Standards and the guidelines is available from the U.S. Government Printing Office. The title is "The Secretary of the Interior's Standards for Rehabilitation & Illustrated Guidelines for Rehabilitating Historic Buildings", ISBN 0-16-035979-1.

This reference includes general information describing the purpose, organization and content of the Guidelines for Rehabilitating Historic Buildings. Each of the guidelines included in the booklet mentioned above have been separated into individual entries for specific use in HBPP. This reference should be used along with each individual guideline in applying the Secretary of the Interior's Standards to historic buildings. The related guidelines include HBPP sequence numbers 01091-06-S through 01091-19-S.

GENERAL

The Guidelines were initially developed in 1977 to help property owners, developers, and Federal managers apply the Secretary of the Interior's "Standards for Rehabilitation" during the project planning stage by providing general design and technical recommendations. Unlike the Standards, the Guidelines are not codified as program requirements. Together with the "Standards for Rehabilitation" they provide a model process for owners, developers, and Federal agency managers to follow.

The Guidelines are intended to assist in applying the Standards to projects generally; consequently, they are not meant to give case- specific advice or address exceptions or rare instances. For example, they cannot tell an owner or developer which features of their own historic building are important in defining the historic character and must be preserved - although examples are provided in each section - or which features could be altered, if necessary, for the new use. This kind of careful case-by-case decision making is best accomplished by seeking assistance from qualified historic preservation professionals in the planning stage of the project. Such professionals include architects, architectural historians, historians, archaeologists, and others who are skilled in the preservation, rehabilitation, and restoration of historic properties.

The Guidelines pertain to historic buildings of all sizes, materials, occupancy, and construction types; and apply to interior and exterior work as well as new exterior additions. Those approaches, treatments, and techniques that are consistent with the Secretary of the Interior's "Standards for Rehabilitation" are listed under the heading, "Recommended"; those approaches, treatments, and techniques which could adversely affect a building's historic character are listed under the heading, "Not Recommended".

To provide clear and consistent guidance for owners, developers, and Federal agency managers to follow, the "Recommended courses of action in each section are listed in order of historic preservation concerns so that a rehabilitation project may be successfully planned and completed - one that, first, assures the preservation of a building's important "character-defining" architectural materials and features and, second, makes possible an efficient contemporary use. Rehabilitation guidance in each section begins with protection and maintenance, that work which should be maximized in every project to enhance overall preservation goals. Next, where some deterioration is present, repair of the building's historic materials and features is recommended. Finally, when deterioration is so extensive that repair is not possible, the most problematic area of work is considered: replacement of historic materials and features with new materials.

To further guide the owner and developer in planning a successful rehabilitation project, those complex design issues dealing with new use requirements such as alterations and additions are highlighted at the end of each section to underscore the need for particular sensitivity in these areas.

IDENTIFY, RETAIN, AND PRESERVE

The guidance that is basic to the treatment of all historic buildings - IDENTIFYING, RETAINING, AND PRESERVING the form and detailing of those architectural materials and features that are important in defining the historic character - is always listed under the heading, "Recommended". The parallel heading, "Not Recommended", lists the types of actions that are most apt to cause the diminution or even loss of the building's historic character. It should be remembered, however, that such loss of character is just as often caused by the cumulative effect of a series of actions that would seem to be minor interventions. Thus, the guidance in ALL of the "Not Recommended" headings must be viewed in that larger context, e.g., for the total impact on a historic building.

PROTECT AND MAINTAIN

After identifying those materials and features that are important and must be retained in the process of rehabilitation work, then PROTECTING AND MAINTAINING them are addressed. Protection generally involves the least degree of intervention and is preparatory to other work. For example, protection includes the maintenance of historic material through treatments such as rust removal, caulking, limited paint removal, and re-application of protective coatings; the cyclical cleaning of roof gutter systems; or installation of fencing, protective plywood, alarm systems and other temporary protective measures. Although a historic building will usually require more extensive work, an overall evaluation of its physical condition should always begin at this level.

REPAIR

Next, when the physical condition of character-defining materials and features warrants additional work REPAIRING is recommended. Guidance for the repair of historic materials such as masonry, wood, and architectural metals again begins with the least degree of intervention possible such as patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading them according to recognized preservation methods. Repairing also includes the limited replacement in kind - or with compatible substitute material - of extensively deteriorated or missing parts of features when there are surviving prototypes (for example, brackets, dentils, steps, plaster, or portions of slate or tile roofing). Although using the same kind of material is always the preferred option, substitute material is acceptable if the form and design as well as the substitute material itself convey the visual appearance of the remaining parts of the feature and finish.

REPLACE

Following repair in the hierarchy, guidance is provided for REPLACING an entire character-defining feature with new material because the level of deterioration or damage of materials precludes repair (for example, an exterior cornice; an interior staircase, or a complete porch or storefront). If the essential form and detailing are still evident so that the physical evidence can be used to re-establish the feature as an integral part of the rehabilitation project, then its replacement is appropriate. Like the guidance for repair, the preferred option is always replacement of the entire feature in kind, that is, with the same material. Because this approach may not always be technically or economically feasible, provisions are made to

consider the use of a compatible substitute material.

It should be noted that, while the National Park Service guidelines recommend the replacement of an entire character-defining feature under certain well-defined circumstances, they NEVER recommend removal and replacement with new material of a feature that - although damaged or deteriorated - could reasonably be repaired and thus preserved.

DESIGN FOR MISSING HISTORIC FEATURES

When an entire interior or exterior feature is missing (for example, an entrance, or cast iron facade; or a principal staircase), it no longer plays a role in physically defining the historic character of the building unless it can be accurately recovered in form and detailing through the process of carefully documenting the historical appearance. Where an important architectural feature is missing, its recovery is always recommended in the guidelines as the FIRST or preferred, course of action. Thus, if adequate historical, pictorial, and physical documentation exists so that the feature may be accurately reproduced, and if it is desirable to re-establish the feature as part of the building's historical appearance, then designing and constructing a new feature based on such information is appropriate. However, a SECOND acceptable option for the replacement feature is a new design that is compatible with the remaining character-defining features of the historic building. The new design should always take into account the size, scale, and material of the historic building itself and, more importantly, should be clearly differentiated so that a false historical appearance is not created.

ALTERATIONS/ADDITIONS TO HISTORIC BUILDINGS

Some exterior and interior alterations to the historic building are generally needed to assure its continued use, but it is most important that such alterations do not radically change, obscure, or destroy character-defining spaces, materials, features, or finishes. Alterations may include providing additional parking space on an existing historic building site; cutting new entrances or windows on secondary elevations; inserting an additional floor; installing an entirely new mechanical system; or creating an atrium or light well. Alteration may also include the selective removal of buildings or other features of the environment or building site that are intrusive and therefore detract from the overall historic character.

The construction of an exterior addition to a historic building may seem to be essential for the new use, but it is emphasized in the guidelines that such new additions should be avoided, if possible, and considered ONLY after it is determined that those needs cannot be met by altering secondary, i.e., non character-defining interior spaces. If, after a thorough evaluation of interior solutions, an exterior addition is still judged to be the only viable alternative, it should be designed and constructed to be clearly differentiated from the historic building and so that the character-defining features are not radically changed, obscured, damaged or destroyed.

Additions to historic buildings are referenced within specific sections of the guidelines such as Site, Roof, Structural Systems, etc., but are also considered in more detail in a separate standard, 01091-19-S "Guidelines for Rehabilitating Historic Buildings: New Additions to Historic Buildings".

HEALTH AND SAFETY CODE REQUIREMENTS; ENERGY RETROFITTING

These standards of rehabilitation guidance address work done to meet health and safety code requirements (for example, providing barrier-free access to historic buildings); or retrofitting measures to conserve energy (for example, installing solar collectors in an unobtrusive location on the site). Although this work is quite often an important aspect of rehabilitation projects it is usually not part of

the overall process of protecting or repairing character-defining features; rather, such work is assessed for its potential negative impact on the building's historic character. For this reason, particular care must be taken not to radically change, obscure, damage, or destroy character-defining materials or features in the process of rehabilitation work to meet code and energy requirements. For specific guidance, see 01091-17-S "Guidelines...Health and Safety Code Requirements" and 01091-18-S "Guidelines...Energy Retrofitting".

Specific information on rehabilitation and preservation technology may be obtained by writing to the National Park Service, at the addresses listed below.

Preservation Assistance Division
National Park Service
P.O. Box 37127
Washington, DC 20013-7127

National Historic Preservation Programs
Western Regional Office
National Park Service
600 Harrison Street, Ste. 600
San Francisco, CA 94107-1372

Division of Cultural Resources
Rocky Mountain Regional Office
National Park Service
12795 West Alameda Pkwy.
P.O. Box 25287
Denver, CO 80225

END OF SECTION

0109107S GUIDELINES FOR REHABILITATING HISTORIC BUILDINGS: WOOD

U.S. Department of the Interior
National Park Service
Preservation Assistance Division
Washington, D.C.

An illustrated booklet addressing the Secretary's Standards and the guidelines is available from the U.S. Government Printing Office. The title is "The Secretary of the Interior's Standards for Rehabilitation & Illustrated Guidelines for Rehabilitating Historic Buildings", ISBN 0-16-035979-1.

Each of the guidelines included in the booklet mentioned above have been separated into individual entries for specific use in HBPP. This entry represents one of many guidelines included in the booklet and describes RECOMMENDED and NOT RECOMMENDED applications of the Secretary of the Interior's Standards as they relate to Wood. For a list of the Secretary of the Interior's Standards for Rehabilitation, see 01091-04-S; For general information relating to the purpose, organization and content of the individual guidelines, see 01091-05-S. Both of these entries should be referenced along with the information contained in this document.

BUILDING EXTERIOR

WOOD: Clapboard, weatherboard, shingles, and other wooden siding and decorative elements

Because it can be easily shaped by sawing, planing, carving, and gouging, wood is the most commonly used material for architectural features such as clapboards, cornices, brackets, entablatures, shutters, columns and balustrades. These wooden features – both functional and decorative - may be important in defining the historic character of the building and thus their retention, protection, and repair are of particular importance in rehabilitation projects.

IDENTIFYING, RETAINING AND PRESERVING

1. Recommended:

Identifying, retaining, and preserving wood features that are important in defining the overall historic character of the building such as siding, cornices, brackets, window architraves, and doorway pediments; and their paints, finishes, and colors.

Not Recommended:

Removing or radically changing wood features which are important in defining the overall historic character of the building so that, as a result, the character is diminished.

Removing a major portion of the historic wood from a facade instead of repairing or replacing only the deteriorated wood, then reconstructing the facade with new material in order to achieve a uniform or "improved" appearance.

Radically changing the type of finish or its color or accent scheme so that the historic character of the exterior is diminished.

Stripping historically painted surfaces to bare wood, then applying clear finishes or stains in order to

create a "natural look."

Stripping paint or varnish to bare wood rather than repairing or reapplying a special finish, i.e., a grained finish to an exterior wood feature such as a front door.

PROTECTING AND MAINTAINING

1. Recommended:

Protecting and maintaining wood features by providing proper drainage so that water is not allowed to stand on flat, horizontal surfaces or accumulate in decorative finishes.

Not Recommended:

Failing to identify, evaluate, and treat the causes of wood deterioration, including faulty flashing, leaking gutters, cracks and holes in siding, deteriorated caulking in joints and seams, plant material growing too close to wood surfaces, or insect or fungus infestation.

2. Recommended:

Applying chemical preservatives to wood features such as beam ends or outriggers that are exposed to decay hazards and are traditionally unpainted.

Not Recommended:

Using chemical preservatives such as creosote which can change the appearance of wood features unless they were used historically.

3. Recommended:

Retaining coatings such as paint that help protect the wood from moisture and ultraviolet light. Paint removal should be considered only where there is paint surface deterioration and as part of an overall maintenance program which involves repainting or applying other appropriate protective coatings.

Not Recommended:

Stripping paint or other coatings to reveal bare wood, thus exposing historically coated surfaces to the effects of accelerated weathering.

4. Recommended:

Inspecting painted wood surfaces to determine whether repainting is necessary or if cleaning is all that is required.

Not Recommended:

Removing paint that is firmly adhering to, and thus,protecting wood surfaces.

5. Recommended:

Removing damaged or deteriorated paint to the next sound layer using the gentlest method possible (handscraping and handsanding), then repainting.

Not Recommended:

Using destructive paint removal methods such as propane or butane torches, sandblasting or waterblasting. These methods can irreversibly damage historic woodwork.

6. Recommended:

Using with care electric hot-air guns on decorative wood features and electric heat plates on flat wood surfaces when paint is so deteriorated that total removal is necessary prior to repainting.

Not Recommended:

Using thermal devices improperly so that the historic woodwork is scorched.

7. Recommended:

Using chemical strippers primarily to supplement other methods such as handscraping, handsanding and the above- recommended thermal devices. Detachable wooden elements such as shutters, doors, and columns may -- with the proper safeguards -- be chemically dip-stripped.

Not Recommended:

Failing to neutralize the wood thoroughly after using chemicals so that new paint does not adhere.

Allowing detachable wood features to soak too long in a caustic solution so that the wood grain is raised and the surface roughened.

8. Recommended:

Applying compatible paint coating systems following proper surface preparation.

Not Recommended:

Failing to follow manufacturers' product and application instructions when repainting exterior woodwork.

9. Recommended:

Repainting with colors that are appropriate to the historic building and district.

Not Recommended:

Using new colors that are inappropriate to the historic building or district.

10. Recommended:

Evaluating the overall condition of the wood to determine whether more than protection and maintenance are required, that is, if repairs to wood features will be necessary.

Not Recommended:

Failing to undertake adequate measures to assure the preservation of wood features.

REPAIRING

1. Recommended:

Repairing wood features by patching, piecing-in, consolidating, or otherwise reinforcing the wood using recognized preservation methods. Repair may also include the limited replacement in kind -- or with compatible substitute material -- of those extensively deteriorated or missing parts of features where there are surviving prototypes such as brackets, moldings, or sections of siding.

Not Recommended:

Replacing an entire wood feature such as a cornice or wall when repair of the wood and limited replacement of deteriorated or missing parts are appropriate.

Using substitute materials for the replacement part that does not convey the visual appearance of the surviving parts of the wood feature or that is physically or chemically incomparable.

REPLACING

1. Recommended:

Replacing in kind an entire wood feature that is too deteriorated to repair -- if the overall form and detailing are still evident -- using the physical evidence to guide the new work. Examples of wood features include a cornice, entablature or balustrade. If using the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered.

Not Recommended:

Removing an entire wood feature that is unrepairable and not replacing it; or replacing it with a new feature that does not convey the same visual appearance.

NOTE: THE FOLLOWING REPRESENTS PARTICULARLY COMPLEX TECHNICAL OR DESIGN ASPECTS OF REHABILITATION PROJECTS AND SHOULD ONLY BE CONSIDERED AFTER THE PRESERVATION CONCERNS LISTED ABOVE HAVE BEEN ADDRESSED.

DESIGN FOR MISSING HISTORIC FEATURES

1. Recommended:

Designing and installing a new wood feature such as a cornice or doorway when the historic features is completely missing. It may be an accurate restoration using historical, pictorial, and physical documentation, or be a new design that is compatible with the size, scale, material, and color of the historic building.

Not Recommended:

Creating a false historic appearance because the replaced wood feature is based on insufficient historical, pictorial, and physical documentation.

Introducing a new wood feature that is incompatible in size, scale, material, and color.

END OF SECTION

0109108S GUIDELINES FOR HISTORIC BUILDINGS: ARCHITECTURAL METALS

U.S. Department of the Interior
National Park Service
Preservation Assistance Division
Washington, D.C.

An illustrated booklet addressing the Secretary's Standards and the guidelines is available from the U.S. Government Printing Office. The title is "The Secretary of the Interior's Standards for Rehabilitation & Illustrated Guidelines for Rehabilitating Historic Buildings", ISBN 0-16-035979-1.

Each of the guidelines included in the booklet mentioned above have been separated into individual entries for specific use in HBPP. This entry represents one of many guidelines included in the booklet and describes RECOMMENDED and NOT RECOMMENDED applications of the Secretary of the Interior's Standards as they relate to Architectural Metals. For a list of the Secretary of the Interior's Standards for Rehabilitation, see 01091-04-S; For general information relating to the purpose, organization and content of the individual guidelines, see 01091-05-S. Both of these entries should be referenced along with the information contained in this document.

BUILDING EXTERIOR

ARCHITECTURAL METALS: Cast iron, steel, pressed tin, copper, aluminum, and zinc

Architectural metal features -- such as cast-iron facades, porches, and steps; sheet metal cornices, roofs, roof cresting and storefronts; and cast or rolled metal doors, window sash, entablatures, and hardware -- are often highly decorative and may be important in defining the overall historic character of the building. Their retention, protection, and repair should be a prime consideration in rehabilitation projects.

IDENTIFYING, RETAINING AND PRESERVING

1. Recommended:

Identifying, retaining, and preserving architectural metal features such as columns, capitals, window hoods, or stairways that are important in defining the overall historic character of the building; and their finishes and colors.

Not Recommended:

Removing or radically changing architectural metal features which are important in defining the overall historic character of the building so that, as a result, the character is diminished.

Removing a major portion of the historic architectural metal from a facade instead of repairing or replacing only the deteriorated metal, then reconstructing the facade with new material in order to create a uniform, or "improved" appearance.

Radically changing the type of finish or its historical color or accent scheme.

PROTECTING AND MAINTAINING

1. Recommended:

Protecting and maintaining architectural metals from corrosion by providing proper drainage so that water does not stand on flat, horizontal surfaces or accumulate in curved, decorative features.

Not Recommended:

Failing to identify, evaluate, and treat the causes of corrosion, such as moisture from leaking roofs or gutters.

Placing incompatible metals together without providing a reliable separation material. Such incompatibility can result in galvanic corrosion of the less noble metal, e.g., copper will corrode cast iron, steel, tin, and aluminum.

2. Recommended:

Cleaning architectural metals, when necessary, to remove corrosion prior to repainting or applying other appropriate protective coatings.

Not Recommended:

Exposing metals which were intended to be protected from the environment.

Applying paint or other coatings to metals such as copper, bronze, or stainless steel that were meant to be exposed.

3. Recommended:

Identifying the particular type of metal prior to any cleaning procedure and then testing to assure that the gentlest cleaning method possible is selected or determining that cleaning is inappropriate for the particular metal.

Not Recommended:

Using cleaning methods which alter or damage the historic color, texture, and finish of the metal; or cleaning when it is inappropriate for the metal.

Removing the patina of historic metal. The patina may be a protective coating on some metals, such as bronze or copper, as well as a significant historic finish.

4. Recommended:

Cleaning soft metals such as lead, tin, copper, terneplate, and zinc with appropriate chemical methods because their finishes can be easily abraded by blasting methods.

Not Recommended:

Cleaning soft metals such as lead, tin, copper, terneplate, and zinc with grit blasting which will abrade the surface of the metal.

5. Recommended:

Using the gentlest cleaning methods for cast iron, wrought iron, and steel -- hard metals -- in order to remove paint buildup and corrosion. If handscraping and wire brushing have proven ineffective, low

pressure dry grit blasting may be used as long as it does not abrade or damage the surface.

Not Recommended:

Failing to employ gentler methods prior to abrasively cleaning cast iron, wrought iron or steel or using high pressure grit blasting.

6. Recommended:

Applying appropriate paint or other coating systems after cleaning in order to decrease the corrosion rate of metals or alloys.

Not Recommended:

Failing to re-apply protective coating systems to metals or alloys that require them after cleaning so that accelerated corrosion occurs.

7. Recommended:

Repainting with colors that are appropriate to the historic building or district.

Not Recommended:

Using new colors that are inappropriate to the historic building or district.

8. Recommended:

- Applying an appropriate protective coating such as lacquer to an architectural metal feature such as a bronze door which is subject to heavy pedestrian use.

Not Recommended:

Failing to assess pedestrian use or new access patterns so that architectural metal features are subject to damage by use or inappropriate maintenance such as salting adjacent sidewalks.

9. Recommended:

Evaluating the overall condition of the architectural metals to determine whether more than protection and maintenance are required, that is, if repairs to features will be necessary.

Not Recommended:

Failing to undertake adequate measures to assure the preservation of architectural metal features.

REPAIRING

1. Recommended:

Repairing architectural metal features by patching, splicing, or otherwise reinforcing the metal following recognized preservation methods. Repairs may also include the limited replacement in kind -- or with a compatible substitute material -- of those extensively deteriorated or missing parts of features when there

are surviving prototypes such as porch balusters, column capitals or bases; or porch cresting.

Not Recommended:

Replacing an entire architectural metal features such as a column or a balustrade when repair of the metal and limited replacement of deteriorated or missing parts are appropriate.

Using a substitute material for the replacement part that does not convey the visual appearance of the surviving parts of the architectural metal feature or that is physically or chemically incompatible.

REPLACING

1. Recommended:

Replacing in kind an entire architectural metal feature that is too deteriorated to repair -- if the overall form and detailing are still evident -- using the physical evidence to guide the new work. Examples could include cast iron porch steps or steel sash windows. If using
the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered.

Not Recommended:

Removing an architectural metal feature that is unrepairable and not replacing it; or replacing it with a new architectural metal feature that does not convey the same visual appearance.

NOTE: THE FOLLOWING REPRESENTS PARTICULARLY COMPLEX TECHNICAL OR DESIGN ASPECTS OF REHABILITATION PROJECTS AND SHOULD ONLY BE CONSIDERED AFTER THE PRESERVATION CONCERNS LISTED ABOVE HAVE BEEN ADDRESSED.

DESIGN FOR MISSING HISTORIC FEATURES

1. Recommended:

Designing and installing a new architectural metal feature such as a sheet metal cornice or cast iron capital when the historic feature is completely missing. It may be an accurate restoration using historical, pictorial and physical documentation; or be a new design that is compatible with the size, scale, material, and color of the historic building.

Not Recommended:

Creating a false historic appearance because the replace architectural metal feature is based on insufficient historical, pictorial, and physical documentation.

Introducing a new architectural metal feature that is incompatible in size, scale, material, and color.

END OF SECTION

0109110S GUIDELINES FOR HISTORIC BUILDINGS: WINDOWS

U.S. Department of the Interior
National Park Service
Preservation Assistance Division
Washington, D.C.

An illustrated booklet addressing the Secretary's Standards and the guidelines is available from the U.S. Government Printing Office. The title is "The Secretary of the Interior's Standards for Rehabilitation & Illustrated Guidelines for Rehabilitating Historic Buildings", ISBN 0-16-035979-1.

Each of the guidelines included in the booklet mentioned above have been separated into individual entries for specific use in HBPP. This entry represents one of many guidelines included in the booklet and describes RECOMMENDED and NOT RECOMMENDED applications of the Secretary of the Interior's Standards as they relate to Windows. For a list of the Secretary of the Interior's Standards for Rehabilitation, see 01091-04-S; For general information relating to the purpose, organization and content of the individual guidelines, see 01091-05-S. Both of these entries should be referenced along with the information contained in this document.

BUILDING EXTERIOR

WINDOWS:

A highly decorative window with an unusual shape, or glazing pattern, or color is most likely identified immediately as a character-defining feature of the building. It is far more difficult, however, to assess the importance of repeated windows on a facade, particularly if they are individually simple in design and material, such as the large, multi-paned sash of many industrial buildings. Because rehabilitation projects frequently include proposals to replace window sash or even entire windows to improve thermal efficiency or to create a new appearance, it is essential that their contribution to the overall historic character of the building be assessed together with their physical condition before specific repair or replacement work is undertaken.

IDENTIFYING, RETAINING AND PRESERVING

1. Recommended:

Identifying, retaining, and preserving windows -- and their functional and decorative features -- that are important in defining the overall historic character of the building. Such features can include frames, sash, muntins, glazing, sills, heads, hoodmolds, panelled or decorated jambs and moldings, and interior and exterior shutters and blinds.

Not Recommended:

Removing or radically changing windows which are important in defining the overall historic character of the building so that, as a result, the character is diminished.

Changing the number, location, size or glazing pattern of windows, through cutting new openings, blocking-in windows, and installing replacement sash which does not fit the historic window opening.

Changing the historic appearance of windows through the use of inappropriate designs, materials, finishes, or colors which radically change the sash, depth of reveal, and muntin configuration; the reflectivity and color of the glazing; or the appearance of the frame.

Obscuring historic window trim with metal or other material.

Stripping windows of historic material such as wood, iron, cast iron, and bronze.

PROTECTING AND MAINTAINING

1. Recommended:

Protecting and maintaining the wood and architectural metal which comprise the window frame, sash, muntins, and surrounds through appropriate surface treatments such as cleaning, rust removal, limited paint removal, and re- application of protective coating systems.

Not Recommended:

Failing to provide adequate protection of materials on a cyclical basis so that deterioration of the windows results.

2. Recommended:

Making windows weathertight by recaulking and replacing or installing weatherstripping. These actions also improve thermal efficiency.

Not Recommended:

Retrofitting or replacing windows rather than maintaining the sash, frame, and glazing.

3. Recommended:

Evaluating the overall condition of materials to determine whether more than protection and maintenance are required, i.e., if repairs to windows and window features will be required.

Not Recommended:

Failing to undertake adequate measures to assure the preservation of historic windows.

REPAIRING

1. Recommended:

Repairing window frames and sash by patching, splicing, consolidating or otherwise reinforcing. Such repair may also include replacement in kind of those parts that are either extensively deteriorated or are missing when there are surviving prototypes such as architraves, hoodmolds, sash, sills, and interior or exterior shutters and blinds.

Not Recommended:

Replacing an entire window when repair of materials and limited replacement of deteriorated or missing

parts are appropriate.

Failing to reuse serviceable window hardware such as brass lifts and sash locks.

Using a substitute material for the replacement part that does not convey the visual appearance of the surviving parts of the window or that is physically or chemically incompatible.

REPLACING

1. Recommended:

Replacing in kind an entire window that is too deteriorated to repair -- if the overall form and detailing are still evident -- using the physical evidence to guide the new work. If using the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered.

Not Recommended:

Removing a character-defining window that is unrepairable and blocking it in; or replacing it with a new window that does not convey the same visual appearance.

NOTE: THE FOLLOWING REPRESENTS PARTICULARLY COMPLEX TECHNICAL OR DESIGN ASPECTS OF REHABILITATION PROJECTS AND SHOULD ONLY BE CONSIDERED AFTER THE PRESERVATION CONCERNS LISTED ABOVE HAVE BEEN ADDRESSED.

DESIGN FOR MISSING HISTORIC FEATURES

1. Recommended:

Designing and installing new windows when the historic windows (frame, sash and glazing) are completely missing. The replacement windows may be an accurate restoration using historical, pictorial, and physical documentation; or be a new design that is compatible wit the window openings and the historic character of the building.

Not Recommended:

Creating a false historical appearance because the replaced window is based on insufficient historical, pictorial, and physical documentation.

Introducing a new design that is incompatible with the historic character of the building.

ALTERATIONS/ADDITIONS FOR THE NEW USE

1. Recommended:

Designing and installing additional windows on rear or other non-character-defining elevations if required by the new use. New windows openings may also be cut into exposed party walls. Such design should be compatible with the overall design of the building, but not duplicate the fenestration pattern and detailing of a character-defining elevation.

Not Recommended:

Installing new windows, including frames, sash, and muntin configuration that are incompatible with the building's historic appearance or obscure, damage, or destroy character-defining features.

2. Recommended:

Providing a setback in the design of dropped ceilings when they are required for the new use to allow the full height of the window openings.

Not Recommended:

Inserting new floors or furred-down ceilings which cut across the glazed areas of windows so that the exterior form and appearance of the windows are changed.

END OF SECTION

0109111S GUIDELINES FOR HISTORIC BUILDINGS: ENTRIES AND PORCHES

U.S. Department of the Interior
National Park Service
Preservation Assistance Division
Washington, D.C.

An illustrated booklet addressing the Secretary's Standards and the guidelines is available from the U.S. Government Printing Office. The title is "The Secretary of the Interior's Standards for Rehabilitation & Illustrated Guidelines for Rehabilitating Historic Buildings", ISBN 0-16-035979-1.

Each of the guidelines included in the booklet mentioned above have been separated into individual entries for specific use in HBPP. This entry represents one of many guidelines included in the booklet and describes RECOMMENDED and NOT RECOMMENDED applications of the Secretary of the Interior's Standards as they relate to Entrances and Porches. For a list of the Secretary of the Interior's Standards for Rehabilitation, see 01091-04-S; For general information relating to the purpose, organization and content of the individual guidelines, see 01091-05-S. Both of these entries should be referenced along with the information contained in this document.

BUILDING EXTERIOR

ENTRANCES AND PORCHES:

Entrances and porches are quite often the focus of historic buildings, particularly when they occur on primary elevations. Together with their functional and decorative features such as doors, steps, balustrades, pilasters, and entablatures, they can be extremely important in defining the overall historic character of a building. Their retention, protection, and repair should always be carefully considered when planning rehabilitation work.

IDENTIFYING, RETAINING AND PRESERVING

1. Recommended:

Identifying, retaining, and preserving entrances -- and their functional and decorative features -- that are important in defining the overall historic character of the building such as doors, fanlights, sidelights, pilasters, entablatures, columns, balustrades, and stairs.

Not Recommended:

Removing or radically changing entrances and porches which are important in defining the overall historic character of the building so that, as a result, the character is diminished.

Stripping entrances and porches of historic material such as wood, iron, cast iron, terra cotta, tile and brick.

Removing an entrance or porch because the building has been reoriented to accommodate a new use.

Cutting new entrances on a primary elevation.

Altering utilitarian or service entrances so they appear to be formal entrances by adding panelled doors, fanlights, and sidelights.

PROTECTING AND MAINTAINING

1. Recommended:

Protecting and maintaining the masonry, wood, and architectural metal that comprise entrances and porches through appropriate surface treatments such as cleaning, rust removal, limited paint removal, and re-application of protective coating systems.

Not Recommended:

Failing to provide adequate protection to materials on a cyclical basis so that deterioration of entrances and porches results.

2. Recommended:

Evaluating the overall condition of materials to determine whether more than protection and maintenance are required, that is, if repairs to entrance and porch features will be necessary.

Not Recommended:

Failing to undertake adequate measures to assure the preservation of historic entrances and porches.

REPAIRING

1. Recommended:

Repairing entrances and porches by reinforcing the historic materials. Repair will also generally include the limited replacement in kind -- or with compatible substitute material -- of those extensively deteriorated or missing parts of repeated features where there are surviving prototypes such as balustrades, cornices, entablatures, columns, sidelights, and stairs.

Not Recommended:

Replacing an entire entrance or porch when the repair of materials and limited replacement of parts are appropriate.

Using a substitute material for the replacement parts that does not convey the visual appearance of the surviving parts of the entrance and porch or that is physically or chemically incompatible.

REPLACING

1. Recommended:

Replacing in kind an entire entrance or porch that is too deteriorated to repair -- if the form and detailing are still evident -- using the physical evidence to guide the new work. If using the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered.

2. Not Recommended:

Removing an entrance or porch that is unrepairable and not replacing it; or replacing it with a new

entrance or porch that does not convey the same visual appearance.

NOTE: THE FOLLOWING REPRESENTS PARTICULARLY COMPLEX TECHNICAL OR DESIGN ASPECTS OF REHABILITATION PROJECTS AND SHOULD ONLY BE CONSIDERED AFTER THE PRESERVATION CONCERNS LISTED ABOVE HAVE BEEN ADDRESSED.

DESIGN FOR MISSING HISTORIC FEATURES

1. Recommended:

Designing and constructing a new entrance or porch if the historic entrance or porch is completely missing. It may be a restoration based on historical, pictorial, and physical documentation; or be a new design that is compatible with the historic character of the building.

Not Recommended:

Creating a false historical appearance because the replaced entrance or porch is based on insufficient historical, pictorial, and physical documentation.

Introducing a new entrance or porch that is incompatible in size, scale, material, and color.

ALTERATIONS/ADDITIONS FOR THE NEW USE

1. Recommended:

Designing enclosures for historic porches when required by the new use in a manner that preserves the historic character of the building. This can include using large sheets of glass and recessing the enclosure wall behind existing scrollwork, posts, and balustrades.

Not Recommended:

Enclosing porches in a manner that results in a diminution or loss of historic character such as using solid materials such as wood, stucco, or masonry.

2. Recommended:

Designing and installing additional entrances or porches when required for the new use in a manner that preserves the historic character of the building, i.e., limiting such alterations to non-character-defining elevations.

Not Recommended:

Installing secondary service entrances and porches that are incompatible in size and scale with the historic building or obscure, damage, or destroy character-defining features.

END OF SECTION

0109113S GUIDELINES FOR HISTORIC BUILDINGS: INTERIOR SPACES

U.S. Department of the Interior
National Park Service
Preservation Assistance Division
Washington, D.C.

An illustrated booklet addressing the Secretary's Standards and the guidelines is available from the U.S. Government Printing Office. The title is "The Secretary of the Interior's Standards for Rehabilitation & Illustrated Guidelines for Rehabilitating Historic Buildings", ISBN 0-16-035979-1.

Each of the guidelines included in the booklet mentioned above have been separated into individual entries for specific use in HBPP. This entry represents one of many guidelines included in the booklet and describes RECOMMENDED and NOT RECOMMENDED applications of the Secretary of the Interior's Standards as they relate to Interior Spaces, Features and Finishes. For a list of the Secretary of the Interior's Standards for Rehabilitation, see 01091-04-S; For general information relating to the purpose, organization and content of the individual guidelines, see 01091-05-S. Both of these entries should be referenced along with the information contained in this document.

BUILDING INTERIOR

INTERIOR: SPACES, FEATURES, AND FINISHES:

An interior floor plan, the arrangement of spaces, and built-in features and applied finishes may be individually or collectively important in defining the historic character of the building. Thus, their identification, retention, protection and repair should be given prime consideration in every rehabilitation project and caution exercised in pursuing any plan that would radically change character-defining spaces or obscure, damage or destroy interior features or finishes.

IDENTIFYING, RETAINING AND PRESERVING

1. Recommended:

Identifying, retaining, and preserving a floor plan or interior spaces that are important in defining the overall historic character of the building. This includes the size, configuration, proportion, and relationship of rooms and corridors; the relationship of features to spaces; and the spaces themselves such as lobbies, reception halls, entrance halls, double parlors, theaters, auditoriums, and important industrial or commercial use spaces.

Not Recommended:

Radically changing a floor plan or interior spaces -- including individual rooms -- which are important in defining the overall historic character of the building so that, as a result, the character is diminished.

Altering the floor plan by demolishing principal walls and partitions to create a new appearance.

Altering or destroying interior spaces by inserting floors, cutting through floors, lowering ceilings, or adding or removing walls.

Relocating an interior feature such as a staircase so that the historic relationship between features and spaces is altered.

2. Recommended:

Identifying, retaining, and preserving interior features and finishes that are important in defining the overall historic character of the building, including columns, cornices, baseboards, fireplaces and mantels, paneling. light fixtures, hardware, and flooring; and wallpaper, plaster, paint, and finishes such as stenciling, marbling, and graining; and other decorative materials that accent interior features and provide color, texture, and patterning to walls, floors, and ceilings.

Not Recommended:

Removing or radically changing features which are important in defining the overall historic character of the building so that, as a result, the character is diminished.

Installing new decorative material that obscures or damages character-defining interior features or finishes.

Removing paint, plaster, or other finishes from historically finished surfaces to create a new appearance (e.g., removing plaster to expose masonry surfaces such as brick walls or a chimney piece).

Applying paint, plaster, or other finishes to surfaces that have been historically unfinished to create a new appearance.

Stripping historically painted wood surfaces to bare wood, then applying clear finishes or stains to create a "natural look."

Stripping paint to bare wood rather than repairing or reapplying grained or marbled finishes to features such as doors and paneling.

Radically changing the type of finish or its color, such as painting a previously varnished wood feature.

PROTECTING AND MAINTAINING

1. Recommended:

Protecting and maintaining masonry, wood, and architectural metals which comprise interior features through appropriate surface treatments such as cleaning, rust removal, limited paint removal, and application of protective coatings systems.

Not Recommended:

Failing to provide adequate protection to materials on a cyclical basis so that deterioration of interior features results.

2. Recommended:

Protecting interior features and finishes against arson and vandalism before project work begins, erecting protective fencing, boarding-up widows, and installing fire alarm systems that are keyed to local protection agencies.

Not Recommended:

Permitting entry into historic buildings through unsecured or broken windows and doors so that interior features and finishes are damaged by exposure to weather or through vandalism.

Stripping interiors of features such as woodwork,doors windows, light fixtures, copper piping, radiators; or of decorative materials.

3. Recommended:

Protecting interior features such as a staircase, mantel, or decorative finishes and wall coverings against damage during project work by covering them with heavy canvas or plastic sheets.

Not Recommended:

Failing to provide proper protection of interior features and finishes during work so that they are gouged, scratched, dented, or otherwise damaged.

4. Recommended:

Installing protective coverings in areas of heavy pedestrian traffic to protect historic features such as wall coverings, parquet flooring and paneling.

Not Recommended:

Failing to take new use patterns into consideration so that interior features and finishes are damaged.

5. Recommended:

Removing damaged or deteriorated paints and finishes to the next sound layer using the gentlest method possible, then repainting or refinishing using compatible paint or other coating systems.

Not Recommended:

Using destructive methods such as propane or butane torches or sandblasting to remove paint or other coatings. These methods can irreversibly damage the historic materials that comprise interior features.

6. Recommended:

Repainting with colors that are appropriate to the historic building.

7. Not Recommended:

Using new paint colors that are inappropriate to the historic building.

8. Recommended:

Limiting abrasive cleaning methods to certain industrial or warehouse buildings where the interior masonry or plaster features do not have distinguishing design, detailing, tooling, or finishes; and where wood features are not finished, molded, beaded, or worked by hand. Abrasive cleaning should ONLY be considered after other, gentler methods have been proven ineffective.

Not Recommended:

Changing the texture and patina of character-defining features through sandblasting or use of other abrasive methods to remove paint, discoloration or plaster. This includes both exposed wood (including structural members) and masonry.

9. Recommended:

Evaluating the overall condition of materials to determine whether more than protection and maintenance are required that is, if repairs to interior features and finishes will be necessary.

Not Recommended:

Failing to undertake adequate measures to assure the preservation of interior features and finishes.

REPAIRING

1. Recommended:

Repairing interior features and finishes by reinforcing the historic materials. Repair will also generally include the limited replacement in kind -- or with compatible substitute material -- of those extensively deteriorated or missing parts of repeated features when there are surviving prototypes such as stairs, balustrades, wood panelling, columns; or decorative wall coverings or ornamental tin or plaster ceilings.

Not Recommended:

Replacing an entire interior feature such as a staircase, panelled wall, parquet floor, or cornice; or finish such as a decorative wall covering or ceiling when repair of materials and limited replacement of such parts are appropriate.

Using a substitute material for the replacement part that does not convey the visual appearance of the surviving parts or portions of the interior feature or finish or that is physically or chemically incompatible.

REPLACING

1. Recommended:

Replacing in kind an entire interior feature or finish that is too deteriorated to repair -- if the overall form and detailing are still evident -- using the physical evidence to guide the new work. Examples could include wainscoting, a tin ceiling, or interior stairs. If using the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered.

Not Recommended:

Removing a character-defining feature or finish that is unrepairable and not replacing it; or replacing it with a new feature or finish that does not convey the same visual appearance.

NOTE: THE FOLLOWING REPRESENTS PARTICULARLY COMPLEX TECHNICAL OR DESIGN ASPECTS OF REHABILITATION PROJECTS AND SHOULD ONLY BE CONSIDERED AFTER THE PRESERVATION CONCERNS LISTED ABOVE HAVE BEEN ADDRESSED.

DESIGN FOR MISSING HISTORIC FEATURES

1. Recommended:

Designing and installing a new interior feature or finish if the historic feature or finish is completely

missing. This could include missing partitions, stairs, elevators, lighting fixtures, and wall coverings; or even entire rooms if all historic spaces, features, and finishes are missing or have been destroyed by inappropriate "renovations." The design may be a restoration based on historical, pictorial, and physical documentation; or be a new design that is compatible with the historic character of the building, district, or neighborhood.

Not Recommended:

Creating a false historical appearance because the replaced feature is based on insufficient physical, historical, and pictorial documentation or on information derived from another building.

Introducing a new interior feature or finish that is incompatible with the scale, design, materials, color, and texture of the surviving interior features and finishes.

ALTERATIONS/ADDITIONS FOR THE NEW USE

1. Recommended:

Accommodating service functions such as bathrooms, mechanical equipment, and office machines required by the building's new use in secondary spaces such as first floor service areas or on upper floors.

Not Recommended:

Dividing rooms, lowering ceilings, and damaging or obscuring character-defining features such as fireplaces, niches, stairways or alcoves, so that a new use can be accommodated in the building.

2. Recommended:

Reusing decorative material or features that have had to be removed during the rehabilitation work including wall and baseboard trim, door moulding, panelled doors, and simple wainscoting; and relocating such material or features in areas appropriate to their historic placement.

Not Recommended:

Discarding historic material when it can be reused within the rehabilitation project or relocating it in historically inappropriate areas.

3. Recommended:

Installing permanent partitions in secondary spaces; removable partitions that do not destroy the sense of space should be installed when the new use requires the subdivision of character-defining interior spaces.

Not Recommended:

Installing permanent partitions that damage or obscure character-defining spaces, features, or finishes.

4. Recommended:

Enclosing an interior stairway where required by code so that its character is retained. In many cases, glazed fire-rated walls may be used.

Not Recommended:

Enclosing an interior stairway with fire-rated construction so that the stairwell space or any character-defining features are destroyed.

5. Recommended:

Placing new code-required stairways or elevators in secondary and service areas of the historic building.

Not Recommended:

Radically changing, damaging, or destroying character- defining spaces, features, or finishes when adding new code-required stairways and elevators.

6. Recommended:

Creating an atrium or a light well to provide natural light when required for the new use in a manner that preserves character-defining interior spaces, features, and finishes as well as the structural system.

Not Recommended:

Destroying character-defining interior spaces, features, or finishes; or damaging the structural system in order to create an atrium or light well.

7. Recommended:

Adding a new floor if required for the new use in a manner that preserves character-defining structural features, and interior spaces, features, and finishes.

Not Recommended:

Inserting a new floor within a building that alters or destroys the fenestration; radically changes a character- defining interior space; or obscures, damages, or destroys decorative detailing.

END OF SECTION

0109121S GUIDELINES FOR HISTORIC BUILDINGS: FIRE SAFETY

This procedure includes guidance on planning appropriate fire safety treatments in historic buildings. General applications for fire safety retrofitting are outlined below along with treatments that are recommended and not recommended for those applications. This material has been extracted from the GSA Fire Safety Retrofitting publication issued jointly by the Advisory Council on Historic Preservation and the General Services Administration. Refer to this publication for detailed information on the importance of fire safety retrofitting, the assessment process and implementation in historic buildings.

CORRIDORS

A. Recommended:

1. Maintaining the historically significant building fabric within exit corridors without sacrificing fire safety requirements.

B. Not Recommended:

1. Permanently altering the appearance of the historically significant ceiling, floor, or wall materials in a corridor to accommodate an exit access corridor.

2. Removing historically significant openings and doors to accommodate an exit access corridor.

3. Adding new doors or openings that would permanently alter the appearance of the historically significant building fabric to accommodate an exit access corridor or permanently closing off significant openings.

INTERIOR STAIRS

A. Recommended:

1. Maintaining the exiting stairway's significant historic characteristics and satisfying fundamental exiting requirements.

2. Constructing new exiting stairs, if required to augment existing requirements, so that the alteration of the existing plan of the historic building fabric is minimized.

B. Not Recommended:

1. Totally enclosing an historically significant open stair without considering alternate means of satisfying fundamental exiting requirements.

2. Permanently altering the appearance of historically significant fabric to accommodate a new stair.

EXTERIOR STAIRS

A. Recommended:

1. Placing new stairs to satisfy exiting requirements so that the stairs do not detract from historically significant facades or the setting of the building and are not readily seen by the public.

2. Constructing the new stairs from approved materials and methods, and in a style that provides a distinct differentiation between old and new.

3. Minimizing the physical alteration to the existing historic facade at the points where the new stair contacts the building.

B. Not Recommended:

1. Locating new stairs on facades that are historically significant or visible to the public.

2. Matching new stair construction with existing historic construction.

3. Altering an existing historic facade to accommodate a new stair.

DOORS

A. Recommended:

1. Maintaining historically significant doors where a fire- rated door is required as a component to the means of egress.

2. Constructing new fire-rated door is required as a component to the means of egress.

3. Attaching the historic door to an approved fire-rated door assembly without permanent damage to the historic door, where replacement of the historic door might otherwise be required to conform to a means of egress.

B. Not Recommended:

1. Altering or removing a historic door without considering viable alternatives to meet fire safety requirements.

MATERIALS

A. Recommended:

1. Installation of passive fire suppression materials so that the significant historic fabric of a building is not permanently altered.

2. Installation of fire proofing materials as required to augment existing nonconforming historic construction so that the significant historic fabric of a building is not permanently altered.

3. The evaluation of equivalency concepts for existing construction so that the least amount of alteration to the fabric takes place.

B. Not Recommended:

1. Permanently altering the appearance of historic walls, ceilings, and floor construction or the removal of significant existing historic building fabric to accommodate passive fire suppression.

2. Installation of new partitions that damage historic features or historic character of the spaces.

3. Addition of modern materials over existing historic building fabric.

FIRE SPRINKLERS

A. Recommended:

1. Evaluation of each historically significant space within a building for the selection of the best-suited fire sprinkler system type.

2. Piping routes, sprinkler head types, styles, colors, and locations implemented so that the historic fabric and visual integrity of the building are least affected.

B. Not Recommended:

1. Routing sprinkler pipe so that it is exposed to view within the historically significant building fabric.

2. Putting sidewall mounted sprinklers into plaster cornices and reliefs.

3. Furring down ceilings in significant interior spaces to conceal piping.

FIRE EXTINGUISHERS

A. Recommended:

1. Installing fire extinguishers without the permanent alteration of the appearance of the historically significant building fabric.

2. Using surface mounted fire extinguisher cabinets in areas where recessed cabinets would alter the significant historic fabric, such as marble wainscoting.

3. Using recess mounted fire extinguisher cabinets where possible.

4. Selection of a fire cabinet style that is least obtrusive to the surrounding historic fabric.

B. Not Recommended:

1. Installing fire extinguishers and/or cabinets on existing historically significant walls in a manner that permanently alters their character and appearance.

SMOKE DETECTORS

A. Recommended:

1. Retrofitting smoke and heat detectors and required electrical conduits so that they are not unusually prominent or do not affect the significant historic fabric of a building.

B. Not Recommended:

1. Installing smoke and heat detectors in historic plaster relief or cornices.

2. Installing smoke and heat detectors on the surface of ceiling that are historically significant.

END OF SECTION

SECTION 011000 – SUMMARY

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Identification: Project consists of **Historic Preservation for the Ohio City Town Hall.**

(1) Project Location: **Ohio City, Colorado.**

(2) Owner: **Gunnison County, Colorado.**

B. Architect Identification: Preparation of the Contract Documents for the Project is under the direction of

Benjamin White, AIA
Ben White Architecture, LLC
148 Elcho Ave. #3
Crested Butte, CO 81224

C. Owner's Project Representative, hereinafter referred to as the Owner:

Rachel Magruder
Gunnison County Attorney's Office
200 East Virginia Avenue
Gunnison, CO 81230

1.3 CONTRACT

A. Project will be bid under multiple phases under a Design/Bid/Build Contract.

1.4 WORK SEQUENCE - SCHEDULE OF WORK

Portions or combination of the following Phases may be bid at any given time.

PHASE 1

T1.1 - Foundation Stabilization. Remove existing front deck and store donor deck boards for reinstallation. Remove bottom 36" to 48" of metal panel siding and sheathing. Investigate condition of existing rim joist and wood framing members for damage and deterioration. Sister or replace damaged structural members. While exterior sheathing is off, install electrical conduit in stud walls. Replace exterior sheathing and reinstall pressed metal panel siding. Disconnect utilities. Engage services of registered archaeologist to monitor any below-grade work. Shore building as necessary; lift and set on cribbing piles. Demolish existing perimeter foundation; excavate and install new concrete footings and stem walls. Add new concrete retaining wall to access crawlspace. Clean cellar area. Rehabilitate crawlspace access door. Replace mud sill and damaged wood structural members. Anchor new mud sill to existing rim joist. Set and level structure on new foundation. Add new side door landing, new front entrance deck, steps, new ADA access ramp, and metal handrails. Reuse donor deck boards.

T1.2 - Electrical Distibution. Remove existing electrical distribution system, lights, and fans and run new wiring in conduit. Install new ceiling lights and fans, new exit lights, and new emergency light fixtures. Add recessed fire extinguishers and fire extingisher cabinets. Furnish and install new post lantern adjacent to entry door. Install smoke detector and carbon monoxide detectors.

T1.3 - Interior Structural Rehabilitation. Add nailed plywood gusset plates to wood truss connection points. Install wood beam in attic space and extend threaded rods through existing roof cavity to suspend existing ceiling from trusses. Remove interior columns and beam and level ceiling. Temporary patch and repair flooring as necessary.

PHASE 2

T2.1 - Window Reconstruction. Utilizing existing framework as a pattern, recreate windows on the east and west elevation. Add wood framing as necessary for a rough opening. Flash window heads. Provide interior and exterior wood trim.

T2.2 - Door Reconstruction and Rehabilitation. Rehabilitate existing secondary exit. Repair and replace jamb and threshold. Reverse swing on existing door to provide for egress. Add panic hardware. Recreate entry door based on secondary exit; provide panic hardware and reverse the swing for egress. Rebuild door frame, head transoms, jamb, and sill to accommodate new door.

T2.3 - Wood Floor Rehabilitation. Patch and repair existing hardwood floor. Infill missing or damaged sections. Remove non-historic wood flooring and install new wood floor to match original flooring. Rehabilitate to remove any finishes and refinish entire floor. Install new non-combustible floor under and behind wood stove. Remove existing stage step and provide new steps and handrails. Repair and provide new finish trim along stage edge. Provide new access panel to area under stage.

T2.4 - Metal Siding Rehabilitation. Remove historic pressed metal panel siding and pressed metal corner trim. Install conceiled crawlspace vents in new belly band. Install 30# felt paper on side walls. Using existing panels, reinstall siding and corner trim over waterproof barrier. Correct door and window flashing installation. Construct enclosed wood fascia and soffit to discourage bird nesting.

T2.5 - Metal Ceiling Tile Rehabilitation. Utilizing replica tiles, install additional ceiling pieces to infill missing or damaged ceiling tiles, molding, filler, and crown molding.

1.5 USE OF PREMISES

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

   (1) Areas identified as NIC (not in contract) are accessible by the Contractor but may contain Owner property which will require protection.

B. Use of the Site: Limit use of the existing site to work in areas indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.

C. Use of the Existing Building: Maintain the existing buildings in a weather tight condition throughout the construction period. Repair damage caused by construction operations. Take all precautions necessary to protect the building during the construction period.

   (1) Owner Occupancy: Allow for Owner occupancy and use by the public of existing buildings outside of the limits of construction.

(2) Entrances and Exits: Keep building entrances and exits available to the Owner, the Owner's employees, and emergency vehicles/staff at all times. Do not use these areas for storage of materials. Maintain all building exits at all times. Coordinate all large material movement, within the building, with the Owner's representative to minimize disruption to the building's occupants.

D. Coordination of work with owner: Coordinate all work within NIC areas. Provide (1) week notice before beginning work in the area: including, but limited to, mechanical and electrical tie-in, cutting, patching and demolition.

1.6 WORK BY OWNER

A. General: Cooperate fully with Owner so work may be carried out smoothly, without interfering with or delaying wok under this Contract or work by Owner. Coordinate the work of this Contract with work by the Owner.

B. Preceding Work: Owner will perform the following construction operations at Project site. Those operations are scheduled to be substantially complete before work under this contract begins.

TBD by Owner

1.7 FUTURE WORK

A. Future Contract: Owner reserves the right to award separate contract(s) for additional work to be performed at the site. Completion of that work will depend on successful coordination with work under this Contract.

(1) Coordinate with Owner's separate contractors to allow them access to the site and their construction areas while maintaining safety in the building and on the site for workers and occupants.

B. When necessary, cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

(Not Used)

END OF SECTION 011000

SECTION 012300 - ALTERNATES

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 administrative and procedural requirements for alternates.

1.3 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

(1) The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

(1) Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.

C. Execute accepted alternates under the same conditions as other work of the Contract.

D. Schedule: A Schedule of Alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ADDITIVE ALTERNATES

TBD

END OF SECTION 012300

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 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

B. Related Sections include the following:

(1) Division 1 Section "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.

(2) Division 1 Section "Construction Progress Documentation" for administrative requirements governing preparation and submittal of Contractor's Construction Schedule and Submittals Schedule.

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) Correlate 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 Owner at earliest possible date but no later than ten days before the date scheduled for submittal of initial Applications for Payment.

(3) Sub-schedules: Where the Work is separated into phases requiring separately phased payments, provide sub-schedules showing values correlated with each phase of payment.

B. Format and Content: Use the 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 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) Change Orders (numbers) that affect value.
(d) Dollar value.
(e) Percentage of the Contract Sum to nearest one-tenth percent, adjusted to total 100 percent.

(3) Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate.

(4) Round amounts to nearest whole dollar; total shall equal the Contract Sum.

(5) Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.

(a) Differentiate between items stored on-site and items stored off-site. Include evidence of insurance or bonded warehousing if required.

(6) Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.

(7) Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.

(a) Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead Expense, at Contractor's option.

(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 shall be consistent with previous applications and payments as certified by Owner and paid for by Owner.

(1) Initial Application for Payment and final Application for Payment involve additional requirements.

B. Payment Application Times: The date for each progress payment is indicated in the Agreement and General Conditional of the Contract between Owner and Contractor. The period of construction Work covered by each Application for
Payment is the period indicated in the Agreement and General Conditions of the Contract.

C. Payment Application Forms: Use Certificate of Contractor's Application for Payment, State Form SC-7.2.

D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Owner will return incomplete applications without action.

(1) Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.

(2) Include amounts of Change Orders issued before last day of construction period covered by application.

E. Transmittal: Submit 5 signed and notarized original copies of each Application for Payment to Owner by a method ensuring receipt within 24 hours.

(1) Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

F. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

(1) List of subcontractors.
(2) Schedule of Values.
(3) Contractor's Construction Schedule (preliminary if not final).
(4) Certificates of insurance and insurance policies.
(5) Performance and payment bonds.

G. Application for Final Payment: Comply with General Conditions of the Contract, Article 50.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

(Not Used)

END OF SECTION 012900

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

(1) General project coordination procedures.
(2) Conservation.
(3) Coordination Drawings.
(4) Administrative and supervisory personnel.
(5) Project meetings.
(6) Requests for Interpretation (RFIs).

1.3 DEFINITIONS

A. RFI: Request for Interpretation: A request from the Contractor seeking interpretation or clarification of the Contract Documents.

1.4 COORDINATION

A. Coordination: Coordinate construction operations included in various Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.

(1) Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.

(2) Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.

(3) Make adequate provisions to accommodate items scheduled for later installation.

B. If necessary prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

(1) Preparation of Contractor's Construction Schedule.
(2) Preparation of the Schedule of Values.
(3) Installation and removal of temporary facilities and controls.
(4) Delivery and processing of submittals.
(5) Progress meetings.
(6) Preinstallation conferences.
(7) Project closeout activities.

D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

(1) Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work.

1.5 SUBMITTALS

A. Coordination Drawings: Prepare Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.

(1) Indicate relationship of components shown on separate Shop Drawings.
(2) Indicate required installation sequences.
(3) Refer to mechanical, electrical, and plumbing sections for mechanical, electrical, and plumbing installations.

B. Staff Names: Within 15 days of starting construction operations, submit a list of principal staff assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.

(1) Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone.

1.6 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

A. General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.

(1) Include special personnel required for coordination of operations with other contractors.

1.7 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences via conference call, web-based conference or at the Project site, unless otherwise indicated.

(1) Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Coordinate with Owner for scheduled meeting dates and times.

(2) Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.

(3) Minutes: Record significant discussions and agreements achieved.
Distribute the meeting minutes to everyone concerned within 3 days of the meeting.

B. Preconstruction Conference: The Owner will schedule a preconstruction conference before starting construction, at a time convenient to all. The conference will be at Project site, by web-based conference, or at another convenient location. The meeting will review responsibilities and personnel assignments.

(1) Attendees: Authorized representatives of Owner, and their consultants; Contractor and its superintendent; major subcontractors; manufacturers; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

(2) Agenda: Discuss items of significance that could affect progress, including the following:

(a) Tentative construction schedule.
(b) Phasing.
(c) Critical work sequencing.
(d) Designation of responsible personnel.
(e) Procedures for processing field decisions and Change Orders.
(f) Procedures for processing Applications for Payment.
(g) Distribution of the Contract Documents.
(h) Submittal procedures.
(j) Preparation of Record Documents.
(k) Use of the premises.
(l) Responsibility for temporary facilities and controls.
(m) Parking availability.
(n) Office, work, and storage areas.
(o) Equipment deliveries and priorities.
(p) First aid.
(q) Job site safety.
(r) Security.
(s) Progress cleaning.
(t) Working hours.

C. Progress Meetings: Conduct progress meetings at weekly intervals, unless otherwise directed by the Owner.

(1) Attendees: In addition to representatives of Owner, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

(2) Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

(a) Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

(b) Review present and future needs of each entity present, including the following:
• Interface requirements.
• Sequence of operations.
• Status of submittals.
• Deliveries.
• Off-site fabrication.
• Access.
• Site utilization.
• Temporary facilities and controls.
• Work hours.
• Hazards and risks.
• Progress cleaning.
• Quality and work standards.
• Change Orders.
• Documentation of information for payment requests.

(3) Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.

(a) Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

(Not Used)

END OF SECTION 013100

SECTION 017123 - FIELD ENGINEERING

PART 1 - GENERAL

1.1 REQUIREMENTS AND DESCRIPTION OF THE WORK

A. This section specifies survey work and engineering responsibilities of the Contractor.

1.2 EXISTING SITE CONDITIONS

A. Verify location of all utility lines, conduits, surface or subsurface structures, etc., of any nature that may be affected by the Work.

B. Should any of the above items be disturbed, disconnected, or damaged during construction, bear all expenses of whatever nature arising from such disturbance or the replacement or repair thereof and replace or repair such items as required to maintain continuing service, including emergency repairs.

C. The Contractor shall obtain and pay for supervision of all excavation work and exploratory digging by a qualified Archaeologist certified in the State of Colorado. Monitoring and reporting shall be performed in a manner directed by the Archaeologist.

Alpine Archaeological Consultants, Inc.
PO Box 2075
900 S. Townsend Ave.
Montrose, CO 81402
(970) 249-6761

C. Should any unidentified item or suspicion of contaminated soil be encountered during excavation, do not proceed with excavation until the Owner has been notified and direction has been given by the Archaeologist.

D. If any traces of archeological resources (human remains, artifacts, concentrations shell/bone/rock/ash) are encountered, immediately stop all construction operations within a 30 yard radius until the Owner has been consulted and has received mitigation recommendations from the Archaeologist.

1.3 SURVEY AND LAYOUT

A. Obtain and pay for all engineering services required to accurately and completely lay out the Work by a registered civil engineer who is qualified to perform surveying or a licensed land surveyor.

B. The Contractor shall lay out the Work, setting grade elevations, location stakes, and other reference points and information necessary to complete the Work and shall be responsible for the accuracy thereof. Unless discrepancies between Drawings and actual conditions are brought to the attention of the Architect and Owner prior to the commencement of operations, the Contractor shall be held solely responsible for the proper installation of the Work. Adjustments in layout shall be made at the Contractor's expense.

C. Stakes, boundary lines, corner markers, bench marks or survey markers which have been or may be established in any part of the site, shall be preserved and respected and shall be restored at Contractor's expense if lost or destroyed as a result of the Contractor's operations.

D. Site data and building dimensions indicated on the Drawings are as exact as could be obtained, but their absolute accuracy cannot be guaranteed. Exact locations, distances, elevations, and similar data shall be governed finally by field conditions and the Owner’s instructions.

E. Contractor shall verify on site the location and depth (elevation) of all existing utilities and services before performing any excavation work.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION

SECTION 017329 - CUTTING AND PATCHING ORIGINAL WORK

PART 1 GENERAL

1.01 SUMMARY

A. This procedure includes general guidelines to follow when performing cutting and patching original work.

1.02 DEFINITIONS

A. "Cutting and patching" includes cutting into existing construction to provide for the installation of other work and subsequent fitting and patching required to restore surfaces to their original condition.

1. Cutting and patching is performed for coordination of the work, to uncover work for access or inspection, to obtain samples for testing, to permit alterations to be performed or for other similar purposes.

2. Cutting and patching performed during the manufacture of products, or during the initial fabrication, erection or installation processes is not considered to be "cutting and patching" under this definition. Drilling of holes to install fasteners and similar operations are also not considered to be "cutting and patching".

3. "Selective Demolition" is recognized as related-but-separate category of work, which may or may not require cutting and patching as defined in this procedure.

1.04 QUALITY ASSURANCE

A. General Contractor shall do all cutting and patching of wall and ceiling surface for the removal, relocation of or new piping, conduit, electrical boxes, asbestos abatement, PCB removal, and where pipes have been removed or abandoned.

1. Cutting which will disturb the asbestos material shall be done under the direction of the Asbestos Abatement subcontractor.

B. Cutting and patching of all nonstructural concrete floors for Mechanical and Electrical work shall be done by the respective subcontractors in accordance with the provision of this section.

C. Cutting and patching of all walls for ducts shall be done by the Mechanical subcontractor in accordance with the provisions of this section.

D. Requirements for Structural Work: Do not cut and patch structural work in a manner that would result in a reduction of load-carrying capacity or of load-deflection ratio. Prior to such work, obtain approval of project's Structural Engineer.

F. Visual Requirements: Do not cut and patch work exposed on the building's exterior or in its occupied spaces, in a manner that would, in the Contracting Officer's opinion, result in lessening the building's aesthetic qualities. Do not cut and patch work in a manner that would result in substantial visual evidence of cut and patch work. Remove and replace work judged by the Contracting Officer to be cut and patched in a visually unsatisfactory manner.

PART 2 PRODUCTS

2.01 MATERIALS

A. General: Except as otherwise indicated, or as directed by the Contracting Officer, use materials for cutting and patching that are identical to existing materials. If identical materials are not available, or cannot be used, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect. Use materials for cutting and patching that will result in equal-or-better performance characteristics.

B. The use of a trade name and suppliers name and address is to indicate a possible source of the product. Products of the same type from other sources shall not be excluded provided they possess like physical and functional characteristics.

PART 3 EXECUTION

3.01 EXAMINATION

A. Before cutting, examine the surfaces to be cut and patched and the conditions under which the work is to be performed. If unsafe or otherwise unsatisfactory conditions are encountered, take corrective action before proceeding with the work.

1. Before the start of cutting work, meet at the work site with all parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict between the various trades. Coordinate layout of the work and resolve potential conflicts before proceeding with the work.

3.02 PREPARATION

A. Temporary Support: To prevent failure provide temporary support of work to be cut. Do not endanger other work. Provide adequate protection of other work during cutting and patching, to prevent damage; and provide protection of the work from adverse weather exposure.

B. Protection: Protect other work during cutting and patching to prevent damage. Provide protection from adverse weather conditions of that part of the project that may be exposed during cutting and patching operations.

C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

3.03 ERECTION, INSTALLATION, APPLICATION

A. General: Employ skilled workers to perform cutting and patching work. Except as otherwise indicated or as approved by the Contracting Officer, proceed with cutting and patching at the earliest feasible time and complete work without delay.

B. Cutting: Cut the work using methods that are least likely to damage work to be retained or adjoining work.

1. In general, where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut through concrete and masonry using a cutting machine such a Carborundum saw or core drill to insure a neat hole.

2. Cut holes and slots neatly to size required with minimum disturbance of adjacent work. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces. Temporarily cover openings when not in use.

3. Comply with other applicable requirements where cutting and patching requires excavating and backfilling.

4. By-pass utility services such as pipe and conduit, before cutting, where such utility services are shown or required to be removed, relocated or abandoned. Cut-off conduit and pipe in walls or partitions to be removed. After by-pass and cutting, cap, valve or plug and seal tight remaining portion of pipe and conduit to prevent entrance of moisture or other foreign matter.

C. Patching: Patch with seams which are durable and as invisible as possible. Comply with specified tolerances for the work.

1. Where feasible, inspect and test patched areas to demonstrate integrity of work.

2. Restore exposed finishes of patched areas and where necessary extend finish restoration into retained adjoining work in a manner which will eliminate evidence of patching and refinishing. Where patch occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing patch, after patched area has received prime and base coats.

3. Where removal of walls or partitions extends one finished area into another finished area, patch and repair floor and wall surfaces in the new space to provide an even surface of uniform color and appearance. If necessary to achieve uniform color and appearance, remove existing floor and wall coverings and replace with new materials.

a. Where patch occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing patch, after patched area has received prime and base coat.

4. Patch, repair or rehang existing ceilings as necessary to provide an even plane surface of uniform appearance.

3.04 ADJUSTING/CLEANING

A. Thoroughly clean areas and adjacent spaces soiled due to the work performed or used as access to work. Remove completely paint, mortar, oils, putty and items of similar nature. Thoroughly clean piping, conduit and similar features before painting or other finishing is applied. Restore damaged pipe covering to its original condition.

END OF SECTION 017329

SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements to collect and separate construction debris for reuse and recycling.

(1) Recycling nonhazardous construction waste.
(2) Salvaging non hazardous construction waste.
(3) Disposing of hazardous and nonhazardous construction waste.

1.3 DEFINITIONS

A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, repair operations, material landscape debris, and hazardous waste. Construction waste includes packaging.

B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.

C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

G. Hazardous Waste: Any material or by product of construction that is regulated by the Environmental Protection Agency and that may not be disposed of in any landfill or other waste end-source with adherence to applicable law.

1.4 PERFORMANCE GOALS

A. Develop waste management plan that results in cost effective salvage/recycling of approximately 50%, by weight, of total waste generated by the Work.

(1) The waste management plan should be presented and approved by the Owner prior to the start of demolition.

B. Salvage/Recycle Goals: Owner's goal is to salvage and recycle as much nonhazardous construction waste as possible; construction debris should be salvaged, reused or recycled (diverted from a landfill) for the following materials:

1.5 SUBMITTALS

A. Waste Management Plan: Email or submit 3 copies of plan within 30 days of date established for commencement of the Work.

B. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit three copies of report. Include the following information:

(1) Material category.
(2) Generation point of waste.
(3) Total quantity of waste in tons.
(4) Quantity of waste salvaged, both estimated and actual in tons.
(5) Quantity of waste recycled, both estimated and actual in tons.
(6) Total quantity of waste recovered (salvaged plus recycled) in tons.
(7) Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.

C. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations.

D. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.

E. Project Information: Site plan showing Contractor access points and location of containers used for on-site storage of construction waste.

F. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, receipts, and invoices.

G. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, receipts, and invoices.

1.6 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

1.7 WASTE MANAGEMENT PLAN

A. General: Develop plan consisting of waste identification and waste reduction work plan. Indicate quantities by weight or volume, but use same units of measure throughout the waste management plan.

B. Waste Identification: Indicate anticipated types and quantities of site-clearing and construction waste generated by the Work.

C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, quantity for each means of recovery, and handling and transportation procedures.

(1) Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged material before incorporation into the Work.

(2) Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.

(3) Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.

(4) Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.

(5) Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.

(6) Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project site where materials separation will be located.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

A. General: Implement waste management plan as approved by Owner. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

B. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.

(1) Distribute waste management plan to entities when they first begin work onsite. Review plan procedures and locations established for salvage, recycling, and disposal.

C. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

(1) Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled and reused.

3.2 RECYCLING CONSTRUCTION WASTE, GENERAL

A. General: Recycle paper and beverage containers used by on-site workers.

B. Recycling Receivers and Processors: Provide list of proposed recycling receivers and processors.

C. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Owner.

D. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical.

(1) Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.

(a) Inspect containers and bins for contamination and remove contaminated materials if found.

(2) Store components off the ground and protect from the weather.

(3) Remove recyclable waste off Owner's property and transport to recycling receiver or processor.

3.3 RECYCLING CONSTRUCTION WASTE

A. Packaging:

(1) Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.

(2) Polystyrene Packaging: Separate and bag materials.

(3) Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.

(4) Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

B. Wood Materials:

(1) Clean Cut-Offs of Lumber: Grind or chip into small pieces.

(2) Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

3.4 DISPOSAL OF WASTE

A. General: Except for items or materials to be recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill acceptable to authorities having jurisdiction.

(1) Do not allow waste materials that are to be disposed of, to accumulate onsite.

(2) Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn waste materials.

C. Disposal: Transport waste materials off Owner's property and legally dispose of them.

D. Disposal: Transport waste materials and dispose of at designated spoil areas on Owner’s property.

END OF SECTION 017419

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 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

(1) Inspection procedures.
(2) Final cleaning.

1.3 COMPLETION AND FINAL INSPECTION

A. Preliminary Procedures: Before filing written Notice of Completion, complete the following. List items below that are incomplete in request.

(1) Complete preliminary inspection of the Work and issue to subcontractors. Verify that all incomplete work and work needing correction has been completed and corrected.

(2) Advise Owner of pending insurance changeover requirements.

(3) Prepare and submit Project Record Documents, operation and maintenance manuals, and similar final record information.

(4) Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.

(5) Submit specific warranties, workmanship bonds, maintenance service agreements, final certificates and similar documents.

(6) Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities including occupancy permits, operating certificates and similar releases.

(7) Make final changeover of permanent locks and deliver keys to Owner. Advise Owner’s personnel of changeover in security provisions.

(8) Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.

(9) Complete startup testing of systems.

(10) Complete final cleaning requirements, including touchup painting.

(11) Submit test/adjust/balance records.

(12) Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

(13) Advise Owner of changeover in heat and other utilities.

(14) Submit changeover information related to Owner’s occupancy, use, operation and maintenance.

(15) Submit a final Application for Payment according to Division 01 Section "Payment Procedures."

(16) Submit certified copy of Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.

(17) Submit evidence of final, continuing insurance coverage complying with insurance requirements.

(18) Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.

B. Final Inspection: Submit a written Notice of Completion, in compliance with the General Conditions of the Contract, requesting Final Inspection. Within ten days after the Contractor files written Notice that the work is complete, the Owner and the Contractor shall make a "final inspection" of the Work to determine if the Work has been completed in accordance with the Contract Documents, or, the Owner will notify Contractor of unfulfilled requirements. As a result of the Final Inspection, the Owner will prepare a final punch list describing the following:

(1) Work to be completed, if any.

(2) Work not in compliance with the drawings and specifications, if any.

(3) Unsatisfactory work for any reason, if any.

C. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.4 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit three copies 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 list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.

(2) Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building services.

1.5 NOTICE OF ACCEPTANCE AND SETTLEMENT

A. Notice of Acceptance: Owner will issue Notice of Acceptance in accordance with the General Conditions of the Contract.

B. Settlement: Comply with requirements for Settlement described in the General Conditions of the Contract.

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: Provide 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 Final
Inspection for entire Project or for a portion of Project:

(a) Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.

(b) Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.

(c) Rake grounds that are neither planted nor paved to a smooth, even textured surface.

(d) Remove tools, construction equipment, machinery, and surplus material from Project site.

(e) Remove snow and ice to provide safe access to building.

(f) Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.

(g) Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.

(h) Sweep concrete floors broom clean in unoccupied spaces.

(i) Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.

(j) Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.

(k) Remove labels that are not permanent.

(l) Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.

• Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.

(m) Clean light fixtures to function with full efficiency. Replace burned out bulbs.

(n) Leave Project clean and ready for occupancy.

END OF SECTION 017700

SECTION 020700 DECONSTRUCTION

PART 1 – GENERAL

1.1 SECTION INCLUDES:

A. Definition: Deconstruction – Removal work that is distinct from demolition. It is the careful, controlled, and orderly removal of building components or materials, with the intention of salvage, reinstallation and repair.

B. Deconstruction, removal, and salvage of interior or exterior finishes, elements, and additions as indicated on the drawings, including but not limited to:

1. Foundation components in degraded condition;
2. Wood Sill Plate;
3. Wood Floor Joists in degraded condition;
4. Wood Structural Members;
5. Wood Sheathing
6. Metal Panel Exterior Cladding;
7. Wood Flooring

1.2 QUALITY ASSURANCE

A. Take all measures during performance of work to maintain and protect historic fabric of this building. Perform work with extreme care and assure that no features of structure are damaged. All work described in this section will adhere to the standards set forth by the *Secretary of the Interior's Standards for the Treatment of Historic Properties.*

B. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work in this section.

1.4 REGULATORY REQUIREMENTS

A. Perform deconstruction in accordance with applicable Federal, State and local building code and regulations, safety standards and requirements of authorities, having jurisdiction, including applicable requirements of the following:

1. Safety Requirements for Demolition: ANSI A 10.6.
2. Building Construction Operation: ANSI/NFPA 241.
3. Local regulations for protection of the public and control of noise, dust, dirt and other pollutants.

B. Lead Based Paint Precautions:

1. Existing items scheduled for possible deconstruction or removal may contain lead based paint.

2. General Contractor shall assume responsibility for complying with all applicable regulations.

1.5 PROJECT CONDITIONS

A. Condition of Structure: The Owner assumes no responsibility for actual condition of items to be demolished.

1. The drawings identify major requirements of this section. The drawings are intended to explain the scope of the section and are not to be interpreted as a comprehensive inventory of existing conditions. They are provided for information only and do not supplant on-site evaluation by the Contractor.

B. Explosives: Use of explosives will not be permitted.

C. Protection of Persons and Property:

1. Provide and maintain temporary construction barricades, signs and other forms of protection as necessary to protect streets, sidewalks, adjoining properties, personnel and general public form injury due to the work at all times.

2. Protect existing sidewalks, streets, utilities and other items which are to remain undisturbed.

3. Provide interior and exterior shoring, bracing or support to prevent movement, settlement, or collapse of elements to be demolished and adjacent facilities or work to remain.

4. Provide dustproof enclosures and or temporary protection to protect from damage existing finish work that is to remain in place.

5. Provide temporary weather protection during interval between deconstruction and removal of existing construction on exterior surfaces, and installation of new construction to insure that no water leakage or damage occurs to structure or interior areas of existing building.

6. Protect from damage existing structure and adjacent elements to remain by approved methods including saw-cutting of existing portions of construction adjacent to portions which are to remain. Remove both new and previous protection provided by others when the work is completed, or as directed by Owner.

D. Damages: Promptly repair damages caused to existing building elements, adjacent public or private facilities, utilities and premises by deconstruction at no additional cost to the Owner.

1. Any damage done to historic elements of the building, must be repaired in a manner approved by the Owner prior to implementation.

E. Traffic: Conduct deconstruction operations and debris removal in a manner to ensure minimum interference with roads, streets, sidewalks and other adjacent occupied facilities.

1. Do not close, block or otherwise obstruct roads, streets, sidewalks or other occupied facilities without proper written permission from authorities having jurisdiction.

F. Utility Services: Maintain existing utilities indicated to remain, keep in service, and protect against damage during deconstruction operations.

G. Remove rubbish and debris from the job site daily unless otherwise directed. Do not allow accumulations inside or outside the building.

H. Environmental Controls: Use water sprinkling, temporary enclosures, and other suitable methods to limit dust and dirt rising and scattering in air to lowest practical level. Comply with governing regulation pertaining to environmental protection. Do not use water when it may create objectionable conditions or cause damage to existing structures and finishes to remain.

I. The use of power-driven impact tools will be permitted only with the consent of the Owner.

J. Open Flame: Cutting torches will not be permitted except by Owner’s written permission. Maintain portable fire suppression devices of appropriate classes during all removals work.

1. Smoking is not permitted in the building or adjacent areas.

2. Fire watch is the responsibility of the Contractor.

PART 2 - PRODUCTS

Not included.

PART 3 - EXECUTION

3.1 GENERAL

A. Locate deconstruction equipment throughout structure and promptly remove materials so as not to impose excessive loads on supporting walls, floors, or framing.

B. Unanticipated elements which conflict with intended function or design, if encountered, shall be investigated, measured, photo documented and reported to the Owner in writing. Pending receipt of a directive, rearrange deconstruction schedule as necessary to continue overall job progress.

C. Title to Materials: Title to all materials to be removed and disposed of, as approved by the Owner, is vested in the Contractor upon the receipt of such approval. The Owner will not be responsible for the condition of, loss of, or damage to such property after such approval. Materials shall not be viewed by prospective purchasers or sold on the site.

1. Items indicated to be removed but of salvageable value to Contractor may be removed from structure as work progresses. Transport salvaged items from site as they are removed.

D. Historic artifacts uncovered during work of this Section remain property of the State and shall remain boxed and labeled in the building attic for future research. Notify Owner if such items are encountered and obtain acceptance regarding method of removal and salvage.

E. Existing finish work that is to remain in place and becomes exposed during deconstruction operations shall be protected from damage.

3.2 PREPARATION

A. Inspection

1. Prior to commencement of deconstruction work, inspect areas in which work will be performed. Photograph existing conditions of adjacent elements which could be construed as damage resulting from selective removal work; file with the Owner prior to starting work.

2. Determine location of piping, utilities and equipment and confirm whether it shall be removed or shall remain.

B. Provide interior and exterior shoring, bracing, or support to prevent movement, settlement or collapse of structures to be demolished and adjacent facilities to remain.

1. Cease operations and notify the Owner immediately if safety of structure appears to be endangered. Take precautions to support structure until determination is made for continuing operations.

C. Cover and protect equipment and fixtures to remain from soiling or damage when deconstruction work is performed in rooms or areas from which such items have not been removed.

D. Locate, identify, stub off, and disconnect utility services that are not indicated to remain.

1. Provide bypass connections as necessary to maintain continuity of service to building.

3.3 DECONSTRUCTION OF ELEMENTS FOR SALVAGE AND REUSE

A. General: Perform deconstruction work in a systematic manner. Use such methods as required to complete work indicated on the drawings, these specifications, and governing regulations.

1. Specialty items will be removed under Owner's or Architect's supervision.

2. Exercise care in removing salvage Elements and materials attached to Historic Elements which are to remain.

a. Unbolt bolted connections.

b. Unscrew screwed connections.

c. Do not pry apart members whose finish will be damaged by chipping, crazing, or cracking, or whose structural integrity will be impaired.

d. Do not remove nails from woodwork from exposed side. Drive nails through or pull from back so head does not splinter finished face.

e. Remove items whole wherever possible. Where cuts are required, make cuts cleanly with proper tools and at logical break points. Verify unusual or ambiguous configurations with Owner and document with photos and written notes prior to removal.

B. Millwork: Remove full lengths of millwork. Reinstall in same locations.

C. Door Assemblies: Store door, frame and hardware of individual door assemblies as single component. Door assemblies will only be removed if necessary for stabilization of building.

D. Windows: Remove only as much material necessary to accommodate new work. Remove window components in whole sections. Remove windows only if necessary for stabilization of building.

3.4 DISPOSAL OF WASTE MATERIALS

A. Remove debris, rubbish and other materials resulting from deconstruction operations from building site. Transport and legally dispose of materials off site in accordance with the approved methods and dump locations.

1. If hazardous materials are encountered during deconstruction operations, comply with applicable regulations, laws, and ordinances concerning removal, handling and protection against exposure or environmental pollution.

2. Burning of removed materials is not permitted on project site.

3.5 CLEAN-UP AND REPAIR

A. Upon completion of deconstruction work, remove tools, equipment and demolished materials from site.

1. Remove both new and existing protection except for those specified to remain.

2. Temporary partitions and closures will not be required to remain, and shall be demolished and removed off the site.

3. Leave interior areas broom clean.

B. Repair deconstruction performed in excess of that required. Return structures and surfaces to remain to condition existing prior to commencement of deconstruction work. Repair adjacent construction or surfaces soiled or damaged by deconstruction work.

END OF SECTION

SECTION 02071 PROTECTION AND SALVAGE OF HISTORIC ELEMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Protect all historic elements that remain in place or on site from damage by construction activities.

B. Document, deconstruct, record, label, store, and protect all items designated to be removed, salvaged and reinstalled as indicated on drawings or as directed by the Owner. All work described in this section will adhere to the standards set forth by the *Secretary of the Interior's Standards for the Treatment of Historic Properties*

1.3 DEFINITIONS

A. "Historic Elements" may include, but are not limited to, the following finishes, components, or areas:

1. Wood windows and doors
2. Interior wood trim and moldings and panels
3. Interior and exterior historic fixtures
4. Interior tin ceiling, molding, and cornice
5. Exterior wood trim, soffits and fascia
6. Exterior sheathing
7. Exterior metal panel siding

B. "Historic Elements" may also be identified in the field by the Owner and brought to the attention of the Contractor. Contractor shall verify any questionable items with the Owner prior to commencement of protection, demolition, or construction procedures.

C. “Protection” as specified herein refers to; protection of historic elements remaining in place from impact and general construction damage, and protection of all stored historic elements from impact, general construction damage, weather, or flooding. Fire protection is not covered by this specification and remains the responsibility of the Contractor.

1.4 QUALITY ASSURANCE

A. Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of work in this section, in accordance with the *Secretary of the Interior's Standards*

B. The Contractor shall be responsible for protection of all existing materials and components to remain or to be salvaged. The minimum amount of protection required is indicated on the drawings. In the event of damage, such items shall be immediately repaired or replaced by the Contractor, at his expense, to the satisfaction of the Owner.

C. Historic Significance: Take all measures during performance of work to maintain, protect, and preserve historic fabric of this building. Perform work with extreme care and assure that no features of structure are damaged.

1.5 SUBMITTALS

A. Photographic Requirements

1. Photographs shall be taken in high resolution, digital format with the files supplied on archival quality disc. The disc shall also contain a schedule of the dates of exposures, description of view and the name and address of the photographer. Submit three discs to the Owner.

1.6 SITE CONDITIONS

A. Coordinate the performance of work in this section with related or adjacent work. Protection of items should be complete prior to commencement of new construction and demolition.

B. At the end of working day or during inclement weather cover work exposed to weather with waterproof coverings, securely anchored.

C. Protection for Historic Elements should remain in place for the duration of the project unless determined otherwise by the Owner.

PART 2 - PRODUCTS

2.1 PROTECTION MATERIALS

A. General: Provide new materials; if acceptable to the Owner provide undamaged, previously used materials in serviceable condition. Provide materials suitable for the use intended.

B. Polyethylene sheets - 4 mil. to 10 mil.

C. Lumber: Species to be selected by Contractor, sizes to fit field conditions.

D. Plywood: 1/2-inch or 3/4-inch fire retardant.

E. Soft Fiberboard: Homasote Co., P. O. Box 7240, West Trenton, N.J. 08628, (609) 883-3300, or approved equal.

F. Polyurethane foam sheets: 4-inch thick.

G. Ethafoam

H. Duct tape.

I. "Preservation" Tape: 3M Scotch brand no. 4811, or approved equal.

J. Plastic film tape: 3M Scotch brand no. 472, or approved equal.

K. Kraft Paper, or approved equal.

L. Accessories: Provide necessary and related parts, devices and anchors required for complete installation.

PART 3 - EXECUTION

3.1 GENERAL

A. Historic Elements to Remain in place:

1. Protect all Historic Elements to remain in place, which may be damaged by construction activities. In the event of new damage, the Contractor shall document damage with photographs and written notes and

inform the Owner immediately as to the nature and extent of damage and the proposed method of repair. Contractor is responsible for repairs and replacement of newly damaged items, to the satisfaction of the Owner at no additional cost.

2. Do not attach protection materials directly to Historic Elements. Do not use duct tape or mechanical fasteners on historic materials unless so directed by Owner.

3. Protection to be secured adequately, so as to maintain a safe environment for workers and other individuals using the building throughout the duration of the project.

B. Salvage Elements to be removed:

1. Protect, carefully handle, transport, and store Historic Elements identified for removal. Contractor is responsible for handling and storing these items, in addition to being responsible for repairs and replacement of newly damaged items to Owner's satisfaction at no additional cost.

2. Catalog removed Salvage Elements in the Artifact Log. Document type, size, quantity, location in storage and, if applicable, original location and condition.

3. Store Salvage Elements in neat, orderly fashion to allow for access and retrieval. Store like type elements together in groups. Store particularly fragile elements in manner that prevents damage while in storage.

3.2 PREPARATION

A. Remove all furnishings and debris to allow for full access as required to perform protection of Historic Elements.

B. Verify Off-Site Facility has adequate capacity and access for orderly storage and retrieval of Salvage elements.

C. Do not stockpile items at job site other than in preparation for transport to storage facility.

3.3 INSTALLATION OF PROTECTION

A. General

1. Alternative methods to specified protection may be acceptable if equal or greater protection is provided. Submit alternative methods to the Owner for review as specified. Do not proceed with alternative methods until specified approvals are secured.

2. Protection may be required to remain in place for the duration of the project. As such, materials should be installed to provide adequate protection throughout the full extent of construction activities. Repair or reinstall protection throughout the duration of construction as required.

3. Extent of protection is to cover all Historic Elements to remain which are in the vicinity of construction activities whether specifically called out on the drawings or not. All questionable protection requirements should be identified for the Owner's review.

4. All protection assemblies should be self-supporting and self bracing, secured at the base to the floor protection, unless otherwise noted.

B. Wood trim, wood sheathing / siding, molding, bases, window and door surrounds and other miscellaneous millwork: Verify extent of potential impact on these elements with Owner. If protection is required, carefully remove these elements for reinstallation.

C. Windows and Doors: Verify extent of potential impact on these elements with Owner.

3.4 DISCOVERY OF HIDDEN ARCHITECTURAL OR ARCHEOLOGICAL FEATURES

A. It is the Contractor's responsibility to hire a professional Archeologist who is certified by the Society of Professional Archaeology (SOPA) to be present on site during excavation activity. Should archeological materials be uncovered during grading, trenching, or other onsite excavations, earthwork within 30 yards of these materials shall be stopped until the archeologist has had an opportunity to evaluate the significance of the find and suggest appropriate mitigation(s), if deemed necessary. Do not disturb area until Owner has evaluated undocumented items.

B. Time lost thereby will be condition for which contract time may be extended. Costs incurred for salvaging or documenting artifacts, after discovery will be handled as a Construction Contingency.

C. The State reserves right to retain possession and ownership of objects, artifacts and historically or archeologically significant materials, other than normal building construction materials, discovered during execution of work. Onwer may act as steward to above findings, with permission of the State, to be stored on location.

3.6 CATALOGING OF HISTORIC SALVAGE ELEMENTS

A. General: Historic fabric removed from its original location shall be labeled to permit reinstallation to its original location and configuration. Contractor may propose alternative methods for cataloguing Salvage Elements. Submit alternative method for Owner's review as specified. All cataloging of historical elements will be supported by digital photographs and written notes of the historic elements in original locations prior to removal.

B. Numbering and cataloguing: Each item to be removed shall be given a unique catalogue number which is to be permanently marked on the element and listed on a Removed Historic Element Log. Numbers are to be created as follows:

N/P/FL1/2
Where:
N 'elevation, (cardinal direction)
P ' component type abbreviation, (P for post)
FL1 ' floor number (first floor)
2 ' component number

C. Wood elements shall be numbered with a black, permanent marker or a yellow lumber crayon, unless otherwise noted, in area hidden from view when element is installed.

D. Removed Historic Elements – Artifact Log

1. As items are removed and labeled, they shall be recorded in an artifact log. The log shall list the item number, a brief description of the item and location in the building, and a reference to the storage location. If required to pinpoint the exact location of an object, the number shall also be placed on an interior elevation, plan, or sketch which shall be appended to the Historic Elements Log. This information will be cross referenced with the photo-documentary evidence collected before and during removal of historic elements.

3.7 STORAGE

A. General: Keep items clean, dry, and well ventilated in designated storage facility. Protect items from abrasion or damage as required. Keep area clean.

B. Organization: organize elements to be readily accessible and retrievable for re-use or reference and store complex components requiring re-assembly together.

3.8 REINSTALLATION

A. Return Salvage elements to their original locations, unless otherwise indicated. When items cannot be returned to their original location because of architectural modifications, they may be re-used in other locations determined by Owner. Where salvage Elements are not to be re-used, they will remain the State's property, if so directed by the Owner.

3.9 CLEAN-UP

A. All residue and debris from protection work is to be removed from existing construction leaving the premises clean and neat.

END OF SECTION

SECTION 029900 STRUCTURE MOVING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Preparing Structure.

B. Raising the Structure.

C. Setting structure on new foundation.

D. Connecting utilities at new location.

1.02 ADMINISTRATIVE REQUIREMENTS

A. Pre-Move Meeting: Convene one week before starting work of this section. Discuss the following:

1. Method of determining damage to existing structure and finishes before and after the move.

2. Method and responsibility for repairs after moving.

3. Review the intended dimensional clearances of foundation work and obstructions.

1.03 QUALITY ASSURANCE

A. Mover Qualifications: Company specializing in relocating building structures with minimum of three years of documented experience.

PART 2 PRODUCTS

2.01 EQUIPMENT AND MATERIALS

A. Transport, Equipment, and Supports: As required to achieve a successful structure move.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions and determine if existing structure is sufficient to support transverse loads. Provide adequate structural supports as necessary.

3.02 PREPARATION

A. Prepare site.

C. Reinforce as necessary to safely lift the structure and to prevent damage.

D. Disconnect and cap existing site utility services. Remove overhead or exposed utility services to provide clear working and moving space around and below structure.

E. Remove components which can be damaged prior to move.

F. Secure supplementary framing and bracing to structure.

3.03 RAISE STRUCTURE

A. Cut structure free of foundation and portions of structure not being moved.

B. Remove existing concrete base and utilities in their entirety.

C. Reinforce, brace, and raise structure clear of foundation in manner to prevent damage.

D. Provide necessary framing, bracing, closures, supports, and blocking.

E. Secure structure to temporary supporting structural members to prevent shifting of structure during lift.

3.04 REINSTALL STRUCTURE

A. Position and anchor structure over prepared foundation and lower onto new foundation.

B. Remove moving equipment.

C. Leave reinforcing, framing, and bracing intact until structure is fully attached and structure loads are supported by new foundation.

D. Attach structure to new foundation as indicated.

E. Connect all utilities to structure under provisions of related sections, test and adjust for proper operation.

3.05 TOLERANCES

A. Maximum Variation from Level and Plumb after Reinstallation: 1/4 inch.

B. Maximum Offset from True Position after Reinstallation: 1/2 inch over full height

C. Adjust structure on foundation.

1. To permit doors to swing freely.

2. So that floor surfaces are level, walls are plumb.

3.06 DAMAGE REPAIR

A. Repair damage to structure not identified in writing prior to move.

B. Refinish repaired surfaces to match adjacent work.

C. Pay all third party claims for incidental or other damage.

END OF SECTION

SECTION 033000 - CAST-IN-PLACE CONCRETE

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. This Section specifies cast-in place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:

(1) Footings.
(2) Foundation walls.
(3) Site Flat Work.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

(1) Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.

2.2 FORM-FACING MATERIALS

A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.

(1) Plywood, metal or other approved panel materials.

C. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

2.3 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.

2.5 CONCRETE MATERIALS

A. Recycled Content for Concrete Products: Provide products with pre-consumer recycled content.

B. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:

(1) Portland Cement: ASTM C 150. Supplement with the following:

(a) Fly Ash: ASTM C 618, Class C or F.

C. Normal-Weight Aggregates: ASTM C 33, coarse aggregate or better, graded.

(1) Maximum Coarse-Aggregate Size: as indicated on structural drawing:

(2) Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

D. Water: ASTM C 94/C 94M and potable.

2.14 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.

(1) Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.

B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:

(1) Fly Ash: **15 percent.**

C. Limit water-soluble, chloride-ion content in hardened concrete to 0.06 percent by weight of cement.

D. Admixtures: Use admixtures according to manufacturer's written instructions.

(1) Use water-reducing admixture in concrete, as required, for placement and workability.

2.16 REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.17 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.

(1) When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

A. Manage construction waste in accordance with provisions of Section 017419. Documentation shall be submitted to satisfy the requirements of that section.

3.2 FORMWORK

A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.

B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

C. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:

(1) Class A, 1/8 inch for smooth-formed finished surfaces.

(2) Class B, 1/4 inch for rough-formed finished surfaces.

D. Construct forms tight enough to prevent loss of concrete mortar.

E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.

F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.

G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

H. Chamfer exterior corners and edges of permanently exposed concrete.

I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.

J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.7 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.

C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover.

D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

E. Install welded wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

3.9 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.

B. Do not add water to concrete during delivery, at Project site, or during placement.

C. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If

a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.

(1) Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.

(2) Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.

(3) Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches (150 mm) into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

D. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.

(1) Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.

(2) Maintain reinforcement in position on chairs during concrete placement.

(3) Screed slab surfaces with a straightedge and strike off to correct elevations.

(4) Slope surfaces uniformly to drains where required.

(5) Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleed water appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

E. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

(1) When average high and low temperature is expected to fall below 40 deg Ffor three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.

(2) Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.

(3) Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

3.11 FINISHING SLABS

A. General: Comply with ACI 302.1R recommendations for screeding, re-straightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.

(1) Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route.

END OF SECTION 033000

SECTION 057300 - DECORATIVE METAL RAILINGS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Wrought iron ornamental railings with brass details as shown on drawings.

1.2 PERFORMANCE REQUIREMENTS

A. General: In engineering railings to withstand structural loads indicated, determine allowable design working stresses of railing materials based on the following:

1. Steel: 72 percent of minimum yield strength.

2. Aluminum: The lesser of minimum yield strength divided by 1.65 or minimum tensile strength divided by 1.95.

B. Structural Performance: Provide railings capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:

1. Handrails:

a. Uniform load of 50 lbf/ ft. applied in any direction.

b. Concentrated load of 200 lbf applied in any direction.

c. Uniform and concentrated loads need not be assumed to act concurrently.

2. Top Rails of Guards:

a. Uniform load of 50 lbf/ ft. applied in any direction.

b. Uniform and concentrated loads need not be assumed to act concurrently.

3. Infill of Guards:

a. Concentrated load of 50 lbf applied horizontally on an area of 1 sq. ft.

C. Thermal Movements: Provide exterior railings that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

D. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

1.6 QUALITY ASSURANCE

A. Source Limitations: Obtain each type of railing through one source from a single manufacturer.

B. Product Options: Information on Drawings and in Specifications establishes requirements for system's aesthetic effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction. Performance characteristics are indicated by criteria subject to verification by one or more methods including structural analysis, preconstruction testing, field testing, and in-service performance.

C. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.

D. Welding: Qualify procedures and personnel according to the following:

1. AWS D1.1, "Structural Welding Code--Steel."

2. AWS D1.2, “Structural Welding Code--Aluminum”

1.7 PROJECT CONDITIONS

A. Field Measurements: Verify actual locations of walls and other construction contiguous with railings by field measurements before fabrication and indicate measurements on Shop Drawings.

1. Provide allowance for trimming and fitting at site.

1.8 COORDINATION AND SCHEDULING

A. Coordinate installation of anchorages for railings. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

B. Schedule installation so wall attachments are made only to completed walls. Do not support railings temporarily by any means that do not satisfy structural performance requirements.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

Wrought Iron or Forged Steel Railings: See drawings for details.

Manufacturer: King Architectural metals 800.542.2379

a. Metal: Wrought Iron or Forged Steel

b. Handrail and Detailing: See Architectural Drawings

2.2 METALS, GENERAL

A. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.

B. Brackets, Flanges, and Anchors: Same metal and finish as supported rails, unless otherwise indicated.

2.3 STEEL AND IRON

A. Tubing: ASTM A 500 (cold formed) or ASTM A 513, Type 5 (mandrel drawn).

B. Bars: Hot-rolled, carbon steel complying with ASTM A 29/A 29M, Grade 1010.

C. Plates, Shapes, and Bars: ASTM A 36/A 36M.

D. Castings: Either gray or malleable iron, unless otherwise indicated.

Gray Iron: ASTM A 48/A 48M, Class 30, unless another class is indicated or required by structural loads.
Malleable Iron: ASTM A 47/A 47M.

2.4 FASTENERS

A. General: Provide the following:

1. Copper-Alloy (Bronze) Components: Silicon bronze (Alloy 651 or 655) fasteners where concealed; muntz metal (Alloy 280) fasteners where exposed.

B. Fasteners for Anchoring Railings to Other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring railings to other types of construction indicated and capable of withstanding design loads.

C. Provide concealed fasteners for interconnecting railing components and for attaching railings to other work, unless exposed fasteners are unavoidable.

2.5 MISCELLANEOUS MATERIALS

A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

1. For aluminum railings, provide type and alloy as recommended by producer of metal to be welded and as required for color match, strength and compatibility in fabricated items.

2.6 FABRICATION

A. General: Fabricate railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to support structural loads.

B. Assemble railings in the shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces.

C. Make up wire-rope assemblies in the shop to field-measured dimensions with fittings machine swaged. Minimize amount of turnbuckle take-up used for dimensional adjustment so maximum amount is available for tensioning wire ropes. Tag wire-rope assemblies and fittings to identify installation locations and orientations for coordinated installation.

D. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch, unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

E. Form work true to line and level with accurate angles and surfaces.

F. Fabricate connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

G. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items.

H. Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.

2. Obtain fusion without undercut or overlap.

3. Remove flux immediately.

4. At exposed connections, finish exposed surfaces smooth and blended so no roughness shows after finishing and welded surface matches contours of adjoining surfaces.

I. Mechanical Connections: Connect members with concealed mechanical fasteners and fittings. Fabricate members and fittings to produce flush, smooth, rigid, hairline joints.
Fabricate splice joints for field connection using an epoxy structural adhesive if this is manufacturer's standard splicing method.

J. Form changes in direction as follows:

1. As detailed.

2. By bending to smallest radius that will not result in distortion of railing member.

K. Form simple and compound curves by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.

L. Close exposed ends of hollow railing members with prefabricated end fittings.

M. Provide wall returns at ends of wall-mounted handrails, unless otherwise indicated. Close ends of returns, unless clearance between end of rail and wall is 1/4 inch or less.

N. Provide inserts and other anchorage devices for connecting railings to concrete or masonry work. Fabricate anchorage devices capable of withstanding loads imposed by railings. Coordinate anchorage devices with supporting structure.

O. For railing posts set in concrete, provide steel sleeves not less than 6 inches long with inside dimensions not less than 1/2 inch greater than outside dimensions of post, with steel plate forming bottom closure.

2.7 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

2.8 STEEL AND IRON FINISHES

A. For nongalvanized steel railings, provide nongalvanized ferrous-metal fittings, brackets, fasteners, and sleeves, except galvanize anchors to be embedded in exterior concrete or masonry.

B. Preparation for Shop Priming: After galvanizing, thoroughly clean railings of grease, dirt, oil, flux, and other foreign matter, and treat with metallic-phosphate process.

C. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with minimum requirements indicated below for SSPC surface preparation specifications and environmental exposure conditions of installed railings:

1. Exterior Railings (SSPC Zone 1B): SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."

2. Interior Railings (SSPC Zone 1A): SSPC-SP 7/NACE No. 4, "Brush-off Blast Cleaning."

D. Apply shop primer to prepared surfaces of railings, unless otherwise indicated. Comply with requirements in SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting. Primer need not be applied to surfaces to be embedded in concrete or masonry.

1. Do not apply primer to galvanized surfaces.

E. Painted Finish: Powder Coating; Flat Black

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine plaster and gypsum board assemblies, where reinforced to receive anchors, to verify that locations of concealed reinforcements have been clearly marked for Installer. Locate reinforcements and mark locations if not already done.

3.2 INSTALLATION, GENERAL

A. Fit exposed connections together to form tight, hairline joints.

B. Perform cutting, drilling, and fitting required for installing railings. Set railings accurately in location, alignment, and elevation; measured from established lines and levels and free of rack.

1. Do not weld, cut, or abrade surfaces of railing components that have been coated or finished after fabrication and that are intended for field connection by mechanical or other means without further cutting or fitting.

2. Set posts plumb within a tolerance of 1/16 inch in 3 feet.

3. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet.

C. Adjust railings before anchoring to ensure matching alignment at abutting joints.

D. Fastening to In-Place Construction: Use anchorage devices and fasteners where necessary for securing railings and for properly transferring loads to in-place construction.

3.3 RAILING CONNECTIONS

A. Nonwelded Connections: Use mechanical or adhesive joints for permanently connecting railing components. Use wood blocks and padding to prevent damage to railing members and fittings. Seal recessed holes of exposed locking screws using plastic cement filler colored to match finish of railings.

B. Welded Connections: Use fully welded joints for permanently connecting railing components. Comply with requirements for welded connections in Part 2 "Fabrication" Article whether welding is performed in the shop or in the field.

C. Expansion Joints: Install expansion joints at locations indicated but not farther apart than required to accommodate thermal movement. Provide slip-joint internal sleeve extending 2 inches beyond joint on either side, fasten internal sleeve securely to 1 side, and locate joint within 6 inches of post.

3.4 ANCHORING POSTS

A. Use steel pipe sleeves preset and anchored into concrete for installing posts. After posts have been inserted into sleeves, fill annular space between post and sleeve with nonshrink, nonmetallic grout, mixed and placed to comply with anchoring material manufacturer's written instructions.

B. Form or core-drill holes not less than 5 inches deep and 3/4 inch larger than OD of post for installing posts in concrete. Clean holes of loose material, insert posts, and fill annular space between post and concrete with nonshrink, nonmetallic grout, mixed and placed to comply with anchoring material manufacturer's written instructions.

C. Cover anchorage joint with flange of same metal as post, welded to post after placing anchoring material.

D. Anchor steel posts to steel with flanges, angle or floor type as required by conditions, welded to posts and bolted to metal supporting members.

E. Anchor posts to metal surfaces with flanges, angle type, or floor type as required by conditions, connected to posts and to metal supporting members as follows:

1. For steel railings, weld flanges to posts and bolt to metal-supporting surfaces.

2. For aluminum railings, attach posts as indicated using fittings designed and engineered for this purpose.

3.5 ATTACHING HANDRAILS TO WALLS

A. Attach handrails to walls with wall brackets. Provide brackets with 1-1/2-inch clearance from inside face of handrail and finished wall surface.

B. Locate brackets as indicated or, if not indicated, at spacing required to support structural loads.

C. Secure wall brackets to building construction as follows:

1. For concrete and solid masonry anchorage, use drilled-in expansion shields and hanger or lag bolts.

2. For hollow masonry anchorage, use toggle bolts.

3.7 CLEANING

A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

B. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint.

3.8 PROTECTION

A. Protect finishes of railings from damage during construction period with temporary protective coverings approved by railing manufacturer. Remove protective coverings at time of Substantial Completion.

B. Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in field to shop; make required alterations and refinish entire unit, or provide new units.

END OF SECTION 057300

057302 INSTALLING A TIN CEILING AND CORNICE

PART 1 GENERAL

1.01 SUMMARY

A. This procedure includes guidance on installing a new tin ceiling to replace one that has deteriorated.

B. Metal ceiling panels are typically 2-feet x 8-feet and are nailed to wood furring strips which are, in turn nailed to the ceiling joists of an existing ceiling.

1.02 DELIVERY, STORAGE, AND HANDLING

A. Packing and Shipping: Protect tin ceiling sheets from damage at all times during handling, installation, and operation of the building.

B. Acceptance at Site:

1. New metal sheets shall be delivered on the job carefully packed. Inspect each piece immediately before installation, and do not use the pieces which have observable edge damage or face imperfections.

2. Manufacturer's delivery or job markings on the tin sheets, and adhesives for manufacturer's labels, shall be a neutral material. In no case shall such material be alkaline; any staining of the tin sheets by alkaline materials will be cause for the rejection of the piece.

C. Storage and Protection:

1. Metal sheets should be stored as to protect from edge and face damage at all times, carefully packed and should remain so from the time of delivery until set.

2. Salvaged historic material shall be carefully packed and stored under cover and in the building away from work or traffic areas. Mark salvaged material with the year of removal.

PART 2---PRODUCTS

2.01 MANUFACTURERS

A. For Metal Ceilings and Cornices:

1. A.A. Abbingdon Affiliates, Inc.
2149 Utica Avenue
Brooklyn, NY 11234
718/258-8333

2. Chelsea Decorative Metal Co.
6115 Cheena
Houston, TX 77096
713/721-9200

3. Kenneth Lynch & Sons
78 Danbury Road

Wilton, CT 06897
203/762-8363

4. Old Jefferson Tile Co.
P.O.Box 323
Jefferson, TX 75657
713/665-2221

5. W.F. Norman Corporation
P.O.Box 323
Nevada, MO 64772
800/641-4038

2.02 MATERIALS

A. Furring strips 1x3's or 1x2's

B. 1-inch long flat head nails as required

C. 3-inch long flat head nails or 2-1/2-inch drywall screws as required

D. Wood shims as required

E. Glazing compound or latex caulk

F. Tin sheets - ceiling panels and cornice pieces (see Manufacturers above)

G. Appropriate primer and finish coat paints

H. Mineral spirits

I. Soft rags

J. Clean, potable water

2.03 EQUIPMENT

A. Chalk line

B. Metal ruler

C. Straightedge

D. Sheet metal cutters

E. Hammer and/or screwgun

F. Heavy gloves and protective gear

G. Scaffolding/working platforms

H. Ladders

PART 3 EXECUTION

3.01 EXAMINATION

A. Before proceeding with steps to install the metal ceiling, it is important to first determine the cause and extent of the problem:

1. Determine the age of the building and if a tin ceiling did exist before or if it is an appropriate ceiling substitute in terms of historical accuracy and expense.

2. If a ceiling exists, can it be salvaged?

3.02 PREPARATION

A. Surface Preparation:

1. Remove any residue from factor-shipped metal by cleaning the sheets thoroughly with denatured alcohol or mineral spirits. Allow to dry before priming.

2. Prime the face of the metal before installation.

IT IS DIFFICULT TO PAINT OVERHEAD ONCE THE METAL IS INSTALLED.

a. Apply a high-quality oil/alkyd primer formulated for metals.

b. Apply two coats of oil-based paint.

NOTE: BE SURE TO USE THE SAME MANUFACTURER FOR THE PRIMER AND THE PAINT.

3. If the ceiling is going into a high-humidity room, back-prime the sheets before installation.

3.03 ERECTION/INSTALLATION/APPLICATION

A. Furring the Ceiling:

1. Using 3-inch nails, attach 3-inch wide furring strips to the ceiling around the perimeter of the room.

NOTE: 1x2 FURRING STRIPS ARE ADEQUATE, BUT 3-INCH STRIPS ARE BETTER. REUSE HISTORIC OR EXISTING FURRING WHEN POSSIBLE.

a. Nail the strips as far from the wall as the cornice will project.

b. If necessary, add a few nailers between the joists to enable nailing the strips at the correct position.

NOTE: ONLY DRIVE THE NAILS IN HALFWAY TO ALLOW FOR LATER SHIMMING AND LEVELLING.

2. Mark the centerlines for locating the furring strips.

a. Snap a chalkline from the center of the ceiling, perpendicular to the joists.

b. Snap additional chalklines every 12 inches on center, parallel to the first line.

NOTE: THE LINES NEED TO BE PRECISELY LOCATED BECAUSE THE METAL SHEETS ARE RIGID AND CANNOT BE ADAPTED TO NON-PARALLEL NAILING STRIPS.

3. Nail up the middle furring strip. BE SURE TO DRIVE THE NAILS IN ONLY HALFWAY.

4. Nail up additional strips on every other chalkline (every 24 inches on center). BE SURE TO DRIVE THE NAILS IN ONLY HALFWAY.

5. Determine the locations where the 8-long sheets will connect, perpendicular to the strips already installed.

6. Nail furring strips at these 8-foot intervals to secure the edges of the sheets where they overlap.

NOTE: WHEN USING 2- INCH FURRING, THESE STRIPS WILL BE APPROXIMATELY 22 INCHES LONG.

7. Nail furring strips on the intermediate chalklines. These should be approximately 12 inches on center.

8. Check the level of the furring strips to see that they are in the same plane. Shim strips as needed to level the ceiling.

a. Use a good straightedge to align the strips.

b. Move around the room holding the straightedge against the strips. Use the claw of the hammer to pull high strips down into the same plane as the lower strips.

9. When all the strips are in line and in the same plane, drive all nails home. Use care to avoid damaging metal ceiling components.

C. Installing the Metal: The sheets are usually 2 feet wide by 8 feet long.

NOTE: USE EXTREME CAUTION AND WEAR HEAVY GLOVES WHEN HANDLING METAL SHEETS AS THEIR EDGES ARE RAZOR-SHARP. GRIP THE EDGES OF THE SHEETS BETWEEN THE FINGERS AND THE THUMB. NEVER LET THE SHEETS SLIDE ACROSS THE PALM.

1. Cut the metal panels with tinsnips as required.

2. Beginning at the furthest corner from the entrance to the room, secure the metal panels to the furring strips using 1-inch, flat-head nails.

NOTE: THE FIRST SHEETS INSTALLED ARE USUALLY THE STRAIGHTEST, SO IT IS BEST TO START IN THE AREA THAT WILL BE THE MOST VISIBLE.

a. Have an assistant hold each sheet flat using a piece of furring.

b. Nail the ends of the each metal panel into the short furring strips described in 3.03 A. 5. above. This provides a secure nailing surface so that the ends of the panels will lay flat.

c. Drive the nail to one side of the decorative button (bead).

d. Nail the long edges of the metal panels to the furring strips. Again drive the nails to one side of the

bead.

e. To line up the next sheet, overlap the beads with the previous sheet (the way a ball and socket fit). Nail directly through the beads on the overlapping sheet.

NOTE: ANY SHEETS THAT NEED CUTTING MUST HAVE THE CUT EDGE TO THE WALL, SO IT WILL BE CONCEALED BY THE COVE MOLDING.

D. Installing the Cornice: Generally the cornice is installed after the ceiling is in place.

1. To ensure solid nailing, measure the cornice before furring for the new metal ceiling.

a. Measure the depth of the cornice (down from the new ceiling) at several points on the wall.

b. Snap a chalkline at these marks.

NOTE: MAKE SURE THE CORNICE RUNS STRAIGHT ALONG THE WALL. DEVIATIONS ARE MORE NOTICEABLE AT THE WALL EDGE THAN AT THE CEILING.

2. Locate and mark all of the studs in the wall for attaching furring strips.

3. Nail furring strips to the wall for attaching the cornice. Try to attach the strips so that the joints occur at the studs. This ensures a tighter connection. If this is not feasible with each joint, however, use a small sheet-metal screw to attach the two pieces.

NOTE: WHEN A SMALLER CORNICE IS USED, IT CAN BE NAILED DIRECTLY TO THE WALL, OMITTING THE FURRING STRIPS.

4. Beginning at an inside (coped) corner and working toward the outside (mitered) corners, drive nails through the cornice's decorative buttons or bumps and into the furring strips.

NOTE: BE SURE TO DRIVE THE NAILS IN ONLY HALFWAY UNTIL THE ENTIRE CORNICE IS IN PLACE. IF THE NAILS CAN BE EASILY REMOVED, MINOR ADJUSTMENTS CAN BE MADE WITHOUT DAMAGING THE CORNICE.

a. Install the metal cornice so that it overlaps the edge of the last metal ceiling panel abutting the wall.

b. Nail the cornice to the furring strips at the ceiling and the wall with nails spaced about every 12 inches.

5. Fit the inside and outside corners.

NOTE: THIS IS THE MOST DIFFICULT PART OF INSTALLING A METAL CORNICE.

a. Make a template by cutting and fitting scrap pieces of cornice by hand using tin snips. Make one template for a coped joint (inside corners) and one for a mitered joint (outside corners). Position the scrap piece on the chalkline when fitting and cutting to ensure an accurate joint.

b. Once a template of each type has been made, make subsequent ones by using the template as a guide and tracing the pattern onto the cornice with a marker.

NOTE: SOME MANUFACTURERS OFFER PREFABRICATED PIECES FOR BOTH INSIDE AND OUTSIDE CORNERS WHICH CAN SAVE TIME AND MONEY.

6. Before fitting the corner pieces, make a series of cuts along the edges (approximately 1/8-inch deep every 1/8-inch). These cuts make is easier to bend the metal when the joint is tapped closed.

7. After the metal cornice is installed, seal any open joints by holding a wide chisel or the back of a 3- inch nail head against the joint and striking the point gently with a hammer.

8. Fill any remaining open joints with glazing compound or latex caulk.

END OF SECTION

SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

(1) Framing with dimension lumber.
(2) Wood blocking, cants, and nailers.
(3) Wood furring.

PART 2 - PRODUCTS

2.1 DIMENSION LUMBER FRAMING

A. Maximum Moisture Content: **19 percent.**

B. Exterior Framing: Provide material hand-selected for uniformity of appearance and freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot-holes, shake, splits, torn grain, and wane.

(1) Species and Grade: **Hem-fir; No. 2 or Better; WCLIB, or WWPA.**

2.2 HEAVY TIMBER FRAMING (COLUMNS)

A. Maximum Moisture Content: **19 percent.**

B. Exterior Columns: Provide material hand-selected for uniformity of appearance and freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot-holes, shake, splits, torn grain, and wane.

(1) Species and Grade: **Doug Fir-Larch; WCLIB, or WWPA.**

2.3 WOOD-PRESERVATIVE-TREATED LUMBER

A. Preservative Treatment by Pressure Process: AWPA C2

1. Preservative Chemicals: Acceptable to authorities having jurisdiction **and containing no arsenic or chromium**.
2. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.

B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with requirements for untreated material.

C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece.

D. Application: Treat all rough carpentry, unless otherwise indicated.

1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.
3. Wood framing and furring attached directly to the interior of below-grade exterior masonry or concrete walls.
4. Wood framing members that are less than 18 inches above the ground in crawlspaces or unexcavated areas.
5. Wood floor plates that are installed over concrete slabs-on-grade.

2.4 MISCELLANEOUS LUMBER

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:

(1)Blocking.
(2)Nailers.
(3)Cants.
(4)Furring.

B. For items of dimension lumber size, provide Construction or No. 2 grade lumber with 19 percent maximum moisture content of any species.

C. For concealed boards, provide lumber with 19 percent maximum moisture content and any of the following species and grades:

(1) Western woods, Construction or No. 2 Common grade; WCLIB or WWPA.

D. For furring strips for wood and metal siding assemblies, provide 2” ripped 7/16” plywood.

2.4 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified.

(1) Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with

A. STM A 153/A 153M or of Type 304 stainless steel.

B. Power-Driven Fasteners: NES NER-272.

C. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, and similar supports to comply with requirements for attaching other construction.

B. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

(1) NES NER-272 for power-driven fasteners.
(2) Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.

END OF SECTION 061000

SECTION 062000 - FINISH CARPENTRY

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

A. The extent of each type of finish carpentry is shown on the drawings and in schedules.

B. The types of Finish Carpentry include, but are not necessarily limited to, the following:
(1) Wood standing and running trims.
(2) Replacement of historic trim work.
(3) Wood base.
(4) Wood stair treads and risers.

C. Comply with the following HUD Minimum Property Standards for Housing:
Interior pre-hung wood door units: NSDJA- 1-79.

1.2 QUALITY ASSURANCE

A. Moisture content of all-solid lumber and plywood shall be not less than 6% or more than 19% and shall be consistent with the average atmospheric condition at the project location. All materials shall be so conditioned at the time of manufacture and shall be handled and stored so as to maintain the condition. In no instance shall any woodwork be stored or installed in any areas unless the entire is broom clean, closed in, and possessing a relative humidity below 50% at 70 degrees F.

B. Verify all dimensions shown on drawings by taking field measurements, proper fit and attachment of all parts is required.

PART 2- PRODUCTS

2.1 LUMBER

A. Lumber for unexposed locations shall be construction grade fir or pine. Where noted on drawings for stair handrails and wall caps use oak.

B. Interior trim members shall be kiln-dried materials of species indicated.

Design Selections. Adjacent and abutting members shall be selected for reasonably compatible grain and color.

C. All species shall contain only minor inherent natural defects, covered by adjoining members, concealed when the stock is installed, or not visible after pigmented finishing (as stain) may be admitted. Lengths shall be in the proportion available in the species and grade specified except that all standing trim shall be one piece where scheduled for transparent finish, custom grade where scheduled for paint finish.

D. Trim members shall be “backed out” when 1-5/8” wide or wider, and for application on flat surfaces.

E. Exposed surfaces shall be machine sanded on flat top face surfaces only, machine run otherwise. Sander marks shall be fine enough to be concealed by the painter’s finish.

F. Working defects, such as torn grain, machine marks, cross sanding, and tool marks will not be permitted. Edges shall be milled straight and true with exposed corners slightly rounded.

2.2 PLYWOOD

A. Softwood plywood shall be grade stamped fir plywood conforming to the requirements of U.S. Product Standards PSI-74. Provide plywood of grade indicated on the drawings.

PART 3 - EXECUTION:

3.1 GENERAL INSTALLATION

A. Use only finish casing nails. Provide hot-dip galvanized nails for work exposed to weather or moisture. Set nails for putty stopping in surfaced members. Hammer marks not acceptable on any exposed finished surface and may be cause for rejection of work.

B. Make all end splices exposed in finished members bevel (scarfed) splices and not square butted. Install members in as long a length as possible. Make splices at studs or other structural support.

C. Repair damaged or defective finished or defective finish carpentry where possible to eliminate functional or visual defects. Where not possible to repair, replace finish carpentry. Adjust joinery for uniform appearance.

3.2 INSTALLATION OF MILLWORK

A. Millwork shall be installed by experienced finish carpenters only. Millwork shall be erected plumb, true and square in a substantial manner strictly according to the approved shop drawings. Finished work shall be neatly installed, free of slivers, open joints and hammer or tool marks.

B. Finished work shall be blind nailed insofar as possible and all surface nails shall be set. Work shall be securely fastened to nailing blocks, grounds and furring. Hardwoods shall be drilled for nails.

C. Scribing and joining shall be done accurately and neatly, so as to produce concealed and permanently tight joints, in a uniform plane for best appearance.

3.3 FINISH HARDWARE FOR DOORS

A. Fit, install, remove for finishing of doors and/or frames and re-install hardware as required and noted under “Door Installation.”

B. Install hardware per manufacturer’s directions and to manufacture’s templates. General installation requirements are given in Section 08711.

C. Thresholds shall be coped to profile of jamb, set in sealant, anchored with expansion bolts.

3.4 WOOD DOOR INSTALLATION

A. Doors shall be trimmed to fit openings snugly without bind. Maximum clearance, 1/8” at top and jambs, 3/16” maximum at meeting or pairs of doors. Bottom clearance 5/8” except where larger undercuts are scheduled, or where thresholds require specific clearances. All edges shall be sanded and eased.

B. Removed fitted and hung doors, remove hardware from door and allow painter to finish all edges and surfaces. Re-hang and re-fit when painter is completed.

C. Just prior to final inspection examine and adjust door hardware and weather stripping to assure perfect operation.

END SECTION 062000

SECTION 062500 GENERAL WOOD RESTORATION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Repair existing exterior and interior wood elements, including but not limited siding, sheathing, trim, soffits, fascia and interior flooring.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Protect wood from exposure to weather at all times.

1. Stack wood sufficiently above the ground to avoid exposure to wet or damp surfaces.

2. Cover wood with waterproof sheeting to protect against inclement weather.

B. Store wood in a manner that allows air circulation within and around stacks.

C. Deliver materials to the site in the original and unopened containers, bearing packing labels describing the material type, name, and any catalogue numbers. Delivered materials must be identical to approved samples.

1.6 QUALITY ASSURANCE

A. The Contractor for work of this section must have a minimum of 10 years experience in the satisfactory completion of projects involving wood restoration including consolidation, fill, and replication of new elements.

PART 2 - PRODUCTS

2.1 CONSOLIDATION MATERIALS

A. Liquid Epoxy Consolidant for consolidation of decayed wood trim:

1. Use a low strength, low viscosity, moisture insensitive epoxy with a low modulus of elasticity specifically designed and marketed for wood restoration.

2. Subject to compliance with requirements, provide one of the following, or approved equal:

a. Liquid Wood, Abatron Inc., 5501 - 95th Avenue, Kenosha, WI
53144 Tel: (414) 653-2000

b. Flexible Epoxy Consolidant 100, ConServ Epoxies, Housecraft
Associates, 7 Goodale Rd., Newton, NJ 07860
Tel: (201) 579-1112

c. West System 105 Epoxy Resin with 205 Hardener, Gougeon
Brothers Inc., P.O. Box 908, Bay City, MI 48707
Tel: (517) 684-7286

d. Smith & Co. 5100 Channel Ave., Richmond, CA 94804
Tel: (800) 234-0330

B. Epoxy Fill for patching and resurfacing voids in wooden members:

1. Use a moisture insensitive, putty consistency epoxy compound with a low modulus of elasticity and inert filler that is specifically designed and marketed for wood restoration, and which may be cut and worked with wood-working tools after curing.

2. Subject to compliance with requirements, provide one of the following, or approved equal.

a. WoodEpox, Abatron Inc., 5501 - 95th Avenue, Kenosha, WI 53144
Tel: (414) 653-2000

b. Flexible Epoxy Patch 200, ConServ Epoxies, Housecraft Associates,
7 Goodale Rd., Newton, NJ 07860
Tel: (201) 579-1112

c. West System 105 Epoxy Resin with 407, Gougeon Brothers Inc.,
P.O. Box 908, Bay City, MI 48707
Tel:(517) 684-7286

2.2 REPLACEMENT LUMBER

A. General Requirements:

1. Wood to bear the grade and trademark of the association under whose rules it is produced and a mark of mill identification, where applicable.

2. Lumber and finished woodwork throughout to be of sound stock thoroughly seasoned, kiln-dried to a moisture content not exceeding 15% for finish.

3. Work shall be free from defects or blemishes that will show on surfaces exposed after the finish coat is applied. Any material which is in any way defective or fails to meet specifications for quality and grade, or is otherwise not in proper condition, will be rejected.

4. Intent is to match existing in material species, size, pattern and dimension, and grain direction.

B. Species: Redwood, Douglas Fir

C. Grade: Architectural Grade, Heart Clear, Kiln Dried, Vertical Grain, Surfaced.

D. Adhesives: Aliphatic resin, non-staining, heat and water resistant glue.

E. Fasteners: Of size and type to suit application. Finish nails for exposed locations to be hot dipped galvanized steel on the interior only. Exterior fasteners to be stainless steel, bronze, or forge-manufactured cut nails to match historic when appropriate to installation.

2.3 OTHER MATERIALS

A. All other materials required for work of this Section shall be selected by the Contractor subject to the approval by the Owner.

2.5 FABRICATION

A. Design and construction features: Comply with details shown for profile and construction of architectural woodwork. Where not otherwise shown, match existing and comply with applicable quality standards.

B. Match original wood species and grade. Fabricate architectural woodwork to match original profiles.

C. Fabricate architectural woodwork with pre-cut openings, where possible, to receive hardware and similar items. Locate openings accurately and use templates or roughing-in diagrams for proper size and shape.

D. Before proceeding with fabrication of woodwork required to be fitted to other construction, obtain measurements and verify dimensions.

PART 3 - EXECUTION

3.1 VERIFICATION OF CONDITIONS

A. Salvaged and in-place woodwork with decorative profiles (woodwork having non-rectangular cross-sections).

B. Prior to beginning work, examine all surfaces to be repaired by epoxy consolidation or resurfacing. Correct any defects in the substrate that will affect the proper execution, stability, or longevity of the epoxy repair work. Assure that substrates and patching materials are thoroughly dry. Epoxy repairs with defects that mar the appearance of finished work or which is otherwise defective will be rejected.

3.2 INSTALLATION OF SALVAGE AND REPLICATED WOODWORK

A. Dress and finished woodwork to ensure it is free from machine milling marks, abrasions, raised grain or other defects on surfaces exposed to view. For construction and workmanship of millwork items, conform to or exceed the requirements of "Premium Grade". Where conflicts occur between these standards and this specification, the more stringent requirements govern in each case. Finish millwork surfaces to match historic finish.

B. Make joints tight and form joints to conceal shrinkage. Construct all exterior millwork so that water cannot pass through joints.

C. Match historic woodwork joints copings, and molded work at returns and interior angles. Miter molded work at exterior corners, where applicable and to match the historic condition.

D. Where woodwork has to be cut to fit adjoining work, repair damaged finish at cuts. Joints greater than 1/4" wide are not permitted between woodwork and adjoining existing masonry.

E. Standing and running trim: Install with minimum number of joints possible using full-length pieces (from maximum length of salvage lumber available) to the greatest extent possible. Stagger joints in adjacent and related members. Use all salvaged trim. If inadequate lengths of salvage trim are available to complete required work, install new trim to match. Use splayed heading joints where new or existing running trim abut.

F. Install the work plumb, level, true, and straight in relation to existing pitches of adjacent walls and floors with no distortions. Shim as required using concealed shims. Install to a tolerance of 1/16" in 8'-0" for plumb and level except where existing assembly is not plumb and level; and with 1/16" maximum offset in flush adjoining surfaces. Where existing assembly is not plumb and level, install work as close as possible to plumb and level, where applicable.

H. Anchor woodwork to anchors or wood blocking built into substrates. Secure stripping and blocking with counter-sunk, concealed fasteners and blind nailing as required for a complete installation. Use galvanized finishing nails for exposed nailing at interior wood work only. Use stainless fixtures on the exterior. Sink exposed nails 1/16" and fill flush with woodwork if this is the historic condition.

I. Do all cutting and fitting required and install all hardware required for the work. Make all templates, etc., required for the fitting and adjustment of other mechanics' work to the woodwork. Do all cutting, patching, and fitting for the installation of work by other trades.

J. Contractor is responsible for materials and workmanship and is required to replace any work that may shrink, crack, or warp. Protect all finished hardware against damage until final acceptance of the work.

3.3 EPOXY APPLICATION

A. Protection and Preparation

1. Protect all surrounding areas prior to start of work.

2. Wear protective clothing, goggles, gloves and barrier creams as recommended by the manufacturer and as may be required by governmental regulations.

3. Do not begin epoxy consolidation and repair prior to approval of all submittals required by this section.

4. Do not begin epoxy consolidation and repair prior to placement of all protective barriers.

B. Epoxy Consolidation for decayed wood trim:

1. Mixing: Use extreme care and follow manufacturer's written mixing and storage instructions for each product. If written instructions are not available or do not apply to the project conditions, consult the manufacturer's technical representative for specific written recommendations before proceeding with the work. Do not use products that have passed the manufacturer's shelf life.

2. Prepare surface to be consolidated by removing all visible dirt and debris. To prevent leakage, temporarily plug large holes or cracks with modeling clay or wax. Surfaces must be dry before consolidation begins to achieve optimum results.

3. Drill 1/8" diameter holes across the end grain at an oblique angle, staggered at approximately 2" intervals, in areas of wood deterioration.

4. Pour epoxy resin into each area to be consolidated until the void has been filled. Top off voids as required as epoxy is absorbed into the wood. To avoid trapping air within the wood, work from one end of the piece to the other.

5. Cure time will vary according to ambient conditions. Follow manufacturer's instructions for curing. Protect consolidated areas from damage until fully cured. Protect consolidated areas from moisture until work is painted.

C. Epoxy Fill for patching and resurfacing deteriorated areas.

1. Use extreme care and follow manufacturer's written mixing and storage instructions for each product. If written instructions are not available or do not apply to the project conditions, consult the manufacturer's technical representative for specific written recommendations before proceeding with the work.

2. Prepare surface by removing all dirt and debris. Surfaces must be clean and dry prior to repair.

3. Fill voids, cracks, gouges and depressions with layers of epoxy at the locations indicated on the drawings or the specifications. Slightly overfill holes to allow for sanding or planing of surface. Where surface build-up is required to achieve positive drainage, apply additional layers of epoxy as necessary. Back bevel gouges, depressions, and cracks to mechanically lock epoxy fill in place.

4. After appropriate cure time, hand sand or plane surface until smooth to achieve original profile.

5. Allow adequate curing time for consolidant before applying resurfacing compound.

6. Protect resurfaced areas from damage until fully cured. Protect filled and resurfaced areas from moisture until work is painted.

3.4 ADJUSTMENT, CLEANING, FINISHING, AND PROTECTION

A. Where possible, repair damaged and defective existing woodwork to eliminate functional and visual defects. Where not possible to properly repair existing woodwork, replace it with new wood to match original. Adjust joinery for uniform appearance and to match existing historic fabric.

B. Cover completed woodwork with protective paper to protect all vulnerable finishes from damage. Remove cover immediately before time of final acceptance.

END OF SECTION

063101 APPLYING A WATER REPELLANT PERSERVATIVE TO WOOD

PART 1 GENERAL

1.01 SUMMARY

A. This procedure includes guidance on applying a water-repellent preservative (WRP) to wood. This coating will prolong the service life of wood and provide some protection against agents of deterioration.

NOTE: WATER REPELLENTS AND WATER REPELLENT PRESERVATIVES ARE ONLY EFFECTIVE ON UNPAINTED WOOD. IF IT IS APPLIED TO PREVIOUSLY PAINTED WOOD, BRUSH IT THOROUGHLY INTO ANY JOINTS OR CRACKS AND WIPE ANY EXCESS OFF PAINTED SURFACES. ALLOW PROPER DRYING TIMES.

B. Natural causes of deterioration include decay, ultraviolet degradation, insect infestation and excess moisture.

C. WRPs are often recommended for humid, southern climates. Their use can significantly reduce the problems of peeling, flaking, blistering, etc. of painted wood surfaces.

D. Some types of problems resulting from the weathering process include:

1. Fungi and/or mildew growth

2. Warped boards

3. Loose fasteners

4. Changes in surface texture resulting in cracks and checks

E. In addition to opaque paints, various so-called "natural" finishes and colored stains provide this necessary protection. And, like paints, proper surface preparation and application are vital to long lasting protection.

F. See 01100-07-S for general project guidelines to be reviewed along with this procedure. These guidelines cover the following sections:

1. Safety Precautions

2. Historic Structures Precautions

3. Submittals

4. Quality Assurance

5. Delivery, Storage and Handling

6. Project/Site Conditions

7. Sequencing and Scheduling

8. General Protection (Surface and Surrounding)

These guidelines should be reviewed prior to performing this procedure and should be followed, when applicable, along with recommendations from the Owner.

1.02 DEFINITIONS

A. Water Repellent Preservatives (WRP):

1. Natural, colorless liquids which, when brushed onto, or soaked into the wood render the wood impervious to liquid water, inhibit the growth of mildew and other fungi, and provide protection against termite and other insect infestation.

2. Their use reduces warping and checking and prevents water staining at edges of boards and at the end grain. They do not, however, protect wood from water vapor or ultraviolet degradation.

3. WRP's will darken wood somewhat though in and of themselves, they contain no coloring agents. Though it varies with wood species the ultimate color is usually a golden tan.

4. WRP's can be used as a natural finish.

1.03 PROJECT/SITE CONDITIONS

A. Environmental Requirements:

1. Unless otherwise recommended by the manufacturer, the ambient temperature shall be between 50 degrees F. and 95 degrees F. when applying either a stain or WRP.

2. Do not apply when the relative humidity exceeds 85% or the moisture content of the wood exceeds 12% as measured by an electronic moisture meter.

3. Do not apply a WRP in the direct sun. They shall be applied only when the surface to be treated is in the shade and the sun is shining on the opposite elevation. The west elevation should be treated in the morning when the sun is shining on the east elevation; the north elevation should be treated around noon when the sun is shining on the south elevation; the east elevation should be treated in the afternoon when the sun is shining on the west elevation; and the south elevation should be treated late in the afternoon when it is in full shade.

4. Do not apply WRP's to damp surfaces, in misty or rainy weather, in the snow or where there is visible ice or frost on the surfaces.

1.04 MAINTENANCE

A. Water Repellent Preservative Finish (WRP):

1. On smooth wood surfaces, a water repellent preservative will remain effective for about a year. If the first application was applied to the point of refusal, it may remain effective for two years. On rough or weathered wood, expect a WRP to remain effective from one to three years.

2. To determine if it is still effective splash some water on the surface.

a. If the water beads up the WRP is still providing the necessary protection.

b. If the water soaks into the wood, and/or the wood has a blotchy appearance (caused by mildew) it is necessary to retreat.

3. Before applying a new coat of WRP, clean the old surface with a nonferrous bristle brush.

4. To kill any mildew, wash with a solution of 1/3 cup of household detergent (NO AMMONIA), 1 quart 5% bleach, and 3 quarts warm water.

5. Rinse well and let dry thoroughly before reapplying the WRP.

6. After the treated wood has achieved a uniform tan color, retreatment will be required every 2 to 4 years.

PART 2---PRODUCTS

2.01 MANUFACTURERS

A. American Building Restoration Chemicals, Inc.
9720 South 60th Street
Franklin, WI 53132
800/346-7532 or 414/421-4125

2.02 MATERIALS

NOTE: SIMPLE WATER REPELLENTS (WR), BY THEMSELVES, DO NOT PROVIDE ADEQUATE PROTECTION AGAINST DECAY AND ULTRAVIOLET DEGRADATION AND ARE NOT TO BE USED AS THE SOLE FINISH.

A. Commercial water-repellent preservative such as "X-100 Natural Seal" (American Building Restoration Chemicals, Inc.), or approved equal.

-OR-

A home-made preservative based on the USDA Forest Products Laboratory formula (see 06310-01-S for guidance on preparation).

B. Household detergent (NO AMMONIA)

C. Household Bleach:

1. Other chemical or common names include Sodium Hypochlorite (NaOCl); Bleaching solution*; Laundry bleach*; Solution of chlorinated soda*.

2. Potential Hazards: CORROSIVE TO FLESH.

3. Available from chemical supply house, grocery store or supermarket, hardware store or janitorial supply distributor.

D. Clean, clear water

2.03 EQUIPMENT

A. Brushes:

1. Use natural bristle paint brushes for oil/alkyd stains. Precondition by soaking in raw linseed oil for 24 hours. Use nylon bristle brushes for latex stains. Do not use the same brush for both types of stain.

2. For thin, runny stains, foam pad applicators can be used.

3. Stiff natural bristle scrub brushes.

PART 3 EXECUTION

3.01 PREPARATION

A. Surface Preparation: The surface should be free of all loose fibers, dust and grease before application of a WRP.

3.02 ERECTION, INSTALLATION, APPLICATION

A. Prepare the Water-Repellent Preservative (Forest Products Laboratory formula). See 06310-01-S for guidance.

-OR-

Use one of the proprietary products listed above.

NOTE: ON A SMOOTH SURFACE 1 GALLON OF WRP WILL COVER APPROXIMATELY 250 SF. IT WILL COVER APPROXIMATELY 100-150 SF ON A ROUGH SURFACE.

B. Dipping is the most effective means of treatment, especially for the ends of wood members. Brushing, to the point of refusal, is the next best method of treatment.

1. For treated lumber, dip freshly cut surfaces before installation, 10 seconds to 3 minutes.

2. For untreated lumber, dip, brush or spray with preservative. Pay particular attention to end grain and joints.

3. For wood shingles, dip before installation, with a second coat brushed onto the surface after installation.

4. On fixed surfaces, use a minimum of two successive coats.

5. For pieces that are removable, soak for 10 seconds to 3 minutes.

C. Allow adequate time to dry before repainting so that paint will adhere properly. Follow manufacturer's instructions.

1. In general, if the surfaces have been brush treated, 48 hours at 70oF. is generally sufficient drying time.

2. Longer drying times will be required if it gets colder than 70oF. at any time during this drying period.

3. Wood that has been dipped for 10 seconds will need a minimum of one week of similar, ideal drying time.

4. If work is being done late in the year and it is too cold in the evenings for a paint film to dry properly, only apply a WRP and wait until spring to prime and paint.

D. In addition to adequate drying times, some WR/WRP's must be allowed to weather before painting. Follow manufacturer's instructions. Time can vary from six months to two years.

3.03 ADJUSTING/CLEANING

A. Caulking joints is an important part of surface preparation. Also caulk after a WR or WRP has been applied.

END OF SECTION

SECTION 071416 FLUID APPLIED WATERPROOFING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Commercial fluid applied waterproofing.

1.2 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.

C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.3 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
   1. Environmental Requirements: Comply with application temperature range of 0 to 150 degrees F for Solvent-Based product and 20 to 130 degrees F for Water-Based product.

1.4 WARRANTY

A. Commercial Warranty: The special warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents, and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
   1. Commercial Warranty: Below grade.
   2. Provide written warranty signed by waterproofing manufacturer and installer agreeing to repair or replace waterproofing that does not meet requirements or that does not remain watertight within the specified warranty period.
      a. Warranty Period: 5 years after date of Substantial Completion.
      b. Warranty does not include failure of waterproofing due to failure of substrate or formation of new joints and cracks in substrate that exceed 1/16 inch in width.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Basis of Design: Mar-flex Waterproofing & Building Products,

P. O. BOX 8256 500 Business Pkwy. ; Carlisle, OH 45005; Toll Free Tel: 800-498-1411; Tel: 513-422-7285;

2.2 BELOW GRADE FOUNDATION WATERPROOFING

A. Solvent Based Fluid Applied Waterproofing:

1. Product: Mar-flex 5000 SB Waterproofing Membrane as manufactured by Mar-flex Waterproofing and Building Products.
   a. Material: Polymer Modified Asphalt Membrane.
   b. Color: Black.
   c. Total Solids: 70 - 75 percent.
   d. Application Method: Spray.
   e. Application Method: Brush.
   f. Application Method: Roll.
   g. Coverage Rate: 4 gal/100 sf.
   h. Film Thickness, Dry: 60 mil minimum.
   i. Total Cure Time: 24 hours.
   j. Weight/Gallon: 7.6 lb.
   k. Elongation at 70 degree F (ÅSTM D 412 Die C): 1725 percent.
   l. Tensile Strength (ASTM C 719): 48 psi.
   m. Low Temperature Flexibility at -15 degree F (ASTM C 719): No cracking.
   n. Crack Bridging (ASTM C 836): 10 cycles without bond failure.
   o. Resistance to Water Flow (ASTM D 466): Bond strength not affected.
   p. Water Solubility (ÅSTM D 2939): No blistering or re-emulsion
   q. Resistance to Hydrostatic Pressure (Federal Spec TT-C 555B, Par. 4.4.7.):
      1) Water Leaks: None
      2) Weight Gain: None
   r. Permeability: 0.23 perms.
   s. Water Vapor (ÅSTM E 96):
      1) Transmission: 0.11 grains/sf/h.
      2) Permeability: 0.23 perms.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Clean and prepare substrate according to manufacturer's recommendations. Provide clean, dust-free, and dry substrate for waterproofing application.

B. Mask off adjoining surfaces not receiving waterproofing to prevent spillage or over spray affecting other construction.

C. Close off deck drains and other deck penetrations to prevent spillage and migration of waterproofing fluids.

D. Remove grease, oil, form release agents, paints, and other penetrating contaminants from concrete.

E. Remove fins, ridges, and other projections and fill honeycomb, aggregate pockets, grout joints, tie holes, and other voids with joint detailing mastic, hydraulic cement, or rapid-set grout.

F. Prepare and treat vertical and horizontal 90 degrees terminations, edge terminations, penetrations through waterproofing material, expansion joints, cracks, drains, and sleeves

according to ASTM C 898 and manufacturer's recommendations.

G. At each area to be treated, apply two coats of joint detailing mastic; embed joint reinforcing strip in first coat and apply second coat entirely covering the embedded joint reinforcing strip ensuring complete saturation.
   1. 90 Degrees Terminations, Vertical and Horizontal: 6 inches on each side.
   2. Penetrations, Drains, Sleeves: 6 inches radius around penetration and 3 inches on to penetrating object.
   3. Joints and Cracks: 6 inches wide on each side of joint/crack.
      a. Remove dust and dirt from joints and cracks in accordance with ASTM D 4258 prior to coating surfaces.
      b. Joints and Cracks Greater Than 1/16 inch In Width: Prior to applying joint detailing mastic, rout out joint/crack, install backer-rod and sealant to bring flush to surface.

H. Secure and protect plumbing, electrical, mechanical and structural items to be under or passing through waterproof membrane prior to membrane application.

I. When it is not possible to install waterproofing before placement of reinforcing steel, exposed reinforcing steel shall be masked by General Contractor prior to membrane application.

3.3 BELOW GRADE INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. For vertical application apply a uniform coat of waterproofing to entire wall area. Obtain a seamless membrane free of entrapped gasses, with a minimum dry film thickness of 80 mil at 10 feet below-grade wall application, 100 mil at 20 feet below-grade wall application and 120 mil at 30 feet or more for below-grade wall application.
   1. Apply fluid membrane onto footing area a minimum of 4 inches to prevent water pooling.
   2. Allow membrane to cure for 24 hours before placing any backfill against the wall.

3.4 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 076200 - SHEET METAL FLASHING AND TRIM

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) Manufactured Products:
(a) Manufactured through-wall flashing and counterflashing.

(2) Formed Products:
(a) Formed sheet metal fabrications.

1.3 PERFORMANCE REQUIREMENTS

A. General: Sheet metal flashing and trim assemblies as indicated shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.

B. Fabricate and install roof edge flashing and copings capable of resisting the following forces according to recommendations in FMG Loss Prevention Data Sheet 1-49:

(1) Wind Zone 1: For velocity pressures of 21 to 30 lbf/sq. ft.: 60-lbf/sq. ft perimeter uplift force, 90-lbf/sq. ft. corner uplift force, and 30-lbf/sq. ft. outward force.

C. Thermal Movements: Provide sheet metal flashing and trim that allows for thermal movements from ambient and surface temperature changes.

(1) Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage. Store sheet metal flashing and trim materials away from uncured concrete and masonry.

B. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to the extent necessary for the period of sheet metal flashing and trim installation.

PART 2 - PRODUCTS

2.1 SHEET METALS

A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying a strippable, temporary protective film before shipping.

B. A606 Corten Steel Sheet: Corrosion resistant steel – weathering steel grade

C. Metallic-Coated Steel Sheet: Restricted flatness steel sheet, metallic coated by the hot-dip process and prepainted by the coil-coating process to comply with ASTM A 755/A 755M.

(1) Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, G90 coating designation; structural quality.

2.3 MISCELLANEOUS MATERIALS

B. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.

C. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.

(1) General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.

(a) Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating.

(b) Blind Fasteners: High-strength aluminum or stainless-steel rivets suitable for metal being fastened.

(c) Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.

(3) Fasteners for Zinc-Coated (Galvanized) Steel Sheet: Hot-dip galvanized steel according to ASTM A 153/A 153M or ASTM F 2329 or Series 300 stainless steel.

(4) Fasteners for Zinc Sheet: Hot-dip galvanized steel according to ASTM A 153/A 153M or ASTM F 2329 or Series 300 stainless steel.

D. Solder: Zinc-Coated (Galvanized) Steel: ASTM B 32, Grade Sn50, 50 percent tin and 50 percent lead or Grade Sn60, 60 percent tin and 40 percent lead.

E. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch wide and 1/8 inch thick.

F. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane polysulfide silicone polymer sealant; low modulus; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

G. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.

H. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.

I. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.

J. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

2.5 FABRICATION, GENERAL

A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, geometry, metal thickness, and other characteristics of item indicated. Fabricate items at the shop to greatest extent possible.

(1) Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.

(2) Obtain field measurements for accurate fit before shop fabrication.

(3) Form sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.

(4) Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces exposed to view.

C. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."

D. Sealed Joints: Form nonexpansion but movable joints in metal to accommodate elastomeric sealant.

E. Expansion Provisions: Where lapped expansion provisions cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.

F. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.

G. Fabricate cleats and attachment devices of sizes as recommended by SMACNA's "Architectural Sheet Metal Manual" for application, but not less than thickness of metal being secured.

H. Seams: Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.

I. Seams: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use.

K. Do not use graphite pencils to mark metal surfaces.

2.6 SHEET METAL FABRICATIONS

A. Apron, Step, Cricket, and Backer Flashing: Fabricate from the following materials:

(1) A606 Corten or bare cold rolled: 22 gauge

B. Drip Edges: Fabricate from the following materials:

(1) Galvanized Steel: 0.022 inch thick.

C. Eave, Rake, Ridge, and Hip Flashing: Fabricate from the following materials:

(1) Galvanized Steel: 0.022 inch thick.

D. Counterflashing: Fabricate from the following materials:

(1) A606 Corten or bare cold rolled: 22 gauge

F. Flashing Receivers: Fabricate from the following materials:

(1) A606 Corten or bare cold rolled: 22 gauge

G. Roof-Penetration Flashing: Fabricate from the following materials:

(1) Galvanized Steel: 0.028 inch thick.

2.7 WALL SHEET METAL FABRICATIONS

A. Through-Wall Flashing: Fabricate continuous flashings in minimum 96-inchlong, but not exceeding 12-foot-long, sections, under copings, at shelf angles, and where indicated. Fabricate discontinuous lintel, sill, and similar flashings to extend 6 inches beyond each side of wall openings. Form with 2-inch- high, end dams where flashing is discontinuous. Fabricate from the following materials:

B. Opening Flashings in Frame Construction: Fabricate head, sill, jamb, and similar flashings to extend 4 inches beyond wall openings. Form head and sill flashing with 2-inch-high, end dams. Fabricate from the following materials:

(1) A606 Corten or bare cold rolled: 22 gauge

2.8 MISCELLANEOUS SHEET METAL FABRICATIONS

A. Overhead-Piping Safety Pans: Fabricate from the following materials:

(1) Galvanized Steel: 0.040 inch thick.

PART 3 - EXECUTION

3.2 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

A. Manage construction waste in accordance with provisions of Section 017419. Documentation shall be submitted to satisfy the requirements of that section.

3.3 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions and other conditions affecting performance of the Work.

(1) Verify compliance with requirements for installation tolerances of substrates.

(2) Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.

B. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.5 INSTALLATION, GENERAL

A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.

(1) Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.

(2) Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.

(3) Space cleats not more than 12 inches apart. Anchor each cleat with two fasteners. Bend tabs over fasteners.

(4) Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.

(5) Install sealant tape where indicated.

(6) Torch cutting of sheet metal flashing and trim is not permitted.

(7) Do not use graphite pencils to mark metal surfaces.

B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by SMACNA.

(1) Underlayment: Where installing metal flashing directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet or install a course of polyethylene sheet.

C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with sealant concealed within joints.

D. Fastener Sizes: Use fasteners of sizes that will penetrate wood sheathing not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws metal decking not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.

E. Seal joints as shown and as required for watertight construction.

(1) Where sealant-filled joints are used, embed hooked flanges of joint members not less than 1 inch into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is moderate, between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F.

3.7 WALL FLASHING INSTALLATION

A. General: Install sheet metal wall flashing to intercept and exclude penetrating moisture according to SMACNA recommendations and as indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.

D. Opening Flashings in Frame Construction: Install continuous head, sill, jamb, and similar flashings to extend 4 inches beyond wall openings.

3.8 MISCELLANEOUS FLASHING INSTALLATION

A. Overhead-Piping Safety Pans: Suspend pans independent from structure above as indicated on Drawings. Pipe and install drain line to plumbing waste or drainage system.

3.9 TOLERANCES

A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet on slope and location lines as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

B. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."

3.10 CLEANING AND PROTECTION

A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

B. Clean and neutralize flux materials. Clean off excess solder.

C. Clean off excess sealants.

D. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturers written installation instructions. On completion of installation, remove unused materials and clean finished surfaces. Maintain in a clean condition during construction.

E. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 076200

SECTION 081416 WOOD DOORS

PART 1 GENERAL

1.02 REFERENCES

A. “Architectural Woodwork Quality Standards” (Fifth Edition) by The Architectural Woodwork Institute.

B. WDMA IS 1A – Window and Door Manufacturers Association (WDMA)

1.04 QUALITY ASSURANCE

A. Certifications: Affidavit by door manufacturer certifying that the door meets the specified requirements and standards.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Factory Finished Doors: Deliver door in factory applied plastic bags or heavy paper protective cartons.

B. Deliver, store and protect and handle products under provisions of WDMA, AWI and manufacturer’s care and handling instructions. The following are general guidelines:

1. Store doors flat and off the floor on a level surface in a dry, well ventilated building. Do not store on edge. Protect/cover doors from dirt, water and abuse.

2. Protect doors from exposure to light after delivery – some wood species are light sensitive.

1.06 PROJECT CONDITIONS

A. Environmental Requirements: Do not store doors within the building or install doors until after completion of cast-in-place concrete, and until after the building has dried out.

PART 2 PRODUCTS

2.01 MATERIALS and ACCESSORIES

A. Lumber: Comply with applicable AWI species requirements for door type and grade.

1. Exposed Surfaces: As indicated on the Drawings or specified. Furnish matching exposed surface material on both faces and both edges of each door unless otherwise indicated. .

B. Wood Veneers: Comply with applicable AWI species requirements for door exterior door type and grade.

C. Glue: Type I waterproof adhesives for bonding faces and crossbands to core, for exterior door fabrication.

D. Water-Repellent Preservative Treatment Materials for Exterior Doors: Comply with National Wood Window And Door Association’s Standard NWWDA I.S.4.

E. Flashing for Exterior Doors: 20 oz. copper.

G. Threshold: Wood to Match Historical Details

I. Weather Stripping: install weather stripping to interior head and jambs. Install brush at bottom of door compatible with the threshold.

J. Keying Systems

1. Meet with Owner to finalize keying requirements and obtain keying instructions in writing. Keying services shall be performed by lock manufacturer, where permanent records are maintained.

2. Keys and Key Blanks: Furnish of nickel silver to maintain security and safety of keying system and accuracy in keys and long cylinder wear.

3. Do not package permanent keys with locks. Package key separately from locksets and cores. Deliver all keys, key blanks and other security keys direct to Owner from lock manufacturer by secure courier, return receipt requested.

2.02 FABRICATION

A. Exterior Flush Wood Door: Size determined in the field. Thickness 1 3/4 inches. 2 or 3 ply face panel construction each side over a solid glued wood block (stave) core edge bonded to stiles and rails, complying with AWI SLC-5 or SLC – 7. Apply water repellent preservative treatment to exposed wood parts after fabrication. Install flashing over top of door.

1. Exposed Surfaces for paint finish: Medium density overlay face over standard thickness close grain hardwood face veneers. Close grain hardwood for exposed edges and all other solid wood components.

A. Frame: Solid wood, Vertical Grain Douglas Fir, three piece type

B. Jamb and Trim: Solid wood, Vertical Grain Douglas Fir

2.03 FACTORY PRIMING

A. Factory Priming for Doors to Receive Paint Finish: Shop apply prime coat on all exposed surfaces and edges of wood doors scheduled or indicated to receive paint finish as follows:

1. Exterior doors: Two coats oil base exterior primer. Finish coats will be field applied.

2.04 FACTORY FINISHING, PREFITTING, AND PREPARATION FOR HARDWARE

A. Factory Finishing: Prefinish wood doors at the factory or finishing shop as follows:

1. Comply with AWI factory finishing recommendations including final sanding requirements.

2. Finishing System: Comply with the requirements of the following AWI Finish System:

B. Factory Prefitting and premachining for hardware: Prefit doors scheduled or indicated to receive factory finishing. Premachine these doors for hardware including hinges and lock. Contractor to coordinate premachining for lock and hinges with the door manufacturer.

1. Comply with AWI clearance requirements for prefitting. Machine doors for hardware requiring cutting of doors.

PART 3 EXECUTION

3.01 PREPARATION

A. Condition doors to average prevailing humidity in installation area prior to hanging.

B. Prepare doors to receive deadbolt type locking hardware. Coordinate door and frame manufacture with the required hardware for proper location of hardware. Machine doors for hardware.

C. Exterior Doors: Brush coat surfaces of cutouts and surfaces which have been trimmed or altered after fabrication with a compatible preservative.

D. Touch-up cut surfaces of factory primed doors with primer compatible with primer specified for factory priming.

3.02 INSTALLATION

A. Install the Work of this Section in accordance with manufacturer's printed installation instructions, except as shown or specified otherwise.

B. Fit doors to prepared frames for proper fit. Allow 3/32 to 1/8 inch clearance at head and both jambs. Trim doors when necessary by planning. Slightly chamfer edge of lock stiles. Bevel lock stile as follows: 1/8 inch in 2 inches.

C. Prefit Doors: Do not alter prefit factory finished doors.

D. Factory Finished Doors: Field touch-up and restore finishes damaged during installation.

END OF SECTION

082103 FABRICATION AND INSTALLATION OF WOOD WINDOWS

WINDOWS ARE AN IMPORTANT DESIGN ELEMENT CONTRIBUTING TO A BUILDING'S ARCHITECTURAL CHARACTER. FOR HISTORIC BUILDINGS, STATE HISTORIC PRESERVATION OFFICERS GENERALLY APPLY THE SECRETARY OF INTERIOR'S STANDARDS FOR REHABILITATION WHICH REQUIRE THAT ORIGINAL MATERIAL BE REPAIRED AND RETAINED WHERE POSSIBLE. CONDITION SURVEYS ARE TYPICALLY REQUIRED TO DETERMINE IF WINDOWS ARE TOO DETERIORATED TO SAVE, BEFORE REPLACEMENTS WILL BE CONSIDERED. REPLACEMENT WINDOWS SHOULD MATCH THE COLOR, SIZE AND CONFIGURATION OF THE ORIGINAL WINDOWS AND THE MATERIAL.

PART 1 GENERAL

1.01 SUMMARY

A. This procedure includes general information relating to the fabrication and installation of wood windows and includes the following window types:

1. Double-Hung Window Units.

2. Casement Window Units.

3. Decorative Window Units.

4. Hopper Window Units.

5. Non-Operative (Fixed) Window Units.

6. Single-Hung Window Units.

B. See 01100-07-S for general project guidelines to be reviewed along with this procedure. These guidelines cover the following sections:

1. Safety Precautions

2. Historic Structures Precautions

3. Submittals

4. Quality Assurance

5. Delivery, Storage and Handling

6. Project/Site Conditions

7. Sequencing and Scheduling

8. General Protection (Surface and Surrounding)

These guidelines should be reviewed prior to performing this procedure and should be followed, when applicable, along with recommendations from the Owner.

1.02 REFERENCES

A. American Society for Testing and Materials (ASTM), 100 Barr Drive, West Conshohocken, PA 19428, (610) 832-9585 or FAX (610) 832-9555.

B. American National Standards Institute, Inc. (ANSI), 1430 Broadway, New York, NY 10018.

C. Flat Glass Marketing Association (FGMA),

D. National Wood Window and Door Association (NWWDA),

1.03 SYSTEM DESCRIPTION

A. Performance Grade Classification: Provide wood windows that comply with requirements of NWWDA I.S. 2 for performance grade 40.

B. Performance Grade Classification: Provide wood windows that comply with requirements of NWWDA I.S. 2 for performance grade 60.

C. Standards: Performance requirements for structural performance, air infiltration, and water penetration for wood windows are those specified in NWWDA I.S. 2 "Industry Standard for Wood Window Units".

D. Testing: Manufacturer's stock units of each grade of required wood window shall have been tested by a recognized testing laboratory or agency, in accordance with ASTM E330 for structural performance. Test samples shall comply with requirements in NWWDA I.S. 2 for test sample sizes and methods.

E. Performance Requirements (Grade 60 Windows): Each required window unit shall comply with the following performance requirements:

1. Air Infiltration: Not more than 0.10 cfm per sq. ft. of overall frame area at an inward test pressure of 1.57 lbf per sq. ft.

2. Water Penetration: No water penetration as defined in the test method at an inward test pressure of 6.24 lbf per sq. ft.

3. Structural Performance: No glass breakage, damage to hardware, or permanent deformation that would impair operation of the unit or residual deflection greater than 0.4 percent of the span at a positive (inward) and negative (outward) test pressure of 60 lbf per sq. ft.

F. Forced Entry Resistance: Windows shall comply with requirements for Grade 40 level of resistance to forced entry when tested in accordance with ASTM F588.

1.04 SUBMITTALS

A. Product Data: Submit product data for each type of wood window specified, including standard construction details, dimensions of individual components, profiles, finishes, hardware, and accessories.

B. Shop Drawings: Submit shop drawings for each type of window specified, including 1/4-inch scale wall elevations, typical unit elevations at 3/4-inch scale, glazing details, and fill-size details of typical composite members.

1.05 QUALITY ASSURANCE

A. Wood Window Standard: Comply with provisions of NWWDA I.S. 2 for standards of performance and fabrication workmanship for wood windows.

B. Glazing Standards: Comply with recommendations of the Flat Glass Marketing Association (FGMA) "Glazing Manual" and "Sealant Manual" except where more stringent requirements are indicated. Refer to those publications for definitions of glass and glazing terms not otherwise defined in this section or referenced standards.

C. Safety Glass Standard: Where safety glass is indicated or required by authorities having jurisdiction, provide the type of products indicated which comply with ANSI Z97.1 and testing requirements of 16 CFR Part 1201 for category II materials.

D. Insulating Glass Certification Program: Provide insulating glass units permanently marked either on spacers at least one component pane of units with the appropriate certification label of inspecting and testing organization indicated below.

1. Insulating Glass Certification Council (IGCC)

2. Associated Laboratories, Inc. (ALI)

E. Single Source Responsibility: Provide wood windows produced by a single fabricator who is capable of indicating prior successful production of units similar to those required.

1.06 PROJECT/SITE CONDITIONS

A. Field Measurements:

1. Check actual window openings in construction work by accurate field measurement before fabrication of custom window units. Show recorded measurements on final shop drawings.

2. Coordinate fabrication with construction progress to avoid delay. Where necessary, proceed with fabrication without measurements, and coordinate tolerances to ensure proper fit of window units.

1.07 WARRANTY

A. Submit a written warranty signed by the Manufacturer, agreeing to repair or replace wood window units that fail in materials or workmanship within the specified warranty period.

1. Failures include, but are not limited to, structural failures, including excessive deflection, excessive leakage, air infiltration, failure of weather stripping, faulty operation of window sash or hardware, and deterioration of metals, finishes, and other materials beyond normal weathering.

2. Warranty period for wood windows is 3 years after the date of substantial completion.

3. This warranty shall be in addition to and not a limitation of other rights the Government may have against the Contractor under the Contract Documents.

PART 2 PRODUCTS

2.02 MATERIALS

A. General: Comply with requirements of NWWDA I.S. 2.

B. Wood: Clear Ponderosa Pine or other suitable fine- grained lumber that has been kiln-dried to a moisture content of 6 to 12 percent at time of fabrication and is free of visible finger-joints, blue stain, knots, pitch- pockets and surface checks larger than 1/8-inch deep by 2-inches wide.

1. Lumber shall be water-repellent preservative treated after machining in accordance with NWWDA I.S. 4.

D. Anchors, Clips, and Accessories: Fabricate anchors, clips and window accessories of aluminum, non-magnetic stainless steel, or hot-dip zinc coated steel complying with ASTM A123; provide strength sufficient to withstand design pressure indicated.

E. Fasteners: Comply with NWWDA I.S. 2 for fabrication and with manufacturer's recommendations and standard industry practices for type and size of installation fasteners.

1. Use zinc-coated or nonferrous nails and screws for window fabrication and installation.

2. Use brass screws for hardware and accessory installation.

G. Compression Weather stripping: Provide compressible weatherstripping, designed for permanently resilient sealing under bumper or wiper action, completely concealed when sash is closed.

H. Glass and Glazing Materials: Provide the manufacturer's standard clear sealed insulating safety glazing material that complies with ANSI Z97.1.

1. Insulating glass unit shall have metal spacers, sealed between the panes, behind each muntin bar.

I. Glazing Seal: Provide the manufacturer's standard extruded vinyl or butyl glazing gasket providing weathertight seal.

2.03 EQUIPMENT

A. General: Comply with minimum operating requirements of NWWDA I.S. 2.

B. Casement Windows: Provide units containing side-hinged swing-out sash, with the following equipment and hardware:

1. Hook or cam-type latch and lever, for operation without screen removal.

a. For sash more than 48 inches high, provide 3 extension hinges and 2-point latching mechanism.

C. Double-Hung Windows: Provide units containing 2 balanced, vertically-sliding sash with the following equipment and hardware.

1. 2 pair concealed counterbalancing mechanism.

2. Latch at meeting rail.

3. Lift handle on the lower rail.

D. Hopper Windows: Provide units containing bottom-hinged (hopper) sash with the following equipment and hardware:

1. 2 balance support arms and pivots with friction shoes.

2. Cam latch or other latching hardware with lever handle or pull. Provide latch with eye for pole operation for operable sash located more than 6 feet above the floor.

2.04 FABRICATION

A. General: Except to the extent that more stringent requirements are indicated, provide the manufacturer's standard fabrication of units. Comply with indicated standards. Include a complete system for assembly of components and anchorage of window units.

1. Comply with requirements of referenced standards for moisture content of lumber at time of fabrication and for relative humidity conditions in the installation areas.

B. Fabricate windows to produce units that are reglazable without dismantling sash framing. Provide openings and mortises precut, where possible, to receive hardware and other items.

C. Each window unit includes sash, frame, stops, sill (including undersill or nosing), and moldings, integral mullions and muntins, hardware, and accessories.

1. Provide weatherstripping at perimeter of each operating sash.

a. For double/single-hung sash, provide weatherstripping only at horizontal rails of operable sash.

2. Provide glazing stops, nailed or snap-on, coordinated with glass selection and glazing system indicated.

3. Preglazed Window Units: Preglaze window units at the shop before delivery.

D. Complete fabrication, assembly, finishing, hardware application, and other work before shipment to the project site, to the maximum extent possible. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

E. Wood Finish: Provide the following finish on exposed wood in units:

1. Shop-Primed Units: Provide the fabricator's standard shop prime coat on exterior wood surfaces only.

PART 3---EXECUTION

3.01 EXAMINATION

A. Inspect openings before beginning installation. Verify that the rough or masonry opening is correct and the sill plate is level. Do not proceed with installation of window units until unsatisfactory conditions have been corrected.

1. Masonry surfaces shall be visibly dry, and free of excess mortar, sand, and other construction debris.

2. Wood frame walls shall be dry, clean, sound and well-nailed, free of voids, and without offsets at joints. Ensure that nail heads are driven flush with surfaces in the opening and within 3 inches of the opening.

3.02 ERECTION, INSTALLATION, APPLICATION

A. Comply with manufacturer's instructions and recommendations for installation of window units, hardware, operators, accessories, and other window components.

B. Set units plumb, level, true to line, without warp or rack of frames or sash. Provide proper support and anchor securely in place.

C. Set sill members in a bed of compound or with joint fillers or gaskets as indicated, to provide weathertight construction. Coordinate window installation with wall flashings and other built-in components.

3.03 ADJUSTING/CLEANING

A. Adjust operating sash and hardware to provide a tight fit at contact points and weatherstripping, and to provide smooth operation and a weathertight closure. Lubricate hardware and moving parts.

B. Clean interior and exterior surfaces promptly after installation of windows. Take care to avoid damage to protective coatings and finishes. Remove excess glazing and sealants, dirt, and other substances.

C. Clean glass of preglazed window units promptly after installation. Wash and polish glass on both faces not more than 4 days prior to date scheduled for final inspection. Comply with manufacturer's recommendations for final cleaning and maintenance.

D. Remove and replace glass that is broken, chipped, cracked, abraded or damaged in other ways during construction period, including natural causes, accidents, and vandalism.

3.04 PROTECTION

A. Institute and maintain protection and other precautions required through remainder of construction period to ensure that, except for normal weathering, window units will be without damage or deterioration at the time of substantial completion.

END OF SECTION

SECTION 086100 WOOD WINDOWS

PART 1 - GENERAL

1.1 SUMMARY

A. Provide new window and frame, complete, as shown and specified.

1.2 REFERENCES

A. Standards: Comply with the following standards for fabrication and installation.

1. National Wood Window and Door Association (NWWDA) I.S.2. “Industry Standard for Wood Window Units.”

2. NWWDA IS.4. “INDUSTRY Standard for Water-Repellent Preservative Treatment for Millwork.”

3. ASTM E1105. “Standard Method for Field Measurement of Water Penetration through Installed Exterior Windows and Doors.”

1.4 QUALITY ASSURANCE

A. The Quality Standards, latest edition of the Architectural Woodwork Institute, Section 1000, apply to the work of this Section. Provide Premium Grade work as defined in the above referenced standard for all wood window work. Where conflicts occur between these standards and this specification, the more stringent requirement governs in each case.

B. NWWDA Standard I.S.2-87: Provides new windows meeting the requirements for Grade 40 windows.

C. Manufacturer’s Qualifications: Engaged in the manufacturing, sales, and services of wood windows for minimum five (5) years.

D. Installer’s Qualifications: Regularly engaged in the installation of wood windows in residential projects for minimum five (5) years.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Wood window Components: Keep all materials and fabricated items dry and protected from damage, soiling, and deterioration.

1.6 SITE CONDITIONS

A. Field Measurement: Make all field measurements as required prior to fabrication and installation.

B. Coordination: Coordinate work with other trades to ensure proper sequencing and fitting of construction.

1.7 WARRANTY

A. Warrant for a period of ten years from the date of Project Completion that the wood window, frame, glazing, and the accessory components shall be free of defects in material and workmanship and that it will not leak water, wear, rot or deteriorate excessively, or otherwise fail to perform as required.

B. In accordance with the Contract Documents, locate and repair the defective workmanship, replace the defective material, and remove and replace with work which has been superimposed on the window to be

repaired or replaced. Also repair or replace all portions of the building damaged by the defect or repair of it.

PART 2-PRODUCTS

2.1 MATERIALS

A. Wood, Fixed replacement windows to match the size and configuration of existing original windows.

1. Fixed Window, Single glazed (ASTM C 1036), Authentic divided lights. All fasteners shall be stainless steel or bronze.

PART 3 EXECUTION

3.1 PREPARATION

A. Verify dimensions of supporting structure at the project site by accurate field measurements so that all work will be accurately designed, fabricated and fitted to the structure.

B. Coordinate window work with the work of other sections and provide items to be placed during the installation of other work at the proper time to avoid delays in the work. Place such items, including inserts and anchors, accurately in relation to the final location of window components.

C. Remove all necessary portions of the existing wall.

D. Examine the substrates of adjoining construction and the conditions under which the work is to be installed. Do not proceed with the work until unsatisfactory conditions detrimental to the proper and timely completion of the work have been corrected.

E. Protect all work and materials, both new and existing, from damage. Any damage or repair to the exterior made necessary by removal of existing wall shall be reported to the State Representative at once.

3.2 INSTALLATION

A. Erect all component parts of the windows in accordance with the manufacturer’s instructions and recommendations, unless otherwise indicated or specified.

B. The sash shall not be altered in the field.

C. Do not erect members which are warped, bowed, deformed or otherwise damaged or defaced to such extent as to impair strength or appearance, including exterior finish. Remove and replace window units damaged during the process of erection, including exterior finish, as directed by State Representative.

D. Set units level, plumb, and true to line, with uniform joints. Support head, jamb and sill on shims of material approved by the State Representative, and secure in place by fastening to supporting structure. Use only the types of equipment, ropes, wedges, spacers, shims and other items during erection which will not stain or mar the finish units.

E. All assembled window unit materials shall be properly back sealed, buttered where it is required, and property fastened before erection. The Owner reserves the right to determine whether the materials are satisfactorily sealed during installation.

F. Provide all materials fully processed, profit, predrilled, etc., and the unit when assembled, shall fit the openings so as not to require any cutting, ripping, or fitting on the job site.

G. All fasteners of windows in adjacent building elements shall be designed and installed to withstand the specified performance standards.

3.3 CLEANING

A. Wash clean window assembly prior to Substantial Completion.

END OF SECTION

0861002 REPLACEMENT OF DAMAGED WOOD DOORS

PART 1 GENERAL

1.01 SUMMARY

A. This procedure includes guidance on the removal and replacement of deteriorated or damaged wood doors with new to match original historic doors. It also includes the removal, storage and reinstallation of original door hardware.

1.02 REFERENCES

A. Architectural Woodwork Institute (AWI), 13924 Braddock Rd., Centerville, VA 22020

1.03 SYSTEM DESCRIPTION

A. Performance Requirements:

1. AWI Quality Standards of Architectural Woodwork Institute.

2. Take all required field measurements and verify installation conditions for work.

1.04 SUBMITTALS

A. Shop Drawings:

1. Indicate general construction, jointing methods, hardware locations and cut-outs for glazing and vents.

2. Indicate opening identifying symbol (room number), sizes, door type and grade, and show elevation, swing, light and grill cut-out sizes, locations and undercuts.

B. Samples:

1. Submit sectional sample of door construction indicating grade and species.

2. Submit sample of stain and finish for approval by Owner.

1.05 PROJECT/SITE CONDITIONS:

A. Field Measurements: Take all required field measurements and verify installation conditions for work of this section.

PART 2 PRODUCTS

2.01 MATERIALS

A. Wood doors, premium grade, to match existing species face and edge grain.

2.02 FABRICATION

A. Moisture content shall be 12% maximum at time of fabrication for all wood material.

B. Fabricate doors in accordance with requirements of AWI Quality Standards to match existing in construction and quality.

C. Allowable Tolerances for Fabrications of Doors:

1. Size: Plus or minus 1/16" overall dimensions.

2. Maximum warp: 1/4"

3. Squareness: Length of diagonal measured on face of door from upper right corner to lower left corner between lengths of diagonal measured on upper left corner to lower right corner - maximum difference of 1/4".

4. Factory finish thickness: Minimum 1 mil., cured.

5. Show-through (photographing): 1/100" deviation from true plane in any 3" span on door face.

D. Provide doors with minimum 1/2" thick edge strips.

E. Make cut-outs and provide stops for glass in original locations using profiles matching the original.

F. Bevel strike edge of single acting doors 1/8" (3 mm) in 2" (51 mm).

G. Strike doors to receive hardware. Hardware locations to match its location on original doors.

PART 3 EXECUTION

3.01 PREPARATION

A. Protection: Remove all non-original door louvers, panels and transom panels taking care not to damage the remainder of the door, frame or paneling.

B. Replace the non-original elements with new wood which matches the species of the original wood and which matches the detailing of the original millwork.

3.02 ERECTION, INSTALLATION, APPLICATION

A. Carefully remove existing damaged and altered doors to be replaced and label with location.

B. Remove all hardware from doors and store. New non- compatible hardware should be discarded and replaced with hardware matching the original.

C. Remove all glazing and vents and restore to origin= al condition.

D. Fitting and Machining:

1. Fit doors for width by planing; for height by sawing.

2. Machine doors for Hardware.

3. Cut doors for glazing and vents. Cuts in replacement doors shall match size and location of openings cut in original doors.

4. Refinish all job site cut surfaces before final hanging of doors.

E. Install doors in accordance with requirements of AWI Standard and as indicated.

1. Clearances:

a. Allow maximum of 1/8" at jamb and head for fit doors.

b. Allow maximum of 3/16" over threshold or saddle or as necessary to zccommodate thresholds and gaskets.

2. Install, using original hardware in original locations. Replace any damaged, incompatible, or missing hardware with that which is as close as possible to original.

3. Install original glazing and vents in original locations.

3.03 ADJUSTING/CLEANING

A. Replace or rehang doors which are hinge bound and do not swing or operate freely.

B. Refinish or replace job-finished doors damaged during installation.

END OF SECTION

087002 INSTALLING ACCESSIBLE BUILDING HARDWARE

This procedure includes some general guidelines to follow in design projects involving handicapped accessibility to building hardware such as elevators, fire alarms or other hardware mounted to stone, unpainted wood, unpainted metal, or other ornamental wall finishes. Special care should be taken to avoid penetration into these materials.

The following "rules of thumb" will aid in the careful placement of building hardware in ornamental wall finishes.

A. If the existing hardware is located within 54 inches from the floor, for side reach accessibility, and within 49 inches from the floor, for front reach accessibility (based on ADA wheelchair maneuverability requirements), retain the existing hardware in place.

1. If new hardware is required, install it in place of the existing hardware to avoid cutting a new hole in the wall. Specify new hardware finishes matching the original hardware.

2. Consult Owner to determine if salvaging the original hardware is required.

3. Notify the Owner in writing if retaining existing hardware in place will require special consideration (for historic preservation) in deviating from the handicapped access code. State the code requirement and the allowance (inches from required height) needed to reuse the existing hardware.

B. If the existing hardware is located above 54 inches from the floor, for side reach accessibility, or above 49 inches from the floor, for front reach accessibility, retain the existing hardware in place.

1. Cut the wall the minimum extent necessary to install new, handicapped accessible hardware separately. Install the new hardware (matching original hardware's finish) at a location five to ten feet away from the existing hardware. When this is not possible, align new and old hardware vertically.

2. Do not install new and old hardware together on an enlarged backplate. Do not remove old hardware and cover hole with an enlarged backplate. The intent is to minimize cutting into the ornamental wall material.

END OF SECTION

SECTION 087100 - FINISH HARDWARE

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes items known commercially as finish or door hardware that are required for swing, sliding, and folding doors, except special types of unique hardware specified in the same sections as the doors and door frames on which they are installed.

B. Hardware specified herein is to cover all necessary material required to fully complete the hardware requirements of specified openings. It is the intention that the hardware specified shall be of sufficient quantities necessary to complete the Work. Notify the Owner of omissions or discrepancies prior to bid date for clarifications or instructions. Adjustments to the Contract Sum will not be allowed for omissions not clarified prior to bid opening.

C. This Section includes the following:

(1) Hinges.
(2) Lock cylinders and keys.
(3) Lock and latch sets.
(4) Protection plates.
(5) Weather-stripping for exterior doors.
(6) Thresholds.

D. Keying Schedule: Submit separate detailed schedule indicating clearly how the Owner's final instructions on keying of locks has been fulfilled.

1.7 MAINTENANCE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware. Present special tools and maintenance instructions to Owner at time of testing and demonstration interval.

C. General Warranty: Warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.

D. Hardware Manufacturers Warranty: All hardware shall be free of defects and imperfections in manufacture and finish. Hardware shall be guaranteed by the manufacturer to perform all the various functions required for, twenty-four, 24 months from date of Substantial Completion.

E. Provide the following special warranty for the following items:

(1) Locksets, cylinders and latch sets: 7 years.
(2) Door Closers: 10 years.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis of Design: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:

1. Butts and Hinges: **Stanley Hinge FBB191 Brass**

2. Exit Hardware: **Sargent 9900 Series Mortise Lock Exit Device**
   Function: Key outside Unlocks/Locks Trim via Cylinder
   Trim: ET with P Lever
   Finish: Stain Brass

3. Door Closers: **Sargent 1331 Series A7735A Narrow Rail Brass Enamel**

4. Door Treshold: **Pemko 170B 4”x1/2” Mill Finish Brass**

5. Door Gaskets: **Pemko PK33D (3/8” Adhesive)**

6. Door Bottom: **Pemko 90062DNB (5/8” Brush Gasketing)**

2.3 MATERIALS AND FABRICATION

A. Manufacturer's Name Plate: Do not use manufacturers' products that have manufacturer's name or trade name displayed in a visible location (omit removable nameplates) except in conjunction with required fire-rated labels and as otherwise acceptable to Owner.
(1) Manufacturers name will not be permitted on cylinders or keys.

D. Fasteners: Provide hardware manufactured to conform to published templates generally prepared for machine screw installation. Do not provide hardware that has been prepared for self-tapping sheet metal screws, except as specifically indicated.

E. Furnish screws for installation with each hardware item. Provide Phillips flat-head screws except as otherwise indicated. Finish exposed (exposed under any condition) screws to match hardware finish or, if exposed in surfaces of other work, to match finish of this other work as closely as possible including "prepared for paint" surfaces to receive painted finish.

2.4 HINGES

A. Hinges shall be 5-knuckle, exposed bearings and shall be certified to exceed two million, five hundred thousand, 2,500,000, full load-operating cycles by a recognized independent testing laboratory.
Templates: Except for hinges to be installed entirely (both leaves) into wood doors and frames provide only template-produced units.

B. Screws: Provide Phillips flat-head screws complying with the following requirements:

(1) For metal doors and frames install machine screws into drilled and tapped holes.
(2) For wood doors and frames install wood screws.
(3) For fire-rated wood doors install #12 x 1-1/4-inch, threaded-to-the-head steel wood screws.
(4) Finish screw heads to match surface of hinges or pivots.

C. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:

(1) Out-Swing Doors with Locks: Nonremovable pins (NRP).

2.5 KEYING SYSTEMS

A. Meet with Owner to finalize keying requirements and obtain keying instructions in writing. Keying services shall be performed by lock manufacturer, where permanent records are maintained.

B. Keys and Key Blanks: Furnish of nickel silver to maintain security and safety of keying system and accuracy in keys and long cylinder wear.

C. Do not package permanent keys with locks. Package key separately from locksets and cores. Deliver all keys, key blanks and other security keys direct to Owner from lock manufacturer by secure courier, return receipt requested.

2.6 LOCKSETS AND LATCHSETS

A. Locksets and latchsets shall be non-handed, heavy-duty cylindrical type, with 2-3/4 inch backset or greater, as specified, with ½ inch throw latchbolt. Manufacturer lock chassis from cold rolled steel, with locking spindles of deep drawn cold rolled steel. Spindles to resist deforming under sever torque.

B. Lever trim shall be designed to increase resistance against vandalism and forced entry by over torquing of lock chassis. Disablement of secured levers shall not permit latchbolt retraction from secure side while allowing emergency egress.

C. Furnish units with concealed through-bolts and threaded chassis hubs to prevent lever torque from rotating lock chassis and maintain correct alignment. Equip units with cast auxiliary spring cages with studs to prevent rotation attached directly to the lock chassis to assist in support of levers. Spring cage units shall contain coil compression springs to maintain life safety and provide extended service.

D. Provide manufacturer’s standard wrought box strike for each latch or lock bolt, with curved lip extended to protect frame. Comply with UL requirements for throw of bolts and latch bolts on rated fire openings.

E. Interface Owner’s existing keying system with specified locksets. Furnish complete and fully operational locksets and cylinders.

2.8 CLOSERS

A. Where manual closers are indicated for doors required to be accessible to the physically challenged, provide adjustable units complying with ANSI A117.1 provisions for door opening force and delayed action closing. Except as specifically indicated, comply with manufacturer’s recommendations for size of door control units, depending upon size of door, exposure to weather, and anticipated frequency of use.

B. Closers shall be cast iron or aluminum construction with forged lever arms, independent adjusting valves for closing, latching and back check. Hydraulic regulation controlled by tamper-proof, non-critical screw valves. All closer adjustments shall be shielded by plastic cover plate after installation. Furnish extra duty arms, EDA, to protect against excessive force. Provide special templated arms to allow clearance and applications of overhead stops and holders.

C. Install closers to allow maximum degree of opening, position back check to activate well in advance of the stop position to cushion the opening swing and prevent door and frame damage. Install closers with through bolt mounting method on metal and wood doors.

(1) Template and install door closers for maximum degree of door swing.

2.13 THRESHOLDS, WEATHERSTRIPPING AND SEALS

A. Provide continuous seal at jambs and heads and at door bottom. Where specified, provide threshold type with silicone gasket. Smoke, or sound seals shall be rated in accordance with surrounding wall rating respective to sound or fire rating or as required by code. Unless otherwise indicated, provide metal threshold units of type, size and profile as shown or scheduled. Provide noncorrosive fasteners for exterior and interior applications.

B. Extruded aluminum with color anodized finish as selected by Owner from manufacturers standard color range; 0.062-inch minimum thickness of main walls and flanges. Provide only those units where resilient or flexible seal strip is easily replaceable and readily available from stocks maintained by manufacturer.

D. Fasteners: Generally, exposed screws to be Phillips or Robertson drive. Flat head sleeve anchors (FHSL) may be slotted drive. Sheet metal and wood screws: full-thread. Sleeve nuts: full length to prevent door compression.

PART 3 - EXECUTION

3.3 EXAMINATION

A. Examine substrates to which hardware assemblies attach to hollow metal frames, doors and walls, with installer present, for compliance with requirements for installation tolerances, blocking and other conditions affecting performance of assemblies specified in this Section. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.4 INSTALLATION

A. Builder’s Hardware Installation:

(1) Install each hardware item in compliance with the manufacturer's instructions and recommendations. Where cutting and fitting is required to install hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation or application of surface protection with finishing work specified in the Division 9 Sections. Do not install surface-mounted items until finishes have been completed on the substrates involved.

B. Mount hardware units at heights indicated in following applicable publications, except as specifically indicated or required to comply with governing regulations and except as otherwise directed by Owner.

(2) Lever locksets height to, centerline to finished floor: **36" inches at center.**
(3) Americans with Disabilities Act, (ADA), of 1990 Guidelines.

C. Set units level, plumb, and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.

D. Drill and countersink units that are not factory prepared for anchorage fasteners.
Space fasteners and anchors in accordance with industry standards.

(1) Patch and fill wood frames and doors with solid wood stock or dowel material before cutting for new hardware. Do not reuse existing screw holes fill and re-pilot.

(2) Gaskets: install jamb-applied gaskets before closers, overhead stops, rim strikes, etc. Install sweeps across bottoms of doors before astragals, cope sweeps around bottom pivots, trim astragals to tops of sweeps.

E. Set thresholds for exterior doors in full bed of butyl-rubber or polyisobutylene mastic sealant.

F. Weatherstripping and Seals: Comply with manufacturer's instructions and recommendations to the extent installation requirements are not otherwise indicated.

G. Drill pilot holes for fasteners in wood doors and/or frames.

H. Lubricate and adjust existing hardware scheduled to remain. Carefully remove and give to Owner items not scheduled for reuse.

END OF SECTION 087100

095502 STRIPPING AND FINISHING WOOD FLOORS

PART 1 GENERAL

1.01 SUMMARY

A. This procedure includes guidance on stripping, staining and refinishing floors.

1.02 PROJECT/SITE CONDITIONS

A. Existing Conditions: Determine that surfaces to which finishes are to be applied are even, smooth, sound, clean, dry and free from defects affecting proper application. Correct or report defective surfaces to Contracting Officer.

PART 2 PRODUCTS

2.02 MATERIALS

A. Cleaner: **Trisodium Phosphate with follow-up 150 grit sandpaper**

B. Finish – **Pure Tung Oil**

C. Clean, soft cloths

D. Fasteners: Nails and screws, select material, type, size and finish to match original installation.

E. Sandpaper: 3 grades, finest grade 00.

2.03 EQUIPMENT

A. Hand-held Orbital Sanders (NO ROTARY OR DISK SANDERS)

B. Machine belt or orbital sander (NO ROTARY OR DISK SANDERS)

C. Stiff bristle brushes

PART 3 EXECUTION

3.01 PREPARATION

A. Surface Preparation:

1. Carefully remove any floor mounted elements and store in location selected by the Contracting Officer.

2. Protect floor borders from damage during sanding and other floor refinishing operations.

3. Machine sand the wood floor to remove stains, indentations and old finish.

NOTE: BELT AND ORBITAL SANDERS SHOULD ONLY BE USED BY EXPERIENCED PERSONNEL. THEY WORK VERY QUICKLY AND IT IS EASY TO DAMAGE THE WOOD SUBSTRATE IF THEY ARE NOT USED CAREFULLY. For additional guidance on stripping wood floors and precautions to take when operating sanding equipment on wood, see 06300-02- R, 06400-10-R and 09910-01-S.

a. Sand floor in direction of wood grain. Remove only the amount of wood necessary to remove old finish but no more than 1/16" depth.

b. Use hand-held sanders at edges of floor.

c. Final sanding shall be with 00 grade sandpaper.

d. Vacuum clean, remove sanding dusted with tack cloth, and immediately apply stain finish.

e. Do not allow traffic on floor until final finishing is complete.

3.02 ERECTION, INSTALLATION, APPLICATION

A. Apply finish to wood floor to obtain a finish to match the original.

B. Apply floor finish in accordance with manufacturer's printed instructions, including machine buffing with steel wool as recommended by the manufacturer.

C. Reinstall floor mounted accessories in original locations. Protect wood flooring during reinstallation.

END OF SECTION

SECTION 09560 WOOD FLOORING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Removal of non-historic wood floor.

2. Patch and repair of existing wood floor.

3. Installation of new wood floor to match.

1.2 QUALITY ASSURANCE

A. Qualifications of wood flooring installation: Contractor must include a minimum of five (5) years experience in wood floor work, involving cleaning, sanding, and new flooring installation.

B. The contractor shall have satisfactorily completed a minimum of two (2) similar flooring restoration projects within the previous five (5) years.

C. Personnel scheduled for work on this project shall have a minimum of two (2) years experience in flooring restoration involving cleaning, sanding, and new flooring installation.

1.3 SUBMITTALS

A. Samples:

1. Submit three 12 inch long samples of new flooring to match existing flooring.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. All new flooring materials shall be thoroughly dry before delivery. Deliver all other materials to the job site in the manufacturer’s original containers with labels intact.

1.5 SITE CONDITIONS

A. Provide equipment and cover to maintain a minimum of 40 degrees F and to protect work completed or in progress.

B. Maintain materials and surrounding air at minimum 50 degrees F prior to, during, and 48 hours after completion of work.

C. Do not install wood flooring material until wet construction work is complete and ambient air at installation point has moisture content stabilized.

D. Protection: Adequately protect existing construction to remain and surrounding property from damage.

E. Disposal: Dispose of all waste materials in a safe and legal manner.

F. Regulations: conform to all applicable federal, state, and local regulations.

PART 2 - PRODUCTS

2.1 FLOORING

A. New Flooring:

1. All flooring shall match the original flooring. Existing flooring material is tongue and groove Douglas Fir.

2.2 ACCESSORIES

A. Nails: Stainless Steel. Type and size recommended sufficient to fix nail tongue and groove flooring to its substrate.

2.3 FINISHING

A. Reference Finish Drawings.

PART 3 - EXECUTION

3.1 PREPARATION

A. Ensure that the moisture content of the wood meets the paint manufacturer's requirements prior to priming and painting.

B. Verify that the substrate is smooth and flat.

C. Clear area or room of furniture, appliances, and other obstructions.

D. Contractor shall take all necessary precautions to minimize damage to surrounding surfaces during removal and installation of flooring materials.

E. The Contractor at the Contractor's expense shall repair any surfaces damaged during removal and installation of flooring materials.

F. Remove existing shoe molding, nosings, transition strips (thresholds), etc. to allow for the complete and proper installation of the flooring.

G. Remove base molding only if necessary for a complete and proper installation of new flooring.

H. Inspect joists for structural deficiencies, soundness, and make any necessary repairs.

3.2 INSTALLATION OF PATCH/REPAIR

A. Carefully identify cracked boards to be replaced.

B. Pattern route out top 5/16" of each board to be replaced. Care should be taken to stagger patch work end joints.

C. Adhere each board in a full bed of epoxy.

D. Each patch should be left approximately 1/32" high or proud of the surrounding flooring. Take great attention to sanding the patch work flat during the refinishing process.

3.3 INSTALLATION OF NEW FLOORING

A. Lay flooring to match existing pattern.

C. Joints shall occur over bearing points

D. Nail flooring to match existing nailing methods.

3.4 REINSTALL TRIM

A. Install wood shoe molding and baseboards tight to wall and floor.

B. Fasten baseboards and/or shoe molding to walls only, not floors, to cover expansion space.

C. Miter joints in shoe moldings and baseboard at outside corners, joints, and at ends. Cope joints at inside corners of shoe molding and baseboard.

D. Install shoe molding and baseboards in adequate lengths to minimize joints.

E. Set and fill all nail holes in shoe molding and baseboard.

F. Finish shoe molding and baseboard to match surrounding wood work.

G. Existing shoe molding and baseboards maybe reused if material is in good condition, free from damage, and unbroken. Contractor shall take care to prevent damage during removal and reinstallation.

3.5 FINISHING AND REFINISHING

A. Hand-sand existing flooring the minimum degree required to accommodate patched areas.

B. Prepare new wood as recommended by finish manufacturer.

C. Mask off adjacent surfaces.

E. Apply finishes.

H. Clean floor surfaces in accordance with manufacturer’s instructions.

3.6 PROTECTION OF FINISHED WORK

A. Protect finished work. Do not permit traffic near unprotected finish surfaces.

3.7 INSPECTION, REPAIR, AND TOUCH-UP

A. Securely protect flooring from damage by construction traffic or further construction work.

B. Repair or replace any damaged or defective work:

Chipped
Scratched
Marred
Stained
Joints that are not tight
Gaps at walls, jambs, or trim

C. The Contractor shall pay all costs for repairing or replacing defective flooring or flooring which has been damaged as a result of Contractor failing to adequately protect flooring.

3.8 CLEAN-UP

A. Upon completion of work, remove tools, equipment, and other unnecessary materials from site. Return adjacent area to clean condition which existed prior to the start of work.

B. Remove and legally dispose off-site all debris, rubbish, and other materials resulting from work.

END OF SECTION

095601 REPLACING DAMAGED FLOOR BOARDS

PART 1 GENERAL

1.01 SUMMARY

A. This procedure includes guidance on removing damaged floorboards and installing new replacement boards.

B. Replacing a floorboard should only be undertaken as a last resort - when a board is inadequate or dangerous such as severely warped or buckled boards, deeply nicked or splintered boards, boards with noticeable or irreversible urine stains, boards with holes that cannot be filled, or missing sections of border or inlay.

These guidelines should be reviewed prior to performing this procedure and should be followed, when applicable, along with recommendations from the Owner.

1.02 SYSTEM DESCRIPTION

A. A wood floor surface can be either a series of connected planks or parquet (small wood pieces arranged in decorative patterns). The wood used is either plain sawn or quarter sawn. Plank flooring, the more common type, is assembled by joining: butt joint, tongue and groove, shiplap, doweled or spline. Wood floors are usually secured to the under structure by countersinking nails, blind-nailing, or screwing and plugging.

B. A wood floor surface in proper condition does not sag, is not inadvertently stained, is free from protruding nails, and is not warped.

1.03 DELIVERY, STORAGE AND HANDLING

A. Storage and Protection:

1. Every effort must be made to use and reuse materials that are original to the structure. When removed from their rightful place, these materials must be stored under cover inside the building where they cannot be damaged.

2. If many pieces are to be removed, they must be marked inconspicuously in a consistent manner as to their location originally.

3. If salvage material is to be used, treat it as the original material with regards to its storage.

4. If new material must be used, keep it dry during delivery, storage and handling.

5. Do not allow materials to be stored in contact with damp surfaces.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Reclaimed Hardwood Flooring to match size, profile, and species of existing floor.

2.02 MATERIALS

A. Replacement board (to match existing wood type, grain, etc.) from a salvage yard, new lumber yard, or inconspicuous place in building.

NOTE: In buildings where tenant areas were originally finished with wood plank or parquet, the wood is often retained as a sub-floor for carpet. Such concealed areas may be a source of replacement flooring for areas of exposed wood.

B. Wood for shims (no shingles)

C. Wood putty to fill holes

D. Colors-in-oils or residue from stain container to stain putty to match

E. Flooring nails

2.03 EQUIPMENT

A. Keyhole saw, circular saw, or mallet and chisel to remove damaged board

B. Drill to make a pilot hole for the keyhole saw

C. Nailset

D. Tools for accurate measurement

E. Carpet scrap or newspaper and pounding block for knocking new piece into place

PART 3---EXECUTION

3.01 EXAMINATION

A. Inspect for wear in the surface such as chips or gouges. If the wear is minimal, holes can be filled and the surface restored.

B. Inspect for the signs of insect infestation such as mold, fungus, bore holes, and sawdust piles. Probe the wood with an ice pick or thin knife blade to determine the existence of rot.

3.02 ERECTION, INSTALLATION, APPLICATION

A. Removing a damaged board:

NOTE: THE DAMAGED BOARD WILL HAVE TO BE DESTROYED TO REMOVE IT.

1. If the gap between boards is wide enough, remove the tongue of the damaged board with a chisel a lift board out.

-OR-

2. Remove board with a saw:

a. Drill a hole, next to the joist edge, large enough for a keyhole saw to be inserted. DO NOT DRILL THROUGH THE SUBFLOOR.

b. With the saw, make a cut along the width of the board and along the length of the section to be removed.

c. Carefully pry the board out, protecting adjacent wood.

d. If a circular saw is used, set the blade depth to the thickness of the finished floor. Use a carbide flooring blade that will also cut through nails.

CAUTION: Do not cut all the way across to the edge of adjacent floor boards. A loss of control can do irreparable damage to adjacent boards.

e. Use a chisel to finish the cut.

-OR-

3. Remove board with a mallet and chisel:

a. Cut along the width of the board to the nearest joist on either side of damage with the beveled edge of the chisel facing the damage. Make sure that the joints in floorboards remain staggered.

b. To free the board from nails, channel cut a wedge from each end holding the chisel at a 30 degree angle with the bevel side down, or drive nails through board with nailset.

c. Remove the center section down the face of the board. The other pieces should then come out easily.

B. Installing a new board:

1. Square up the edges of the hole before inserting replacement board.

2. Measure the new board to fit exactly. If it is tongue and groove, remove the bottom shoulder of the groove. Shim if necessary.

3. If no subfloor exists, add blocking to joist below to support new floorboard.

4. Knock the new board into place protecting the surface with a carpet scrap or newspaper and a pounding block.

5. Face nail the board to the subfloor or nail board ends into joists or attached nailing blocks.

6. Fill the nail holes with wood filler stained to match floor.

a. Add filler in layers and allow to dry between each layer.

b. To stain wood filler use either colors-in-oils or the settled pigment from the bottom of a stain container. When staining to match, go darker than the original color rather than lighter.

END OF SECTION

SECTION 104416 FIRE EXTINGUISHERS, CABINETS, AND ACCESSORIES

PART 1 -GENERAL

1.01 SUMMARY

A. This Section includes the following:

1. Portable fire extinguishers
2. Cabinets for portable fire extinguishers

1.02 SUBMITTALS

A. Submit brochure and product data.

1.03 QUALITY ASSURANCE

A. NFPA Compliance: Fabricate and label fire extinguishers to comply with NFPA 10.

B. Fire Extinguishers: Listed and labeled by Underwriter's Laboratory (UL) or Factory Mutual (FM) for type, rating, and classification.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the work include, but are not limited to, the following:

1. Ansul Inc.
2. Larsen's Manufacturing Co.
3. Encon Safety Products

2.02 PORTABLE FIRE EXTINGUISHERS

A. General: Provide fire extinguishers of type, size, and capacity for each cabinet and other locations indicated.

1. Product: A 5-lb, multi-purpose, UL listed, fire extinguisher

2.03 FIRE EXTINGUISHER CABINETS

A. General: Unless specified otherwise on construction drawings, provide fire extinguisher cabinet of type, size, and rating as indicated below, or equivalent.

Trim Style & Projection	Inside Box Dimensions (H x W x D)	Manufacturer	Model #	Fire-Rated Model #	SNL Extinguisher Type
Semirecessed 4½	24 x 9½ x 6	Larsen's	2409-RM	FS-2409-RM	I, III

B. Cabinet Size: The minimum inside box dimensions shall be 24"H x 9½W x 6"D for SNL Type I and Type III fire extinguishers, and 27"H x 12"W x 8"D for SNL Type II fire extinguishers.

C. Cabinet Construction: Provide manufacturer's standard box, with trim, frame, door, and hardware to suit cabinet type, trim style, and door style indicated. Weld joints and grind smooth. Miter and weld perimeter door frames.

E. Cabinet Mounting: Suitable for the following:

1. Semirecessed: Cabinet box partially recessed in walls of shallow depth to suit style of trim indicated.

F. Cabinet Trim Style: Fabricate cabinet trim in one piece with corners mitered, welded and ground smooth.

G. Cabinet Trim Material: Steel sheet.

H. Door Material: Steel sheet.

I. Door Glazing: Clear Float Glass, ASTM C1036, Type 1, Class 1

J. Door Style: Vertical duo panel with frame.

K. Door Construction: Provide a minimum ½-inch (13 mm) thick door frames.

L. Door Hardware: Provide manufacturer's standard door-operating hardware of proper type for cabinet type, trim style, and door material and style indicated. Provide recessed door pull and friction latch. Provide continuous-type hinge permitting door to open 180 degrees.

M. Cabinet and Door Finishes: Provide manufacturer's standard baked-enamel paint for the exterior and interior of the cabinet and doors.

Color : **White**

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine walls and partitions for suitable framing depth and blocking where recessed and semirecessed cabinets are to be installed. Verify that rough openings for cabinets are correctly sized and located.

B. Examine fire extinguishers for proper charging and tagging. Remove and replace damaged, defective, or undercharged units.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION OF FIRE EXTINGUISHERS

A. Comply with manufacturer's written instructions for installing fire extinguishers and mounting brackets.

B. Mounting Height: Install extinguishers at heights indicated below.

1. Install fire extinguishers mounted on hangers or brackets attached to a wall so that the top of the fire extinguisher is not more than 3½ ft. above the floor.

2. In no case shall the clearance between the bottom of the fire extinguisher and the floor be less than 4 inches.

C. Locations: Install extinguishers at locations indicated below.

1. Install fire extinguishers at locations specified on the drawings or as directed by the authority having jurisdiction.

2. Fire extinguishers shall be conspicuously located, along normal paths of travel, including exits from areas. Extinguishers shall not be obstructed or obscured from view.

D. Install portable fire extinguishers on the hanger or in the bracket supplied, or place in the fire extinguisher cabinets provided. Verify that the extinguisher operating instructions face outward.

3.03 INSTALLATION OF FIRE EXTINGUISHER CABINETS

A. Comply with manufacturer's written instructions for installing fire extinguisher cabinets.

B. Mounting Height: Install fire extinguisher cabinets at the height required so that the top of the fire extinguisher is not more than 54 inches above the floor.

C. Install fire extinguisher cabinets at locations specified on the drawings.

D. Fire extinguisher cabinets shall protrude no more than 4 inches into corridors, passageways, or aisles.

E. Repair wall surfaces surrounding fire extinguisher cabinet damaged during installation to match existing wall surface.

3.04 SIGNAGE

A. Identify bracket-mounted extinguishers with the words "FIRE EXTINGUISHER" in red letter decals applied to wall surface.

B. Identify fire extinguisher in cabinet with the words "FIRE EXTINGUISHER" applied to door.

1. Application Process: Decals

2. Lettering Color: Red

3. Orientation: Vertical

3.05 ADJUSTING, CLEANING, AND PROTECTION

A. Adjust cabinet doors that do not swing or operate freely.

B. Refinish or replace cabinets and doors damaged during installation.

C. Provide protection and maintain conditions that ensure that cabinets and doors are without damage or deterioration at the time of Construction Completion.

END OF SECTION

SECTION 160100 ELECTRICAL DESIGN / BUILD PROVISIONS

PART 1 GENERAL

1.1 WORK INCLUDED

A. Disconnect power from structure prior to construction activities.

B. Provide power to temporary utility pole during construction activities.

C. Remove existing electrical wiring, outlets, junction boxes, fixtures, and infrastructure.

D. Electrical work is design-build. The contractor is responsible for all coordination with the State Electrical Inspector and Electrical Utility Company.

1.2 INSPECTION OF THE SITE AND EXISTING CONDITIONS

A. It is strongly advised that the Contractor walk through the jobsite scheduled to take place during the pre-bid conference prior to submitting his proposal for the work to account for all labor and material cost required to perform the contract work.

B. If the Contractor finds that existing project site conditions substantially differ from what is shown on the contract drawings; Contractor shall notify the Owner in writing before bid date and request clarification. Response and any Addendum thereof shall be at the discretion of the Owner.

C. After award of Contract, verify the location of existing underground utilities. Protect all existing underground utilities during construction.

1.3 CONTRACTOR QUALIFICATIONS & RESPONSIBILITIES

A. New and retrofit aspects of the work requires an licensed electrical subcontractor with minimum of 5 years documented experience performing similar type of work.

B. Contractor is required to perform the work in accordance with all applicable codes and regulation whether it is stated in the contract document or not.

C. The Contractor is required to provide a complete and functional system in accordance with intent of these Contract Documents.

D. The Contractor will coordinate the details equipment and construction for all Specifications Divisions, which affect the work.

E. The Contractor shall install all incidental items not actually shown or specified, but which are required by good practice to provide complete functional systems.

1.4 QUALITY ASSURANCE

A. Codes: All electrical equipment and materials, including installation and testing, shall conform to the current editions of all applicable codes.

B. Variances: In instance where two or more codes are at variance, the most restrictive requirements shall apply.

C. All work will be coordinated with other disciplines.

D. Standards: Equipment shall conform to applicable standards of American National Standards Institute (ANSI), Electronics Industries Association (EIA), Institute of Electrical and Electronics Engineers (IEEE), Insulated Power Cable Engineer's Association (IPCEA), and National Electrical Manufacturers Association (NEMA), ISA – Instrument Society of America, and local utility service requirements. The revisions of these standards in effect on the date of issuance of the Contract Documents shall apply.

E. Underwriters Laboratories (UL) listing is required for all equipment and materials where such listing is offered by the Underwriters Laboratories. Unique electrical products are products for which there is no listing available from an approved testing laboratory and for which there is no nationally recognized standards of safety. Safety labeling and listing by other organizations, such as ETL Testing Laboratories, may be substituted for UL labeling and listing if acceptable to the authority having code enforcement jurisdiction. Provide service entrance labels for all equipment required by the NEC to have such labels.

1.5 INTENT OF DRAWINGS

A. The electrical elements shown on the Architectural drawings are diagrammatic and show only general locations of equipment, and devices, unless specifically dimensioned. The Contractor shall be responsible for the proper placement of equipment due to actual field conditions, subject to the approval of the Owner.

B. As-Built Drawings

1. Maintain a complete and accurate record set of full size "working drawings" during construction.

2. Record all work that is installed differently than shown on the Drawings.

3. Upon completion of the work, contractor shall submit a set of "As-Built Drawings" reflecting all change made during construction.

PART 2 MATERIALS AND EQUIPMENT, COMMON REQUIREMENTS

2.1 GENERAL

A. Unless otherwise indicated, provide all first-quality, new materials and equipment, free from any defects, in first-class condition, and to fit the space provided. Provide materials and equipment listed by UL wherever standards have been established by that agency.

B. Where two or more units of the same class of material or equipment are required, provide products of a single manufacturer. Component parts of materials or equipment need not be products of the same manufacturer.

2.2 STANDARD PRODUCTS

A. Unless otherwise indicated, provide materials and equipment which are standard products of manufacturers regularly engaged in the production of such materials and equipment. Provide the manufacturer's latest standard design modified as required to conform to these specifications.

2.3 EQUIPMENT FINISH

A. Equipment finish shall be for exterior grade use

2.4 EQUIPMENT HARDWARE

A. Hardware used for installation of outdoor equipment shall be stainless steel.

Unless noted otherwise, hardware used for installation of indoor equipment shall be galvanized steel or stainless steel. Zinc or cadmium plated hardware is not acceptable. Hardware shall include, but not limited to, door handles, hinges, latches, bolts, clamps, nuts and other items.

PART 3 EXECUTION COMMON REQUIREMENTS

3.1 GENERAL

A. Install materials and equipment in workmanlike manner-utilizing craftsmen skilled in the particular trade. Provide work that has a neat and finished appearance. Carry out work in accordance with NECA Standard of Installation unless otherwise specified.

B. Coordinate electrical work with other Divisions, and be aware of the work of other trades to avoid conflicts, errors, delays and unnecessary interference during construction.

C. Prior installation, check the locations of electrical outlets and other electrical system components shown on Drawings for conflicts with openings, structural members and components of other systems and equipment having fixed locations. Submit suggested resolution of such conflicts for approval.

3.2 MATERIALS AND EQUIPMENT INSTALLATION

A. Follow manufacturer's installation instructions explicitly, unless otherwise indicated. Keep copy of manufacturer's installation instructions on the job site available for review at all times.

3.3 CUTTING AND PATCHING

A. Lay out work carefully in advance. Carefully carry out any cutting, channeling, chasing or drilling of floors, walls, partitions, ceilings, paving or other surfaces required for the installation, support or anchorage of conduit, raceways or other electrical materials and equipment. Following such work, restore surfaces neatly to original condition. Use skilled craftsmen of the trades involved.

3.4 CLEANING AND TOUCHUP

A. Keep the premises free at all times from accumulation of waste material, litter and rubbish. Upon completion of work, remove all materials, scraps and debris from premises and from interior and exterior of all devices and equipment.

B. The interior of all electrical equipment shall be vacuumed and wiped free of dust just before final acceptance.

C. Touch up scratches scrapes or chips in interior and exterior surfaces of devices and equipment with finishes matching the type, color, consistency and type of surface of the original finish. If extensive damage is done to equipment paint surfaces, refinish the entire equipment in a manner that provides a finish equal to or better than the factory finish, that meets the requirements of the Specifications and that is acceptable to the Owner.

3.5 STANDARDS, CODES, PERMITS AND REGULATIONS

A. Perform all work; furnish and install all materials and equipment in full accordance with the latest applicable rules, regulations, requirements and specifications of the following:

1. Local Laws, Codes, Ordinances and Regulating Agencies
2. State and Federal Laws
3. National Electrical Code (NEC)
4. Gunnison County Fire Marshal
5. Underwriters' Laboratories (UL)

6. National Electrical Safety Code (NESC)
7. American National Standards Institute (ANSI)
8. National Electrical Manufacturer's Association (NEMA)
9. National Electrical Contractor's Association (NECA); Standard Installation
10. Institute of Electrical and Electronics Engineers (IEEE)

END OF SECTION

SECTION 265100 - INTERIOR LIGHTING

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) Interior lighting fixtures, lamps, and ballasts.
(2) Exit signs.
(3) Lighting fixture supports.

1.5 QUALITY ASSURANCE

A. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by an independent agency, with the experience and capability to conduct the testing indicated, that is an NRTL as defined by OSHA in 29 CFR 1910, complying with the IESNA Lighting Measurements Testing & Calculation Guides.

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. Comply with NFPA 70.

D. FM Global Compliance: Lighting fixtures for hazardous locations shall be listed and labeled for indicated class and division of hazard by FM Global.

1.6 COORDINATION

A. Coordinate layout and installation of lighting fixtures and suspension system with other construction that penetrates ceilings or is supported by them.

1.7 WARRANTY

A. Special Warranty for Emergency Lighting Batteries: Manufacturer's standard form in which manufacturer of battery-powered emergency lighting unit agrees to repair or replace components of rechargeable batteries that fail in materials or workmanship within specified warranty period.

(1) Warranty Period for Emergency Lighting Unit Batteries: 10 years from date of Substantial Completion. Full warranty shall apply for first year, and prorated warranty for the remaining nine years.
(2) Warranty Period for Self-Powered Exit Sign Batteries: Seven years from date of Substantial Completion. Full warranty shall apply for first year, and prorated warranty for the remaining six years.

1.8 EXTRA MATERIALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

(1) Globes and Guards: **Furnish at least (3) three spare globes.**

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Products: Per Drawings – Reference Fixture Schedule.

2.2 GENERAL REQUIREMENTS FOR LIGHTING FIXTURES AND COMPONENTS

A. Recessed Fixtures: Comply with NEMA LE 4 for ceiling compatibility for recessed fixtures.

B. Incandescent Fixtures: Comply with UL 1598. Where LER is specified, test according to NEMA LE 5A.

C. Fluorescent Fixtures: Comply with UL 1598. Where LER is specified, test according to NEMA LE 5 and NEMA LE 5A as applicable.

E. Metal Parts: Free of burrs and sharp corners and edges.

F. Sheet Metal Components: Steel unless otherwise indicated. Form and support to prevent warping and sagging.

G. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position.

H. Diffusers and Globes:

(1) Acrylic Lighting Diffusers: 100 percent virgin acrylic plastic. High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.

(a) Lens Thickness: At least 0.125 inch minimum unless otherwise indicated.
(b) UV stabilized.

(2) Glass: Annealed crystal glass unless otherwise indicated.

I. Factory-Applied Labels: Comply with UL 1598. Include recommended lamps and ballasts. Labels shall be located where they will be readily visible to service personnel, but not seen from normal viewing angles when lamps are in place.

(1) Label shall include the following lamp and ballast characteristics:

(a) "USE ONLY" and include specific lamp type.
(b) Lamp diameter code (T-4, T-5, T-8, T-12, etc.), tube configuration (twin, quad, triple, etc.), base type, and nominal wattage for fluorescent and compact fluorescent luminaires.
(c) Lamp type, wattage, bulb type (ED17, BD56, etc.) and coating (clear or coated) for HID luminaires.
(d) Start type (preheat, rapid start, instant start, etc.) for fluorescent and compact fluorescent luminaires.
(e) ANSI ballast type (M98, M57, etc.) for HID luminaires.
(f) CCT and CRI for all luminaires.

J. Electromagnetic-Interference Filters: Factory installed to suppress conducted electromagnetic interference as required by MIL-STD-461E. Fabricate lighting fixtures with one filter on each ballast indicated to require a filter.

2.4 BALLASTS FOR COMPACT FLUORESCENT LAMPS

A. Description: Electronic-programmed rapid-start type, complying with UL 935 and with ANSI C 82.11, designed for type and quantity of lamps indicated. Ballast shall be designed for full light output unless dimmer or bi-level control is indicated:

(1) Lamp end-of-life detection and shutdown circuit.
(2) Automatic lamp starting after lamp replacement.
(3) Sound Rating: Class A.
(4) Total Harmonic Distortion Rating: Less than 20 percent.
(5) Transient Voltage Protection: IEEE C62.41.1 and IEEE C62.41.2, Category A or better.
(6) Operating Frequency: 20 kHz or higher.
(7) Lamp Current Crest Factor: 1.7 or less.
(8) BF: 0.95 or higher unless otherwise indicated.
(9) Power Factor: 0.95 or higher.
(10) Interference: Comply with 47 CFR 18, Ch. 1, Subpart C, for limitations on electromagnetic and radio-frequency interference for non-consumer equipment.

2.8 EXIT SIGNS

A. General Requirements for Exit Signs: Comply with UL 924; for sign colors, visibility, luminance, and lettering size, comply with authorities having jurisdiction.

B. Internally Lighted Signs:
(1) Lamps for AC Operation: LEDs, 50,000 hours minimum rated lamp life.

(2) Self-Powered Exit Signs (Battery Type): Integral automatic charger in a selfcontained power pack.

(a) Battery: Sealed, maintenance-free, nickel-cadmium type.
(b) Charger: Fully automatic, solid-state type with sealed transfer relay.
(c) Operation: Relay automatically energizes lamp from battery when circuit voltage drops to 80 percent of nominal voltage or below. When normal voltage is restored, relay disconnects lamps from battery, and battery is automatically recharged and floated on charger.
(d) Test Push Button: Push-to-test type, in unit housing, simulates loss of normal power and demonstrates unit operability.
(e) LED Indicator Light: Indicates normal power on. Normal glow indicate strickle charge; bright glow indicates charging at end of discharge cycle.
(f) Remote Test: Switch in hand-held remote device aimed in direction of tested unit initiates coded infrared signal. Signal reception by factory installed infrared receiver in tested unit triggers simulation of loss of its normal power supply, providing visual confirmation of either proper or failed emergency response.
(g) Integral Self-Test: Factory-installed electronic device automatically initiates code-required test of unit emergency operation at required intervals. Test failure is annunciated by an integral audible alarm and a flashing red LED.

2.10 FLUORESCENT LAMPS

A. Compact Fluorescent Lamps: 4-Pin, CRI 80 (minimum), color temperature 2700 K, average rated life of 10,000 hours at three hours operation per start, and suitable for use with dimming ballasts unless otherwise indicated.

2.12 LIGHTING FIXTURE SUPPORT COMPONENTS

A. Single-Stem Hangers: 1/2-inch steel tubing with swivel ball fittings and ceiling canopy. Finish same as fixture.

B. Twin-Stem Hangers: Two, 1/2-inch steel tubes with single canopy designed to mount a single fixture. Finish same as fixture.

C. Rod Hangers: 3/16-inch minimum diameter, cadmium-plated, threaded steel rod.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Lighting fixtures:
(1) Set level, plumb, and square with ceilings and walls unless otherwise indicated.
(2) Install lamps in each luminaire.

B. Temporary Lighting: If it is necessary, and approved by Owner, to use permanent luminaires for temporary lighting, install and energize the minimum number of luminaires necessary. When construction is sufficiently complete, remove the temporary luminaires, disassemble, clean thoroughly, install new lamps, and reinstall.

C. Remote Mounting of Ballasts: Distance between the ballast and fixture shall not exceed that recommended by ballast manufacturer. Verify, with ballast manufacturers, maximum distance between ballast and luminaire.

E. Suspended Lighting Fixture Support:

(1) Pendants and Rods: Where longer than 48 inches, brace to limit swinging.
(2) Stem-Mounted, Single-Unit Fixtures: Suspend with twin-stem hangers.
(3) Continuous Rows: Use tubing or stem for wiring at one point and tubing or rod for suspension for each unit length of fixture chassis, including one at each end.

3.2 IDENTIFICATION

A. Install labels with panel and circuit numbers on concealed junction and outlet boxes.

3.3 FIELD QUALITY CONTROL

A. Test for Emergency Lighting: Interrupt power supply to demonstrate proper operation. Verify transfer from normal power to battery and retransfer to normal.

B. Verify that self-luminous exit signs are installed according to their listing and the requirements in NFPA 101.

3.4 STARTUP SERVICE

A. Burn-in all lamps that require specific aging period to operate properly, prior to occupancy by Owner. Burn-in fluorescent and compact fluorescent lamps intended to be dimmed, for at least 4 hours at full voltage.

END OF SECTION 265100

SECTION 310000 – EARTHWORK

PART 1 – GENERAL

1.1 SUMMARY

A. This section includes the following:

1. Excavating and back-filling for buildings and structures
2. Excavating and back-filling within building lines

1.3 DEFINITIONS

A. Back-fill: Soil materials used to fill an excavation

B. Bedding Course: Layer placed over the excavated sub-grade in a trench before laying pipe.

C. Borrow: Satisfactory soil imported from off-site for use as fill or back-fill.

D. Drainage Course: Layer supporting slab-on-grade used to minimize capillary flow of porewater.

E. Excavation: Removal of material encountered above sub-grade elevations.

1. All excavation work is to be conducted in favorable weather conditions and par all procedures and methods of local codes and ordinances.

F. Fill: Soil materials used to raise existing grades.

G. Structures: Buildings, footings, foundations, retaining walls, slabs, mechanical and electrical appurtenances, or other man made stationary features constructed above or below the ground surface.

H. Sub-grade: Surface or elevation remaining after completing excavation or top surface of a fill or back-fill immediately below topsoil grade.

I. Utilities: Utilities include on-site underground pipes, conduits, ducts, and cables, as well as underground services within the buildings.

1.4 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary work and who are completely familiar with the specified requirements and the methods needed for proper performance of work in this section.

B. The Contractor shall be responsible for protection of all existing materials and components to remain or to be salvaged. The minimum amount of protection required is indicated on the drawings. In the event of damage, such items shall be immediately repaired or replaced by the Contractor, at his expense, to the satisfaction of the Owner.

C. Historic Significance: Take all measures during performance of work to maintain and protect historic fabric of this building. Perform work with extreme care and assure that no features of structure are damaged.

1.6 SITE CONDITIONS

A. Coordinate the performance of work in this section with related or adjacent work. Protection of items should be complete prior to commencement of new construction and demolition.

B. At the end of working day or during inclement weather cover work exposed to weather with waterproof coverings, securely anchored.

C. Protection for Historic Elements should remain in place for the duration of the project unless determined otherwise by the State Representative.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

B. Satisfactory Back-fill Soils:

1. Native excavated material

2. Borrow soil free of rock or gravel larger than 3” in any dimension, debris, waste, vegetation or other deleterious matter. Borrowed soil should match native soil in content of sand, clay, and organic matter to assure similar percolation characteristics.

C. Bedding Material: Class 6 Structural Fill Compacted to 95% Proctor

PART 3 - EXECUTION

3.1 PREPARATION

A. Historic Elements to Remain in place:

1. Protect all Historic Elements to remain in place, which may be damaged by construction activities. In the event of new damage, inform the Owner immediately as to the nature and extent of damage and the proposed method of repair. Contractor is responsible for repairs and replacement of newly damaged items to the satisfaction of the Architect at no additional cost.

2. Protect structures, utilities, walkways, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operation.

3. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil bearing water runoff.

3.2 EXPLOSIVES

A. Explosives are not permitted.

3.3 EXCAVATION GENERAL

A. Unclassified Excavation: Excavation to sub-grade elevations regardless of the character of surface and subsurface conditions, including rock, soil materials, and obstructions.

1. If excavated materials intended for fill and back-fill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.

B. Classified Excavation: Excavation to sub-grade elevations classified as earth and rock.

1. Earth excavation includes excavating pavements or obstructions visible on the surface: underground structures, utilities, and other items indicated to be removed: together with soil, boulders, and other materials not classified as rock or unauthorized excavations.

a. Intermittent drilling; gram hammering: or ripping of material not classified as rock excavation is earth excavation.

2. Rock excavation includes removal and disposal of rock.

3.4 EXCAVATION FOR STRUCTURES

A. Excavate to indicated elevations and dimension within a tolerance of plus or minus one inch. Extend excavations a sufficient distance from structures for placing and removing concrete form-work, for installing services and other construction and for inspections.

1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.

3.5 EXCAVATION FOR UTILITY TRENCHES (Not Used)

3.6 APPROVAL OF SUBGRADE

A. Notify the Owner when excavations have reached required sub-grade.

B. If unsatisfactory soil is present, continue excavation and replace with compacted back-fill or fill material as directed.

1. Additional excavation and replacement material will be paid for according to the Contract provisions for changes in the work.

C. Reconstruct subgrades damaged by rain, accumulated water, or construction activities.

3.7 UNAUTHORIZED EXCAVATION

A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom without altering top elevation.

3.8 STORAGE OF SOIL MATERIALS

A. Stockpile soil materials away from edge of excavations.

3.9 BACKFILL

A. Place and compact back-fill in excavation promptly, but not before completing the following:

1. Surveying locations of underground utilities for record documents.
2. Inspecting and testing underground utilities.
3. Removing concrete form-work.
4. Removing trash and debris.

5. Removing temporary shoring and bracing, and sheeting.
6. Installing permanent or temporary horizontal bracing on horizontally supported walls.

3.10 UTILITY TRENCH BACKFILL (Not Used)

3.11 FILL

A. Preparation: remove vegetation, topsoil, debris, unsatisfactory soil materials, obstruction and deleterious materials from ground surface before placing fills.

B. Place and compact fill material in layers to required elevations as follows:

1. Under walks and pavements, use satisfactory fill material.
2. Under slabs use engineered fill.
3. Under footings and foundations use engineered fill.
4. Fill around completed foundation to restore the original grade / finished floor relationship is not in contract.

3.12 MOISTURE CONTROL

A. Uniformly moisten or aerate sub-grade and each subsequent fill or back-fill layer before compaction to within 2 percent of optimum moisture content.

B. Place and compact fill material in layers to required elevations as follows:

1. Do not place back-fill or fill material on surfaces that are muddy.

2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is excessively wet.

3.13 COMPACTION OF BACKFILLS AND FILLS

A. Place back-fill and fill materials in layers not mare than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

B. Place back-fill and fill materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.

3.14 GRADING

A. General: Uniformly grade areas to a smooth surface, free from irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevation indicated.

1. Provide smooth transition between adjacent existing grades and new grades.

2. Cut out soft spots, fill low spots, and trim high spots to comply with the required surface tolerances.

B. Slope grades to direct water away from buildings and to prevent ponding.

C. Grading inside Building Lines: Finish sub-grade to a tolerance of ½ inch when tested with a 10 foot straight edge.

3.15 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, and erosion. Keep free of trash and debris.

B. Restore grades to original contours. Fill around foundation will occur in later phase. Where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

C. Where Settling occurs before Project correction period elapses, remove finished surfacing, back-fill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to the greatest extent possible.

3.16 DISPOSAL OF SURPLUS AND WASTE MATERIALS / CLEAN-UP

A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of material at off site location approved by local ordinance.

B. All residue and debris from Earthwork is to be removed from existing construction leaving the premises clean and neat with the ground plane restored to pre-existing grades.

3.17 DISCOVERY OF HIDDEN ARCHITECTURAL OR ARCHEOLOGICAL FEATURES

A. In event that undocumented features, materials, or artifacts are discovered during execution of work, immediately notify the Owner. Do not disturb area until the Owner has evaluated undocumented items. Owner reserves the right to discretionary monitoring by the State Historian or Archaeologist assigned to the project. See Specification Section 020710 Protection & Salvage of Historic Elements for discussion of this topic. An archaeologist hired by the Contractor shall be present on site during excavation under and adjacent to the building, as well as work that will occur prior to lifting it.

C. The Owner reserves right to document, or have documented by qualified professional, location, surrounding conditions, and other circumstances that may be pertinent. Time lost thereby will be condition for which contract time may be extended. Costs incurred for salvaging or documenting artifacts, after discovery, will be administered as a change order through the Contractor. The State reserves right to retain possession and ownership of objects, artifacts and historically or archeologically significant materials, other than normal building construction materials, discovered during execution of work.

END OF SECTION