SPECIFICATIONS

FOR

DRIVESMART RENOVATIONS

FOR

NEDC BUILDING

CITY OF NEWPORT

NEWPORT, ARKANSAS

November 2024

EDA Project # ED24AUS0G0057

MILLER-NEWELL ENGINEERS, INC.
P.O. Box 705
510 Third Street
Newport, AR 72112

STEWARCH ARCHITECTS
P.O. Box 363
Searcy, AR 72145

M-N 23-048

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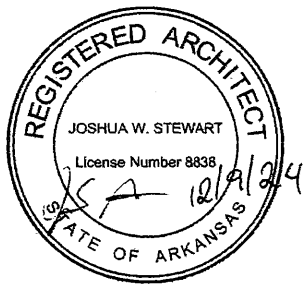

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ADVERTISEMENT FOR BIDS

Separate sealed bids for Construction of Building Renovations, will be received by the City of Newport, at Newport City Hall, 615 Third Street, Newport, AR 72112 , until 10:00 o'clock A.M., on May 20, 2025, and then at said location publicly opened and read aloud.

The Information for Bidders, Form of Bid, Form of Contract, Plans, Specifications, Forms of Bid Bond, Performance and Payment Bond, and other Contract Documents may be examined at the following locations:

Miller-Newell Engineers, Inc., 510 Third Street, Newport, AR
Dodge Plans Room, (www.dodgeplans.construction.com)
Construction Market Data (www.cmdgroup.com)
Southern Reprographics, 901 West Seventh, Little Rock, AR

Copies of the Contract Documents may be obtained at the office of MILLER-NEWELL ENGINEERS, INC., 510 Third Street, Newport, Arkansas 72112, upon the payment of $150 for each set. Successful bidders will be refunded $75 upon return of the Contract Documents in usable condition within 14 days after receipt of bids.

The Owner reserves the right to waive any informalities or to reject any or all bids.

Each bidder must deposit with his bid security in the amount, form and subject to the conditions provided in the Information for Bidders.

In accordance with Act 150 of 1965, as amended, all bidders shall conform to the requirements of the Arkansas State Licensing Law for Contractors.

No bidder may withdraw his bid within 60 days after the actual date of the opening thereof.

A pre-bid conference will be held on May 6, 2025 at 2:00 P.M. at the building site, 201 Hazel Street, Newport, AR 72112. All contractors are encouraged to attend.

This Advertisement for Bids is being published by and paid for by the following:

Mayor Derrick Ratliffe
City of Newport
615 Third Street
Newport, AR 72112

The amount of this publication is $_____.

Derrick Ratliffe/Mayor
Date: April 27,2025

INFORMATION FOR BIDDERS

Bids will be received by City of Newport (herein called the "OWNER"), at Newport City Hall, 615 Third Street, Newport, AR 72112, until 10:00 o'clock A.M., on May 20, 2025 and then at said office publicly opened and read aloud. Each bid must be submitted in a sealed envelope, addressed to City of Newport. Each sealed envelope containing a bid must be plainly marked on the outside as RENOVATION OF EXISTING BUILDING AT 201 HAZEL STREET, NEWPORT, and the envelope should bear on the outside the name of the bidder, his address, his license number, if applicable, and the name of the project for which the bid is submitted. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed to the City of Newport, 615 Third Street, Newport, AR 72112.

Bids must be made on the required bid form. All blank spaces for bid prices must be filled in, in ink or typewritten, and the bid form must be fully completed and executed when submitted. Only one copy of the bid form is required.

The Owner may waive any informalities or minor defects or reject any and all bids. Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified shall not be considered. No bidder may withdraw a bid within 60 days after the actual date of the opening thereof. Should there be reasons why the contract cannot be awarded within the specified period, the time may be extended by mutual agreement between the Owner and the bidder.

Bidders must satisfy themselves of the accuracy of the estimated quantities in the bid schedule by examination of the site and a review of the drawings and specifications, including all addenda. After bids have been submitted, the bidder shall not assert that there was a misunderstanding concerning the quantities of work or of the nature of the work to be done.

The Owner shall provide to bidders, prior to bidding, all information which is pertinent to and delineates and describes the land owned and rights-of-way acquired or to be acquired.

The Contract Documents contain the provisions required for the construction of the project. Information obtained from an officer, agent or employee of the Owner or any other person shall not affect the risks or obligations assumed by the Contractor or relieve him from fulfilling any of the conditions of the contract.

Each bid must be accompanied by a Bid Bond payable to the Owner for five percent of the total amount of the bid. As soon as the bid prices have been compared, the Owner will return the bonds of all except the three lowest responsible bidders. When the Agreement is executed, the bonds of the two remaining unsuccessful bidders will be returned. The Bid Bond of the successful bidder will be retained until the Payment Bond and Performance Bond have been executed and approved, after which it will be returned. A certified check **WILL NOT BE ACCEPTED** in lieu of

a Bid Bond.

A Performance Bond and Payment Bond, each in the amount of 100 percent of the contract price, with a corporate surety approved by the Owner, will be required for the faithful performance of the contract.

Attorneys-in-fact who sign Bid Bonds or Payment Bonds or Performance Bonds must file with each bond a certified and effective dated copy of their power of attorney.

The party to whom the contract is awarded will be required to execute the Agreement and obtain the Performance Bond and Payment Bond within ten (10) calendar days from the date when the Notice of Award is delivered to the bidder. The Notice of Award shall be accompanied by the necessary Agreement and bond forms. In case of failure of the bidder to execute the Agreement, the Owner may at his option consider the bidder in default, in which case the Bid Bond accompanying the proposal shall become the property of the Owner.

The Owner, within ten (10) days of receipt of acceptable Performance Bond, Payment Bond and Agreement signed by the party to whom the Agreement was awarded, shall sign the Agreement and return to such party an executed duplicate of the Agreement. Should the Owner not execute the Agreement within such period, the bidder may by written notice withdraw his signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the Owner.

The Notice to Proceed shall be issued within ten (10) days of the execution of the Agreement by the Owner. Should there be reasons why the Notice to Proceed cannot be issued within such period, the time may be extended by mutual agreement between the Owner and Contractor. If the Notice to Proceed has not been issued within the ten (10) day period or within the period mutually agreed upon, the Contractor may terminate the Agreement without further liability on the part of either party.

The Owner shall make such investigations as he deems necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any bid on the evidence submitted by, or investigation of, such bidder fails to satisfy the Owner that such bidder is properly qualified to carry out the obligations of the Agreement and to complete the work contemplated therein. A conditional or qualified bid will not be accepted. Award will be made to the lowest responsible bidder.

All applicable laws, ordinances and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout.

Each bidder is responsible for inspecting the site and for reading and being thoroughly familiar with the Contract Documents. The failure or omission of any bidder to do any of the foregoing shall in no way relieve any bidder from any obligation in respect to his bid.

The low bidder shall supply the names and addresses of major material suppliers and subcontractors when requested to do so by the Owner.

The Engineer is MILLER-NEWELL ENGINEERS, INC., 510 THIRD STREET, NEWPORT, ARKANSAS 72112.

The Architect is STEWARCH ARCHITECTS, P.O. BOX 363, SEARCY, ARKANSAS 72145.

Regarding Substitutions:

1. Where a definite material is specified, it is not the intent to discriminate against any "approved equal" product of another manufacturer. It is the intent to set a definite standard.
2. Open competition is expected, but in all cases, complete data must be submitted for comparison and test when required by the Architect.
3. No substitution shall be made unless authorized in writing by the Architect.
4. No substitution shall be authorized prior to the bid. All bidders shall base their proposals on the material or specialty specified. Any proposal for substitution shall be submitted within 30 day after the award of contract.
5. Should a substitution be accepted and should the substituted material prove defective or otherwise unsatisfactory for the service intended with the guaranty period, the Contractor shall replace this material or equipment with that which was originally specified, without cost to the Owner.

** This project will be partially funded with Federal funds from the United States Department of Commerce, Economic Development Administration and therefore is subject to the Federal laws and regulations associated with that program.*

NOTICE TO BIDDERS

The following is made a part of these Contract Documents:

1. SAFETY STANDARDS AND ACCIDENT PREVENTION

With respect to all work performed under this Contract, in accordance with Act 291 of the Arkansas 79th General Assembly, the Contractor shall:

A. Comply with the safety standards provisions of applicable laws, building and construction codes, and the Manual of Accident Prevention in Construction: published by the Associated General Contractors of America, the requirements of the Occupational Safety and Health Act of 1970 (Public Law 91-596 and the requirement of Title 29 of the Code of Federal Regulations, Section 1518 as published in the Federal Register, Volume 36, No. 75, Saturday, April 17, 1971), and specifically OSHA's Standard for Excavation and Trenches Safety Systems, 29 CFR Part 1926, Subpart P, which is made a part hereof by reference.

B. Exercise every precaution at all times for the prevention of accidents and the protection of persons (including employees) and property.

C. Maintain at his office or other well-known place at the job site, all articles necessary for giving first aid to the injured and shall make standing arrangements for the immediate removal to a hospital or doctor's care of persons (including employees) who may be injured on the job site.

2. BID FORM - SEPARATE PAY ITEM

A. A separate lump sum bid item has been included for "Excavation/Trench Safety System (for excavation in excess of 5')". Bidder is required to complete this pay item in accordance with Act 291 of the Arkansas 79th General Assembly.

B. In the event a bidder fails to complete this pay item, the Owner shall declare that the bid fails to comply fully with the provisions of the specifications and bid documents and will be considered invalid as a non-responsive bid.

C. NOTE: Payment for the lump sum bid item for "Excavation/Trench Safety Systems" will be paid at the completion of the Contract. No partial payments will be allowed thereunder.

3. STORM WATER PERMIT REQUIREMENTS

The bidders attention is specifically called to the Storm Water Permit Requirements as follow:

The Contractor is advised that if this construction activity involves clearing, grading or excavation activities that result in the disturbance of one or more acres of total land area, this activity is subject to Storm Water Permit requirements of the Arkansas Department of Environmental Quality. The Contractor must obtain a site specific Storm Water Discharge Permit or apply for inclusion under the General Permit Number ARR10A000 or ARR150000 covering construction activities. The permit, if required, must be filed for in the Owner's name.

To be included under the General Permit, the Contractor must submit the Notice of Intent (NOI) at least two (2) weeks before the construction activity is to begin. A financial disclosure statement must accompany the NOI.

The General Permit requires that the Contractor control the entrance of pollutants into the surface and ground waters of the State. Temporary and permanent sediment and erosion control measures must be included in the work during the course of construction. These measures may include temporary and permanent seeding, construction of catch basins, the use of mulch, hay bales and silt fences to control sediments, the use of rip-rap at erosion prone areas, and other measures.

The General Permit also requires the Contractor to maintain "good housekeeping practices" that include items such as proper waste disposal, proper storage for hazardous materials and designating safe places for equipment maintenance and washdown.

The Contractor is required to maintain on site a Pollution Prevention Plan describing the storm water pollution prevention measures that will be taken at the construction site. The Plan must include a site description, a description of the nature of the activity, the intended sequence of the work, estimates of the total area involved in the activity, an estimate of the possible volume of run-off from the area, site maps showing drainage patterns, pollution prevention measures that will be taken and other items.

Additional information and application materials may be obtained by calling or writing:

Arkansas Department of Environmental Quality
Storm Water Permits Section
5301 Northshore Drive
North Little Rock, AR 72118

Telephone Number: (501) 562-7444
Fax Number: (501) 562-4632

Permitting and compliance cost shall be considered as subsidiary to the overall project and all costs shall be included in the cost of the work.

PROPOSAL FORM

DATE: _____, 2025

Proposal of _____

(hereinafter called "Bidder"), a corporation, organized and existing under the laws of the State of _____; a partnership; an individual doing business as _____

_____.* (*STRIKE INAPPLICABLE PHRASE)

TO: City of Trumann (Hereinafter called "Owner")

GENTLEMEN:

The Bidder, in compliance with your invitation for bids for the furnishing of materials and/or labor for **RENOVATION OF EXISTING BUILDING** having examined the plans and specifications with the related documents and the site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project, including the availability of materials, hereby proposes to furnish all materials and supplies in accordance with the Contract Documents, within the time set forth therein, and at the price stated below. These prices are to cover all expenses incurred in furnishing the equipment/materials required under the Contract Documents, of which this proposal is a part.

Bidder hereby agrees to commence work under this contract on or before a date to be specified in written "Notice to Proceed" of the Owner and to fully complete the contract within **One Hundred Eighty (180)** consecutive calendar days thereafter as stipulated in the specifications. Bidder further agrees to pay as liquidated damages, the sum of $500 for each calendar day thereafter as hereinafter provided in Section 34 of the General Conditions.

Bidder acknowledges receipt of the following addendum:

_____

_____

Bidder agrees to perform all the work required and to furnish all material required to be furnished to cover the finished work as described in the Specifications and as shown on the Plans for the following prices or lump sum:

(Amount shall be shown in both words and figures. In case of discrepancy, the amount shown in words will govern.)

BID SCHEDULE

BASE BID:

Item No.	Description	Unit	Total Price
1.	Building Renovations	LS	$_____
2.	Electrical Installation	LS	$_____
3.	Fire Sprinkler System	LS	$_____
4.	Plumbing	LS	$_____
5.	HVAC	LS	$_____
6.	Electrical Low Voltage	LS	$_____
7.	Miscellaneous	LS	$_____
		TOTAL BASE BID	$_____

Written in Words _____

_____

_____

DEDUCTIVE ALTERNATE NO. 1:

DELETE Audio System from Building DELETE $_____

Written in Words _____

_____

DEDUCTIVE ALTERNATE NO. 2:

DELETE Security Camera System from Building DELETE $_____

Written in Words _____

_____

(Note: Bids shall include sales tax and all applicable taxes and fees.)

In submitting this bid, it is understood that the right is reserved by the Owner to reject any or all bids. No bid shall be withdrawn for a period of sixty (60) days subsequent to the opening of bids without the consent of the Owner.

Upon receipt of written notice of the acceptance of this bid, bidder will execute the formal contract attached within 10 days and deliver a Surety Bond or Bonds as required by the General Conditions.

The bid security attached in the sum of _____ _____Dollars ($_____) is to become the property of the Owner in the event the contract and bond are not executed within the time above set forth, as liquidated damages for the delay and additional expense to the Owner caused thereby.

The Bidder further agrees to designate the names of proposed separate subcontractors, if necessary, for masonry work, electrical work, plumbing, heating, ventilation and air conditioning, roofing, etc. as specified below. I (or we) submit the names of the subcontractors I (or we) propose to use and their Arkansas Contractor's State License Number as follows:

	Name	License Number
Masonry	_____	_____
Plumbing	_____	_____
HVAC	_____	_____
Electrical	_____	_____
Roofing	_____	_____
Other	_____	_____

RESPECTFULLY SUBMITTED,

By:_____
Signature

_____
Title

(SEAL if bid is by corporation)

BUSINESS ADDRESS:

_____

_____

_____

CONTRACTOR'S ARKANSAS LICENSE No.

Bid Bond

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, _____
_____ as Principal,
and _____ as Surety,
are hereby held and firmly bound unto _____, as
Owner,in the penal sum of _____
for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.
Signed, this _____ day of _____, 2025.

The condition of the above obligation is such that whereas the Principal has submitted to _____ a certain Bid, attached hereto and hereby made a part hereof to enter into a contract in writing, for the

RENOVATION OF EXISTING BUILDING

NOW, THEREFORE.

A. If said Bid shall be rejected, or in the alternate,

B. If said Bid shall be accepted and the Principal shall execute and deliver a contract in theForm of Contract specified (properly completed in accordance with said Bid) and shall furnish a bond for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said Bid, then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the Owner may accept such Bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

_____

Surety

_____

Surety's Agent

_____

Principal

Seal

Note: Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570, as amended) as authorized to transact business in Arkansas and have underwriting authority in an amount equal to or greater than the bid amount.

AGREEMENT

THIS AGREEMENT, made and entered into this ____ day of _____, 2025, by and between **City of Newport** hereinafter called "Owner," and _____, hereinafter called "Contractor."

WITNESSETH: That for an in consideration of the payments and agreements hereinafter mentioned, to be made and performed by the Owner, the Contractor hereby agrees with the Owner to commence and complete the construction described as follows: **RENOVATION OF EXISTING BUILDING** for the City of Newport, Arkansas, hereinafter called the project, for the sum of _____**Dollars & NO/100($_____)** and all extra work in connection therewith, under the terms as stated in the General and Special Conditions of the Contract; and at his (its or their) own proper cost and expense to furnish all materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said project in accordance with the conditions and prices stated in the Proposal, the General Conditions, Supplemental General Conditions and Special Conditions of the Contract, the plans, which includes all maps, plats, blueprints, and other drawings and printed or written explanatory matter thereof, the specifications and contract documents therefore as prepared by MILLER-NEWELL ENGINEERS, INC., NEWPORT, ARKANSAS, herein entitled the Engineer, all of which are made a part hereof and collectively evidence and constitute the contract.

The Contractor hereby agrees to commence work under this contract on or before a date to be specified in a written "Notice to Proceed" of the Owner and to fully complete the project within **One Hundred Eighty (180)** consecutive calendar days thereafter. The Contractor further agrees to pay, as liquidated damages, the sum of $500 for each day thereafter as hereinafter provided in the General Conditions.

The Owner agrees to pay the Contractor in current funds for the performance of the contract, subject to additions and/or deductions, as provided in the General Conditions, and to make payments on account thereof as provided in Paragraph 33, "Payments to Contractor," of the General Conditions.

IN WITNESS WHEREOF, the parties to these presents have executed this Contract in six (6) counterparts, each of which shall be deemed an original, on the day and year first above mentioned.

CITY OF NEWPORT
Owner

(SEAL)
ATTEST: By:_____

_____ Mayor
Clerk Title

	_____
	Contractor
(SEAL)	
ATTEST:	By:_____
_____	_____
Title	Title
	_____
	_____
	Business Address

NOTE: Secretary of the Owner should attest. If Contractor is a corporation, Secretary should attest.

Arkansas Statutory Payment and Performance Bond

We _____,
as Principal, hereinafter called Principal, and _____
authorized to do business in the State of Arkansas, as Surety, hereinafter called Surety,
are held and firmly bound unto _____
as Obligee, hereinafter called Owner, in the amount of

_____

Dollars ($ _____), for the payment whereof Principal and Surety bind themselves, their heirs, personal representatives, successors and assigns, jointly and severally, by these presents.

Principal has by written agreement dated _____ entered into a contract with Owner for

RENOVATION OF EXISTING BUILDING

which contract is by reference made a part hereof and hereinafter referred to as the Contract.

THE CONDITION OF THIS OBLIGATION is such that if the Principal shall faithfully perform the Contract on his part and shall fully indemnify and save harmless the Owner from all cost and damage which he may suffer by reason of failure to do so and shall fully reimburse and repay the Owner all outlay and expense which the Owner may incur in making good any such default, and further, that if the Principal shall pay all persons all indebtedness for labor or materials furnished or performed under said Contract, failing which such persons shall have a direct right of action against the Principal and Surety, jointly and severally, under this obligation, subject to the Owner's priority, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

No suit, action or proceeding shall be brought on this bond outside the State of Arkansas. No suit, action or proceeding shall be brought on this bond except by the Owner after six months from the date final payment is made on the Contract, nor shall any suit, action or proceeding be brought by the Owner after two years from the date on which the final payment under the Contract falls due.

Any alterations which may be made in the terms of the Contract, or in the work to be done under it, or the giving by the Owner of any extension of time for the performance of the Contract, or any other forbearance on the part of either the Owner or the Principal to the other shall not in any way release the Principal and the Surety or Sureties, or either or any of them, their heirs, personal representatives, successors or assigns from their

liability hereunder, notice to the Surety or Sureties of any such alteration, extension or forbearance being hereby waived.

In no event shall the aggregate liability of the Surety exceed the sum set out herein.

Executed on this _____ day of _____, 2025

_____

Principal

_____

Surety Agent

_____

Attorney-in-Fact

FORM CD-512
(REV 12-04)

U.S. DEPARTMENT OF COMMERCE

CERTIFICATION REGARDING LOBBYING
LOWER TIER COVERED TRANSACTIONS

Applicants should review the instructions for certification included in the regulations before completing this form. Signature on this form provides for compliance with certification requirements under 15 CFR Part 28, "New Restrictions on Lobbying."

LOBBYING

As required by Section 1352, Title 31 of the U.S. Code, and implemented at 15 CFR Part 28, for persons entering into a grant, cooperative agreement or contract over $100,000 or a loan or loan guarantee over $150,000 as defined at 15 CFR Part 28, Sections 28.105 and 28.110, the applicant certifies that to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure occurring on or before October 23, 1996, and of not less than $11,000 and not more than $110,000 for each such failure occurring after October 23, 1996.

Statement for Loan Guarantees and Loan Insurance

The undersigned states, to the best of his or her knowledge and belief, that:

In any funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

Submission of this statement is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required statement shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure occurring on or before October 23, 1996, and of not less than $11,000 and not more than $110,000 for each such failure occurring after October 23, 1996.

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above applicable certification.

NAME OF APPLICANT	AWARD NUMBER AND/OR PROJECT NAME
PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE	
SIGNATURE	DATE

NOTICE OF REQUIREMENTS FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246 AND 41 CFR PART 60-4)

The following Notice shall be included in, and shall be a part of all solicitations for offers and bids on all Federal and federally assisted construction contracts or subcontracts in excess of $10,000.

The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.

The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Timetables	Goals for minority participation for each trade	Goals for female participation for each trade
	16.4 %	6.9%

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non federally involved construction.
The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order, and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.
As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is:

State of Arkansas

County of Jackson

City of Newport

OMB Number: 0610-0096
Expiration Date: 01/31/2025

U. S. DEPARTMENT OF COMMERCE
ECONOMIC DEVELOPMENT ADMINISTRATION

EDA CONTRACTING PROVISIONS
FOR CONSTRUCTION PROJECTS

These EDA Contracting Provisions for Construction Projects (EDA Contracting Provisions) are intended for use by recipients receiving federal assistance from the U. S. Department of Commerce - Economic Development Administration (EDA). They contain provisions specific to EDA and other federal provisions not normally found in non-federal contract documents. The requirements contained herein must be incorporated into all construction contracts and subcontracts funded wholly or in part with federal assistance from EDA.

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1. DEFINITIONS

Agreement – The written instrument that is evidence of the agreement between the Owner and the Contractor overseeing the Work.

Architect/Engineer - The person or other entity engaged by the Recipient to perform architectural, engineering, design, and other services related to the work as provided for in the contract.

Contract – The entire and integrated written agreement between the Owner and the Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

Contract Documents – Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents.

Contractor – The individual or entity with whom the Owner has entered into the Agreement.

Drawings or Plans – That part of the Contract Documents prepared or approved by the Architect/Engineer that graphically shows the scope, extent, and character of the Work to be performed by the Contractor.

EDA - The United States of America acting through the Economic Development Administration of the U.S. Department of Commerce or any other person designated to act on its behalf. EDA has agreed to provide financial assistance to the Owner, which includes assistance in financing the Work to be performed under this Contract. Notwithstanding EDA's role, nothing in this Contract shall be construed to create any contractual relationship between the Contractor and EDA.

Owner – The individual or entity with whom the Contractor has entered into the Agreement and for whom the Work is to be performed.

Project – The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.

Recipient – A non-Federal entity receiving a Federal financial assistance award directly from EDA to carry out an activity under an EDA program, including any EDA-approved successor to the entity.

Specifications – That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.

Subcontractor – An individual or entity having direct contract with the Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.

Work – The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

2. APPLICABILITY

The Project to which the construction work covered by this Contract pertains is being assisted by the United States of America through federal assistance provided by the U.S. Department of Commerce - Economic Development Administration (EDA). Neither EDA, nor any of its departments, entities, or employees is a party to this Contract. The following EDA Contracting Provisions are included in this Contract and all subcontracts or related instruments pursuant to the provisions applicable to such federal assistance from EDA.

3. FEDERALLY REQUIRED CONTRACT PROVISIONS

(a) All contracts in excess of the simplified acquisition threshold - currently fixed at $150,000 (*see* 41 U.S.C. §§ 134 and 1908) must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as may be appropriate.

(b) All contracts in excess of $10,000 must address termination for cause and for convenience by the Recipient including the manner by which it will be effected and the basis for settlement.

(c) All construction contracts awarded in excess of $10,000 by recipients of federal assistance and their contractors or subcontractors shall contain a provision requiring compliance with Executive Order 11246 of September 24, 1965, *Equal Employment Opportunity*, as amended by Executive Order 11375 of October 13, 1967, and Department of Labor implementing regulations at 41 C.F.R. part 60.

(d) All prime construction contracts in excess of $2,000 awarded by Recipients must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. §§ 3141-3148) as supplemented by Department of Labor regulations at 29 C.F.R. part 5. The contracts must also include a provision for compliance with the Copeland "Anti-Kickback" Act (18 U.S.C. § 874 and 40 U.S.C. § 3145) as supplemented by Department of Labor regulations at 29 C.F.R. part 3.

(e) All contracts awarded by the Recipient in excess of $100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. §§ 3702 and 3704 (the Contract Work Hours and Safety Standards Act) as supplemented by Department of Labor regulations at 29 C.F.R. part 5.

(f) All contracts must include EDA requirements and regulations that involve a requirement on the contractor or sub-contractor to report information to EDA, the Recipient or any other federal agency.

(g) All contracts must include EDA requirements and regulations pertaining to patent rights with respect to any discovery or invention which arises or is developed in the course of or under such contract.

(h) All contracts must include EDA requirements and regulations pertaining to copyrights and rights in data.

(i) All contracts and subgrants in excess of $150,000 must contain a provision that requires compliance with all applicable standards, orders, or requirements issued under the Clean Air Act (42 U.S.C. § 7401 *et seq.*) and the Federal Water Pollution Control Act (Clean Water Act) (33 U.S.C. § 1251 *et seq.*), and Executive Order 11738, *Providing for Administration of the Clean Air Act and the Federal Water Pollution Control Act With Respect to Federal Contracts, Grants, or Loans.*

(j) Contracts must contain mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C.§ 6201).

(k) Contracts must contain a provision ensuring that contracts are not to be made to parties on the government wide Excluded Parties List System in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 C.F.R. part 180.

(l) Contracts must contain a provision ensure compliance with the Byrd Anti-Lobbying Amendment (31 U.S.C. § 1352) under which contractors that apply or bid for an award of $100,000 or more must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. § 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award.

(m) If the Recipient is a state agency or agency of a political subdivision of a state, any contract awarded must contain a provision ensuring compliance with section 6002 of the Solid Waste Disposal Act (42 U.S.C. § 6962), as amended by the Resource Conservation and Recovery Act related to the procurement of recovered materials.

4. REQUIRED PROVISIONS DEEMED INSERTED

Each and every provision of law and clause required by law to be inserted in this contract shall be deemed to be inserted herein and the contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party the contract shall forthwith be physically amended to make such insertion of correction.

5. INSPECTION BY EDA REPRESENTATIVES

The authorized representatives and agents of EDA shall be permitted to inspect all work, materials, payrolls, personnel records, invoices of materials, and other relevant data and records.

6. EXAMINATION AND RETENTION OF CONTRACTOR'S RECORDS

(a) The Owner, EDA, or the Comptroller General of the United States, or any of their duly authorized representatives shall, generally until three years after final payment under this contract, have access to and the right to examine any of the Contractor's directly pertinent books, documents, papers, or other records involving transactions related to this contract for the purpose of making audit, examination, excerpts, and transcriptions.

(b) The Contractor agrees to include in first-tier subcontracts under this contract a clause substantially the same as paragraph (a) above. "Subcontract," as used in this clause, excludes purchase orders that do not exceed $10,000.

(c) The periods of access and examination in paragraphs (a) and (b) above for records relating to (1) appeals under the disputes clause of this contract, (2) litigation or settlement of claims arising from the performance of this contract, or (3) costs and expenses of this contract to which the Owner, EDA, or Comptroller General or any of their duly authorized representatives has taken exception shall continue until disposition of such appeals, litigation, claims, or exceptions.

7. CONSTRUCTION SCHEDULE AND PERIODIC ESTIMATES

Immediately after execution and delivery of the contract, and before the first partial payment is made, the Contractor shall deliver to the Owner an estimated construction progress schedule in a form satisfactory to the Owner, showing the proposed dates of commencement and completion of each of the various subdivisions of work required under the Contract Documents and the anticipated amount of each monthly payment that will become due to the Contractor in accordance with the progress schedule. The Contractor also shall furnish the Owner (a) a detailed estimate giving a complete breakdown of the contract price and (b) periodic itemized estimates of work done for the purpose of making partial payments thereon. The costs employed in making up any of these schedules will be used only to determine the basis of partial payments and will not be considered as fixing a basis for additions to or deductions from the contract price.

8. CONTRACTOR'S TITLE TO MATERIAL

No materials, supplies, or equipment for the work shall be purchased by the Contractor or by any subcontractor that is subject to any chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller. The Contractor warrants and guarantees that he/she has good title to all work, materials, and equipment used by him/her in the Work, free and clear of all liens, claims, or encumbrances.

9. INSPECTION AND TESTING OF MATERIALS

All materials and equipment used in the completion of the Work shall be subject to adequate inspection and testing in accordance with accepted standards. The laboratory or inspection agency shall be selected by the Owner. Materials of construction, particularly those upon which the strength and durability of any structure may depend, shall be subject to inspection and testing to establish conformance with specifications and suitability for intended uses.

10. "OR EQUAL" CLAUSE

Whenever a material, article, or piece of equipment is identified in the Contract Documents by reference to manufacturers' or vendors' names, trade names, catalogue numbers, etc., it is intended merely to establish a standard. Any material, article, or equipment of other manufacturers and vendors that will perform adequately the duties imposed by the general design will be considered equally acceptable provided the material, article, or equipment so proposed is, in the opinion of the Architect/Engineer, of equal substance and function. However, such substitution material, article, or equipment shall not be purchased or installed by the Contractor without the Architect/Engineer's written approval.

11. PATENT FEES AND ROYALTIES

(a) Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device that is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Architect/Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by the Owner in the Contract Documents.

(b) To the fullest extent permitted by Laws and Regulations, the Contractor shall indemnify and hold harmless the Owner and the Architect/Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

12. CLAIMS FOR EXTRA COSTS

No claims for extra work or cost shall be allowed unless the same was done in pursuance of a written order from the Architect/Engineer approved by the Owner.

13. CONTRACTORS AND SUBCONTRACTORS INSURANCE

(a) The Contractor shall not commence work under this Contract until the Contractor has obtained all insurance reasonably required by the Owner, nor shall the Contractor allow any subcontractor to commence work on his/her subcontract until the insurance required of the subcontractor has been so obtained and approved.

(b) Types of insurance normally required are:

(1) Workers' Compensation
(2) Contractor's Public Liability and Property Damage
(3) Contractor's Vehicle Liability
(4) Subcontractors' Public Liability, Property Damage and Vehicle Liability
(5) Builder's Risk (Fire and Extended Coverage)

(c) **Scope of Insurance and Special Hazards:** The insurance obtained, which is described above, shall provide adequate protection for the Contractor and his/her subcontractors, respectively, against damage claims that may arise from operations under this contract, whether such operations be by the insured or by anyone directly or indirectly employed by him/her and also against any of the special hazards that may be encountered in the performance of this Contract.

(d) **Proof of Carriage of Insurance:** The Contractor shall furnish the Owner with certificates showing the type, amount, class of operations covered, effective dates, and dates of expiration of applicable insurance policies.

14. CONTRACT SECURITY BONDS

(a) If the amount of this Contract exceeds $150,000, the Contractor shall furnish a performance bond in an amount at least equal to one hundred percent (100%) of the Contract price as security for the faithful performance of this Contract and also a payment bond in an amount equal to one hundred percent (100%) of the Contract price or in a penal sum not less than that prescribed by State, Territorial, or local law, as security for the payment of all persons performing labor on the Work under this Contract and furnishing materials in connection with this Contract. The performance bond and the payment bond may be in one or in separate instruments in accordance with local law. Before final acceptance, each bond must be approved by EDA. If the amount of this Contract does not exceed $150,000, the Owner shall specify the amount of the payment and performance bonds.

(b) All bonds shall be in the form prescribed by the Contract Documents except as otherwise provided in applicable laws or regulations, and shall be executed by such sureties as are named in the current list of *Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies* as published in Treasury Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent must be accompanied by a certified copy of the agent's

authority to act. Surety companies executing the bonds must also be authorized to transact business in the state where the Work is located.

15. **LABOR STANDARDS - DAVIS-BACON AND RELATED ACTS**
(as required by section 602 of PWEDA)

(a) **Minimum Wages**

(1) All laborers and mechanics employed or working upon the site of the Work in the construction or development of the Project will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act at 29 C.F.R. part 3, the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at the time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor, which is attached hereto and made a part hereof, regardless of any contractual relationship that may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 C.F.R. § 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 C.F.R. § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein, provided that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates determined under 29 C.F.R. § 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(2) (i) Any class of laborers or mechanics to be employed under the Contract, but not listed in the wage determination, shall be classified in conformance with the wage determination. EDA shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(A) The work to be performed by the classification requested is not performed by a classification in the wage determination;

(B) The classification is utilized in the area by the construction industry; and

(C) The proposed wage rate, including any bona fide fringe benefits, bears a

reasonable relationship to the wage rates contained in the wage determination.

(ii) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and EDA or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by EDA or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210.

(iii) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and EDA or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), EDA or its designee shall refer the questions, including the views of all interested parties and the recommendation of EDA or its designee, to the Administrator for determination.

(iv) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(2)(ii) or (iii) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(3) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(4) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(b) **Withholding**

EDA or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the Contractor under this Contract or any other federal contract with the same prime Contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the Contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper employed or working on the site of the Work in the construction or development of the Project, all or part of the wages required by the Contract, EDA or its designee may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations

have ceased. EDA or its designee may, after written notice to the Contractor, disburse such amounts withheld for and on account of the Contractor or subcontractor to the respective employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

(c) **Payrolls and basic records**

(1) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the Work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the Work in the construction or development of the Project. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 C.F.R. § 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, the plan or program is financially responsible, and the plan or program has been communicated in writing to the laborers or mechanics affected, and provide records that show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(2) (i) For each week in which Contract work is performed, the Contractor shall submit a copy of all payrolls to the Owner for transmission to EDA or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 C.F.R. part 5.5(a)(3)(i). This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose. It may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), U.S. Government Printing Office, Washington, D.C. 20402; or downloaded from the U.S. Department of Labor's website at https://www.dol.gov/whd/forms/wh347.pdf. The prime Contractor is responsible for the submission of copies of payrolls by all subcontractors

(ii) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the Contract and shall certify the following:

(A) That the payroll for the payroll period contains the information required to be maintained under 29 C.F.R. § 5.5(a)(3)(i) and that such information is correct and complete;

(B) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the Contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 C.F.R. part 3; and

(C) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the Contract.

(iii)The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 15(c)(2)(ii) of this section.

(iv)The falsification of any of the above certifications may subject the Contractor or subcontractor to civil or criminal prosecution under section 1001 of Title 18 and section 3729 of Title 31 of the U.S. Code.

(3) The Contractor or subcontractor shall make the records required under paragraph 15(c)(1) of this section available for inspection, copying, or transcription by authorized representatives of EDA or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit the required records or to make them available, EDA or its designee may, after written notice to the Contractor or Owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 C.F.R. § 5.12.

(d) **Apprentices and Trainees**.

(1) **Apprentices**. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training (Bureau), or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any

apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a Contractor is performing construction on a Project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) **Trainees**. Except as provided in 29 C.F.R. § 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program that has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman's hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(3) **Equal employment opportunity**. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity

requirements of Executive Order 11246, *Equal Employment Opportunity*, as amended, and 29 C.F.R. part 30.

(e) **Compliance with Copeland Anti-Kickback Act Requirements**. The Contractor shall comply with the Copeland Anti-Kickback Act (18 U.S.C. § 874 and 40 U.S.C. § 3145) as supplemented by Department of Labor regulations (29 C.F.R. part 3, "Contractors and Subcontractors on Public Buildings or Public Works Financed in Whole or in Part by Loans or Grants of the United States"). The Act provides that the Contractor and any subcontractors shall be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which they are otherwise entitled. The Owner shall report all suspected or reported violations to EDA.

(f) **Subcontracts**. The Contractor and any subcontractors will insert in any subcontracts the clauses contained in 29 C.F.R. §§ 5.5(a)(1) through (10) and such other clauses as EDA or its designee may require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 C.F.R. § 5.5.

(g) **Contract termination; debarment**. The breach of the contract clauses in 29 C.F.R. § 5.5 may be grounds for termination of the contract, and for debarment as a Contractor and a subcontractor as provided in 29 C.F.R. § 5.12.

(h) **Compliance with Davis-Bacon and Related Act Requirements**. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 C.F.R. parts 1, 3, and 5 are herein incorporated by reference in this contract.

(i) **Disputes concerning labor standards**. Disputes arising out of the labor standards provisions of this Contract shall not be subject to the general disputes clause of this Contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 C.F.R. parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and EDA or its designee, the U.S. Department of Labor, or the employees or their representatives.

(j) **Certification of Eligibility**.

(1)By entering into this Contract, the Contractor certifies that neither it nor any person or firm that has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 C.F.R. § 5.12(a)(1).

(2) No part of this Contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 C.F.R. § 5.12(a)(1).

(3) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. § 1001.

16. LABOR STANDARDS - CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

(a) **Overtime requirements.** No Contractor or subcontractor contracting for any part of the Contract work, which may require or involve the employment of laborers or mechanics, shall require or permit any such laborer or mechanic in any workweek in which that person is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(b) **Violation; liability for unpaid wages, liquidated damages.** In the event of any violation of the clause set forth in paragraph (a) of this section, the Contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such Contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (a) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (a) of this section.

(c) **Withholding for unpaid wages and liquidated damages.** EDA or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any monies payable on account of work performed by the Contractor or subcontractor under any such Contract or any other federal contract with the same prime Contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime Contractor such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b) of this section.

(d) **Subcontracts.** The Contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs (a) through (c) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (a) through (c) of this section.

17. EQUAL EMPLOYMENT OPPORTUNITY

(a) The Recipient hereby agrees that it will incorporate or cause to be incorporated into any contract for construction work, or modification thereof, as defined in the regulations of the Secretary of Labor at 41 C.F.R. chapter 60, which is paid for in whole or in part with funds obtained from EDA, the following equal opportunity clause:

During the performance of this contract, the Contractor agrees as follows:

(1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training including apprenticeship. The Contractor agrees to post in conspicuous places available to employees and applicants for employment notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.

(3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.

(4) The Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers representatives of the Contractor's commitments hereunder, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(5) The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965 and of the rules, regulations, and relevant orders of the Secretary of Labor.

(6) The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to its books, records, and accounts by EDA and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(7) In the event of the Contractor's noncompliance with the nondiscrimination clauses of

this Contract or with any of the said rules, regulations, or orders, this Contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts or federally-assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation or order of the Secretary of Labor, or as otherwise provided by law.

(8) The Contractor will include the portion of the sentence immediately preceding paragraph 17(a)(1) and the provisions of paragraphs 17(a)(1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as EDA or the Secretary of Labor may direct as a means of enforcing such provisions, including sanctions for noncompliance. Provided, however, that in the event the Contractor becomes involved in or is threatened with litigation with a subcontractor or vendor as a result of such direction by EDA or the Secretary of Labor, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

(9) The Recipient further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally-assisted construction work. Provided, however, that if the Recipient so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality, or subdivision of such government that does not participate in work on or under the Contract.

(10)The Recipient agrees that it will assist and cooperate actively with EDA and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish EDA and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist EDA in the discharge of the EDA's primary responsibility for securing compliance.

(11) The Recipient further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a Contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by EDA or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the Recipient agrees that if it fails or refuses to comply with these undertakings, EDA may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this EDA financial assistance; refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case

to the Department of Justice for appropriate legal proceedings.

(b) Exemptions to Above Equal Opportunity Clause (41 C.F.R. chapter 60):

(1) Contracts and subcontracts not exceeding $10,000 (other than Government bills of lading, and other than contracts and subcontracts with depositories of Federal funds in any amount and with financial institutions which are issuing and paying agents for U.S. savings bonds and savings notes) are exempt. The amount of the Contract, rather than the amount of the federal financial assistance, shall govern in determining the applicability of this exemption.

(2) Except in the case of subcontractors for the performance of construction work at the site of construction, the clause shall not be required to be inserted in subcontracts below the second tier.

(3) Contracts and subcontracts not exceeding $10,000 for standard commercial supplies or raw materials are exempt.

18. CONTRACTING WITH SMALL, MINORITY AND WOMEN'S BUSINESSES

(a) If the Contractor intends to let any subcontracts for a portion of the work, the Contractor shall take affirmative steps to assure that small, minority and women's businesses are used when possible as sources of supplies, equipment, construction, and services.

(b) Affirmative steps shall consist of:

(1) Placing qualified small and minority businesses and women's business enterprises on solicitation lists;

(2) Ensuring that small and minority businesses and women's business enterprises are solicited whenever they are potential sources;

(3) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses and women's business enterprises;

(4) Establishing delivery schedules, where the requirements of the contract permit, which encourage participation by small and minority businesses and women's business enterprises;

(5) Using the services and assistance of the U.S. Small Business Administration, the Minority Business Development Agency of the U.S. Department of Commerce, and State and local governmental small business agencies;

(6) Requiring each party to a subcontract to take the affirmative steps of this section; and

(7) The Contractor is encouraged to procure goods and services from labor surplus area firms.

19. **HEALTH, SAFETY, AND ACCIDENT PREVENTION**

(a) In performing this contract, the Contractor shall:

(1) Ensure that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to their health and/or safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation;

(2) Protect the lives, health, and safety of other persons;

(3) Prevent damage to property, materials, supplies, and equipment; and

(4) Avoid work interruptions.

(b) For these purposes, the Contractor shall:

(1) Comply with regulations and standards issued by the Secretary of Labor at 29 C.F.R. part 1926. Failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act (40 U.S.C. §§ 3701 – 3708); and

(2) Include the terms of this clause in every subcontract so that such terms will be binding on each subcontractor.

(c) The Contractor shall maintain an accurate record of exposure data on all accidents incident to work performed under this Contract resulting in death, traumatic injury, occupational disease, or damage to property, materials, supplies, or equipment, and shall report this data in the manner prescribed by 29 C.F.R. part 1904.

(d) The Owner shall notify the Contractor of any noncompliance with these requirements and of the corrective action required. This notice, when delivered to the Contractor or the Contractor's representative at the site of the Work, shall be deemed sufficient notice of the noncompliance and corrective action required. After receiving the notice, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to take corrective action promptly, the Owner may issue an order stopping all or part of the Work until satisfactory corrective action has been taken. The Contractor shall not base any claim or request for equitable adjustment for additional time or money on any stop order issued under these circumstances.

(e) The Contractor shall be responsible for its subcontractors' compliance with the provisions of this clause. The Contractor shall take such action with respect to any subcontract as EDA, or the Secretary of Labor shall direct as a means of enforcing such provisions.

20. CONFLICT OF INTEREST AND OTHER PROHIBITED INTERESTS

(a) No official of the Owner who is authorized in such capacity and on behalf of the Owner to negotiate, make, accept, or approve, or to take part in negotiating, making, accepting, or approving any architectural, engineering, inspection, construction or material supply contract or any subcontract in connection with the construction of the Project, shall become directly or indirectly interested personally in this Contract or in any part hereof.

(b) No officer, employee, architect, attorney, engineer, or inspector of or for the Owner who is authorized in such capacity and on behalf of the Owner to exercise any legislative, executive, supervisory or other similar functions in connection with the construction of the Project, shall become directly or indirectly interested personally in this Contract or in any part thereof, any material supply contract, subcontract, insurance contract, or any other contract pertaining to the Project.

(c) The Contractor may not knowingly contract with a supplier or manufacturer if the individual or entity who prepared the Contract Documents has a corporate or financial affiliation with the supplier or manufacturer.

(d) The Owner's officers, employees, or agents shall not engage in the award or administration of this Contract if a conflict of interest, real or apparent, may be involved. Such a conflict may arise when: (i) the employee, officer or agent; (ii) any member of their immediate family; (iii) their partner or (iv) an organization that employs, or is about to employ, any of the above, has a financial interest in the Contractor. The Owner's officers, employees, or agents shall neither solicit nor accept gratuities, favors, or anything of monetary value from the Contractor or subcontractors.

(e) If the Owner finds after a notice and hearing that the Contractor, or any of the Contractor's agents or representatives, offered or gave gratuities (in the form of entertainment, gifts, or otherwise) to any official, employee, or agent of the Owner or EDA in an attempt to secure this Contract or favorable treatment in awarding, amending, or making any determinations related to the performance of this Contract, the Owner may, by written notice to the Contractor, terminate this Contract. The Owner may also pursue other rights and remedies that the law or this Contract provides. However, the existence of the facts on which the Owner bases such findings shall be an issue and may be reviewed in proceedings under the dispute resolution provisions of this Contract.

(f) In the event this Contract is terminated as provided in paragraph (e) of this section, the Owner may pursue the same remedies against the Contractor as it could pursue in the event of a breach of this Contract by the Contractor. As a penalty, in addition to any other damages to which it may be entitled by law, the Owner may pursue exemplary damages in an amount (as determined by the Owner) which shall not be less than three nor more than ten times the costs the Contractor incurs in providing any such gratuities to any such officer or employee.

21. RESTRICTIONS ON LOBBYING

(a) This Contract, or subcontract is subject to 31 U.S.C. § 1352, regarding lobbying restrictions. The section is explained in the common rule, 15 C.F.R. part 28 (55 FR 6736-6748, February 26, 1990). Each bidder under this Contract or subcontract is generally prohibited from using federal funds for lobbying the Executive or Legislative Branches of the Federal Government in connection with this EDA Award.

(b) **Contract Clause Threshold**: This Contract Clause regarding lobbying must be included in each bid for a contract or subcontract exceeding $100,000 of federal funds at any tier under the EDA Award.

(c) **Certification and Disclosure**: Each bidder of a contract or subcontract exceeding $100,000 of federal funds at any tier under the federal Award must file Form CD-512, *Certification Regarding Lobbying – Lower Tier Covered Transactions*, and, if applicable, Standard Form-LLL, *Disclosure of Lobbying Activities*, regarding the use of any nonfederal funds for lobbying. Certifications shall be retained by the Contractor or subcontractor at the next higher tier. All disclosure forms, however, shall be forwarded from tier to tier until received by the Recipient of the EDA Award, who shall forward all disclosure forms to EDA.

(d) **Continuing Disclosure Requirement**: Each Contractor or subcontractor that is subject to the Certification and Disclosure provision of this Contract Clause is required to file a disclosure form at the end of each calendar quarter in which there occurs any event that requires disclosure or that materially affects the accuracy of the information contained in any disclosure form previously filed by such person. Disclosure forms shall be forwarded from tier to tier until received by the Recipient of the EDA Award, who shall forward all disclosure forms to EDA.

(e) **Indian Tribes, Tribal Organizations, or Other Indian Organizations**: Indian tribes, tribal organizations, or any other Indian organizations, including Alaskan Native organizations, are excluded from the above lobbying restrictions and reporting requirements, but only with respect to expenditures that are by such tribes or organizations for lobbying activities permitted by other federal law. An Indian tribe or organization that is seeking an exclusion from Certification and Disclosure requirements must provide EDA with the citation of the provision or provisions of federal law upon which it relies to conduct lobbying activities that would otherwise be subject to the prohibitions in and to the Certification and Disclosure requirements of 31 U.S.C. § 1352, preferably through an attorney's opinion. Note, also, that a non-Indian subrecipient, contractor, or subcontractor under an award to an Indian tribe, for example, is subject to the restrictions and reporting requirements.

22. HISTORICAL AND ARCHAEOLOGICAL DATA PRESERVATION

The Contractor agrees to facilitate the preservation and enhancement of structures and objects of historical, architectural or archaeological significance and when such items are found and/or unearthed during the course of project construction. Any excavation by the Contractor that uncovers an historical or archaeological artifact shall be immediately reported to the Owner and a representative of EDA. Construction shall be temporarily halted pending the notification process and further directions issued by EDA after consultation with the State Historic

Preservation Officer (SHPO) for recovery of the items. *See* the National Historic Preservation Act of 1966 (54 U.S.C. § 300101 *et seq.*, formerly at 16 U.S.C. § 470 *et seq.*) and Executive Order No. 11593 of May 31, 1971.

23. **CLEAN AIR AND WATER**

Applicable to Contracts in Excess of $150,000

(a) **Definition.** "Facility" means any building, plant, installation, structure, mine, vessel, or other floating craft, location, or site of operations, owned, leased, or supervised by the Contractor or any subcontractor, used in the performance of the Contract or any subcontract. When a location or site of operations includes more than one building, plant, installation, or structure, the entire location or site shall be deemed a facility except when the Administrator, or a designee, of the United States Environmental Protection Agency (EPA) determines that independent facilities are collocated in one geographical area.

(b) In compliance with regulations issued by the EPA, 2 C.F.R. part 1532, pursuant to the Clean Air Act, as amended (42 U.S.C. § 7401 *et seq.*); the Federal Water Pollution Control Act, as amended (33 U.S.C. § 1251 *et seq.*); and Executive Order 11738, the Contractor agrees to:

(1) Not utilize any facility in the performance of this contract or any subcontract which is listed on the Excluded Parties List System, part of the System for Award Management (SAM), pursuant to 2 C.F.R. part 1532 for the duration of time that the facility remains on the list;

(2) Promptly notify the Owner if a facility the Contractor intends to use in the performance of this contract is on the Excluded Parties List System or the Contractor knows that it has been recommended to be placed on the List;

(3) Comply with all requirements of the Clean Air Act and the Federal Water Pollution Control Act, including the requirements of section 114 of the Clean Air Act and section 308 of the Federal Water Pollution Control Act, and all applicable clean air and clean water standards; and

(4) Include or cause to be included the provisions of this clause in every subcontract and take such action as EDA may direct as a means of enforcing such provisions.

24. **USE OF LEAD-BASED PAINTS ON RESIDENTIAL STRUCTURES**

(a) If the work under this Contract involves construction or rehabilitation of residential structures over $5,000, the Contractor shall comply with the Lead-based Paint Poisoning Prevention Act (42 U.S.C. § 4831). The Contractor shall assure that paint or other surface coatings used in a residential property does not contain lead equal to or in excess of 1.0 milligram per square centimeter or 0.5 percent by weight or 5,000 parts per million (ppm) by weight. For purposes of this section, "residential property" means a dwelling unit, common areas, building exterior surfaces, and any surrounding land, including outbuildings, fences and play equipment affixed to the land, belonging to an owner and available for use by residents, but not

including land used for agricultural, commercial, industrial or other non-residential purposes, and not including paint on the pavement of parking lots, garages, or roadways.

(b) As a condition to receiving assistance under PWEDA, recipients shall assure that the restriction against the use of lead-based paint is included in all contracts and subcontracts involving the use of federal funds.

25. ENERGY EFFICIENCY

The Contractor shall comply with all standards and policies relating to energy efficiency which are contained in the energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C. § 6201) for the State in which the Work under the Contract is performed.

26. ENVIRONMENTAL REQUIREMENTS

When constructing a Project involving trenching and/or other related earth excavations, the Contractor shall comply with the following environmental constraints:

(1) **Wetlands.** When disposing of excess, spoil, or other construction materials on public or private property, the Contractor shall not fill in or otherwise convert wetlands.

(2) **Floodplains.** When disposing of excess, spoil, or other construction materials on public or private property, the Contractor shall not fill in or otherwise convert 100 year floodplain areas delineated on the latest Federal Emergency Management Agency (FEMA) Floodplain Maps, or other appropriate maps, i.e., alluvial soils on Natural Resource Conservation Service (NRCS) Soil Survey Maps.

(3) **Endangered Species.** The Contractor shall comply with the Endangered Species Act, which provides for the protection of endangered and/or threatened species and critical habitat. Should any evidence of the presence of endangered and/or threatened species or their critical habitat be brought to the attention of the Contractor, the Contractor will immediately report this evidence to the Owner and a representative of EDA. Construction shall be temporarily halted pending the notification process and further directions issued by EDA after consultation with the U.S. Fish and Wildlife Service.

27. DEBARMENT, SUSPENSION, INELIGIBILITY, AND VOLUNTARY EXCLUSIONS

As required by Executive Orders 12549 and 12689, *Debarment and Suspension*, 2 C.F.R. Part 180 and implemented by the Department of Commerce at 2 C.F.R. part 1326, for prospective participants in lower tier covered transactions (except subcontracts for goods or services under the $25,000 small purchase threshold unless the subrecipient will have a critical influence on or substantive control over the award), the Contractor agrees that:

(1) By entering into this Contract, the Contractor and subcontractors certify, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared

ineligible, or voluntarily excluded from participation in this Contract by any federal department or agency.

(2) Where the Contractor or subcontractors are unable to certify to any of the statements in this certification, the Contractor or subcontractors shall attach an explanation to this bid.

See also 2 C.F.R. part 180 and 2 C.F.R. § 200.342.

28. EDA PROJECT SIGN

The Contractor shall supply, erect, and maintain in good condition a Project sign according to the specifications provided by EDA. To the extent practical, the sign should be a free standing sign. Project signs shall not be located on public highway rights-of-way. Location and height of signs will be coordinated with the local agency responsible for highway or street safety in the Project area, if any possibility exists for obstructing vehicular traffic line of sight. Whenever the EDA site sign specifications conflict with State law or local ordinances, the EDA Regional Director will permit such conflicting specifications to be modified so as to comply with State law or local ordinance.

29. BUY AMERICA

To the greatest extent practicable, contractors are encouraged to purchase American-made equipment and products with funding provided under EDA financial assistance awards.

GENERAL CONDITIONS

1. DEFINITIONS

   A. The "Contract Documents" consist of the Advertisement for Bids, the Information for Bidders, the Proposal Form, the General Conditions, the Agreement of Contract, the Contract Bond, the Specifications and the Approved Plans, including all modifications to any of the above documents incorporated therein before their execution. All of these form the Contract.

   B. The "Owner" is understood to mean the individual for whom the work is being done.

   C. The "Engineer" is understood to mean the Registered Professional Engineer, registered in Arkansas, employed by the Owner to carry out the conditions of this contract. The Engineer is the duly authorized representative of the Owner. Where the term "Architect/Engineer" is used it is intended to mean "Engineer" and does not mean to imply the Engineer is an Architect.

   D. The "Work Order" or "Notice to Proceed" is the Contractor's authority to begin the work. It shall designate the day on which working time shall commence. The work order shall be deemed to have been delivered when mail to the Contractor at the address given in the Proposal. When a Contractor begins work before a work order is issued, his time begins on the day he commences.

   E. The term "Subcontractor," as employed herein, includes only those having direct contact with the Contractor and it includes one who furnished material worked to a special design according to the plans or specifications, but does not include one who merely furnishes material so worked.

   F. The term "Work," includes labor or material or both, equipment, or other facilities necessary to complete the work.

2. CONTRACTOR'S UNDERSTANDING OF CONDITIONS OF WORK

   It is understood and agreed that the Contractor has, by careful examination, satisfied himself as to the nature and location of the work, the conformation of the ground, the character, quality and quantity of materials to be encountered, the character of equipment and facilities needed preliminary to and during the prosecution of the work, the general and local conditions, and all other matters which can in any way affect the work under this contract. No verbal agreement or conversation with any officer, agent or employee of the Owner, either before or after the execution of this Contract, shall affect or modify any of the terms or obligations herein contained.

3. MATERIALS, APPLIANCES, EMPLOYEES

Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labor, water, tools, equipment, light, power and 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 of good quality. The Contractor shall, if required, furnish satisfactory evidence, such as test reports, as to the kind and quality of materials.

The Contractor shall at all times enforce strict discipline and good order among his employees, and shall not employ on the work any unfit person or anyone not skilled in the work assigned to him.

4. ROYALTIES AND PATENTS

The Contractor shall pay all royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof, except that the Owner shall be responsible when a particular process or product of a particular manufacturer is specified, but if the Contractor has information that the process or article specified is an infringement of a patent, he shall be responsible for such loss unless he promptly gives such information to the Engineer in writing.

5. SURVEYS, PERMITS AND REGULATIONS

The Engineer will provide the Contractor with the bench mark and alignment as may be necessary for the Contractor to layout the work correctly. The finished work must conform to the bench marks furnished by the Engineer.

The Owner shall furnish all right-of-way, easements and sites for the construction.

The Contractor shall furnish all permits and licenses required by law.

The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn and specified. If the Contractor observes that the plans and specifications are at variance therewith, he shall promptly notify the Engineer in writing and proper changes or adjustments shall be made in accordance with the contract provisions for changes in the work.

6. PROTECTION OF WORK AND PROPERTY

The Contractor shall continuously maintain adequate protection of

all his work from damages and shall protect the Owner's property from injury of loss arising in connection with the work. He shall make good any such damage, injury or loss, except such as may be due directly to errors in the Contract Documents or caused by agents or employees of the Owner. He shall protect all private property adjacent to the work. He shall provide and maintain all passage ways, guard fences, lights and other facilities for protection required by law or local conditions.

The Contractor is hereby authorized to act in an emergency affecting loss of life or property without special authorization from the Engineer. Any compensation claimed by the Contractor on account of emergency work shall be determined by agreement or arbitration.

7. INSPECTION OF WORK AND TESTING OF MATERIALS

Inspection shall be provided by a representative of Miller-Newell Engineers, Ltd. The Engineer, and his representatives, shall at all times have access to the work wherever it is in preparation or progress and the Contractor shall provide proper facilities for such access and inspection.

The Contractor shall furnish to the Engineer certified laboratory testing on all material to be used on the project.

No work or preparation for work shall be covered up without consent of the Engineer. If such work is covered up, without consent of the Engineer, the Contractor, if required by the Engineer, shall uncover such work for examination and replace it at his own expense.

Re-examination of approved work may be ordered by the Engineer and if so ordered, the work must be uncovered by the Contractor. If such work is found to be in accordance with the Contract Documents, the Owner shall pay the cost of the reexamination and replacement. If such work is found not to be in accordance with the Contract Documents, the Contractor shall pay such cost, unless he shall show that the defect in the work was caused by another Contractor and, in that event, the Owner shall pay such cost.

8. SUPERINTENDENCE AND SUPERVISION

The Contractor shall keep on his work during its progress a competent superintendent and any necessary assistants, all satisfactory to the Engineer. The Superintendent shall not be changed without the consent of the Engineer, unless he proves to be unsatisfactory to the Contractor and ceases to be in his employ. The Superintendent shall represent the Contractor in his absence and instructions and directions given to him shall be binding on the Contractor. Important decisions shall be confirmed to the Contractor in writing.

If the Contractor, in the course of the work, finds any discrepancy between the plans and the physical conditions of the locality, or any errors of omissions in the drawings or in the layout as given by prints and instructions, it shall be his duty to immediately inform the Engineer, in writing, and the Engineer shall promptly verify the same. Any work done after such discovery, until authorized, will be done at the Contractor's risk.

9. CHANGES IN THE WORK

The Owner, without invalidating the Contract, may order extra work or make changes by altering, adding or deducting from the work, the Contract Sum being adjusted accordingly. All such work shall be executed under the conditions of the original contract, except that any claim for extension in time caused thereby shall be adjusted at the time of ordering such change.

In giving instructions, the Engineer shall have the authority to make minor changes in the work, not involving extra cost, and not inconsistent with the purpose of the work, but otherwise, except in an emergency endangering life or property, no extra work or change shall be made unless in pursuance of a written order by the Engineer, and no claim for an addition to the Contract sum shall be valid unless so ordered.

The value of any such extra work or changes shall be determined in one or more of the following ways:

A. By estimate and acceptance in a lump sum;

B. By unit prices named in the Contract or subsequently agreed upon;

C. By cost and percentage or by cost and a fixed fee.

If none of the above methods is agreed upon, the Contractor, provided he receives an order as above, shall proceed with the work. He shall keep an accurate account of the cost of labor and materials, pending final determination of the value of the work.

10. CLAIMS FOR EXTRA COST

If the Contractor claims that any instructions in the plans or otherwise involves any extra cost under this contract, he shall give the Engineer written notice thereof within a reasonable time after the receipt of such instructions and, in any event, before proceeding to execute the work, except in an emergency endangering life or property. No such claims shall be valid unless so made.

11. DEDUCTIONS FOR UNCORRECTED WORK

If the Engineer deems it inexpedient to correct work injured or

not done in accordance with the Contract, an equitable deduction from the Contract price shall be made therefore.

12. DELAYS AND EXTENSION OF TIME

If the Contractor be delayed at any time in the progress of the work by an act or neglect of the Owner or of his employees or by any other contractor employed by the Owner or by changes ordered in the work or by strikes, lockouts, fire, unusual delay in transportation, unavoidable casualties or any causes by the Engineer pending arbitration, or by any cause which the Engineer shall decide justifies the delay, then the time of completion shall be extended for such reasonable time as the Engineer may decide.

No such extension shall be made for delay occurring more than seven days before claim therefor is made in writing to the Engineer. In the case of the continuing cause of delay, only one claim is necessary.

This article does not exclude recovery of damages for delay by either party under provisions of the Contract Documents.

13. CORRECTION OF WORK BEFORE FINAL PAYMENT

The Contractor shall promptly remove from the premises all materials condemned by the Engineer as failing to conform to the Contract, whether incorporated in the work, or not, and the Contractor shall promptly replace and re-execute his own work in accordance with the Contract and without expense to the Owner and shall bear all the expense of making good all work of other Contractors destroyed or damaged by such removal or replacement.

If the Contractor does not remove such condemned work and materials within a reasonable time, fixed by written notice, the Owner may remove them and may store the materials at the expense of the Contractor.

14. SUSPENSION OF WORK

The Owner may at any time suspend work, or any part thereof, by giving five days written notice to the Contractor. The work shall be resumed by the Contractor within ten days after the date fixed by the written notice from the Owner to the Contractor to do so. The Owner shall reimburse the Contractor for expense incurred by the Contractor in connection with the work under this contract as a result of such suspension.

But, if the work or any part thereof shall be stopped by the notice in writing aforesaid, and if the Owner does not give in writing notice to the Contractor to resume the work at a date within thirty days of the date fixed in the written notice to suspend, then the Contractor may abandon that portion of the work

so suspended and he will be entitled to the estimates and payment for all work done on the portions so abandoned.

15. THE OWNER'S RIGHT TO DO WORK

If the Contractor should neglect to prosecute the work or fail to perform any of the provisions of this Contract, the Owner, after three days written notice to the Contractor, may, without prejudice to any other remedy he may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor.

16. THE OWNER RIGHT TO TERMINATE THE CONTRACT

If the Contractor should be adjudged a bankrupt, or he should make a general assigned for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, or if he should persistently or repeatedly refuse or fail to make prompt payment to his subcontractors or for material or labor, or if he should persistently or repeatedly refuse or should fail, except in cases for which time is provided, to supply enough skilled workmen or proper materials, or if he should persistently disregard laws, ordinances or the instructions of the Engineer, or otherwise be guilty of a substantial violation of any provision of the contract, then the Owner, upon the certification of the Engineer that sufficient cause exists to justify such action, may without prejudice to any other right or remedy and after giving the Contractor seven (7) days notice in writing, terminate the employment of the Contractor and take possession of the premises and all materials, tools and appliances thereon and finish the work by whatever method he may deem expedient. In such cases, the Contractor will not be entitled to any further payment until the work is finished. If the unpaid balance of the contract price shall exceed the expense of finishing the work, including compensation for additional managerial and administrative services, such excess shall be paid to the Contractor. If such expense shall exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The expense incurred by the Owner as herein provided, and the damage incurred through the Contractor's default, shall be certified by the Engineer.

17. THE CONTRACTOR'S RIGHT TO TERMINATE THE CONTRACT

If the work should be stopped under the order of any court, or other public authority, for a period of three months, through no act or fault of the Contractor or of anyone employed by him, or if the Engineer should fail to issue any estimate for payment seven days after it is due, or if the Owner should fail to pay the Contractor within seven (7) days of its maturity and presentation, any sum certified by the Engineer or awarded by arbitrators, then the Contractor may, upon seven (7) days written notice to the Owner and the Engineer, stop the work or terminate this contract and recover from the Owner payments for all work executed and any

loss sustained upon any plant or materials and reasonable profit and damages.

18. PAYMENTS WITHHELD

The Owner may withhold or, on account of subsequently discovered evidence, nullify whole or a part of any certificate to such extent as may be necessary to protect himself from loss on account of:

A. Defective work not remedied;

B. Claims or reasonable evidence that claims will be filed;

C. Failure of the Contractor to pay all bills properly;

D. A reasonable doubt that the Contractor can finish work on time; or

E. Damage to another contractor.

When the above grounds are removed, payment shall be made for the amounts withheld because of them.

19. CONTRACTOR'S LIABILITY INSURANCE

The Contractor shall maintain such insurance as will protect him for claims under the Worker's Compensation Act and from other claims for damages for personal injury, including death, which may arise from operations under this Contract, whether such operations be by himself or by any subcontractor or anyone directly or indirectly employed by either of them. Certificates of insurance for liability and property damage shall be filed with the Engineer before the work is started and shall be subject to his approval for adequacy of protection.

As required above, the Contractor's Public Liability Insurance and Vehicle Liability Insurance shall be in an amount not less than $1,000,000.00 for injuries, including accidental death, to any one person, and subject to the same limit for each person, and in an amount not less than $1,000,000.00 on account of one accident, and Contractor's property damage insurance in an amount not less than $1,000,000.00.

The insurance certificate must contain the following verbiage: **"The insurance covered by this certificate will not be canceled or materially altered except after ten (10) days prior written notice has been received by the Owner."**

The Contractor shall either (1) require each of his subcontractors to procure and to maintain during the life of his subcontract, Subcontractor's Public Liability and Property Damage of the type

and in the same amounts as specified in the preceding paragraphs, or (2) insure the activities of his subcontractors in his own policy.

20. INDEMNITY

The Contractor shall indemnify and save harmless the Owner from and against all losses and all claims, demands, suits, actions, recoveries and judgments of every nature and description brought or recovered against him by reason of any act or omission of the said Contractor, his agents or employees, in the execution of the work or in the guarding of it.

The Contractor shall, and is hereby authorized to, maintain and pay for such insurance, issued in the name of the Owner, as will protect the Owner from his contingent liability under this Contract, and the Owner's right to enforce against the Contractor any provisions of this article shall be contingent upon the full compliance by the Owner with terms of such insurance or policies, a copy of which shall be deposited with the Owner.

21. FIRE INSURANCE AND BUILDERS RISK INSURANCE

The Contractor shall secure in the name of the Owner, policies for fire insurance and builders risk insurance in the amount, form and from companies satisfactory to the Engineer, upon such structures and materials as shall be specified by the latter, payable to the Owner for the benefit of the Contractor or the Owner as the Engineer shall find their interest to appear.

22. GUARANTY BONDS

The Contractor shall furnish the Owner, where stipulated in the advertisement for bids, with a performance bond covering the faithful performance on the contract and payment of all obligations arising thereunder, in such form as the Owner may prescribe and with surety company or companies as the Owner may approve.

23. DAMAGES

Any claims for damages arising under this Contract 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 as expressly stipulated by agreement or arbitration.

24. LIENS

Neither the final payment nor any part of the retained percentage shall become due until the Contractor, if required, shall deliver to the Owner a complete release of all liens arising out of this contract, or receipts in full in lieu thereof and, if required in either case, an affidavit that so far as he had knowledge or information, the releases and receipts include all the labor and material for which the lien could be filed; but the Contractor may, if any subcontractor refuses to furnish a release or receipt in full, furnish a bond satisfactory to the Engineer, to indemnify

the Owner against any lien. If any lien remains unsatisfied after all payments are made, the Contractor shall refund to the Owner all moneys that the latter may be compelled to pay in discharging such lien, including all costs and a reasonable attorney's fee.

25. ASSIGNMENT

Neither party to the contract shall assign the contract or sublet it as a whole without the written consent of the other, nor shall the Contractor assign any moneys due or to become due to him hereunder without the previous written consent of the Engineer.

26. SEPARATE CONTRACTS

The Owner reserves the right to let other contracts in connection with this work. 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 work with theirs.

27. SUBCONTRACTS

The Contractor shall, as soon as practicable after the signature of the contract, notify the Engineer in writing the names of the subcontractors proposed for the work and shall not employ any of the subcontractors that the Engineer may object to as incompetent or unfit.

The Contractor agrees that he is fully responsible to the Owner for all work or omissions of his subcontractors, either directly or indirectly employed by him. Nothing in this contract shall create any contractual relations between the subcontractor or the Owner.

28. POINTS AND INSTRUCTIONS

The Contractor shall carefully preserve bench marks, reference points and stakes and, in case of willful or careless destruction, he shall be charged with the resulting expense and shall be responsible for any mistakes that may be caused by their unnecessary loss or disturbance.

29. ENGINEER'S STATUS

The Engineer shall observe the execution of the work. He has the authority to stop the work whenever such stoppage may be necessary to insure the proper execution of the Contract. He shall also have the authority to reject all work and materials which do not conform to the contract, to direct application of the forces to any part of the work, as in his judgment is required, and to order the force increased or diminished, and to decide questions which arise in the execution of the work.

30. ENGINEER'S DECISIONS

The Engineer shall, within a reasonable time after their presentation to him, make decisions in writing on all claims of the

Owner or Contractor and on other matters relating to the execution and progress of the work or the interpretation of the Contract Documents.

All such decisions of the Engineer shall be final except in cases where time and/or financial considerations are involved, which, if no agreement in regard thereto is reached, shall be subject to arbitration.

31. LANDS FOR WORK

The Owner shall provide the lands upon which the work under this Contract is to be done, except that the Contractor shall provide land required for the erection of temporary construction facilities and storage of his materials, together with right of access to same.

32. CLEANING UP

The Contractor, as directed by the Engineer, shall remove from the Owner's property and from all public and private property, at his own expense, all temporary structures and construction facilities, rubbish and waste materials resulting from his operations.

33. PAYMENTS TO CONTRACTOR

At least ten (10) days before each progress payment falls due (but not more often than once a month), the Contractor will submit to the Engineer a partial payment estimate filled out and signed by the Contractor covering the work performed during the period covered by the partial payment estimate and supported by such data as the Engineer may reasonably require. If payment is requested on the basis of materials and equipment not incorporated in the work but delivered and suitably stored at or near the site, the partial payment estimate shall also be accompanied by such supporting data, satisfactory to the Owner, as will establish the Owner's title to the material and equipment and protect his interest therein, including applicable insurance. The Engineer will, within ten (10) days after receipt of each partial payment estimate, either indicate in writing his approval of payment and present the partial payment estimate to the Owner, or return the partial payment estimate to the Contractor indicating in writing his reasons for refusing to approve payment. In the latter case, the Contractor may make the necessary corrections and resubmit the partial payment estimate. The Owner will, within ten (10) days of presentation to him of an approved partial payment estimate, pay the Contractor a progress payment on the basis of the approved partial payment estimate. The Owner shall retain five (5) percent of the amount of each payment until final completion and acceptance of all work covered by the Contract Documents. When the work is substantially complete (operational or beneficial occupancy), the retained amount may be further reduced below five (5) percent to only that amount necessary to assure completion. On completion and acceptance of a part of the work on which the price is stated separately in the Contract Documents, payment may be made in full, including retained percentages, less authorized

deductions.

The request for payment may also include an allowance for the cost of such major materials and equipment which are suitably stored either at or near the site.

34. TIME OF COMPLETION - LIQUIDATED DAMAGES

The work shall be commenced at the time stipulated in the Notice to Proceed to the Contractor. The project shall be completed within **One Hundred Eighty (180)** consecutive calendar days thereafter.

As actual damages for any delay in completion are impossible to determine, the Contractor and his sureties shall be liable for and shall pay to the Owner the sum of $500 per day as fixed and agreed liquidated damages for each calendar day of delay until the work is completed and accepted.

35. SAFETY STANDARDS AND ACCIDENT PREVENTION

With respect to all work performed under this Contract, the Contractor shall:

A. Comply with the safety standards provisions of applicable laws, building and construction codes, and the Manual of Accident Prevention in Construction: published by the Associated General Contractors of America, the requirements of the Occupational Safety and Health Act of 1970 (Public Law 91-596 and the requirement of Title 29 of the Code of Federal Regulations, Section 1518 as published in the Federal Register, Volume 36, No. 75, Saturday, April 17, 1971), and specifically OSHA's Standard for Excavation and Trenches Safety Systems, 29 CFR Part 1926, Subpart P.

B. Exercise every precaution at all times for the prevention of accidents and the protection of persons (including employees) and property.

C. Maintain at his office or other well-known place at the job site, all articles necessary for giving first aid to the injured and shall make standing arrangements for the immediate removal to a hospital or doctor's care of persons (including employees) who may be injured on the job site.

SUPPLEMENTAL GENERAL CONDITIONS

REFERENCE DOCUMENT: These Supplemental General Conditions are included as a part of the Contract Documents for this project to supplement and/or amend the standard provisions of the General Conditions.

36. EXECUTION, CORRELATION, INTENT AND INTERPRETATIONS

Section 2 of the General Conditions is hereby supplemented as follows: The Drawings and Specifications are intended to agree and to be mutually explanatory. Should any discrepancy exist and not be clarified by addendum prior to bid opening, it will be presumed that the Contractor has based his proposal on the more expensive of the conflicting requirements. Before proceeding with any part of the work, Contractor shall report any such discrepancy to the Engineer, who shall rule on which of the conflicting requirements is to be followed. If the least expensive is directed, the Contractor shall refund to the Owner the difference in net cost.

Explanatory notes on Drawings shall be preferred to conflicting drawn out indications, if any. Large scale details will be preferred to small scale drawings, and figured dimensions to scale measurements. Where figures are lacking, scale measurements may be followed, but in all cases the measurements are to be checked from work in place, and should variations be found, such must be referred to the Engineer for instructions. Where on any of the Drawings a portion of work is drawn out and remainder is indicated in outline, the parts drawn out shall apply also to all other like portions of the work. Where the word "similar" occurs on Drawings, it shall be interpreted in its general sense and not as meaning identical, and all details shall be worked out in relationship to their location and their connection with other parts of the work.

37. PROTECTION AGAINST THEFT

Contractor shall take such precautions as he deems necessary to protect himself and the Owner from loss by theft. Contractor shall be responsible for the recovery or replacement of all materials or equipment lost by reason of theft during the entire course of the work, even though payment for same may have been received.

38. TOILET FACILITIES

General Contractor shall furnish, install and maintain ample sanitary facilities for workmen, including those of other contractors. Toilets shall be placed where indicated on the site as soon as work begins. They shall be housed in temporary enclosures and shall be maintained in a sanitary condition. They shall be removed from the premises upon completion of the work. They shall comply with all regulations of governmental agencies having jurisdiction.

39. GUARANTY

The Contractor shall guarantee all materials and equipment furnished and work performed for a period of one (1) year from the date of substantial completion. The Contractor warrants and guarantees for a period of one (1) year from the date of substantial completion of the system that the completed system is free from all defects due to faulty materials or workmanship and the Contractor shall promptly make such corrections as may be necessary by reason of such defects, including the repairs of any damage to other parts of the system resulting from such defects. The Owner will give notice of observed defects with reasonable promptness. In the event that the Contractor should fail to make such repairs, adjustments or other work that may be made necessary by such defects, the Owner may do so and charge the Contractor the cost thereby incurred. The Performance Bond shall remain in full force and effect through the guarantee period.

40. Any proposal for substitution shall be submitted within thirty (30) days after the award of the contract. Substitutions for materials or methods as specified may only be incorporated into the work after a written order from the Architect has been obtained. The offering of a substitute shall be construed as including necessary modifications to design, required appurtenances, etc., for proper functioning of said substitution. In no case will an article other than as specified be considered if brought on work without previous authority. Should a substitution be accepted and should the substitute material prove defective or otherwise unsatisfactory for the service intended, and within the warranty period, the Contractor shall replace this material or equipment with that originally specified, without cost to the Owner.

"General Decision Number: AR20250085 01/03/2025

Superseded General Decision Number: AR20240085

State: Arkansas

Construction Type: Residential

County: Jackson County in Arkansas.

RESIDENTIAL CONSTRUCTION PROJECTS (consisting of single family homes and apartments up to and including 4 stories).

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

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $17.75 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2025.

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

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

Modification Number	Publication Date
0	01/03/2025

SUAR2008-196 11/28/2008

	Rates	Fringes
BRICKLAYER	$ 13.41 **	0.00
CARPENTER, Includes Cabinet Installation, and Form Work (Excludes Drywall Hanging)	$ 11.37 **	0.00
CEMENT MASON/CONCRETE FINISHER	$ 13.00 **	0.00
DRYWALL FINISHER/TAPER	$ 12.00 **	0.00
DRYWALL HANGER	$ 12.00 **	0.00
ELECTRICIAN	$ 15.78 **	0.00
FENCE ERECTOR	$ 10.00 **	0.00
HVAC MECHANIC (Installation of HVAC Unit Only, Excludes Installation of HVAC Pipe and Duct)	$ 10.00 **	0.00
INSTALLER - SIDING	$ 10.75 **	0.00
LABORER: Common or General	$ 7.50 **	0.00
LABORER: Mason Tender - Brick	$ 8.38 **	0.00
LABORER: Mason Tender - Cement/Concrete	$ 8.07 **	0.00
OPERATOR: Backhoe/Excavator/Trackhoe	$ 10.50 **	0.00
PAINTER: Brush and Spray, Excludes Drywall Finishing/Taping	$ 10.75 **	0.00
PLUMBER	$ 13.71 **	0.00
ROOFER	$ 11.72 **	0.00
SHEET METAL WORKER	$ 10.54 **	0.00
TILE SETTER	$ 8.00 **	0.00
TRUCK DRIVER: Dump Truck	$ 9.15 **	0.00

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

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 ($17.75) or 13658 ($13.30). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

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

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

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number

used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

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

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys

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

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

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

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

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

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

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

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

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END OF GENERAL DECISION"

Certificate of Owner's Attorney

I, the undersigned, _____, the duly authorized and acting legal representative of City of Newport, Arkansas, do hereby certify as follows:

I have examined the attached contract(s) and surety bonds and the manner of execution thereof, and I am of the opinion that each of the aforesaid agreements has been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreements on behalf of the respective parties named thereon; and that the foregoing agreements constitute valid and legally binding obligations upon the parties executing the same in accordance with terms, conditions and provisions thereof.

_____

Attorney Signature

_____

Date

EDA PROJECT SIGN

The Contractor shall supply, erect, and maintain in good condition a project sign according to the specifications set forth below:

EDA SITE SIGN SPECIFICATIONS

Size: 4' x 8' x ¾"

Materials: Exterior grade/MDO plywood (APA rating A-B)

Supports: 4" x 4" x 12' posts with 2" x 4" cross branching

Erection: Posts shall be set a minimum of three feet deep in concrete footings that are at least 12" in diameter.

Paint: Outdoor enamel

Colors: Jet Black, Blue (PMS300), and Gold (PMS7406). Specifically, on white background the following will be placed:

The U. S. Department of Commerce seal in blue, black, and gold;

"EDA" in blue;

"U. S. DEPARTMENT OF COMMERCE ECONOMIC DEVELOPMENT

ADMINISTRATION" in black;

"In partnership with" in blue;

(Actual name of the) "EDA Grant Recipient" in black;

Lettering: Specific fonts are named below; positioning will be as shown on the attached illustration.

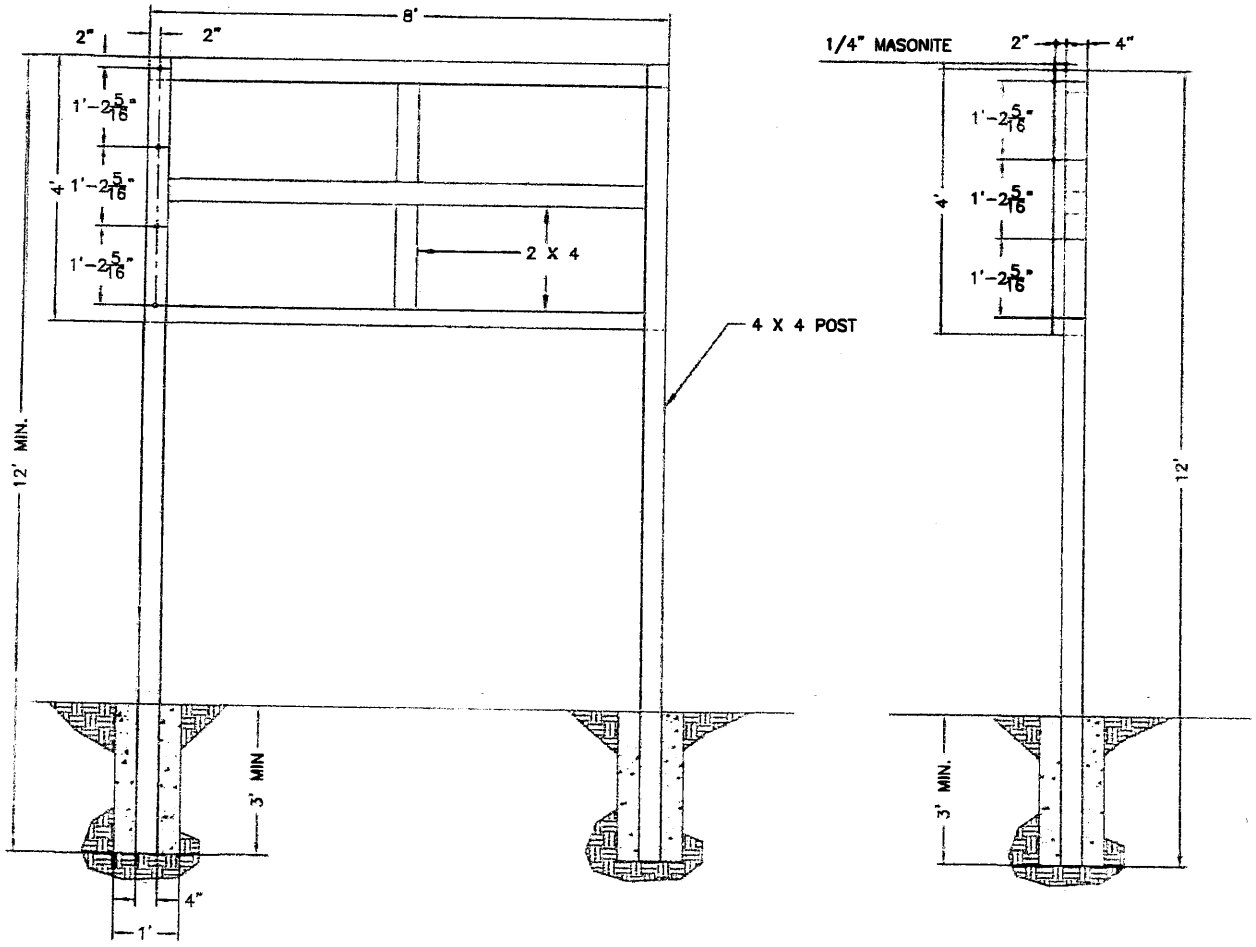
"U. S. DEPARTMENT OF COMMERCE ECONOMIC DEVELOPMENT ADMINISTRATION" use Bank Gothic Medium - BANK GOTHIC MED

"In partnership with" use Univers™ 55 Oblique - *Univers 55*

(Name of) "EDA Grant Recipient" use Univers™ Extra Black 85 **Univers 85**

Project signs will not be erected on public highway rights-of-way. If any possibility exists for obstruction to traffic line of sight, the location and height of the sign will be coordinated with the agency responsible for highway or street safety in the area.

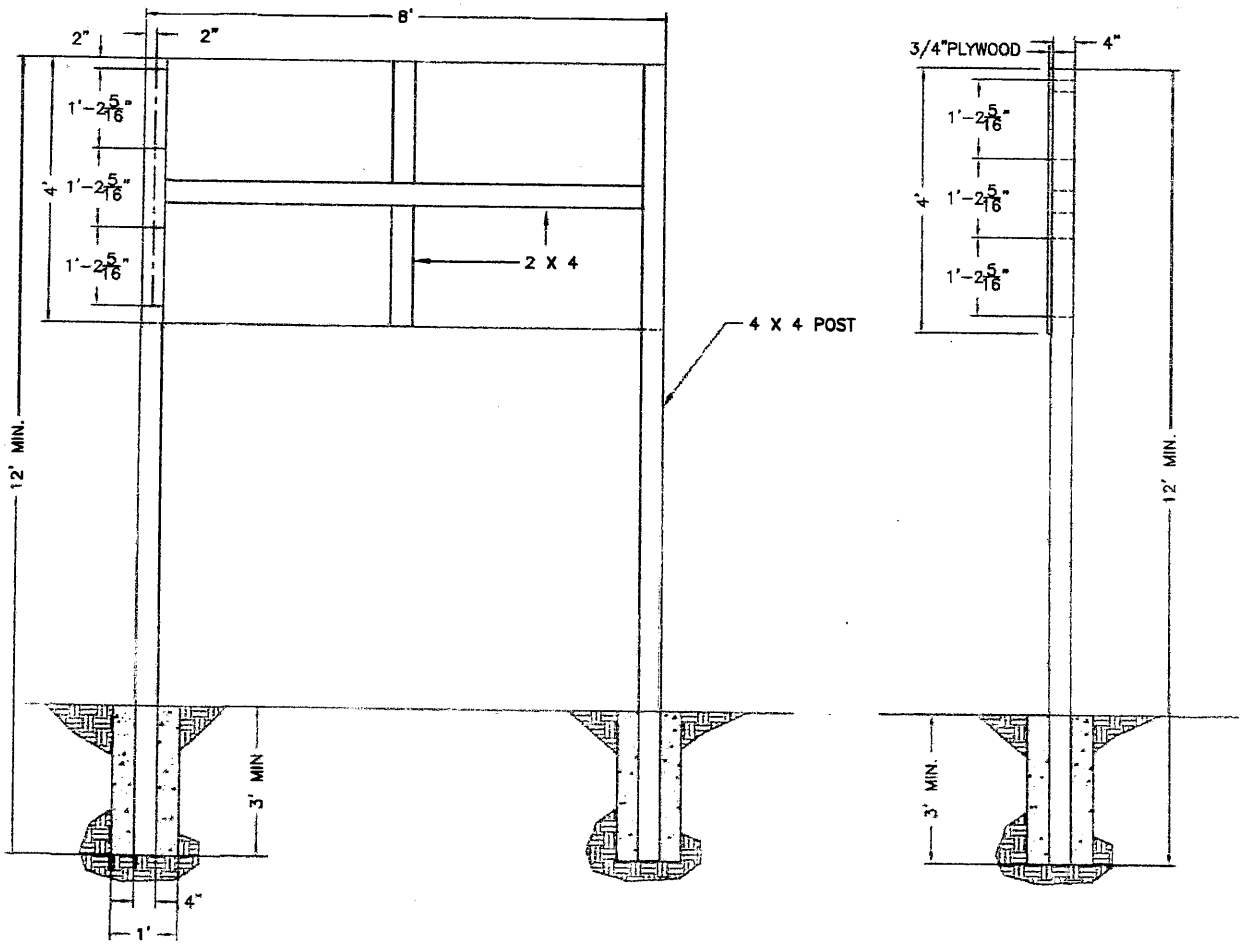
The EDA Regional Director may permit modifications to these specifications if they conflict with state law or local ordinances.



SIGN A
MASONITE SIGN

SCALE: 3/8" = 1'

PROJECT - SIGN A
ECONOMIC DEVELOPMENT ADMINISTRATION



SIGN B
PLYWOOD SIGN
SCALE: 3/8" = 1'

PROJECT – SIGN B
ECONOMIC DEVELOPMENT ADMINISTRATION

EDA

U.S. DEPARTMENT OF COMMERCE ECONOMIC DEVELOPMENT ADMINISTRATION

In partnership with

<EDA Grant Recipient Name>

64


2.25"
1.75"
13.5"
1.75"
DEPARTMENT OF COMMERCE
UNITED STATES OF AMERICA
EDA
10"
Black
Blue= PMS300
Gold= PMS7406
2.0"
1.5"
U.S. DEPARTMENT OF COMMERCE ECONOMIC DEVELOPMENT ADMINISTRATION
4.0"
48"
3.0"
In partnership with
65
3.0"
3.75"
<EDA Grant Recipient Name>
15.0"
96"

2.25"

13.5"

1.75"

1.75"

EDA

10"

Black
Blue= PMS300
Gold= PMS7406

2.0"

1.5"

4.0"

3.0"

3.0"

3.75"

99

48"

U.S. Department of Commerce Economic Development Administration

In partnership with

<EDA Grant Recipient Name>

15.0"

96"

EDA

U.S. DEPARTMENT OF COMMERCE ECONOMIC DEVELOPMENT ADMINISTRATION

In partnership with

<EDA Grant Recipient Name>

SECTION 01 21 00 – ALLOWANCES

PART 1 – GENERAL

1.1 DESCRIPTION

1.1.1 Work Included: This Section lists the Allowance for the project.

1.1.2 Related Work Described Elsewhere:

(1)	Luxury Vinyl Tile	Section 09 35 00
(2)	Carpeting	Section 09 68 00

PART TWO – PRODUCTS

2.1 ALLOWANCE NO. 1 – LUXURY VINYL TILE

2.1.1 Contractor to allow $5.00 per square foot for materials.

2.1.2 Labor, installation, taxes, insurance, overhead, and profit shall be in Base Proposal.

2.2 ALLOWANCE NO. 2 – CARPETING

2.2.1 Contractor to allow $22.00 per square yard for materials.

2.2.2 Labor, installation, taxes, insurance, overhead, and profit shall be in Base Proposal.

PART THREE – EXECUTION

3.1 Execute allowances as indicated herein.

END OF SECTION 01 21 00

SECTION 01 33 00 – SUBMITTALS

PART 1 – GENERAL

1.1 CONSTRUCTION SCHEDULE

1.1.1 A proposed Construction Progress Schedule shall be submitted to the Architect within ten (10) days of the Contractor's receipt of Notice to Proceed for the Architect's approval. The schedule shall indicate estimated start and finish dates for activities to ensure substantial completion by the date stipulated.

1.1.2 Contractor Pay Applications shall be submitted on a monthly basis and shall be correlated in sufficient itemized detail with the Construction Progress Schedule so as to provide the Architect with enough information to verify percentages of completion and the resulting amount of money due.

1.1.3 The Planned Progress Schedule shall be revised at the Architect's request should the planned schedule prove significantly unrealistic to the actual overall progress.

PART 2 – PRODUCTS

2.1 SHOP DRAWINGS, LAYOUT DRAWINGS, MATERIAL BROCHURES, AND SAMPLES

2.1.1 Shop Drawings, diagrams, descriptive data, and field drawings as required, shall be submitted to the Architect in the form specified. These submissions shall bear written certification to the effect that Contractor has carefully examined them and found them to be in accordance with specifications and to be dimensionally correct with reference to available space and to work of related trades.

2.1.2 Submit to the Architect for approval a digital copy in pdf format of each item or shop drawing (except samples) stated in the various divisions. Submission via email is preferred. The Contractor shall be responsible for printing the required approved hard copies to be kept on site throughout the project.

2.1.3 Refer to individual Sections for specific submittal requests.

2.1.4 Submittals shall contain the Contractor's signature or stamp confirming their review of the submittal, verification of products, field measurements and construction criteria, and coordination of the information with the requirements of the work and the Contract Documents.

PART 3 – EXECUTION

3.1 MAINTENANCE AND OPERATING INSTRUCTIONS

3.1.1 Refer to Section 01 70 00, Project Closeout.

END OF SECTION 01 33 00

SECTION 01 60 00 – PRODUCT REQUIREMENTS

PART 1 – GENERAL

1.1 DESCRIPTION

1.1.1 Equal Substitution:

(1) Where a definite material is specified, it is not the intent to discriminate against any "approved equal" product of another manufacturer. It is the intent to set a minimum standard.

(2) Open competition is expected, but in all cases, complete data must be submitted for comparison and test when required by the Architect or Engineer.

(3) Contractor is fully responsible for verifying compatibility with existing systems within the project prior to bidding. If a contract is awarded based on substitution and it is discovered during the submittal process that the substitution is incompatible, it is the Contractor's responsibility to provide a product that is deemed acceptable to the Architect or Engineer of record.

(4) The specifications manual defines the minimum standard for a product. No submittal for substitution shall be reviewed or approved prior to bidding.

END OF SECTION 01 60 00

SECTION 01 70 00 - PROJECT CLOSEOUT

PART 1 – GENERAL

1.1 DESCRIPTION

1.1.1 Work Included: Project closeout for this work shall include, but is not necessarily limited to:

(1) Final Clean Up
(2) Guarantees and Affidavits:
- General Contractor One Year Warranty
- Release of Liens
- Consent of Surety

(3) Maintenance and Operating Instructions
(4) Final Inspections as applicable (TAB, Termite, etc.)
(5) Project Record Drawings (As-Builts)
(6) List of subcontractors with contact information
(7) Digital copy of all the above listed closeout documents

1.2 SUBMITTALS: Unless otherwise noted, the following shall be submitted on electronic media only (cd or flash drives are acceptable):

1.2.1 Guarantees and Affidavits:

(1) In addition to digital copy, one hard copy of each required document shall be provided to the Architect.

1.2.2 Project Record Drawings:

(1) General Contractor shall maintain one complete set of Record Drawings on-site in good condition on which all changes have been clearly and accurately recorded in RED pen or pencil as the job progresses. These drawings shall not be used for any other purpose than recording construction information. At project completion, before final acceptance, the set shall be scanned and included on the chosen electronic media.

1.2.3 Maintenance and Operating Instructions:

(1) Required Information: Contractor shall furnish to Architect one hard copy in addition to the digital copy of the Heating, Ventilating and Air Conditioning equipment operation manuals. Each manual shall clearly identify its location on the project. These shall all be neatly and systematically assembled in a heavy-duty plastic notebook, properly indexed and identified.

PART 2 – PRODUCTS

2.1 SUBMITTALS

2.1.1 Refer to Submittals, paragraph 1.2.

PART 3 – EXECUTION

3.1 FINAL CLEAN UP

3.1.1 Immediately prior to final inspection and acceptance, remove protective covers or markings and complete surface treatments, washing or polishing as specified, leaving all interior surfaces, including projections, in such condition that all areas can be occupied and used without further cleaning. This includes all HVAC grilles, etc., provided under the Mechanical Work and all Electrical Work.

3.1.2 Remove all tools, scaffolding, trash, surplus materials, etc., from the Project Site.

END OF SECTION 01 70 00

SECTION 01 74 00 – CLEANING

PART 1 – GENERAL

1.1 DESCRIPTION

1.1.1 Work Included: Throughout all phases and items of the construction period, maintain the building and site in a standard of cleanliness as described in this Section.

1.1.2 Related Work Described Elsewhere:
(1) In addition to standards described in this Section, comply with all requirements for cleaning up as described in various other Sections of these Specifications.

1.2 QUALITY ASSURANCE

1.2.1 Inspection: The General Contractor shall conduct daily inspections, and more often if necessary, to verify that requirements of cleanliness are being met.

1.2.2 Codes and Standards: In addition to the standards described in this Section, comply with all pertinent requirements of Governmental agencies having jurisdiction.

1.2.3 Disposal of volatile fluid wastes (such as mineral spirits, oil, or paint thinner) in storm or sanitary sewer systems or into streams or waterways is not permitted.

PART 2 – PRODUCTS

2.1 CLEANING MATERIALS AND EQUIPMENT: Provide all required personnel, equipment, and materials needed to maintain the specified standard of cleanliness.

2.2 COMPATIBILITY: Use only the cleaning materials and equipment which are compatible with the surface being cleaned, as recommended by the manufacturer of the material or as approved by the Architect.

PART 3 – EXECUTION

3.1 PROGRESS CLEANING

3.1.1 General:
(1) Retain all stored items in an orderly arrangement allowing maximum access, not impeding traffic, and providing the required protection of materials.
(2) Do not allow the accumulation of scrap, debris, waste material, and other items not required for the construction of this work.
(3) Twice weekly, and more often if necessary, EACH CONTRACTOR shall completely remove all scrap, debris, and waste material from the job site and shall place into container furnished by the General Contractor.
(4) Provide adequate storage for all items awaiting removal from the job site, observing all requirements for fire protection.

3.1.2 Project Site:
(1) The General Contractor shall:

(a) Daily, and more often if necessary, inspect the project site and pick up all scrap, debris, and waste material. Remove all such items to the place designated for their storage.

(b) Weekly, and more often if necessary, sweep all interior places clean. "Clean", for the purpose of this subparagraph, shall be interpreted as meaning free from dust and other material capable of being removed by reasonable diligence using a hand-held broom.

(c) As required preparatory to installation of succeeding materials, clean the structures or pertinent portions thereof to the degree of cleanliness recommended by the manufacturer of the succeeding material, using all equipment and materials required to achieve the required cleanliness.

(d) Following the installation of finish floor materials, protect by covering with temporary coverings and/or clean the finish floor daily (and more often if necessary) at all times while work is being performed in the space in which finish materials have been installed. "Clean" for the purpose of this subparagraph, shall be interpreted as meaning free from all foreign material, which in the opinion of the Owner's representative, may be injurious to the finish floor material.

3.2 FINAL CLEANING

3.2.1 Definition: Except as otherwise specifically provided, "Clean" (for the purpose of this Article) shall be interpreted as meaning the level of cleanliness generally provided by commercial building maintenance Subcontractors using commercial quality building maintenance equipment and materials.

3.2.2 General: Prior to completion of the work, remove from the job site all tools, temporary structures, surplus materials, equipment, scrap, debris, and waste. Conduct final progress cleaning as described in Article 3.1 above.

3.2.3 Interior: Visually inspect all surfaces and remove all traces of soil, waste material, smudges, and other foreign matter. Remove all traces of splashed materials from adjacent surfaces. Remove all paint droppings, spots, stains, and dirt from finished surfaces. Use only the specified cleaning materials and equipment.

3.2.4 Repair, patch, and touch-up marred or damaged surfaces to match adjacent finishes.

3.2.5 Clean the following if located within the project area:
(1) Light fixtures and lamps.
(2) All electrical panels.

3.2.6 Clean areas traversed by construction personnel. Maintain cleaning until the building, or portion thereof, is accepted by the Owner.

3.2.8 Timing: Schedule final cleaning as approved by the Owner's representative to enable the Owner to accept a completely clean project.

END OF SECTION 01 74 00

SECTION 03 10 00 – CONCRETE FORMWORK

PART 1 – GENERAL

1.1 DESCRIPTION

1.1.1 Work Included: Provide formwork in accordance with the provisions of this Section for all cast-in-place concrete shown on the drawings or required by other sections of these specifications.

1.1.2 Related Work Described Elsewhere:

(1)	Structural Concrete	Section 03 31 00

1.2 QUALITY ASSURANCE

1.2.1 Standards: Comply with the following standards or codes unless otherwise specified or modified:

(1) A.C.I. Sp-4, Formwork for Concrete
(2) A.C.I. 347, Recommended Practice for Concrete Formwork

PART 2 – PRODUCTS

2.1 FORM MATERIALS

2.1.1 Forms:

(1) Construct formwork for exposed (painted or unpainted) concrete surfaces with smooth-faced undamaged plywood or other panel-type materials acceptable to the Architect, to provide continuous, straight, smooth as-cast surfaces. Furnish in largest practicable sizes to minimize number of joints.
(2) Construct forms for unexposed finish concrete with plywood, lumber, metal, or other acceptable material. Provide lumber dressed on at least 2 edges and one side for tight fit.
(3) Provide form material with sufficient thickness to withstand pressure of newly placed concrete without excessive and objectionable bow or deflection.

2.2 DESIGN OF FORMWORK

2.2.1 General:

(1) Construct formwork so that concrete members and structures are of correct size, shape, alignment, elevation, and position.
(2) Provide formwork sufficiently tight to prevent leakage of cement paste during concrete placement. Solidly butt joints and provide backup material at joints as required to prevent leakage and fins.

PART 3 – EXECUTION

3.1 SURFACE CONDITIONS

3.1.1 Examine the substrate and conditions under which work of this Section is to be performed, and correct unsatisfactory conditions that would prevent proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

3.2 FORM CONSTRUCTION

3.2.1 General:

(1) Construct forms complying with ACI 347, to the exact sizes, shapes, lines, and dimensions shown, and as required to obtain accurate alignment, location, grades, level, and plumb work in finish structures.
(2) Provide for openings, offsets, keyways, recesses, anchorages, inserts, and other features required. Use selected materials to obtain required finishes.

3.2.2 Construction joints: Locate as indicated on the drawings.

3.2.3 Control joints: Locate as indicated on the drawings.

3.2.4 Provision for other trades: Provide openings in concrete formwork to accommodate work of other trades. Verify size and location of openings, recesses, and chases with the trade requiring such items. Accurately place and securely support items to be built into forms.

END OF SECTION 03 10 00

SECTION 03 30 00 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specified cast-in-place concrete, including formwork, reinforcing, mix design, placement procedures, and finishes.

B. Concrete paving and walks are specified in Division 2.

C. Precast concrete is specified in Division 3 Sections.

D. Mechanical finishes and concrete floor toppings are specified in other Division 3 Sections.

1.3 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

B. Product data for proprietary materials and items, including reinforcement and forming accessories, admixtures, patching compounds, waterstops, joint systems, curing compounds, dry-shake finish materials, and others as requested by the Architect/Engineer.

C. Shop drawings for reinforcement, prepared for fabrication, bending and placement of concrete reinforcement, showing bar schedules, stirrup spacing, diagrams of bent bars, and arrang ement of concrete reinforcement. Include special reinforcement required for openings through concrete structures.

1.4 QUALITY ASSURANCE

A. Codes and Standards: Comply with provisions of following codes, specifications and standards, except where more stringent requirements are shown or specified:

1. ACI 318, "Building Code Requirements for Reinforced Concrete."
2. Concrete Reinforcing Steel Institute (CRSI) "Manual of Standard Practice."

B. Concrete Testing Service: Engage a testing laboratory acceptable to Architect/Engineer to perform material evaluation tests and do design concrete mixes.

C. Materials and installed work may require testing and retesting at any time during

progress of work. Tests, including retesting of rejected materials for installed work, shall be done at Contractor's expense.

D. Pre-Construction Conference: Conduct conference at project site to comply with requirements of Division 1 Section "Project Meetings" and to be attended by the following:

1. Contractor's superintendent.
2. Laboratory responsible for field quality control.
3. Ready-mix concrete producer.
4. Concrete subcontractor.
5. Architect, Engineer, or Owner's representative.

PART 2 – PRODUCTS

2.1 FORM MATERIALS

A. Forms for Unexposed Finish Concrete: Plywood, lumber, metal, or other acceptable material. Provide lumber dressed on at least 2 edges and one side for tight fit.

B. Form Ties: Factory-fabricated, adjustable length, removable or snap-off metal form ties, designed to prevent form deflection and to prevent spalling concrete upon removal. Provide units that will leave no metal closer than 1-1/2 inches to exposed surface.

2.2 REINFORCING MATERIALS

A. Reinforcing Bars: ASTM A 615, Grade 60, deformed.

B. Supports for Reinforcement: Bolsters, chairs, spacers, and other devises for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place. Use wire-bar-type supports complying with CRSI specifications.

1. For slabs-on-grade, use supports with sand plates or horizontal runners where base material will not support chair legs.

2.3 CONCRETE MATERIALS

A. Portland Cement: ASTM C 150, Type I.

1. Use one brand of cement throughout project unless otherwise acceptable to Architect/Engineer.

B. Normal Weight Aggregates: ASTM C 33 and as herein specified. Provide aggregates from a single source for exposed concrete.

1. Local aggregates not complying with ASTM C 33 but that special tests or actual service have shown to produce concrete of adequate strength and durability may be used when acceptable to Architect/Engineer.

C. Water: Drinkable.

D. Air-Entraining Admixture: ASTM C 260, certified by manufacturer to be compatible with other required admixtures.

2.4 RELATED MATERIALS

A. Vapor Retarder: Provide vapor retarder cover over prepared base material where indicated below slabs on grade. Use only materials that are resistant to deterioration when tested in accordance with ASTM E 154, as follows:

1. Polyethylene sheet not less than 8 mils thicks.

B. Evaporation Control: Monomolecular film-forming compound applied to exposed concrete slab surfaces for temporary protection from rapid moisture loss.

1. Available Projects: Subject to compliance with requirements, products that may be incorporated in the work include, but are not limited to, the following:

"Aquafilm," Conspec Marketing and Mfg. Co.
"Eucobar," Euclid Chemical Co.
"E-Con," L & M Construction Chemicals, Inc.
"Confilm," Master Builders, Inc.

C. Expansion joints in concrete slabs shall be 1 x 4 or 2 x 4 Redwood lumber.

D. Expansion joints using 1 x 4 Redwood shall be constructed with a 1 / 2" x 3 / 4" reservoir for sealant. The joints shall be sealed with Throseal Caulking, as manufactured by Sonneborne.

2.5 PROPORTIONING AND DESIGN OF MIXES

A. Submit written reports to Architect/Engineer of each proposed mix for each class of concrete at least 15 days prior to start of work. Do not begin concrete production until proposed mix designs have been reviewed by Architect/Engineer.

B. Design mixes to provide normal weight concrete with the following properties, as indicated on drawings and schedules.

1. 3000 psi, 28 day compressive strength; W/C ratio 0.58 maximum (non-air-entrained), 0.46 maximum (air-entrained); with a minimum cement of 470# per cu.yd.

2. 4000 psi, 28 day compressive strength; with a minimum cement of 560# per cu.yd.

C. Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant, as accepted by Architect/Engineer. Laboratory test data for revised mix design and strength results must be submitted to an accepted by

Architect/Engineer before using in work.

2.6 ADMIXTURES

A. Use water-reducing admixture or high-range water-reducing admixture (Superplasticizer) in concrete as required for placement and workability.

B. Use non-chloride accelerating admixture in concrete slabs at ambient temperatures below 50 deg. F (10 deg C).

C. Use high-range water-reducing admixture (HRWR) in pumped concrete, concrete for industrial slabs, architectural concrete, parking structures slabs, concrete required to be watertight, and concrete with water/cement rations below 0.50.

D. Use air-entraining admixture in exterior exposed concrete unless otherwise indicated. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having total air content with a tolerance of plus or minus 1-1/2 percent within following limits:

1. Concrete structures and slabs exposed to freezing and thawing, deicer chemicals, or hydraulic pressure: 6.0 percent (sever exposure) 3/4-inch max. aggregate.

2. Other concrete (not exposed to freezing, thawing, or hydraulic pressure) or to receive a surface hardener: 2 percent to 4 percent air.

E. Use admixtures for water reduction and set control in strict compliance with manufacturer's directions.

1. Water-Cement Ratio: Provide concrete for following conditions with maximum water-cement (W/C) ratios as follows:

   Subjected to freezing and thawing: W/C 0.45.
   Subjected to deicers/watertight: W/C 0.40.
   Subjected to brackish water, salt spray or deicers: W/C 0.40.

F. Slump Limits: Proportion and design mixes to result in concrete slump at point of placement as follows:

1. Ramps, slabs, and sloping surfaces: Not more than 3 inches.
2. Reinforced foundation systems: Not less than 1 inch and not more than 3 inches.
3. Concrete containing HRWR admixture (Superplasticizer): Not more than 8 inches after addition of HRWR to site-verified 2-inch to 3-inch slump concrete.
4. Other Concrete: Not more than 4 inches.

G. Fly ash is not acceptable as a substitute for cement.

2.7 CONCRETE MIXING

A. Ready-Mix Concrete: Comply with requirements of ASTM C 94, and as specified.

1. When air temperature is between 85 deg F (30 deg C) and 90 deg F (32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes, and when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 GENERAL

A. Coordinate the installation of joint materials and vapor retarders with placement of forms and reinforcing steel.

3.2 FORMS

A. General: Design, erect, support, brace, and maintain form work to support vertical and lateral, static and dynamic loads that might be applied until concrete structure can support such loads. Construct form work so concrete members and structures are of correct size, shape, alignment, elevation, and position. Maintain form work construction tolerances complying with ACI 347.

B. Construct forms to sizes, shapes, lines and dimensions shown and to obtain accurate alignment, location, grades, level, and plumb work in finished structures. Provide for openings, offsets, recesses, blocking, screeds, bulkheads, anchorages and inserts, and other features required in work. Use selected materials to obtain required finishes. Solidly butt joints and provide backup at joints to prevent leakage of cement paste.

C. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces.

D. Provisions for Other Trades: Provide openings in concrete form work to accommodate work of other trades. Determine size and location of openings, recesses, and chases from trades providing such items. Accurately place and securely support items built into forms.

E. Cleaning & Tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, or other debris just before concrete is placed. Retighten forms and bracing before concrete placement as required to prevent mortar leaks and maintain proper alignment.

3.3 VAPOR RETARDER/BARRIER INSTALLATION

A. General: Following leveling and tamping of granular base for slabs on grade, place vapor retarder/ barrier sheeting with longest dimension parallel with direction of pour.

B. Lap joints 6 inches and seal vapor barrier joints with manufacturer's recommended mastic and pressure-sensitive tape.

C. After placement of vapor retarder/barrier, cover with sand cushion and compact to depth as shown on drawings.

3.4 PLACING REINFORCEMENT

A. General: Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars," for details and methods of reinforcement placement and supports and as herein specified.

1. Avoid cutting or puncturing vapor retarder during reinforcement placement and concreting operations.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials that reduce or destroy bong with concrete.

C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers, as approved by Architect/ Engineer.

D. Place reinforcement to obtain at least minimum coverages for concrete protection. Arrange, space and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.

E. Install welded wire fabric in as long lengths as practicable. Lap adjoining pieces at lease one full mesh and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

3.5 JOINTS

A. Construction Joints: Locate and install construction joints as indicated or, if not indicated, locate so as not to impair strength and appearance of the structure, as acceptable to Architect/Engineer.

B. Place construction joints perpendicular to main reinforcement. Continue reinforcement across construction joints except as otherwise indicated. Do not continue reinforcement through sides of strip placements.

C. Use bonding agent on existing concrete surfaces that will be joined with fresh concrete.

3.6 INSTALLATION OF EMBEDDED ITEMS

A. General: Set and build into work anchorage devices and other embedded items required for other work that is attached to or supported by cast-in-place concrete. Use setting drawings, diagrams, instructions, and directions provided by suppliers of items to be attached thereto.

B. Forms for Slabs: Set edge forms, bulkheads, and intermediate screed strips for slabs to obtain required elevations and contours in finished surfaces. Provide and secure units

to support screed strips using strike-off templates or compacting-type screeds.

3.7 CONCRETE PLACEMENT

A. Inspection: Before placing concrete, inspect and complete form work installation, reinforcing steel, and items to be embedded or cast in. Notify other crafts to permit installation of their work; cooperate with other trades in setting such work.

B. General: Comply with ACI 304, "Recommended Practice of Measuring, Mixing, Transporting, and Placing Concrete," and as herein specified.

C. Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete that has hardened sufficiently to cause the formation of seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as herein specified. Deposit concrete to avoid segregation at its final location.

D. Placing Concrete in Forms: Deposit concrete in forms in horizontal layers not deeper than 24 inches and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints.

1. Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Use equipment and procedures for consolidation of concrete in accordance with ACI 309.

2. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than visible effectiveness of machine. Place vibrators to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing segregation of mix.

E. Placing Concrete Slabs: Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until the placing of a panel or section is completed.

1. Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners.

2. Bring slab surfaces to correct level with straightedge and strike off. Use bull floats or darbies to smooth surface, free of humps or hollows. Do not disturb slab surfaces prior to beginning finishing operations.

3. Maintain reinforcing in proper position during concrete placement.

F. Cold-Weather Placing: Comply with provisions of ACI 306 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

G. When air temperature has fallen to or is expected to fall below 40 deg F (4 deg C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F (10 deg C) and mot more than 80 deg F (27 deg C) at point of placement.

1. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.

2. Do not us calcium chloride, salt, and other materials containing antifreeze agents or chemical accelerators unless otherwise accepted in mix designs.

H. Hot-Weather Placing: When hot weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACI 305 and as herein specified.

1. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 deg F (32 deg C). Mixing water may be chilled, or chapped ice may be used to control temperature provided water equivalent of ice is calculated to total amount of mixing water. Use of liquid nitrogen to cool concrete is Contractor's option.

2. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedment in concrete.

3. Fog spray forms, reinforcing steel, and subgrade just before concrete is placed.

4. Use water-reducing retarding admixture when required by high temperatures, low humidity, or other adverse placing conditions, when acceptable to Architect/ Engineer.

3.8 MONOLITHIC SLAB FINISHES

A. Trowel Finish: Apply trowel finish to monolithic slab surfaces to be exposed to view and slab surfaces to be covered with resilient flooring, carpet, ceramic or quarry tile, paint or other film finish coating system.

1. After floating, begin first trowel finish operation using a power-driven trowel. Begin final troweling when surface produces a ringing sound as trowel is moved over surface. Consolidate concrete surface by final hand-troweling operation, free of trowel marks, uniform in texture and appearance, and with surface leveled to tolerances of Ff20 - F1 17. Grind smooth surface defects that would telegraph through applied floor covering system.

B. Trowel and Fine Broom Finish: Sidewalks shall receive trowel and fine broom finish.

3.9 CONCRETE CURING AND PROTECTION

A. General: Protect freshly placed concrete from premature drying and excessive cold or

hot temperatures. In hot, dry and windy weather, protect concrete from rapid moisture loss before and during finishing operations with an evaporation-control material. Apply in accordance with manufacturer's instructions after screeding and bull floating, but before power floating and troweling.

B. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than 7 days.

C. Curing Methods: Perform curing of concrete by curing and sealing compound, by moist curing, by moisture-retaining cover curing, and by combinations thereof, as herein specified.

D. Provide moisture curing by following methods.

1. Keep concrete surface continuously wet by covering with water.

2. Use continuous water-fog spray.

3. Cover concrete surface with specified absorptive cover, thoroughly saturate cover with water, and keep continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with 4-inch lap over adjacent absorptive covers.

E. Provide moisture-cover curing as follows:

1. Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least 3 inches and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

F. Provide curing and sealing compound to exposed interior slabs and to exterior slabs walks, and curbs as follows:

1. Apply specified curing and sealing compound to concrete slabs as soon as final finishing operations are complete (within 2 hours and after surface water sheen has disappeared). Apply uniformly in continuous operation by power spray or roller in accordance with manufacturer's directions. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during curing period.

2. Use membrane curing compounds that will not affect surfaces to be covered with finish materials applied directly to concrete.

3.10 MISCELLANEOUS CONCRETE ITEMS

A. Filling In: Fill in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown or directed, after work of other trades in place. Mix, place, and cure concrete as herein specified, to blend with in-place construction. Provide other miscellaneous concrete filling shown or required to complete work.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

C. Steel Pan Stairs: Provide concrete fill for steel pan stair treads and landings and associated items. Cast-in safety inserts and accessories as shown on drawings. Screed, tamp, and finish concrete surfaces as scheduled.

3.11 CONCRETE SURFACE REPAIRS

A. Patching Defective Areas: Repair and patch defective areas with cement mortar immediately after removal of forms, when acceptable to Architect/Engineer.

1. Cut out honeycomb, rock pockets, voids over 1/4 inch in any dimension, and holes left by tie rods and bolts, down to solid concrete but in no case to a depth of less than 1 inch. Make edges of cuts perpendicular to the concrete surface. Thoroughly clean, dampen with water, and brush-coat the area to be patched with specified bonding agent. Place patching mortar before bonding compound has dried.

B. Repair of Formed Surfaces: Remove and replace concrete having defective surfaces if defects cannot be repairs to satisfaction of Architect/Engineer. Surface defects, as such, include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets, fins and other projections of surface, and stains and other discolorations that cannot be removed by cleaning. Flush out form tie holes, fill with dry-pack mortar, or precast cement cone plugs secured in place with bonding agent.

1. Repair concealed formed surfaces, where possible, that contain defects that affect the durability of concrete. If defects cannot be repaired, remove and replace concrete.

C. Repair of Unformed Surfaces: Test unformed surfaces, such as monolithic slabs, for smoothness and verify surface plane to tolerances specified for each surface and finish. Correct low and high areas as herein specified. Test unformed surfaces sloped to drain for trueness of slope and smoothness by using a template having required slope.

1. Repair finished unformed surfaces that contain defects that affect durability of concrete. Surface defects, as such, include crazing and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through non-reinforced sections regardless of width, spalling, popouts, honeycomb, rock pockets, and other objectionable conditions.

2. Correct high areas in unformed surfaces by grinding after concrete has cured at least 14 days.

3. Correct low areas in unformed surfaces during or immediately after completion of surface finishing operations by cutting out low areas and replacing with patching compound. Finish repaired areas to blend into adjacent concrete. Proprietary underlayment compounds may be used when acceptable to Architect/Engineer.

4. Repair defective areas, except random cracks and single holes not exceeding 1

inch in diameter, by cutting out and replacing with fresh concrete. Remove defective areas to sound concrete with clean, square cuts and expose reinforcing steel with at least 3/4-inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding compound. Mix patching concrete of same materials to provide concrete of same type or class as original concrete. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.

3.12 QUALITY CONTROL TESTING DURING CONSTRUCTION.

A. General: Employ a testing laboratory to perform tests and to submit test reports.

B. Sampling and testing for quality control during placement of concrete may include the following, as directed by Architect/Engineer.

C. Sampling Fresh Concrete: ASTM C 172, except modified for slump to comply with ASTM D 94.

1. Slump: ASTM C 143; one test at point of discharge for each day's pour of each type of concrete; additional tests when concrete consistency seems to have changed.

2. Air Content: ASTM C 173, volumetric method for lightweight or normal weight concrete; ASTM C 231 pressure method of normal weight concrete; one for each day's pour of each type of air-entrained concrete.

3. Concrete Temperature: Test hourly when air temperature is 40 deg F (4 deg C) and below, when 80 deg F (27deg C) and above, and each time a set of compression test specimens is made.

4. Compression Test Specimen: ASTM C 31; one set of 4 standard cylinders for each compressive strength test, unless otherwise directed. Mold and store cylinders for laboratory-cured test specimens except when field-cure test specimens are required.

5. Compressive Strength Tests: ASTM C 39; one set for each day's pour exceeding 5 cu. yds. plus additional sets for each 50 cu. yds. more than the first 25 cu. yds. of each concrete class placed in any one day; one specimen tested at 7 days, two specimens tested at 28 days, and one specimen retained in reserve for later testing if required.

6. When frequency of testing will provide fewer than 5 strength tests for a given class of concrete, conduct testing from at least 5 randomly selected batches or from each batch if fewer than 5 are used.

D. Test results will be reported in writing to Architect, Structural Engineer, Ready-Mix Producer, and Contractor within 24 hours after tests. Reports of compressive strength tests shall contain the project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of concrete batch in structure, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7-

day tests and 28-day tests.

E. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted but shall not be used as the sole basis for acceptance or rejection.

F. Additional Tests: The testing service will make additional tests of in-place concrete when test results indicate specified concrete strengths and other characteristics have not been attained in the structure, as directed by the Architect/Engineer. Testing service may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed. Contractor shall pay for such tests when unacceptable concrete is verified.

END OF SECTION 03 30 00

SECTION 03 31 00 – STRUCTURAL CONCRETE

PART 1 – GENERAL

1.1 DESCRIPTION

1.1.1 Work Included: Provide all cast-in-place concrete, complete, in place, as indicated on the drawings, specified herein, and needed for a complete and proper installation.

1.1.2 Related Work Described Elsewhere:

(1)	Quality Control	Section 01 45 00
(2)	Concrete Formwork	Section 03 10 00

1.2 QUALITY ASSURANCE

1.2.1 Standards: Comply with the following standards or codes unless otherwise specified or modified:

(1) A.C.I. 301 Specifications for Structural Concrete for Buildings
(2) A.C.I. 305 Recommended Practice for Hot Weather Concreting
(3) A.C.I. 306 Recommended Practice for Cold Weather Concreting

1.2.2 Qualifications of Installers: Throughout the progress of installation of the work of this Section, provide at least one person who shall be thoroughly familiar with the specified requirements, completely trained and experienced in the necessary skills, and who shall be present at the site and shall direct all work performed under this Section.

1.3 SUBMITTALS

1.3.1 General: Comply with the pertinent provisions of Section 01 33 00.

1.3.2 Shop Drawings: Submit complete shop drawings on all material proposed to be furnished and installed under this Section. The following shall be shown:

(1) Bar Schedules, stirrup spacing, diagrams of bent bars and arrangements and assemblies

1.3.3 Mill Certificates: Accompanying the shop drawings, submit steel producer's certificates of mill analysis, tensile, and bend tests for reinforcing steel, if so requested by Architect.

PART 2 – PRODUCTS

2.1 CEMENT

2.1.1 General: All Portland cement shall conform to the requirements of ASTM C 150, Type 1.

2.1.2 Sequence of use: Use only one brand of cement for the entire work and use in the same sequence as received at the site.

2.2 SAND

2.2.1 Clean, hard, durable, uncoated grains free from silt, loam, and clay. Grade in size from fine to coarse with 95 to 100% by weight passing No.4 sieve; 45 to 70% passing No. 16 sieve; 15 to 30% passing No. 50 sieve, and 3 to 8% passing No. 100 sieve. Sand shall comply with ASTM C33.

2.3 WATER

2.3.1 Water used as an ingredient in concrete shall be clean, potable, and free from injurious amounts of foreign matter.

2.4 CONCRETE ADMIXTURES

2.4.1 General: Admixtures shall conform to ASTM C494, "Standard Specification for Chemical Admixtures for Concrete", and shall be approved by the Architect before use.

2.5 OTHER MATERIALS

2.5.1 Vapor retarder shall be polyethylene sheets having a thickness of 10 mil (minimum).

2.5.2 Expansion joint material shall be bituminous fiber type conforming to ASTM D1751.

2.6 CHARACTERISTICS OF CONCRETE

2.6.1 Strength shall be as indicated on the Structural Drawings.

2.6.2 Slumps: Maximum and minimum slump for structural concrete is as follows when tested according to ASTM C-143:

	Type of Construction	Maximum	Minimum
(1)	Reinforced Foundation Walls and Footings	3	1
(2)	Unreinforced Footings, Cassions, and Substructure Walls	3	1
(3)	Reinforced Slabs, Beams, and Walls	4	1
(4)	Sidewalks	4	2

When high-frequency vibrators are NOT used, the values may be increased by 50%, but in no case should slump exceed 6".

2.6.3 Workability: Concrete shall be such that it will work readily into corners and angles of forms and around reinforcement by methods of placing and consolidation employed, without permitting materials to segregate or excessive free water to collect on the surface.

2.7 MIXING

2.7.1 Ready-Mixed Concrete: Mix and transport in accordance with ASTM C-94.

2.7.2 Air-Entraining Admixture: Add to concrete used at all exterior areas exposed to weather, and where otherwise specifically indicated on the drawings.

2.8 REINFORCING MATERIALS

2.8.1 Reinforcing Bars: Comply with ASTM A615, Grade 60, Fy = 60,000 p.s.i.

2.8.2 Steel Wire: Comply with ASTM A82.

2.8.3 Welded Wire Fabric: Comply with ASTM A185.

2.8.4 Supports for Reinforcement: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing in place:

(1) Use wire bar-type supports complying with CRSI recommendations unless otherwise indicated. Do not use wood, brick, and other unacceptable materials.
(2) For slabs on grade, use supports with sand plates or horizontal runners where base material will not support chair legs.
(3) For exposed-to-view concrete surfaces, and where legs of supports are in contact with forms, provide supports with either hot-dip galvanized or plastic protected legs.

2.9 SELF-LEVELING SEALANT

2.9.1 Self-leveling sealant shall be MasterSeal SL, 1-part leveling urethane sealant as manufactured by Master Builders Solutions, LLC an MBCC Group company or equal.

2.10 CURING

2.10.1 Concrete (other than high-early-strength) shall be maintained above 50 degrees F (10 degrees C) and in a moist condition for at least 7 days after placement.

PART 3 – EXECUTION

3.1 INSPECTION

3.1.1 Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

3.2 CONCRETE PLACEMENT

3.2.1 General: Place concrete in compliance with practices and recommendations of ACI 304, and as herein specified.

3.2.2 Procedures:

(1) Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete that has hardened sufficiently to cause the formation of seams or planes of weakness within this section.
(2) Perform concrete placing at such a rate that concrete that is being integrated with fresh concrete is still plastic.

(3) Deposit concrete as nearly as practicable in its final location to avoid segregation due to re-handling and flowing.
(4) Screed concrete that is to receive other construction to the proper level to avoid excessive skimming and grouting.
(5) Do not use concrete which becomes non-plastic and unworkable, or does not meet the required quality control limits, or which has been contaminated by foreign materials.
(6) Remove rejected concrete from the site and dispose of it in an approved location.

3.2.3 Cold weather placing: Comply with ACI 306 to protect all concrete work from physical damage and reduced strength which would be caused by frost, freezing actions, or low temperatures.

(1) Place no concrete whenever it is anticipated that air temperature at the point of placement is likely to fall below 40 degrees F.
(2) Concrete may be placed when air temperature is 40 degrees F. and rising.
(3) Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
(4) Do not use calcium chloride, salt, or other materials containing anti-freeze agents or chemical accelerators unless otherwise accepted in mix designs or approved by Architect.

3.2.4 Hot Weather Placing:

(1) When hot weather conditions exist that would seriously impair the quality and strength of concrete, place the concrete as follows:

(a) Maintain concrete temperature at time of placement below 90 degrees F. Use chilled mixing water or chopped ice to control concrete temperature, provided the water equivalent of the ice is calculated to the total amount of water.
(b) Cover reinforcing steel with water-soaked burlap if the steel becomes too hot. Steel temperature shall not exceed the ambient air temperature immediately prior to placement of concrete.
(c) Wet forms thoroughly prior to placement of concrete.
(d) Use set-control admixtures in the mix.
(e) Do not add water to concrete mix at job site unless directed by Architect.

3.3 AIR-ENTRAINING CONCRETE

3.3.1 Air-Entraining: Air-entrained concrete is required for concrete exposed to freezing and thawing. Unless plant- or transit-mix concrete is used, air-entrained concrete shall be obtained by the use of cement to which an air-entraining agent has been added by the cement manufacturer. Air content shall be between 3 and 5% of the volume of the concrete.

3.4 CONCRETE FINISHING

3.4.1 Finish of formed surfaces:

(1) Rough form finish:

(a) Provide as-cast rough form finish to formed concrete surfaces that are to be concealed in the finish work or by any other construction.
(b) Standard rough form finish shall be the concrete surface having the texture imparted by the form facing material used.

(2) Smooth form finish:

(a) Provide at all concrete surfaces exposed to view. This includes but is not limited to turn-down concrete slabs, foundation walls, and retaining walls.

3.4.2 Monolithic slab finishes:

(1) Float finish:

(a) Apply float finish to monolithic slab surfaces that are to receive trowel finish and other finishes as specified.
(b) After placing concrete slabs, do not work the surface further until ready for floating.
(c) Begin floating when the surface water has disappeared, when the concrete has stiffened sufficiently to permit operation of a power-driven float, or both.
(d) Consolidate the surface with power-driven floats, or by hand-floating if area is small or inaccessible to power units.

(3) Non-slip broom finish:

(a) Apply non-slip broom finish to exterior concrete sidewalk and equipment pad exposed to weather.
(b) Immediately after trowel finishing, slightly roughen the concrete surface by brooming in the direction perpendicular to the main traffic route. Use a fiber bristle broom.
(c) Coordinate the required finish with the Architect prior to application.

3.5 INSTALLATION (STEEL REINFORCING)

3.5.1 Placement Tolerances:

(1) Bars shall be placed to the following tolerances:

(a)	Concrete cover to formed surfaces:	+/- 3/4 inch
(b)	Minimum spacing between bars:	1 inch
(c)	Top bars in slabs and beams	
	(1) Members 8" deep or less:	+/- 1/4 inch
	(2) Members more than 8", But not over 2' deep:	+/- 1/2 inch
(d)	Crosswise of members:	+/- 2 inches
(e)	Lengthwise of members:	+/- 2 inches

(2) Bars may be moved as necessary to avoid interference with other reinforcing steel, conduits, or embedded items. If bars are moved more than one bar diameter, or enough to exceed the above tolerances, the resulting arrangement of bars shall be subject to disapproval by the Architect.

(3) Arrange, space, and securely tie bars and bar supports together with 16-gauge wire to hold reinforcement accurately in position during concrete placement operations. Set wire ties so that twisted ends are directed away from exposed surfaces.

END OF SECTION 03 31 00

SECTION 05 40 00 – COLD-FORMED METAL FRAMING

PART 1 – GENERAL

1.1 DESCRIPTION

1.1.1 Work Included: Furnish and install all structural metal framing as indicated on the drawings and as specified herein.

1.1.2 Related Work Described Elsewhere:

(1)	Gypsum Wallboard	Section 09 20 00

1.2 QUALITY ASSURANCE

1.2.1 Standards: Comply with the following standards:

(1) "Specification For the Design of Cold Formed Steel Structural Members", latest edition.

PART 2 – PRODUCTS

2.1 MATERIALS

2.1.1 All studs, channels, and accessories shall be the type, size, gauge, and spacing as shown on the drawings and shall be manufactured by Unimast Incorporated, Carl Dietrich, or Bailey Metal Products, or equal.

2.1.2 All Studs shall be formed from hot-dipped galvanized steel, G-60 coating, corresponding to the requirements of ASTM A446, Grade A, with a minimum yield of 33 ksi.

2.2 FABRICATION

2.2.1 All framing components shall be cut squarely for attachment to perpendicular members, or, as required, for an angular fit against abutting members.

2.2.2 Axially-loaded studs shall be installed in a manner which will assure that ends of the studs are positioned against the inside track web, prior to stud and runner attachment.

2.2.3 Fastening of components shall be by means of self-drilling screws or welding. Screws or welds shall be of sufficient size to insure the strength of the connection. Wire tying of components shall not be permitted.

PART 3 – EXECUTION

3.1 ERECTION

3.1.1 Runner tracks shall be securely anchored to the supporting structure as shown on the drawings.

3.1.2 Abutting pieces of runner tracks shall be securely anchored to a common structural element, or they shall be butt-welded or spliced together.

3.1.3 Studs shall be plumbed, aligned, and securely attached to the flanges of both upper and lower runner tracks.

3.1.4 Lateral bracing shall be provided by cold-rolled 1-½" channels at 48" o.c. or as indicated on the drawings.

3.1.5 Refer to the drawings for additional notes concerning diagonal bracing at building corners.

END OF SECTION 05 40 00

SECTION 05 50 00 – METAL FABRICATIONS

PART 1 – GENERAL

1.1 DESCRIPTION

1.1.1 Work Included: Provide and install miscellaneous metal fabrications as indicated on the drawings and as specified in this section.

1.1.2 Related Work Described Elsewhere:

(1)	Painting	Section 09 91 00
(2)	Electric Traction Elevators	Section 14 21 00

1.2 QUALITY ASSURANCE

1.2.1 Qualifications of Manufacturers: Products used in the work of this Section shall be produced by manufacturers regularly engaged in manufacture of similar items and with a history of successful production acceptable to the Architect.

1.2.2 Qualifications of Installers: 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 the work of this Section.

1.2.3 Welding: Perform all shop and field welding required in connection with the work of this Section, adhering strictly to the current pertinent recommendations of the American Welding Society.

1.3 SUBMITTALS

1.3.1 General: Comply with the pertinent provisions of Section 01 33 00.

1.3.2 Product Data: Submit the following to the Architect for approval:

(1) Complete materials list of all items proposed to be furnished and installed under this Section.
(2) Manufacturer's specifications and other data required to demonstrate compliance with specified requirements.
(3) Shop drawings of all items proposed to be furnished and installed under this Section. Include plans, sections, elevations, and details as needed.

1.4 PRODUCT HANDLING

1.4.1 Protection: Use all means necessary to protect the materials of this Section before, during, and after installation and to protect the work and materials of all other trades.

1.4.2 Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART 2 – PRODUCTS

2.1 MATERIALS AND COMPONENTS

2.1.1 Metal Surfaces, General: For fabrication of the work of this Section which will be exposed to view, use only those materials which are smooth and free from surface blemishes including pitting, seam marks, roller marks, roller trade names, and roughness.

2.1.2 Standards: All materials shall comply with the following, unless otherwise specified:

(1) Steel plates, shapes, and bars: ASTM A36.
(2) Steel plates to be bent or cold-formed: ASTM A283, Grade C.
(3) Steel tubing to be cold-formed, welded, or seamless: ASTM A500, Grade C.
(4) Steel bars and bar-size shapes: ASTM 572, Grade 65, or ASTM A36.
(5) Cold-finished steel bars: ASTM A108, grade as selected by the fabricator.
(6) Cold-rolled carbon steel sheets: ASTM A336, thickness as specified in U.S. Standards Gauge.
(7) Galvanized carbon steel sheets: ASTM A526, with ASTM A525, G90 zinc coating.
(8) Steel pipe: ASTM A53, type as selected, Grade A, black finish unless galvanizing is required, standard weight (Schedule 40) unless otherwise indicated.
(9) Concrete inserts: Threaded or wedge type, galvanized ferrous castings, either malleable iron ASTM A47 or cast steel ASTM A27. Provide bolts, washers, and shims as required, hot-dip galvanized, ASTM A153.
(10) Wrought Iron: ASTM A-41.
(11) Grating: ASTM A-446.

2.2 FASTENERS

2.2.1 General: Provide zinc-coated fasteners for exterior use and where built into exterior walls. Select fasteners for the type, grade, and class required.

2.2.2 Standards: All fasteners shall comply with the following, unless otherwise specified:

(1) Bolts and nuts: Regular hexagon-head type, ASTM A325.
(2) Lag bolts: Square-head type, Fed. Spec., FF-B-561.
(3) Machine screws: Cadmium plated steel, Fed Spec. FF-S-92.
(4) Wood screws: Flat-head carbon steel, Fed. Spec. FF-S-111.
(5) Plain washers: Round, carbon steel, Fed. Spec. FF-W-92.
(6) Masonry anchorage devices: Expansion shields, Fed. Spec. FF-S-325. Machine bolt type, tubular type, or self-drilling tubular type.
(7) Toggle bolts: Tumble-wing type, Fed. Spec. FF-B-588, type, class, and style as required.
(8) Lock washers: Helical-spring type carbon steel, Fed. Spec. FF-W-84.

2.3 PAINT

2.3.1 Metal Primer Paint:

(1) Use red lead mixed pigment, alkyd varnish, linseed oil paint complying with Fed. Spec. TT-P-86, Type II; or red lead iron oxide, raw linseed oil, alkyd paint, complying with SSPC Paint 2-64; or basic lead silico chromate base iron oxide, linseed oil, alkyd paint complying with Fed. Spec. TT-P-615, Type II.

(2) Primer selected shall be compatible with finish coats of paint. Coordinate selection of metal primer with actual finish paint provided under Section 09 91 00 of these Specifications.

2.4 FABRICATION

2.4.1 Workmanship:

(1) Use materials of size and thickness shown or, if now shown, of required size and thickness to produce strength and durability in the finished product.

(2) Work to dimensions shown or accepted on the Shop Drawings using proven details of fabrication and support.

(3) Use type of materials shown or specified for the various components of the work.

(4) Form exposed work true to line and level, with accurate angles and surfaces and with straight, sharp edges.

(5) Ease the exposed edges to a radius of approximately (1/32") unless otherwise shown.

(6) Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

(7) Weld corners and seams continuously, complying with AWS recommendations. At exposed connections, grind exposed welds smooth and flush to match and blend with adjoining surfaces.

(8) Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type shown or, if not shown, use Phillips flat-head (countersunk) screws or bolts.

(9) Provide for anchorage of the type shown. Coordinate with supporting structure. Fabricate and space the anchoring devices to provide adequate support for intended use.

(10) Cut, reinforce, drill, and tap miscellaneous metal work as indicated to receive finish hardware and similar items.

2.5 MISCELLANEOUS METAL FABRICATIONS

2.5.1 Elevator Pit Ladder:

(1) Fabricate ladder for access to elevator pit.

(2) Stringer shall be 2-1/2" x 3/8" bar

(3) 3/4" round rungs shall be welded to stringer at 12" o.c.

(4) 2-1/2" x 4" x 3/8" clip angle at base shall be welded to stringer and anchored to floor

(5) 2-1/2" x 3/8" bar bracket at 2'-0" o.c. shall attach stringer to wall.

2.5.2 Rough Hardware:

(1) Provide bent or otherwise custom fabricated bolts, plates, anchors, hangers, dowels, and other miscellaneous steel and iron shapes as required for framing

and supporting woodwork, and for anchoring or securing woodwork where indicated on the drawings.

(2) Manufacture or fabricate items of sizes, shapes, and dimensions required.

(3) Provide malleable iron washers for heads and nuts which bear on wood structural connections; elsewhere furnish steel washers.

2.5.3 Loose bearing and leveling plates:

(1) Provide loose bearing and leveling plates for steel items bearing on concrete construction; make flat, free from warps of twists, and of required thickness and bearing area.

(2) Drill plates to receive anchor bolts and for grouting as required.

(3) Galvanize after fabrication.

2.5.4 Miscellaneous framing and supports:

(1) Provide miscellaneous steel framing and supports which are not part of structural steel framework, as required to complete work.

(2) Fabricate miscellaneous units to sizes, shapes, and profiles shown, or if not shown, of required dimensions to receive adjacent other work to be retained by framing.

(3) Fabricate the miscellaneous units from structural steel shapes, plates, and steel bars of welded construction with mitered joints for field connection, unless otherwise shown.

(4) Cut, drill, and tap units to receive hardware.

(5) Equip units with integrally welded anchors for casting into concrete or building into masonry, and furnish inserts if units must be installed after concrete is placed.

(6) Except as otherwise shown, space anchors 24" on centers, and provide minimum anchor units of 1-1/4" x 1/4" x 8" steel straps.

PART 3 – EXECUTION

3.1 INSPECTION

3.1.1 Examine the areas and conditions under which miscellaneous metal items are to be installed, and correct conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

3.2 PREPARATION

3.2.1 Furnish setting drawings, diagrams, templates, instructions, and directions for installation of anchorages such as concrete inserts, anchor bolts, and miscellaneous items having integral anchors, which are to be embedded in concrete construction. Coordinate delivery of such items to project site.

3.3 INSTALLATION

3.3.1 Setting loose plates:

(1) Clean concrete bearing surfaces free from bond-reducing materials, and roughen to improve bond to surfaces. Clean the bottom surface of bearing plates.
(2) Set lose leveling and bearing plates on wedges, or other adjustable devices.
(3) After the bearing members have been positioned and plumbed, tighten the anchor bolts. Do not remove wedges or shims; but if protruding, cut off flush with the edge of the bearing plate before packing with grout.
(4) Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

3.3.2 Fastening to in-place construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction including threaded fasteners for concrete inserts, toggle bolts, through-bolts, lag bolts, wood screws, and other connectors as required.

3.3.3 Cutting, fitting, and placement:
(1) Perform cutting, drilling, and fitting required for installation of miscellaneous metal fabrications.
(2) Set work accurately in location, alignment, and elevation, and make plumb, level, true, and free from rack as measured from established lines and levels.
(3) Provide temporary bracing or anchors in formwork for items which are to be built into concrete or similar construction.
(4) Fit exposed connections accurately together to form tight hairline joints.
(5) Weld connections which are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations.
(6) Grind exposed joints smooth, and touch-up shop paint coat. Do not weld, cut, or abrade the surfaces of exterior units which have been hot-dip galvanized after fabrication and are intended for bolted or screwed field connections.

3.3.4 Field Welding: Comply with AWS code for procedures of manual shielded metal-arc welding, appearance and quality of weld made, and methods in correcting welding work.

3.3.5 Touch-Up 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.

END OF SECTION 05 50 00

SECTION 06 10 00 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Wood blocking, cants and nailers
B. Plywood backing panels

1.2 SUBMITTALS

A. Material Certificates as applicable:
   1. Preservative treated wood.
   2. Metal framing anchors.

PART 2 - PRODUCTS

2.1 MISCELLANEOUS LUMBER

A. Provide No. 2 Southern Yellow Pine or approved substitution for the following:
   1. Blocking
   2. Nailers
   3. Equipment bases and support curbs
   4. Cants
   5. Furring
   6. Grounds

2.2 PLYWOOD BACKING PANELS

A. Exterior, AC in thickness indicted, if not indicated, not less than ½ inch.

2.3 METAL FRAMING ANCHORS

A. Manufacturers:
   1. Simpson Strong-Tie Co., Inc. or approved equal.

B. For interior locations unless otherwise indicated use Hot-Dipped, zinc-coated Galvanized-Steel Sheet

C. For wood-preservative-treated lumber use Hot-Dipped, Heavy-galvanied Steel Sheet.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Set rough carpentry to required levels and lines, with members plumb, true to line and fitted.

B. Install Engineered Wood Products in compliance with manufacturer's written instructions and recommendations.

C. Install metal framing anchors and connectors in compliance with manufacturer's written instructions.

D. Apply field treatment to cut surfaces of preservative-treated materials.

3.2 PROTECTION

A. Protect all treated and untreated lumber from weather.

B. Protect installed material and systems from damage during following construction procedures.

END OF SECTION 06 10 00

SECTION 06 40 00 – ARCHITECTURAL WOODWORK

PART 1 - GENERAL

1.1 DESCRIPTION

1.1.1 Work Included: Furnish and install all materials, equipment, and related services necessary for installation of cabinets and carpentry as shown on the drawings and as specified herein.

1.2 QUALITY ASSURANCE

1.2.1 Standards: Comply with the following standards unless otherwise specified:

(1) Plywood and hardwood shall conform to U.S. Product Standard PS 51-71 for Hardwood and Decorative Plywood.
(2) Quality Standards of the Architectural Woodwork Institute, "Architectural Woodwork Quality Standards and Guide Specifications".

1.2.2 Qualifications of Manufacturers: Products used in the work of this Section shall be produced by manufacturers regularly engaged in manufacture of similar items and with a history of successful production acceptable to the Architect.

1.2.3 Qualifications of Installers: 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 methods needed for proper performance of the work of this Section.

1.3 SUBMITTALS

1.3.1 General: Comply with the pertinent provisions of Section 01 33 00.

1.3.2 Product Data: Submit the following to the Architect for approval:

(1) Shop Drawings: Showing elevations of each item shown on the drawings, methods and details of joinery, anchorage, and grade of wood being used.
(2) Samples: Color selections to be made from manufacturer's plastic laminate samples.

1.4 PRODUCT HANDLING

1.4.1 Delivery and Storage: Work under this Section shall be protected against dampness. It shall be stored in well ventilated buildings and where not exposed to extreme changes in temperature and/or humidity.

1.4.2 Protection: Use all means necessary to protect materials of this Section before, during, and after installation and to protect the installed work and materials of all other trades.

1.4.3 Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART 2 - PRODUCTS

2.1 PRODUCTS

2.1.1 Refer to the Millwork drawings for cabinet product details and locations.

2.2 PLASTIC LAMINATE

2.2.1 Plastic laminate shall be as manufactured by Wilson Art or equal.

2.2.2 Color to be selected by Architect from submitted samples.

2.3 ROUGH HARDWARE

2.3.1 Rough hardware needed for proper installation of all carpentry work shall be provided. Nails, spikes, screws, bolts, and similar items shall be of proper types and ample sizes to fasten and hold the various members securely in place.

2.4 CABINET HARDWARE

2.4.1 Refer to the Millwork drawings for product details and locations.

2.5 OTHER MATERIALS

2.5.1 All other materials, not specifically described but required for a complete and proper installation as indicated on the drawings, shall be new, suitable for the intended use, and subject to the approval of the Architect.

2.6 GUARANTEE

2.6.1 Specified work shall be guaranteed for five (5) years starting from date of substantial completion against manufacturing defects including but not limited to adhesive failure.

PART 3 - EXECUTION

3.1 INSPECTION

3.1.1 Examine the areas and conditions under which work of this Section will be installed. Correct conditions detrimental to proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

3.1.2 Field verify all dimensions prior to fabrication of work under this Section.

3.2 WORKMANSHIP

3.2.1 All work under this Section shall be smooth, properly membered or mitered, set true, level and plumb, with tight joints, and securely fastened in place. All lengths of lumber to be without joints on a straight run where possible, and where joints are necessary, they are to be made on an angle of 45 degrees against the light, accurately, and neatly.

Moldings shall be true to details, cleanly cut, and sharp. Exposed surfaces shall be sanded to an even, smooth surface, ready for finish. Mill assemblies shall be joined with concealed nails or screws, mortise and tenons, dowels, or glued blocks, in accordance with the best mill practice and workmanship. Intersection molds shall be neatly coped. Flat members of wood trim shall be backed out or saw-kerfed to prevent warping. Finish to be properly protected from dampness at all times until painted or stained.

3.3 HARDWARE

3.3.1 Rough hardware including nails, screws, anchor bolts, wall plugs, etc., shall be installed in such types, sizes, and quantities as indicated on drawings or as required for the secure anchorage of carpentry work.

3.4 FINISHING

3.4.1 Sandpaper all finished wood surfaces thoroughly as required to produce a uniformly smooth surface, always sanding in the direction of the grain. No coarse-grained sandpaper mark, hammer mark, or other imperfection will be accepted. Finish to be applied in accordance with the very best practice so that completed results will show as little of the joints as possible, no tool or machine marks, and no nail holes or nails.

3.5 CLEANING AND ADJUSTMENT

3.5.1 Upon completion of the installation, visually inspect each installed item, thoroughly clean all surfaces by using the cleaning material recommended by the manufacturer of the finish being cleaned, and carefully adjust all operating components for optimum operation.

END OF SECTION 06 40 00

SECTION 07 13 00 – SHEET MEMBRANE WATERPROOFING

PART 1 – GENERAL

1.1 DESCRIPTION

1.1.1 Work Included: Install sheet membrane waterproofing on surfaces indicated on the drawings, consisting of preparation of existing and repaired concrete surfaces, sealing of cracks and joints, and application of Sheet Membrane Waterproofing.

1.1.2 Related Work Described Elsewhere:

(1)	Concrete Formwork	Section 03 10 00
(2)	Structural Concrete	Section 03 31 00

1.2 QUALITY ASSURANCE

1.2.1 Standards: Comply with the following standards unless otherwise specified or modified:

(1) ASTM D412, Tests for Rubber Properties in Tension
(2) ASTM E154, Puncture Resistance
(3) ASTM E96(b), Water Vapor Transmission of Materials
(4) ASTM D1970, Self-Adhering Polymer Modified Bituminous Sheet Materials

1.2.2 Applicator Qualifications: Applicator shall be experienced in applying the same or similar materials and shall be completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1.2.3 Regulatory Requirements: Comply with applicable codes, regulations, ordinances, and laws regarding use and application of products that contain volatile organic compounds (VOC).

1.2.4 Pre-Application Conference: Prior to beginning work, convene a conference to review conditions, installation procedures, schedules, and coordination of other work.

1.3 SUBMITTALS

1.3.1 General: Submit the following to the Architect for approval:

(1) Product Data: Submit manufacturer's product literature and installation instructions.

1.4 PRODUCT HANDLING

1.4.1 Deliver materials to project site in original, factory-sealed, unopened containers bearing manufacturer's name and label intact and legible with the following information.

(1) Name of Material.
(2) Manufacturer's stock number and date of manufacture.
(3) Material safety data sheet.

1.4.2 Store materials in protected and well ventilated area.

1.5 WARRANTY

1.5.1 Upon completion and acceptance of the work required by this section, the manufacturer will issue a warranty agreeing to promptly replace defective materials for a period of 5 years.

1.6 PROJECT CONDITIONS

1.6.1
(1) Do not apply membrane if temperature is less than 25 degrees F. or to a damp, frosty, or contaminated surface.
(2) Coordinate waterproofing work with other trades. The applicator shall have a sole right of access to the specified areas for the time needed to complete the installation.
(3) Warn personnel against breathing vapor and contact of material with skin or eyes. Wear applicable protective clothing and respiratory protection gear.
(4) Keep flammable products away from spark or flame. Do not allow the use of spark producing equipment during application and until all vapors have dissipated. Post "NO SMOKING " signs.
(5) Maintain work area in a neat and orderly condition, removing empty containers, rags, and rubbish daily from the site.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

2.1.1 Provide CCW-701 Sheet Membrane Waterproofing as manufactured by Carlisle Coating and Waterproofing Incorporated, P.O. Box 1600, Sapulpa, OK 74067-1600, Phone (800) 338-8701, FAX (918) 227-0603, or equal.

2.2 PRODUCTS

2.2.1 Self-Adhesive Sheet Membrane Waterproofing: Shall be CCW-701 consisting of a 56 mil rubberized asphalt membrane laminated to 4 mil cross laminated polyethylene film, and shall meet or exceed the following requirements:

(1) Tensile Strength: 300 psi minimum, ASTM D-412
(2) Ultimate Elongation: 300% minimum, ASTM D-412
(3) Puncture Resistance: 40 lbs. minimum, ASTM E-154
(4) Permeance: 0.05 Perm maximum, ASTM E-96 B
(5) Low Temperature Flexibility: Unaffected at -45 degrees F., ASTM D-146, 1" mandrel.

2.2.2 For application temperatures between 25 and 40 degrees F., use CCW-701LT Low Temperature Sheet Membrane and CCW-702LT Low Temperature Primer.

2.3 ACCESSORY PRODUCTS

(1) Surface Primer: Shall be CCW-702 or CCW0702LT Solvent-based Primers or CCW-714 Water Based Primer.
(2) Mastic: Shall be CCW-704 Mastic.
(3) Sealants: Shall be CCW-703 Vertical Grade Liquiseal Membrane, CCW-102C one component or CCW-201 two component Polyurethane Sealant.
(4) Backing Rod: Shall be closed-cell polyethylene foam rod.
(5) Protection Course: 1-1/2" Styrofoam Drainage Insulation as manufactured by Dow Chemical Company (R-7) or equal.

PART 3 – EXECUTION

3.1 INSPECTION

3.1.1 Before any waterproofing work is started the waterproofing applicator shall thoroughly examine all surfaces for any deficiencies. Should any deficiencies exist, the Architect and General Contractor shall be notified.

3.1.2 Condition of Concrete Surfaces:

(1) The concrete surfaces shall be of sound structural grade and shall have a smooth finish, free of fins, ridges, voids or entrained air holes. Rough surfaces shall receive a well adhered coat.
(2) Voids, rock pockets and excessively rough surfaces shall be repaired with approved non-shrink grout or ground to match the unrepaired areas.

3.2 SURFACE PREPARATION

3.2.1 The concrete surface must be thoroughly clean, dry and free from any surface contaminates or cleaning residue that may harmfully affect the adhesion of the membrane.

3.3 APPLICATION

3.3.1 Priming: Clean surfaces to remove residual dust before priming. Stir primer. Apply by spray or roller at a rate of 250 to 300 sq. ft. per gallon. Allow to dry per manufacturer's recommendation.

3.3.2 Horizontal surfaces: Install sheet membrane from low to high point, so that laps will shed water. Overlap edge seams 2-1/2", end laps 4". Stagger end seams. Roll in place with an 18" to 24" wide, 100 lb. (min.) resilient roller. Ensure that all laps are firmly adhered and that there are no gaps of fishmouths.

3.3.3 Vertical surfaces: Apply in lengths of 8' or less. Overlap edge seams 2-1/2". On walls over 8' high, apply in 8' sections, starting at the lowest point with the higher section overlapping the lower section 4". Roll in place using firm pressure with a hand roller.

3.3.4 Terminations: Roll terminations edges firmly. Apply CCW-704 mastic to all terminations and "T" joints. Apply CCW-704 Mastic or CCW-703-V Liquiseal to laps at angle changes, extending 9" in each direction.

3.4 PROTECTION COURSE

3.4.1 Install Drainage Insulation as drainage composite immediately after membrane has been installed on vertical surfaces.

END OF SECTION 07 13 00

SECTION 07 20 00 – INSULATION

PART 1 – GENERAL

1.1. DESCRIPTION

1.1.1 Work Included: Furnish and install all building insulation as indicated on drawings and as specified herein.

1.1.2 Related Work Described Elsewhere:

(1)	Gypsum Wallboard	Section 09 20 00

1.2 PRODUCT HANDLING

1.2.1 Protection: Use all means necessary to protect the materials of this Section before, during, and after installation and to protect the work and materials of all other trades.

1.2.2 Delivery and Storage: Deliver materials to the job site and store in a safe, dry place with all labels intact and legible at time of installation.

1.2.3 Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART 2 – PRODUCTS

2.1 BATT INSULATION

2.1.1 Batt insulation shall be 3 1/2" thick unfaced (sound batt), and 6" thick unfaced (fire barrier), and 6" thick faced (sound batt above ceiling) as manufactured by Owens/Corning Fiberglass Corporation, Krauf, or CertainTeed.

2.1.2 Refer to the drawings for locations of batt insulation.

PART 3 – EXECUTION

3.1 INSPECTION

3.1.1 Examine the areas and conditions under which work of this Section will be installed. Correct conditions detrimental to proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

3.2 INSTALLATION (BATT INSULATION)

3.2.1 Except as otherwise specifically directed by the Architect, install all batt insulation in accordance with the current edition of "Fiberglass Building Insulation Application Instructions", publication 3-BL-4992 of the Owens/Corning Fiberglass Corporation.

3.3 VERIFICATION

3.3.1 Upon completion of the installation in each area, visually inspect and verify that all insulation is complete and properly installed.

END OF SECTION 07 20 00

SECTION 07 54 23 - TPO SINGLE PLY ROOFING SYSTEM

PART 1 GENERAL

1.01 SUMMARY

A. Furnish and install elastomeric sheet roofing system, including:
   1. Roofing manufacturer's requirements for the specified warranty.
   2. Preparation of roofing substrates.
   3. Wood nailers for roofing attachment as required.
   4. Tapered Insulation.
   5. Cover boards.
   6. Self Adhering elastomeric membrane roofing.
   7. Metal roof edge, scuppers/leader heads & flashings.
   8. Walkway pads.
   9. Other roofing-related items specified or indicated on the drawings or otherwise necessary to provide a complete weatherproof roofing system.

B. Disposal of debris and construction waste is the responsibility of Contractor. Perform disposal in manner complying with all applicable federal, state, and local regulations.

C. Comply with the published recommendations and instructions of the roofing membrane manufacturer, at http://manual.fsbp.com.

D. Commencement of work by the Contractor shall constitute acknowledgement by the Contractor that this specification can be satisfactorily executed, under the project conditions and with all necessary prerequisites for warranty acceptance by roofing membrane manufacturer. No modification of the Contract Sum will be made for failure to adequately examine the Contract Documents or the project conditions.

1.02 RELATED SECTIONS/DRAWINGS

E. Section 06 10 00 - Rough Carpentry: Wood nailers associated with roofing and roof insulation as required.

F. Roof Accessories: See architectural, structural and MEP drawings/specification information for Roof hatches, vents, plumbing piping, roof drains and manufactured curbs.

1.03 REFERENCES

H. Referenced Standards: These standards form part of this specification only to the extent they are referenced as specification requirements.

1. ASTM C 1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2013.
2. ASTM C 1549 - Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer; 2009.
3. ASTM D 638 - Standard Test Method for Tensile Properties of Plastics; 2010.
4. ASTM D 1004 - Standard Test Method for Initial Tear Resistance of Plastic Film and Sheeting; 2009.
5. ASTM D 3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2000.
6. ASTM D6878/D6878M - Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing; 2011a.
7. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2013a.
8. ASTM E 136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace At 750 Degrees C; 2012.
9. FM 1-28 - Design Wind Loads; Factory Mutual System; 2007.
10. FM 1-29 - Roof Deck Securement and Above Deck Roof Components; Factory Mutual System; 2006.
11. PS 1 - Construction and Industrial Plywood; 2009.
12. PS 20 - American Softwood Lumber Standard; 2010.
13. SPRI ES-1 - Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems; 2007. (ANSI/SPRI ES-1).

1.04 SUBMITTALS

I. Product Data:

1. Provide membrane manufacturer's printed data sufficient to show that all components of roofing system, including insulation and fasteners, comply with the specified requirements and with the membrane manufacturer's requirements and recommendations for the system type specified; include data for each product used in conjunction with roofing membrane.
2. Where UL or FM requirements are specified, provide documentation that shows that the roofing system to be installed is UL-Classified or FM-approved, as applicable; include data itemizing the components of the classified or approved system.
3. Installation Instructions: Provide manufacturer's instructions to installer, marked up to show exactly how all components will be installed; where

instructions allow installation options, clearly indicate which option will be used.

J. Shop Drawings: Provide:

1. The roof membrane manufacturer's standard details customized for this project for all relevant conditions, including flashings, base tie-ins, roof edges, terminations, expansion joints, penetrations, and drains.
2. For tapered insulation, provide project-specific layout and dimensions for each board.
3. For roof coping, provide manufacturer's color selected to match the existing adjacent coping.

K. Pre-Installation Notice: Copy to show that manufacturer's required Pre Installation Notice (PIN) has been accepted and approved by the manufacturer.

L. Executed Warranty.

1.05 QUALITY ASSURANCE

M. Applicator Qualifications: Roofing installer shall have the following:
1. Current Firestone Master Contractor status or similar qualifications from alternate manufacturer.
2. At least five years experience in installing specified system.
3. Capability to provide payment and performance bond to building owner.

N. Pre-Installation Conference: Before start of roofing work, Contractor shall hold a meeting to discuss the proper installation of materials and requirements to achieve the warranty.
1. Require attendance with all parties directly influencing the quality of roofing work or affected by the performance of roofing work.
2. Notify Architect well in advance of meeting.

1.06 DELIVERY, STORAGE AND HANDLING

O. Deliver products in manufacturer's original containers, dry and undamaged, with seals and labels intact and legible.

P. Store materials clear of ground and moisture with weather protective covering.

Q. Keep combustible materials away from ignition sources.

1.07 WARRANTY

R. Comply with all warranty procedures required by manufacturer, including notifications, scheduling, and inspections.

S. Warranty: Firestone 10 year Red Shield Limited Warranty covering membrane, roof insulation, and membrane accessories.

Warranty Duration	Membrane Thickness, required minimums
20 year maximum	.060 UltraPly TPO SA

1. Limit of Liability: No dollar limitation.
2. Scope of Coverage: Repair leaks in the roofing system caused by:
   a. Ordinary wear and tear of the elements.
   b. Manufacturing defect in Firestone brand materials.
   c. Defective workmanship used to install these materials.
   d. Damage due to winds up to 55 mph.
3. Not Covered:
   a. Materials made entities other than Firestone Building Products
   b. Damage due to winds in excess of 55 mph.
   c. Damage due to hurricanes or tornadoes.
   d. Hail.
   e. Intentional damage.
   f. Unintentional damage due to normal rooftop inspections, maintenance, or service.

PART 2 PRODUCTS

1.1 MANUFACTURERS

A. Acceptable Manufacturer - Roofing System: Firestone Building Products Co., Carmel, IN.

B. Roofing systems manufactured by others may be acceptable provided the roofing system is completely equivalent in materials and warranty conditions and the manufacturer meets the following qualifications:
   1. Specializing in manufacturing the roofing system to be provided.
   2. Minimum ten years of experience manufacturing the roofing system to be provided.
   3. Able to provide a no dollar limit, single source roof system warranty that is backed by corporate assets in excess of one billion dollars.
   4. ISO 9002 certified.
   5. Able to provide polyisocyanurate insulation that is produced in own facilities.

C. Manufacturer of Insulation and Cover Board: Same manufacturer as roof membrane.

D. Manufacturer of Metal Roof Edging: Same manufacturer as roof membrane.
   1. Metal roof edging products by other manufacturers are not acceptable.
   2. Field- or shop-fabricated metal roof edgings are not acceptable.

2.02 ROOFING SYSTEM DESCRIPTION

E. Roofing System:
   1. Membrane: Self Adhering Thermoplastic Polyolefin (TPO).
   2. Thickness: As specified elsewhere.
   3. Membrane Attachment: Fully adhered.
   4. Slope: Deck is not sloped. Provide additional slope to achieve 1/4 inch per foot (1:48) by means of tapered insulation.
   5. Comply with applicable local building code requirements.
   6. Provide assembly having Underwriters Laboratories, Inc. (UL) Class A Fire Hazard Classification.
   7. Provide assembly complying with Factory Mutual Corporation (FM) Roof Assembly Classification, FM DS 1-28 and 1-29, and meeting minimum requirements of FM 1-[60, 90, 120, 160] wind uplift rating.

F. Insulation:
   1. Total System R Value: 20, minimum.
   2. Maximum Board Thickness: 2 inches (50 mm); use as many layers as necessary; stagger joints in adjacent layers. Minimum thickness of 1 inch.
   3. Base Layer: Polyisocyanurate foam board, non-composite.
      a. Attachment: Mechanical fastening.
   4. Top Layer: Polyisocyanurate foam board, non-composite.
      a. Attachment: Mechanical fastening.

C. Cover Board: High Density Polyisocyanurate Cover Board:
   1. Thickness: 0.5 inch (12.7mm).
   2. R-Value: 2.5 based on ASTM tests C158 and C177.
      a. Attachment: Mechanical fastening.

2.03 TPO MEMBRANE MATERIALS

A. Membrane: Flexible, heat weldable sheet composed of thermoplastic polyolefin polymer and ethylene propylene rubber; complying with ASTM D 6878, with polyester weft inserted reinforcement and the following additional characteristics:
   1. Thickness: 0.060 inch (1.15 mm) plus/minus 10 percent, with coating thickness over reinforcement of 0.021 inch (0.54 mm) plus/minus 10 percent.
   2. Puncture Resistance: 300 lbf (1,334 N), minimum, when tested in accordance FTM 101C Method 2031.
   3. Solar Reflectance: 0.74, minimum, when tested in accordance with ASTM C 1549.
   4. Color: White
   5. Acceptable Product: UltraPly TPO SA with Secure Bond technology by Firestone.

B. Membrane Fasteners: Type and size as required by roof membrane manufacturer for roofing system and warranty to be provided; use only fasteners furnished by roof membrane manufacturer.

C. Curb and Parapet Flashing: Same material as membrane, with encapsulated

edge which eliminates need for seam sealing the flashing-to-roof splice; precut to 18 inches (457 mm) wide.

D. Formable Flashing: Non-reinforced, flexible, heat weldable sheet, composed of thermoplastic polyolefin polymer and ethylene propylene rubber.
   1. Thickness: 0.060 inch (1.52 mm) plus/minus 10 percent.
   2. Tensile Strength: 1550 psi (10.7 MPa), minimum, when tested in accordance with ASTM D 638 after heat aging.
   3. Elongation at Break: 650 percent, minimum, when tested in accordance with ASTM D 638 after heat aging.
   4. Tearing Strength: 12 lbf (53 N), minimum, when tested in accordance with ASTM D 1004 after heat aging.
   5. Color: Same as field membrane.
   6. Acceptable Product: UltraPly TPO Flashing by Firestone.

E. Tape Flashing: 5-1/2 inch (140 mm) nominal wide TPO membrane laminated to cured rubber polymer seaming tape, overall thickness 0.065 inch (1.6 mm) nominal; TPO Quickseam Flashing by Firestone.

F. Pourable Sealer: Two-part polyurethane, two-color for reliable mixing; Pourable Sealer by Firestone.

G. Seam Plates: Steel with barbs and Galvalume coating; corrosion-resistance complying with FM 4470.

H. Termination Bars: Aluminum bars with integral caulk ledge; 1.3 inches (33 mm) wide by 0.10 inch (2.5 mm) thick; Firestone Termination Bar by Firestone.

I. Cut Edge Sealant: Synthetic rubber-based, for use where membrane reinforcement is exposed; UltraPly TPO Cut Edge Sealant by Firestone.

J. General Purpose Sealant: EPDM-based, one part, white general purpose sealant; UltraPly TPO General Purpose Sealant by Firestone.

K. Molded Flashing Accessories: Unreinforced TPO membrane pre-molded to suit a variety of flashing details, including pipe boots, inside corners, outside corners, etc.; UltraPly TPO Small and Large Pipe Flashing by Firestone.

L. Roof Walkway Pads: Non-reinforced TPO walkway pads, 0.130 inch (3 mm) by 30 inches (760 mm) by 40 feet (12.19 m) long with patterned traffic bearing surface; UltraPly TPO Walkway Pads by Firestone.

M. Yellow Safety Strip: To designate areas of caution on the roof or around rooftop objects. 5.5 inches wide (140 mm) by 100 feet long (30 m) strip and nominal 30 mil (0.76 mm) thick yellow TPO membrane laminated to a white, cured, seam tape. Compatible with TPO and EPDM; QuickSeam Yellow Safety Strip by Firestone.

2.04 ROOF INSULATION AND COVER BOARDS

N. Polyisocyanurate Board Insulation: Closed cell polyisocyanurate foam with black glass reinforced mat laminated to faces, complying with ASTM C 1289 Type II Class 1, with the following additional characteristics:
   1. Thickness: As indicated elsewhere.
   2. Size: 48 inches (1220 mm) by 96 inches (2440 mm), nominal.

3. Exception: Insulation to be attached using adhesive or asphalt may be no larger than 48 inches (1220 mm) by 48 inches (1220 mm), nominal.
4. R-Value (LTTR): 1.0 inch (25 mm) Thickness: 5.7 R, minimum.
5. Compressive Strength: 20 psi (138 kPa) when tested in accordance with ASTM C 1289.
6. Ozone Depletion Potential: Zero; made without CFC or HCFC blowing agents.
7. Recycled Content: 19 percent post-consumer and 15 percent post-industrial, average.
8. Acceptable Product: ISO 95+ polyiso board insulation by Firestone

A. High Density Polyisocyanurate Cover Board: Non-combustible, water resistant high density, closed cell polyisocyanurate core with coated glass mat facers, complying with ASTM D 1623, and with the following additional characteristics:
1. Size: 48 inches (1220 mm) by 96 inches (2440 mm), nominal.
   a. Exception: Board to be attached using adhesive or asphalt may be no larger than 48 inches (1220 mm) by 48 inches (1220 mm), nominal.
2. Thickness: 0.5 inch (12.7mm).
3. R-Value: 2.5 R based on ASTM tests C158 and C177.
4. Surface Water Absorption: <3%, maximum, when tested in accordance with ASTM C 209.
5. Compressive Strength: 120psi, when tested in accordance with ASTM 1621.
6. Density: 5pcf, when tested in accordance with ASTM 1622.
7. Factory Mutual approved for use with FM 1-60 and 1-90 rated roofing assemblies.
8. Mold Growth Resistance: Passed, when tested in accordance with ASTM D 3273.
9. Acceptable Product: ISOGARD HD Cover Board by Firestone.

B. Insulation Fasteners: Type and size as required by roof membrane manufacturer for roofing system and warranty to be provided; use only fasteners furnished by roof membrane manufacturer.

2.05 METAL ACCESSORIES

A. Metal Roof Edging and Fascia: Continuous metal edge membrane serving as termination of roof membrane and retainer for metal fascia; watertight with no exposed fasteners; mount to roof edge nailer.
1. Wind Performance:
   a. At least the minimum required when tested in accordance with ANSI/SPRI ES-1 Test Method RE-3, current edition.
   b. Fascia Pull-Off Resistance: At least the minimum required when tested in accordance with ANSI/SPRI ES-1 Test Method RE-3, current edition.
   c. Provide product listed in current Factory Mutual Research

Corporation Approval Guide with at least FM 1-90 rating.

1. Description: two piece: 45 degree sloped galvanized steel sheet edge membrane securing top and bottom edges of formed metal fascia; Firestone EdgeGard.
2. Fascia Face Height: Match existing adjacent fascia.
3. Dimensions:
   a. Wall Width: As indicated on the drawings.
   b. Piece Length: Minimum 144 inches (3650 mm).

1. Anchor/Support Cleats: 20 gage, 0.036 inch (0.9 mm) thick galvanized steel cleat with pre-punched holes.
2. Special Shaped Components: Provide factory-fabricated pieces necessary for complete installation, including miters, corners, intersections, curves, pier caps, and end caps; minimum 14 inch (355 mm) long legs on corner, intersection, and end pieces.
3. Fasteners: Factory-furnished; corrosion resistant, electrolytically compatible; minimum pull out resistance of 240 pounds (109 kg) for actual substrate used; no exposed fasteners.

2.06 ACCESSORY MATERIALS

A. Wood Nailers: PS 20 dimension lumber, Structural Grade No. 2 or better Southern Pine; pressure preservative treated.
   1. Width: 3-1/2 inches (90 mm), nominal minimum, or as wide as the nailing flange of the roof accessory to be attached to it.
   2. Thickness: Same as thickness of roof insulation.

PART 3 INSTALLATION

3.01 GENERAL

A. Install roofing, insulation, flashings, and accessories in accordance with roofing manufacturer's published instructions and recommendations for the specified roofing system. Where manufacturer provides no instructions or recommendations, follow good roofing practices and industry standards. Comply with federal, state, and local regulations.

B. Obtain all relevant instructions and maintain copies at project site for duration of installation period.

C. Do not start work until Pre-Installation Notice has been submitted to manufacturer as notification that this project requires a manufacturer's warranty.

D. Perform work using competent and properly equipped personnel.

E. Temporary closures, which ensure that moisture does not damage any completed section of the new roofing system, are the responsibility of the applicator. Completion of flashings, terminations, and temporary closures shall be completed as required to provide a watertight condition.

F. Install self-adhering roofing membrane only when surfaces are clean, dry,

smooth and free of snow or ice; do not apply roofing membrane during inclement weather or when ambient conditions will not allow proper application; consult manufacturer for recommended procedures during cold weather. Do not work with sealants and adhesives when material temperature is outside the range of 60 to 80 degrees F (16 to 27 degrees C).

G. Protect adjacent construction, property, vehicles, and persons from damage related to roofing work; repair or restore damage caused by roofing work.
   1. Protect from spills and overspray from bitumen, adhesives, sealants and coatings.
   2. Particularly protect metal, glass, plastic, and painted surfaces from bitumen, adhesives, and sealants within the range of wind-borne overspray.
   3. Protect finished areas of the roofing system from roofing related work traffic and traffic by other trades.

H. Until ready for use, keep materials in their original containers as labeled by the manufacturer.

I. Consult membrane manufacturer's instructions, container labels, and Safety Data Sheets (SDS) for specific safety instructions. Keep all adhesives, sealants, primers and cleaning materials away from all sources of ignition.

3.02 EXAMINATION

A. Examine roof deck to determine that it is sufficiently rigid to support installers and their mechanical equipment and that deflection will not strain or rupture roof components or deform deck.

B. Verify that surfaces and site conditions are ready to receive work. Correct defects in the substrate before commencing with roofing work.

C. Examine roof substrate to verify that it is properly sloped to drains.

D. Verify that the specifications and drawing details are workable and not in conflict with the roofing manufacturer's recommendations and instructions; start of work constitutes acceptable of project conditions and requirements.

3.03 PREPARATION

A. Prior to proceeding, prepare roof surface so that it is clean, dry, and smooth, and free of sharp edges, fins, roughened surfaces, loose or foreign materials, oil, grease and other materials that may damage the membrane.

B. Fill all surface voids in the immediate substrate that are greater than 1/4 inch (6 mm) wide with fill material acceptable insulation to membrane manufacturer.

3.04 INSULATION AND COVER BOARD INSTALLATION

A. Install insulation in configuration and with attachment method(s) specified in PART 2, under Roofing System.

B. Install only as much insulation as can be covered with the completed roofing

system before the end of the day's work or before the onset of inclement weather.

C. Lay roof insulation in courses parallel to roof edges.

D. Neatly and tightly fit insulation to all penetrations, projections, and nailers, with gaps not greater than 1/4 inch (6 mm). Fill gaps greater than 1/4 inch (6 mm) with acceptable insulation. Do not leave the roofing membrane unsupported over a space greater than 1/4 inch (6 mm).

E. Mechanical Fastening: Using specified fasteners and insulation plates, engage fasteners through insulation into deck to depth and in pattern required by Factory Mutual for FM Class specified in PART 2 and membrane manufacturer, whichever is more stringent.

3.05 SELF ADHERING SINGLE-PLY MEMBRANE INSTALLATION

A. Substrates must be clean, dry and free of foreign material which could inhibit adhesion.

1. Install Firestone UltraPly TPO SA membrane with Secure Bond technology only when ambient and substrate temperatures are 20 °F (-7 °C) minimum and rising. Do not install Firestone UltraPly TPO SA below this minimum temperature.

B. Lay out the membrane pieces so that field and flashing splices are installed to shed water. Install membrane without wrinkles and without gaps or fishmouths in seams; bond and test seams and laps in accordance with membrane manufacturer's instructions and details.

1. Beginning at low point of roof, place membrane without stretching over substrate and allow to relax at least 30 minutes before attachment or splicing; in colder weather allow for longer relax time.

2. Fold back one side (½ of the membrane) to expose the release liner without disturbing the original position.

3. Starting at one end, remove the release liner at a 45° angle in one continuous motion.

4. Immediately broom the installed membrane. Roll the installed membrane with a weighted roller to ensure full contact with the substrate.

C. Fold back the remaining half of membrane and repeat the preceding steps.

D. Follow all current manufacturer technical specifications for heat welding TPO membrane.

1. Edge Securement: Secure membrane at all locations where membrane terminates or goes through an angle change greater than 2 in 12 inches (1:6) using mechanically fastened reinforced perimeter fastening strips, plates, or metal edging as indicated or as recommended by roofing manufacturer.

a. Exception: Round pipe penetrations less than 18 inches (460 mm) in diameter and square penetrations less than 4 inches (200 mm) square.
b. Metal edging is not merely decorative; ensure anchorage of membrane as intended by roofing manufacturer.

2. Side Laps: All seams (side laps) must be heat-welded. Overlap adjoining sheets and heat weld the uncoated area to create a minimum 1½" welded monolithic seam.

3. End Laps: Adjoining rolls must be butted together (not lapped). Strip in all butted end laps according to manufacturer's instructions. Apply cut edge sealant to all exposed scrim areas of the membrane strip.

3.06 FLASHING AND ACCESSORIES INSTALLATION

E. Install flashings, including laps, splices, joints, bonding, adhesion, and attachment, as required by membrane manufacturer's recommendations and details.

F. Metal Accessories: Install metal edgings, gravel stops, and copings in locations indicated on the drawings, with horizontal leg of edge member over membrane and flashing over metal onto membrane.
1. Follow roofing manufacturer's instructions.
2. Remove protective plastic surface film immediately before installation.
3. Install water block sealant under the membrane anchorage leg.
4. Flash with manufacturer's recommended flashing sheet unless otherwise indicated.
5. Where single application of flashing will not completely cover the metal flange, install additional piece of flashing to cover the metal edge.
6. If the roof edge includes a gravel stop and sealant is not applied between the laps in the metal edging, install an additional piece of self-adhesive flashing membrane over the metal lap to the top of the gravel stop; apply seam edge treatment at the intersections of the two flashing sections.
7. When the roof slope is greater than 1:12, apply seam edge treatment along the back edge of the flashing.

G. Roofing Expansion Joints: Install as shown on drawings and as recommended by roofing manufacturer.

H. Flashing at Walls, Curbs, and Other Vertical and Sloped Surfaces: Install weathertight flashing at all walls, curbs, parapets, curbs, skylights, and other vertical and sloped surfaces that the roofing membrane abuts to; extend flashing at least 8 inches (200 mm) high above membrane surface.
1. Use the longest practical flashing pieces.
2. Evaluate the substrate and overlay and adjust installation procedure in accordance with membrane manufacturer's recommendations.
3. Complete the splice between flashing and the main roof sheet with specified splice adhesive before adhering flashing to the vertical surface.

4. Provide termination directly to the vertical substrate as shown on roof drawings.

I. Roof Drains:
   1. Taper insulation around drain to provide smooth transition from roof surface to drain. Use specified pre-manufactured tapered insulation with facer or suitable bonding surface to achieve slope; slope not to exceed manufacturer's recommendations.
   2. Position membrane, then cut a hole for roof drain to allow 1/2 to 3/4 inch (12 to 19 mm) of membrane to extend inside clamping ring past drain bolts.
   3. Make round holes in membrane to align with clamping bolts; do not cut membrane back to bolt holes.
   4. Apply sealant on top of drain bowl where clamping ring seats below the membrane
   5. Install roof drain clamping ring and clamping bolts; tighten clamping bolts to achieve constant compression.

J. Flashing at Penetrations: Flash all penetrations passing through the membrane; make flashing seals directly to the penetration.
   1. Pipes, Round Supports, and Similar Items: Flash with specified pre-molded pipe flashings wherever practical; otherwise use specified self-curing elastomeric flashing.
   2. Pipe Clusters and Unusual Shaped Penetrations: Provide penetration pocket at least 2 inches (50 mm) deep, with at least 1 inch (25 mm) clearance from penetration, sloped to shed water.
   3. Structural Steel Tubing: If corner radii are greater than 1/4 inch (6 mm) and longest side of tube does not exceed 12 inches (305 mm), flash as for pipes; otherwise, provide a standard curb with flashing.
   4. Flexible and Moving Penetrations: Provide weathertight gooseneck set in sealant and secured to deck, flashed as recommended by manufacturer.

3.07 FINISHING AND WALKWAY INSTALLATION

K. Install walkways at access points to the roof, around rooftop equipment that may require maintenance, and where indicated on the drawings.

L. Walkway Pads: Adhere to the roofing membrane, spacing each pad at minimum of 1.0 inch (25 mm) and maximum of 3.0 inches (75 mm) from each other to allow for drainage.
   1. If installation of walkway pads over field fabricated splices or within 6 inches (150 mm) of a splice edge cannot be avoided, adhere another layer of flashing over the splice and extending beyond the walkway pad a minimum of 6 inches (150 mm) on either side.
   2. Prime the membrane, remove the release paper on the pad, press in place, and walk on pad to ensure proper adhesion.

3.08 FIELD QUALITY CONTROL

M. Inspection by Manufacturer: Provide final inspection of the roofing system by a Technical Representative employed by roofing system manufacturer specifically to inspect installation for warranty purposes (i.e. not a sales person).

N. Perform all corrections necessary for issuance of warranty.

3.09 CLEANING

O. Clean all contaminants generated by roofing work from building and surrounding areas, including bitumen, adhesives, sealants, and coatings.

P. Repair or replace building components and finished surfaces damaged or defaced due to the work of this section; comply with recommendations of manufacturers of components and surfaces.

Q. Remove leftover materials, trash, debris, equipment from project site and surrounding areas.

3.10 PROTECTION

R. Where construction traffic must continue over finished roof membrane, provide durable protection and replace or repair damaged roofing to original condition.

END OF SECTION 07 54 23

SECTION 07 84 00 – FIRE STOPPING

PART 1 – GENERAL

1.1 DESCRIPTION

1.1.1 Work Included: Furnish and install all Fire Stopping in fire-rated wall assemblies as indicated on the drawings and as specified.

1.2 QUALITY ASSURANCE

1.2.1 Standards:

(1) FIRE STOPPING Materials: ASTM E 119, ASTM E 814, UL 1479 to achieve a fire rating as indicated on the drawings.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

2.1.1 Subject to compliance with project requirements, manufacturers offering Fire Stopping materials which may be incorporated in the work include the following:

(1) Nelson Fire stop Products, Tulsa, OK (800) 331-7325
(2) Hilti Fire stop Products, Tulsa, OK (800) 879-8000
(3) The Rectorseal Corporation, Houston, TX (800) 231-3345
(4) Specified Technologies, Incorporated (STI), Somerville, NJ (800) 992-1180
(5) 3M Fire protection Products, St. Paul, MN (800) 328-1687
(6) Tremco Fire stop System, Beechwood, OH (800) 321-7906

2.1.2 Other products such as USG Fire stop System by U.S. Gypsum Co. are acceptable if complying with requirements.

2.2 MATERIALS

2.2.1 Intumescent Latex Sealant: Single-component, intumescent, latex formulation.

(1) LBC, by Nelson Fire stop Products
(2) FS611A, by Hilti
(3) Metacaulk 950 or 1000 by RectorSeal
(4) SpecSeal SSS100, by STI
(5) CP 25WB+, by 3M
(6) TREMstop WBM, by Tremco

2.2.2 Intumescent Solvent-Release-Curing Sealant: Single component, intumescent, synthetic-polymer based, non-sag grade.

(1) CP 25N/S, by 3M
(2) TREMstop WBM, by Tremco

2.2.3 Intumescent Wrap/Strip: Single-component, elastomeric sheet with aluminum foil on one face.

(1) WRS, by Nelson Fire stop Products
(2) Metacaulk Wrap Strip, by RectorSeal
(3) SpecSeal SSWRED Wrapstrip, by STI
(4) FS-195+ Wrap/Strip, by 3M
(5) Tremstop WS by Tremco

2.2.4 Silicone Sealant: Single-component, moisture-curing, silicone-based elastomeric, non-sag.

(1) CLK N/S, by Nelson Fire stop Products
(2) FS 601, by Hilti
(3) Metacaulk 835, by RectorSeal
(4) SpecSeal PEN 300, by STI
(5) 2000+ Silicone, by 3M
(6) FYRE SIL, by Tremco

2.2.5 Silicone Foam: Two-component, silicone-based liquid elastomer that, when mixed, expands and cures in place to produce a flexible, non-shrinking foam.

(1) FS Fireblocks, by Hilti
(2) SpecSeal PEN 200, by STI
(3) 2001 Silicone RTV Foam, by 3M

2.2.6 Intumescent Collar: Factory-fabricated, intumescent collar.

(1) PCS, by Nelson Fire stop Products
(2) CP 642, by Hilti
(3) Metacaulk Pipe Collar, by RectorSeal
(4) SpecSeal SSC Collars, by STI
(5) Plastic Pipe Device, by 3M
(6) TREMstop D, by Tremco

2.2.7 Intumescent Composite Sheet or Pillows and Mortar: Intumescent sheet used to Fire stop large openings.

(1) CPS, by Nelson Firstop Products
(2) Mineral Wool, by Nelson Fire stop Products
(3) Fire Safing or Backer Rod, by RectorSeal
(4) Mineral Wool, by STI
(5) FireMaster Mastic, FireMaster Putty, or FireMaster Bulk, by 3M
(6) Cerablanket, by Tremco

PART 3 – EXECUTION

3.1 PREPARATION

3.1.1 Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter which

may affect bond of FIRE STOPPING material.

3.1.2 Remove incompatible materials that may affect bond.

3.1.3 Place hangers or damming materials in penetration to hold FIRE STOPPING materials where required.

3.2 INSTALLATION

3.2.1 Follow manufacturer charts for appropriate material to achieve required fire rating in various locations.

3.2.2 Install FIRE STOPPING at penetrations of fire rated wall materials by sleeves, piping, ductwork, conduit, and other items in accordance with manufacturer's published instructions.

END OF SECTION 07 84 00

SECTION 07 92 00 – SEALANTS

PART 1 – GENERAL

1.1 DESCRIPTION

1.1.1 Work Included: Seal around all new windows and new hollow metal frames as indicated on the drawings and as specified herein.

1.1.2 Related Work Described Elsewhere:

(1)	Metal Doors and Frames	Section 08 11 00
(2)	Entrances and Storefronts	Section 08 41 00

1.2 QUALITY ASSURANCE

1.2.1 Qualifications of Manufacturers: Products used in the work of this Section shall be produced by manufacturers regularly engaged in manufacture of similar items and with a history of successful production acceptable to the Architect.

1.3 PRODUCT HANDLING

1.3.1 Delivery and Storage: Deliver all materials of this Section to the job site in the original unopened containers with all labels intact and legible at time of use. Store only under conditions recommended by the manufacturers. Do not retain on the job site any material that has exceeded the shelf life recommended by its manufacturer.

PART 2 – PRODUCTS

2.1 EXTERIOR APPLICATIONS

2.1.1 Polyurethane joint sealant as manufactured by Master Builders Solutions, LLC, BASF, Dupont, Bostik, or equal.

2.1.2 Color to be selected by Architect.

2.2 ALL INTERIOR NON-GLAZING APPLICATIONS

2.2.1 One-component acrylic latex caulking compound compliant with ASTM C834 "Standard Specification for Latex Sealing Compounds."

2.3 JOINT BACKING

2.3.1 Furnish foam backer rod of type and size appropriate for adjacent materials and as recommended by Sealant Manufacturer.

2.4 PRIMER FOR POROUS SURFACE

2.4.1 Non-staining product of Sealant Manufacturer for use when recommended and as specified for the application by the manufacturer.

2.5 OTHER MATERIALS

2.5.1 All other materials, not specifically described but required for complete and proper installation of sealants, shall be first quality of their respective kinds, new, and as selected by the Contractor subject to the approval of the Architect.

PART 3 – EXECUTION

3.1 INSPECTION

3.1.1 Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

3.2 PREPARATION

3.2.1 Steel Surfaces: Refer to Painting, Section 09 91 00.

3.2.2 Windows and Door Frames: Install sealant as indicated for material specified. Provide backer-rod as required where joint exceeds the depth of the sealant material.

3.3 INSTALLATION OF BACKUP MATERIAL

3.3.1 Use only the backup material recommended by the manufacturer of the sealant and approved by the Architect for the particular installation, compressing the backup material 25% to 50% to secure a positive and secure fit. When using backup of tube or rod stock, avoid lengthwise stretching of the material. Do not twist or braid hose or rod backup stock.

3.4 PRIMING

3.4.1 Use only the primer recommended by the manufacturer of the sealant and approved by the Architect for the particular installation. Apply the primer in strict accordance with the manufacturer's recommendations as approved by the Architect.

3.5 INSTALLATION OF SEALANTS

3.5.1 General: Prior to start of installation of each joint, verify the joint type required.

3.5.2 Equipment: Apply sealant under pressure with hand- or power-actuated gun or other appropriate means. Guns shall have nozzle of proper size and shall provide sufficient pressure to completely fill joints as designed.

3.5.3 Masking: Thoroughly and completely mask all joints where the appearance of sealant on adjacent surfaces would be objectionable.

3.5.4 Installation of Sealant: Install the sealant in strict accordance with the manufacturer's recommendations as approved by the Architect, thoroughly filling all joints to the recommended depth.

3.5.5 Cleaning Up:

(1) Remove masking tape immediately after joints have been tooled.
(2) Clean adjacent surfaces free from sealant as the installation progresses. Use solvent or cleaning agent as recommended by the sealant manufacturer.

END OF SECTION 07 92 00

SECTION 08 11 00 – METAL DOORS AND FRAMES

PART 1 – GENERAL

1.1 DESCRIPTION

1.1.1 Work Included: Provide all steel doors and steel frames for doors, complete in place, as indicated on the drawings and as specified herein.

1.1.2 Related Work Described Elsewhere:

(1)	Sealants	Section 07 92 00
(2)	Wood Doors	Section 08 20 00
(3)	Finish Hardware	Section 08 71 00
(4)	Painting	Section 09 91 00

1.2 QUALITY ASSURANCE

1.2.1 Standards: Comply with the following standards:

(1) Hollow metal doors and frames shall comply with the Steel Door Institute's "Recommended Specifications for Standard Steel Doors and Frames (SDI-100; ANSI/SDI A250.8-2023)".

1.2.2 Qualifications of Manufacturers: Products used in the work of this Section shall be produced by manufacturers regularly engaged in manufacture of similar items and with a history of successful production acceptable to the Architect.

1.3 SUBMITTALS

1.3.1 General: Comply with the pertinent provisions of Section 01 33 00.

1.3.2 Product Data: Submit the following to the Architect for approval:

(1) Complete materials list of all items proposed to be furnished and installed under this Section.
(2) Manufacturer's specifications and other data required to demonstrate compliance with the specified requirements.
(3) Shop Drawings showing details of each frame type, elevations of each door design type, details of all openings, and all details on construction, installation, and anchorage.
(4) Submittals shall indicate the exterior metal doors and frames required to be galvanized.

1.4 PRODUCT HANDLING

1.4.1 Protection: Use all means necessary to protect materials of this section before, during, and after installation and to protect installed work and materials of all other trades.

PART 2 – PRODUCTS

2.1 HOLLOW METAL FRAMES, STEEL

2.1.1 Metal frames shall be as manufactured by The Ceco Corporation, 5601 West 26th Street, Chicago, IL, Steelcraft, or Mesker.

2.1.2 Steel frames for door openings shall be furnished in the sizes shown, formed of 16-gauge cold rolled steel.

2.1.3 Anchors for frames shall be as required and as designated for the specific wall conditions shown on the plans. All frames shall be furnished with one (1) anchor for every two feet of jamb height with a minimum of three anchors per jamb. All anchors shall be a minimum of 18 gauge.

2.1.4 Frame corners shall be mitered, and all frame joints shall be full-face welded and ground to present a smooth, finished surface. All frames shall be shipped with spreader bars securely in place.

2.1.5 Frames shall be prepared for hardware as specified in Section 08 71 00 "Finish Hardware".

2.1.6 Universal type strike reinforcement shall be 12-gauge steel. Hinge jambs shall be mortised for 4-1/2" high template hinges, and lock jambs shall be mortised for ANSI A115.1 and .2 universal (4-7/8") lock strike. Hinge and strike reinforcements shall be drilled and tapped by the manufacturer.

2.1.7 Three rubber door silencers shall be furnished for strike jambs.

2.1.8 All exterior metal door frames shall be galvanized prior to prime coat of paint. This shall be designated on the submitted shop drawings. Frames shall be field painted, color selected by the Architect.

2.2 PAINTING

2.2.1 All metal components covered by this Section of the specifications shall be carefully and completely cleaned free of all mill-scale, rust, dirt, grease, or oil and shall then be given a factory-applied prime coat of rust-inhibitive paint, baked on. Finish painting after erection is covered under Section 09 91 00 "Painting".

PART 3 – EXECUTION

3.1 FABRICATION

3.1.1 Insofar as possible, fabrication, assembly, and fitting of the work shall be executed in the shop with the various parts or assemblies ready for erection at the building. Work that cannot be shop-assembled shall be given a trial fit at the shop to insure a proper and expeditious field assembly. The work shall be designed and anchored so that it will not be disturbed nor the fastenings seriously stressed from the expansion and contraction of the metal. All work shall be free from buckle, warping, or oil canning effects.

3.2 INSTALLATION

3.2.1 All frames shall be installed plumb, straight, and true, rigidly secured in place, and properly braced.

3.2.2 All work shall be thoroughly caulked or sealed and made weathertight as specified in Section 07 92 00 "Sealants". All exterior exposed points of contact between steel members that are not sealed with vinyl, neoprene, or the manufacturer's standard sealing method shall be especially prepared for this purpose.

END OF SECTION 08 11 00

SECTION 08 20 00 – WOOD DOORS

PART 1 – GENERAL

1.1 DESCRIPTION

1.1.1 Work Included: Furnish and install all wood doors as scheduled and detailed on the drawings and as specified herein.

1.1.2 Related Work Described Elsewhere:

(1)	Metal Doors and Frames	Section 08 11 00
(2)	Hardware	Section 08 71 00
(3)	Painting	Section 09 91 00

1.2 QUALITY ASSURANCE

1.2.1 Standards: Comply with the following standards unless otherwise specified:

(1) National Woodwork Manufacturer's Association (NWMA):

(a) I.S. 1-80 NWMA Industry Standard
(b) Specification for Care and Finishing of doors
(c) Standard Door Guarantee

(2) Architectural Woodwork Institute (AWI):

(a) Quality Standards
(b) Brochure No. 5

1.2.2 Qualifications of Manufacturers: All wood doors shall bear the NWMA seal of approval and I.S. 1-80 stamp.

1.3 SUBMITTALS

1.3.1 General: Comply with the pertinent provisions of Section 01 33 00.

1.3.2 Product Data: Submit the following to the Architect for approval:

(1) Shop Drawings: Indicate dimensions and elevations of each door type, location in building of each door, and pertinent erection instructions.
(2) Samples: Submit samples of corner section of each type of door cut diagonally with twelve-inch sides, showing construction and finish, if requested by Architect.

1.4 PRODUCT HANDLING

1.4.1 Delivery and Storage: Protect the materials of this Section during transit, storage, and handling to prevent deterioration, damage, and soiling.

1.4.2 Replacements: In the event of damage, immediately make all repairs and replacements

necessary to the approval of the Architect and at no additional cost to the Owner.

1.5 GUARANTEE

1.5.1 Specified work shall be guaranteed for five (5) years starting from date of substantial completion against warping, twisting, or manufacturing defects when accorded treatment recommended by the National Woodwork Manufacturer's Association for Storage, Installation, and Maintenance. During the "Guarantee Period", the Contractor agrees that each wood door showing defects defined by Standard Door Guarantee will be replaced with a new wood door equal in quality to the original specifications without cost to the Owner, including all labor costs of handling and refinishing. The Contractor does further agree to make the replacement within ten (10) days after the receipt of notice from the Owner.

PART 2 – PRODUCTS

2.1 SOLID WOOD DOOR

2.1.1 Grade: Shall be Marshfield Door Systems, V.T. Industries, or CECO DPC-1 door in size and thickness as shown on the Door Schedule, which meets or exceeds quality standards.

2.1.2 Core Construction: Crossband shall be engineered fiber. Faces assembly adhesive to be Type I (waterproof), core assembly adhesive to be Type II (water resistive). Core construction to be particleboard which complies with ANSI A208.1-LD2. Refer to the drawings for the fire rating on the doors.

2.1.3 Stiles: 1-3/8" LSL with veneer band to match face.

2.1.4 Finish: Door to be field finished, paint color to be selected by Architect.

PART 3 – EXECUTION

3.1 INSTALLATION

3.1.1 Wood Doors: Wood doors shall be conditioned to the average prevailing temperature and humidity at building before hanging. Doors should fit accurately in their respective frames with proper door clearances.

3.1.2 Clearances: Doors shall be installed only after completion of all other work which would raise the moisture content of the doors or damage the surface of the doors. Doors shall be fit, hung, and trimmed as required by the openings that they will close. Doors shall have a clearance of 1/8" at the sides and top and shall have a bottom clearance of 1/4" over thresholds and 1/2" at other locations unless otherwise shown. The lock edge of doors shall be beveled at the rate of 1/8" in 2". Cuts made on the job shall be sealed immediately after cutting, using a clear water-resistant varnish or sealer.

END OF SECTION 08 20 00

SECTION 08 41 00 – ENTRANCES AND STOREFRONTS

PART 1 – GENERAL

1.1 DESCRIPTION

1.1.1 Work Included: Furnish and install all aluminum storefront systems, entrance doors, and frames indicated on the drawings and as specified herein.

1.1.2 Related Work Described Elsewhere:

(1)	Sealants	Section 07 92 00
(2)	Finish Hardware	Section 08 71 00

1.2 QUALITY ASSURANCE

1.2.1 Qualifications of Manufacturers: Products used in the work of this Section shall be produced by manufacturers regularly engaged in manufacture of similar items and with a history of successful production acceptable to the Architect.

1.2.2 Qualifications of Installers: 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 the work of this Section.

1.3 SUBMITTALS

1.3.1 General: Comply with the pertinent provisions of Section 01 33 00, Submittals.

1.3.2 Product Data: Submit the following to the Architect for approval:

(1) Shop drawings for entire installation indicating elevations, materials, thickness, dimensions, and methods and details of installation.

1.4 PRODUCT HANDLING

1.4.1 Delivery and Storage: Deliver materials to the project with manufacturer's labels intact and legible.

1.4.2 Protection: Use all means necessary to protect materials of this Section before, during, and after installation and to protect installed work and materials of all other trades.

1.4.3 Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART 2 – PRODUCTS

2.1 ALUMINUM ENTRANCE DOOR

2.1.1 Aluminum Entrance Doors shall be 250T Insulpour as manufactured by Kawneer or

equal.

2.1.2 Materials: Extrusions shall be of aluminum alloy and temper recommended by aluminum-framed entrance door manufacturer for strength, corrosion resistance, and application of required finish and extruded within commercial tolerance and free from defects impairing strength and/or durability. Door stile and rail sections shall be not less than 0.125" (3.2 mm) wall thickness at any location for the main frame and door leaf members. Steel tension rods of .375 inch diameter shall run the full width of the top and bottom door rails and shall be fixed with steel plates and lock nuts. Door glazing shall be by means of an interior and exterior fixed gasket of high-quality extruded elastomeric material. Door stiles and rails shall be accurately fitted to flush hairline joints.

2.1.3 Door glazing shall be 1" insulating glass.

2.1.4 Hardware: Refer to drawings for hardware set list.

2.1.5 Finish: Refer to Owner for door finish prior to fabrication. Allow for clear anodized or dark bronze.

2.2 INTERIOR ALUMINUM STOREFRONT SYSTEM

2.2.1 Aluminum storefront system shall be 4" fixed window system, as manufactured by Kawneer or equal.

2.2.2 Aluminum Extrusions: Alloy and temper recommended by aluminum storefront manufacturer for strength, corrosion resistance, and application of required finish and not less than 0.070" (1.8 mm) wall thickness at any location for the main frame and complying with ASTM B 221: 6063-T6 alloy and temper.

2.2.3 Screws, bolts, and other accessories to be compatible with the aluminum under normal service conditions.

2.2.4 Finish: All exposed framing surfaces shall be free of scratches and other serious blemishes. Finish to match Storefront.

2.2.5 System shall be compatible with Aluminum Entrance Door.

PART 3 – EXECUTION

3.1 FABRICATION

3.1.1 General: Shop fabricate all aluminum entrance doors and frames into complete units, verifying all measurements at the job site prior to fabrication.

3.1.2 Workmanship:

(1) Fabricate in strict accordance with the approved shop drawings and the manufacturer's published recommendations.
(2) Accurately miter and fit all members to hairline joints.
(3) Weld or mechanically fasten along entire line of contact on the unexposed side.

3.2 SURFACE CONDITIONS

3.2.1 Inspection:

(1) Prior to installation of the work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
(2) Verify that each system may be installed in complete accordance with the original design and the approved shop drawings.

3.2.2 Discrepancies:

(1) In the event of discrepancy, immediately notify the Architect.
(2) Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.3 INSTALLATION

3.3.1 General: Install all members with adequate provision for settling, expanding, and contracting to occur without breaking glass.

3.3.2 Anchoring: Firmly anchor all members, using all anchoring devices required to ensure positive attachment of the members for long life under hard use.

3.3.3 Protection:

(1) Wherever aluminum is in contact with steel, concrete, or other material potentially creative of electrolytic action, provide all required permanent isolations of the aluminum by backpainting with first quality bituminous paint or by such other isolation as is approved in advance by the Architect.
(2) Protect all finished surfaces as necessary to prevent damage during progress of the work.

3.3.4 All joints between framing and building structure shall be sealed with sealant.

3.4 CLEANING UP

3.4.1 General: Immediately prior to acceptance of the work, remove all protective materials from the windows and doors and clean all exposed members.

3.4.2 Abrasive: Do not use abrasives or harmful cleaning agents.

END OF SECTION 08 41 00

SECTION 08 71 00 – FINISH HARDWARE

PART 1 – GENERAL

1.1 DESCRIPTION

1.1.1 Work Included: The work of this Section shall include the furnishing of all items of finish hardware hereinafter specified, or necessary for a complete installation.

1.1.2 Related Work Described Elsewhere:

(1)	Metal Doors and Frames	Section 08 11 00
(2)	Wood Doors	Section 08 14 00
(3)	Entrances and Storefronts	Section 08 41 00

1.1.3 Definitions: "Hardware Sets" described in Part Three of this Section are located on the drawings.

1.2 QUALITY ASSURANCE

1.2.1 Qualifications of Suppliers: The Architect retains the authority to approve or reject any schedule based upon his knowledge of the supplier's experience and capabilities, the general quality of the products submitted, and compliance with the specifications. The supplier shall be prepared to furnish samples at the Architect's request of any items he proposes to substitute. Samples will be held until completion of the project and then will be returned to the supplier.

1.2.2 Qualifications of Installers: 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 the work of this Section.

1.2.3 The Hardware Supplier shall forward template information to all related trades within 10 days after receipt of approved hardware schedules. Template submission shall be made in accordance with the latest standards published ay the Door and Hardware Institute.

1.3 SUBMITTALS

1.3.1 General: Comply with the pertinent provisions of Section 01 33 00.

1.3.2 Product Data: Submit the following to the Architect for approval:

(1) Schedules and Schematics: Upon award of the contract, the successful supplier shall submit electronic hardware schedules to the Architect for approval. Each schedule shall contain the door index listing or opening on the project and the hardware for said opening. Each item of hardware listed is to be clearly identified by manufacturer, manufacturer's number, and finish. Schedules not complying with the above will be rejected. After approval of the schedules of materials or corrections as are required, provide an electronic corrected and approved schedule to the Architect for file and distribution purposes.

(2) Manufacturer's specifications and other data required to demonstrate compliance with the specified requirements.

1.3.3 Samples: Submit samples of products specified, if requested by Architect.

1.4 PRODUCT HANDLING

1.4.1 Protection: Use all means necessary to protect materials of this Section before, during, and after delivery to the job site and to protect the work and materials of all other trades.

1.4.2 Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

1.4.3 All items of hardware shall be clearly marked with door number, key symbol, and heading number to correspond with the approved hardware schedule.

1.4.4 The General Contractor shall be responsible for providing a dry, clean, locked room of adequate size for storage of the hardware.

1.5 GUARANTEE

1.5.1 The supplier shall guarantee that all materials furnished under this division will be free from defects and blemishes for a period of one (1) year from the date of acceptance. The supplier shall repair or replace at his expense, including labor for removing and replacing, when instructed to do so by the Architect, any item that may prove to be defective within said period.

PART 2 – PRODUCTS

2.1 KEYING

2.1.1 Locks are to be keyed alike in groups as required.

2.1.2 Furnish four (4) keys per keyed alike set and two (2) keys each for all other locks.

2.1.3 There shall be six (6) master keys furnished.

2.2 FINISH

2.2.1 The finish in general shall be Satin Chrome (BHMA 626 or BHMA 652). Verify with the Owner.

2.2.2 Satin Stainless steel (BHMA 630) may be provided at the supplier's option.

2.2.3 Door closers shall be painted aluminum (BHMA 689)

2.2.4 Thresholds and weatherstrips shall be mill finish aluminum.

2.2.5 Kickplates shall be 630.

2.3 ADA REQUIREMENTS

2.3.1 All hardware to comply with ADA (Americans with Disabilities Act).

2.4 FASTENERS

2.4.1 Where sex nut bolts are specified, furnish sex bolts sized to the thickness of the door.

2.4.2 Wood screws are to be threaded to the head.

2.4.3 Material of fasteners shall be ferrous or non-ferrous matching the product being applied.

2.4.4 Length of fasteners shall be sufficient to afford adequate thread engagement.

PART 3 – EXECUTION

3.1 DELIVERIES

3.1.1 Stockpile all items sufficiently in advance to ensure their availability, and make all necessary deliveries in a timely manner to ensure orderly progress of the work.

3.2 INSPECTION

3.2.1 Conditions of opening size shall be verified by the General Contractor as to door frames being plumb and of correct tolerances to receive door and hardware.

3.3 INSTALLATION

3.3.1 The installer shall be competent and have knowledge of hardware.

3.3.2 Mounting heights for all hardware shall be recommended by the Door and Hardware Institute and in compliance with ADA (Americans with Disabilities Act) where applicable.

3.4 ADJUSTING

3.4.1 The General Contractor shall be responsible for final adjustments on all items of finish hardware. They shall replace or repair any items of hardware until the Owner accepts project as complete.

3.4.2 Door closers are to be adjusted to meet the opening force requirements of Federal, State, or Local codes or requirements. In instances where pressure, drafts, or other factors prevent the proper operation and compliance of the closers, the contractor shall consult the Architect for guidance.

3.4.3 The contractor shall adjust the closers after all HVAC systems are operational and adjusted. The contractor shall be prepared to make a final adjustment to the door closers within six (6) months after occupancy.

3.5 PROTECTION

3.5.1 The General Contractor is responsible for the protection of all items of hardware until the Owner accepts the project as complete.

3.6 HARDWARE SETS

3.6.1 Refer to the drawings for the Hardware Schedule.

3.6.2 Any item of hardware normally required by good practice, or as to meet state or local codes, shall be furnished even though it may not be specifically mentioned.

END OF SECTION 08 71 00

SECTION 09 20 00 – GYPSUM WALLBOARD

PART 1 – GENERAL

1.1 DESCRIPTION

1.1.1 Work Included: Provide all gypsum wallboard, moisture-resistant board, metal studs, and accessories complete in place as shown on the drawings, specified herein, and needed for a complete and proper installation.

1.1.2 Related Work Described Elsewhere:

(1)	Cold-Formed Metal Framing	Section 05 40 00
(2)	Painting	Section 09 91 00

1.2 QUALITY ASSURANCE

1.2.1 Standards:

(1) "Gypsum Construction Handbook", latest Edition, published by the United States Gypsum Company.

1.2.2 Qualifications of Manufacturers: Products used in the work of this Section shall be produced by manufacturers regularly engaged in manufacture of similar items and with a history of successful production acceptable to the Architect.

1.2.3 Qualifications of Installers: 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 methods needed for proper performance of the work of this Section.

1.3 PRODUCT HANDLING

1.3.1 Delivery and Storage: Deliver all materials to the job site in their original unopened containers with all labels intact and legible at time of use. Store in strict accordance with the manufacturer's recommendations as approved by the Architect.

1.3.2 Protection: Use all means necessary to protect materials of this Section before, during, and after installation and to protect installed work and materials of all other trades.

1.3.3 Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART 2 – PRODUCTS

2.1 GYPSUM BOARD

2.1.1 Shall be manufactured by United States Gypsum, National Gypsum Company, or American Gypsum. The following types shall be used:

(1) 5/8" thick Fire Code "X" panels
(2) 1" thick Fire Code "X" panels. Refer to drawings for locations.

2.1.2 5/8" gypsum board shall be installed where noted and indicated on the drawings.

2.2 EXPANSION CONTROL

2.2.1 Expansion Control shall be Phillips 093. www.phillipsmfg.com, US Gypsum, or ClarkDietrich.

2.2.2 Expansion Control shall be located in gypsum board ceilings and/or walls as indicated on the drawings.

2.3 MOISTURE RESISTANT BOARD

2.3.1 Moisture resistant board to be ME Brand Moisture Resistant board by US Gypsum or equal.

2.3.2 Moisture Resistant Board shall be installed where noted and indicated on the drawings.

2.4 ACCESSORIES

2.4.1 Gypsum Wallboard Accessories: Sizes of wallboard accessories shall be as required for the wallboard thickness and application.

2.4.2 Fasteners: Screws for screw fastening of gypsum board shall be Phillips head screws as recommended by Gypsum board manufacturer for installation on metal studs.

2.4.3 Corner Beads: Knurled bead, wing type, fabricated of galvanized steel, with perforated flanges.

2.4.4 Metal Trim: Angle type as required by the application, fabricated of galvanized steel with perforated flanges.

2.4.5 Adhesive: Durabond 90 as manufactured by United States Gypsum or as recommended by previously mentioned acceptable alternate wallboard manufacturer.

2.5 FRAMING (Non-structural)

2.5.1 3-5/8" X 20-gauge electro-galvanized steel studs as manufactured by United States Gypsum Company, ClarkDietrich, or National Gypsum.

2.5.2 Install where noted and indicated on the drawings.

PART 3 – EXECUTION

3.1 SURFACE CONDITIONS

3.1.1 Inspection: Prior to installation of the work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this

installation may properly commence. Verify that gypsum wallboard may be installed in strict accordance with the manufacturer's recommendations as approved by the Architect, and the original design.

3.1.2 Discrepancies: Do not install gypsum wallboard until all unsatisfactory conditions have been corrected.

3.2 INSTALLATION

3.2.1 General: Install the gypsum wallboard with the separate boards in moderate contact but not forced into place. At internal and external corners, conceal the cut edges of the board by the overlapping covered edges of the abutting boards. Stagger the boards so that corners of any four boards will not meet at a common point except in vertical corners.

3.2.2 Attachments:

(1) Screws shall be spaced not less than 3/8" from ends and edges of wallboard. Drive the specified screws with clutch-controlled power screwdrivers, spacing the screws (12") on centers at ceilings and (16") on centers at walls, except that where framing members are spaced (24") apart on walls, screw spacing shall be (12") on centers.

3.3 JOINT TREATMENT

3.3.1 General:

(1) Inspect all areas to be joint treated, ascertaining that the gypsum wallboard fits snugly against supporting framework.
(2) In areas where joint treatment and compound finishing will be performed, maintain a temperature of not less than 50 degrees F for 24 hours prior to commencing treatment, for the entire period of treatment, and until joint and finishing compounds have dried.
(3) Apply the joint treatment and finishing compound by machine or hand tool.
(4) Provide a minimum drying time of 24 hours between coats, with additional drying time in poorly ventilated areas.
(5) Provide expansion control where indicated on the drawings.

3.3.2 Embedding Compound: Apply to gypsum wallboard joints and fastener heads in a thin uniform layer. Spread the compound not less than 3" wide at joints, center the reinforcing tape in the joint, and embed the tape in the compound. Then spread a thin layer of compound over the tape. After this treatment has dried, apply a second coat of embedding compound to joints and fastener heads, spreading in a thin uniform coat to not less than 6" wide at joints, and feather edged. When thoroughly dry, sandpaper to eliminate ridges and high points.

3.3.3 Finishing Compound: After embedding compound is thoroughly dry and has been completely sanded, apply a coat of finishing compound to all joints and fastener heads. Feather the finishing compound to not less than 12" wide. When thoroughly dry, sandpaper to obtain uniformly smooth surfaces, taking all necessary care to not scuff the

paper surface of the wallboard.

3.4 CORNER TREATMENT

3.4.1 Internal Corners: Treat as specified for joints, except that the reinforcing tape shall be folded lengthwise through the middle and fitted neatly into the corner.

3.4.2 External Corners:

(1) Install a corner bead fitting neatly over the corner and secured with the same type fasteners used for applying the wallboard, spacing the fasteners approximately 6" on centers and driving through the wallboard into the framing or furring member.

(2) After the corner piece has been secured into position, treat the corner with joint compound and reinforcing tape as specified for joints, feathering the joint compound out from 8" to 10" on each side of the corner.

3.5 OTHER METAL TRIM

3.5.1 General: The drawings do not purport to show all locations and all requirements for metal trim in connection with the work of this Section. Carefully study the drawings and the installation; provide in-place all metal trim normally recommended by the manufacturer of the gypsum wallboard used.

3.5.2 Installation: Install the metal trim in strict accordance with the manufacturer's recommended methods of installation, providing no less embedment and finishing than specified above for corner treatment.

3.6 CLEANING UP

3.6.1 Use all necessary care during execution of this portion of the work to prevent scattering of gypsum wallboard scraps and dust and to prevent tracking of joint and finishing compound onto floor surfaces. At completion of each segment of installation in a room or space, promptly pick up and remove from the working area all scraps, debris, and surplus material of this Section.

END OF SECTION 09 20 00

SECTION 09 35 00 – LUXURY VINYL TILE – ALLOWANCE

PART 1 – GENERAL

1.1 DESCRIPTION

1.1.1 Work Included: Furnish and install all Luxury Vinyl Tile as indicated on the drawings and as specified herein.

1.1.2 Related Work Described Elsewhere:

(1)	Allowances	Section 01 21 00

1.2 QUALITY ASSURANCE

1.2.1 Qualifications of the Installers: 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 methods needed for proper performance of the work of this Section.

1.3. SUBMITTALS

1.3.1 General: Comply with the pertinent provisions of Section 01 33 00.

1.3.2 Product Data: Submit the following to the Architect for approval within the allowance amount:

(1) Manufacturer's specifications and other data required to demonstrate compliance with the specified requirements.
(2) Samples of each item, coloring, and patterns available in the specified products.
(3) Manufacturer's recommended methods of installation. The manufacturer's recommended methods of installation, when approved by the Architect, will become the basis for inspecting and accepting or rejecting actual installation methods used on the work.

1.4 PRODUCT HANDLING

1.4.1 Delivery and Storage: Deliver materials to the job site and store in their original unopened containers with all labels intact and legible at time of use. Store in strict accordance with the manufacturer's recommendations.

1.4.2 Protection: Use all means necessary to protect materials of this Section before, during, and after installation and to protect installed work and materials of all other trades.

1.4.3 Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART 2 – PRODUCTS

2.1 LUXURY VINYL TILE (LVT)

2.1.1 Contractor to include an allowance for material. Refer to Section 01 21 00 Allowances.

2.1.2 Manufacturer: Gerflor, Beauflor, Mannington Commercial, or equal.

2.1.3 Size of tiles, pattern, and color of tile will be selected by Architect from manufacturer's standard selections.

2.2 ADHESIVE

2.2.1 Adhesive shall be as recommended by product manufacturer for installation on substrate specified.

PART 3 – EXECUTION

3.1 INSPECTION

3.1.2 General: Examine the areas and conditions under which LVT is to be placed. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

3.2 PREPARATION

3.2.1 Prior to start of laying of tile units, patch any imperfections in the subfloor; broom clean or vacuum all surfaces to be covered, and inspect the subfloor. Start of laying tile will indicate acceptance of subfloor conditions.

3.3 INSTALLATION

3.3.1 General:

(1) Place tile units in strict accordance with manufacturer's recommendations. Butt tile units tightly to vertical surfaces, transition strips, edging, etc. Scribe as necessary around obstructions to produce neat joints, laid tight, even, and in straight, parallel lines.
(2) Extend tile units into toe spaces, door reveals, and in closets and similar openings.
(3) Maintain reference markers, holes, or openings that are in place or plainly marked for future cutting by repeating on the finish tile as marked on the subfloor. Use chalk or other non-permanent marking device.
(4) Lay tile from center marks established with principal walls, discounting minor off-sets, so that tile at opposite edges of the room are as equal as possible.

3.3.2 Matching:

(1) Match tiles for color and pattern by using tile from cartons in the same sequence as manufactured and packaged. Cut tiles neatly to and around all fixtures, walls, etc.
(2) Lay tile in pattern as selected by Architect after selection of tile has been made.

3.3.3 Cleaning and Protection: Remove excess adhesive or other surface blemishes from specified product, using neutral type cleaners recommended by the manufacturer. Protect installed product from damage until acceptance by the Owner.

END OF SECTION 09 35 00

SECTION 09 51 00 – ACOUSTICAL CEILINGS

PART 1 – GENERAL

1.1 DESCRIPTION

1.1.1 Work Included: Acoustical ceiling system required for this work includes, but is not necessarily limited to:

(1) Acoustical or lay-in ceilings and suspension systems, including wire hangers, main tee runners, crosstees, and angle moulding.

1.1.2 Related Work Described Elsewhere:

(1) Electrical (Lighting) Division 26

1.2 QUALITY ASSURANCE

1.2.1 Standards: Comply with the following standards:

(1) ASTM C635, "Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings"
(2) ASTM C636, "Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels"

1.2.2 Qualifications of Manufacturers: Products used in the work of this Section shall be produced by manufacturers regularly engaged in manufacture of similar items and with a history of successful production acceptable to the Architect.

1.2.3 Qualifications of Installers: 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 the work of this Section.

1.3 SUBMITTALS

1.3.1 General: Comply with the pertinent provisions of Section 01 33 00.

1.3.2 Product Data: Submit the following to the Architect for approval:

(1) Samples of the acoustical materials and elements of the suspension system, if requested by Architect.
(2) Manufacturer's recommended installation procedures, which, when approved by the Architect, will become the basis for inspecting and accepting or rejecting actual installation procedures used on the work.
(3) Manufacturer's specifications and other data required to demonstrate compliance with the specified requirements.

1.4 PRODUCT HANDLING

1.4.1 Delivery and Storage: Deliver the materials in their original unopened containers with all labels intact and legible at the time of use. Store in strict accordance with the manufacturer's recommendations.

1.4.2 Protection: Use all means necessary to protect the materials of this Section before, during, and after installation and to protect the work and materials of all other trades.

1.4.3 Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART 2 – PRODUCTS

2.1 ACOUSTICAL LAY-IN PANELS (2 x 2 PANELS)

2.1.1 Acoustical Lay-In Panels: Shall be 24" x 24" x 5/8", Fine Fissured, #770 as manufactured by Armstrong or equal.

2.1.2 Ceiling tiles shall be white.

2.1.3 Refer to the drawings for locations of Acoustical Lay-In Panels.

2.1.4 All Acoustical Lay-In Panels shall be asbestos free.

2.2 ACOUSTICAL LAY-IN PANELS (2 x 2 WASHABLE PANELS)

2.2.1 Acoustical Lay-In Panels: Shall be 24" x 24" x 5/8" Cleanassure #670 as manufactured by Armstrong or equal.

2.2.2 Ceiling tiles shall be white.

2.2.3 Washable acoustical panels shall be installed in Kitchen(s).

2.2.4 All acoustical Lay-In Panels shall be asbestos free.

2.3 ACOUSTICAL LAY-IN PANELS (2 x 2 PANELS HUMIDITY-RESISTANT)

2.3.1 Acoustical Lay-In Panels: Shall be 24" x 24" x 5/8", Fine Fissured, #1728 as manufactured by Armstrong or equal.

2.3.2 Ceiling tiles shall be white.

2.3.3 Humidity-resistant acoustical panels shall be installed in rooms containing a shower or as indicated on the drawings.

2.3.4 All Acoustical Lay-In Panels shall be asbestos free.

2.4 SUSPENSION SYSTEMS

2.4.1 The exposed ceiling suspension system shall be Prelude 15/16" as manufactured by

Armstrong or equal. Grid shall be white.

2.4.2 Attachment Devices: Hanger wire: Galvanized carbon steel, soft temper, prestretched; yield stress loads at least three times design load but not less than 12 gauge.

PART 3 – EXECUTION

3.1 INSTALLATION

3.1.1 In areas where suspended ceilings are to be provided, all piping, ducts, electrical, and other work that is to be concealed by the ceiling shall be completed, tested, and inspected, and the proper ceiling height and level established before acoustical work is started.

3.1.2 A uniform temperature of not less than 50 degrees F., nor more than 80 degrees F., and a relative humidity of not more than 75 percent shall be maintained continuously before, during, and after installation of acoustical units.

3.1.3 The grid system for exposed suspension shall be laid out for a true and level installation. The main runners and cross runners shall be spaced to form the modules indicated. Cross runners shall be back cut and locked in place at intersections with main runners to provide good stability and a flush exposed-to-view surface. Acoustical units shall be assembled and placed on the flanges of the suspended members. Upon completion, the ceilings shall present true, level, and even surfaces, and the joints shall be in alignment.

3.1.4 Acoustical units shall be installed complete in accordance with the specifications of the manufacturer of the acoustical materials, including necessary additional carrying beams and other accessories.

3.1.5 Attention is directed to the fact that lighting fixtures and air registers are to be incorporated in the ceiling systems. Contractor shall make proper provision for support of each added weight.

3.1.6 Support suspension system by 12-gauge hanger wires attached directly to structure above 48" o.c., maximum. Main beams shall be double-thickness web, bulb-section design with 15/16" bottom flange. Cross tees shall be of single-thickness web design and have a 15/16" bottom flange.

3.1.7 Join cross tees to main beam with a positive interlock. Main beams and cross tees shall rest on angle moldings at walls.

3.1.8 Acoustical ceiling system shall be installed so that no irregular shapes shall be used. If such shapes occur, call to the attention of the Architect prior to start of installation.

3.2 CLEANING AND PROTECTION

3.2.1 Following installation, dirty or discolored surfaces of acoustical units shall be cleaned and left free from defects. Units that are damaged or improperly installed shall be removed and new units provided, as directed by Architect. The acoustical units shall be protected until completion of the project.

END OF SECTION 09 51 00

SECTION 09 65 50 – VINYL BASE

PART 1 – GENERAL

1.1 DESCRIPTION

1.1.1 Work Included: Provide all vinyl base, complete in place, as indicated on the drawings, specified herein, or otherwise needed for a complete and proper installation of the work of this Section.

1.2 QUALITY ASSURANCE

1.2.1 Qualifications of the Installers: 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 methods needed for proper performance of the work of this Section.

1.3 SUBMITTALS

1.3.1 General: Comply with the pertinent provisions of Section 01 33 00.

1.3.2 Product Data: Submit the following to the Architect for approval:

(1) Manufacturer's specifications and other data required to demonstrate compliance with the specified requirements.
(2) Samples of each item, color, and pattern available in the specified products from the proposed manufacturer.
(3) Manufacturer's recommended methods of installation. The manufacturer's recommended methods of installation, when approved by the Architect, will become the basis for inspecting and accepting or rejecting actual installation methods used on the work.

1.4 PRODUCT HANDLING

1.4.1 Delivery and Storage: Deliver materials to the job site and store in their original unopened containers with all labels intact and legible at time of use. Store in strict accordance with the manufacturer's recommendations.

1.4.2 Protection: Use all means necessary to protect materials of this Section before, during, and after installation and to protect installed work and materials of all other trades.

1.4.3 Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART 2 – PRODUCTS

2.1 VINYL BASE

2.1.1 Vinyl base shall be 4" vinyl cove base as manufactured by Roppe Rubber Corporation or equal. Base shall be in long rolls to eliminate seams Refer to drawings for locations.

Color to be selected by Architect.

PART 3 – EXECUTION

3.1 INSPECTION

3.1.1 General: Examine the areas and conditions under which vinyl base is to be placed. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

3.2.1 Install vinyl base in accordance with manufacturer's instructions. Base shall be attached to wall so as to achieve a smooth, firmly attached surface.

3.2.2 Cleaning and protection: Remove excess adhesive or other surface blemishes from base, using neutral type cleaners recommended by the manufacturer. Protect installed base from damage until acceptance by the Owner.

END OF SECTION 09 65 50

SECTION 09 65 51 – VINYL STAIR NOSING

PART 1 – GENERAL

1.1 DESCRIPTION

1.1.1 Work Included: Furnish and install vinyl stair nosing as indicated on the drawings and as specified in this Section.

1.1.2 Related Work Described Elsewhere:

(1)	Carpeting	Section 09 68 00

1.2 QUALITY ASSURANCE

1.2.1 Qualifications of the Installers: 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 the work of this Section.

1.3 SUBMITTALS

1.3.1 General: Comply with the pertinent provisions of Section 01 30 00.

1.3.2 Product Data: Submit the following to the Architect for approval:

(1) Manufacturer's specifications and other data required to demonstrate compliance with the specified requirements.
(2) Samples of each item, color, and pattern available in the specified products from the proposed manufacturer.
(3) Manufacturer's recommended methods of installation. The manufacturer's recommended methods of installation, when approved by the Architect, will become the basis for inspecting and accepting or rejecting actual installation methods used on the work.

1.4 PRODUCT HANDLING

1.4.1 Delivery and Storage: Deliver materials to the job site and store in their original unopened containers with all labels intact and legible at time of use. Store in strict accordance with the manufacturer's recommendations.

1.4.2 Protection: Use all means necessary to protect materials of this Section before, during, and after installation and to protect installed work and materials of all other trades.

1.4.3 Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART 2 - PRODUCTS

2.1 VINYL STAIR NOSING

2.1.1 Vinyl stair nosing shall be manufactured from a homogeneous composition of polyvinyl chloride (PVC), high quality additives, and colorants to meet the performance requirements of ASTM F2169 "Standard Specification for Resilient Stair Treads, Type TV, Class 1 and 2, Group 1 and 2" as produced by Johnsonite/Tarkett or equal.

2.1.2 Vinyl stair nosing shall be of type and size required for installation on substrate indicated on the drawings.

2.1.3 Slip Resistance: shall meet ASTM D 2047, federal standards, and exceed ADA recommendations of 0.5 for flat surfaces.

2.1.4 Fire Resistance: shall be Class 1.

2.2 ADHESIVE

2.2.1 Adhesive shall be as recommended by vinyl stair nosing manufacturer for installation on substrate specified.

PART 3 - EXECUTION

3.1 INSPECTION

3.1.1 General: Examine the areas and conditions under which specified product is to be placed. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

3.2.1 Install specified product in accordance with manufacturer's instructions. Nosing shall be attached to substrate so as to achieve a smooth firmly attached surface.

3.2.2 Cleaning and Protection: Remove excess adhesive or other surface blemishes from specified product, using neutral type cleaners recommended by the manufacturer. Protect installed product from damage until acceptance by the Owner.

END OF SECTION 09 65 51

SECTION 09 68 00 – CARPETING – ALLOWANCE

PART 1 – GENERAL

1.1 DESCRIPTION

1.1.1 Work Included: Furnish and install all carpeting and accessories as indicated on the drawings and as specified herein.

1.1.2 Related Work Described Elsewhere:

(1)	Allowances	Section 01 21 00
(2)	Vinyl Base	Section 09 65 50

1.2 QUALITY ASSURANCE

1.2.1 Qualifications of Manufacturer: Products used in the work of this Section shall be produced by manufacturers regularly engaged in manufacture of similar items and with a history of successful production acceptable to the Architect.

1.2.2 Qualifications of Installers: 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 the work of this Section.

1.3 SUBMITTALS

1.3.1 General: Comply with the pertinent provisions of Section 01 33 00.

1.3.2 Product Data: Submit the following to the Architect for approval:

(1) Manufacturer's specifications and other data required to demonstrate compliance with specified requirements.
(2) Manufacturer's recommended installation procedures. The manufacturer's recommended installation procedures, when approved by the Architect, will become the basis for inspection and accepting or rejecting actual installation procedures used on the work.

1.3.3 Maintenance Manuals: Provide Owner with a copy of the Manufacturer's Recommendations for care, cleaning, etc.

1.4 PRODUCT HANDLING

1.4.1 Protection: Use all means necessary to protect the materials of this Section before, during and after installation and to protect the work and materials of all other trades.

1.4.2 Replacements: In the event of damage, immediately make all repairs and replacements needed to the approval of the Architect and at no additional cost to the Owner.

1.5 WARRANTY

1.5.1 The carpet manufacturer shall, in writing, warrant the carpet for a period of at least 10 years against defects in workmanship and materials.

PART 2 – PRODUCTS

2.1 CARPET – ALLOWANCE

2.1.1 Contractor to include an allowance for material. Refer to Section 01 21 00 Allowances.

2.1.2 Manufacturer: Mohawk Carpet, LLC, Shaw Industries Group, Inc., Mannington Commercial, or equal.

2.1.3 Construction Specifications:

(1)	Product Type	Carpet Tiles
(2)	Fiber Content	6.6 nylon, solution or yarn dyed
(3)	Fiber Weight (tufted)	20 oz. sq. yd. minimum
(4)	Texture	Level loop
(5)	Size	24" x 24" (or other standard tile size)
(6)	Backing	High-performance backing

2.1.4 Performance Specifications:

(1)	Flammability Rating	Class 1
(2)	Smoke Density	Less than 450 Dm in flaming mode
(3)	Static Rating	Maximum of 3.5v
(4)	Soil Resistant Treatment	Commercially durable treatment

2.2 CARPET ADHESIVE

2.2.1 Carpet adhesive shall be as recommended by carpet manufacturer.

PART 3 – EXECUTION

3.1 INSPECTION

3.1.1 Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

3.2 SURFACE PREPARATION

3.2.1 Cleaning: Immediately prior to installation of the work of this Section, thoroughly clean all substrata and remove all oil, grease, paint, varnish, hardeners, and other items which would adversely affect the bond of adhesive.

3.3 INSTALLATION

3.3.1 General:

(1) Glue directly to floor, using no pad and no foam.
(2) Scribe the carpet accurately to all vertical surfaces.
(3) Align the lines of carpet as woven, using no filler strips less than 6" in width, laying all carpet in the same direction unless specifically directed by the Architect.
(4) Carpet shall be installed with the carpet running the length of the room.

3.3.2 Seams:

(1) Locate seams to the maximum practicable out of traffic.
(2) Fabricate the seams by the compression method, using a butt joint, and properly bead and seal. Do not stretch seams.

3.3.3 Cleaning Up: Thoroughly clean all carpet surfaces prior to final acceptance by the Owner.

3.4 PROTECTION

3.4.1 Provide a heavy, non-staining paper or plastic walkway as required over carpeting in direction of foot traffic, maintaining intact until carpeted space is accepted by the Owner.

END OF SECTION 09 68 00

SECTION 09 91 00 – PAINTING

PART 1 – GENERAL

1.1 DESCRIPTION

1.1.1 Work Included: Section includes preparation and finishing all surfaces scheduled and specified.

1.1.2 Related Work Described Elsewhere:

(1)	Metal Doors and Frames	Section 08 11 00
(2)	Wood Doors	Section 08 20 00
(3)	Gypsum Wallboard	Section 09 20 00

1.2 SUBMITTALS

1.2.1 Manufacturer's Data: Provide data on all finishing products. Indicate products appropriate for each surface, as scheduled in this section.

1.2.2 Provide two samples of each color and each gloss for each material on which the finish is specified to be applied, if requested by Architect.

1.2.3 Revise and resubmit each sample as required until the Architect's approval of gloss, color, and texture is achieved.

1.3 PRODUCT HANDLING

1.3.1 Delivery of Materials: Deliver all materials to the job site and store in their original, unopened containers with all labels intact and legible at time of use. Store in strict accordance with the manufacturer's recommendations.

1.3.2 Storage of Materials: Store and apply material in environmental conditions recommended by manufacturer.

1.3.3 Protection: Use all means necessary to protect materials of this Section before, during, and after installation and to protect work and materials of all other trades.

PART 2 – PRODUCTS

2.1 MATERIALS

2.1.1 Acceptable Manufacturers: Sherwin Williams Company, Pittsburgh Paint, Benjamin Moore or equal.

2.1.2 Coatings: Ready-mixed, except field-catalyzed coating, of good flow and brushing properties, capable of drying or curing free of streaks or sags.

2.1.3 Accessory Materials: Linseed oil, shellac, turpentine, paint thinners, and other materials required to achieve the finishes specified.

2.1.4 Quality: Use only premium quality products.

2.2 FINISHES

2.2.1 Refer to schedule in this Section for surface finish schedule.

PART 3 – EXECUTION

3.1 EXAMINATION AND PREPARATION

3.1.1 Perform all preparation and cleaning procedures in strict accordance with paint manufacturer's recommendations as approved by Architect.

3.1.2 Measure moisture content of porous surfaces using an electronic moisture meter. Do not apply finishes unless moisture content is less than 15 percent.

3.1.3 Remove all removable items which are in place and are not scheduled to receive paint finish, or provide surface-applied protection prior to surface preparation and painting operations.

3.1.4 Clean each surface to be painted prior to applying paint or surface treatment.

3.1.5 Preparation of Wood Surfaces

(1) Clean all wood surfaces until they are completely free from dirt, oil, and other foreign substances.
(2) Smooth all finished wood surfaces exposed to view using the proper sandpaper. Where so required, use varying degrees of coarseness in sandpaper to produce a uniformly smooth and unmarred wood surface.

3.1.6 Preparation of Metal Surfaces:

(1) Thoroughly clean all surfaces until they are completely free from dirt, oil, and grease.
(2) On galvanized surfaces, use solvent for the initial cleaning and then treat the surface thoroughly with phosphoric acid etch. Remove all etching solution before proceeding.
(3) Allow to dry thoroughly before application of paint.

3.2 APPLICATION

3.2.1 Apply products in accordance with manufacturer's instructions.

3.2.2 Sand finishes lightly between coats to achieve required finish.

3.3 CLEANING

3.3.1 As work proceeds, promptly remove spilled, splashed, or spattered finishes.

3.4 PAINTING SCHEDULE - INTERIOR SURFACES

3.4.1 Metal - Painted (Ferrous Metals): (Total DFT - 6 mils) Hollow metal frames, hollow metal doors, miscellaneous interior metals (grilles and louvers).

(1) 1st coat: Primer by Manufacturer (DFT - 3 mils) or Sherwin-Williams Pro Industrial Pro Cryl Universal Metal Primer
(2) 2nd coat: Sherwin-Williams ProClassic Interior Alkyd Semi-Gloss Enamel (B34 Series)
(3) 3rd coat: Sherwin-Williams ProClassic Interior Alkyd Semi-Gloss Enamel (B34 Series)

3.4.2 Gypsum Board - Paint: Gypsum board

(1) 1st coat: Sherwin-Williams PrepRite High Build Interior Latex Primer/Surfacer (B28W601)
(2) 2nd coat: Sherwin-Williams Promar 200 Latex Eg-Shell
(3) 3rd coat: Sherwin-Williams Promar 200 Latex Eg-Shell

3.4.4 Wood – Painted: Wood Doors

(1) 1st coat: Sherwin-Williams Latex Primer
(2) 2nd coat: Sherwin-Williams ProMar 200 Alkyd Semi-Gloss Enamel
(3) 3rd coat: Sherwin-Williams ProMar 200 Alkyd Semi-Gloss Enamel

3.5 PAINTING SCHEDULE – EXTERIOR SURFACES

3.5.1 Metal – Painted (Ferrous Metals): (Total DFT – 6 mils) Exterior hollow metal frames and exterior hollow metal doors.

(1) 1st coat: Pro Industrial Pro Cryl Universal Metal Primer
(2) 2nd coat: DMT Alkyd Semi Gloss Coating B55 Series
(3) 3rd coat: DTM Alkyd Semi Gloss Coating B55 Series

3.6 COLORS

3.6.1 Colors shall be selected by the Architect from color chips submitted by the Contractor.

END OF SECTION 09 91 00

SECTION 10 14 23 - SIGNAGE

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Interior door signs

1.02 SUBMITTAL

A. Manufacturer must submit 3 references showing products for projects completed within the last 5 years.
B. Submit manufacturer's technical data and recommended installation for each type of sign required.
C. Submit shop drawings listing sign size, letter form and letter heights.
D. Submit one full size sample of sign of type, style and color specified, including method of attachment. If approved, the sample may become part of the job.

1.03 SIGN TYPE DESCRIPTION

A. Signage shall consist of room number and room function to meet the requirements of the Americans with Disabilities Act.

PART 2 - PRODUCTS

2.01 MANUFACTURER

A. Provide products similar to those manufactured by Mohawk Sign Systems, Inc. Submit alternate manufacturers systems for approval.

2.02 GRAPHIC PROCESS

A. All signs shall be manufactured using Graphic Process Series 200A - Sand Carved® using format D.
    1. Tactile characters shall be raised the required 1/32 inches from the sign face. Glue-on letters or etched backgrounds are not acceptable.
    2. All text shall be accompanied by Grade 2 braille. Braille shall be separated ½" from the corresponding raised characters or symbols. Grade 2 braille to be provided by sign manufacturer.
    3. All letters, numbers and/or symbols shall contrast

with their background, either light characters on a dark background or dark characters on a light background. Characters and background shall have a non-glare finish.

B. Plaque material shall be Special Purpose SP125 decorative thermosetting high pressure laminate. Material to be 1/8" thick laminate with a melamine resin surface and a phenolic resign core which provides resistance to abrasion, stains, alcohol, solvents, boiling water and heat. The material shall be NEMA rated and have flammability and smoke values that meet the standards for flammability of interior materials.

C. Background color as selected from manufacturer's standard color samples.

D. Letterform shall be Gill Sans upper case letters and numbers.

E. Size of letters and numbers shall be as follows:

1. Room numbers shall be 1"
2. Letter for room ID signs shall 5/8"
3. Symbol size shall be 4"
4. Standard Grade 2 braille shall be ½" below copy.
5. Corners: ½" radius.

F. Copy position: CC (centered/centered)

2.03 SIGN DESIGN

A. Room ID signs with room number and function, size 6" x 6".

B. Restroom signs design, 6"X 8" or 8" x 8" with a 4" accessibility and gender symbol with the verbal description placed directly below with Grade 2 braille symbol.

PART 3 - EXECUTION/INSTALLATION

3.01 INSTALLATION

A. Signs shall be mounted 60 inches from the floor to the center of the sign on the latch side. The distance from the door frame and sign shall be 2 inches. Install signs utilizing materials and procedures in accordance with manufacturer's recommendations.

3.02 CLEANING AND PROTECTION

3.02 CLEANING AND PROTECTION

A. After installation, clean soiled signs surface according to manufacturer's instructions. Protect signs from damage until final project completion.

END OF SECTION 10 14 23

SECTION 10 21 00 - TOILET COMPARTMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Solid plastic partitions.

1.2 REFERENCES

A. ASTM International (ASTM):
   1. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

B. National Fire Protection Association: NFPA 286 -Standard Methods of Fire Test for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth.

1.3 SUBMITTALS

A. Submit under provisions of Section 01 30 00 -Administrative Requirements.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Literature indicating typical panel, pilaster, door, hardware and fastening.
   2. Preparation instructions and recommendations.
   3. Storage and handling requirements and recommendations.
   4. Installation methods.

C. Shop Drawings:
   1. Dimensioned plans indicating layout of toilet compartments.
   2. Dimensioned elevations indicating heights of doors, pilasters, separation partitions, and other components; indicate locations and sizes of openings in compartment separation partitions for toilet and bath accessories to be installed in partitions; indicate floor and ceiling clearances.
   3. Details indicating anchoring components (bolt layouts) and methods for project conditions; indicate components required for installation, but not supplied by toilet compartment manufacturer.

D. Selection Samples: For each finish product specified, one complete set of color selection guides representing manufacturer's full range of available colors, textures and patterns.Verification Samples: For each finish product specified, two samples representing actual product, color, texture andpattern.

E. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store and handle materials and products in strict compliance with manufacturer's instructions and recommendations and industry standards.

B. Store products indoors in manufacturer's or fabricator's original containers and packaging, with labels clearly identifying product name and manufacturer. Protect from damage.

C. Lay cartons flat, with adequate support to ensure flatness and to prevent damage to pre-finished surfaces.

D. Do not store where ambient temperature exceeds 120 degrees F (49 degrees C).

1.5 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.

B. Do not deliver materials or begin installation until building is enclosed, with complete protection from outside weather, and building temperature maintained at a minimum of 60 degrees F (15.6 degrees C).

1.6 WARRANTY

A. Manufacturers Standard Warranty: For Solid Plastic HDPE Material: Against breakage, corrosion, and delamination for 15 years.

1.7 COORDINATION

A. Coordinate Work with placement of support framing and anchors in walls and ceilings.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: ASI Accurate Partitions; 160 Tower Drive, Burr Ridge, IL 60527; Tel: 708-442-6800; Email: info@asi-accuratepartitions.com; Web: http://www.asi-accuratepartitions.com.
   1. Other Acceptable Manufacturer:ASI Global Partitions;Eastanollee, GA; Tel: 706-827-2700; Web: www.asi-globalpartitions.com.
   2. No other manufacturer will be accepted without ASTM performance compliance.

B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 COMPARTMENTS AND SCREENS

A. Toilet Compartments: Floor anchored/overhead braced solid plastic.

1. Compartment Depth and Width: As scheduled and indicated on Drawings.
2. Door Width: 24 inches (610 mm), minimum; at ADA accessible compartments 36 inches (915 mm) minimum.
3. Height Above Floor: 12 inches (305 mm).
4. Door/Panel Height: 58 inches (1473 mm).
5. Pilaster Height: 82 inches (2083 mm).

2.3 SOLID PLASTIC TOILET COMPARTMENTS

A. Doors, Panels, Screens, and Pilasters: Single sheet solid, homogenous HDPE plastic material formed from waterproof, non-absorbent, high-density polyethylene resins; mark-resistant self-lubricating surface; edges finished smooth.
   1. Material: Solid, homogenous HDPE; 1 inch (25 mm) thick.
   2. Rating: Class "B" Fire Rated per ASTM E 84.
   3. Rating: Meets the standard acceptance criteria per Annex C of NFPA 286.
   4. Edges: 1/4 inch (6 mm) radius machined edges.
   5. Heat Sink: Aluminum heat sink, to dissipate heat from incendiary devices used by vandals, attached to bottom of doors and panels.

B. Finish: Pebble-textured homogenous color throughout material.
   1. Color: As selected from manufacturer's standard colors.

C. Door Hardware: 8 inches (203 mm) Aluminum Wrap-around hinge.
   1. Hinges: Hinges shall be 8 inches (203 mm) and fabricated from heavy-duty extruded aluminum (6463-T5 alloy) with a brushed anodized finish with wrap-around flanges, surface mounted and through bolted to doors and pilasters. Hinges operate and are field set with adjustable nylon cams. Cams can be set in 30 degree increments.
   2. Latch: Anodized extruded aluminum, with housing, slide bolt and button.
   3. Strike and Keeper: 6 inch (152 mm) wrap-around flanges fabricated from heavy-duty extruded aluminum (6463-T5 alloy) with a brushed anodized finish.
   4. Coat Hook and Bumper: Non-ferrous, chrome-plated, with black rubber tip for doorstop.
   5. Fastening Hardware: Manufacturer's standard, Type stainless steel, No. 4 satin finish, theft-resistant barrel nuts and machine screws.
   6. Door Pulls: Non-ferrous, chrome-plated. Standard on ADA compartments. Two per ADA door.

D. Mounting Brackets: Provide optional stainless steel continuous bracket with theft resistantbarrel nuts and shoulder screws.

E. Pilaster Shoes: Type 304 Stainless Steel, No. 4 satin finish. Easy Stall shoe shall be of a one piece design and integral to the mounting system and formed from 304 stainless steel 3 inch (76 mm) high with a No. 4 satin finish. Pilaster shoes are anchored to the pilaster with No. 10 stainless steel, vandal-resistant screws.

F. Headrail: Manufacture's standard anodized aluminum rail with anti-grip profile.

G. Pilaster Anchors, Floor Anchored/Overhead Braced:
   1. Easy Stall shoe system. 1/4 by 2 inch (6 by 51 mm) steel screws attach Easy Stall shoe to floor.
   2. Pilaster to be inserted into shoe and secured after height adjusted. Leveling adjustment to be concealed by pilaster shoe.

3. Height/leveling adjustment to be made via machine thread bolts inserted into factory installed threaded insert in bottom of pilaster.

PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

A. Inspect and prepare substrates using the methods recommended by the manufacturer for achieving best result for the substrates under project conditions. Clean surfaces thoroughly prior to installation.

B. Do not proceed with installation until substrates have been prepared using the methods recommended by the manufacturer and deviations from manufacturer's recommended tolerances are corrected. Commencement of installation constitutes acceptance of conditions.

C. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.
   1. Verify dimensions of areas to receive compartments.
   2. Verify locations of built-in framing, anchorage, bracing, and plumbing fixtures.

3.2 INSTALLATION

A. Install in accordance with approved shop drawings and manufacturer's instructions.

B. Fasten components to adjacent materials and to other components using purpose-designed fastening devices.

C. Adjust pilaster anchors for substrate variations; conceal anchors with pilaster shoes.

D. Equip each compartment door with hinges and door latch.

E. Install door strike keeper on pilasters in alignment with door latch.

F. Equip each compartment door with one coat hook and bumper.

G. Installation Tolerances:
   1. Maximum variations from plumb or level: 1/8 inch (3 mm).
   2. Clearance between wall surface and panels or pilasters: 1-1/2 inch (38 mm) maximum.

3.3 ADJUSTING

A. Adjust and align hardware to uniform clearance at vertical edge of doors.

B. Adjust adjacent components for consistency of line or plane.

3.4 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

C. Remove factory protective coverings and clean finish surfaces in accordance with manufacturer's instructions before substantial completion.

END OF SECTION 10 21 00

SECTION 10 28 13 – TOILET AND BATH ACCESSORIES

PART 1 – GENERAL

1.1 DESCRIPTION

1.1.1 Work Included: Furnish and install all toilet accessories as shown on the drawings and as specified herein.

1.2 QUALITY ASSURANCE

1.2.1 Qualifications of Manufacturers: Products used in the work of this Section shall be produced by manufacturers regularly engaged in manufacture of similar items and with a history of successful production acceptable to the Architect.

1.3 SUBMITTALS

1.3.1 General: Comply with the pertinent provisions of Section 01 33 00.

1.3.2 Product Data: Submit the following to the Architect for approval:

(1) Complete materials list showing all items proposed to be furnished and installed under this Section.
(2) Manufacturer's specifications and other data required to demonstrate compliance with specified requirements.
(3) The manufacturer's recommended methods of installation, when approved by the Architect, will become the basis for inspecting and accepting or rejecting actual installation methods used on the work.

1.4 PRODUCT HANDLING

1.4.1 Delivery and Storage: Deliver all materials to the job site in their original unopened containers with all labels intact and legible at time of use. Store in strict accordance with the manufacturer's recommendations as approved by the Architect.

1.4.2 Protection: Use all means necessary to protect materials of this Section before, during, and after installation and to protect installed work and materials of all other trades.

1.4.3 Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART 2 – PRODUCTS

2.1 TOILET ACCESSORIES

2.1.1 Mirrors: Shall be 24" x 36" with channel frame, stainless steel, ¼" glass mirror warranted against silver spoilage for 15 years. Refer to drawings for number and exact locations per Architect instructions.

2.1.2 Grab Bars: Refer to the drawings for locations and the Toilet Accessories Schedule for

the sizes of grab bars. All grab bars shall be Model B6206, 1-1/2" outside diameter, satin finish, 1-1/2" wall clearance, concealed mounting, with a peened, non-slip gripping surface.

PART 3 – EXECUTION

3.1 INSPECTION

3.1.1 Examine the areas and conditions under which work of this Section will be installed. Correct conditions detrimental to proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

3.2 COORDINATION

3.2.1 Throughout construction of substrate surfaces, use all means necessary to ensure proper and adequate provision for concealed support devices and for finished openings to receive the work of this Section.

3.3 INSTALLATION

3.3.1 Install the work of this Section in strict accordance with the manufacturer's recommendations as approved by the Architect, anchoring all components plumb, level, square, and firmly into position for long life under hard use.

3.3.2 Consult with Architect in field for exact locations of accessories where locations are not indicated on the drawings or where indicated or proposed locations interfere with other construction such as door swings, lights, etc.

END OF SECTION 10 28 13

SECTION 10 44 00 - FIRE EXTINGUISHERS, CABINETS, AND ACCESSORIES

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Includes furnishing materials and installation of the fire extinguishers, fire extinguisher cabinets and fire extinguisher mounting hardware.

1.02 RELATED SECTIONS

A. Section 06100 - Rough Carpentry: Treated wood blocking for rigid attachment of wall brackets and cabinets.

B. Section 092000 - Gypsum Wallboard: Completion of gypsum wallboard installations prior to attachment of wall brackets. Coordination of the wallboard system installations with the cabinet installations.

C. Section 099100 - Painting: Protection of installed cabinets during painting operations. Completion of painting operations prior to installation of wall mounted brackets.

1.03 QUALITY ASSURANCE

A. Provide fire extinguishers, cabinets, and accessories by one (1) manufacturer, unless otherwise acceptable to the Architect.

B. UL-Listed Products: Provide new fire extinguishers which are UL Listed and bearing UL Listing Mark for type, rating and classification of extinguisher indicated.

1.04 SUBMITTALS

A. Submit copies of technical data to the Architect in accordance with Section 013300.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Fire Extinguishers
   1. Multi-purpose, 10 pound, dry chemical type rated for Class A, B and C fires, and shall have a U.L. 4A-60BC rating, except at Kitchen.
   2. 2-1/2 gallon, K-type at Kitchen

B. Cabinets: As manufactured by J.L. Industries of Bloomington, Minnesota. Where cabinets are installed in fire-rated walls, provide cabinets with the FS option.

1. Provide semi-recessed Panorama Model 1017G17, with factory applied whiteenamel finish, clear tempered glass with red FE lettering arranged vertically.

C. Wall Brackets: Wall brackets and mounting hardware shall be furnished for wall hung extinguishers. Provide J.L. Industries MB 846 wall bracket for 10 pound extinguisher. Coordinate bracket type with extinguisher purchased.

1. Decals: Red letter decals spelling "FIRE EXTINGUISHER" for application to vertical surface above unit; letter size, style, and location in accordance with NFPA requirements.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Wall Mounted (Bracket Supported) Fire Extinguishers
1. Install fire extinguishers in locations shown on Drawings. Wall brackets shall be anchored solidly to wall. Block walls where required in order to obtain a rigid installation. Mount so that fire extinguisher handle is no higher than 4'-0" above finish floor; comply with requirements of ADA and NFPA 10.
2. Install identification for bracket mounted extinguishers. Install decals above each extinguisher unit in accordance with NFPA 10 and ADA.
3. Install bracket-mounted fire extinguishers in the following locations:
   a. Kitchen.
   b. Electrical and mechanical rooms.

B. Cabinet Installation
1. Install cabinets to permit floor to extinguisher handle to be 48". Comply with requirements of ADA and NFPA 10.
2. Install cabinets in locations indicated on the Drawings.
3. Cabinets shall be rigidly anchored to solid treated wood blocking or metal framing.

C. Extinguisher Charging: Install charged extinguishers not more than 48 hours prior to Date of Substantial Completion.

END OF SECTION 10 44 00

SECTION 14 21 00 – Electric Traction Elevators

PART 1 - GENERAL

1.01 Summary

A. This section specifies electric traction elevators.

B. Work Required

1- The work required under this section consists of all labor, materials and services required for the complete installation (including operational verification) of all the equipment required for the elevator(s) as herein specified.

2- All work shall be performed in a first class, safe and workmanlike manner.

3- In all cases where a device or part of the equipment is herein referred to in the singular, it is intended that such reference shall apply to as many of such devices or parts as are required to make complete installation.

1.02 Related Sections

A. The following sections contain requirements that relate to this section and are performed by trades other than the elevator manufacturer/installer.

1- Section 01 50 00 – Temporary Facilities and Controls: protection of floor openings and personnel barriers; temporary power and lighting.

2- Section 03 30 00 – Cast-In-Place Concrete: elevator pit and elevator machine foundation.

3- Section 04 20 00 – Unit Masonry: masonry hoistway enclosure, building-in and grouting hoistway doorframes, and grouting of sills.

4- Section 05 50 00 – Metal Fabrications: pit ladder, divider beams, supports for entrances and rails, and hoisting beam at top of elevator hoistway.

5- Section 07 16 00 – Cementitious Waterproofing: waterproofing of elevator pit.

6- Section 23 50 00 – Heat Generation Equipment: ventilation and temperature control of elevator equipment areas.

7- Section 26 05 00 – Common Work Results for Electrical:

a. Main disconnects for each elevator.

b. Electrical power for elevator installation and testing.

c. Disconnecting device to elevator equipment prior to activation of sprinkler system.

d. The installation of dedicated GFCI receptacles in the pit and overhead.

e. Lighting in controller area, machine area and pit.

f. Wiring for telephone service to controller (if applicable).

8- Section 26 30 00 – Emergency (Standby) Power Supply Systems: emergency generator for elevator operation.

9- Section 27 30 00 – Voice Communications: ADAAG-required emergency communications equipment.

10- Section 28 31 00 – Fire Alarm Systems: fire and smoke detectors at required locations and interconnecting devices; fire alarm signal lines to contacts in the machine area.

11- Section 31 10 00 – Site Clearing: excavation for elevator pit.

1.03 References

A. Comply with applicable building and elevator codes at the project site, including but not limited to the following:

1- ASME A17.1/CSA B44, Safety Code for Elevators and Escalators.

2- ASME A17.7/CSA B44, Performance-Based Safety Code for Elevators and Escalators.

3- ADAAG, American Disabilities Act Accessibility Guidelines.

4- ANSI A117.1, Building and Facilities, Providing Accessibility and Usability for Physically Handicapped People.

5- ANSI/NFPA 70, (NEC) National Electrical Code.

6- CAN/CSA C22.1, (CEC) Canadian Electrical Code.

7- ANSI/UL 10B, Standard for Fire Test of Door Assemblies.

8- CAN/ULC-S104-10, Standard Method for Fire Test of Door Assemblies.

9- ANSI/NFPA 80, Standard for Fire Doors and Other Opening Protectives.

10- Building Codes IBC or NBCC.

11- All Local Jurisdictional applicable codes.

1.04 System Description

A. Equipment Description: Gen3 Core™ gearless machineroom less elevator where all components fit inside the hoistway.

B. Equipment Control: Elevonic® Control System.

C. Drive: Regenerative

D. Quantity of Elevators: 1

E. Elevator Stop Designations: 1, 2

F. Stops: 2

G. Openings: Front Only

H. Travel: 13'-0"

I. Pit Depth: 4'-0"

J. Rated Capacity: 2100 lb

K. Rated Speed: 150 fpm

L. Laminate Cab Clear Inside Dimensions: 5'-8 5/16" Width x 4'-3 9/16" Depth (1735 mm Width x 1309 mm Depth)

M. Cab Height: 7'-9" (2362 mm)

N. Clear Cab Height: 7'-8 ⅛" (2340 mm) with 1 ¼" (32 mm) Floor Recess and 4 LED Ceiling

O. Entrance Type and Width: Single-Speed Side Opening Door – 36" (914 mm)

P. Entrance Height: 7'-0" (2134 mm)

Q. Main Power Supply: 208 volts ± 5% of normal, three-phase, with a separate equipment grounding conductor.

R. Car Lighting Power Supply: 120 volts, single-phase, 15 amps, 60 Hz.

S. Machine Location: Rail-mounted at the top of the hoistway.

T. Signal Fixtures: Manufacturer's standard with metal button targets (excluding CA).

U. Controller Location: Machine Roomless controller(s) must be jamb-mounted on the same side as the counterweight, located at the top landing.

V. Performance:

1- Car Speed: ± 3 % of contract speed under any loading condition or direction of travel.

2- Car Capacity: Safely lower, stop and hold up to 120% of rated load (code required).

3- Ride Quality:

a. Vertical Vibration (maximum): 20 milli-g

b. Horizontal Vibration (maximum): 12 milli-g

c. Vertical Jerk (maximum): 4.59 ± 1.0 ft./ sec^3 (1.4 ± 0.3 m/ sec^3)

d. Acceleration/Deceleration (maximum): 2.62 ft./ sec^2 (0.8 m/ sec^2)

e. In Car Noise: 55 – 60 dB(A)

f. Stopping Accuracy: ± 0.375 in. (± 10 mm) max, ± 0.25 in. (± 6 mm) Typical

g. Re-leveling Distance: ± 0.5 in. (± 12 mm)

W. Operation: **Simplex Collective Operation:** Using a microprocessor-based controller, operation shall be automatic by means of the car and hall buttons. If all calls in the system have been answered, the car shall park at the last landing served.

X. Operation Features – Standard

1- Full Collective Operation

2- Anti-nuisance.

3- Fan and Light Protection.

4- Load Weighing Bypass.

5- Independent Service.

6- Firefighters' Service Phase I and Phase II (USA only); or Special Emergency Service Phase I and II – Emergency Recall and In-Car Emergency Operation (Canada only).

7- Top of Car Inspection.

8- Zoned Access at Bottom Landing.

9- Zoned Access at Top Landing

Y. Door Control Features:

1- Door control to open doors automatically when car arrives at a landing in response to a normal hall or car call.

2- Elevator doors shall be provided with a reopening device that will stop and reopen the car door(s) and hoistway door(s) automatically should the door(s) become obstructed by an object or person.

3- Door protection shall consist of a two-dimensional or a code required, three-dimensional, multi-beam array projecting across the car door opening.

4- Door nudging operation to occur if doors are prevented from closing for an adjustable period of time.

Z. Provide equipment for seismic conditions: Yes zone 2

1.05 Submittals

A. Product Data: Submit manufacturer's product data for each system proposed for use. Include the following:

1- Signal and operating fixtures, operating panels and indicators.

2- Cab design, dimensions and layout.

3- Hoistway-door and frame details.

4- Electrical characteristics and connection requirements.

5- Expected heat dissipation of elevator equipment in hoistway (BTU).

6- Color selection chart for Cab and Entrances.

B. Shop Drawings: Submit approval layout drawings. Include the following:

1- Car, guide rails, buffers, and other components in hoistway.

2- Maximum rail bracket spacing.

3- Maximum loads imposed on guide rails requiring load transfer to building structure.

4- Clearances and travel of car.

5- Clear inside hoistway and pit dimensions.

6- Location and sizes of access doors, hoistway entrances and frames.

C. Operations and Maintenance Manuals: Provide manufacturer's standard operations and maintenance manual.

1.06 Quality Assurance

A. Manufacturer: Elevator manufacturer shall be ISO 9001 certified.

B. Manufacturer shall have a minimum of fifteen years of experience in the fabrication, installation and service of elevators.

C. Installer: Elevators shall be installed by the manufacturer.

D. Permits, Inspections and Certificates: The Elevator Contractor shall obtain and pay for necessary Municipal or State Inspection and permit as required by the elevator inspection authority, and make such tests as are called for by the regulations of such authorities. These tests shall be made in the presence of such authorities or their authorized representatives.

1.07 Delivery, Storage, and Handling

A. Should the building or the site not be prepared to receive the elevator equipment at the agreed upon date, the General Contractor will be responsible to provide a proper and suitable storage area on or off the premises.

B. Should the storage area be off-site, and the equipment not yet delivered, then the elevator contractor, upon notification from the General Contractor, will divert the elevator equipment to the storage area. If the equipment has already been delivered to the site, then the General Contractor shall transport the elevator equipment to the storage area. The cost of elevator equipment taken to storage by either party, storage, and redeliver to the job site shall not be at the expense of the elevator contractor.

1.08 Warranty

A. The elevator contractor's acceptance is conditional on the understanding that their warranty covers defective material and workmanship. The warranty period shall not extend longer than one (1) year from the date of completion or acceptance thereof by beneficial use, whichever is earlier, of each elevator. The warranty excludes: ordinary wear and tear, improper use, vandalism, abuse, misuse, or neglect or any other causes beyond the control of the elevator

contractor and this express warranty is in lieu of all other warranties, express or implied, including any warranty of merchantability or fitness for a particular purpose.

1.09 Maintenance and Service

A. Maintenance service consisting of regular examinations and adjustments of the elevator equipment shall be provided by the elevator contractor for a period of 12 Months after the elevator has been turned over for the customer's use. This service shall not be subcontracted but shall be performed by the elevator contractor. All work shall be performed by competent employees during regular working hours of regular working days. This service shall not cover adjustments, repairs, or replacement of parts due to negligence, misuse, abuse or accidents caused by persons other than the elevator contractor. Only genuine parts and supplies as used in the manufacture and installation of the original equipment shall be provided.

B. The periodic lubrication of elevator components shall not be required, including Sheaves, Rails, Belts, Ropes, Car and Counterweight guides, etc.

C. The elevator control system must:

1- Provide in the controller the necessary devices to run the elevator on inspection operation.

2- Provide on top of the car the necessary devices to run the elevator in inspection operation.

3- Provide in the controller an emergency stop switch. This emergency stop switch when opened disconnects power from the brake and prevents the motor from running.

4- Provide in the event of a power outage, means from the controller to electrically lift and control the elevator brake to safely bring the elevator to the nearest available landing.

5- Provide the means from the controller to reset the governor over speed switch and also trip the governor.

6- Provide the means from the controller to reset the emergency brake when set because of an unintended car movement or ascending car over speed.

7- (Optional) Provide the means from the controller to reset elevator earthquake operation.

PART 2 - PRODUCTS

2.01 Manufacturer

A. Manufacturer: Design based upon Otis Elevator's Gen3 Core™ machine room-less elevator system.

2.02 Design and Specifications

A. Provide Gen3™ Core traction passenger elevators from Otis Elevator Company. The control system and car design based on materials and systems manufactured by Otis Elevator Company. Specifically, the system shall consist of the following components:

1- Controller located entirely inside the hoistway.

2- An AC gearless machine using embedded permanent magnets mounted at the top of the hoistway.

3- Polyurethane Coated-Steel Belts for elevator hoisting purposes.

4- Regenerative drive that captures normally wasted energy and feeds clean power back into the building's power grid.

5- LED lighting standard in ceiling lights and elevator fixtures.

6- Sleep mode operation for LED ceiling lights and car fan.

B. Approved Installer: Otis Elevator Company

2.03 Equipment: Controller Components

A. Controller: A microcomputer-based control system shall be provided to perform all of the functions of safe elevator operation. The system shall also perform car and group operational control.

1- All high voltage (110V or above) contact points inside the controller shall be protected from accidental contact when the controller doors are open.

2- Controller shall be separated into two distinct halves: Motor Drive side and Control side. High voltage motor power conductors shall be routed so as to be physically segregated from the rest of the controller.

3- Field conductor terminations points shall be segregated; high voltage (>30 volts DC and 110 VAC,) and low voltage (< 30 volts DC)

4- Controllers shall be designed and tested for Electromagnetic Interference (EMI) immunity according to the EN 12016 (May 1998): "EMC Product Family Standards for lifts, escalators, and passenger conveyors Part 2 – immunity"

5- Controller shall be located inside the wall next to the top landing entrance frame. Emergency access shall be provided through an access panel in the entrance frame secured by a key lock.

6- A separate control room, space or closet is an option.

B. Drive: A Variable Voltage Variable Frequency AC drive system shall be provided. The drive shall be set up for regeneration of AC power back to the building grid.

2.04 Equipment: Hoistway Components

A. Machine: AC gearless machine, with a synchronous permanent-magnet motor, dual solenoid service and emergency disc brakes, mounted at the top of the hoistway.

B. Governor: The governor shall be a tension type car-mounted governor.

C. Buffers, Car, and Counterweight: Polyurethane type buffers shall be used for speeds of 150 and 200 feet per minute.

D. Hoistway Operating Devices:

1- Emergency stop switch in the pit.

2- Terminal stopping switches.

E. Positioning System: Consists of an encoder, reader box, and door zone vanes.

F. Guide Rails and Attachments: Guide rails shall be Tee-section steel rails with brackets and fasteners. Side counterweight arrangements shall have a dual-purpose bracket that combines both counterweight guide rails, and one of the car guide rails to building fastening.

G. Coated-Steel Belts: Polyurethane coated belts with high-tensile-grade, zinc-plated steel cords and a flat profile on the running surface and the backside of the belt. The belts shall have an FT-1 rating as referenced by NFPA 13. All driving sheaves and deflector sheaves should have a crowned profile to ensure center tracking of the belts. A continuous 24/7 monitoring system using resistance-based technology has to be installed to continuously monitor the integrity of the coated steel belts and provide advanced notice of belt wear.

H. Governor Rope: Shall be steel and shall consist of at least eight strands wound about a sisal core center.

I. Fascia: Galvanized sheet steel shall be provided in accordance with code requirements.

J. Hoistway Entrances:

1- Frames: Entrance frames shall be of bolted construction for complete one-piece unit assembly. All frames shall be securely fastened to fixing angles mounted in the hoistway

and shall be of UL fire rated steel. The entrance profile (jamb face) shall be a width of 2 7/8" (73 mm).

2- Sills shall be extruded aluminum.

3- Doors: Entrance doors shall be of metal construction with vertical channel reinforcements.

4- Fire Rating: Entrance and doors shall be UL fire rated for 1-½ hour

5- Entrance Finish: Brushed Stainless Steel

6- Entrance Marking Plates: Entrance jambs shall be marked with 4" x 4" (102 mm x 102 mm) plates having raised floor markings with Braille located adjacent to the floor marking. Marking plates shall be provided on both sides of the entrance.

7- Sight Guards: Sight guards will be furnished with all doors painted to match with painted doors, painted black for stainless steel doors.

2.05 Equipment: Car Components

C. Car Frame and Safety: A car frame fabricated from formed or structural steel members shall be provided with adequate bracing to support the platform and car enclosures. The car safety shall be integral to the car frame and shall be Type "B", flexible guide clamp type.

D. Cab: Laminate Cab with vertical high-pressure laminate wall panels; laminated woodgrains, patterns and solid selections available from the manufacturer's standard selection chart.

E. Car Front Finish: Brushed Stainless Steel

F. Car Door Finish: Brushed Stainless Steel

G. Flush Ceiling with 4 LED Lights

H. Ceiling Finish: Brushed Stainless Steel

G. Emergency Car Lighting: An emergency power unit employing a 6-volt sealed rechargeable battery and totally static circuits shall be provided to illuminate the elevator car in the event of building power failure.

H. Fan: A one-speed 120 VAC fan will be mounted to the ceiling to facilitate in-car air circulation, meeting A17.1 code requirements. The fan shall be rubber mounted to prevent the transmission of structural vibration and will include a baffle to diffuse audible noise. A switch shall be provided in the car-operating panel to control the fan.

A. Threshold: Extruded Aluminum

I. Emergency Exit Contact: An electrical contact shall be provided on the car-top exit.

J. Guides: The car shall have 3" diameter roller guides at top and bottom and the counterweight shall have slide type guides at the top and the bottom. Optional counterweight guides available.

K. Platform: The car platform shall be constructed of metal. Load weighing device shall be mounted on the belts at the top of the hoistway.

L. The LED ceiling lights, and the fan should automatically shut off when the system is not in use and be powered back up after a passenger calls the elevator and pushes a hall button.

Note: Below are optional.

M. Certificate frame: Provide a Certificate frame with a satin stainless steel finish.

2.06 Equipment: Signal Devices and Fixtures

A. Car Operating Panel: A Standard Otis ONE™ Pro flat applied car operating panel with a surrounding injected molded bezel shall be provided which contains all push buttons, key switches, and message indicators for elevator operation. The car operating panel shall have a brushed stainless steel finish and include a service cabinet. (A second COP is available)

1- The car operating panel shall contain a bank of round stainless steel, mechanical LED illuminated buttons. Flush mounted to the panel and marked to correspond to the landings served. All buttons to have raised numerals and Braille markings with:

Flush Mounted brushed stainless steel buttons with white LED illuminating halos.

Lexan ⅛" (3mm) projecting fully illuminated buttons with white LEDs may be required by some local codes

2- The car operating panel shall be equipped with the following features:

a. Raised markings and Braille to the left-hand side of each push-button.

b. Car Position Indicator at the top of and integral to the car operating panel.

c. Door open and door close buttons.

d. Inspection key-switch.

e. Elevator Data Plate marked with elevator capacity and car number.

f. Help Button: The help button shall initiate two-way communication between the car and a location inside the building, switching over to another location if the call is unanswered, where personnel are available who can take the appropriate action. Visual indicators are provided for call initiation and call acknowledgement.

g. Landing Passing Signal: A chime bell shall sound in the car to signal that the car is either stopping at or passing a floor served by the elevator.

Note: Below are Standard for USA and optional in Canada.

h. In car stop switch (toggle or key unless local code prohibits use)

i. Firefighter's hat (standard USA)

j. Firefighter's Phase II Key-switch (standard USA)

k. Call Cancel Button (standard USA)

Note: Below are optional.

l. Firefighter's Phase II Emergency In-Car Operating Instructions: worded according to A17.1 2000, Article 2.27.7.2.

m. Please Exit Symbol: provided with emergency hospital service, or express priority in the hall.

B. Car Position Indicator: A digital, LED car position indicator shall be integral to the car operating panel.

C. Hall Fixtures: Hall fixtures shall be provided with necessary push buttons and key switches for elevator operation. Hall fixtures shall include:

Round stainless steel, mechanical buttons located in the entrance frame face mounted vertically. Fixtures shall be brushed stainless steel finish.

Flush Mounted brushed stainless steel buttons with white LED illuminating halos.

1- Car Lantern and Chime: A directional lantern visible from the corridor shall be provided in the car entrance. When the car stops and the doors are opening, the lantern shall indicate the direction in which the car is to travel, and a chime will sound.

D. Access key-switch at top floor in entrance jamb is optional.

E. Access key-switch at lowest floor in entrance jamb is optional.

PART 3 - EXECUTION

3.01 Preparation

A. Take field dimensions and examine conditions of substrates, supports, and other conditions under which this work is to be performed. Do not proceed with work until unsatisfactory conditions are corrected.

3.02 Installation

A. Installation of all elevator components except as specifically provided for elsewhere by others.

3.03 Demonstration

A. The elevator contractor shall make a final check of each elevator operation with the Owner or Owner's representative present prior to turning each elevator over for use. The elevator contractor shall determine that control systems and operating devices are functioning properly.

END OF SECTION 14 21 00

SECTION 22 00 00 - MECHANICAL - GENERAL

PART 1 - GENERAL

1.1 GENERAL CONDITIONS

A. The General Conditions and other pertinent documents issued by the Engineer are a part of these Specifications and shall be complied with in every respect. In addition, the accompanying Architectural, Structural, Mechanical, Electrical and other Drawings shall be complied with in every respect. It shall be the responsibility of the Mechanical and Electrical Contractors to avail themselves of a complete set of Drawings and Specifications and be familiar with all parts thereof. Failure to do so shall not relieve any responsibility in the fulfillment of the Contract in any respect.

1.2 INTENT

A. The intent of the Mechanical and Electrical Drawings and Specifications is that the Contractor shall furnish all labor and materials, equipment and transportation necessary for the proper execution of the work. The work required as related to other trades is shown in it majority in the drawings, but thoroughly examine the Drawings and Specifications relating to other trades in order to include all necessary work. No additional compensation shall be considered for failure to properly interpret the responsibilities to other trades. The Contractor shall do all the work shown on the Drawings and described in the Specifications and all incidental work considered necessary to complete the project. The Engineer reserves the right to make any reasonable change in the locations indicated without additional compensation to the Contractor.

1.3 CONFLICT

A. If there is a conflicting variance between the Drawings and Specifications, the provisions of the most stringent shall control. In case of conflict between the General Provisions of the Contract or any modifications thereof, the Mechanical and Electrical Specifications shall control. The Drawings and Specifications are complementary and any work required by one, but not by the other, shall be performed as though required by both.

1.4 SCOPE

A. The work contemplated and included under this Section of the Specifications consists of the furnishing of all labor, materials and supervision necessary for the installation of complete mechanical and electrical systems, as specified herein or shown on the Drawings, together with all necessary auxiliaries and appurtenances for same.

B. Furnish and install all systems complete in every respect and ready to operate. Furnish all miscellaneous items and accessories required for such installation, whether or not each such item or accessory is shown on the Drawings or mentioned in these Specifications.

1.5 RELATED SECTIONS

A. Section 22 11 13 - Plumbing
B. Section 23 08 00 - Heating, Ventilation and Air Conditioning
C. Section 26 00 00 - Electrical

1.6 INSPECTION OF SITE

A. The Contractor, before submitting his proposal, shall inspect the site of the proposed construction and become fully informed as to the facilities, difficulties and restrictions attending the execution of the work. No additional compensation will be granted for work or items omitted from his proposal due to his failure to inform himself of the conditions affecting the performance of the work included in the Contract, or necessary to carry on and satisfactorily complete the work included herein.

B. Locations and elevations of the various utilities included within the scope of this work are offered separate from the Contract Documents as a general safety guide only without guarantee as to accuracy.

1.7 CODES, STANDARDS AND REGULATIONS

A. All workmanship and materials herein specified shall meet in every respect the codes, standards and regulations having jurisdiction of the work. In case of difference between the various standards and other regulations, the matter will be brought to the attention of the Engineer and either the most stringent shall govern or the regulation or standard selected by the Engineer shall govern.

B. Should the Contractor perform any work that does not comply with the requirements of the applicable codes, standards and regulations, he shall bear all costs arising from the deficiencies.

C. The following codes, standards and regulations in effect on the date of bid invitation shall be considered a part of this Specification:

a. State Public Health Department Regulations
b. State Plumbing Code and HVACR Code
c. National Fire Protection Association
d. American Society of Mechanical Engineers
e. American Society for Testing Materials
f. Air Conditioning and Refrigeration Institute
g. National Electrical Code
h. National Electrical Safety Code
i. Local, City, State and Federal Codes and Standards
j. Underwriters' Laboratories
k. Local Utilities Requirements
l. National Electrical Manufacturers Association
m. OSHA - Occupational Safety and Health Standards

1.8 PERMITS AND FEES

A. Provide all necessary notices, obtain all permits, pay all taxes, file all necessary plans and obtain all necessary approvals in connection with the mechanical and electrical

work required for the project.

1.9 CONTRACTOR DEFINITION

A. Where the word "Contractor" is used in connection with the work included under the Mechanical and Electrical Sections of these Specifications, reference is thereby made to the Contractor who is engaged to execute the work included under that Section of the Specifications only, notwithstanding the fact that this Contractor may be either the prime contractor, general contractor or his subcontractor.

1.10 DRAWINGS

A. The accompanying Mechanical and Electrical Drawings in general indicate approximately the locations of equipment and devices, except in those cases where specified notes appear. Exact locations of outlets and apparatus shall be determined by reference to the general plans and to detailed shop drawings, by measurements at the building and in cooperation with other contractors and the Engineer.

B. Exact locations are subject to approval by the Engineer and may differ a reasonable amount from the approximate locations shown on the Drawings without additional compensation to the Contractor.

C. Major changes resulting in a savings in labor or material shall be made only in accordance with a Change Order. Major deviations shall be made only where necessary to avoid interference and only after drawings showing the proposed deviations have been submitted to and approved by the Engineer.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Provide materials and equipment which are new and in perfect condition. Where the Underwriters' Laboratories have established standards and issued labels for a particular group, class or type of equipment, the Underwriters' label shall be required on all equipment in that category. Each component shall have a nameplate giving the name and address of the manufacturer, catalog number and designation.

B. Where the words "or equal" are used in the Specifications or on the Drawings, it shall be understood that the Engineer will be the sole judge in the matter. In all cases where more than one manufacturer or material is specified, the Contractor shall be permitted to furnish any of those specified, however, power equipment, panels, transformers and safety switches should be of the same manufacturer. It is not the intention to discriminate against any "equal" product of other manufacturers, but rather to definitely set a standard of quality and shall not be construed to limiting competition. Any proposed substitution will be assumed to be acceptable without specific authorization from the Engineer. Should a substitution be accepted and should the substitution prove defective or otherwise unsatisfactory for the intended service within the warranty period, the Contractor shall replace the substitution with the equipment or material originally specified, and on which the Specification required him to base his proposal, at no additional compensation.

2.2 TEMPORARY CONSTRUCTION POWER

A. Furnish and install temporary power, water, heating, gas and lighting as the needs require for construction and safety purposes. It shall be the responsibility of the General or Prime Contractor to obtain and be responsible for all utility charges.

PART 3 - EXECUTION

3.1 WORKMANSHIP - GENERAL

A. All work shall be installed in a neat, careful, safe and workmanlike manner by craftsmen skilled in the trade.

3.2 STANDARDS

A. Perform all work in such a manner that the many components will function as a complete workable system, including any accessories required to accomplish such installations. Perform all work in accordance with acceptable industry standards except where other standards or procedures are herein specified.

3.3 COORDINATION AND COOPERATION

A. Coordinate all mechanical and electrical work with general, structural and other grades to insure proper execution of the work and general progress for the entire project and to avoid delaying any other Contractor. Cooperate with all other trades so that the entire project will not be handicapped, hindered or delayed. Assist other trades in working out space conditions to permit all work to be installed satisfactorily. No extra compensation will be allowed the Contractor for any remedial work required to eliminate interferences due to lack of coordination and cooperation.

3.4 STORAGE OF MATERIALS

A. Protect all mechanical and electrical materials and apparatus to prevent any damage to them. Unless approved, no material or apparatus shall be stored outside or exposed to the elements. Cover apparatus with tarpaulins or other protective coverings, provide pallets or other methods to raise materials above the floor, and where directed, provide barriers or guard rails to protect the materials. Failure on the part of the Contractor to comply with the above to the complete satisfaction of the Engineer or his representative will be sufficient cause for rejection of the piece of apparatus in question.

3.5 DAMAGED AND DEFECTIVE WORK

A. Remove and replace damaged and defective work or materials as directed by the Engineer with no extra compensation. All repairs to the work shall be made with new materials or a complete new piece of equipment shall be provided as directed by the Engineer.

3.6 ACCESSIBILITY

A. Install all equipment and devices in an accessible location or in a location where they

can be made accessible with removable panels. Provide Milcor or approved equal access panels as required for access to concealed equipment which requires servicing and testing. Equipment and devices shall be "readily accessible" where required by the National Electrical Code. In non-removable ceilings, the removal of a lighting fixture or air device is not an approved access panel.

3.7 SAFETY

A. Provide necessary precautions for the safety of life or property. All construction work shall conform to the standards of the Occupational Safety and Health Act. Provide approved ground fault interrupter devices on all electrical construction devices consuming power and including temporary lighting systems.

3.8 CLEAN-UP

A. The Contractor shall keep his work area clean at all times. Upon completion of work in any area, remove all equipment, excess materials and debris from the area and leave area broom clean. Protect all equipment during operations of painting, plastering, cutting or drilling and any like operation which might damage the equipment. Upon completion of the project, remove all equipment, excess material, scrap and debris from the job site. The job site shall be left clean and finished.

3.9 CONTRACTOR FURNISHED DATA

A. Submit to the Engineer shop drawings for all equipment and materials to be installed on the project. No equipment or materials shall be installed until the shop drawings have been approved, even if the material submitted is identical to that originally specified. Consideration for substitution of materials will not be allowed if shop drawings are not received within 30 days after award of Construction Contract.

B. Rough-in materials including pipe, wire, conduits, connectors and boxes may be submitted in a list form including the names of manufacturers and catalog type or number. All other equipment and materials shall be submitted with detailed prints or drawings. Prints or drawings shall be permanent reproductions and not Thermofax copies. The total number of shop drawings and lists shall be not less than six.

C. Should the Contractor propose to submit items other than those specified, he shall include cuts of both the specified item and the proposed "equal item" in the brochures. The "originally specified product" and the "proposed substitution" shall be clearly marked.

D. Where the Specifications or Drawings call for the work to be installed in accordance with the manufacturer's specifications, recommendations or directions, copies of the same shall be submitted to the Engineer for review and surveillance.

E. Provide the Engineer four (4) copies of hard bound manuals for the project ten (10) days prior to final acceptance of the completion of the project. The manuals shall include copies of all corrected and approved shop drawings, schedules, catalog data, illustrations, performance curves and rating data, wiring and control diagrams, manufacturer's recommendations, operating and maintenance instructions, including safe operating procedures and requirements, spare parts lists and other pertinent

information for the specified equipment and systems. The manual shall include a typewritten schedule of each motor, giving nameplate data, switch and fuse or breaker sizes and voltage and phase at motor terminals.

3.10 TESTS

A. Test and demonstrate each and every system in the presence of and to the complete satisfaction of a representative of the Engineer. Prior to demonstration, start all equipment and make necessary tests and adjustments to place the system in first class operating conditions.

B. Furnish all services, instruments, equipment and personnel required for the tests; in addition, submit a typewritten test report, where applicable and recorded data is taken or required for approval prior to final acceptance.

C. Test all electrical conductors after installation but prior to termination with a 500 volt meggar. Conductors shall test free of grounds and shorts, and their insulation resistance shall be recorded for all feeders and circuits where the conductor size is size 8 and larger.

D. No piping work, fixtures or equipment shall be concealed or covered until they have been inspected and approved. Engineer's representative shall be notified one week prior to when the work is ready for inspection. All work shall be completely installed, tested as required by the Section and the State Ordinances and State Safety Orders, and shall be leak-tight before inspection if requested. All tests shall be repeated upon request to the complete satisfaction of those making the inspection.

E. All domestic water piping shall be flushed out, tested and shall be left under pressure of supply main or a minimum of 40 psi for the balance of the construction period.

3.11 AS-BUILT DRAWINGS

A. Before the project will be finally accepted, a set of permanent as-built drawings must be submitted to the Engineer. The Contractor must certify accuracy by endorsement. The as-built drawings must be correct in every detail so that the Owner can properly operate, maintain and repair exposed and concealed work.

B. All underground work shall be dimensioned. All change orders, field changes, equipment, circuit numbers, motors, feeders, breakers and starters shall be clearly indicated on the drawings. As-built drawings shall be submitted on tracings or other reproducible forms.

3.12 GUARANTEE

A. Furnish to the Engineer a typewritten guarantee, countersigned by the General Contractor, to the effect that all work or equipment installed by him under this Contract shall be free from any or all mechanical and electrical defects for a period of one (1) year from the date of final acceptance. Should any mechanical or electrical defect develop in any of the systems or equipment within the period, due to faulty equipment, poor installation or workmanship, this Contractor shall agree to repair or replace same with new and like material without additional compensation. Lamps in all fixtures shall

be guaranteed for 100 percent of manufacturer's published life data.

3.13 GENERAL CONSTRUCTION WORK FOR MECHANICAL AND ELECTRICAL FACILITIES - SLEEVES

A. Provide 22 gauge galvanized sheet iron sleeves where pipes and conduits pass through interior masonry walls. Sleeves shall be trimmed flush with each finished surface. Sleeves shall be sufficient size to allow insertion of pipe or conduit passing through concrete beams and walls, masonry exterior walls and all floors. Sleeves shall be sized at least 1/2 inch greater than the outside diameters of the pipes or conduits. Floor sleeves shall extend 1 inch above floors. After conduits/pipes are installed, seal the space between the conduits/pipes and sleeves with a filler to provide a non-runable watertight joint.

3.14 ROOF FLASHING

A. Provide complete watertight flashing and counter-flashing for all roof penetrations. All flashings shall be made to the complete satisfaction of the Engineer.

3.15 PAINTING

A. All exposed mechanical and electrical equipment in finished areas shall be painted.

B. Provide a prime coat to all unfinished equipment or material and all ferrous metal subject to rusting and corrosion during construction.

C. All duct work visible through registers, grilles and diffuser openings shall be given two coats of dull black paint.

3.16 FASTENING DEVICES AND METHODS

A. Provide fastening devices which are permanent, non-corroding, high strength type using threads or tightening. Minimum size bolt shall be 3/16 inch, and medium size screw shall be No. 10. Cement or glue type fasteners shall not be used. Driven studs may be used for fastening only in steel.

B. In concrete and solid masonry, use threaded inserts secured in drilled holes or cast into the concrete. Conduits 1 inch and larger, junction boxes 12 inches and larger, and all equipment subject to motion, operation or vibration shall be fastened with lead tamped or wedge type expanding shield secured threaded inserts.

C. In hollow masonry, plaster or plaster board, toggle bolts or expanding lag anchors shall be used with excess hole area covered with washers. Whenever possible, fastening in plaster or plaster board shall be into studs or structural supports.

D. In wood construction, wood screws and lag bolts may be used. Screws shall not be hammered into wood.

E. In steel construction, driven threaded studs, welded threaded studs, drilled threaded or through holes, or threaded clamps shall be used.

F. In light weight applications on sheet metal, self-threading screws or bolts may be used.

3.17 PIPING

A. Cut pipe accurately to measurements established at the site, work into place, without springing or facing and clear all windows, doors and other openings. Ream all piping to remove burrs and install so as to permit free expansion and contraction without causing damage. Make all changes in direction with fittings.

B. Provide, whether shown or not, sufficient awing joints, expansion loops and devices necessary for a flexible piping system. Provide union shut off valves suitable located to facilitate maintenance and removal of all equipment or apparatus. Install drain valves at all low points of each system to enable complete drainage, and air vents at all high points in the piping system to enable complete air venting.

C. Pipe all drains from condensate pans, and relief valves, to spill over an open sight drain, floor drain or other acceptable discharge points, and terminate with a plain end (unthreaded pipe) 6 inches above the drain. Rigidly support all drains.

D. Weld-O-Let type fittings may be used for branch take offs where size of take off does not exceed 3 inch IPS and the take off is at least two standard pipe sizes smaller than the main size. Standard welding steel shall be used in all other locations. Copper piping shall have soldered joints with 95-5 solder. Galvanized piping shall have screwed joints.

E. Joints in copper tubing shall be made using sweat fittings and tin-antimony solder and non-corrosive flux. For soldered joints, the outside surface at end of pipe and inside surface of fitting shall be thoroughly cleaned with steel wool or emery cloth and all burrs shall be removed. After cleaning, surfaces to be joined shall be evenly and completely covered with flux. Solder joints shall be well supported during the heating process and shall not be strained during the cooling period. Excess solder shall be removed while in a plastic state, leaving a fillet around the cup of the fitting as it cools.

F. All pipe and fittings with screwed ends shall have its threads cut clean and true and in conformance with the ASA Specification B2-1 for taper threads. Screwed pipe and fitting of brass shall be made up without marring or damaging pipe and fitting surfaces. All screwed pipe joints, except where specified otherwise, shall be made up with non-soluble, non-toxic, approved thread compound, applied to male threads only.

G. Connections between pipe fittings, hangers and equipment of dissimilar metals shall be avoided wherever practical. Wherever such connections are unavoidable, they shall be insulated against direct contact, using a high grade dielectric insulating material of Teflon, Milarta, asbestos fiber, neoprene, or equal.

H. Hangers: Furnish and install suitable hangers and supports for all horizontal lines. Hangers and supports shall be Grinnel, Fee and Mason, or equal. Heavy pipes shall be carried by pipe hangers supported by rods secured to slab or by approved design. No piping shall be hung from other piping. In no case shall hangers be supported by means of vertical expansion bolts.

I. Horizontal steel piping shall be supported in accordance with the following schedule:

PIPE SIZE	MAX. HANGER SPACING	ROD SIZE
1" & smaller	6 ft. 0 inches	3/8 inch
1 1/2" to 2"	9 ft. 0 inches	3/8 inch
2 1/2" to 4"	10 ft. 0 inches	1/2 inch
Larger than 4"	12 ft. 0 inches	1/2 inch

J. All lines of copper tubing shall be supported by approved type hangers. Hangers for uncovered lines shall be especially designed for copper tubing. Hangers for covered tubing shall have broad scraps fitting outside of covering with insulation protection. Horizontal copper tubing shall be installed in accordance with the following schedule.

PIPE SIZE	HANGER HORIZONTAL SPACING	ROD SIZE
½"	6'	3/8 inch
3/4" & 1"	8'	3/8 inch
1 1/4" & Larger	10'	3/8 inch

3.18 ESCUTCHEONS

A. Escutcheons shall be installed on pipes and conduits wherever they pass through floors, ceilings, walls or partitions in finished areas.

B. Escutcheons shall be chrome plated brass.

3.19 RELOCATION OF GAS LINE

A. Trenches for gas line shall be excavated to the required depth.

B. The bottom of the trenches shall be tamped hard and graded to secure all available fill. Bell holes shall be excavated to ensure pipe resting for its entire length on solid ground. If rock is encountered, it shall be excavated to a depth of 6 inches below the bottom of the pipe, and before laying the pipe, the space between the bottom of the pipe and the rock surface shall be filled with gravel and shall be well tamped. No extra compensation will be made for rock excavation.

C. After the gas line has been tested, inspected and approved by the Engineer and utility company representative, the trenches shall be backfilled with approved fill material, in 12 inch layers, firmly compacted, flooded if necessary, and thoroughly tamped.

3.20 NAMEPLATES AND IDENTIFICATION

A. Provide nameplates and identification on all major mechanical and electrical equipment.

B. Exposed or surface mounted panel boards, cabinets, starters, contactors, time clocks,

fans, motors, air handling units, shall be coded and painted with one inch high stenciled black letters across the front.

C. The above equipment where flush mounted, shall be coded on the inside of the cover.

D. Stencils shall be made from heavy waxed cardboard with all letters in capitals and of the same size. At the completion of the project, the stencils shall be turned over to the Owner.

E. In lieu of stencils, engraved bakelite nameplates may be used; nameplates shall be minimum one inch high with 1/4 inch high capital letters permanently fastened to equipment.

3.21 PIPE VIBRATION AND NOISE ISOLATION

A. Insert 1 inch strip of hair felt to isolate all piping, conveying fluids, from direct contact with building walls, framing and sleeves. Pipe isolation shall be installed at all ring hangers consisting of 1 inch felt. Separate cold and hot water piping by 6 inches.

B. All rotating equipment, piping, hangers, supports and tank connections to rotating equipment shall be vibration isolated from beams, columns, floors, ceilings, joists and walls using isolation equipment as specified in other sections of this specification or as shown on the Drawings.

3.22 CONTROL WIRING

A. The Electrical Contractor shall furnish and install all control and interlock wiring for electrical equipment furnished. All wiring shall be in conduit and shall be in conformance with Section 16. Where control voltage is greater than 48 volts, wire shall be minimum 14 gauge AWG and shall have 600 volt insulation. Motors, starters, heaters, thermostats, and other control devices shall be furnished and delivered from the Mechanical Contractor to the Electrical Contractor for installation by the Electrical Contractor. The Mechanical Contractor shall furnish complete wiring diagrams to the Electrical Contractor for each and every piece of equipment to be installed and interconnected if necessary. The Mechanical Contractor shall notify the Electrical Contractor concerning any changes in the electrical requirements due to substitution of equipment or variations in the equipment. Control raceways and boxes exposed to the elements shall be NEMA 3R or weatherproof.

END OF SECTION 22 00 00

SECTION 22 11 13 - PLUMBING

PART 1 - GENERAL

1.1 GENERAL CONDITIONS

A. Furnish all labor, materials, equipment and services to complete the plumbing work as shown on the drawings or as specified. Refer to the General Conditions, Supplemental General Conditions, Mechanical, Electrical, and other sections as they apply.

1.2 RELATED SECTIONS

A. Section 220000 - Mechanical General

1.3 SCOPE

A. Furnish and install all plumbing systems complete in every respect and ready to operate. Furnish all miscellaneous items and accessories required for such installation, whether or not each item or accessory is shown on the drawings or mentioned in these specifications.

B. The work shall consist of, but is not limited to the following general items.

1. Plumbing fixtures and related drainage and water supply systems.

2. Hot water heater system.

3. Floor drains, cleanouts and hose bibbs.

4. Gas piping system.

1.4 SUBMITTALS

A. Submit shop drawings for:

1. Fixtures.
2. Water heaters.
3. Drains, cleanouts, and hose bibbs.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Fixtures: As scheduled on Drawings and as manufactured by American Standard, Kohler, Crane, Bradley, or equal.

B. Trim as for fixtures, plus Delta Faucet, or equal.

C. Seats: Olsonite or Church.

D. Hot water heater system: Refer to Plumbing Fixture Schedule on Drawings for manufacturer and model number.

E. Hose bibbs: Josam, Chicago Faucet, Speakman, Zurn, or equal, with vacuum breaker. Material rough brass outside, chrome plated brass inside.

F. Floor drains and cleanouts: Josam, Zurn or Wade.

2.2 PIPE AND FITTINGS

A. Hot and cold water piping above slab shall be Schedule 40 galvanized steel with galvanized M.I. fittings or Type "L" copper with wrought copper fittings, or equal. Piping below slab shall be Type "K" copper tubing. Exterior piping shall be Schedule 40 galvanized steel, Type "K" or "L" copper, or Class 150 cast iron.

B. Soil and storm drainage piping shall be Schedule 40 PVC, or Schedule 40 ABS DWV plastic pipe, or service weight cast iron with service weight fittings or no hub. Pipe and fittings to be coated with hot coal tar pitch inside and out.

C. Vent piping 2 1/2 inch and under may be Schedule 40 galvanized steel pipe with banded cast iron fittings or galvanized victaulic couplings and fittings. Three inch and larger pipe shall be service weight cast iron, no hub. Copper DWV with copper drainage fittings may be used for all size vent piping. Vent pipe may be Schedule 40 PVC or ABS DWV plastic pipe.

D. Gas piping shall be Schedule 40 black steel assembled with M.I. or welded fittings. Piping below grade coated and wrapped. Straight lengths furnished with factory coating. Fittings and damaged coatings shall be wrapped with tape-coat applied according to manufacturer's instructions.

2.3 VALVES AND STRAINERS

A. Gate and globe valves shall be bronze with a steam working pressure of 125 psi as manufactured by Jenkins, Stockham or Wellworth, or equal.

B. Valves 2" and smaller shall have screwed ends. Valves 2 1/2" and larger shall be iron body bronze mounted 125 psi ASA flanged.

C. Strainer shall be "Y" pattern Sarco, or equal, and furnished with stainless steel baskets.

D. Ball valves shall be full flow round port with teflon seats and seals.

E. Pet cocks shall be brass and rated 125 lb. W.P.

F. Check valves shall be all brass, swing check, screwed ends and suitable for 150 lb. W.P.

G. Gas cocks 1" and below - Crane No. 272 low pressure, 1 1/4" and above and all medium pressure, Rockwell No. 114 or 116.

H. Under water service valves shall be Mueller H-15200 curb stop with cast iron curb box with lid, plug and footpiece for sizes 1 1/2" and smaller, and Mueller A-2380-5, 200 psi, AWWA, iron body, non-rising stem gate valve with H-10360 cast iron valve box for sizes 2" and larger. Four 12" x 12" x 6" thick concrete pads around each box. Furnish key for each valve size.

2.4 BACKFLOW PREVENTERS

A. Connections not permitted between potable water and a non-potable water or waste sources.

B. Air gaps or approved backflow preventers shall always be used when required by code or as necessary to prevent backflow.

C. Backflow preventers shall be installed with any supply fixture when the outlet end may at times be submerged, such as hoses, sprays, direct flushing valves, aspirators and under-rim connections to a fixture in which the surface of water in the fixture is exposed at all times to atmospheric pressure.

PART 3 - EXECUTION

3.1 INSULATION

A. All cold and hot water supply and return piping except exposed connections to plumbing fixtures, flanges and unions shall be insulated with 3/4" wall thickness Gustin-Bacon "snap-on," Owens-Corning "PF," or standard thick 85% magnesia.

B. All exposed piping shall have a fire retardant jacket applied.

C. Fittings and valves shall be insulated with insulating cement. In exposed areas a fire retardant jacket shall be applied.

D. Cold water piping shall have a vapor barrier jacket applied.

E. Hot water piping under floors, 1" foamglas covered with glass cloth and mastic.

F. Pipe insulation shall have a protective shield of 14 gauge galvanized steel placed centrally between the insert section at all hangers. Shield shall cover one-half of the insulation.

3.2 ROOF FLASHING

A. A waterproof flashing shall be provided for each pipe or vent passing through the roof.

B. Flashing shall be one piece 26 gauge FHA flashing assembly with the joint between flashing and pipe sealed with waterproof compound.

C. Approved equal 3 pound lead, copper or Semco assembly may be used in lieu of FHA flashing.

3.3 STERILIZING WATER SUPPLY PIPES

A. After the hot and cold water systems are complete, they shall be flushed out completely and filled with water and a solution of sodium hypochlorite added to the system. The solution shall consist of 1 gallon of 5% sodium hypochlorite, Purex or other bleach to 200 gallons of water. Check residual chlorine by orthotolidin test. Allow solution to remain in the system for 24 hours, after which the entire system shall be flushed.

B. The Engineer shall be notified 24 hours prior to testing so his representative can witness test.

3.4 WATER HAMMER ARRESTERS

A. Water hammer arresters shall be provided on all supply piping, both hot and cold, where indicated on the Drawings.

3.5 LAYING SUPPLY LINES

A. Exterior water supply lines shall be laid with a minimum cover of 36". Installation shall be in accordance with Arkansas Department of Health Regulations and local codes and ordinances.

3.6 T & P VALVE

A. The T & P valve on the water heater shall be run to outside of building.

END OF SECTION 22 11 13

SECTION 23 08 00 - HEATING, VENTILATION & AIR CONDITIONING

PART 1 - GENERAL

1.1 CONDITIONS

A. Furnish all labor, materials, equipment and services to complete the work as shown on the Drawings or as specified. Refer to the General Conditions, Supplemental General Conditions, Electrical, and other Sections as they apply.

1.2 RELATED SECTIONS

A. Section 220000 - Mechanical General

1.3 SCOPE

A. Furnish all HVAC systems complete in every respect and ready to operate. Furnish all miscellaneous items and accessories required for such installation, whether or not each such item or accessory is shown on the Drawings or mentioned in these Specifications.

B. The work shall consist of but is not limited to the following items:

1. Exhaust fans
2. Sheet metal duct work
3. Diffusers and grilles
4. Roof top units

1.3 SUBMITTALS

A. Submit shop drawings for:

1. Exhaust fans
2. Diffusers and grilles
3. Roof top units

PART 2 - PRODUCTS

2.1 ROOF TOP UNIT

A. Roof top units shall be equal to units shown in the Mechanical Equipment Schedule.

2.2 EXHAUST FANS

A. Exhaust fans shall bear AMCA or PFMA certified seal and be of minimum sizes and capacities as shown on the drawings. Include disconnects, integral mounted. Furnish with variable pitch drives unless otherwise directed. Fans shall be spun type with automatic backdraft dampers.

B. Furnish with factory curbs.

C. Approved equals shall include Greenhack, Penn, Cook or Exit-Air.

2.3 PRE-FABRICATED ROOF CURBS

A. All roof top equipment shall be furnished with pre-fabricated roof curbs.

PART 3 - EXECUTION

3.1 DUCTWORK

A. Ductwork shall be galvanized fabricated and installed in accordance with the latest publication of SMACNA standards, for low pressure ductwork.

B. Duct sizes shown on the drawings are actual sizes requried and do not include allowance for internal insulation. Rectangular duct for units must be increased in size from that shown on the drawings to allow for insulation.

C. Air foil turning vanes shall be installed in all abrupt elbows. Connection to diffusers, grille and register faces shall be made absolutely air tight.

D. Furnish flexible connections between all duct work and fans or fan coil units. Connections shall be flame proof and waterproof 16 ounce canvas of not less than 4" in length and secured in an airtight manner.

3.2 DIFFUSERS

A. Diffusers, grilles and registers are scheduled on the drawings. Center all diffusers to coordinate with reflected ceilings, lighting, speakers, etc. All wall mounted outlets shall be prime coated. All ceiling mounted outlets and returns shall be natural aluminum satin finished; air testing in accordance with SMACNA standards.

B. Furnish opposed blade volume controls to provide control of the air flow for all supply and return diffusers and registers. Operation shall be from face of the grille with a removable key.

C. Door grilles shall be slight tight core and vision proof from any angle. Grilles shall be prime coated unless otherwise shown on the drawings. Center the door fixed fanel.

D. Diffusers, grilles and registers as manufactured by Titus, Barber Coleman, Kruger, Carnes or Grillmaster.

E. Contractor to balance the airflow as indicated on the drawings in accordance with ASHRAE Standards.

3.3 INSULATION

A. Rectangular duct work, both supply and return, shall be insulated with 1" thick 2 pound

density duct liner with vinyl sprayed surface to the air side. The liner shall be installed in accordance with duct liner standards of SMACNA. Return duct insulated only if indicated on the plans.

B. Round duct work shall be insulated with 2" thick fiberglass insulation with fire resistive vapor barrier jacket.

C. Insulate kitchen exhaust duct with 2" thick fiberglass with fire resistive vapor barrier jacket.

3.4 FLUES

A. All gas flues shall be double wall type B with 6" clearance between roofing material and flue. Flues shall terminate above roof with rain cap, roof jack and counter flashing, in compliance with the gas code.

END OF SECTION 23 0800

SECTION 26 00 00 - ELECTRICAL

PART 1 - GENERAL

1.1 CONDITIONS

A. Furnish all labor, materials, equipment and services to complete the electrical work as shown on the drawings or as specified. Refer to the General Conditions, Supplemental General Conditions and other sections below, as they apply.

1.2 RELATED SECTIONS

A. Section 220000 - Mechanical General

1.3 SCOPE

A. Furnish and install all electrical systems complete in every respect and ready to operate. Furnish all miscellaneous items and accessories required for such installation, whether or not each such item or accessory is shown on the drawings or mentioned in these specifications.

B. The work shall consist of, but is not limited to the following general items:

1. Lighting Fixtures and Lamps
2. Raceways
3. Wiring Devices and Plates
4. Branch Circuits
5. Control Wiring
6. Panelboards

1.4 SUBMITTALS

A. Submit under provisions of Section 013300

B. Submit shop drawings for:

1. Lighting Fixtures and Lamps
2. Wiring Devices and Plates
3. Safety Disconnect Switches
4. Control Wiring for all Mechanical Systems
5. Panelboards

PART 2 - PRODUCTS

2.1 MATERIALS

A. Submit material lists for all raceways and connectors, conductors and their connectors, boxes and grounding facilities.

PART 3 - EXECUTION

3.1 RACEWAYS

A. GENERAL: Provide raceways for all wiring systems, minimum 3/4 inch. Raceways shall include rigid galvanized steel, conduit, rigid aluminum conduit, (EMT) electrical metallic tubing, flexible metallic conduit, surface metal raceways, wire ways and troughs. Raceways shall be mechanically and electrically continuous from service entrance to final outlet. Raceways shall be run perpendicular and parallel to building construction. Except in Mechanical Rooms or as otherwise noted, all raceways shall be concealed. All breaks and turns with exposed raceways shall be made with malleable iron cadmium or hot dipped galvanized conduit fittings and covers. Raceways shall be rigidly supported with malleable iron conduit clamps or trapeze supports and clamps at intervals not exceeding 7 feet with 12 inches of all outlet boxes, elbows, and changes or direction. Concealed raceways shall be supported from structural members and not furring. All raceway systems shall be completely installed and secured and swabbed out, and all work in the area shall have progressed sufficiently to prevent injury to cables, before any conductors are installed. Provide caps and plugs on ends of raceways and openings in boxes to prevent foreign material from entering during construction. Provide double locknuts where 1 1/2 inch and larger conduits terminate, where No. 4 and larger conductors are installed, and where required by NEC. Do not use running threads. Leave No. 12 pull wire (identified at both ends) in all empty raceways. Provide plastic insulating busing on all conduit connections and fiber inserts on all tubing connections. Surface metal raceways, surface wiremold and surface metal troughs shall be installed only where shown on the drawings.

B. RIGID CONDUIT: Provide rigid galvanized steel conduits for service entrance, panel feeders and all motor feeders. Threadless fittings, all thread and running threads shall not be used. Rigid conduits shall be provided for all raceway systems run underground or embedded in concrete or solid masonry. Rigid conduit shall be as manufactured by Youngstown, Allied, Triangle, or equal. Conduits located underground shall be PVC or shall be rigid galvanized steel and have an additional coat or polyvinylchloride and shall be manufactured by Robroy, or equal.

C. ELECTRICAL METALLIC TUBING (EMT): Electrical metallic tubing (EMT) may be used for conduits concealed in furred ceilings or walls, run exposed in the building, or embedded in hollow masonry construction above grade. EMT shall be as manufactured by Triangle, Allied, Republic, or equal. EMT fittings shall be ferrous metal galvanized or plated to resist corrosion and shall be of the compression-ring type, rain-tight and concrete-tight. Set screw, indenter or friction type fittings will not be allowed. All fittings shall be wrench tight and shall have insulated throats. Fittings shall be as manufactured by Steel City, Raco, Appleton, or equal.

D. FLEXIBLE CONDUIT: Provide flexible conduit for all connections to motors and other equipment subject to vibration or motion with a maximum length of 18 inches. Flexible conduit may be used for final connection to lighting fixtures in lay-in ceilings. Conduit shall be rigidly supported where connection to flexible conduit is made. Conduit and fittings shall be self-grounding and, in addition, copper bonding jumpers shall be used.

Flexible conduit shall be as manufactured by Republic, Anaconda, Pittsburg, or equal. Connectors shall be ferrous metal, galvanized or plated to resist corrosion, of the two (2) screw clamp type, or the squeeze type, as manufactured by Raco, Appleton, Steel City, or equal. Flexible conduit and fittings used outdoors or in other areas subject to moisture shall be of the liquid-tight type with connectors having an O-ring assembly. Liquid tight connectors shall be Raco type 3500, Appleton STB, or equal.

E. CONDUIT HANGERS AND SUPPORTS: All conduits shall be rigidly supported and securely fastened to structural members. Perforated iron straps or wire shall not be used for support. Maximum support spacing shall be five (5) foot for one (1) inch and smaller conduits, and seven (7) foot for conduits larger than one (1) inch. All conduit shall be installed to permit expansion and contraction, and type hanger, method of support, location of support, etc. shall be governed in part by this consideration.

3.2 OUTLET, JUNCTION AND PULL BOXES

A. Provide outlet and junction boxes where shown on the drawings or as required by Code. Boxes shall be independently rigidly supported and accessible. All outlet boxes shall be minimum of two (2) inches deep. Provide a four (4) inch square box with plaster ring and cover at each switch and receptacle location. Wiring device boxes located in brick, block or concrete walls shall be approved for the type of installation being at mortar joints. Multi-gang boxes shall be installed for more than two (2) adjacent devices; sectional boxes will not be allowed. All exposed cover plates as manufactured by Crouse Hinds, or equal. Outlets exposed to the weather shall be type FD with weatherproof gaskets and covers. Pull boxes shall be constructed of code gauge galvanized steel and shall be sized not less than 1 1/2 times all dimensions as recommended by the NEC. All conductors in pull boxes shall be identified with tags.

3.3 CONDUCTORS

A. All conductors shall be rated 600 volts, and shall be copper with type THHN insulation. Minimum size shall be No. 12 and No. 8, and larger shall be stranded. All conductors shall be color coded, with sizes through No. 10 being of the solid compound coating. Stripes, bands or hash marks with respective color coding may be used for conductors No. 8 and larger. Color coding shall be phase A - black, phase B - red, phase C - blue, neutral - white, and ground - green. All conductors shall be by the same manufacturer and shall be Triangle, Simplex, Anaconda, General, Okonite, or equal.

B. Mains and feeders shall be run continuous without joints or splices. Branch circuit splices shall be made with 3M "Scotchloks," or equal. In panelboards and boxes, conductors shall be neatly placed in phase groups and supported away from all enclosure sides. Lacing shall be done at intervals not greater than six (6) inches and shall be done with linen cord or T & B self-locking "Ty-Raps," or equal.

3.4 LIGHTING FIXTURES

A. Provide all lighting fixtures as noted on the drawings. Fixtures shall be suspended from structural members or from ceiling structural members, by standard bar hangers, or other approved means. Structural steel necessary to support fixtures shall be furnished and installed under this Section. Provide plaster frames as required. All fixtures shall

be grounded. Fixtures shall be completely wired and lamped and shall be in perfect condition and operating at the time of completion. New building fixtures shall not be used for construction lighting.

B. Fixture locations shall be coordinated with ceiling patterns or other details or notes as shown on the drawings.

C. If a lighting fixture for a specific location is not clearly noted, the Contractor shall bring it to the attention of the Engineer prior to bidding, or the Contractor shall furnish and install a fixture similar and comparable in cost to that specified for other like location.

3.5 LAMPS

A. Provide and install lamps in lighting fixtures.

3.6 WIRING DEVICES AND PLATES

A. Furnish and install all wiring devices and plates where shown on the drawings and herein specified. All devices shall be NEMA rated specification grade, with all parts except terminals totally enclosed, and with each device separately packaged upon arrival at job site. Height of wiring device shall work with brick joints and concrete block joints, but in general, lighting switches shall be mounted 4'-0" above floor, and receptacles and telephone outlets shall be mounted 12" above floor. Adjacent wiring devices shall be mounted as close to each other as possible. All wiring devices shall be side wired.

B. In general, wiring devices and plated located in finished unpaneled areas shall be ivory. Wiring devices and plates located in finished paneled areas shall be brown. In un-finished areas, plates shall be 302 stainless steel.

3.7 SAFETY DISCONNECT SWITCHES

A. Furnish and install safety disconnect switches where shown on the Drawings or as required by NEC. Switches shall be NEMA heavy duty, horsepower rated, with pad-locking provisions and with a nameplate identifying equipment served. In wet or exterior locations, switches shall be in NEMA 3R enclosures. Switches shall be as manufactured by Square "D", General Electric, Westinghouse, ITE, or equal.

3.8 GROUNDING

A. The entire electrical system and the building structure shall be grounded, or as indicated on the drawings. The electric service, equipment and enclosures, conduits and raceways, switches, breakers and panels, motors, controllers, lighting fixtures and receptacles shall be gounded. Each branch or power circuit shall have an independent grounding conductor whether shown or not, with the exception of lighting switches.

B. Bonding jumpers shall be installed to maintain continuity at water meters, connections shall be made with approved clamps as manufactured by Burndy.

3.9 GROUND FAULT CIRCUIT INTERRUPTERS

A. Conformance with UL Std. 943, Class A.

B. Temperature tolerance level of -31° to 158°F.

C. Equal to Leviton Suregard V, NEMA 5-15R, Model 6598-W with indicator light, 15A, 125 volt.

END OF SECTION 26 00 00

SECTION 27 41 00 - AUDIO SYSTEM

PART 1 - GENERAL

1.1 CONDITIONS

A. Furnish design, layout, all labor, materials, equipment and services to complete the audio system as specified. Refer to the General Conditions, Supplemental General Conditions, Mechanical, Plumbing, Electrical, and other sections as they apply.

1.2 SCOPE

A. Design, layout, furnish and install all audio system components complete in every respect and ready to operate. Furnish all miscellaneous items and accessories required for such installation, whether or not each item or accessory is shown on the drawings or mentioned in these specifications. The Contractor is responsible for design, layout, and all system components.

B. The work shall consist of, but is not limited to the following general items.

1. Interior audio speakers.
2. Audio control panel and control system.

C. Submit shop drawings for:

1. Interior audio speakers.
2. Audio control panel and system.

1.3 SYSTEM DESIGN

A. The Contractor shall be responsible for design, layout and installation of audio speakers and an audio system for the building. The audio control system shall be designed to allow audio to be played at all areas, intercom capabilities, and isolation/individual control of each room/area. The audio system layout drawings shall be submitted to the owner and the Engineer for approval.

B. The audio system contractor shall coordinate locations of speakers and components to provide a complete working system. The contractor shall coordinate the speaker placement with the proposed structural, mechanical and electrical components. All wiring shall be concealed unless otherwise authorized by the owner. Additional speakers may be required at no additional expense to the Owner to provide total audio coverage of the rooms and building. At project completion, present the Owner with as-built drawings indicating installed location of all components. Contractor shall provide to the Owner copies of six (6) Operation and Maintenance Manuals.

D. Training shall be provided for each individual zone in the building. Training shall include

a minimum of 2 hours and shall be conducted at a time that is mutually agreeable to both the contractor and owner.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Speaker: The audio speaker shall be equal to Yamaha model VXC4, in-ceiling, 3- watt, speaker.

PART 3 - EXECUTION

3.1 INSTALLATION

A. All components and equipment shall be installed in accordance with manufactures recommendations.

END OF SECTION 27 41 00

SECTION 28 21 00 - SECURITY CAMERA SYSTEM

PART 1 - GENERAL

1.1 CONDITIONS

A. Furnish design, layout, all labor, materials, equipment and services to complete the security system system as specified. Refer to the General Conditions, Supplemental General Conditions, Mechanical, Plumbing, Electrical, and other sections as they apply.

1.2 SCOPE

A. Design, layout, furnish and install all security camera systems complete in every respect and ready to operate. Furnish all miscellaneous items and accessories required for such installation, whether or not each item or accessory is shown on the drawings or mentioned in these specifications. The Contractor is responsible for design, layout, and all system components.

B. The work shall consist of, but is not limited to the following general items.

1. Interior exterior security cameras
2. Video recording device.

C. Submit shop drawings for:

1. Interior security cameras
2. Video recording device.

1.3 SYSTEM DESIGN

A. The Contractor shall be responsible for design, layout and installation of a security camera system for the proposed building. The security camera system shall have recording capability. The security camera system layout drawings shall be submitted to the owner and the Engineer for approval.

B. The security camera system contractor shall coordinate locations of security camera components to provide a complete view of the exterior of the building and all interior rooms shown on the plans with cameras. The contractor shall coordinate the camera placement with the proposed structural, mechanical and electrical components. All wiring shall be concealed unless otherwise authorized by the owner. Obstructions to cameras must be considered during shop drawing production and installation. Additional cameras may be required at no additional expense to the Owner to provide total coverage of the area. At project completion, present the Owner with as-built drawings indicating installed location of all components. Contractor shall provide to the Owner copies of six (6) Operation and Maintenance Manuals.

D. Training shall be provided for each individual zone in the building. Training shall include a minimum of 2 hours and shall be conducted at a time that is mutually agreeable to both the contractor and owner.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Security Camera: The security cameras shall be equal to Alibi HNC14-UAI-0, indoor/outdoor camera.

B. Provide a NVR , monitor, and all items necessary for a complete working system.

PART 3 - EXECUTION

3.1 INSTALLATION

A. All components and equipment shall be installed in accordance with manufactures recommendations.

END OF SECTION 28 21 00