



**EASTPORT MUNICIPAL AIRPORT
Eastport, Maine**

**CONTRACT DOCUMENTS FOR
AIRPORT IMPROVEMENTS**

To Include:

Construct Terminal Building

A.T.P. Project No. 3-23-0053-XX-2024



Issued for Bid

June 2024

Contract Documents and Technical Specifications

for

EASTPORT MUNICIPAL AIRPORT
Eastport, Maine

Airport Improvements to Include:

Construct Terminal Building

A.T.P. Project No. 3-23-0053-XX-2024

Aviest Project No. 240501



Prepared By:

Aviest Engineering
120 Rabbit Ridge Rd
Woodland, Maine 04736

June 2024

Issued for Bid

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BID PROPOSAL

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PROPOSAL

FOR THE CONSTRUCTION OF AIRPORT IMPROVEMENTS

To Include: Airport Improvements to Include: Construct Terminal Building at the Eastport Municipal Airport, Eastport, Maine, ATP Project No. 3-23-0053-XX-2024.

To: [City of Eastport](#):

The undersigned declares that no person in the employ of the [City of Eastport](#), (hereinafter referred to as the Owner) is pecuniarily interested in this proposal or in the Contract for the work which he proposes to do; that he has carefully examined the contract and specifications and has informed himself fully in regard to all conditions pertaining to the site where the work is to be done and carefully estimated on the work. He understands that the Owner, its agents and employees, are not to be in any manner held responsible for the accuracy of, or bound by, any estimates or plans or underground structures relating to the work, and that if any have been given or made, they are to be considered solely as a base for filling out and comparing the several proposals.

The undersigned proposes to furnish all the labor, equipment and materials required for completing the following at the [Eastport Municipal Airport](#), in accordance with the accompanying specifications and plans prepared by Aviest Engineering LLC, [Woodland, Maine](#), for the sums specified herein, subject to additions and deductions according to the specifications and in all respects according to the terms thereof.

The undersigned proposes and agrees that within five (5) days after the day on which notice of the acceptance of this proposal shall be given to him or mailed to him at the address hereinafter given, he will sign in quadruplicate in the form of the office copy, and will execute and deliver to the [City of Eastport](#), a bond in the sum specified.

It is understood that the quantities given in this Proposal are approximate only and are given as a basis for comparison of the Proposals. The Owner does not expressly or by implication agree that the actual amount of work will even approximately correspond herewith, but reserves the right to increase or decrease the amount of any item of the work listed, and the unit prices quoted in the proposal shall apply without change to such variation in the quantity of each of the items, except as further clarified herein.

The undersigned agrees that for extra work, if any, performed in accordance with the terms and provisions of the annexed form of AGREEMENT, he will accept compensation as stipulated therein in full payment for such extra work.

If this Proposal is accepted by the Owner, the undersigned agrees to complete the entire work provided to be done under the Contract within the time stipulated in the AGREEMENT under the heading "Contract Time", except as otherwise expressly provided in the Contract Documents. The Contractor agrees by execution of this contract that construction shall commence in the same calendar year, unless both the [City of Eastport](#) and the Contractor agree that conditions at the time of execution warrant delay until the following construction season. If the Notice to Proceed is granted during the successive calendar year, construction will commence at the earliest possible date, but no later than June 1st of the successive year. The executed contract will not be affected by delays.

As provided in the INFORMATION TO BIDDERS, the bidder hereby agrees that he will not withdraw this Proposal prior to [October 1](#) of the year of Proposals bid opening date and that, if the Owner shall accept this Proposal, the bidder will duly execute and acknowledge AGREEMENT and furnish, duly executed and acknowledged, the required CONTRACT BONDS within five (5) days after notification that the AGREEMENT and other Contract Documents are ready for signature.

Should the bidder fail to fulfill any of his agreements as herein above set forth, the Owner shall have the right to retain, as liquidated damages, the amount of the Proposal Guaranty, which shall become the Owner's property.

This Proposal includes Addenda numbers * _____**
***** To be filled in by Bidder if Addenda are issued.**

The bidder, by submittal of this Proposal, agrees with the Owner that the amount of the Proposal Guaranty with this Proposal fairly and reasonably represents the amount of damages the Owner will suffer due to the failure of the bidder to fulfill his agreements as above provided.

The undersigned certifies under penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this section the work "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity.

BIDDER: _____
(Name of Bidder)

(Contact Person) By: _____
(Signature and Title of Authorized Representative)

(Telephone Number) _____
(Business Address)

(City / Town and State)

(Date)

The bidder is a corporation (a partnership - an individual) incorporated or organized in the State / Commonwealth of _____ .

SCHEDULE OF PRICES

**Eastport Municipal Airport
Eastport, Maine**

AIP Project No. 3-23-0053-XX-2024

Construct Terminal Building

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>AMOUNT</u>
1	MOBILIZATION – LUMP SUM PRICE	\$ _____
	WRITTEN PRICE: _____	
2	SITE WORK – LUMP SUM PRICE	\$ _____
	WRITTEN PRICE: _____	
3	FOUNDATION – LUMP SUM PRICE	\$ _____
	WRITTEN PRICE: _____	
4	TERMINAL BUILDING – LUMP SUM PRICE	\$ _____
	WRITTEN PRICE: _____	
5	ELECTRICAL– LUMP SUM PRICE	\$ _____
	WRITTEN PRICE: _____	
6	PLUMBING – LUMP SUM PRICE	\$ _____
	WRITTEN PRICE: _____	
7	HVAC – LUMP SUM PRICE	\$ _____
	WRITTEN PRICE: _____	
8	ELECTRICAL UTILITY CONNECTION – ALLOWANCE	\$ <u>10,000.00</u>
	WRITTEN PRICE: <u>Ten Thousand Dollars and Zero Cents</u>	
9	FENCE & VEHICLE GATE – LUMP SUM PRICE	\$ _____
	WRITTEN PRICE: _____	
10	SEPTIC SYSTEM – LUMP SUM PRICE	\$ _____
	WRITTEN PRICE: _____	
		GRAND TOTAL: \$ _____

NOTE: In the event of a bidder’s mathematical error in tabulating any bid prices, the written unit price shall govern. Selection of the lowest bidder will be based on the calculated total of all items as written in words.

Items below will be paid for directly by the City of Eastport as they are not eligible for federal funding. Please provide pricing taking into account this separate funding source. In addition, note that items below will be constructed as local funding allows. The City of Eastport may accept or reject any or all of these items as they deem fundable.

1 CENTRAL FIREPLACE – LUMP SUM PRICE\$ _____

WRITTEN PRICE: _____

This item consists of constructing a propane/gas fireplace in the center of the main room of the terminal building. It is the intention to have this as a focal piece of the building. It is anticipated that potentially additional foundational support as well as roof framing will be required along with the necessary electrical, plumbing, and HVAC components. The owner is seeking a circular fireplace with glass all around and a chimney through the ceiling.

CONTRACTOR'S QUALIFICATIONS AND CERTIFICATION:

The undersigned submits answers to the following questions to enable the Owner to judge of his experience and ability in, and facilities for, the work proposed to be done.

1. Please provide a brief description/manufacturer of the proposed materials and/or finishes to be used in consideration for the bid of the Terminal Building at the Eastport Municipal Airport. It is the intent of this section to understand the Contractor's methods and means as this will be considered during the bid analysis and award. Please attach additional sheets as needed.

Element B Shell

Exterior Siding _____
Exterior Doors _____
Exterior Windows _____
Roofing _____
Exterior Lighting _____

Element C Interior

Interior Ceiling _____
Interior Wall Finish _____
Interior Doors _____
Interior Cabinets _____
Interior Flooring _____

Element D Services

Heating Equipment _____
Cooling Equipment _____
HVAC Air Distribution _____
Electrical Services & Equipment _____
Artificial Lighting _____

2. The work, if awarded to you, will have the resident personal supervision of whom? State his or her special qualifications.

3. Describe equipment you propose to use. State whether you own or rent it.

4. How many years has your organization been in business as a general contractor under the name in which you propose to execute this contract?

5. What projects has your present organization completed of character similar to that proposed? Give the information indicated by the following tabulation:

Name and Address of Owner for Whom Work was Done:	Work Done as Contractor or SubContractor	Description of Work, including Approximate Amount of Contract and Dates Work Done:
---	--	--

6. Has your present organization ever failed to complete any work awarded to it? If so, state when, where and why.

7. In lieu of the financial statement required in Section 20-02 of the General Provisions, give below, the name of one or more banks which have information that would enable them to advise regarding the financial ability of your company.

Name of Bank: Address: Telephone No:

8. The names and residences of all persons and parties interested in this proposal as principals are as follows:

NOTE: In case of a corporation, give names of officers and directors; in case of a partnership, given names of all partners.

9. List all subcontractors you are proposing to use on the project:

Description of Subcontract Work:	Name and Address of Subcontractor:
----------------------------------	------------------------------------

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**INDIVIDUAL CERTIFICATE
FOR PROPOSAL**

State of _____ ss

County of _____

On this _____ day of _____, 2024 before me

personally appeared _____,
known to me and known by me to be the person who executed the above instrument, who, being by me first
duly sworn, did depose and say that he is the owner of the

firm of _____; and that he
executed the foregoing instrument on behalf of said firm for the uses and purposes stated herein.

Notary Public in and for the County

of _____, State

of _____.

My commission expires:

**PARTNERSHIP CERTIFICATE
FOR PROPOSAL**

State of _____) ss

County of _____)

On this _____ day of _____, 2024,

before me personally appeared _____, known to me and known by me to be the person who executed the above instrument, who, being by me first duly sworn, did depose and say that he is a general partner in the firm of

_____;

that said firm consists of himself / herself and _____

_____, and that he/she executed the foregoing instrument on behalf of said firm for the uses and purposes stated herein.

Notary Public in and for the County

of _____, State of

My commission expires:

**ACKNOWLEDGMENT OF PRINCIPAL
(if a corporation)**

State of _____)

County of _____)

On this _____ day of _____, 2024,

before me personally came _____

to me known, who being by me duly sworn, did depose and say as follows:

That he resides at _____

and is the _____

of _____,

the corporation described in and which executed the foregoing instrument; that he knows the corporate seal of said corporation; that the seal affixed to the foregoing instrument is such corporate seal and it was so affixed by order of the Board of Directors of said corporation; and that by the like order he signed thereto his name and official designation.

Notary Public (Seal)

My commission expires: _____

NOTICE TO BIDDERS

It is REQUIRED that the following Bid Bond form be completed by all bidders. The other forms within this section for the Performance and Payment Bonds shall be utilized by the apparent low bidder ONLY after being requested to provide these bonds by the Sponsor.

In lieu of a Bid Bond form, a certified bankers' check will be accepted as an alternative form of payment. The Bid Bond form may be photocopied as long as it retains the original format. Attachments to the completed bond forms are acceptable.

BID BOND

KNOW ALL PERSONS BY THESE PRESENTS, that we, the undersigned

as Principal, and _____
as Surety, are hereby held and firmly bound unto City of Eastport, Maine 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, successors and assigns.

Signed, this _____ day of _____, 2024.
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:

Airport Improvements to Include:

Construct Terminal Building

at the

Eastport Municipal Airport

Eastport, Maine

A.T.P. Project No. 3-23-0053-XX-2024

NOW, THEREFORE,

- (a) If said Bid shall be rejected, or
- (b) If said Bid shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (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 set forth above.

_____ (L.S.)
Principal

Surety

By: _____

IMPORTANT - Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

Certificate of Buy American Compliance for Manufactured Products (Equipment/Building Projects)

As a matter of bid responsiveness, the bidder or offeror must complete, sign, date, and submit this certification statement with their proposal. The bidder or offeror must indicate how they intend to comply with 49 USC § 50101, and other Made in America Laws, U.S. statutes, guidance, and FAA policies by selecting one on the following certification statements. These statements are mutually exclusive. Bidder must select one or the other (not both) by inserting a checkmark (✓) or the letter “X”.

- Bidder or offeror hereby certifies that it will comply with 49 USC § 50101, BABA and other related U.S. statutes, guidance, and policies of the FAA by:
- a) Only installing steel and manufactured products produced in the United States;
 - b) Only installing construction materials defined as: an article, material, or supply – other than an item of primarily iron or steel; a manufactured product; cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives that are or consist primarily of non-ferrous metals; plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables); glass (including optic glass); lumber or drywall that have been manufactured in the United States.
 - c) Installing manufactured products for which the Federal Aviation Administration (FAA) has issued a waiver as indicated by inclusion on the current FAA Nationwide Buy American Waivers Issued listing; or
 - d) Installing products listed as an Excepted Article, Material or Supply in Federal Acquisition Regulation Subpart 25.108.

By selecting this certification statement, the bidder or offeror agrees:

- a) To provide to the Airport Sponsor or FAA evidence that documents the source and origin of the steel and manufactured product.
 - b) To faithfully comply with providing U.S. domestic product.
 - c) To furnish U.S. domestic product for any waiver request that the FAA rejects.
 - d) To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.
- The bidder or offeror hereby certifies it cannot comply with the 100 percent Buy American Preferences of 49 USC § 50101(a) but may qualify for a Type 3 waiver under 49 USC § 50101(b). By selecting this certification statement, the apparent bidder or offeror with the apparent low bid agrees:
- a) To submit to the Airport Sponsor or FAA within 15 calendar days of being selected as the responsive bidder, a formal waiver request and required documentation that supports the type of waiver being requested.
 - b) That failure to submit the required documentation within the specified timeframe is cause for a non-responsive determination that may result in rejection of the proposal.
 - c) To faithfully comply with providing U.S. domestic products at or above the approved U.S. domestic content percentage as approved by the FAA.

- d) To refrain from seeking a waiver request after establishment of the contract, unless extenuating circumstances emerge that the FAA determines justified.

Required Documentation

Type 2 Waiver (Nonavailability) - The iron, steel, manufactured goods or construction materials are not available in sufficient quantity or quality in the United States. The required documentation for the Nonavailability waiver is:

- a) Completed Content Percentage Worksheet and Final Assembly Questionnaire
- b) Record of thorough market research, consideration where appropriate of qualifying alternate items, products, or materials including;
- c) A description of the market research activities and methods used to identify domestically manufactured items capable of satisfying the requirement, including the timing of the research and conclusions reached on the availability of sources.

Type 3 Waiver – The cost of the item components and subcomponents produced in the United States is more than 60 percent of the cost of all components and subcomponents of the “item”. The required documentation for a Type 3 waiver is:

- a) Completed Content Percentage Worksheet and Final Assembly Questionnaire including;
- b) Listing of all product components and subcomponents that are not comprised of 100 percent U.S. domestic content (Excludes products listed on the FAA Nationwide Buy American Waivers Issued listing and products excluded by Federal Acquisition Regulation Subpart 25.108 (products of unknown origin must be considered as non-domestic products in their entirety).
- c) Cost of non-domestic components and subcomponents, excluding labor costs associated with final assembly at place of manufacture.
- d) Percentage of non-domestic component and subcomponent cost as compared to total “item” component and subcomponent costs, excluding labor costs associated with final assembly at place of manufacture.

Type 4 Waiver (Unreasonable Costs) - Applying this provision for iron, steel, manufactured goods or construction materials, would increase the cost of the overall project by more than 25 percent. The required documentation for this waiver is:

- a) Completed Content Percentage Worksheet and Final Assembly Questionnaire from
- b) At minimum two comparable equal bidders and/or offerors;
- c) Receipt or record that demonstrates that supplier scouting called for in Executive Order 14005, indicates that no domestic source exists for the project and/or component;
- d) Completed waiver applications for each comparable bid and/or offer.

False Statements: Per 49 USC § 47126, this certification concerns a matter within the jurisdiction of the Federal Aviation Administration and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code.

Date

Signature

Company Name

Title

Certification of Offered/Bidder Regarding Tax Delinquency and Felony Convictions

The applicant must complete the following two certification statements. The applicant must indicate its current status as it relates to tax delinquency and felony conviction by inserting a checkmark () in the space following the applicable response. The applicant agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification in all lower tier subcontracts.

Certifications

- 1) The applicant represents that it is () is not () a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.
- 2) The applicant represents that it is () is not () is not a corporation that was convicted of a criminal violation under any Federal law within the preceding 24 months.

Note

If an applicant responds in the affirmative to either of the above representations, the applicant is ineligible to receive an award unless the sponsor has received notification from the agency suspension and debarment official (SDO) that the SDO has considered suspension or debarment and determined that further action is not required to protect the Government's interests. The applicant therefore must provide information to the owner about its tax liability or conviction to the Owner, who will then notify Guidelines for Contract Provisions for Obligated Sponsors and Airport Improvement Program Projects Issued on June 19, 2018 Page 63 the FAA Airports District Office, which will then notify the agency's SDO to facilitate completion of the required considerations before award decisions are made.

Term Definitions

Felony conviction: Felony conviction means a conviction within the preceding twenty-four (24) months of a felony criminal violation under any Federal law and includes conviction of an offense defined in a section of the U.S. code that specifically classifies the offense as a felony and conviction of an offense that is classified as a felony under 18 U.S.C. § 3559.

Tax Delinquency: A tax delinquency is any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability

I. INSURANCE REQUIREMENTS:

General. The Contractor shall not commence work under this contract until he has obtained all insurance required under this paragraph and such insurance has been approved by the Engineer, nor shall the Contractor allow any sub-contractor to commence work on his sub-contract until all similar insurance required of the sub-contractor has been so obtained and approved. Insurance shall include as named insured [the City of Eastport](#) and its employees.

- (a) **Compensation Insurance.** The Contractor shall take out and maintain during the life of this contract, Workmen's Compensation Insurance of \$300,000 for all of his employees employed at the site of the project and in case any work is sublet, the Contractor shall require the subcontractor similarly to provide Workmen's Compensation Insurance of \$300,000 for all the latter's employees, unless such employees are covered by the protection afforded the Contractor. In case any class of employees engaged in hazardous work under this contract at the site of the project is not protected under the Workmen's Compensation Insurance of \$300,000, the Contractor shall provide and shall cause each sub-contractor to provide adequate insurance for the protection of his employees not otherwise protected.
- (b) **Public Liability Insurance - Contractor.** Not less than Five Hundred Thousand Dollars (\$500,000.00) for insurance, including wrongful death, to any one person and subject to the same limit for each person in an amount not less than One Million Dollars (\$1,000,000.00) on account of one accident.
- (c) **Public Liability Insurance - Sub-Contractors.** Not less than Five Hundred Thousand Dollars (\$500,000.00) for insurance, including wrongful death, to any one person and subject to the same limit for each person in an amount not less than One Million Dollars (\$1,000,000.00) on account of one accident.
- (d) **Property Damage Insurance - Contractor.** The Contractor shall purchase and maintain property insurance upon the entire work at the site to the full insurable value thereof. This insurance shall include the interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the work and shall insure against the perils of fire and extended coverage and shall include "all risk" insurance for physical loss or damage including, without duplication of coverage, theft, vandalism and malicious mischief.
- (e) **Property Damage Insurance - Sub-Contractors.** Sub-Contractors shall also provide Property Damage Coverage, including damage from blasting, in the amount of Five Hundred Thousand Dollars (\$500,000.00) on account of one accident and Five Hundred Thousand Dollars (\$500,000.00) in the aggregate.
- (f) **Builders Risk Insurance.** The Contractor will provide All-Risks Builder's Risk Insurance in the amount equal to 10% of the insurable value of the work, Completed Value Form including materials delivered and labor performed. The policy will be written in the name of the Owner, the Contractor, Sub-Contractors, and Sub-subcontractors as their interest may appear. Such policy will also be endorsed so that loss, if any, shall be adjusted with and made payable to the Owner as Trustee for the insured's as their interests may appear; such insurance shall be specific as to coverage and not contributing insurance with any permanent insurance maintained as the present premises. Materials stored off-site and materials in transit will be covered up to \$100,000 per occurrence. ***Builder's Risk Insurance is only required for construction of structures or buildings including work on existing structures and/or buildings.***

II. INSTRUCTIONS TO BIDDERS:

1. Section 60-1.7(b) of the Regulations of the Secretary of Labor requires each bidder or prospective prime contractor and proposed subcontractor, where appropriate, to state in the bid whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; and if so, whether it has filed with the Joint Reporting Committee, the Director, an agency, or the former President’s Committee on Equal Employment Opportunity all reports due under the applicable filing requirements. In any case in which a bidder or prospective prime contractor or proposed subcontractor has participated in a previous contract subject to Executive Orders 10925, 11114, or 11246 and has not filed a report due under the applicable filing requirements, no contract or subcontract shall be awarded unless such contractor submits a report covering the delinquent period or such other period specified by the FAA or the Director, OFCC.
2. To effectuate these requirements, the Bidder shall complete and sign the following statement by checking the appropriate boxes.

The Bidder has ___ has not ___ participated in a previous contract subject to the equal opportunity clause prescribed by Executive Order 10925, or Executive Order 11246, or Executive Order 11114.

The Bidder has ___ has not ___ submitted all compliance reports in connection with any such contract due under the applicable filing requirements; and that representations indicating submission of required compliance reports signed by proposed subcontractors will be obtained prior to award of subcontracts.

If the Bidder has participated in a previous contract subject to the equal opportunity clause and has not submitted compliance reports due under applicable filing requirements, the Bidder shall submit a compliance report on Standard Form 100, “Employee Information Report EEO-1” prior to the award of contract.

Dated: _____

 Legal Name of Person, Firm or Corporation

By: _____

Title: _____

III. NOTICE TO PROSPECTIVE CONTRACTORS OF REQUIREMENT FOR CERTIFICATION FOR NONSEGREGATED FACILITIES:

The following certification of Nonsegregated Facilities must be submitted prior to the award of a contract or subcontract exceeding \$10,000 which is not exempt from the provisions of the equal opportunity clause.

Certification: The information presented within this section of the specifications is true and complete to the best of my knowledge and belief.

Name and Title of Signer (please type)

Signature

Date

INTERNAL REVENUE SERVICE EMPLOYER IDENTIFICATION NUMBER:

IV. REQUIRED ASSURANCES:

To meet the requirements of the U.S. Department of Transportation Regulations Part 26, all bidders will provide evidence of the methods they have used to meet the disadvantaged owned and controlled business goal as published in the Owner’s disadvantaged business enterprise (DBE) program and approved by the U.S. Department of Transportation.

The goal for utilization of disadvantaged business enterprises for this project shall be 0.19% of the total dollar value of the prime contractor's bid.

The following statement MUST be completed and executed by ALL bidders:

This firm assures that it will utilize no less than _____% Disadvantaged Business Enterprise (DBE) participation for this project.

(Name of Bidder)

By: _____
(Signature and Title)

(Date)

For each Disadvantaged Business Enterprise proposed to be utilized under the contract, the bidder shall submit with the bid the following information:

1. Name of DBE.
2. Description of work to be performed by the DBE on the project.
3. Dollar value of the work to be performed by the DBE on the project.
4. Evidence of current DBE certification by the Maine Department of Transportation, or another State's Highway/Transportation department in accordance with the requirements of 49 CFR Part 26. The contractor can locate possible disadvantaged businesses at the following organization:

Maine Department of Transportation
Office of Human Resources
#16 State House Station
Augusta, Maine 04333-0016
Tel: (207) 624-3066; Fax: (207) 624-3051
<http://www.state.me.us/mdot/disadvantaged-business-enterprises/pdf/directory.pdf>

**MaineDOT CONTRACTOR'S DBE/SUBCONTRACTOR
PROPOSED UTILIZATION FORM**

All Bidders must furnish this form with their bid on Bid Opening day

Contractor: _____ Telephone: _____ Ext _____

Contact Person: _____ Fax: _____

E-mail: _____

BID DATE: _____

FEDERAL PROJECT PIN # AIP No 3-23-0053-XX-2024
FEDERAL PROJECT PIN # _____

PROJECT LOCATION: Eastport, Maine

TOTAL ANTICIPATED DBE _____% PARTICIPATION FOR THIS CONTRACT

W B E	D B E	Non DBE	Subcontractor	Item Number & Description of Work	Quantity	Cost Per Unit/Item	Anticipated \$ Value
Subcontractor Total >							
DBE Total >							

NOTE: THIS INFORMATION IS USED TO TRACK AND REPORT ANTICIPATED DBE PARTICIPATION IN ALL FEDERALLY FUNDED MAINE DOT CONTRACTS. THE ANTICIPATED DBE AMOUNT IS VOLUNTARY AND WILL NOT BECOME A PART OF THE CONTRACTUAL TERMS.

Equal Opportunity Use:
Form received: ___/___/___ Verified by: _____

For a complete list of certified firms and company designation (WBE/DBE) go to
<http://www.maine.gov/mdot>

**INFORMATION, CONTRACT
AND BONDS**

**INVITATION TO BID
for
Airport Improvements**

To Include: “**Construct Terminal Building at Eastport Municipal Airport, Eastport, Maine**”

Sealed bids for Airport Improvements at Eastport Municipal Airport will be received by **the City Manager at the Airport Terminal Building, 1 Airport Road, Eastport, Maine**, on **Friday, June 28th, 2024 at 11:00 a.m.** local time, at which time and place all bids will be publicly opened and read aloud. Bids submitted after this time will not be accepted. Bids must be submitted in a sealed envelope clearly marked "**Airport Improvements, Construct Terminal Building at Eastport Municipal Airport, Eastport, Maine, ATP Project No. 3-23-0053-XX-2024**".

The proposed work may include, but is not necessarily limited to: Construction of a new, conventionally framed single story structure. The new building will utilize traditional materials and construction methods including slab on grade with frost walls, exterior siding and roofing, casement windows, entry doors and common interior finishes. The project will require site work to include connections to utilities including water, sewer, electric, and data. In addition, a new parking area and access road reconstruction will be required. The building portion utilizes performance-based standard which provides flexibility in material and equipment choices. The City desires a “middle of the road” material quality for building components, which translates to above builder grade quality products. Lastly, the contractor will not be required to finish construction in the 2024 season but will be required to be complete by July 1, 2025.

Prospective bidders are strongly encouraged to attend a pre-bid project information meeting scheduled for **Wednesday, June 19th, 2024 at 11:00 a.m.** local time at the Eastport Municipal Airport.

All Requests for Information (RFI's) must be submitted no later than June 24th, 2024 at 5:00 p.m., to the Engineer

Copies of the contract documents may be obtained from the office of Aviest Engineering., by e-mailing Aviest at smcdougall@aviestme.com for an electronic copy or a hardcopy. Hard copies require a non-refundable fee of Four Hundred Dollars (\$400.00) per set, including postage and handling. Hardcopies will be mailed upon receipt of payment. **ALL CHECKS SHALL BE MADE PAYABLE TO THE “CITY OF EASTPORT”**, and forwarded to Aviest Engineering, at 120 Rabbit Ridge Rd Woodland, ME 04736. Partial sets, separate drawings or individual sections of the documents will not be distributed.

Bid security in the amount of at least five percent (5%) of the total bid must be submitted with the Bid. The bid security may be either a certified check or a proposal guarantee bond executed by a surety company authorized to do business in the State of Maine. Bid security shall be made payable to the City of Eastport. Late bids, unsigned bids, facsimile bids, or bids submitted without security will not be considered.

The successful bidder must furnish a 100 percent Performance Bond, and a 100 percent Labor and Materials Payment Bond, and begin execution of this contract within five (5) calendar days following the Notice to Proceed.

Construction under this contract will be funded by Federal Grant under the Airport Improvement Program (AIP) and will be subject to all applicable requirements of the U.S. Department of Transportation / Federal Aviation Administration and the Maine Department of Transportation. Award of all contracts will be contingent upon receipt of Federal funding under the ATP.

Wages paid to employees must comply with the minimum established by U.S. Department of labor Wage Determination and CH 149, § 26-27D, M.G.L. The contractor must comply with the Davis-Bacon Act, Anti-Kickback Act, the Occupational Safety and Health Act, the Contract Work Hours and Safety Standard Act, Title VI of the Civil Rights Act of 1964 and Executive Order 11246.

The Eastport Municipal Airport has an approved Disadvantaged Business Enterprise (DBE) program for Airport Improvement projects which the successful bidder must comply with, the specific goals for this job being listed within the contract documents.

The City of Eastport reserves the right to reject any and all proposals, to waive any technical or legal deficiencies, and to accept any bid that it may deem to be in the best interest of the City of Eastport.

By:
CITY OF EASTPORT

Mr. Brian Schuth, City Manager

INFORMATION FOR BIDDERS

Bids will be received by the **City of Eastport, 1 Airport Drive at the Airport Terminal Building, Eastport, Maine** until **Friday, June 28th, 2024 at 11:00 a.m.**, local time and then at said office publicly opened and read aloud.

Each sealed envelope containing a bid must be plainly marked on the outside as bid for:

Airport Improvements

Construct Terminal Building Eastport Municipal Airport, Eastport, Maine A.T.P. Project No. 3-23-0053-XX-2024

The contractor shall commence work within five (5) days of the date specified in the "Notice to Proceed" and shall fully complete the work within the specified contract performance period consisting of **120 calendar days**. The "Notice To Proceed" will be the start of construction, submittals, contracts, and other associated tasks prior to physical construction will not count towards the contract performance period. The Contractor agrees by execution of this contract that construction shall commence in the same calendar year, unless both the City of Eastport and the Contractor agree that conditions at the time of execution warrant delay until the following construction season. If the Notice to Proceed is granted during the successive calendar year, construction will commence at the earliest possible date, but no later than June 1st of the successive year. The executed contract will not be affected by delays.

Each bid must be submitted on the prescribed proposal form and must be accompanied by CERTIFICATIONS OF BIDDER REQUIRED BY FAA, included herein, immediately following the proposal.

Each bid must be prepared in strict accordance with the requirements of Section 20 of the General Provisions of these specifications.

The bidder is specifically advised that any person, firm, or other party to whom it proposes to award a subcontract under this Contract:

- a. Must be acceptable to the Owner, the Federal Aviation Administration, and the Maine Department of Transportation, and
- b. Must submit Certification by Proposed Subcontractor Regarding Equal Employment Opportunity. Approval of the proposed subcontract award cannot be given by the Owner unless and until the proposed subcontractor has submitted the Certification and/or the evidence showing that it has fully complied with any reporting requirements to which it is or was subject. Although the bidder is not required to attach such Certification by proposed subcontractors to his bid, the bidder is here advised of this requirement so that appropriate action can be taken to prevent subsequent delay in subcontract awards.

Each bid package must be accompanied by cash, certified check of the bidder, or a bid bond prepared on the FORM OF BID BOND included in the Contract Documents, duly executed by the bidder as principal and having as surety thereon a surety company approved by the Owner, in the amount of not less than five percent (5%) of the total bid price. The bid bond shall be executed or countersigned for the surety by a person who is a resident in the State of Maine and who has current power of attorney for the surety.

The bid security will be returned to all except the two lowest bidders within five days after the opening of bids, and the remaining cash, checks, or bid bonds will be returned promptly after the Owner and the accepted bidder have executed the Contract, or, if no award has been made by October 1, 2024, upon demand of the bidder at any time thereafter, so long as he/she has not been notified of the acceptance of his/her bid.

The Owner may make such investigations as he/she 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 if the evidence submitted by, or investigation of, such Bidder fails to satisfy the Owner that such Bidder is properly qualified to carry out the obligation of the Agreement and to complete the Work contemplated therein. The Owner reserves the right to reject any bid items he/she desires.

Causes for disqualifications are outlined, but are not limited to, relevant sections of the General Provisions herein.

Women will be afforded equal opportunity in all areas of employment. However, the employment of women shall not diminish the standards or requirements for the employment of minorities.

1. Each bidder will be required to comply with the affirmative action plan for equal employment opportunity prescribed by the OFCC, United States Department of Labor, Regulations of the Secretary of Labor (41 CFR 60), or by other designated trades used in the performance of the contract and other non-Federally involved contracts in the area geographically defined in the plan.
2. The proposed contract is under and subject to Executive Order 11246 of September 26, 1965, as amended, and to the equal opportunity clause; and
3. The successful bidder will be required to submit a Certification of Nonsegregated Facilities prior to award of the contract, and to notify prospective subcontractors of the requirement for such a certification where the subcontract exceeds \$10,000. Samples of the certification and the notice to subcontractors appear in the specifications.
4. When a determination has been made to award a contract or subcontract to a specific contractor, such contractor is required, prior to the award or after the award, or both, to furnish such other information as the FAA, the sponsor, or the Director of OFCC requests.
5. A bidder must indicate whether he/she has previously had a contract subject to the equal opportunity clause, whether he/she has filed all report forms required in such contract, and if not, compliance report (Standard Form (SF) 100) must be submitted with his/her bid.
6. Equal Employment Opportunity (EEO) and labor provisions, when applicable, are included in the bidding documents of specifications and are available for inspection at the City of Eastport Municipal Office, 22 Washington Street, Eastport, Maine.
7. Contractors and subcontractors may satisfy EEO requirements of paragraph 2 of the EEO contract clause by stating in all solicitations or advertisements for employees that:

"All qualified applicants will receive consideration for employment without regard to race, color, language, sex, or national origin."

or by using a single advertisement in which appears in clearly distinguished type, the phrase:

"an equal opportunity employer."

8. Prior to commencing any excavation, the Contractor shall notify any and all utility companies which might have an underground utility installation in the vicinity of the work area. Such notice, including the requirement to call Digsafe, Inc. at (888) 344-7233, shall be given at least 72 hours prior to the time of anticipated excavation.
9. A contractor having 50 or more employees and his subcontractors having 50 or more employees and who may be awarded a subcontract of \$50,000 or more will, within 120 days from contract commencement, be required to develop a written affirmative action compliance program for each of its establishments (state and local governments are exempt).

- a. Attorneys-in-Fact:

Attorneys-in-fact who sign bid bonds or contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

- b. Subcontractors:

The submission of the name of a subcontractor in the Proposal shall be deemed to constitute an acceptance by the contractor, if awarded the contract, of the bid of such subcontractor. Any alteration therein, after the award of the contract, shall be subject to the approval of the City of Eastport.

- c. Obligations of the Bidder

At the time of the opening of bids, each bidder will be presumed to have inspected the sites and to have read and to be thoroughly familiar with the plans and contract documents (including all addenda). The failure or omission of any bidder to examine any form, instrument or document shall in no way relieve any bidder from any obligation in respect to his / her bid.

All bidders are specifically instructed to visit the sites of the work, to ascertain personally the extent and character of the work to be performed and to familiarize themselves with conditions at the site.

Each bidder must inform himself fully of the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of his obligation to furnish all material and labor necessary to carry out the provisions of his contract. Insofar as possible the Contractor, in carrying out his work, must employ such methods or means as will not cause any interruption of or interference with the work of any other contractor.

The bidder's attention is directed to the fact that all applicable federal and state laws, county or municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract thoroughly and they will be deemed to be included in the contract the same as though herein written out in full.

d. Cooperation by Contractor

The Contractor shall so carry on his work under the direction of the Engineer that a Public Utility, or County or Municipal Departments may enter on the work to make changes in their structures or to place new structures and connection therewith without interference, and the Contractor shall have no claim for, or on account of any delay which may be due to, or result from, said work of Public Utility or County or Municipal Departments or other contractors.

e. Domestic Preference for Materials

In the performance of the work covered by this contract the Contractor, subcontractors, material men or suppliers shall use only such un-manufactured articles, materials, and supplies as have been mined or produced in the United States, and only such manufactured articles, materials and supplies as have been manufactured in the United States substantially all from articles, materials or supplies mined, produced, or manufactured, as the case may be, in the United States. The foregoing provision shall not apply to such articles, materials, or supplies of the class or kind to be used or such articles, materials or supplies from which they are manufactured, as are not mined, produced, or manufactured, as the case may be, in the United States in sufficient and reasonably available commercial quantities and of a satisfactory quality, or to such articles, materials, or supplies as may be excepted by the Secretary of Commerce under the proviso of Title III, Section 3 of the act of March 3, 1933, 47 Stat. 1520 (U.S. Code, Title 41, Sec 10b).

CONTRACT AGREEMENT

KNOW ALL MEN BY THESE PRESENTS of this agreement entered into this _____, **2024** by and between the **City of Eastport**, a body politic and corporate, hereinafter referred to as the "Owner", and _____, hereinafter referred to as the "Contractor".

W I T N E S S E T H

WHEREAS, the Owner did advertise by bid for:

Airport Improvements to Include:

Construct Terminal Building
at
Eastport Municipal Airport, Eastport, Maine
A.T.P. Project No. 3-23-0053-XX-2024

WHEREAS, the Contractor did under date of **June 28th, 2024** submit a bid for such work; and

WHEREAS, after due consideration of all the bids, the Owner did award the Contract to the Contractor.

NOW THEREFORE, in consideration of the mutual promises made by each party to the other, the parties covenant and agree as follows:

1. The Contractor will furnish all labor, materials, fixtures, supplies, equipment, and transportation and will perform all work required for the construction and completion of:

Construct Terminal Building
at
Eastport Municipal Airport, Eastport, Maine
A.T.P. Project No. 3-23-0053-XX-2024

All work shall be performed in strict conformance with the provisions of this Agreement, the Invitation for Bids, the Contractor's Proposal, General Provisions, Plans, and Technical Specifications (hereinafter referred to as "Contract Documents") which are attached hereto and shall be considered as a part of this Agreement.

The restatement in this Contract of any of the terms of said Contract Documents and Standard Specifications shall not be deemed to waive any terms not so restated.

2. It is agreed that the quantities given in the "Schedule of Prices" in the Contractor's Proposal section of the Contract Documents will be used as the basis for determining the amount due under this Contract Agreement and for establishing the amount of the required Contract Performance Surety Bond, and Contract Payment Bond, and that the amount due under this Agreement so determined \$ _____ hereinafter referred to as the Contract Price.

The Owner shall have the right to increase or decrease the amount and extent of the work by giving reasonable notice in writing to the Contractor. The Owner will pay for the work performed and the materials furnished for any such increase and will calculate a proper reduction for any decrease in accordance with the unit prices specified in the "Schedule of Prices" section of the Contractor's Proposal.

3. a) Contractor will supply the Owner with a Contract Performance Surety Bond in the amount of the Contract Price, guaranteeing one hundred percent performance of this Contract, free and clear of any and all liens, attachments and encumbrances.

b) Contractor will supply the Owner with a Contract Payment Surety Bond in the amount of the Contract Price guaranteeing payment in full for all labor and materials used or required in connection with the work set forth in this Contract Agreement.

4. To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, its officers and employees, from and against all claims, damages, losses, and expenses, arising out of or resulting from the performance of this Contract; provided that any such claim, damage, loss, or expense (1) is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property, including the loss of use therefrom; and (2) is caused in whole or in part by any negligence, act, or omission of the Contractor, anyone directly or indirectly employed by it, or anyone for whose act it may be liable, except to the extent that it is caused by the Owner, its officers or employees.

5. Contractor shall procure and affix to this page an insurance certificate as evidence to the Owner of Public Liability Insurance and Automobile Liability Insurance coverage in amounts not less than \$500,000 per person, \$1,000,000 per occurrence for bodily injury, death, and property damage, protecting the Contractor and the Owner from such claims; and also Workers' Compensation Insurance coverage. Insurance shall include as named insured the City of Eastport and its employees.

6. Upon receipt of executed contracts, bonds, and insurance as required, the Owner will promptly send a "Notice to Proceed" to the Contractor. The Contractor agrees to perform no work under this Agreement until he receives said Notice and to complete the work within the allotted contract time. The time set for such completion may be extended only by the written consent of the Owner or his/her authorized representative, hereinafter jointly referred to as the "Responsible City Official."

7. It is agreed that the Owner shall deduct as liquidated damages, from any moneys due or which may become due the Contractor for work performed, an amount of **One Thousand Dollars (\$1,000.00)** per calendar day for each day that the work shall remain uncompleted after the time specified for completion of the work.

8. Contractor will perform the work to the satisfaction of the Responsible City Official who shall have the right of inspection at all times, and whose approval and acceptance of the work shall be a condition precedent to payments by the Owner under this Contract.

9. In the event of any dispute as to the amount, nature or scope of the work required under this Contract, the decision and judgment of the Responsible City Official shall be final and binding.

10. The Owner may terminate this Contract for cause by Written Notice to the Contractor. In the event of such termination, Contractor shall not be entitled to any further payment under this Contract from the date of receipt of said Notice.

11. The Contractor shall provide a quality control program as outlined in the specifications and shall include but is not limited to: shop drawings, submittals, materials testing, or manufacturers certifications.

12. The Owner shall have the right to terminate this Contract at any time for its convenience on ten (10) days' prior Written Notice to Contractor. If Contract is terminated by the City for convenience, the Owner shall pay Contractor for all work performed and all materials purchased prior to the receipt of such Notice.

IN WITNESS WHEREOF, the said the City of Eastport has caused this Contract to be signed and sealed in their corporate names by its City Manager, respectively, being duly authorized, and _____ has caused this Contract to be signed and sealed in its corporate name by _____, its _____ being duly authorized, the day and year first written above at Eastport, Maine.

OWNER: City of Eastport _____

By: _____

Name: Brian Schuth _____

Title: City Manager _____

CONTRACTOR: _____

By: _____

Name: _____

Title: _____

PAYMENT BOND

KNOW ALL PERSONS BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called Principal,
(Corporation, Partnership or Individual)

and _____
(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto the City of Eastport, hereinafter called OWNER, in the penal sum

of _____ Dollars,

(\$ _____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the _____ day of _____ 2024, a copy of which is hereto attached and made a part hereof for:

Airport Improvements to Include: Construct Terminal Building at the Eastport Municipal Airport, Eastport, Maine, ATP Project No. 3-23-0053-XX-2024.

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, Subcontractors, and corporations furnishing materials for or performing labor in the prosecution of the Work provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such Work, and all insurance premiums on said Work, and for all labor, performed in such Work whether by Subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the Work to be performed thereunder or the Specifications accompanying the same shall in any wise affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the Work or to the Specifications.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.
IN WITNESS WHEREOF, this instrument is executed in four (4) counterparts, each of which shall be deemed an original, this the _____ day of _____ 2024.

ATTEST:

(Principal)

(Principal) Secretary

By _____ (s)

(Address)

(SEAL)

(Witness as to Principal)

(Surety)

(Address)

(Address)

ATTEST:

(Witness as to Surety)

By _____
(Attorney-in-Fact)

(Address)

(Address)

NOTE: The date of Bond must not be prior to date of Contract. If the contractor is a Partnership, then all partners should execute Bond.

IMPORTANT: Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the Project is located.

PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called Principal,
(Corporation, Partnership, or Individual)

and _____
(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto City of Eastport, hereinafter called OWNER, in the penal sum of

_____ Dollars, (\$_____)

in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the _____ day of _____, 2024, a copy of which is hereto attached and made a part hereof for:

Airport Improvements to Include: Construct Terminal Building at the Eastport Municipal Airport, Eastport, Maine, ATP Project No. 3-23-0053-XX-2024.

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the one year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and affect.

PROVIDED, FURTHER, that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to Work to be performed thereunder or the Specifications accompanying the same shall in any wise affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the Work or to the Specifications.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in four (4) counterparts, each one of which shall be deemed an original, this the _____ day of _____, 2024.

ATTEST:

(Principal)

(Principal) Secretary

By _____(s)

(Address)

(SEAL)

(Witness as to Principal)

(Surety)

(Address)

(Address)

ATTEST:

(Witness as to Surety)

By _____
(Attorney-in-Fact)

(Address)

(Address)

NOTE: Date of Bond must not be prior to date of Contract. If CONTRACTOR is Partnership, all partners should execute Bond.

IMPORTANT: Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the Project is located.

DIVISION I

GENERAL PROVISIONS

Section 10 Definition of Terms

When the following terms are used in these specifications, in the contract, or in any documents or other instruments pertaining to construction where these specifications govern, the intent and meaning shall be defined as follows:

Paragraph Number	Term	Definition
10-01	AASHTO	The American Association of State Highway and Transportation Officials.
10-02	Access Road	The right-of-way, the roadway and all improvements constructed thereon connecting the airport to a public roadway.
10-03	Advertisement	A public announcement, as required by local law, inviting bids for work to be performed and materials to be furnished.
10-04	Airport	Airport means an area of land or water which is used or intended to be used for the landing and takeoff of aircraft; an appurtenant area used or intended to be used for airport buildings or other airport facilities or rights of way; airport buildings and facilities located in any of these areas, and a heliport.
10-05	Airport Improvement Program (AIP)	A grant-in-aid program, administered by the Federal Aviation Administration (FAA).
10-06	Air Operations Area (AOA)	The term air operations area (AOA) shall mean any area of the airport used or intended to be used for the landing, takeoff, or surface maneuvering of aircraft. An air operation area shall include such paved or unpaved areas that are used or intended to be used for the unobstructed movement of aircraft in addition to its associated runway, taxiway, or apron.
10-07	Apron	Area where aircraft are parked, unloaded or loaded, fueled and/or serviced.
10-08	ASTM International (ASTM)	Formerly known as the American Society for Testing and Materials (ASTM).
10-09	Award	The Owner's notice to the successful bidder of the acceptance of the submitted bid.
10-10	Bidder	Any individual, partnership, firm, or corporation, acting directly or through a duly authorized representative, who submits a proposal for the work contemplated.
10-11	Building Area	An area on the airport to be used, considered, or intended to be used for airport buildings or other airport facilities or rights-of-way together with all airport buildings and facilities located thereon.
10-12	Calendar Day	Every day shown on the calendar.

Paragraph Number	Term	Definition
10-13	Certificate of Analysis (COA)	The COA is the manufacturer's Certificate of Compliance (COC) including all applicable test results required by the specifications.
10-14	Certificate of Compliance (COC)	The manufacturer's certification stating that materials or assemblies furnished fully comply with the requirements of the contract. The certificate shall be signed by the manufacturer's authorized representative.
10-15	Change Order	A written order to the Contractor covering changes in the plans, specifications, or proposal quantities and establishing the basis of payment and contract time adjustment, if any, for work within the scope of the contract and necessary to complete the project.
10-16	Contract	<p>A written agreement between the Owner and the Contractor that establishes the obligations of the parties including but not limited to performance of work, furnishing of labor, equipment and materials and the basis of payment.</p> <p>The awarded contract includes but may not be limited to: Advertisement, Contract form, Proposal, Performance bond, payment bond, General provisions, certifications and representations, Technical Specifications, Plans, Supplemental Provisions, standards incorporated by reference and issued addenda.</p>
10-17	Contract Item (Pay Item)	A specific unit of work for which a price is provided in the contract.
10-18	Contract Time	The number of calendar days or working days, stated in the proposal, allowed for completion of the contract, including authorized time extensions. If a calendar date of completion is stated in the proposal, in lieu of a number of calendar or working days, the contract shall be completed by that date.
10-19	Contractor	The individual, partnership, firm, or corporation primarily liable for the acceptable performance of the work contracted and for the payment of all legal debts pertaining to the work who acts directly or through lawful agents or employees to complete the contract work.
10-20	Contractors Quality Control (QC) Facilities	The Contractor's QC facilities in accordance with the Contractor Quality Control Program (CQCP).
10-21	Contractor Quality Control Program (CQCP)	Details the methods and procedures that will be taken to assure that all materials and completed construction required by the contract conform to contract plans, technical specifications and other requirements, whether manufactured by the Contractor, or procured from subcontractors or vendors.
10-22	Control Strip	A demonstration by the Contractor that the materials, equipment, and construction processes results in a product meeting the requirements of the specification.
10-23	Construction Safety and Phasing Plan (CSPP)	The overall plan for safety and phasing of a construction project developed by the airport operator, or developed by the airport operator's consultant and approved by the airport operator. It is

Paragraph Number	Term	Definition
		included in the invitation for bids and becomes part of the project specifications.
10-24	Drainage System	The system of pipes, ditches, and structures by which surface or subsurface waters are collected and conducted from the airport area.
10-25	Engineer	The individual, partnership, firm, or corporation duly authorized by the Owner to be responsible for engineering, inspection, and/or observation of the contract work and acting directly or through an authorized representative.
10-26	Equipment	All machinery, together with the necessary supplies for upkeep and maintenance; and all tools and apparatus necessary for the proper construction and acceptable completion of the work.
10-27	Extra Work	An item of work not provided for in the awarded contract as previously modified by change order or supplemental agreement, but which is found by the Owner's Engineer or Resident Project Representative (RPR) to be necessary to complete the work within the intended scope of the contract as previously modified.
10-28	FAA	The Federal Aviation Administration. When used to designate a person, FAA shall mean the Administrator or their duly authorized representative.
10-29	Federal Specifications	The federal specifications and standards, commercial item descriptions, and supplements, amendments, and indices prepared and issued by the General Services Administration.
10-30	Force Account	<p>a. Contract Force Account - A method of payment that addresses extra work performed by the Contractor on a time and material basis.</p> <p>b. Owner Force Account - Work performed for the project by the Owner's employees.</p>
10-31	Intention of Terms	<p>Whenever, in these specifications or on the plans, the words "directed," "required," "permitted," "ordered," "designated," "prescribed," or words of like import are used, it shall be understood that the direction, requirement, permission, order, designation, or prescription of the Engineer and/or Resident Project Representative (RPR) is intended; and similarly, the words "approved," "acceptable," "satisfactory," or words of like import, shall mean approved by, or acceptable to, or satisfactory to the Engineer and/or RPR, subject in each case to the final determination of the Owner.</p> <p>Any reference to a specific requirement of a numbered paragraph of the contract specifications or a cited standard shall be interpreted to include all general requirements of the entire section, specification item, or cited standard that may be pertinent to such specific reference.</p>
10-32	Lighting	A system of fixtures providing or controlling the light sources used on or near the airport or within the airport buildings. The field lighting includes all luminous signals, markers, floodlights,

Paragraph Number	Term	Definition
		and illuminating devices used on or near the airport or to aid in the operation of aircraft landing at, taking off from, or taxiing on the airport surface.
10-33	Major and Minor Contract Items	A major contract item shall be any item that is listed in the proposal, the total cost of which is equal to or greater than 20% of the total amount of the award contract. All other items shall be considered minor contract items.
10-34	Materials	Any substance specified for use in the construction of the contract work.
10-35	Modification of Standards (MOS)	Any deviation from standard specifications applicable to material and construction methods in accordance with FAA Order 5300.1.
10-36	Notice to Proceed (NTP)	A written notice to the Contractor to begin the actual contract work on a previously agreed to date. If applicable, the Notice to Proceed shall state the date on which the contract time begins.
10-37	Owner	The term "Owner" shall mean the party of the first part or the contracting agency signatory to the contract. Where the term "Owner" is capitalized in this document, it shall mean airport Sponsor only. The Owner for this project is the City of Eastport .
10-38	Passenger Facility Charge (PFC)	Per 14 Code of Federal Regulations (CFR) Part 158 and 49 United States Code (USC) § 40117, a PFC is a charge imposed by a public agency on passengers enplaned at a commercial service airport it controls.
10-39	Pavement Structure	The combined surface course, base course(s), and subbase course(s), if any, considered as a single unit.
10-40	Payment bond	The approved form of security furnished by the Contractor and their own surety as a guaranty that the Contractor will pay in full all bills and accounts for materials and labor used in the construction of the work.
10-41	Performance bond	The approved form of security furnished by the Contractor and their own surety as a guaranty that the Contractor will complete the work in accordance with the terms of the contract.
10-42	Plans	The official drawings or exact reproductions which show the location, character, dimensions and details of the airport and the work to be done and which are to be considered as a part of the contract, supplementary to the specifications. Plans may also be referred to as 'contract drawings.'
10-43	Project	The agreed scope of work for accomplishing specific airport development with respect to a particular airport.
10-44	Proposal	The written offer of the bidder (when submitted on the approved proposal form) to perform the contemplated work and furnish the necessary materials in accordance with the provisions of the plans and specifications.

Paragraph Number	Term	Definition
10-45	Proposal guaranty	The security furnished with a proposal to guarantee that the bidder will enter into a contract if their own proposal is accepted by the Owner.
10-46	Quality Assurance (QA)	Owner's responsibility to assure that construction work completed complies with specifications for payment.
10-47	Quality Control (QC)	Contractor's responsibility to control material(s) and construction processes to complete construction in accordance with project specifications.
10-48	Quality Assurance (QA) Inspector	An authorized representative of the Engineer and/or Resident Project Representative (RPR) assigned to make all necessary inspections, observations, tests, and/or observation of tests of the work performed or being performed, or of the materials furnished or being furnished by the Contractor.
10-49	Quality Assurance (QA) Laboratory	The official quality assurance testing laboratories of the Owner or such other laboratories as may be designated by the Engineer or RPR. May also be referred to as Engineer's, Owner's, or QA Laboratory.
10-50	Resident Project Representative (RPR)	The individual, partnership, firm, or corporation duly authorized by the Owner to be responsible for all necessary inspections, observations, tests, and/or observations of tests of the contract work performed or being performed, or of the materials furnished or being furnished by the Contractor, and acting directly or through an authorized representative.
10-51	Runway	The area on the airport prepared for the landing and takeoff of aircraft.
10-52	Runway Safety Area (RSA)	A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to aircraft. See the construction safety and phasing plan (CSPP) for limits of the RSA.
10-53	Safety Plan Compliance Document (SPCD)	Details how the Contractor will comply with the CSPP.
10-54	Specifications	A part of the contract containing the written directions and requirements for completing the contract work. Standards for specifying materials or testing which are cited in the contract specifications by reference shall have the same force and effect as if included in the contract physically.
10-55	Sponsor	A Sponsor is defined in 49 USC § 47102(24) as a public agency that submits to the FAA for an AIP grant; or a private Owner of a public-use airport that submits to the FAA an application for an AIP grant for the airport.
10-56	Structures	Airport facilities such as bridges; culverts; catch basins, inlets, retaining walls, cribbing; storm and sanitary sewer lines; water lines; underdrains; electrical ducts, manholes, handholes, lighting fixtures and bases; transformers; navigational aids; buildings;

Paragraph Number	Term	Definition
		vaults; and, other manmade features of the airport that may be encountered in the work and not otherwise classified herein.
10-57	Subgrade	The soil that forms the pavement foundation.
10-58	Superintendent	The Contractor's executive representative who is present on the work during progress, authorized to receive and fulfill instructions from the RPR, and who shall supervise and direct the construction.
10-59	Supplemental Agreement	A written agreement between the Contractor and the Owner that establishes the basis of payment and contract time adjustment, if any, for the work affected by the supplemental agreement. A supplemental agreement is required if: (1) in scope work would increase or decrease the total amount of the awarded contract by more than 25%; (2) in scope work would increase or decrease the total of any major contract item by more than 25%; (3) work that is not within the scope of the originally awarded contract; or (4) adding or deleting of a major contract item.
10-60	Surety	The corporation, partnership, or individual, other than the Contractor, executing payment or performance bonds that are furnished to the Owner by the Contractor.
10-61	Taxilane	A taxiway designed for low speed movement of aircraft between aircraft parking areas and terminal areas.
10-62	Taxiway	The portion of the air operations area of an airport that has been designated by competent airport authority for movement of aircraft to and from the airport's runways, aircraft parking areas, and terminal areas.
10-63	Taxiway/Taxilane Safety Area (TSA)	A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an aircraft. See the construction safety and phasing plan (CSPP) for limits of the TSA.
10-64	Work	The furnishing of all labor, materials, tools, equipment, and incidentals necessary or convenient to the Contractor's performance of all duties and obligations imposed by the contract, plans, and specifications.
10-65	Working day	A working day shall be any day other than a legal holiday, Saturday, or Sunday on which the normal working forces of the Contractor may proceed with regular work for at least six (6) hours toward completion of the contract. When work is suspended for causes beyond the Contractor's control, it will not be counted as a working day. Saturdays, Sundays and holidays on which the Contractor's forces engage in regular work will be considered as working days.

END OF SECTION 10

Section 20 Proposal Requirements and Conditions

20-01 Advertisement (Notice to Bidders).

20-02 Qualification of bidders. Each bidder shall submit evidence of competency and evidence of financial responsibility to perform the work to the Owner at the time of bid opening.

Evidence of competency, unless otherwise specified, shall consist of statements covering the bidder's past experience on similar work, and a list of equipment and a list of key personnel that would be available for the work.

Each bidder shall furnish the Owner satisfactory evidence of their financial responsibility. Evidence of financial responsibility, unless otherwise specified, shall consist of a confidential statement or report of the bidder's financial resources and liabilities as of the last calendar year or the bidder's last fiscal year. Such statements or reports shall be certified by a public accountant. At the time of submitting such financial statements or reports, the bidder shall further certify whether their financial responsibility is approximately the same as stated or reported by the public accountant. If the bidder's financial responsibility has changed, the bidder shall qualify the public accountant's statement or report to reflect the bidder's true financial condition at the time such qualified statement or report is submitted to the Owner.

Unless otherwise specified, a bidder may submit evidence that they are prequalified with the State Highway Division and are on the current "bidder's list" of the state in which the proposed work is located. Evidence of State Highway Division prequalification may be submitted as evidence of financial responsibility in lieu of the certified statements or reports specified above.

Each bidder shall submit "evidence of competency" and "evidence of financial responsibility" to the Owner at the time of bid opening.

20-03 Contents of proposal forms. The Owner's proposal forms state the location and description of the proposed construction; the place, date, and time of opening of the proposals; and the estimated quantities of the various items of work to be performed and materials to be furnished for which unit bid prices are asked. The proposal form states the time in which the work must be completed, and the amount of the proposal guaranty that must accompany the proposal. The Owner will accept only those Proposals properly executed on physical forms or electronic forms provided by the Owner. Bidder actions that may cause the Owner to deem a proposal irregular are given in paragraph 20-09 *Irregular proposals*.

Mobilization is limited to 10 percent of the total project cost

A prebid conference is required on this project to discuss as a minimum, the following items: material requirements; submittals; Quality Control/Quality Assurance requirements; the construction safety and phasing plan including airport access and staging areas; and unique airfield paving construction requirements. The pre-bid meeting will be held at the place and time as indicated in the invitation to bid section at the beginning this document.

20-04 Issuance of proposal forms. The Owner reserves the right to refuse to issue a proposal form to a prospective bidder if the bidder is in default for any of the following reasons:

- a. Failure to comply with any prequalification regulations of the Owner, if such regulations are cited, or otherwise included, in the proposal as a requirement for bidding.
- b. Failure to pay, or satisfactorily settle, all bills due for labor and materials on former contracts in force with the Owner at the time the Owner issues the proposal to a prospective bidder.
- c. Documented record of Contractor default under previous contracts with the Owner.
- d. Documented record of unsatisfactory work on previous contracts with the Owner.

20-05 Interpretation of estimated proposal quantities. An estimate of quantities of work to be done and materials to be furnished under these specifications is given in the proposal. It is the result of careful calculations and is believed to be correct. It is given only as a basis for comparison of proposals and the award of the contract. The Owner does not expressly, or by implication, agree that the actual quantities involved will correspond exactly therewith; nor shall the bidder plead misunderstanding or deception because of such estimates of quantities, or of the character, location, or other conditions pertaining to the work. Payment to the Contractor will be made only for the actual quantities of work performed or materials furnished in accordance with the plans and specifications. It is understood that the quantities may be increased or decreased as provided in the Section 40, paragraph 40-02, Alteration of Work and Quantities, without in any way invalidating the unit bid prices.

20-06 Examination of plans, specifications, and site. The bidder is expected to carefully examine the site of the proposed work, the proposal, plans, specifications, and contract forms. Bidders shall satisfy themselves to the character, quality, and quantities of work to be performed, materials to be furnished, and to the requirements of the proposed contract. The submission of a proposal shall be prima facie evidence that the bidder has made such examination and is satisfied to the conditions to be encountered in performing the work and the requirements of the proposed contract, plans, and specifications.

Boring logs and other records of subsurface investigations and tests are available for inspection of bidders. It is understood and agreed that such subsurface information, whether included in the plans, specifications, or otherwise made available to the bidder, was obtained and is intended for the Owner's design and estimating purposes only. Such information has been made available for the convenience of all bidders. It is further understood and agreed that each bidder is solely responsible for all assumptions, deductions, or conclusions which the bidder may make or obtain from their own examination of the boring logs and other records of subsurface investigations and tests that are furnished by the Owner.

20-07 Preparation of proposal. The bidder shall submit their proposal on the forms furnished by the Owner. All blank spaces in the proposal forms, unless explicitly stated otherwise, must be correctly filled in where indicated for each and every item for which a quantity is given. The bidder shall state the price (written in ink or typed) both in words and numerals which they propose for each pay item furnished in the proposal. In case of conflict between words and numerals, the words, unless obviously incorrect, shall govern.

The bidder shall correctly sign the proposal in ink. If the proposal is made by an individual, their name and post office address must be shown. If made by a partnership, the name and post office address of each member of the partnership must be shown. If made by a corporation, the person signing the proposal shall give the name of the state where the corporation was chartered and the name, titles, and business address of the president, secretary, and the treasurer. Anyone signing a proposal as an agent shall file evidence of their authority to do so and that the signature is binding upon the firm or corporation.

20-08 Responsive and responsible bidder. A responsive bid conforms to all significant terms and conditions contained in the Owner's invitation for bid. It is the Owner's responsibility to decide if the exceptions taken by a bidder to the solicitation are material or not and the extent of deviation it is willing to accept.

A responsible bidder has the ability to perform successfully under the terms and conditions of a proposed procurement, as defined in 2 CFR § 200.318(h). This includes such matters as Contractor integrity, compliance with public policy, record of past performance, and financial and technical resources.

20-09 Irregular proposals. Proposals shall be considered irregular for the following reasons:

- a. If the proposal is on a form other than that furnished by the Owner, or if the Owner's form is altered, or if any part of the proposal form is detached.
- b. If there are unauthorized additions, conditional or alternate pay items, or irregularities of any kind that make the proposal incomplete, indefinite, or otherwise ambiguous.
- c. If the proposal does not contain a unit price for each pay item listed in the proposal, except in the case of authorized alternate pay items, for which the bidder is not required to furnish a unit price.

- d. If the proposal contains unit prices that are obviously unbalanced.
- e. If the proposal is not accompanied by the proposal guaranty specified by the Owner.
- f. If the applicable Disadvantaged Business Enterprise information is incomplete.

The Owner reserves the right to reject any irregular proposal and the right to waive technicalities if such waiver is in the best interest of the Owner and conforms to local laws and ordinances pertaining to the letting of construction contracts.

20-10 Bid guarantee. Each separate proposal shall be accompanied by a bid bond, certified check, or other specified acceptable collateral, in the amount specified in the proposal form. Such bond, check, or collateral, shall be made payable to the Owner.

20-11 Delivery of proposal. Each proposal submitted shall be placed in a sealed envelope plainly marked with the project number, location of airport, and name and business address of the bidder on the outside. When sent by mail, preferably registered, the sealed proposal, marked as indicated above, should be enclosed in an additional envelope. No proposal will be considered unless received at the place specified in the advertisement or as modified by Addendum before the time specified for opening all bids. Proposals received after the bid opening time shall be returned to the bidder unopened.

20-12 Withdrawal or revision of proposals. A bidder may withdraw or revise (by withdrawal of one proposal and submission of another) a proposal provided that the bidder's request for withdrawal is received by the Owner in writing or by email before the time specified for opening bids. Revised proposals must be received at the place specified in the advertisement before the time specified for opening all bids.

20-13 Public opening of proposals. Proposals shall be opened, and read, publicly at the time and place specified in the advertisement. Bidders, their authorized agents, and other interested persons are invited to attend. Proposals that have been withdrawn (by written or telegraphic request) or received after the time specified for opening bids shall be returned to the bidder unopened.

20-14 Disqualification of bidders. A bidder shall be considered disqualified for any of the following reasons:

a. Submitting more than one proposal from the same partnership, firm, or corporation under the same or different name.

b. Evidence of collusion among bidders. Bidders participating in such collusion shall be disqualified as bidders for any future work of the Owner until any such participating bidder has been reinstated by the Owner as a qualified bidder.

c. If the bidder is considered to be in "default" for any reason specified in paragraph 20-04, *Issuance of Proposal Forms*, of this section.

20-15 Discrepancies and Omissions. A Bidder who discovers discrepancies or omissions with the project bid documents shall immediately notify the Owner's Engineer of the matter. A bidder that has doubt as to the true meaning of a project requirement may submit to the Owner's Engineer a written request for interpretation no later than 5 days prior to bid opening.

Any interpretation of the project bid documents by the Owner's Engineer will be by written addendum issued by the Owner. The Owner will not consider any instructions, clarifications or interpretations of the bidding documents in any manner other than written addendum.

END OF SECTION 20

Section 30 Award and Execution of Contract

30-01 Consideration of proposals. After the proposals are publicly opened and read, they will be compared on the basis of the summation of the products obtained by multiplying the estimated quantities shown in the proposal by the unit bid prices. If a bidder's proposal contains a discrepancy between unit bid prices written in words and unit bid prices written in numbers, the unit bid price written in words shall govern.

Until the award of a contract is made, the Owner reserves the right to reject a bidder's proposal for any of the following reasons:

a. If the proposal is irregular as specified in Section 20, paragraph 20-09, *Irregular Proposals*.

b. If the bidder is disqualified for any of the reasons specified Section 20, paragraph 20-14, *Disqualification of Bidders*.

In addition, until the award of a contract is made, the Owner reserves the right to reject any or all proposals, waive technicalities, if such waiver is in the best interest of the Owner and is in conformance with applicable state and local laws or regulations pertaining to the letting of construction contracts; advertise for new proposals; or proceed with the work otherwise. All such actions shall promote the Owner's best interests.

30-02 Award of contract. The award of a contract, if it is to be awarded, shall be made by October 1 of the year bids were opened, unless otherwise specified herein.

If the Owner elects to proceed with an award of contract, the Owner will make award to the responsible bidder whose bid, conforming with all the material terms and conditions of the bid documents, is the lowest in price.

30-03 Cancellation of award. The Owner reserves the right to cancel the award without liability to the bidder, except return of proposal guaranty, at any time before a contract has been fully executed by all parties and is approved by the Owner in accordance with paragraph 30-07 *Approval of Contract*.

30-04 Return of proposal guaranty. All proposal guaranties, except those of the two lowest bidders, will be returned immediately after the Owner has made a comparison of bids as specified in the paragraph 30-01, *Consideration of Proposals*. Proposal guaranties of the two lowest bidders will be retained by the Owner until such time as an award is made, at which time, the unsuccessful bidder's proposal guaranty will be returned. The successful bidder's proposal guaranty will be returned as soon as the Owner receives the contract bonds as specified in paragraph 30-05, *Requirements of Contract Bonds*.

30-05 Requirements of contract bonds. At the time of the execution of the contract, the successful bidder shall furnish the Owner a surety bond or bonds that have been fully executed by the bidder and the surety guaranteeing the performance of the work and the payment of all legal debts that may be incurred by reason of the Contractor's performance of the work. The surety and the form of the bond or bonds shall be acceptable to the Owner. Unless otherwise specified in this subsection, the surety bond or bonds shall be in a sum equal to the full amount of the contract.

30-06 Execution of contract. The successful bidder shall sign (execute) the necessary agreements for entering into the contract and return the signed contract to the Owner, along with the fully executed surety bond or bonds specified in paragraph 30-05, *Requirements of Contract Bonds*, of this section, within 15 calendar days from the date mailed or otherwise delivered to the successful bidder.

30-07 Approval of contract. Upon receipt of the contract and contract bond or bonds that have been executed by the successful bidder, the Owner shall complete the execution of the contract in accordance with local laws or ordinances, and return the fully executed contract to the Contractor. Delivery of the

fully executed contract to the Contractor shall constitute the Owner's approval to be bound by the successful bidder's proposal and the terms of the contract.

30-08 Failure to execute contract. Failure of the successful bidder to execute the contract and furnish an acceptable surety bond or bonds within the period specified in paragraph 30-06, *Execution of Contract*, of this section shall be just cause for cancellation of the award and forfeiture of the proposal guaranty, not as a penalty, but as liquidated damages to the Owner.

END OF SECTION 30

Section 40 Scope of Work

40-01 Intent of contract. The intent of the contract is to provide for construction and completion, in every detail, of the work described. It is further intended that the Contractor shall furnish all labor, materials, equipment, tools, transportation, and supplies required to complete the work in accordance with the plans, specifications, and terms of the contract.

40-02 Alteration of work and quantities. The Owner reserves the right to make such changes in quantities and work as may be necessary or desirable to complete, in a satisfactory manner, the original intended work. Unless otherwise specified in the Contract, the Owner's Engineer or RPR shall be and is hereby authorized to make, in writing, such in-scope alterations in the work and variation of quantities as may be necessary to complete the work, provided such action does not represent a significant change in the character of the work.

For purpose of this section, a significant change in character of work means: any change that is outside the current contract scope of work; any change (increase or decrease) in the total contract cost by more than 25%; or any change in the total cost of a major contract item by more than 25%.

Work alterations and quantity variances that do not meet the definition of significant change in character of work shall not invalidate the contract nor release the surety. Contractor agrees to accept payment for such work alterations and quantity variances in accordance with Section 90, paragraph 90-03, *Compensation for Altered Quantities*.

Should the value of altered work or quantity variance meet the criteria for significant change in character of work, such altered work and quantity variance shall be covered by a supplemental agreement. Supplemental agreements shall also require consent of the Contractor's surety and separate performance and payment bonds. If the Owner and the Contractor are unable to agree on a unit adjustment for any contract item that requires a supplemental agreement, the Owner reserves the right to terminate the contract with respect to the item and make other arrangements for its completion.

40-03 Omitted items. The Owner, the Owner's Engineer or the RPR may provide written notice to the Contractor to omit from the work any contract item that does not meet the definition of major contract item. Major contract items may be omitted by a supplemental agreement. Such omission of contract items shall not invalidate any other contract provision or requirement.

Should a contract item be omitted or otherwise ordered to be non-performed, the Contractor shall be paid for all work performed toward completion of such item prior to the date of the order to omit such item. Payment for work performed shall be in accordance with Section 90, paragraph 90-04, *Payment for Omitted Items*.

40-04 Extra work. Should acceptable completion of the contract require the Contractor to perform an item of work not provided for in the awarded contract as previously modified by change order or supplemental agreement, Owner may issue a Change Order to cover the necessary extra work. Change orders for extra work shall contain agreed unit prices for performing the change order work in accordance with the requirements specified in the order, and shall contain any adjustment to the contract time that, in the RPR's opinion, is necessary for completion of the extra work.

When determined by the RPR to be in the Owner's best interest, the RPR may order the Contractor to proceed with extra work as provided in Section 90, paragraph 90-05, *Payment for Extra Work*. Extra work that is necessary for acceptable completion of the project, but is not within the general scope of the work covered by the original contract shall be covered by a supplemental agreement as defined in Section 10, paragraph 10-59, *Supplemental Agreement*.

If extra work is essential to maintaining the project critical path, RPR may order the Contractor to commence the extra work under a Time and Material contract method. Once sufficient detail is available to establish the level of effort necessary for the extra work, the Owner shall initiate a change order or supplemental agreement to cover the extra work.

Any claim for payment of extra work that is not covered by written agreement (change order or supplemental agreement) shall be rejected by the Owner.

40-05 Maintenance of traffic. It is the explicit intention of the contract that the safety of aircraft, as well as the Contractor's equipment and personnel, is the most important consideration. The Contractor shall maintain traffic in the manner detailed in the Construction Safety and Phasing Plan (CSPP).

a. It is understood and agreed that the Contractor shall provide for the free and unobstructed movement of aircraft in the air operations areas (AOAs) of the airport with respect to their own operations and the operations of all subcontractors as specified in Section 80, paragraph 80-04, *Limitation of Operations*. It is further understood and agreed that the Contractor shall provide for the uninterrupted operation of visual and electronic signals (including power supplies thereto) used in the guidance of aircraft while operating to, from, and upon the airport as specified in Section 70, paragraph 70-15, *Contractor's Responsibility for Utility Service and Facilities of Others*.

b. With respect to their own operations and the operations of all subcontractors, the Contractor shall provide marking, lighting, and other acceptable means of identifying personnel, equipment, vehicles, storage areas, and any work area or condition that may be hazardous to the operation of aircraft, fire-rescue equipment, or maintenance vehicles at the airport in accordance with the construction safety and phasing plan (CSPP) and the safety plan compliance document (SPCD).

c. When the contract requires the maintenance of an existing road, street, or highway during the Contractor's performance of work that is otherwise provided for in the contract, plans, and specifications, the Contractor shall keep the road, street, or highway open to all traffic and shall provide maintenance as may be required to accommodate traffic. The Contractor, at their expense, shall be responsible for the repair to equal or better than preconstruction conditions of any damage caused by the Contractor's equipment and personnel. The Contractor shall furnish, erect, and maintain barricades, warning signs, flag person, and other traffic control devices in reasonable conformity with the Manual on Uniform Traffic Control Devices (MUTCD) (<http://mutcd.fhwa.dot.gov/>), unless otherwise specified. The Contractor shall also construct and maintain in a safe condition any temporary connections necessary for ingress to and egress from abutting property or intersecting roads, streets or highways. Unless otherwise specified herein, the Contractor will not be required to furnish snow removal for such existing road, street, or highway.

40-06 Removal of existing structures. All existing structures encountered within the established lines, grades, or grading sections shall be removed by the Contractor, unless such existing structures are otherwise specified to be relocated, adjusted up or down, salvaged, abandoned in place, reused in the work or to remain in place. The cost of removing such existing structures shall not be measured or paid for directly, but shall be included in the various contract items.

Should the Contractor encounter an existing structure (above or below ground) in the work for which the disposition is not indicated on the plans, the Resident Project Representative (RPR) shall be notified prior to disturbing such structure. The disposition of existing structures so encountered shall be immediately determined by the RPR in accordance with the provisions of the contract.

Except as provided in Section 40, paragraph 40-07, *Rights in and Use of Materials Found in the Work*, it is intended that all existing materials or structures that may be encountered (within the lines, grades, or grading sections established for completion of the work) shall be used in the work as otherwise provided for in the contract and shall remain the property of the Owner when so used in the work.

40-07 Rights in and use of materials found in the work. Should the Contractor encounter any material such as (but not restricted to) sand, stone, gravel, slag, or concrete slabs within the established lines, grades, or grading sections, the use of which is intended by the terms of the contract to be embankment, the Contractor may at their own option either:

- a. Use such material in another contract item, providing such use is approved by the RPR and is in conformance with the contract specifications applicable to such use; or,
- b. Remove such material from the site, upon written approval of the RPR; or
- c. Use such material for the Contractor's own temporary construction on site; or,
- d. Use such material as intended by the terms of the contract.

Should the Contractor wish to exercise option a., b., or c., the Contractor shall request the RPR's approval in advance of such use.

Should the RPR approve the Contractor's request to exercise option a., b., or c., the Contractor shall be paid for the excavation or removal of such material at the applicable contract price. The Contractor shall replace, at their expense, such removed or excavated material with an agreed equal volume of material that is acceptable for use in constructing embankment, backfills, or otherwise to the extent that such replacement material is needed to complete the contract work. The Contractor shall not be charged for use of such material used in the work or removed from the site.

Should the RPR approve the Contractor's exercise of option a., the Contractor shall be paid, at the applicable contract price, for furnishing and installing such material in accordance with requirements of the contract item in which the material is used.

It is understood and agreed that the Contractor shall make no claim for delays by reason of their own exercise of option a., b., or c.

The Contractor shall not excavate, remove, or otherwise disturb any material, structure, or part of a structure which is located outside the lines, grades, or grading sections established for the work, except where such excavation or removal is provided for in the contract, plans, or specifications.

40-08 Final cleanup. Upon completion of the work and before acceptance and final payment will be made, the Contractor shall remove from the site all machinery, equipment, surplus and discarded materials, rubbish, temporary structures, and stumps or portions of trees. The Contractor shall cut all brush and woods within the limits indicated and shall leave the site in a neat and presentable condition. Material cleared from the site and deposited on adjacent property will not be considered as having been disposed of satisfactorily, unless the Contractor has obtained the written permission of the property Owner.

END OF SECTION 40

Section 50 Control of Work

50-01 Authority of the Resident Project Representative (RPR). The RPR has final authority regarding the interpretation of project specification requirements. The RPR shall determine acceptability of the quality of materials furnished, method of performance of work performed, and the manner and rate of performance of the work. The RPR does not have the authority to accept work that does not conform to specification requirements.

50-02 Conformity with plans and specifications. All work and all materials furnished shall be in reasonably close conformity with the lines, grades, grading sections, cross-sections, dimensions, material requirements, and testing requirements that are specified (including specified tolerances) in the contract, plans, or specifications.

If the RPR finds the materials furnished, work performed, or the finished product not within reasonably close conformity with the plans and specifications, but that the portion of the work affected will, in their opinion, result in a finished product having a level of safety, economy, durability, and workmanship acceptable to the Owner, the RPR will advise the Owner of their determination that the affected work be accepted and remain in place. The RPR will document the determination and recommend to the Owner a basis of acceptance that will provide for an adjustment in the contract price for the affected portion of the work. Changes in the contract price must be covered by contract change order or supplemental agreement as applicable.

If the RPR finds the materials furnished, work performed, or the finished product are not in reasonably close conformity with the plans and specifications and have resulted in an unacceptable finished product, the affected work or materials shall be removed and replaced or otherwise corrected by and at the expense of the Contractor in accordance with the RPR's written orders.

The term "reasonably close conformity" shall not be construed as waiving the Contractor's responsibility to complete the work in accordance with the contract, plans, and specifications. The term shall not be construed as waiving the RPR's responsibility to insist on strict compliance with the requirements of the contract, plans, and specifications during the Contractor's execution of the work, when, in the RPR's opinion, such compliance is essential to provide an acceptable finished portion of the work.

The term "reasonably close conformity" is also intended to provide the RPR with the authority, after consultation with the Sponsor and FAA, to use sound engineering judgment in their determinations to accept work that is not in strict conformity, but will provide a finished product equal to or better than that required by the requirements of the contract, plans and specifications.

The RPR will not be responsible for the Contractor's means, methods, techniques, sequences, or procedures of construction or the safety precautions incident thereto.

50-03 Coordination of contract, plans, and specifications. The contract, plans, specifications, and all referenced standards cited are essential parts of the contract requirements. If electronic files are provided and used on the project and there is a conflict between the electronic files and hard copy plans, the hard copy plans shall govern. A requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete work. In case of discrepancy, calculated dimensions will govern over scaled dimensions; contract technical specifications shall govern over contract general provisions, plans, cited standards for materials or testing, and cited advisory circulars (ACs); contract general provisions shall govern over plans, cited standards for materials or testing, and cited ACs; plans shall govern over cited standards for materials or testing and cited ACs. If any paragraphs contained in the Special Provisions conflict with General Provisions or Technical Specifications, the Special Provisions shall govern.

From time to time, discrepancies within cited testing standards occur due to the timing of the change, edits, and/or replacement of the standards. If the Contractor discovers any apparent discrepancy within standard test methods, the Contractor shall immediately ask the RPR for an interpretation and decision, and such decision shall be final.

The Contractor shall not take advantage of any apparent error or omission on the plans or specifications. In the event the Contractor discovers any apparent error or discrepancy, Contractor shall immediately notify the Owner or the designated representative in writing requesting their written interpretation and decision.

50-04 List of Special Provisions.

Refer to Division II of the Contract Documents for Special Provisions.

50-05 Cooperation of Contractor. The Contractor shall be supplied with two hard copies or an electronic PDF of the plans and specifications. The Contractor shall have available on the construction site at all times one hardcopy each of the plans and specifications. Additional hard copies of plans and specifications may be obtained by the Contractor for the cost of reproduction.

The Contractor shall give constant attention to the work to facilitate the progress thereof, and shall cooperate with the RPR and their inspectors and with other Contractors in every way possible. The Contractor shall have a competent superintendent on the work at all times who is fully authorized as their agent on the work. The superintendent shall be capable of reading and thoroughly understanding the plans and specifications and shall receive and fulfill instructions from the RPR or their authorized representative.

50-06 Cooperation between Contractors. The Owner reserves the right to contract for and perform other or additional work on or near the work covered by this contract.

When separate contracts are let within the limits of any one project, each Contractor shall conduct the work not to interfere with or hinder the progress of completion of the work being performed by other Contractors. Contractors working on the same project shall cooperate with each other as directed.

Each Contractor involved shall assume all liability, financial or otherwise, in connection with their own contract and shall protect and hold harmless the Owner from any and all damages or claims that may arise because of inconvenience, delays, or loss experienced because of the presence and operations of other Contractors working within the limits of the same project.

The Contractor shall arrange their work and shall place and dispose of the materials being used to not interfere with the operations of the other Contractors within the limits of the same project. The Contractor shall join their work with that of the others in an acceptable manner and shall perform it in proper sequence to that of the others.

50-07 Construction layout and stakes. The Engineer/RPR shall establish necessary horizontal and vertical control. The establishment of Survey Control and/or reestablishment of survey control shall be by a State Licensed Land Surveyor. Contractor is responsible for preserving integrity of horizontal and vertical controls established by Engineer/RPR. In case of negligence on the part of the Contractor or their employees, resulting in the destruction of any horizontal and vertical control, the resulting costs will be deducted as a liquidated damage against the Contractor.

Prior to the start of construction, the Contractor will check all control points for horizontal and vertical accuracy and certify in writing to the RPR that the Contractor concurs with survey control established for the project. All lines, grades and measurements from control points necessary for the proper execution and control of the work on this project will be provided to the RPR. The Contractor is responsible to establish all layout required for the construction of the project.

Copies of survey notes will be provided to the RPR for each area of construction and for each placement of material as specified to allow the RPR to make periodic checks for conformance with plan grades, alignments and grade tolerances required by the applicable material specifications. Surveys will be

provided to the RPR prior to commencing work items that cover or disturb the survey staking. Survey(s) and notes shall be provided in the following format(s): Electronic data files and field book notes.

Laser, GPS, String line, or other automatic control shall be checked with temporary control as necessary. In the case of error, on the part of the Contractor, their surveyor, employees or subcontractors, resulting in established grades, alignment or grade tolerances that do not concur with those specified or shown on the plans, the Contractor is solely responsible for correction, removal, replacement and all associated costs at no additional cost to the Owner.

No direct payment will be made, unless otherwise specified in contract documents, for this labor, materials, or other expenses. The cost shall be included in the price of the bid for the various items of the Contract.

50-08 Authority and duties of Quality Assurance (QA) inspectors. QA inspectors shall be authorized to inspect all work done and all material furnished. Such QA inspection may extend to all or any part of the work and to the preparation, fabrication, or manufacture of the materials to be used. QA inspectors are not authorized to revoke, alter, or waive any provision of the contract. QA inspectors are not authorized to issue instructions contrary to the plans and specifications or to act as foreman for the Contractor.

QA Inspectors are authorized to notify the Contractor or their representatives of any failure of the work or materials to conform to the requirements of the contract, plans, or specifications and to reject such nonconforming materials in question until such issues can be referred to the RPR for a decision.

50-09 Inspection of the work. All materials and each part or detail of the work shall be subject to inspection. The RPR shall be allowed access to all parts of the work and shall be furnished with such information and assistance by the Contractor as is required to make a complete and detailed inspection.

If the RPR requests it, the Contractor, at any time before acceptance of the work, shall remove or uncover such portions of the finished work as may be directed. After examination, the Contractor shall restore said portions of the work to the standard required by the specifications. Should the work thus exposed or examined prove acceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be paid for as extra work; but should the work so exposed or examined prove unacceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be at the Contractor's expense.

Provide advance written notice to the RPR of work the Contractor plans to perform each week and each day. Any work done or materials used without written notice and allowing opportunity for inspection by the RPR may be ordered removed and replaced at the Contractor's expense.

Should the contract work include relocation, adjustment, or any other modification to existing facilities, not the property of the (contract) Owner, authorized representatives of the Owners of such facilities shall have the right to inspect such work. Such inspection shall in no sense make any facility owner a party to the contract, and shall in no way interfere with the rights of the parties to this contract.

50-10 Removal of unacceptable and unauthorized work. All work that does not conform to the requirements of the contract, plans, and specifications will be considered unacceptable, unless otherwise determined acceptable by the RPR as provided in paragraph 50-02, *Conformity with Plans and Specifications*.

Unacceptable work, whether the result of poor workmanship, use of defective materials, damage through carelessness, or any other cause found to exist prior to the final acceptance of the work, shall be removed immediately and replaced in an acceptable manner in accordance with the provisions of Section 70, paragraph 70-14, *Contractor's Responsibility for Work*.

No removal work made under provision of this paragraph shall be done without lines and grades having been established by the RPR. Work done contrary to the instructions of the RPR, work done beyond the lines shown on the plans or as established by the RPR, except as herein specified, or any extra work done without authority, will be considered as unauthorized and will not be paid for under the provisions of the contract. Work so done may be ordered removed or replaced at the Contractor's expense.

Upon failure on the part of the Contractor to comply with any order of the RPR made under the provisions of this subsection, the RPR will have authority to cause unacceptable work to be remedied or removed and replaced; and unauthorized work to be removed and recover the resulting costs as a liquidated damage against the Contractor.

50-11 Load restrictions. The Contractor shall comply with all legal load restrictions in the hauling of materials on public roads beyond the limits of the work. A special permit will not relieve the Contractor of liability for damage that may result from the moving of material or equipment.

The operation of equipment of such weight or so loaded as to cause damage to structures or to any other type of construction will not be permitted. Hauling of materials over the base course or surface course under construction shall be limited as directed. No loads will be permitted on a concrete pavement, base, or structure before the expiration of the curing period. The Contractor, at their own expense, shall be responsible for the repair to equal or better than preconstruction conditions of any damage caused by the Contractor's equipment and personnel.

50-12 Maintenance during construction. The Contractor shall maintain the work during construction and until the work is accepted. Maintenance shall constitute continuous and effective work prosecuted day by day, with adequate equipment and forces so that the work is maintained in satisfactory condition at all times.

In the case of a contract for the placing of a course upon a course or subgrade previously constructed, the Contractor shall maintain the previous course or subgrade during all construction operations.

All costs of maintenance work during construction and before the project is accepted shall be included in the unit prices bid on the various contract items, and the Contractor will not be paid an additional amount for such work.

50-13 Failure to maintain the work. Should the Contractor at any time fail to maintain the work as provided in paragraph 50-12, *Maintenance during Construction*, the RPR shall immediately notify the Contractor of such noncompliance. Such notification shall specify a reasonable time within which the Contractor shall be required to remedy such unsatisfactory maintenance condition. The time specified will give due consideration to the exigency that exists.

Should the Contractor fail to respond to the RPR's notification, the Owner may suspend any work necessary for the Owner to correct such unsatisfactory maintenance condition, depending on the exigency that exists. Any maintenance cost incurred by the Owner, shall be recovered as a liquidated damage against the Contractor.

50-14 Partial acceptance. If at any time during the execution of the project the Contractor substantially completes a usable unit or portion of the work, the occupancy of which will benefit the Owner, the Contractor may request the RPR to make final inspection of that unit. If the RPR finds upon inspection that the unit has been satisfactorily completed in compliance with the contract, the RPR may accept it as being complete, and the Contractor may be relieved of further responsibility for that unit. Such partial acceptance and beneficial occupancy by the Owner shall not void or alter any provision of the contract.

50-15 Final acceptance. Upon due notice from the Contractor of presumptive completion of the entire project, the RPR and Owner will make an inspection. If all construction provided for and contemplated by the contract is found to be complete in accordance with the contract, plans, and specifications, such inspection shall constitute the final inspection. The RPR shall notify the Contractor in writing of final acceptance as of the date of the final inspection.

If, however, the inspection discloses any work, in whole or in part, as being unsatisfactory, the RPR will notify the Contractor and the Contractor shall correct the unsatisfactory work. Upon correction of the work, another inspection will be made which shall constitute the final inspection, provided the work has been satisfactorily completed. In such event, the RPR will make the final acceptance and notify the Contractor in writing of this acceptance as of the date of final inspection.

50-16 Claims for adjustment and disputes. If for any reason the Contractor deems that additional compensation is due for work or materials not clearly provided for in the contract, plans, or specifications

or previously authorized as extra work, the Contractor shall notify the RPR in writing of their intention to claim such additional compensation before the Contractor begins the work on which the Contractor bases the claim. If such notification is not given or the RPR is not afforded proper opportunity by the Contractor for keeping strict account of actual cost as required, then the Contractor hereby agrees to waive any claim for such additional compensation. Such notice by the Contractor and the fact that the RPR has kept account of the cost of the work shall not in any way be construed as proving or substantiating the validity of the claim. When the work on which the claim for additional compensation is based has been completed, the Contractor shall, within 10 calendar days, submit a written claim to the RPR who will present it to the Owner for consideration in accordance with local laws or ordinances.

Nothing in this subsection shall be construed as a waiver of the Contractor's right to dispute final payment based on differences in measurements or computations.

END OF SECTION 50

Section 60 Control of Materials

60-01 Source of supply and quality requirements. The materials used in the work shall conform to the requirements of the contract, plans, and specifications. Unless otherwise specified, such materials that are manufactured or processed shall be new (as compared to used or reprocessed).

In order to expedite the inspection and testing of materials, the Contractor shall furnish documentation to the RPR as to the origin, composition, and manufacture of all materials to be used in the work. Documentation shall be furnished promptly after execution of the contract but, in all cases, prior to delivery of such materials.

At the RPR's option, materials may be approved at the source of supply before delivery. If it is found after trial that sources of supply for previously approved materials do not produce specified products, the Contractor shall furnish materials from other sources.

The Contractor shall furnish airport lighting equipment that meets the requirements of the specifications; and is listed in AC 150/5345-53, *Airport Lighting Equipment Certification Program and Addendum*, that is in effect on the date of advertisement.

60-02 Samples, tests, and cited specifications. All materials used in the work shall be inspected, tested, and approved by the RPR before incorporation in the work unless otherwise designated. Any work in which untested materials are used without approval or written permission of the RPR shall be performed at the Contractor's risk. Materials found to be unacceptable and unauthorized will not be paid for and, if directed by the RPR, shall be removed at the Contractor's expense.

Unless otherwise designated, quality assurance tests will be made by and at the expense of the Owner in accordance with the cited standard methods of ASTM, American Association of State Highway and Transportation Officials (AASHTO), federal specifications, Commercial Item Descriptions, and all other cited methods, which are current on the date of advertisement for bids.

The testing organizations performing on-site quality assurance field tests shall have copies of all referenced standards on the construction site for use by all technicians and other personnel. Unless otherwise designated, samples for quality assurance will be taken by a qualified representative of the RPR. All materials being used are subject to inspection, test, or rejection at any time prior to or during incorporation into the work. Copies of all tests will be furnished to the Contractor's representative at their request after review and approval of the RPR.

A copy of all Contractor QC test data shall be provided to the RPR daily, along with printed reports, in an approved format, on a weekly basis. After completion of the project, and prior to final payment, the Contractor shall submit a final report to the RPR showing all test data reports, plus an analysis of all results showing ranges, averages, and corrective action taken on all failing tests.

The Contractor shall employ a Quality Control (QC) testing organization to perform all Contractor required QC tests in accordance with Item C-100 Contractor Quality Control Program (CQCP).

60-03 Certification of compliance/analysis (COC/COA). The RPR may permit the use, prior to sampling and testing, of certain materials or assemblies when accompanied by manufacturer's COC stating that such materials or assemblies fully comply with the requirements of the contract. The certificate shall be signed by the manufacturer. Each lot of such materials or assemblies delivered to the work must be accompanied by a certificate of compliance in which the lot is clearly identified. The COA is the manufacturer's COC and includes all applicable test results.

Materials or assemblies used on the basis of certificates of compliance may be sampled and tested at any time and if found not to be in conformity with contract requirements will be subject to rejection whether in place or not.

The form and distribution of certificates of compliance shall be as approved by the RPR.

When a material or assembly is specified by “brand name or equal” and the Contractor elects to furnish the specified “or equal,” the Contractor shall be required to furnish the manufacturer’s certificate of compliance for each lot of such material or assembly delivered to the work. Such certificate of compliance shall clearly identify each lot delivered and shall certify as to:

- a. Conformance to the specified performance, testing, quality or dimensional requirements; and,
- b. Suitability of the material or assembly for the use intended in the contract work.

The RPR shall be the sole judge as to whether the proposed “or equal” is suitable for use in the work.

The RPR reserves the right to refuse permission for use of materials or assemblies on the basis of certificates of compliance.

60-04 Plant inspection. The RPR or their authorized representative may inspect, at its source, any specified material or assembly to be used in the work. Manufacturing plants may be inspected from time to time for the purpose of determining compliance with specified manufacturing methods or materials to be used in the work and to obtain samples required for acceptance of the material or assembly.

Should the RPR conduct plant inspections, the following conditions shall exist:

- a. The RPR shall have the cooperation and assistance of the Contractor and the producer with whom the Contractor has contracted for materials.
- b. The RPR shall have full entry at all reasonable times to such parts of the plant that concern the manufacture or production of the materials being furnished.
- c. If required by the RPR, the Contractor shall arrange for adequate office or working space that may be reasonably needed for conducting plant inspections. Place office or working space in a convenient location with respect to the plant.

It is understood and agreed that the Owner shall have the right to retest any material that has been tested and approved at the source of supply after it has been delivered to the site. The RPR shall have the right to reject only material which, when retested, does not meet the requirements of the contract, plans, or specifications.

60-05 Engineer/ Resident Project Representative (RPR) field office. The Contractor shall provide dedicated space for the use of the engineer, RPR, and inspectors, as a field office for the duration of the project. This space shall be located conveniently near the construction and shall be separate from any space used by the Contractor. The Contractor shall furnish water, sanitary facilities, heat, air conditioning, and electricity.

60-06 Storage of materials. Materials shall be stored to assure the preservation of their quality and fitness for the work. Stored materials, even though approved before storage, may again be inspected prior to their use in the work. Stored materials shall be located to facilitate their prompt inspection. The Contractor shall coordinate the storage of all materials with the RPR. Materials to be stored on airport property shall not create an obstruction to air navigation nor shall they interfere with the free and unobstructed movement of aircraft. Unless otherwise shown on the plans and/or CSPP, the storage of materials and the location of the Contractor’s plant and parked equipment or vehicles shall be as directed by the RPR. Private property shall not be used for storage purposes without written permission of the Owner or lessee of such property. The Contractor shall make all arrangements and bear all expenses for the storage of materials on private property. Upon request, the Contractor shall furnish the RPR a copy of the property Owner’s permission.

All storage sites on private or airport property shall be restored to their original condition by the Contractor at their expense, except as otherwise agreed to (in writing) by the Owner or lessee of the property.

60-07 Unacceptable materials. Any material or assembly that does not conform to the requirements of the contract, plans, or specifications shall be considered unacceptable and shall be rejected. The Contractor shall remove any rejected material or assembly from the site of the work, unless otherwise instructed by the RPR.

Rejected material or assembly, the defects of which have been corrected by the Contractor, shall not be returned to the site of the work until such time as the RPR has approved its use in the work.

60-08 Owner furnished materials. The Contractor shall furnish all materials required to complete the work, except those specified, if any, to be furnished by the Owner. Owner-furnished materials shall be made available to the Contractor at the location specified.

All costs of handling, transportation from the specified location to the site of work, storage, and installing Owner-furnished materials shall be included in the unit price bid for the contract item in which such Owner-furnished material is used.

After any Owner-furnished material has been delivered to the location specified, the Contractor shall be responsible for any demurrage, damage, loss, or other deficiencies that may occur during the Contractor's handling, storage, or use of such Owner-furnished material. The Owner will deduct from any monies due or to become due the Contractor any cost incurred by the Owner in making good such loss due to the Contractor's handling, storage, or use of Owner-furnished materials.

END OF SECTION 60

Section 70 Legal Regulations and Responsibility to Public

70-01 Laws to be observed. The Contractor shall keep fully informed of all federal and state laws, all local laws, ordinances, and regulations and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any manner affect those engaged or employed on the work, or which in any way affect the conduct of the work. The Contractor shall at all times observe and comply with all such laws, ordinances, regulations, orders, and decrees; and shall protect and indemnify the Owner and all their officers, agents, or servants against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order, or decree, whether by the Contractor or the Contractor's employees.

70-02 Permits, licenses, and taxes. The Contractor shall procure all permits and licenses, pay all charges, fees, and taxes, and give all notices necessary and incidental to the due and lawful execution of the work.

70-03 Patented devices, materials, and processes. If the Contractor is required or desires to use any design, device, material, or process covered by letters of patent or copyright, the Contractor shall provide for such use by suitable legal agreement with the Patentee or Owner. The Contractor and the surety shall indemnify and hold harmless the Owner, any third party, or political subdivision from any and all claims for infringement by reason of the use of any such patented design, device, material or process, or any trademark or copyright, and shall indemnify the Owner for any costs, expenses, and damages which it may be obliged to pay by reason of an infringement, at any time during the execution or after the completion of the work.

70-04 Restoration of surfaces disturbed by others. The Owner reserves the right to authorize the construction, reconstruction, or maintenance of any public or private utility service, FAA or National Oceanic and Atmospheric Administration (NOAA) facility, or a utility service of another government agency at any time during the progress of the work. To the extent that such construction, reconstruction, or maintenance has been coordinated with the Owner, such authorized work (by others) must be shown on the plans and is indicated as follows: [No work is scheduled at this time.](#)

Except as listed above, the Contractor shall not permit any individual, firm, or corporation to excavate or otherwise disturb such utility services or facilities located within the limits of the work without the written permission of the RPR.

Should the Owner of public or private utility service, FAA, or NOAA facility, or a utility service of another government agency be authorized to construct, reconstruct, or maintain such utility service or facility during the progress of the work, the Contractor shall cooperate with such Owners by arranging and performing the work in this contract to facilitate such construction, reconstruction or maintenance by others whether or not such work by others is listed above. When ordered as extra work by the RPR, the Contractor shall make all necessary repairs to the work which are due to such authorized work by others, unless otherwise provided for in the contract, plans, or specifications. It is understood and agreed that the Contractor shall not be entitled to make any claim for damages due to such authorized work by others or for any delay to the work resulting from such authorized work.

70-05 Federal Participation. The United States Government has agreed to reimburse the Owner for some portion of the contract costs. The contract work is subject to the inspection and approval of duly authorized representatives of the FAA Administrator. No requirement of this contract shall be construed as making the United States a party to the contract nor will any such requirement interfere, in any way, with the rights of either party to the contract.

70-06 Sanitary, health, and safety provisions. The Contractor's worksite and facilities shall comply with applicable federal, state, and local requirements for health, safety and sanitary provisions.

70-07 Public convenience and safety. The Contractor shall control their operations and those of their subcontractors and all suppliers, to assure the least inconvenience to the traveling public. Under all circumstances, safety shall be the most important consideration.

The Contractor shall maintain the free and unobstructed movement of aircraft and vehicular traffic with respect to their own operations and those of their own subcontractors and all suppliers in accordance with Section 40, paragraph 40-05, *Maintenance of Traffic*, and shall limit such operations for the convenience and safety of the traveling public as specified in Section 80, paragraph 80-04, *Limitation of Operations*.

The Contractor shall remove or control debris and rubbish resulting from its work operations at frequent intervals, and upon the order of the RPR. If the RPR determines the existence of Contractor debris in the work site represents a hazard to airport operations and the Contractor is unable to respond in a prompt and reasonable manner, the RPR reserves the right to assign the task of debris removal to a third party and recover the resulting costs as a liquidated damage against the Contractor.

70-08 Construction Safety and Phasing Plan (CSPP). The Contractor shall complete the work in accordance with the approved Construction Safety and Phasing Plan (CSPP) developed in accordance with AC 150/5370-2, Operational Safety on Airports During Construction. The CSPP is on sheet C2 of the project plans.

70-09 Use of explosives. *The use of explosives is not permitted on this project.*

70-10 Protection and restoration of property and landscape. The Contractor shall be responsible for the preservation of all public and private property, and shall protect carefully from disturbance or damage all land monuments and property markers until the Engineer/RPR has witnessed or otherwise referenced their location and shall not move them until directed.

The Contractor shall be responsible for all damage or injury to property of any character, during the execution of the work, resulting from any act, omission, neglect, or misconduct in manner or method of executing the work, or at any time due to defective work or materials, and said responsibility shall not be released until the project has been completed and accepted.

When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work, or in consequence of the non-execution thereof by the Contractor, the Contractor shall restore, at their expense, such property to a condition similar or equal to that existing before such damage or injury was done, by repairing, or otherwise restoring as may be directed, or the Contractor shall make good such damage or injury in an acceptable manner.

70-11 Responsibility for damage claims. The Contractor shall indemnify and hold harmless the Engineer/RPR and the Owner and their officers, agents, and employees from all suits, actions, or claims, of any character, brought because of any injuries or damage received or sustained by any person, persons, or property on account of the operations of the Contractor; or on account of or in consequence of any neglect in safeguarding the work; or through use of unacceptable materials in constructing the work; or because of any act or omission, neglect, or misconduct of said Contractor; or because of any claims or amounts recovered from any infringements of patent, trademark, or copyright; or from any claims or amounts arising or recovered under the "Workmen's Compensation Act," or any other law, ordinance, order, or decree. Money due the Contractor under and by virtue of their own contract considered necessary by the Owner for such purpose may be retained for the use of the Owner or, in case no money is due, their own surety may be held until such suits, actions, or claims for injuries or damages shall have been settled and suitable evidence to that effect furnished to the Owner, except that money due the Contractor will not be withheld when the Contractor produces satisfactory evidence that he or she is adequately protected by public liability and property damage insurance.

70-12 Third party beneficiary clause. It is specifically agreed between the parties executing the contract that it is not intended by any of the provisions of any part of the contract to create for the public or any member thereof, a third-party beneficiary or to authorize anyone not a party to the contract to maintain a suit for personal injuries or property damage pursuant to the terms or provisions of the contract.

70-13 Opening sections of the work to traffic. If it is necessary for the Contractor to complete portions of the contract work for the beneficial occupancy of the Owner prior to completion of the entire contract, such “phasing” of the work must be specified below and indicated on the approved Construction Safety and Phasing Plan (CSPP) and the project plans. When so specified, the Contractor shall complete such portions of the work on or before the date specified or as otherwise specified.

Refer to Division II for Special Provisions regarding Phasing & Sequencing of Owner’s Beneficial Occupancy.

Upon completion of any portion of work listed above, such portion shall be accepted by the Owner in accordance with Section 50, paragraph 50-14, *Partial Acceptance*.

No portion of the work may be opened by the Contractor until directed by the Owner in writing. Should it become necessary to open a portion of the work to traffic on a temporary or intermittent basis, such openings shall be made when, in the opinion of the RPR, such portion of the work is in an acceptable condition to support the intended traffic. Temporary or intermittent openings are considered to be inherent in the work and shall not constitute either acceptance of the portion of the work so opened or a waiver of any provision of the contract. Any damage to the portion of the work so opened that is not attributable to traffic which is permitted by the Owner shall be repaired by the Contractor at their expense.

The Contractor shall make their own estimate of the inherent difficulties involved in completing the work under the conditions herein described and shall not claim any added compensation by reason of delay or increased cost due to opening a portion of the contract work.

The Contractor must conform to safety standards contained AC 150/5370-2 and the approved CSPP.

Contractor shall refer to the plans, specifications, and the approved CSPP to identify barricade requirements, temporary and/or permanent markings, airfield lighting, guidance signs and other safety requirements prior to opening up sections of work to traffic.

70-14 Contractor’s responsibility for work. Until the RPR’s final written acceptance of the entire completed work, excepting only those portions of the work accepted in accordance with Section 50, paragraph 50-14, *Partial Acceptance*, the Contractor shall have the charge and care thereof and shall take every precaution against injury or damage to any part due to the action of the elements or from any other cause, whether arising from the execution or from the non-execution of the work. The Contractor shall rebuild, repair, restore, and make good all injuries or damages to any portion of the work occasioned by any of the above causes before final acceptance and shall bear the expense thereof except damage to the work due to unforeseeable causes beyond the control of and without the fault or negligence of the Contractor, including but not restricted to acts of God such as earthquake, tidal wave, tornado, hurricane or other cataclysmic phenomenon of nature, or acts of the public enemy or of government authorities.

If the work is suspended for any cause whatever, the Contractor shall be responsible for the work and shall take such precautions necessary to prevent damage to the work. The Contractor shall provide for normal drainage and shall erect necessary temporary structures, signs, or other facilities at their own expense. During such period of suspension of work, the Contractor shall properly and continuously maintain in an acceptable growing condition all living material in newly established planting, seeding, and sodding furnished under the contract, and shall take adequate precautions to protect new tree growth and other important vegetative growth against injury.

70-15 Contractor’s responsibility for utility service and facilities of others. As provided in paragraph 70-04, *Restoration of Surfaces Disturbed by Others*, the Contractor shall cooperate with the owner of any public or private utility service, FAA or NOAA, or a utility service of another government agency that may be authorized by the Owner to construct, reconstruct or maintain such utility services or facilities during the progress of the work. In addition, the Contractor shall control their operations to prevent the unscheduled interruption of such utility services and facilities.

To the extent that such public or private utility services, FAA, or NOAA facilities, or utility services of another governmental agency are known to exist within the limits of the contract work, the approximate locations have been indicated on the plans and/or in the contract documents.

<u>Utility or Agency</u>	<u>Emergency or Facility Telephone No.</u>
City of Eastport	(207) 853-2300
FAA, Airways Facilities	(207) 775-1039
Versant Power	(207) 973-2000
Consolidated Communications	1 (844) 968-7224
National Weather Service	(207) 688-3216
Maine Department of Transportation	(207) 941-4500
Digsafe	(888) 344-7233

It is understood and agreed that the Owner does not guarantee the accuracy or the completeness of the location information relating to existing utility services, facilities, or structures that may be shown on the plans or encountered in the work. Any inaccuracy or omission in such information shall not relieve the Contractor of the responsibility to protect such existing features from damage or unscheduled interruption of service.

It is further understood and agreed that the Contractor shall, upon execution of the contract, notify the Owners of all utility services or other facilities of their plan of operations. Such notification shall be in writing addressed to "The Person to Contact" as provided in this paragraph and paragraph 70-04, *Restoration of Surfaces Disturbed By Others*. A copy of each notification shall be given to the RPR.

In addition to the general written notification provided, it shall be the responsibility of the Contractor to keep such individual Owners advised of changes in their plan of operations that would affect such Owners.

Prior to beginning the work in the general vicinity of an existing utility service or facility, the Contractor shall again notify each such Owner of their plan of operation. If, in the Contractor's opinion, the Owner's assistance is needed to locate the utility service or facility or the presence of a representative of the Owner is desirable to observe the work, such advice should be included in the notification. Such notification shall be given by the most expeditious means to reach the utility owner's "Person to Contact" no later than two normal business days prior to the Contractor's commencement of operations in such general vicinity. The Contractor shall furnish a written summary of the notification to the RPR.

The Contractor's failure to give the two days' notice shall be cause for the Owner to suspend the Contractor's operations in the general vicinity of a utility service or facility.

Where the outside limits of an underground utility service have been located and staked on the ground, the Contractor shall be required to use hand excavation methods within 3 feet (1 m) of such outside limits at such points as may be required to ensure protection from damage due to the Contractor's operations.

Should the Contractor damage or interrupt the operation of a utility service or facility by accident or otherwise, the Contractor shall immediately notify the proper authority and the RPR and shall take all reasonable measures to prevent further damage or interruption of service. The Contractor, in such events, shall cooperate with the utility service or facility owner and the RPR continuously until such damage has been repaired and service restored to the satisfaction of the utility or facility owner.

The Contractor shall bear all costs of damage and restoration of service to any utility service or facility due to their operations whether due to negligence or accident. The Owner reserves the right to deduct such costs from any monies due or which may become due the Contractor, or their own surety.

70-15.1 FAA facilities and cable runs. The Contractor is hereby advised that the construction limits of the project include existing facilities and buried cable runs that are owned, operated and maintained by the FAA. The Contractor, during the execution of the project work, shall comply with the following:

a. The Contractor shall permit FAA maintenance personnel the right of access to the project work site for purposes of inspecting and maintaining all existing FAA owned facilities.

b. The Contractor shall provide notice to the FAA Air Traffic Organization (ATO)/Technical Operations/System Support Center (SSC) Point-of-Contact through the airport manager a minimum of seven (7) calendar days prior to commencement of construction activities in order to permit sufficient time to locate and mark existing buried cables and to schedule any required facility outages.

c. If execution of the project work requires a facility outage, the Contractor shall contact the FAA Point-of-Contact a minimum of 72 hours prior to the time of the required outage.

d. Any damage to FAA cables, access roads, or FAA facilities during construction caused by the Contractor's equipment or personnel whether by negligence or accident will require the Contractor to repair or replace the damaged cables, access road, or FAA facilities to FAA requirements. The Contractor shall not bear the cost to repair damage to underground facilities or utilities improperly located by the FAA.

e. If the project work requires the cutting or splicing of FAA owned cables, the FAA Point-of-Contact shall be contacted a minimum of 72 hours prior to the time the cable work commences. The FAA reserves the right to have a FAA representative on site to observe the splicing of the cables as a condition of acceptance. All cable splices are to be accomplished in accordance with FAA specifications and require approval by the FAA Point-of-Contact as a condition of acceptance by the Owner. The Contractor is hereby advised that FAA restricts the location of where splices may be installed. If a cable splice is required in a location that is not permitted by FAA, the Contractor shall furnish and install a sufficient length of new cable that eliminates the need for any splice.

70-16 Furnishing rights-of-way. The Owner will be responsible for furnishing all rights-of-way upon which the work is to be constructed in advance of the Contractor's operations.

70-17 Personal liability of public officials. In carrying out any of the contract provisions or in exercising any power or authority granted by this contract, there shall be no liability upon the Engineer, RPR, their authorized representatives, or any officials of the Owner either personally or as an official of the Owner. It is understood that in such matters they act solely as agents and representatives of the Owner.

70-18 No waiver of legal rights. Upon completion of the work, the Owner will expeditiously make final inspection and notify the Contractor of final acceptance. Such final acceptance, however, shall not preclude or stop the Owner from correcting any measurement, estimate, or certificate made before or after completion of the work, nor shall the Owner be precluded or stopped from recovering from the Contractor or their surety, or both, such overpayment as may be sustained, or by failure on the part of the Contractor to fulfill their obligations under the contract. A waiver on the part of the Owner of any breach of any part of the contract shall not be held to be a waiver of any other or subsequent breach.

The Contractor, without prejudice to the terms of the contract, shall be liable to the Owner for latent defects, fraud, or such gross mistakes as may amount to fraud, or as regards the Owner's rights under any warranty or guaranty.

70-19 Environmental protection. The Contractor shall comply with all federal, state, and local laws and regulations controlling pollution of the environment. The Contractor shall take necessary precautions to prevent pollution of streams, lakes, ponds, and reservoirs with fuels, oils, asphalts, chemicals, or other harmful materials and to prevent pollution of the atmosphere from particulate and gaseous matter.

70-20 Archaeological and historical findings. Unless otherwise specified in this subsection, the Contractor is advised that the site of the work is not within any property, district, or site, and does not contain any building, structure, or object listed in the current National Register of Historic Places published by the United States Department of Interior.

Should the Contractor encounter, during their operations, any building, part of a building, structure, or object that is incongruous with its surroundings, the Contractor shall immediately cease operations in that

location and notify the RPR. The RPR will immediately investigate the Contractor's finding and the Owner will direct the Contractor to either resume operations or to suspend operations as directed.

Should the Owner order suspension of the Contractor's operations in order to protect an archaeological or historical finding, or order the Contractor to perform extra work, such shall be covered by an appropriate contract change order or supplemental agreement as provided in Section 40, paragraph 40-04, *Extra Work*, and Section 90, paragraph 90-05, *Payment for Extra Work*. If appropriate, the contract change order or supplemental agreement shall include an extension of contract time in accordance with Section 80, paragraph 80-07, *Determination and Extension of Contract Time*.

70-21 Insurance Requirements. The contractor shall provide the required insurances as specified in the Bid Proposal section of the Contract Documents.

END OF SECTION 70

Section 80 Execution and Progress

80-01 Subletting of contract. The Owner will not recognize any subcontractor on the work. The Contractor shall at all times when work is in progress be represented either in person, by a qualified superintendent, or by other designated, qualified representative who is duly authorized to receive and execute orders of the Resident Project Representative (RPR).

The Contractor shall perform, with his organization, an amount of work equal to at least **25** percent of the total contract cost.

Should the Contractor elect to assign their contract, said assignment shall be concurred in by the surety, shall be presented for the consideration and approval of the Owner, and shall be consummated only on the written approval of the Owner.

The Contractor shall provide copies of all subcontracts to the RPR 14 days prior to being utilized on the project. As a minimum, the information shall include the following:

- Subcontractor's legal company name.
- Subcontractor's legal company address, including County name.
- Principal contact person's name, telephone and fax number.
- Complete narrative description, and dollar value of the work to be performed by the subcontractor.
- Copies of required insurance certificates in accordance with the specifications.
- Minority/ non-minority status.

80-02 Notice to proceed (NTP). The Owners notice to proceed will state the date on which contract time commences. The Contractor is expected to commence project operations within **10** days of the NTP date. The Contractor shall notify the RPR at least 24 hours in advance of the time contract operations begins. The Contractor shall not commence any actual operations prior to the date on which the notice to proceed is issued by the Owner.

80-03 Execution and progress. Unless otherwise specified, the Contractor shall submit their coordinated construction schedule showing all work activities for the RPR's review and acceptance at least 10 days prior to the start of work. The Contractor's progress schedule, once accepted by the RPR, will represent the Contractor's baseline plan to accomplish the project in accordance with the terms and conditions of the Contract. The RPR will compare actual Contractor progress against the baseline schedule to determine that status of the Contractor's performance. The Contractor shall provide sufficient materials, equipment, and labor to guarantee the completion of the project in accordance with the plans and specifications within the time set forth in the proposal.

If the Contractor falls significantly behind the submitted schedule, the Contractor shall, upon the RPR's request, submit a revised schedule for completion of the work within the contract time and modify their operations to provide such additional materials, equipment, and labor necessary to meet the revised schedule. Should the execution of the work be discontinued for any reason, the Contractor shall notify the RPR at least 24 hours in advance of resuming operations.

The Contractor shall not commence any actual construction prior to the date on which the NTP is issued by the Owner.

The project schedule shall be prepared as a network diagram in Critical Path Method (CPM), Program Evaluation and Review Technique (PERT), or other format, or as otherwise specified. It shall include

information on the sequence of work activities, milestone dates, and activity duration. The schedule shall show all work items identified in the project proposal for each work area and shall include the project start date and end date.

The Contractor shall maintain the work schedule and provide an update and analysis of the progress schedule on a weekly basis, or as otherwise specified in the contract. Submission of the work schedule shall not relieve the Contractor of overall responsibility for scheduling, sequencing, and coordinating all work to comply with the requirements of the contract.

80-04 Limitation of operations. The Contractor shall control their operations and the operations of their subcontractors and all suppliers to provide for the free and unobstructed movement of aircraft in the air operations areas (AOA) of the airport.

When the work requires the Contractor to conduct their operations within an AOA of the airport, the work shall be coordinated with airport operations (through the RPR) at least 48 hours prior to commencement of such work. The Contractor shall not close an AOA until so authorized by the RPR and until the necessary temporary marking, signage and associated lighting is in place as provided in Section 70, paragraph 70-08, *Construction Safety and Phasing Plan (CSPP)*.

When the contract work requires the Contractor to work within an AOA of the airport on an intermittent basis (intermittent opening and closing of the AOA), the Contractor shall maintain constant communications as specified; immediately obey all instructions to vacate the AOA; and immediately obey all instructions to resume work in such AOA. Failure to maintain the specified communications or to obey instructions shall be cause for suspension of the Contractor's operations in the AOA until satisfactory conditions are provided. The areas of the AOA identified in the Construction Safety Phasing Plan (CSPP) and as listed below, cannot be closed to operating aircraft to permit the Contractor's operations on a continuous basis and will therefore be closed to aircraft operations intermittently as follows:

Refer to Division II Special Provisions for specific information on limitations of operations.

The Contractor shall be required to conform to safety standards contained in AC 150/5370-2, Operational Safety on Airports During Construction and the approved CSPP.

80-04.1 Operational safety on airport during construction. All Contractors' operations shall be conducted in accordance with the approved project Construction Safety and Phasing Plan (CSPP) and the Safety Plan Compliance Document (SPCD) and the provisions set forth within the current version of AC 150/5370-2, Operational Safety on Airports During Construction. The CSPP included within the contract documents conveys minimum requirements for operational safety on the airport during construction activities. The Contractor shall prepare and submit a SPCD that details how it proposes to comply with the requirements presented within the CSPP.

The Contractor shall implement all necessary safety plan measures prior to commencement of any work activity. The Contractor shall conduct routine checks to assure compliance with the safety plan measures.

The Contractor is responsible to the Owner for the conduct of all subcontractors it employs on the project. The Contractor shall assure that all subcontractors are made aware of the requirements of the CSPP and SPCD and that they implement and maintain all necessary measures.

No deviation or modifications may be made to the approved CSPP and SPCD unless approved in writing by the Owner. The necessary coordination actions to review Contractor proposed modifications to an approved CSPP or approved SPCD can require a significant amount of time.

80-05 Character of workers, methods, and equipment. The Contractor shall, at all times, employ sufficient labor and equipment for prosecuting the work to full completion in the manner and time required by the contract, plans, and specifications.

All workers shall have sufficient skill and experience to perform properly the work assigned to them. Workers engaged in special work or skilled work shall have sufficient experience in such work and in the operation of the equipment required to perform the work satisfactorily.

Any person employed by the Contractor or by any subcontractor who violates any operational regulations or operational safety requirements and, in the opinion of the RPR, does not perform his work in a proper and skillful manner or is intemperate or disorderly shall, at the written request of the RPR, be removed immediately by the Contractor or subcontractor employing such person, and shall not be employed again in any portion of the work without approval of the RPR.

Should the Contractor fail to remove such person or persons, or fail to furnish suitable and sufficient personnel for the proper execution of the work, the RPR may suspend the work by written notice until compliance with such orders.

All equipment that is proposed to be used on the work shall be of sufficient size and in such mechanical condition as to meet requirements of the work and to produce a satisfactory quality of work. Equipment used on any portion of the work shall not cause injury to previously completed work, adjacent property, or existing airport facilities due to its use.

When the methods and equipment to be used by the Contractor in accomplishing the work are not prescribed in the contract, the Contractor is free to use any methods or equipment that will accomplish the work in conformity with the requirements of the contract, plans, and specifications.

When the contract specifies the use of certain methods and equipment, such methods and equipment shall be used unless otherwise authorized by the RPR. If the Contractor desires to use a method or type of equipment other than specified in the contract, the Contractor may request authority from the RPR to do so. The request shall be in writing and shall include a full description of the methods and equipment proposed and of the reasons for desiring to make the change. If approval is given, it will be on the condition that the Contractor will be fully responsible for producing work in conformity with contract requirements. If, after trial use of the substituted methods or equipment, the RPR determines that the work produced does not meet contract requirements, the Contractor shall discontinue the use of the substitute method or equipment and shall complete the remaining work with the specified methods and equipment. The Contractor shall remove any deficient work and replace it with work of specified quality, or take such other corrective action as the RPR may direct. No change will be made in basis of payment for the contract items involved nor in contract time as a result of authorizing a change in methods or equipment under this paragraph.

80-06 Temporary suspension of the work. The Owner shall have the authority to suspend the work wholly, or in part, for such period or periods the Owner may deem necessary, due to unsuitable weather, or other conditions considered unfavorable for the execution of the work, or for such time necessary due to the failure on the part of the Contractor to carry out orders given or perform any or all provisions of the contract.

In the event that the Contractor is ordered by the Owner, in writing, to suspend work for some unforeseen cause not otherwise provided for in the contract and over which the Contractor has no control, the Contractor may be reimbursed for actual money expended on the work during the period of shutdown. No allowance will be made for anticipated profits. The period of shutdown shall be computed from the effective date of the written order to suspend work to the effective date of the written order to resume the work. Claims for such compensation shall be filed with the RPR within the time period stated in the RPR's order to resume work. The Contractor shall submit with their own claim information substantiating the amount shown on the claim. The RPR will forward the Contractor's claim to the Owner for consideration in accordance with local laws or ordinances. No provision of this article shall be construed as entitling the Contractor to compensation for delays due to inclement weather or for any other delay provided for in the contract, plans, or specifications.

If it becomes necessary to suspend work for an indefinite period, the Contractor shall store all materials in such manner that they will not become an obstruction nor become damaged in any way. The Contractor shall take every precaution to prevent damage or deterioration of the work performed and provide for normal drainage of the work. The Contractor shall erect temporary structures where necessary to provide for traffic on, to, or from the airport.

80-07 Determination and extension of contract time. The number of calendar days shall be stated in the proposal and contract and shall be known as the Contract Time.

If the contract time requires extension for reasons beyond the Contractor's control, it shall be adjusted as follows:

80-07.1 Contract time based on calendar days. Contract Time based on calendar days shall consist of the number of calendar days stated in the contract counting from the effective date of the Notice to Proceed and including all Saturdays, Sundays, holidays, and non-work days. All calendar days elapsing between the effective dates of the Owner's orders to suspend and resume all work, due to causes not the fault of the Contractor, shall be excluded.

At the time of final payment, the contract time shall be increased in the same proportion as the cost of the actually completed quantities bears to the cost of the originally estimated quantities in the proposal. Such increase in the contract time shall not consider either cost of work or the extension of contract time that has been covered by a change order or supplemental agreement. Charges against the contract time will cease as of the date of final acceptance.

80-08 Failure to complete on time. For each calendar day or working day, as specified in the contract, that any work remains uncompleted after the contract time (including all extensions and adjustments as provided in paragraph 80-07, *Determination and Extension of Contract Time*) the sum specified in the contract and proposal as liquidated damages (LD) will be deducted from any money due or to become due the Contractor or their own surety. Such deducted sums shall not be deducted as a penalty but shall be considered as liquidation of a reasonable portion of damages including but not limited to additional engineering services that will be incurred by the Owner should the Contractor fail to complete the work in the time provided in their contract.

Schedule	Liquidated Damages Cost	Allowed Construction Time
Base Bid	\$1,000/day	120 Calendar Days

The maximum construction time allowed for Project will be the sum of the time allowed for individual schedules but not more than 120 days. Permitting the Contractor to continue and finish the work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, will in no way operate as a waiver on the part of the Owner of any of its rights under the contract.

80-09 Default and termination of contract. The Contractor shall be considered in default of their contract and such default will be considered as cause for the Owner to terminate the contract for any of the following reasons, if the Contractor:

- a. Fails to begin the work under the contract within the time specified in the Notice to Proceed, or
- b. Fails to perform the work or fails to provide sufficient workers, equipment and/or materials to assure completion of work in accordance with the terms of the contract, or
- c. Performs the work unsuitably or neglects or refuses to remove materials or to perform anew such work as may be rejected as unacceptable and unsuitable, or
- d. Discontinues the execution of the work, or
- e. Fails to resume work which has been discontinued within a reasonable time after notice to do so, or
- f. Becomes insolvent or is declared bankrupt, or commits any act of bankruptcy or insolvency, or
- g. Allows any final judgment to stand against the Contractor unsatisfied for a period of 10 days, or
- h. Makes an assignment for the benefit of creditors, or
- i. For any other cause whatsoever, fails to carry on the work in an acceptable manner.

Should the Owner consider the Contractor in default of the contract for any reason above, the Owner shall immediately give written notice to the Contractor and the Contractor's surety as to the reasons for considering the Contractor in default and the Owner's intentions to terminate the contract.

If the Contractor or surety, within a period of 10 days after such notice, does not proceed in accordance therewith, then the Owner will, upon written notification from the RPR of the facts of such delay, neglect, or default and the Contractor's failure to comply with such notice, have full power and authority without violating the contract, to take the execution of the work out of the hands of the Contractor. The Owner may appropriate or use any or all materials and equipment that have been mobilized for use in the work and are acceptable and may enter into an agreement for the completion of said contract according to the terms and provisions thereof, or use such other methods as in the opinion of the RPR will be required for the completion of said contract in an acceptable manner.

All costs and charges incurred by the Owner, together with the cost of completing the work under contract, will be deducted from any monies due or which may become due the Contractor. If such expense exceeds the sum which would have been payable under the contract, then the Contractor and the surety shall be liable and shall pay to the Owner the amount of such excess.

80-10 Termination for national emergencies. The Owner shall terminate the contract or portion thereof by written notice when the Contractor is prevented from proceeding with the construction contract as a direct result of an Executive Order of the President with respect to the execution of war or in the interest of national defense.

When the contract, or any portion thereof, is terminated before completion of all items of work in the contract, payment will be made for the actual number of units or items of work completed at the contract price or as mutually agreed for items of work partially completed or not started. No claims or loss of anticipated profits shall be considered.

Reimbursement for organization of the work, and other overhead expenses, (when not otherwise included in the contract) and moving equipment and materials to and from the job will be considered, the intent being that an equitable settlement will be made with the Contractor.

Acceptable materials, obtained or ordered by the Contractor for the work and that are not incorporated in the work shall, at the option of the Contractor, be purchased from the Contractor at actual cost as shown by receipted bills and actual cost records at such points of delivery as may be designated by the RPR.

Termination of the contract or a portion thereof shall neither relieve the Contractor of their responsibilities for the completed work nor shall it relieve their surety of its obligation for and concerning any just claim arising out of the work performed.

80-11 Work area, storage area and sequence of operations. The Contractor shall obtain approval from the RPR prior to beginning any work in all areas of the airport. No operating runway, taxiway, or air operations area (AOA) shall be crossed, entered, or obstructed while it is operational. The Contractor shall plan and coordinate work in accordance with the approved CSPP and SPCD.

END OF SECTION 80

Section 90 Measurement and Payment

90-01 Measurement of quantities. All work completed under the contract will be measured by the RPR, or their authorized representatives, using United States Customary Units of Measurement.

The method of measurement and computations to be used in determination of quantities of material furnished and of work performed under the contract will be those methods generally recognized as conforming to good engineering practice.

Unless otherwise specified, longitudinal measurements for area computations will be made horizontally, and no deductions will be made for individual fixtures (or leave-outs) having an area of 9 square feet (0.8 square meters) or less. Unless otherwise specified, transverse measurements for area computations will be the neat dimensions shown on the plans or ordered in writing by the RPR.

Unless otherwise specified, all contract items which are measured by the linear foot such as electrical ducts, conduits, pipe culverts, underdrains, and similar items shall be measured parallel to the base or foundation upon which such items are placed.

The term “lump sum” when used as an item of payment will mean complete payment for the work described in the contract. When a complete structure or structural unit (in effect, “lump sum” work) is specified as the unit of measurement, the unit will be construed to include all necessary fittings and accessories.

When requested by the Contractor and approved by the RPR in writing, material specified to be measured by the cubic yard (cubic meter) may be weighed, and such weights will be converted to cubic yards (cubic meters) for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by the RPR and shall be agreed to by the Contractor before such method of measurement of pay quantities is used.

Measurement and Payment Terms

Term	Description
Excavation and Embankment Volume	In computing volumes of excavation, the average end area method will be used unless otherwise specified.
Measurement and Proportion by Weight	The term “ton” will mean the short ton consisting of 2,000 pounds (907 kg) avoirdupois. All materials that are measured or proportioned by weights shall be weighed on accurate, independently certified scales by competent, qualified personnel at locations designated by the RPR. If material is shipped by rail, the car weight may be accepted provided that only the actual weight of material is paid for. However, car weights will not be acceptable for material to be passed through mixing plants. Trucks used to haul material being paid for by weight shall be weighed empty daily at such times as the RPR directs, and each truck shall bear a plainly legible identification mark.
Measurement by Volume	Materials to be measured by volume in the hauling vehicle shall be hauled in approved vehicles and measured therein at the point of delivery. Vehicles for this purpose may be of any size or type acceptable for the materials hauled, provided that the body is of such shape that the actual contents may be readily and accurately determined. All vehicles shall be loaded to at least their water level capacity, and all loads shall be leveled when the vehicles arrive at the point of delivery.

Term	Description
Asphalt Material	Asphalt materials will be measured by the gallon (liter) or ton (kg). When measured by volume, such volumes will be measured at 60°F (16°C) or will be corrected to the volume at 60°F (16°C) using ASTM D1250 for asphalts. Net certified scale weights or weights based on certified volumes in the case of rail shipments will be used as a basis of measurement, subject to correction when asphalt material has been lost from the car or the distributor, wasted, or otherwise not incorporated in the work. When asphalt materials are shipped by truck or transport, net certified weights by volume, subject to correction for loss or foaming, will be used for computing quantities.
Cement	Cement will be measured by the ton (kg) or hundredweight (km).
Structure	Structures will be measured according to neat lines shown on the plans or as altered to fit field conditions.
Timber	Timber will be measured by the thousand feet board measure (MFBM) actually incorporated in the structure. Measurement will be based on nominal widths and thicknesses and the extreme length of each piece.
Plates and Sheets	The thickness of plates and galvanized sheet used in the manufacture of corrugated metal pipe, metal plate pipe culverts and arches, and metal cribbing will be specified and measured in decimal fraction of inch.
Miscellaneous Items	When standard manufactured items are specified such as fence, wire, plates, rolled shapes, pipe conduit, etc., and these items are identified by gauge, unit weight, section dimensions, etc., such identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited specifications, manufacturing tolerances established by the industries involved will be accepted.
Scales	<p>Scales must be tested for accuracy and serviced before use. Scales for weighing materials which are required to be proportioned or measured and paid for by weight shall be furnished, erected, and maintained by the Contractor, or be certified permanently installed commercial scales. Platform scales shall be installed and maintained with the platform level and rigid bulkheads at each end.</p> <p>Scales shall be accurate within 0.5% of the correct weight throughout the range of use. The Contractor shall have the scales checked under the observation of the RPR before beginning work and at such other times as requested. The intervals shall be uniform in spacing throughout the graduated or marked length of the beam or dial and shall not exceed 0.1% of the nominal rated capacity of the scale, but not less than one pound (454 grams). The use of spring balances will not be permitted.</p> <p>In the event inspection reveals the scales have been “overweighing” (indicating more than correct weight) they will be immediately adjusted. All materials received subsequent to the last previous correct weighting-accuracy test will be reduced by the percentage of error in excess of 0.5%.</p> <p>In the event inspection reveals the scales have been under-weighing (indicating less than correct weight), they shall be immediately adjusted. No additional payment to the Contractor will be allowed for materials previously weighed and recorded.</p> <p>Beams, dials, platforms, and other scale equipment shall be so arranged that the operator and the RPR can safely and conveniently view them.</p> <p>Scale installations shall have available ten standard 50-pound (2.3 km) weights for testing the weighing equipment or suitable weights and devices for other approved equipment.</p> <p>All costs in connection with furnishing, installing, certifying, testing, and maintaining scales; for furnishing check weights and scale house; and for all other items specified in</p>

Term	Description
	this subsection, for the weighing of materials for proportioning or payment, shall be included in the unit contract prices for the various items of the project.
Rental Equipment	Rental of equipment will be measured by time in hours of actual working time and necessary traveling time of the equipment within the limits of the work. Special equipment ordered in connection with extra work will be measured as agreed in the change order or supplemental agreement authorizing such work as provided in paragraph 90-05 <i>Payment for Extra Work</i> .
Pay Quantities	When the estimated quantities for a specific portion of the work are designated as the pay quantities in the contract, they shall be the final quantities for which payment for such specific portion of the work will be made, unless the dimensions of said portions of the work shown on the plans are revised by the RPR. If revised dimensions result in an increase or decrease in the quantities of such work, the final quantities for payment will be revised in the amount represented by the authorized changes in the dimensions.

90-02 Scope of payment. The Contractor shall receive and accept compensation provided for in the contract as full payment for furnishing all materials, for performing all work under the contract in a complete and acceptable manner, and for all risk, loss, damage, or expense of whatever character arising out of the nature of the work or the execution thereof, subject to the provisions of Section 70, paragraph 70-18, *No Waiver of Legal Rights*.

When the “basis of payment” subsection of a technical specification requires that the contract price (price bid) include compensation for certain work or material essential to the item, this same work or material will not also be measured for payment under any other contract item which may appear elsewhere in the contract, plans, or specifications.

90-03 Compensation for altered quantities. When the accepted quantities of work vary from the quantities in the proposal, the Contractor shall accept as payment in full, so far as contract items are concerned, payment at the original contract price for the accepted quantities of work actually completed and accepted. No allowance, except as provided for in Section 40, paragraph 40-02, *Alteration of Work and Quantities*, will be made for any increased expense, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the Contractor which results directly from such alterations or indirectly from their own unbalanced allocation of overhead and profit among the contract items, or from any other cause.

90-04 Payment for omitted items. As specified in Section 40, paragraph 40-03, *Omitted Items*, the RPR shall have the right to omit from the work (order nonperformance) any contract item, except major contract items, in the best interest of the Owner.

Should the RPR omit or order nonperformance of a contract item or portion of such item from the work, the Contractor shall accept payment in full at the contract prices for any work actually completed and acceptable prior to the RPR’s order to omit or non-perform such contract item.

Acceptable materials ordered by the Contractor or delivered on the work prior to the date of the RPR’s order will be paid for at the actual cost to the Contractor and shall thereupon become the property of the Owner.

In addition to the reimbursement hereinbefore provided, the Contractor shall be reimbursed for all actual costs incurred for the purpose of performing the omitted contract item prior to the date of the RPR’s order. Such additional costs incurred by the Contractor must be directly related to the deleted contract item and shall be supported by certified statements by the Contractor as to the nature the amount of such costs.

90-05 Payment for extra work. Extra work, performed in accordance with Section 40, paragraph 40-04, *Extra Work*, will be paid for at the contract prices or agreed prices specified in the change order or supplemental agreement authorizing the extra work.

90-06 Partial payments. Partial payments will be made to the Contractor at least once each month as the work progresses. Said payments will be based upon estimates, prepared by the RPR, of the value of the work performed and materials complete and in place, in accordance with the contract, plans, and specifications. Such partial payments may also include the delivered actual cost of those materials stockpiled and stored in accordance with paragraph 90-07, *Payment for Materials on Hand*. No partial payment will be made when the amount due to the Contractor since the last estimate amounts to less than five hundred dollars.

a. From the total of the amount determined to be payable on a partial payment, 10 percent of such total amount will be deducted and retained by the Owner for protection of the Owner's interests. Unless otherwise instructed by the Owner, the amount retained by the Owner will be in effect until the final payment is made except as follows:

(1) Contractor may request release of retainage on work that has been partially accepted by the Owner in accordance with Section 50-14. Contractor must provide a certified invoice to the RPR that supports the value of retainage held by the Owner for partially accepted work.

(2) In lieu of retainage, the Contractor may exercise at its option the establishment of an escrow account per paragraph 90-08.

b. The Contractor is required to pay all subcontractors for satisfactory performance of their contracts no later than 30 days after the Contractor has received a partial payment. Contractor must provide the Owner evidence of prompt and full payment of retainage held by the prime Contractor to the subcontractor within 30 days after the subcontractor's work is satisfactorily completed. A subcontractor's work is satisfactorily completed when all the tasks called for in the subcontract have been accomplished and documented as required by the Owner. When the Owner has made an incremental acceptance of a portion of a prime contract, the work of a subcontractor covered by that acceptance is deemed to be satisfactorily completed.

c. When at least 95% of the work has been completed to the satisfaction of the RPR, the RPR shall, at the Owner's discretion and with the consent of the surety, prepare estimates of both the contract value and the cost of the remaining work to be done. The Owner may retain an amount not less than twice the contract value or estimated cost, whichever is greater, of the work remaining to be done. The remainder, less all previous payments and deductions, will then be certified for payment to the Contractor.

It is understood and agreed that the Contractor shall not be entitled to demand or receive partial payment based on quantities of work in excess of those provided in the proposal or covered by approved change orders or supplemental agreements, except when such excess quantities have been determined by the RPR to be a part of the final quantity for the item of work in question.

No partial payment shall bind the Owner to the acceptance of any materials or work in place as to quality or quantity. All partial payments are subject to correction at the time of final payment as provided in paragraph 90-09, *Acceptance and Final Payment*.

The Contractor shall deliver to the Owner a complete release of all claims for labor and material arising out of this contract before the final payment is made. If any subcontractor or supplier fails to furnish such a release in full, the Contractor may furnish a bond or other collateral satisfactory to the Owner to indemnify the Owner against any potential lien or other such claim. The bond or collateral shall include all costs, expenses, and attorney fees the Owner may be compelled to pay in discharging any such lien or claim.

90-07 Payment for materials on hand. Partial payments may be made to the extent of the delivered cost of materials to be incorporated in the work, provided that such materials meet the requirements of the

contract, plans, and specifications and are delivered to acceptable sites on the airport property or at other sites in the vicinity that are acceptable to the Owner. Such delivered costs of stored or stockpiled materials may be included in the next partial payment after the following conditions are met:

- a. The material has been stored or stockpiled in a manner acceptable to the RPR at or on an approved site.
- b. The Contractor has furnished the RPR with acceptable evidence of the quantity and quality of such stored or stockpiled materials.
- c. The Contractor has furnished the RPR with satisfactory evidence that the material and transportation costs have been paid.
- d. The Contractor has furnished the Owner legal title (free of liens or encumbrances of any kind) to the material stored or stockpiled.
- e. The Contractor has furnished the Owner evidence that the material stored or stockpiled is insured against loss by damage to or disappearance of such materials at any time prior to use in the work.

It is understood and agreed that the transfer of title and the Owner's payment for such stored or stockpiled materials shall in no way relieve the Contractor of their responsibility for furnishing and placing such materials in accordance with the requirements of the contract, plans, and specifications.

In no case will the amount of partial payments for materials on hand exceed the contract price for such materials or the contract price for the contract item in which the material is intended to be used.

No partial payment will be made for stored or stockpiled living or perishable plant materials.

The Contractor shall bear all costs associated with the partial payment of stored or stockpiled materials in accordance with the provisions of this paragraph.

90-08 Payment of withheld funds. At the Contractor's option, if an Owner withholds retainage in accordance with the methods described in paragraph 90-06 *Partial Payments*, the Contractor may request that the Owner deposit the retainage into an escrow account. The Owner's deposit of retainage into an escrow account is subject to the following conditions:

- a. The Contractor shall bear all expenses of establishing and maintaining an escrow account and escrow agreement acceptable to the Owner.
- b. The Contractor shall deposit to and maintain in such escrow only those securities or bank certificates of deposit as are acceptable to the Owner and having a value not less than the retainage that would otherwise be withheld from partial payment.
- c. The Contractor shall enter into an escrow agreement satisfactory to the Owner.
- d. The Contractor shall obtain the written consent of the surety to such agreement.

90-09 Acceptance and final payment. When the contract work has been accepted in accordance with the requirements of Section 50, paragraph 50-15, *Final Acceptance*, the RPR will prepare the final estimate of the items of work actually performed. The Contractor shall approve the RPR's final estimate or advise the RPR of the Contractor's objections to the final estimate which are based on disputes in measurements or computations of the final quantities to be paid under the contract as amended by change order or supplemental agreement. The Contractor and the RPR shall resolve all disputes (if any) in the measurement and computation of final quantities to be paid within 30 calendar days of the Contractor's receipt of the RPR's final estimate. If, after such 30-day period, a dispute still exists, the Contractor may approve the RPR's estimate under protest of the quantities in dispute, and such disputed quantities shall be considered by the Owner as a claim in accordance with Section 50, paragraph 50-16, *Claims for Adjustment and Disputes*.

After the Contractor has approved, or approved under protest, the RPR's final estimate, and after the RPR's receipt of the project closeout documentation required in paragraph 90-11, *Contractor Final Project Documentation*, final payment will be processed based on the entire sum, or the undisputed sum

in case of approval under protest, determined to be due the Contractor less all previous payments and all amounts to be deducted under the provisions of the contract. All prior partial estimates and payments shall be subject to correction in the final estimate and payment.

If the Contractor has filed a claim for additional compensation under the provisions of Section 50, paragraph 50-16, *Claims for Adjustments and Disputes*, or under the provisions of this paragraph, such claims will be considered by the Owner in accordance with local laws or ordinances. Upon final adjudication of such claims, any additional payment determined to be due the Contractor will be paid pursuant to a supplemental final estimate.

90-10 Construction warranty.

a. In addition to any other warranties in this contract, the Contractor warrants that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, workmanship, or design furnished, or performed by the Contractor or any subcontractor or supplier at any tier.

b. This warranty shall continue for a period of one year from the date of final acceptance of the work, except as noted. If the Owner takes possession of any part of the work before final acceptance, this warranty shall continue for a period of one year from the date the Owner takes possession. However, this will not relieve the Contractor from corrective items required by the final acceptance of the project work. Light Emitting Diode emitting diode (LED) light fixtures with the exception of obstruction lighting, must be warranted by the manufacturer for a minimum of four (4) years after date of installation inclusive of all electronics.

c. The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Owner real or personal property, when that damage is the result of the Contractor's failure to conform to contract requirements; or any defect of equipment, material, workmanship, or design furnished by the Contractor.

d. The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for one year from the date of repair or replacement.

e. The Owner will notify the Contractor, in writing, within seven (7) days after the discovery of any failure, defect, or damage.

f. If the Contractor fails to remedy any failure, defect, or damage within 14 days after receipt of notice, the Owner shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

g. With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall: (1) Obtain all warranties that would be given in normal commercial practice; (2) Require all warranties to be executed, in writing, for the benefit of the Owner, as directed by the Owner, and (3) Enforce all warranties for the benefit of the Owner.

h. This warranty shall not limit the Owner's rights with respect to latent defects, gross mistakes, or fraud.

90-11 Contractor Final Project Documentation. Approval of final payment to the Contractor is contingent upon completion and submittal of the items listed below. The final payment will not be approved until the RPR approves the Contractor's final submittal. The Contractor shall:

a. Provide two (2) copies of all manufacturers warranties specified for materials, equipment, and installations.

b. Provide weekly payroll records (not previously received) from the general Contractor and all subcontractors.

c. Complete final cleanup in accordance with Section 40, paragraph 40-08, *Final Cleanup*.

- d.** Complete all punch list items identified during the Final Inspection.
- e.** Provide complete release of all claims for labor and material arising out of the Contract.
- f.** Provide a certified statement signed by the subcontractors, indicating actual amounts paid to the Disadvantaged Business Enterprise (DBE) subcontractors and/or suppliers associated with the project.
- g.** When applicable per state requirements, return copies of sales tax completion forms.
- h.** Manufacturer's certifications for all items incorporated in the work.
- i.** All required record drawings, as-built drawings or as-constructed drawings.
- j.** Project Operation and Maintenance (O&M) Manual(s).
- k.** Security for Construction Warranty.
- l.** Equipment commissioning documentation submitted, if required.

END OF SECTION 90

DIVISION II

SPECIAL PROVISIONS

FEDERAL REQUIREMENTS CONSTRUCTION CONTRACTS \$100,000 AND OVER

ACCESS TO RECORDS AND REPORTS

The Contractor must maintain an acceptable cost accounting system. The Contractor agrees to provide the Owner, the Federal Aviation Administration and the Comptroller General of the United States or any of their duly authorized representatives access to any books, documents, papers and records of the Contractor which are directly pertinent to the specific contract for the purpose of making audit, examination, excerpts and transcriptions. The Contractor agrees to maintain all books, records and reports required under this contract for a period of not less than three years after final payment is made and all pending matters are closed.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY

1. 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.
2. 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:	0.6%
Goals for female participation in each trade:	0.6%

These goals are applicable to all of 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 nonfederally 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.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs (OFCCP) 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.

4. As used in this notice and in the contract resulting from this solicitation, the “covered area” is [Maine, Washington County, Eastport](#).

BREACH OF CONTRACT TERMS

Any violation or breach of terms of this contract on the part of the Contractor or its subcontractors may result in the suspension or termination of this contract or such other action that may be necessary to enforce the rights of the parties of this agreement.

Owner will provide Contractor written notice that describes the nature of the breach and corrective actions the Contractor must undertake in order to avoid termination of the contract. Owner reserves the right to withhold payments to Contractor until such time the Contractor corrects the breach or the Owner elects to terminate the contract. The Owner’s notice will identify a specific date by which the Contractor must correct the breach. Owner may proceed with termination of the contract if the Contractor fails to correct the breach by the deadline indicated in the Owner’s notice.

The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder are in addition to, and not a limitation of, any duties, obligations, rights and remedies otherwise imposed or available by law.

FAA BUY AMERICAN PREFERENCE

The Contractor certifies that its bid/offer is in compliance with 49 USC § 50101, BABA and other related Made in America Laws,¹ U.S. statutes, guidance, and FAA policies, which provide that Federal funds may not be obligated unless all iron, steel and manufactured goods used in AIP funded projects are produced in the United States, unless the Federal Aviation Administration has issued a waiver for the product; the product is listed as an Excepted Article, Material Or Supply in Federal Acquisition Regulation subpart 25.108; or is included in the FAA Nationwide Buy American Waivers Issued list.

¹ Per Executive Order 14005 “Made in America Laws” means all statutes, regulations, rules, and Executive Orders relating to federal financial assistance awards or federal procurement, including those that refer to “Buy America” or “Buy American,” that require, or provide a preference for, the purchase or acquisition of goods, products, or materials produced in the United States, including iron, steel, and manufactured products offered in the United States.

The bidder or offeror must complete and submit the certification of compliance with FAA's Buy American Preference, BABA and Made in America laws included herein with their bid or offer. The Airport Sponsor/Owner will reject as nonresponsive any bid or offer that does not include a completed certification of compliance with FAA's Buy American Preference and BABA.

The bidder or offeror certifies that all construction materials, defined to mean an article, material, or supply other than an item of primarily iron or steel; a manufactured product; cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives that are or consist primarily of: non-ferrous metals; plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables); glass (including optic glass); lumber; or drywall used in the project are manufactured in the U.S.

GENERAL CIVIL RIGHTS PROVISIONS

In all its activities within the scope of its airport program, the Contractor agrees to comply with pertinent statutes, Executive Orders, and such rules as identified in Title VI List of Pertinent Nondiscrimination Acts and Authorities to ensure that no person shall, on the grounds of race, color, national origin (including limited English proficiency), creed, sex (including sexual orientation and gender identity), age, or disability be excluded from participating in any activity conducted with or benefiting from Federal assistance.

This provision is in addition to that required by Title VI of the Civil Rights Act of 1964.

The above provision binds the Contractor and subcontractors from the bid solicitation period through the completion of the contract.

The **City of Eastport**, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 USC §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders or offerors that it will affirmatively ensure that for any contract entered into pursuant to this advertisement, [select businesses, or disadvantaged business enterprises or airport concession disadvantaged business enterprises] will be afforded full and fair opportunity to submit bids in response to this invitation and no businesses will be discriminated against on the grounds of race, color, national origin (including limited English proficiency), creed, sex (including sexual orientation and gender identity), age, or disability in consideration for an award.

Title VI List of Pertinent Nondiscrimination Acts and Authorities

During the performance of this contract, the Contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "Contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 USC § 2000d *et seq.*, 78 stat. 252) (prohibits discrimination on the basis of race, color, national origin);
- 49 CFR part 21 (Non-discrimination in Federally-Assisted programs of the Department of Transportation—Effectuation of Title VI of the Civil Rights Act of 1964);
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 USC § 4601) (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);

- Section 504 of the Rehabilitation Act of 1973 (29 USC § 794 *et seq.*), as amended (prohibits discrimination on the basis of disability); and 49 CFR part 27 (Nondiscrimination on the Basis of Disability in Programs or Activities Receiving Federal Financial Assistance);
- The Age Discrimination Act of 1975, as amended (42 USC § 6101 *et seq.*) (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982 (49 USC § 47123), as amended (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987 (PL 100-259) (broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, the Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms “programs or activities” to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act of 1990 (42 USC § 12101, *et seq*) (prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities) as implemented by U.S. Department of Transportation regulations at 49 CFR parts 37 and 38;
- The Federal Aviation Administration’s Nondiscrimination statute (49 USC § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (ensures nondiscrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations);
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs [70 Fed. Reg. 74087 (2005)];
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 USC § 1681, *et seq.*).

During the performance of this contract, the Contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “Contractor”), agrees as follows:

1. **Compliance with Regulations:** The Contractor (hereinafter includes consultants) will comply with the Title VI List of Pertinent Nondiscrimination Acts and Authorities, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
2. **Nondiscrimination:** The Contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, national origin (including limited English proficiency), creed, sex (including sexual orientation and gender identity), age, or disability in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The Contractor will not participate directly or indirectly in the discrimination prohibited by the Nondiscrimination Acts and Authorities, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR part 21.
3. **Solicitations for Subcontracts, including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding or negotiation made by the Contractor for work

to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the Contractor of the contractor's obligations under this contract and the Nondiscrimination Acts and Authorities on the grounds of race, color, or national origin.

4. **Information and Reports:** The Contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Sponsor or the Federal Aviation Administration to be pertinent to ascertain compliance with such Nondiscrimination Acts and Authorities and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the Contractor will so certify to the Sponsor or the Federal Aviation Administration, as appropriate, and will set forth what efforts it has made to obtain the information.
5. **Sanctions for Noncompliance:** In the event of a Contractor's noncompliance with the non-discrimination provisions of this contract, the Sponsor will impose such contract sanctions as it or the Federal Aviation Administration may determine to be appropriate, including, but not limited to:
 - a. Withholding payments to the Contractor under the contract until the Contractor complies; and/or
 - b. Cancelling, terminating, or suspending a contract, in whole or in part.
6. **Incorporation of Provisions:** The Contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations, and directives issued pursuant thereto. The Contractor will take action with respect to any subcontract or procurement as the Sponsor or the Federal Aviation Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the Contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the Contractor may request the Sponsor to enter into any litigation to protect the interests of the Sponsor. In addition, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

CLEAN AIR AND WATER POLLUTION CONTROL

Contractor agrees to comply with all applicable standards, orders, and regulations issued pursuant to the Clean Air Act (42 USC §§ 7401-7671q) and the Federal Water Pollution Control Act as amended (33 USC §§ 1251-1387). The Contractor agrees to report any violation to the Owner immediately upon discovery. The Owner assumes responsibility for notifying the Environmental Protection Agency (EPA) and the Federal Aviation Administration.

Contractor must include this requirement in all subcontracts that exceed \$150,000.

CONTRACT WORKHOURS AND SAFETY STANDARDS ACT REQUIREMENTS

1. 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, including watchmen and guards, in any workweek in which he or she 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.

2. Violation; Liability for Unpaid Wages; Liquidated Damages.

In the event of any violation of the clause set forth in paragraph (1) of this clause, the Contractor and any subcontractor responsible therefor 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 (1) of this clause, in the sum of \$29 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 (1) of this clause.

3. Withholding for Unpaid Wages and Liquidated Damages.

The Federal Aviation Administration (FAA) or the Owner 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 moneys 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 (2) of this clause.

4. Subcontractors.

The Contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs (1) through (4) and also a clause requiring the subcontractor 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 (1) through (4) of this clause.

COPELAND "ANTI-KICKBACK" ACT

Contractor must comply with the requirements of the Copeland "Anti-Kickback" Act (18 USC 874 and 40 USC 3145), as supplemented by Department of Labor regulation 29 CFR part 3. Contractor and subcontractors are prohibited from inducing, by any means, any person employed on the project to give up any part of the compensation to which the employee is entitled. The Contractor and each Subcontractor must submit to the Owner, a weekly statement on the wages paid to each employee

performing on covered work during the prior week. Owner must report any violations of the Act to the Federal Aviation Administration.

DAVIS-BACON REQUIREMENTS

1. Minimum Wages.

(i) All laborers and mechanics employed or working upon the site of the work 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 the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalent thereof) due at 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 which 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 paragraph (1)(iv) of this section; 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 CFR § 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 conformed under (1)(ii) of this section) 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 easily be seen by the workers.

(ii)(A) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination;
- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer 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 the contracting officer to the Administrator of the Wage and Hour Division, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(C) In the event the Contractor, the laborers, or mechanics to be employed in the classification, or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(ii) (B) or (C) of this paragraph, 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.

(iii) 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.

(iv) 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.

2. Withholding. The Federal Aviation Administration or the Sponsor 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, all or part of the wages required by the contract, the Federal Aviation Administration 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.

3. Payrolls and Basic Records.

(i) 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. 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 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 CFR 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 that show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual costs 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.

(ii)(A) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Federal Aviation Administration if the agency is a party to the contract, but if the agency is not such a party, the Contractor will submit the payrolls to the applicant, Sponsor, or Owner, as the case may be, for transmission to the Federal Aviation Administration. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR § 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (*e.g.*, the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker and shall provide them upon request to the Federal Aviation Administration if the agency is a party to the contract, but if the agency is not such a party, the Contractor will submit them to the applicant, Sponsor, or Owner, as the case may be, for transmission to the Federal Aviation Administration, the Contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the sponsoring government agency (or the applicant, Sponsor, or Owner).

(B) 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:

(1) That the payroll for the payroll period contains the information required to be provided under 29 CFR § 5.5(a)(3)(ii), the appropriate information is being maintained under 29 CFR § 5.5 (a)(3)(i), and that such information is correct and complete;

(2) That each laborer and 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 Regulations, 29 CFR Part 3;

(3) 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.

(C) 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 (3)(ii)(B) of this section.

(D) 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 231 of Title 31 of the United States Code.

(iii) The Contractor or subcontractor shall make the records required under paragraph (3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the Sponsor, the Federal Aviation Administration, 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, the Federal agency 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. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR § 5.12.

4. Apprentices and Trainees.

(i) 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, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, 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 Office of Apprenticeship Training, Employer and Labor Services 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 Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, 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.

(ii) Trainees. Except as provided in 29 CFR § 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 which 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 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 that provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate that 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.

(iii) 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, as amended, and 29 CFR Part 30.

5. Compliance with Copeland Act Requirements.

The Contractor shall comply with the requirements of 29 CFR Part 3, which are incorporated by reference in this contract.

6. Subcontracts.

The Contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR §§ 5.5(a)(1) through (10) and such other clauses as the Federal Aviation Administration may by appropriate instructions 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 CFR § 5.5.

7. Contract Termination: Debarment.

A breach of the contract clauses in paragraph 1 through 10 of this section may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR § 5.12.

8. Compliance with Davis-Bacon and Related Act Requirements.

All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. 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 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of Eligibility.

(i) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who 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 CFR § 5.12(a)(1).

(ii) 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 CFR § 5.12(a)(1).

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

CERTIFICATION OF OFFEROR/BIDDER REGARDING DEBARMENT

By submitting a bid/proposal under this solicitation, the bidder or offeror certifies that neither it nor its principals are presently debarred or suspended by any Federal department or agency from participation in this transaction.

CERTIFICATION OF LOWER TIER CONTRACTORS REGARDING DEBARMENT

The successful bidder, by administering each lower tier subcontract that exceeds \$25,000 as a "covered transaction", must confirm each lower tier participant of a "covered transaction" under the project is not presently debarred or otherwise disqualified from participation in this federally-assisted project. The successful bidder will accomplish this by:

1. Checking the System for Award Management at website: <http://www.sam.gov>.
2. Collecting a certification statement similar to the Certification of Offeror /Bidder Regarding Debarment, above.
3. Inserting a clause or condition in the covered transaction with the lower tier contract.

If the Federal Aviation Administration later determines that a lower tier participant failed to disclose to a higher tier participant that it was excluded or disqualified at the time it entered the covered transaction, the FAA may pursue any available remedies, including suspension and debarment of the non-compliant participant.

TEXTING WHEN DRIVING

In accordance with Executive Order 13513, “Federal Leadership on Reducing Text Messaging While Driving”, (10/1/2009) and DOT Order 3902.10, “Text Messaging While Driving”, (12/30/2009), the Federal Aviation Administration encourages recipients of Federal grant funds to adopt and enforce safety policies that decrease crashes by distracted drivers, including policies to ban text messaging while driving when performing work related to a grant or subgrant.

In support of this initiative, the Owner encourages the Contractor to promote policies and initiatives for its employees and other work personnel that decrease crashes by distracted drivers, including policies that ban text messaging while driving motor vehicles while performing work activities associated with the project. The Contractor must include the substance of this clause in all sub-tier contracts exceeding \$10,000 that involve driving a motor vehicle in performance of work activities associated with the project.

PROHIBITION ON CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT

Contractor and Subcontractor agree to comply with mandatory standards and policies relating to use and procurement of certain telecommunications and video surveillance services or equipment in compliance with the National Defense Authorization Act [Public Law 115-232 § 889(f)(1)].

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 by the agency contracting officer, advising the labor union or workers' representative of the Contractor's commitments under this section 202 of Executive Order 11246 of September 24, 1965, 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 the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency 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 such 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 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 provisions of paragraphs (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 may be directed by the Secretary of Labor 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, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

**STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY
CONSTRUCTION CONTRACT SPECIFICATIONS**

1. As used in these specifications:

- a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;
- b. "Director" means Director, Office of Federal Contract Compliance Programs (OFCCP), U.S. Department of Labor, or any person to whom the Director delegates authority;
- c. "Employer identification number" means the Federal social security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941;
- d. "Minority" includes:
 - (1) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 - (2) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race);
 - (3) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - (4) American Indian or Alaskan native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the Contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the Contractor is participating (pursuant to 41 CFR part 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each contractor or subcontractor participating in an approved plan is individually required to comply with its obligations under the EEO clause and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other contractors or subcontractors toward a goal in an approved Plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through 7p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing construction work in a geographical areas where they do not have a Federal or federally assisted construction

contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

c. Maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source, or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.

d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs

funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions including specific review of these items with onsite supervisory personnel such as superintendents, general foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other contractors and subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer, and vacation employment to minority and female youth both on the site and in other areas of a contractor's work force.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel, for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

- n. Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
- o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
- p. Conduct a review, at least annually, of all supervisor's adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations, which assist in fulfilling one or more of their affirmative action obligations (7a through 7p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the Contractor is a member and participant may be asserted as fulfilling any one or more of its obligations under 7a through 7p of these specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, sexual orientation, gender identity, or national origin.

11. The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination, and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the

implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR part 60-4.8.

14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government, and to keep records. Records shall at least include for each employee, the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g. those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

FEDERAL FAIR LABOR STANDARDS ACT (FEDERAL MINIMUM WAGE)

All contracts and subcontracts that result from this solicitation incorporate by reference the provisions of 29 CFR part 201, et seq, the Federal Fair Labor Standards Act (FLSA), with the same force and effect as if given in full text. The FLSA sets minimum wage, overtime pay, recordkeeping, and child labor standards for full and part-time workers.

The Contractor has full responsibility to monitor compliance to the referenced statute or regulation. The Contractor must address any claims or disputes that arise from this requirement directly with the U.S. Department of Labor – Wage and Hour Division.

CERTIFICATION REGARDING LOBBYING

The Bidder or Offeror certifies by signing and submitting this bid or proposal, 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 Bidder or Offeror, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of 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 sub-awards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients 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.

PROHIBITION OF SEGREGATED FACILITIES

(a) The Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Contractor agrees that a breach of this clause is a violation of the Equal Employment Opportunity clause in this contract.

(b) "Segregated facilities," as used in this clause, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.

(c) The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Employment Opportunity clause of this contract.

OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970

All contracts and subcontracts that result from this solicitation incorporate by reference the requirements of 29 CFR Part 1910 with the same force and effect as if given in full text. The employer must provide a work environment that is free from recognized hazards that may cause death or serious physical harm to the employee. The employer retains full responsibility to monitor its compliance and their subcontractor's compliance with the applicable requirements of the Occupational Safety and Health Act of 1970 (29 CFR Part 1910). The employer must address any claims or disputes that pertain to a referenced requirement directly with the U.S. Department of Labor – Occupational Safety and Health Administration.

PROCUREMENT OF RECOVERED MATERIALS

Contractor and subcontractor agree to comply with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, and the regulatory provisions of 40 CFR Part 247. In the performance of this contract and to the extent practicable, the Contractor and subcontractors are to use products containing the highest percentage of recovered materials for items designated by the Environmental Protection Agency (EPA) under 40 CFR Part 247 whenever:

- 1) The contract requires procurement of \$10,000 or more of a designated item during the fiscal year; or
- 2) The contractor has procured \$10,000 or more of a designated item using Federal funding during the previous fiscal year.

The list of EPA-designated items is available at www.epa.gov/smm/comprehensive-procurement-guidelines-construction-products.

Section 6002(c) establishes exceptions to the preference for recovery of EPA-designated products if the contractor can demonstrate the item is:

- a) Not reasonably available within a timeframe providing for compliance with the contract performance schedule;
- b) Fails to meet reasonable contract performance requirements; or
- c) Is only available at an unreasonable price.

RIGHTS TO INVENTIONS

Contracts or agreements that include the performance of experimental, developmental, or research work must provide for the rights of the Federal Government and the Owner in any resulting invention as established by 37 CFR part 401, Rights to Inventions Made by Non-profit Organizations and Small Business Firms under Government Grants, Contracts, and Cooperative Agreements. This contract incorporates by reference the patent and inventions rights as specified within 37 CFR § 401.14. Contractor must include this requirement in all sub-tier contracts involving experimental, developmental, or research work.

SEISMIC SAFETY

The Contractor agrees to ensure that all work performed under this contract, including work performed by subcontractors, conforms to a building code standard that provides a level of seismic safety substantially equivalent to standards established by the National Earthquake Hazards Reduction Program (NEHRP). Local building codes that model their code after the current version of the International Building Code (IBC) meet the NEHRP equivalency level for seismic safety.

CERTIFICATION OF OFFEROR/BIDDER REGARDING TAX DELINQUENCY AND FELONY CONVICTIONS

The applicant must complete the following two certification statements. The applicant must indicate its current status as it relates to tax delinquency and felony conviction by inserting a checkmark (✓) in the space following the applicable response. The applicant agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification in all lower tier subcontracts.

Certifications

- 3) The applicant represents that it is () is not (✓) a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.
- 4) The applicant represents that it is () is not (✓) a corporation that was convicted of a criminal violation under any Federal law within the preceding 24 months.

Note

If an applicant responds in the affirmative to either of the above representations, the applicant is ineligible to receive an award unless the Sponsor has received notification from the agency suspension and debarment official (SDO) that the SDO has considered suspension or debarment and determined that further action is not required to protect the Government's interests. The applicant therefore must provide information to the owner about its tax liability or conviction to the Owner, who will then notify the FAA Airports District Office, which will then notify the agency's SDO to facilitate completion of the required considerations before award decisions are made.

Term Definitions

Felony conviction: Felony conviction means a conviction within the preceding twenty four (24) months of a felony criminal violation under any Federal law and includes conviction of an offense defined in a section of the U.S. Code that specifically classifies the offense as a felony and conviction of an offense that is classified as a felony under 18 USC § 3559.

Tax Delinquency: A tax delinquency is any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

TERMINATION FOR CONVENIENCE (CONSTRUCTION & EQUIPMENT CONTRACTS)

The Owner may terminate this contract in whole or in part at any time by providing written notice to the Contractor. Such action may be without cause and without prejudice to any other right or remedy of Owner. Upon receipt of a written notice of termination, except as explicitly directed by the Owner, the Contractor shall immediately proceed with the following obligations regardless of any delay in determining or adjusting amounts due under this clause:

1. Contractor must immediately discontinue work as specified in the written notice.
2. Terminate all subcontracts to the extent they relate to the work terminated under the notice.

3. Discontinue orders for materials and services except as directed by the written notice.
4. Deliver to the Owner all fabricated and partially fabricated parts, completed and partially completed work, supplies, equipment and materials acquired prior to termination of the work, and as directed in the written notice.
5. Complete performance of the work not terminated by the notice.
6. Take action as directed by the Owner to protect and preserve property and work related to this contract that Owner will take possession.

Owner agrees to pay Contractor for:

1. Completed and acceptable work executed in accordance with the contract documents prior to the effective date of termination;
2. Documented expenses sustained prior to the effective date of termination in performing work and furnishing labor, materials, or equipment as required by the contract documents in connection with uncompleted work;
3. Reasonable and substantiated claims, costs, and damages incurred in settlement of terminated contracts with Subcontractors and Suppliers; and
4. Reasonable and substantiated expenses to the Contractor directly attributable to Owner's termination action.

Owner will not pay Contractor for loss of anticipated profits or revenue or other economic loss arising out of or resulting from the Owner's termination action.

The rights and remedies this clause provides are in addition to any other rights and remedies provided by law or under this contract.

TERMINATION FOR CAUSE (CONSTRUCTION)

Section 80-09 of FAA Advisory Circular 150/5370-10 establishes standard language for conditions, rights, and remedies associated with Owner termination of this contract for cause due to default of the Contractor.

TERMINATION FOR CAUSE (EQUIPMENT)

The Owner may, by written notice of default to the Contractor, terminate all or part of this Contract for cause if the Contractor:

1. Fails to begin the Work under the Contract within the time specified in the Notice-to-Proceed;
2. Fails to make adequate progress as to endanger performance of this Contract in accordance with its terms;
3. Fails to make delivery of the equipment within the time specified in the Contract, including any Owner approved extensions;
4. Fails to comply with material provisions of the Contract;

5. Submits certifications made under the Contract and as part of their proposal that include false or fraudulent statements; or
6. Becomes insolvent or declares bankruptcy.

If one or more of the stated events occur, the Owner will give notice in writing to the Contractor and Surety of its intent to terminate the contract for cause. At the Owner's discretion, the notice may allow the Contractor and Surety an opportunity to cure the breach or default.

If within [10] days of the receipt of notice, the Contractor or Surety fails to remedy the breach or default to the satisfaction of the Owner, the Owner has authority to acquire equipment by other procurement action. The Contractor will be liable to the Owner for any excess costs the Owner incurs for acquiring such similar equipment.

Payment for completed equipment delivered to and accepted by the Owner shall be at the Contract price. The Owner may withhold from amounts otherwise due the Contractor for such completed equipment, such sum as the Owner determines to be necessary to protect the Owner against loss because of Contractor default.

Owner will not terminate the Contractor's right to proceed with the work under this clause if the delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such acceptable causes include: acts of God, acts of the Owner, acts of another Contractor in the performance of a contract with the Owner, and severe weather events that substantially exceed normal conditions for the location.

If, after termination of the Contractor's right to proceed, the Owner determines that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the Owner issued the termination for the convenience the Owner.

The rights and remedies of the Owner in this clause are in addition to any other rights and remedies provided by law or under this contract.

TRADE RESTRICTION CERTIFICATION

By submission of an offer, the Offeror certifies that with respect to this solicitation and any resultant contract, the Offeror –

- 1) is not owned or controlled by one or more citizens of a foreign country included in the list of countries that discriminate against U.S. firms as published by the Office of the United States Trade Representative (USTR);
- 2) has not knowingly entered into any contract or subcontract for this project with a person that is a citizen or national of a foreign country included on the list of countries that discriminate against U.S. firms as published by the USTR; and
- 3) has not entered into any subcontract for any product to be used on the Federal project that is produced in a foreign country included on the list of countries that discriminate against U.S. firms published by the USTR.

This certification concerns a matter within the jurisdiction of an agency of the United States of America and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18 USC § 1001.

The Offeror/Contractor must provide immediate written notice to the Owner if the Offeror/Contractor learns that its certification or that of a subcontractor was erroneous when submitted or has become erroneous by reason of changed circumstances. The Contractor must require subcontractors provide immediate written notice to the Contractor if at any time it learns that its certification was erroneous by reason of changed circumstances.

Unless the restrictions of this clause are waived by the Secretary of Transportation in accordance with 49 CFR § 30.17, no contract shall be awarded to an Offeror or subcontractor:

- 1) who is owned or controlled by one or more citizens or nationals of a foreign country included on the list of countries that discriminate against U.S. firms published by the USTR; or
- 2) whose subcontractors are owned or controlled by one or more citizens or nationals of a foreign country on such USTR list; or
- 3) who incorporates in the public works project any product of a foreign country on such USTR list.

Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by this provision. The knowledge and information of a contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

The Offeror agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification without modification in all lower tier subcontracts. The Contractor may rely on the certification of a prospective subcontractor that it is not a firm from a foreign country included on the list of countries that discriminate against U.S. firms as published by USTR, unless the Offeror has knowledge that the certification is erroneous.

This certification is a material representation of fact upon which reliance was placed when making an award. If it is later determined that the Contractor or subcontractor knowingly rendered an erroneous certification, the Federal Aviation Administration (FAA) may direct through the Owner cancellation of the contract or subcontract for default at no cost to the Owner or the FAA.

VETERAN'S PREFERENCE

In the employment of labor (excluding executive, administrative, and supervisory positions), the Contractor and all sub-tier contractors must give preference to covered veterans as defined within Title 49 United States Code Section 47112. Covered veterans include Vietnam-era veterans, Persian Gulf veterans, Afghanistan-Iraq war veterans, disabled veterans, and small business concerns (as defined by 15 USC § 632) owned and controlled by disabled veterans. This preference only applies when there are covered veterans readily available and qualified to perform the work to which the employment relates.

CERTIFICATION REGARDING DOMESTIC PREFERENCES FOR PROCUREMENTS

The Bidder or Offeror certifies by signing and submitting this bid or proposal that, to the greatest extent practicable, the Bidder or Offeror has provided a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including, but not limited to, iron, aluminum, steel, cement, and other manufactured products) in compliance with 2 CFR § 200.322.

FEDERAL WAGE RATES

Superseded General Decision Number: ME20230013

State: Maine

Construction Type: Building

County: Washington County in Maine.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or 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 \$17.20 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 2024.
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 \$12.90 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 2024.

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>.

1 02/09/2024
 2 05/24/2024

* IRON0007-034 03/16/2024

	Rates	Fringes
IRONWORKER (ORNAMENTAL AND REINFORCING).....	\$ 31.37	24.79

 LABO0327-003 12/01/2023

	Rates	Fringes
LABORER: Common or General (Industrial Work Only).....	\$ 21.90	19.72

 PLUM0716-001 08/01/2023

	Rates	Fringes
PIPEFITTER.....	\$ 37.50	21.71

 * SUME2014-022 01/31/2017

	Rates	Fringes
BRICKLAYER.....	\$ 27.38	9.14
CARPENTER, Includes Form Work....	\$ 20.14	8.23
CEMENT MASON/CONCRETE FINISHER...\$ 16.13 **		3.82
ELECTRICIAN.....	\$ 22.78	7.35
IRONWORKER, STRUCTURAL.....	\$ 22.71	10.88
LABORER: Common or General.....\$ 14.14 **		4.20
LABORER: Mason Tender - Brick...\$ 18.33		2.01
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 20.42	3.12
OPERATOR: Crane.....	\$ 24.07	6.08
PAINTER (Brush and Roller).....	\$ 17.38	4.70
SHEET METAL WORKER, Includes HVAC Duct Installation.....	\$ 16.97 **	1.92
TRUCK DRIVER: Dump Truck.....	\$ 14.79 **	2.53

 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 (\$17.20) or 13658 (\$12.90). 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 classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which 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. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of 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. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

State Adopted Rate Identifiers

Classifications listed under the ""SA"" identifier indicate that the prevailing wage rate set by a state (or local) government was 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. 01/03/2024 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:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write 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 the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write 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 by 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

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"

CONTRACT

SPECIAL PROVISIONS

CONTRACT SPECIAL PROVISIONS

Construct Terminal Building Eastport Municipal Airport, Eastport, Maine ATP Project No. 3-23-0053-XX-2024

CONSTRUCTION SCHEDULING

1. GENERAL:

- A. Scheduling of work activities shall be the responsibility of the Contractor and a condition of the contract. Work schedules shall be updated as necessary by the Contractor. The Contractor shall submit the initial, tentative schedule of construction activities for approval at the preconstruction conference. This schedule will be formally reviewed between the Contractor, Engineer, and Owner at construction progress meetings, normally held on a weekly basis or as often as deemed necessary by the Engineer.
- B. Safety requirements are included as an integral part of project activity scheduling. The Contractor shall carefully schedule all necessary safety activities when preparing and revising construction schedules.

2. PERFORMANCE PERIOD:

- A. The performance period prescribed for substantial completion of the project shall be 120 calendar days
- B. Work shall commence within five (5) days of the issuance of the Notice to Proceed. The clock will begin on the date stated on the within the Notice to Proceed, regardless of when work begins on the project site.

3. LIQUIDATED DAMAGES:

Liquidated damages will be assessed in the amount of \$1,000.00 per day to the Contractor for each calendar day in excess of the performance period in which all contract work is not substantially complete.

4. WORK PHASING GUIDANCE

- A. Work phasing guidance is provided to allow the Owner to maintain continuity of airport operations to the extent possible during the construction period. The Contractor shall schedule specific work activities in a manner that is consistent with this guidance and minimizes the disruption to normal airport operations at the Eastport Municipal Airport throughout the construction period.
- B. Work phasing guidance is subject to revision at any time prior to and during construction as necessary to best accommodate changing operational needs of the Owner and airport users.
- C. Ensure that access for aircraft between the terminal area and Runway 14-32 are maintained each day that the respective runway is open for operations throughout the construction period.

- D. The Contractor will be expected to work diligently and continuously to complete all contract work that is conducted within the designated Runway 14-32 aircraft operations area (AOA). Work within the AOA and required runway closures shall be scheduled with the Owner or his designated representative at least 72 hours in advance to allow NOTAM's to be posted with the flight service. The Contractor shall understand that all approvals for work within the AOA are subject to last minute revocations to accommodate operational needs of the airport and/or changeable weather conditions.

CONSTRUCTION SAFETY REQUIREMENTS

1. GENERAL:

- A. This section is intended to emphasize some of the necessary safety measures and precautions that shall be followed by the Contractor during this project at the Airfield. Construction safety and the safety of airport operations shall be of the highest continuous importance throughout the duration of construction activities.
- B. The Contractor shall accomplish all work in accordance with FAA Advisory Circular AC 150/5370-2, Operational Safety on Airports During Construction Activity. Additionally, the Contractor shall become familiar with vehicle operation requirements at airports as discussed in the FAA Advisory Circular AC 150/5210-20 Ground Vehicle Operations on Airports to be provided at the pre-construction conference. Both of these publications are available on line at: <http://www.faa.gov/search/?omni=MainSearch&q=Advisory+Circulars+%28ACs%29>

2. AIRCRAFT OPERATIONAL AREA (AOA) RESTRICTIONS:

- A. No Contractor vehicles, equipment, materials or personnel shall enter active aircraft operational areas (AOA's) unless the designated runway has been NOTAMed closed.
- B. Before beginning any work on the project, the Contractor shall clearly mark out the limits of the project and place signs, barricades or take other actions as approved by the Engineer to ensure that no contractor vehicles or personnel are allowed to enter any AOA's.
- C. The Contractor shall ensure that all pavement utilized by aircraft is continually swept clean (and washed if necessary) and that no foreign object debris (FOD) remains that could be hazardous to aircraft. The Contractor shall control his operations and possibly suspend some work activities as necessary such that no construction generated dust is allowed to drift into aircraft operating areas.

The runway AOA's as prescribed for this contract as follows:

<p><u>Aircraft Operational Areas - Eastport Municipal Airport</u></p> <p>Construct Terminal Building</p> <p>ATP Project No. 3-23-0053-XX-2024</p> <p>Distance from runway centerlines: 250 feet</p> <p>Distance from runway thresholds: 600 feet</p> <p>Distance from taxiway centerlines: 65 feet</p>
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3. VEHICLE AND EQUIPMENT MARKINGS AND LIGHTS:

- A. Contractor vehicles which are expected to work within the airfield shall be fitted with roof mounted flashing strobe lights, with the lights operating whenever the vehicles are within the airfield. Contractor vehicles and equipment working on public airports shall be clearly marked with the contractor's (or subcontractor's) name.
- B. It is recommended that construction equipment items display airport safety flags (3 ft. by 3 ft., checkered aviation orange and white) mounted on the highest point of the equipment. Safety flags are available from Sargent-Sowell, Inc., tel. 1-800-527-2450.

4. PERSONAL SAFETY VESTS

Contractor personnel working within runway AOA limits and in the vicinity of active airfield areas are expected to wear individual reflective orange safety vests.

5. RUNWAY CLOSURE REQUIREMENTS AND PROCEDURES

- A. The Contractor shall provide a minimum 72-hour notice to the Engineer to schedule work activities which will require closure of the runway. **Approvals given for runway closures shall be considered tentative** by the Contractor and rescheduling of closure days or portions thereof may become necessary at the last minute as needed to meet current weather conditions and airport operational needs.
- B. Each time that the runway is closed, the Contractor shall place closed runway markers (CRM's) over the numerals of the runway. Each time the runway must be reopened to accommodate aircraft; the Contractor shall recover the CRM's and transport them to the airport maintenance building as directed by the Owner. CRM's will be properly anchored and maintained on the runway by the Contractor throughout the runway closure periods.
- C. It is anticipated that some limited scope work not involving contractor vehicles or equipment may be allowed within AOA's without closing the runway. All such work proposed by the Contractor shall be coordinated with the Engineer and Owner on at least 72 hours in advance for approval. This will allow the Owner to post "construction adjacent to runway" NOTAM's with the FAA Flight Service. The Contractor shall ensure that a Unicom radio equipped flag person is in close proximity to ongoing work at all times to monitor air traffic. Subject to Owner approval, the following types of work may not require a runway closure:

6. BARRICADES, WARNING SIGNS, AND HAZARD MARKINGS:

The Contractor shall furnish, erect, and maintain all barricades, warning signs, flashers, and markings for hazards necessary to protect the public and the work. When used during periods of darkness, such barricades, warning signs, and hazard markings shall remain suitably illuminated with batteries periodically replaced in flasher units as needed. All barricades, signs and other temporary hazard markings shall be relocated as necessary to accommodate ongoing and changing work activities and as requested by the Owner or Engineer.

INCIDENTAL CONTRACT REQUIREMENTS

1. GENERAL:

This section describes some significant items to be provided under the contract which shall be considered incidental to the contract. This list is not intended to represent a complete list of incidental items. No separate or additional compensation shall be made to the Contractor for any specified or implied incidental items. The Contractor shall absorb the costs required to complete all incidental items whether it be labor, materials, equipment usage, or otherwise. It is understood that all compensation to the Contractor for incidental items shall be made indirectly through the unit and lump sum prices for specified pay items under this contract.

The Contractor shall recognize that a complete listing of all requirements considered incidental to the contract is impossible. Many other additional requirements, specified, implied, or otherwise, are inherently placed upon the Contractor toward the completion of the intended product and to satisfactorily meet contractual obligations.

The Contractor is strongly encouraged to investigate and carefully consider each of the following items as well as other incidental work required before finalizing his/her proposal.

1. SAFETY RELATED EQUIPMENT:

Safety related requirements shall include material costs and labor for furnishing, placing, maintaining and re-positioning flashing warning barricades, temporary signage, and CRM's as requested by the Engineer or Owner as indicated on the construction drawings or in the contract documents.

2. CONTRACTOR'S HAUL ROUTES:

The exact location of the Contractor's haul roads and staging areas shall be determined in the field by the Engineer and Owner. All work and materials necessary for the construction, maintenance, security, temporary gates, signage, temporary utility relocations and associated items where indicated or as requested by the Owner or Engineer, and restoration of the haul roads and staging areas as well as removal of temporary measures and restoration of all disturbed areas at the completion of work shall be considered incidental to the contract for payment purposes.

3. TEMPORARY AIRCRAFT ROUTING AND VEHICLE AND PEDESTRIAN ACCESS

It will be necessary for the Airfield to maintain its level of aircraft operations and public access as close to normal as is possible during the period of construction. As such, the Contractor may be required to provide and remove temporary taxilanes, roads, and pedestrian walkways as requested by the Engineer between the runway and terminal area, aircraft hangars, and fuel facilities. Additional requirements may be necessary beyond those indicated on the construction drawings and beyond those known at the time of bidding.

END OF CONTRACT SPECIAL PROVISIONS

DIVISION III

TECHNICAL SPECIFICATIONS

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and -control services required by Engineer, Owner, Construction Manager, or authorities having jurisdiction are not limited by provisions of this Section.

1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Engineer or Construction Manager.
- C. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- D. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- E. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.
- F. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

- A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Engineer for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Engineer for a decision before proceeding.

1.5 SUBMITTALS

- A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
 1. Specification Section number and title.
 2. Description of test and inspection.
 3. Identification of applicable standards.
 4. Identification of test and inspection methods.
 5. Number of tests and inspections required.
 6. Time schedule or time span for tests and inspections.
 7. Entity responsible for performing tests and inspections.
 8. Requirements for obtaining samples.
 9. Unique characteristics of each quality-control service.
- C. Reports: Prepare and submit certified written reports that include the following:
 1. Date of issue.
 2. Project title and number.
 3. Name, address, and telephone number of testing agency.
 4. Dates and locations of samples and tests or inspections.
 5. Names of individuals making tests and inspections.
 6. Description of the Work and test and inspection method.
 7. Identification of product and Specification Section.

8. Complete test or inspection data.
 9. Test and inspection results and an interpretation of test results.
 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 12. Name and signature of laboratory inspector.
 13. Recommendations on retesting and reinspecting.
- D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.6 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.
- E. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
1. Requirement for specialists shall not supersede building codes and regulations governing the Work.
- F. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

- G. **Factory-Authorized Service Representative Qualifications:** An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

1.7 QUALITY CONTROL

- A. **Owner Responsibilities:** Where quality-control services are indicated in individual specification sections as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
 - 1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
 - 2. Payment for these services will be made by Owner.
 - 3. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.
- B. **Tests and inspections not explicitly assigned to Owner are Contractor's responsibility.** Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
 - 1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 - 2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
 - 3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 - 4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 - 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. **Manufacturer's Field Services:** Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."
- D. **Retesting/Reinspecting:** Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- E. **Testing Agency Responsibilities:** Cooperate with Engineer, Construction Manager, and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Engineer, Construction Manager, and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform any duties of Contractor.
- F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- H. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Submit schedule within 30 days of date established for commencement of the Work.
1. Distribution: Distribute schedule to Owner, Engineer, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

- A. Prepare a record of tests and inspections. Include the following:
 - 1. Date test or inspection was conducted.
 - 2. Description of the Work tested or inspected.
 - 3. Date test or inspection results were transmitted to Engineer.
 - 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Engineer's reference during normal working hours.

3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
 - 1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
 - 2. Comply with the Contract Document requirements for Division 01 Section "Cutting and Patching."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Provisions of the contract and Special Provisions of the Contract including General and Supplementary Conditions.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. Related Sections include the following:
 - 1. Division 01 Section "Quality Requirements" for submitting test and inspection reports and for mockup requirements.
 - 2. Division 01 Section "Closeout Procedures" for submitting warranties.
 - 3. Division 01 Section "Operation and Maintenance Data" for submitting operation and maintenance manuals.
 - 4. Division 01 Section "Demonstration and training" for submitting videotapes of demonstration of equipment and training of Owner's personnel.

1.3 SUBMITTALS

- A. Sample Submittal: Submit first project submittal within one week of Notice to Proceed. First project submittal shall be a sample of the Contractor's submittal review stamp incorporating the specified compliance statement. Submittal shall also demonstrate correct transmittal form, submittal format, numbering, etc. for project.

1.4 DEFINITIONS

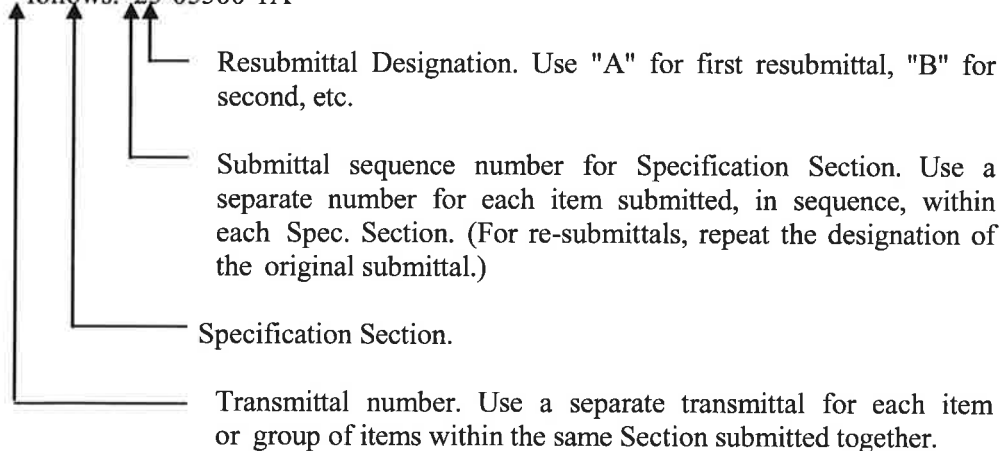
- A. Action Submittals: Written and graphic information that requires Engineer's responsive action including product data submittals and shop drawings.
- B. Informational Submittals: Written information that does not require Engineer's approval such as test reports, certifications, maintenance data, insurance certificates, etc. Submittals may be rejected for not complying with requirements.

1.5 SUBMITTAL PROCEDURES

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

- a. Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- B. Submittals Schedule: Comply with requirements in Division 01 Section "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.
- C. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Engineer's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
1. Initial Review: Allow 14 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Engineer will advise Contractor when a submittal being processed must be delayed for coordination. Submittal review periods will apply only with the submittal and approval of the submittal schedule.
 2. Resubmittal Review: Allow 14 days for review of each resubmittal.
 3. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing.
 4. Submittals with Color Selections: Deliver to Engineer a list of submittals required for the exterior color package and a list required for the interior color package. The Engineer needs to coordinate the colors of all exterior and interior items and will hold submittals with color selections until all materials in the exterior color package have been received. Allow 2 weeks after the last item has been submitted for return of exterior color selections. The Engineer will hold submittals with color selections until all materials in the interior color package have been received. Allow 3 weeks after the last item has been submitted for return of interior color selections. Careful coordination of the Submittal Schedule by the Contractor is required so as not to delay the Work.
- D. Identification: Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Engineer.
 3. Submittal tracking number: Mark each submittal with a tracking number as

follows: 25-05500-1A



4. Include the following information on label for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name and address of Engineer.
 - d. Name and address of Contractor.
 - e. Name and address of subcontractor.
 - f. Name and address of supplier.
 - g. Name of manufacturer.
 - h. Submittal tracking number.
 - i. Number and title of appropriate Specification Section.
 - j. Drawing number and detail references, as appropriate.
 - k. Location(s) where product is to be installed, as appropriate.
 - l. Other necessary identification.

- E. Deviations: Submit only specified products. Highlight, encircle, or otherwise identify minor deviations from the Contract Documents on submittals. Deviations not specifically approved and later found to be in conflict with Contract Documents may be rejected. Refer to Division 1 Section "Product Requirements" for substitution requirements.

- F. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Submittals transmitted together will be reviewed and returned together. Transmit each submittal using a transmittal form. Engineer will return submittals, without review, received from sources other than Contractor.
 1. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Engineer on previous submittals, and deviations from requirements of the Contract Documents, including minor variations and limitations. Include the same label information as the related submittal.
 2. Include Contractor's certification stating that information submitted complies with requirements of the Contract Documents.
 3. Transmittal Form: Provide locations on form for the following information:
 - a. Project name.
 - b. Date.
 - c. Destination (To:).
 - d. Source (From:).
 - e. Names of subcontractor, manufacturer, and supplier.
 - f. Submittal tracking number.
 - g. Submittal purpose and description.
 - h. Submittal and transmittal distribution record.
 - i. Remarks.
 - j. Signature of transmitter.

- G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
 1. Note date and content of previous submittal.
 2. Note date and content of revision in label or title block and clearly indicate extent of revision.

- H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- I. Use for Construction: Use only approved submittals with mark indicating action taken by Engineer in connection with construction.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
 - 1. Number of Copies: Submit the number of copies of each submittal the Contractor requires plus those required for reviewers, unless otherwise indicated. Engineer will retain two copies. Mark up and retain one returned copy as a Project Record Document.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 - 1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
 - 2. Mark each copy of each submittal to show which products and options are applicable.
 - 3. Include the following information, as applicable:
 - a. Manufacturer's written recommendations.
 - b. Manufacturer's product specifications.
 - c. Manufacturer's installation instructions.
 - d. Standard color charts.
 - e. Manufacturer's catalog cuts.
 - f. Wiring diagrams showing factory-installed wiring.
 - g. Printed performance curves.
 - h. Operational range diagrams.
 - i. Mill reports.
 - j. Standard product operating and maintenance manuals.
 - k. Compliance with recognized trade association standards.
 - l. Compliance with recognized testing agency standards.
 - m. Application of testing agency labels and seals.
 - n. Notation of coordination requirements.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
 - 1. Preparation: Include the following information, as applicable:
 - a. Dimensions.
 - b. Identification of products.
 - c. Fabrication and installation drawings.
 - d. Roughing-in and setting diagrams.
 - e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
 - f. Shopwork manufacturing instructions.
 - g. Templates and patterns.
 - h. Schedules.

- i. Design calculations.
 - j. Compliance with specified standards.
 - k. Notation of coordination requirements.
 - l. Notation of dimensions established by field measurement.
 - 2. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
 - 3. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
 - 4. Number of Copies: Submit shop drawings electronically or else provide two black-line hardcopies.
- D. Coordination Drawings: Comply with requirements in Division 01 Section "Project Management and Coordination."
- E. Samples: Prepare physical units of materials or products, including the following:
- 1. Comply with requirements in Division 1 Section "Quality Requirements" for mockups.
 - 2. Samples for Selection:
 - a. When indicated, submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - b. When indicated, submit full-size units or samples of size indicated, prepared from the same material to be used for the Work, cured and finished in manner specified, and physically identical with the product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 - 3. Preparation: Mount, display, or package Samples in manner specified to facilitate review of qualities indicated. Prepare Samples to match Engineer's sample where so indicated. Attach label on unexposed side that includes the following:
 - a. Generic description of Sample.
 - b. Product name or name of manufacturer.
 - c. Sample source.
 - 4. Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, provide the following:
 - a. Size limitations.
 - b. Compliance with recognized standards.
 - c. Availability.
 - d. Delivery time.
 - 5. Submit Samples for review of kind, color, pattern, and texture for a final check of these characteristics with other elements and for a comparison of these characteristics between final submittal and actual component as delivered and installed.
 - a. If variation in color, pattern, texture, or other characteristic is inherent in the product represented by a Sample, submit at least three sets of paired units that show approximate limits of the variations.
 - b. Refer to individual Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation, and similar construction characteristics.

6. Number of Samples for Selection: Submit three sets of Samples. Engineer will retain one Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a Project Record Sample.
 - a. Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
 7. Disposition: Maintain sets of approved Samples at Project site, available for quality- control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
- F. Product Schedule or List: Prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
1. Type of product. Include unique identifier for each product.
 2. Number and name of room or space.
 3. Location within room or space.
- G. Delegated-Design Submittal: Comply with requirements in Division 01 Section "Quality Requirements."
- H. Contractor's Construction Schedule: Comply with requirements in Division 01 Section "Construction Progress Documentation" for Engineer's action.
- I. Submittals Schedule: Comply with requirements in Division 01 Section "Construction Progress Documentation."
- J. Application for Payment: Comply with requirements in Division 01 Section "Payment Procedures."
- K. Schedule of Values: Comply with requirements in Division 01 Section "Payment Procedures."
- L. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
1. Name, address, and telephone number of entity performing subcontract or supplying products.
 2. Number and title of related Specification Section(s) covered by subcontract.
 3. Drawing number and detail references, as appropriate, covered by subcontract.

2.2 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
1. Number of Copies: Submit two copies of each submittal, unless otherwise indicated. Engineer will not return copies.

2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 3. Test and Inspection Reports: Comply with requirements in Division 01 Section "Quality Requirements."
- B. Contractor's Construction Schedule: Comply with requirements in Division 01 Section "Construction Progress Documentation."
 - C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of Engineers and owners, and other information specified.
 - D. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements. Include evidence of manufacturing experience where required.
 - E. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements.
 - F. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements.
 - G. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
 - H. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.
 - I. Material Safety Data Sheets: Submit information directly to Owner. If submitted to Engineer, Engineer will not review this information but will return it with no action taken.

2.3 DELEGATED DESIGN

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Engineer.

- B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit three copies of a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
 - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Engineer.
- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.
 - 1. Stamp or statement shall include the following: "The Contractor represents that he has determined and verified all materials, field measurements, and field construction criteria related thereto or will do so, and that he has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents."

3.2 ENGINEER'S ACTION

- A. General: Engineer will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Engineer will review each submittal, make marks to indicate corrections or modifications required, and return it. Engineer will respond to each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:

APPROVED
PROVIDE AS NOTED
REJECTED
REVISE AND RESUBMIT

- C. The action stamp above will be appropriately marked and executed to indicate whether the submittal returned is approved for unrestricted release, final-but-restricted release, returned for resubmittal, or not approved.

1. Final Unrestricted Release/Approved: When the Engineer marks a submittal or a part of a submittal "APPROVED", the Work covered by the submittal or part of a submittal may proceed provided it complies with requirements of the Contract Documents. Final payment depends on that compliance.
 - a. Marking: "APPROVED"
2. Final-But-Restricted Release/Conditionally Approved: When the Engineer marks a submittal or part of a submittal "PROVIDE AS NOTED," the Work covered by the submittal or part of a submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents. Final payment depends on that compliance.
 - a. Marking: "PROVIDE AS NOTED"
3. Returned for Resubmittal/Not Approved: When the Engineer marks a submittal or part of a submittal "REVISE AND RESUBMIT," do not proceed with Work covered by the submittal or part of a submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal according to the notations; resubmit without delay. Repeat if necessary to obtain different action mark.
 - a. Do not use, or allow others to use, submittals marked "REVISE AND RESUBMIT" at the Project Site or elsewhere where Work is in progress.
 - b. Marking: "REVISE AND RESUBMIT"
4. Not approved: When the Engineer marks a submittal or part of a submittal "REJECTED", the Work covered by the submittal or part of a submittal does not conform to the contract documents. Submittal of specified item is required prior to proceeding with Work covered by the submittal.

END OF SECTION 013300

ITEM C-102
TEMPORARY AIR & WATER POLLUTION, SOIL EROSION, AND SILTATION
CONTROL

GENERAL

102-1. This item shall consist of temporary control measures as shown on the plans or as ordered by the Resident Project Representative (RPR) during the life of a contract to control pollution of air and water, soil erosion, and siltation through the use of silt fences, berms, dikes, dams, sediment basins, fiber mats, gravel, mulches, grasses, slope drains, and other erosion control devices or methods.

Temporary erosion control shall be in accordance with the approved erosion control plan; the approved Construction Safety and Phasing Plan (CSPP) and AC 150/5370-2, *Operational Safety on Airports During Construction*. The temporary erosion control measures contained herein shall be coordinated with the permanent erosion control measures specified as part of this contract to the extent practical to assure economical, effective, and continuous erosion control throughout the construction period.

Temporary control may include work outside the construction limits such as borrow pit operations, equipment and material storage sites, waste areas, and temporary plant sites.

Temporary control measures shall be designed, installed and maintained to minimize the creation of wildlife attractants that have the potential to attract hazardous wildlife on or near public-use airports.

MATERIALS

102-2.1 Grass. Grass that will not compete with the grasses sown later for permanent cover per Item T-901 shall be a quick-growing species (such as ryegrass, Italian ryegrass, or cereal grasses) suitable to the area providing a temporary cover. Selected grass species shall not create a wildlife attractant.

102-2.2 Mulches. Mulches may be hay, straw, fiber mats, netting, bark, wood chips, or other suitable material reasonably clean and free of noxious weeds and deleterious materials per Item T-908. Mulches shall not create a wildlife attractant.

102-2.3 Fertilizer. Fertilizer shall be a standard commercial grade and shall conform to all federal and state regulations and to the standards of the Association of Official Agricultural Chemists.

102-2.4 Slope Drains. Slope drains may be constructed of pipe, fiber mats, rubble, concrete, asphalt, or other materials that will adequately control erosion.

102-2.5 Silt Fence. Silt fence shall consist of polymeric filaments which are formed into a stable network such that filaments retain their relative positions. Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life. Silt fence shall meet the requirements of ASTM D6461.

102-2.6 Other. All other materials shall meet commercial grade standards and shall be approved by the RPR before being incorporated into the project.

CONSTRUCTION REQUIREMENTS

102-3.1 General. In the event of conflict between these requirements and pollution control laws, rules, or regulations of other federal, state, or local agencies, the more restrictive laws, rules, or regulations shall apply. The RPR shall be responsible for assuring compliance to the extent that construction practices, construction operations, and construction work are involved.

102-3.2 Schedule. Prior to the start of construction, the Contractor shall submit schedules in accordance with the approved Construction Safety and Phasing Plan (CSPP) and the plans for accomplishment of temporary and permanent erosion control work for clearing and grubbing; grading; construction; paving; and structures at watercourses. The Contractor shall also submit a proposed method of erosion and dust control on haul roads and borrow pits and a plan for disposal of waste materials. Work shall not be started until the erosion control schedules and methods of operation for the applicable construction have been accepted by the RPR.

102-3.3 Construction Details. The Contractor will be required to incorporate all permanent erosion control features into the project at the earliest practicable time as outlined in the plans and approved CSPP. Except where future construction operations will damage slopes, the Contractor shall perform the permanent seeding and mulching and other specified slope protection work in stages, as soon as substantial areas of exposed slopes can be made available. Temporary erosion and pollution control measures will be used to correct conditions that develop during construction that were not foreseen during the design stage; that are needed prior to installation of permanent control features; or that are needed temporarily to control erosion that develops during normal construction practices, but are not associated with permanent control features on the project.

Where erosion may be a problem, schedule and perform clearing and grubbing operations so that grading operations and permanent erosion control features can follow immediately if project conditions permit. Temporary erosion control measures are required if permanent measures cannot immediately follow grading operations. The RPR shall limit the area of clearing and grubbing, excavation, borrow, and embankment operations in progress, commensurate with the Contractor's capability and progress in keeping the finish grading, mulching, seeding, and other such permanent control measures current with the accepted schedule. If seasonal limitations make such coordination unrealistic, temporary erosion control measures shall be taken immediately to the extent feasible and justified as directed by the RPR.

The Contractor shall provide immediate permanent or temporary pollution control measures to minimize contamination of adjacent streams or other watercourses, lakes, ponds, or other areas of water impoundment as directed by the RPR. If temporary erosion and pollution control measures are required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of the work as scheduled or directed by the RPR, the work shall be performed by the Contractor and the cost shall be incidental to this item.

The RPR may increase or decrease the area of erodible earth material that can be exposed at any time based on an analysis of project conditions.

The erosion control features installed by the Contractor shall be maintained by the Contractor during the construction period.

Provide temporary structures whenever construction equipment must cross watercourses at frequent intervals. Pollutants such as fuels, lubricants, bitumen, raw sewage, wash water from concrete mixing operations, and other harmful materials shall not be discharged into any waterways, impoundments or into natural or manmade channels.

102-3.4 Installation, Maintenance and Removal of Silt Fence. Silt fences shall extend a minimum of 16 inches (41 cm) and a maximum of 34 inches (86 cm) above the ground surface. Posts shall be set no more than 10 feet (3 m) on center. Filter fabric shall be cut from a continuous roll to the length required minimizing joints where possible. When joints are necessary, the fabric shall be spliced at a support post with a minimum 12-inch (300-mm) overlap and securely sealed. A trench shall be excavated approximately 4 inches (100 mm) deep by 4 inches (100 mm) wide on the upslope side of the silt fence. The trench shall be backfilled and the soil compacted over the silt fence fabric. The Contractor shall remove and dispose of silt that accumulates during construction and prior to establishment of permanent erosion control. The fence shall be maintained in good working condition until permanent erosion control is established. Silt fence shall be removed upon approval of the RPR.

METHOD OF MEASUREMENT

102-4.1 Temporary erosion and pollution control work required will be performed as scheduled or directed by the RPR. Completed and accepted work will not be measured.

BASIS OF PAYMENT

102-5.1 Accepted quantities of temporary water pollution, soil erosion, and siltation control work ordered by the RPR and measured as provided in paragraph 102-4.1 will be paid for under:

Item 2 Site Work – Per Lump Sum

Where other directed work falls within the specifications for a work item that has a contract price, the units of work shall be measured and paid for at the contract unit price bid for the various items.

Temporary control features not covered by contract items that are ordered by the RPR will be paid for in accordance with Section 90, paragraph 90-05 *Payment for Extra Work*.

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5200-33 *Hazardous Wildlife Attractants on or Near Airports*

AC 150/5370-2 *Operational Safety on Airports During Construction*

ASTM International (ASTM)

ASTM D6461 *Standard Specification for Silt Fence Materials*

United States Department of Agriculture (USDA)

FAA/USDA Wildlife Hazard Management at Airports, A Manual for Airport Personnel

END OF ITEM C-102

ITEM C-105 MOBILIZATION

GENERAL

105-1 Description. This item of work shall consist of, but is not limited to, work and operations necessary for the movement of personnel, equipment, material and supplies to and from the project site for work on the project except as provided in the contract as separate pay items.

105-2 Mobilization Limit. Mobilization shall be limited to 10 percent of the total project cost. Refer to Section 20, paragraph 20-03, Contents of Proposal Forms, of the General Provisions for further information regarding this limit.

105-3 Posted Notices. Prior to commencement of construction activities, the Contractor must post the following documents in a prominent and accessible place where they may be easily viewed by all employees of the prime Contractor and by all employees of subcontractors engaged by the prime Contractor: Equal Employment Opportunity (EEO) Poster “Equal Employment Opportunity is the Law” in accordance with the Office of Federal Contract Compliance Programs Executive Order 11246, as amended; Davis Bacon Wage Poster (WH 1321) - DOL “Notice to All Employees” Poster; and Applicable Davis-Bacon Wage Rate Determination. These notices must remain posted until final acceptance of the work by the Owner.

105-4 Engineer/RPR Field Office. The Contractor shall provide dedicated space for the use of the field RPR and inspectors, as a field office for the duration of the project. This space shall be located conveniently near the construction and shall be separate from any space used by the Contractor. The Contractor shall furnish water, sanitary facilities, heat, air conditioning, electricity, and wireless internet connections in accordance with local building codes.

METHOD OF MEASUREMENT

105-5 Basis of measurement and payment. Based upon the contract lump sum price for “Mobilization” partial payments will be allowed as follows:

- a. With first pay request, 25%.
- b. When 50% or more of the original contract is earned, an additional 40%.
- c. When 90% or more of the original contract is earned, an additional 25%.
- d. After Final Inspection, Staging area clean-up and delivery of all Project Closeout materials as required by Section 90, paragraph 90-11, *Contractor Final Project Documentation*, the final 10%.

BASIS OF PAYMENT

105-6 Payment will be made under:

Item 1 Mobilization – Per Lump Sum

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Office of Federal Contract Compliance Programs (OFCCP)

Executive Order 11246, as amended

EEOC-P/E-1 – Equal Employment Opportunity is the Law Poster

ITEM P-152 EXCAVATION AND EMBANKMENT

DESCRIPTION

152-1.1 GENERAL. This item covers excavation, disposal, placement, and compaction of all materials within the limits of the work required to construct safety areas, runways, taxiways, aprons, and intermediate areas as well as other areas for drainage, building construction, parking, or other purposes in accordance with these specifications and in conformity to the dimensions and typical sections shown on the plans.

152-1.2 CLASSIFICATION. All material excavated shall be classified as defined below:

a. Unclassified Excavation. Unclassified excavation shall consist of the excavation and disposal of all material, regardless of its nature, which is not otherwise classified and paid for under the following items.

b. Rock Excavation. Rock excavation shall include all solid rock in ledges, in bedded deposits, in unstratified masses, and conglomerate deposits which are so firmly cemented they cannot be removed without blasting or using rippers. All boulders containing a volume of more than 1/2 cubic yard (0.4 m³) will be classified as “rock excavation.”

c. Drainage Excavation. Drainage excavation shall consist of all excavation made for the primary purpose of drainage and includes drainage ditches, such as intercepting, inlet or outlet ditches; temporary levee construction; or any other type as shown on the plans.

d. Borrow Excavation. Borrow excavation shall consist of approved material required for the construction of embankments or for other portions of the work in excess of the quantity of usable material available from required excavations. Borrow material shall be obtained from areas designated by the Resident Project Representative (RPR) within the limits of the airport property but outside the normal limits of necessary grading, or from areas outside the airport boundaries.

e. Pavement Removal. Pavement removal shall consist of existing bituminous pavement to be removed using excavation or milling techniques. Existing pavement areas shall be cut back to the limits shown on the plans to provide a clean vertical face. Milled pavement shall remain the property of the Owner and shall be stockpiled at locations designated by the Engineer. Excavated pavement shall be disposed of off-site in accordance with local and state regulations.

152-1.3 UNSUITABLE EXCAVATION. Unsuitable material shall be disposed in designated waste areas as shown on the plans. Materials containing vegetable or organic matter, such as muck, peat, organic silt, or sod shall be considered unsuitable for use in embankment construction. Material suitable for topsoil may be used on the embankment slope when approved by the RPR.

CONSTRUCTION METHODS

152-2.1 General. Before beginning excavation, grading, and embankment operations in any area, the area shall be cleared or cleared and grubbed in accordance with Item P-151. The suitability of material to be placed in embankments shall be subject to approval by the RPR. All unsuitable material shall be disposed of in waste areas as shown on the plans. All waste areas shall be graded to allow positive drainage of the area and adjacent areas. The surface elevation of waste areas shall be specified on the plans or approved by the RPR.

When the Contractor's excavating operations encounter artifacts of historical or archaeological significance, the operations shall be temporarily discontinued and the RPR notified per Section 70, paragraph 70-20. At the direction of the RPR, the Contractor shall excavate the site in such a manner as to preserve the artifacts encountered and allow for their removal. Such excavation will be paid for as extra work.

Areas outside the limits of the pavement areas where the top layer of soil has become compacted by hauling or other Contractor activities shall be scarified and disked to a depth of 4 inches (100 mm), to loosen and pulverize the soil. Stones or rock fragments larger than 4 inches (100 mm) in their greatest dimension will not be permitted in the top 6 inches (150 mm) of the subgrade.

If it is necessary to interrupt existing surface drainage, sewers or under-drainage, conduits, utilities, or similar underground structures, the Contractor shall be responsible for and shall take all necessary precautions to preserve them or provide temporary services. When such facilities are encountered, the Contractor shall notify the RPR, who shall arrange for their removal if necessary. The Contractor, at their own expense, shall satisfactorily repair or pay the cost of all damage to such facilities or structures that may result from any of the Contractor's operations during the period of the contract.

a. Blasting. Blasting will be permitted as directed by the RPR and in accordance with the following:

Blasting will be permitted only when proper precautions are taken for the safety of all persons, work, and property. All damage done to the work or property shall be repaired by the Contractor. The cost of repair is incidental to this item. All operations of the Contractor in connection with the transportation, storage, and use of explosives shall conform to all federal, state and local regulations and explosive manufacturers' instructions, with applicable approved permits reviewed by the RPR. Any approval will not relieve the Contractor of their responsibility in blasting operations.

Where blasting is approved, the Contractor shall employ a vibration consultant, approved by the RPR, to advise on explosive charge weights per delay and to analyze records from seismograph recordings. The seismograph shall be capable of producing a permanent record of the three components of the motion in terms of particle velocity, and in addition shall be capable of internal dynamic calibration.

In each distinct blasting area, where pertinent factors affecting blast vibrations and their effects in the area remain the same, the Contractor shall submit a blasting plan of the initial blasts to the RPR for approval. This plan must consist of hole size, depth, spacing, burden, type of explosives, type of delay sequence, maximum amount of explosive on any one delay period, depth of rock, and depth of overburden if any. The maximum explosive charge weights per delay included in the plan shall not be increased without the approval of the RPR.

The Contractor shall keep a record of each blast: its date, time and location; the amount of explosives used, maximum explosive charge weight per delay period, and, where necessary, seismograph records identified by instrument number and location.

Blasting and explosive storage shall be in accordance with Section 70, paragraph 70-09 and all federal, state, and local safety regulations.

These records shall be made available to the RPR on a monthly basis or in tabulated form at other times as required.

152-2.2 EXCAVATION. No excavation shall be started until the work has been staked out by the Contractor and the RPR has obtained from the Contractor, the survey notes of the elevations and measurements of the ground surface. The Contractor and RPR shall agree that the original ground lines shown on the original topographic mapping are accurate, or agree to any adjustments made to the original ground lines.

All areas to be excavated shall be stripped of vegetation and topsoil. Topsoil shall be stockpiled for future use in areas designated on the plans or by the RPR. All suitable excavated material shall be used in the formation of embankment, subgrade, or other purposes as shown on the plans. All unsuitable material shall be disposed of as shown on the plans.

The grade shall be maintained so that the surface is well drained at all times.

When the volume of the excavation exceeds that required to construct the embankments to the grades as indicated on the plans, the excess shall be used to grade the areas of ultimate development or disposed as directed by the RPR. When the volume of excavation is not sufficient for constructing the embankments to the grades indicated, the deficiency shall be obtained from borrow areas.

a. Selective Grading. When selective grading is indicated on the plans, the more suitable material designated by the RPR shall be used in constructing the embankment or in capping the pavement subgrade. If, at the time of excavation, it is not possible to place this material in its final location, it shall be stockpiled in approved areas until it can be placed. The more suitable material shall then be placed and compacted as specified. Selective grading shall be considered incidental to the work involved. The cost of stockpiling and placing the material shall be included in the various pay items of work involved.

b. Undercutting. Rock, shale, hardpan, loose rock, boulders, or other material unsatisfactory for safety areas, subgrades, roads, shoulders, or any areas intended for turf shall be excavated to a minimum depth of 12 inches (300 mm) below the subgrade or to the depth specified by the RPR. Muck, peat, matted roots, or other yielding material, unsatisfactory for subgrade foundation, shall be removed to the depth specified. Unsuitable materials shall be disposed off the airport. This excavated material shall be paid for at the contract unit price per cubic yard for unclassified excavation. The excavated area shall be backfilled with suitable material obtained from the grading operations or borrow areas and compacted to specified densities. The necessary backfill will constitute a part of the embankment. Where rock cuts are made, backfill with select material. Any pockets created in the rock surface shall be drained in accordance with the details shown on the plans. Undercutting will be paid as unclassified excavation.

c. Overbreak. Over-break, including slides, is that portion of any material displaced or loosened beyond the finished work as planned or authorized by the RPR. All over-break shall be graded or removed by the Contractor and disposed of as directed by the RPR. The RPR shall determine if the displacement of such material was unavoidable and their own decision shall be final. Payment will not be made for the removal and disposal of over-break that the RPR determines as avoidable. Unavoidable over-break will be classified as "Unclassified Excavation."

d. Removal of Utilities. The removal of existing structures and utilities required to permit the orderly progress of work will be accomplished by someone other than the Contractor. All existing foundations shall be excavated at least 2 feet (60 cm) below the top of subgrade or as indicated on the plans, and the material disposed of as directed by the RPR. All foundations thus excavated

shall be backfilled with suitable material and compacted as specified for embankment or as shown on the plans.

152-2.3 BORROW EXCAVATION. Borrow areas within the airport property are indicated on the plans. Borrow excavation shall be made only at these designated locations and within the horizontal and vertical limits as staked or as directed by the RPR. All unsuitable material shall be disposed of by the Contractor as shown on the plans. All borrow pits shall be opened to expose the various strata of acceptable material to allow obtaining a uniform product. Borrow areas shall be drained and left in a neat, presentable condition with all slopes dressed uniformly. Borrow areas shall not create a hazardous wildlife attractant.

When there are no borrow sources within the boundaries of the airport property. The Contractor shall locate and obtain borrow sources, subject to the approval of the RPR. The Contractor shall notify the RPR at least 15 days prior to beginning the excavation so necessary measurements and tests can be made by the RPR. All borrow pits shall be opened to expose the various strata of acceptable material to allow obtaining a uniform product. Borrow areas shall be drained and left in a neat, presentable condition with all slopes dressed uniformly.

152-2.4 DRAINAGE EXCAVATION. Drainage excavation shall consist of excavating drainage ditches including intercepting, inlet, or outlet ditches; or other types as shown on the plans. The work shall be performed in sequence with the other construction. Ditches shall be constructed prior to starting adjacent excavation operations. All satisfactory material shall be placed in embankment fills; unsuitable material shall be placed in designated waste areas or as directed by the RPR. All necessary work shall be performed true to final line, elevation, and cross-section. The Contractor shall maintain ditches constructed on the project to the required cross-section and shall keep them free of debris or obstructions until the project is accepted.

152-2.5 PREPARATION OF CUT AREAS OR AREAS WHERE EXISTING PAVEMENT HAS BEEN REMOVED. In those areas on which a subbase or base course is to be placed, the top 12 inches (300 mm) of subgrade shall be compacted to not less than 100 % of maximum density for non-cohesive soils, and 95% of maximum density for cohesive soils as determined by ASTM D698. As used in this specification, "non-cohesive" shall mean those soils having a plasticity index (PI) of less than 3 as determined by ASTM D4318

152-2.6 PREPARATION OF EMBANKMENT AREA. All sod and vegetative matter shall be removed from the surface upon which the embankment is to be placed. The cleared surface shall be broken up by plowing or scarifying to a minimum depth of 6 inches (150 mm) and shall then be compacted per paragraph 152-2.10.

Sloped surfaces steeper than one (1) vertical to four (4) horizontal shall be plowed, stepped, benched, or broken up so that the fill material will bond with the existing material. When the subgrade is part fill and part excavation or natural ground, the excavated or natural ground portion shall be scarified to a depth of 12 inches (300 mm) and compacted as specified for the adjacent fill.

No direct payment shall be made for the work performed under this section. The necessary clearing and grubbing and the quantity of excavation removed will be paid for under the respective items of work.

152-2.7 CONTROL STRIP. The first half-day of construction of subgrade and/or embankment shall be considered as a control strip for the Contractor to demonstrate, in the presence of the RPR, that the materials, equipment, and construction processes meet the requirements of this

specification. The sequence and manner of rolling necessary to obtain specified density requirements shall be determined. The maximum compacted thickness may be increased to a maximum of 12 inches (300 mm) upon the Contractor's demonstration that approved equipment and operations will uniformly compact the lift to the specified density. The RPR must witness this demonstration and approve the lift thickness prior to full production.

Control strips that do not meet specification requirements shall be reworked, re-compacted, or removed and replaced at the Contractor's expense. Full operations shall not begin until the control strip has been accepted by the RPR. The Contractor shall use the same equipment, materials, and construction methods for the remainder of construction, unless adjustments made by the Contractor are approved in advance by the RPR.

152-2.8 FORMATION OF EMBANKMENTS. The material shall be constructed in lifts as established in the control strip, but not less than 6 inches (150 mm) nor more than 12 inches (300 mm) of compacted thickness.

When more than one lift is required to establish the layer thickness shown on the plans, the construction procedure described here shall apply to each lift. No lift shall be covered by subsequent lifts until tests verify that compaction requirements have been met. The Contractor shall rework, re-compact and retest any material placed which does not meet the specifications. The lifts shall be placed, to produce a soil structure as shown on the typical cross-section or as directed by the RPR. Materials such as brush, hedge, roots, stumps, grass and other organic matter, shall not be incorporated or buried in the embankment.

Earthwork operations shall be suspended at any time when satisfactory results cannot be obtained due to rain, freezing, or other unsatisfactory weather conditions in the field. Frozen material shall not be placed in the embankment nor shall embankment be placed upon frozen material. Material shall not be placed on surfaces that are muddy, frozen, or contain frost. The Contractor shall drag, blade, or slope the embankment to provide surface drainage at all times.

The material in each lift shall be within $\pm 2\%$ of optimum moisture content before rolling to obtain the prescribed compaction. The material shall be moistened or aerated as necessary to achieve a uniform moisture content throughout the lift. Natural drying may be accelerated by blending in dry material or manipulation alone to increase the rate of evaporation.

The Contractor shall make the necessary corrections and adjustments in methods, materials or moisture content to achieve the specified embankment density.

The contractor will take samples of excavated materials which will be used in embankment for testing and develop a Moisture-Density Relations of Soils Report (Proctor) in accordance with ASTM D698. A new Proctor shall be developed for each soil type based on visual classification.

Density tests will be taken by the contractor for every 3,000 square yards of compacted embankment for each lift which is required to be compacted, or other appropriate frequencies as determined by the RPR.

If the material has greater than 30% retained on the 3/4-inch (19.0 mm) sieve, follow AASHTO T-180 Annex Correction of maximum dry density and optimum moisture for oversized particles.

Rolling operations shall be continued until the embankment is compacted to not less than 95% of maximum density for non-cohesive soils, and 92% of maximum density for cohesive soils as determined by ASTM D698. Under all areas to be paved, the embankments shall be compacted to a depth of 6 inches and to a density of not less than 100 percent of the maximum density as determined by ASTM D698. As used in this specification, "non-cohesive" shall mean those soils having a plasticity index (PI) of less than 3 as determined by ASTM D4318.

On all areas outside of the pavement areas, no compaction will be required on the top 4 inches (100 mm) which shall be prepared for a seedbed in accordance with Item T-901.

The in-place field density shall be determined in accordance with ASTM 6938 using Procedure A, the direct transmission method, and ASTM D6938 shall be used to determine the moisture content of the material. The machine shall be calibrated in accordance with ASTM D6938. The Contractor's laboratory shall perform all density tests in the RPR's presence and provide the test results upon completion to the RPR for acceptance. If the specified density is not attained, the area represented by the test or as designated by the RPR shall be reworked and/or re-compacted and additional random tests made. This procedure shall be followed until the specified density is reached.

Compaction areas shall be kept separate, and no lift shall be covered by another lift until the proper density is obtained.

During construction of the embankment, the Contractor shall route all construction equipment evenly over the entire width of the embankment as each lift is placed. Lift placement shall begin in the deepest portion of the embankment fill. As placement progresses, the lifts shall be constructed approximately parallel to the finished pavement grade line.

When rock, concrete pavement, asphalt pavement, and other embankment material are excavated at approximately the same time as the subgrade, the material shall be incorporated into the outer portion of the embankment and the subgrade material shall be incorporated under the future paved areas. Stones, fragmentary rock, and recycled pavement larger than 4 inches (100 mm) in their greatest dimensions will not be allowed in the top 12 inches (300 mm) of the subgrade. Rockfill shall be brought up in lifts as specified or as directed by the RPR and the finer material shall be used to fill the voids forming a dense, compact mass. Rock, cement concrete pavement, asphalt pavement, and other embankment material shall not be disposed of except at places and in the manner designated on the plans or by the RPR.

When the excavated material consists predominantly of rock fragments of such size that the material cannot be placed in lifts of the prescribed thickness without crushing, pulverizing or further breaking down the pieces, such material may be placed in the embankment as directed in lifts not exceeding 2 feet (60 cm) in thickness. Each lift shall be leveled and smoothed with suitable equipment by distribution of spalls and finer fragments of rock. The lift shall not be constructed above an elevation 4 feet (1.2 m) below the finished subgrade.

152-2.9 PROOF ROLLING. After compaction is completed, the subgrade area shall be proof rolled with a 20 ton (18.1 metric ton) Tandem axle Dual Wheel Dump Truck loaded to the legal limit with tires inflated to 80/100/150 psi (0.551 MPa/0.689 MPa/1.034 MPa) or a 10 ton Proof Roller with tires spaced not more than 32 inches (0.8 m) on-center with tires inflated to 100 psi in the presence of the RPR. Apply a minimum of 1 coverage, or as specified by the RPR, under pavement areas. A coverage is defined as the application of one tire print over the designated area. Soft areas of subgrade that deflect more than 1 inch (25 mm) or show permanent

deformation greater than 1 inch (25 mm) shall be removed and replaced with suitable material or reworked to conform to the moisture content and compaction requirements in accordance with these specifications. Removal and replacement of soft areas is incidental to this item.

152-2.10 COMPACTION REQUIREMENTS. The subgrade under areas to be paved shall be compacted to a depth of 6 inches and to a density of not less than 100 percent of the maximum dry density as determined by ASTM D698. The subgrade in areas outside the limits of the pavement areas shall be compacted to a depth of 12 inches and to a density of not less than 95 percent of the maximum density as determined by ASTM D698.

The material to be compacted shall be within $\pm 2\%$ of optimum moisture content before being rolled to obtain the prescribed compaction (except for expansive soils). When the material has greater than 30 percent retained on the $\frac{3}{4}$ inch (19.0 mm) sieve, follow the methods in ASTM D698. Tests for moisture content and compaction will be taken at a minimum of 500 S.Y. of subgrade. All quality assurance testing shall be done by the Contractor's laboratory in the presence of the RPR, and density test results shall be furnished upon completion to the RPR for acceptance determination.

The in-place field density shall be determined in accordance with ASTM D6938 using Procedure A, the direct transmission method, and ASTM D6938 shall be used to determine the moisture content of the material. The machine shall be calibrated in accordance with ASTM D6938 within 12 months prior to its use on this contract. The gage shall be field standardized daily. Maximum density refers to maximum dry density at optimum moisture content unless otherwise specified.

If the specified density is not attained, the entire lot shall be reworked and/or re-compacted and additional random tests made. This procedure shall be followed until the specified density is reached.

All cut-and-fill slopes shall be uniformly dressed to the slope, cross-section, and alignment shown on the plans or as directed by the RPR and the finished subgrade shall be maintained.

152-2.11 FINISHING AND PROTECTION OF SUBGRADE. Finishing and protection of the subgrade is incidental to this item. Grading and compacting of the subgrade shall be performed so that it will drain readily. All low areas, holes or depressions in the subgrade shall be brought to grade. Scarifying, blading, rolling and other methods shall be performed to provide a thoroughly compacted subgrade shaped to the lines and grades shown on the plans. All ruts or rough places that develop in the completed subgrade shall be graded, re-compacted, and retested. The Contractor shall protect the subgrade from damage and limit hauling over the finished subgrade to only traffic essential for construction purposes.

The Contractor shall maintain the completed course in satisfactory condition throughout placement of subsequent layers. No subbase, base, or surface course shall be placed on the subgrade until the subgrade has been accepted by the RPR.

152-2.12 HAUL. All hauling will be considered a necessary and incidental part of the work. The Contractor shall include the cost in the contract unit price for the pay of items of work involved. No payment will be made separately or directly for hauling on any part of the work.

The Contractor's equipment shall not cause damage to any excavated surface, compacted lift or to the subgrade as a result of hauling operations. Any damage caused as a result of the Contractor's hauling operations shall be repaired at the Contractor's expense.

The Contractor shall be responsible for providing, maintaining and removing any haul roads or routes within or outside of the work area, and shall return the affected areas to their former condition, unless otherwise authorized in writing by the Owner. No separate payment will be made for any work or materials associated with providing, maintaining and removing haul roads or routes.

152-2.13 SURFACE TOLERANCES. In those areas on which a subbase or base course is to be placed, the surface shall be tested for smoothness and accuracy of grade and crown. Any portion lacking the required smoothness or failing in accuracy of grade or crown shall be scarified to a depth of at least 3 inches (75 mm), reshaped and re-compacted to grade until the required smoothness and accuracy are obtained and approved by the RPR. The Contractor shall perform all final smoothness and grade checks in the presence of the RPR. Any deviation in surface tolerances shall be corrected by the Contractor at the Contractor's expense.

a. Smoothness. The finished surface shall not vary more than +/- 1/2 inch (12 mm) when tested with a 12-foot (3.7-m) straightedge applied parallel with and at right angles to the centerline. The straightedge shall be moved continuously forward at half the length of the 12-foot (3.7-m) straightedge for the full length of each line on a 50-foot (15-m) grid.

b. Grade. The grade and crown shall be measured on a 50-foot (15-m) grid and shall be within +/-0.05 feet (15 mm) of the specified grade.

On safety areas, turfed areas and other designated areas within the grading limits where no subbase or base is to be placed, grade shall not vary more than 0.10 feet (30 mm) from specified grade. Any deviation in excess of this amount shall be corrected by loosening, adding or removing materials, and reshaping.

152-2.14 TOPSOIL. When topsoil is specified or required as shown on the plans or under Item T-905, it shall be salvaged from stripping or other grading operations. The topsoil shall meet the requirements of Item T-905. If, at the time of excavation or stripping, the topsoil cannot be placed in its final section of finished construction, the material shall be stockpiled at approved locations. Stockpiles shall be located as shown on the plans and the approved CSPP, and shall not be placed on areas that subsequently will require any excavation or embankment fill. If, in the judgment of the RPR, it is practical to place the salvaged topsoil at the time of excavation or stripping, the material shall be placed in its final position without stockpiling or further re-handling.

Upon completion of grading operations, stockpiled topsoil shall be handled and placed as shown on the plans and as required in Item T-905. Topsoil shall be paid for as provided in Item T-905. No direct payment will be made for topsoil under Item P-152.

METHOD OF MEASUREMENT

152-3.1 The quantity of unclassified excavation shall not be measured.

152-3.2 The quantity of embankment in place shall not be measured.

BASIS OF PAYMENT

152-4.1 For “Unclassified Excavation” payment shall be made under the lump sum price for under Item 2 – Site Work. The pricing shall include all excavating, hauling, and stockpiling or disposing of the excavation and for furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the item.

152-4.2 For “Embankment in Place” payment shall be made under the lump sum price for under Item 2 – Site Work. This price shall include furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the item.

TESTING REQUIREMENTS

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

American Association of State Highway and Transportation Officials (AASHTO)

AASHTO T-180	Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop
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ASTM International (ASTM)

ASTM D698	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft ³ (600 kN-m/m ³))
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ASTM D1556	Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
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ASTM D1557	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft ³ (2700 kN-m/m ³))
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ASTM D6938	Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
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END OF ITEM P-152

ITEM M-304 AGGREGATE BASE AND SUBBASE COURSE
(Supplement to MDOT Section 304)

DESCRIPTION

304-1.1 GENERAL. This item shall consist of furnishing and installing aggregate base and subbase courses for the construction roads and parking areas as shown on the construction plans, details, and typical sections. Work shall also consist of the preparation of the subgrade consisting of native material or upon a previously constructed embankment in accordance with these specifications. The aggregate base and subbase courses shall be placed in close conformity with the lines, grades, thickness and typical cross sections, as shown on the drawings.

All work shall be accomplished in accordance with the requirements of Section 304 of the Maine Department of Transportation Standard Specifications, revision of March 2020, as indicated on the construction drawings, or as directed by the Engineer or Owner.

304-1.2 REFERENCE STANDARDS

- a. State of Maine, Department of Transportation, Standard Specifications, March 2020

MATERIALS

304-2.1 MATERIALS

- a. Aggregates shall be in accordance with MDOT Section 703.06:

Aggregate Base	703.06a
Aggregate Subbase	703.06c

- b. Aggregate Base shall be shale Type A, crushed and screened, as shown on the drawings.
- c. Aggregate Subbase shall be shale Type D, as shown on the drawings.
- d. The 200 Sieve shall be less 15% passing.

CONSTRUCTION METHODS

304-3.1 GENERAL

a. The placement of base and subbase courses shall be in accordance with MDOT Standard Specifications, Section 304.03. The number and thickness of each course shall conform to the drawings.

304-3.2 COMPACTION TESTING

- a. Compaction testing for base and subbase courses shall be performed in accordance

with MDOT Standard Specification Section 304.04.

b. The field density of the compacted material shall be at least 100 % of the maximum density of laboratory specimens prepared from samples of the base and subbase materials delivered to the job site. Laboratory specimens shall be tested in accordance with ASTM D 698. In-place field densities shall be determined in accordance with ASTM D 1556 or ASTM D 2167.

304-3.3 SUBGRADE TOLERANCE. Subgrade tolerances shall meet the requirements of Item P-152.

304-3.4 SURFACE TOLERANCE. The completed surface of the subbase course shall be shaped and maintained to a tolerance, above and below the indicated cross sectional grades of 1/2 inch. The completed surface of the base course shall be shaped and maintained to a tolerance, above and below the indicated cross sectional grades of 3/8 inch.

METHOD OF MEASUREMENT

304-4.1 Aggregate base and subbase quantities shall not be measured.

BASIS OF PAYMENT

304-5.1 The accepted quantities of aggregate base course and aggregate subbase course of the type specified will not be paid for directly but shall be included and paid for under the lump sum price for Site Work and in accordance with MDOT Standard Specification Section 304.07. Payment shall be considered full compensation for furnishing all materials along with the placement, grading, compaction, and testing along with all labor, materials, equipment that are necessary to complete all specified and implied requirements to produce fully functional products as intended and as approved by the Engineer.

END OF SECTION

ITEM M-401 HOT MIX ASPHALT PAVEMENT

DESCRIPTION

401-1.1 GENERAL. The Contractor shall furnish a uniformly blended, homogenous mixture placed as one or more courses of Hot Mix Asphalt Pavement (HMA) on an approved base in accordance with the contract documents and in reasonably close conformity with the lines, grades, thickness, and typical cross sections shown on the plans or established by the Engineer. The Engineer will accept this work under Quality Assurance provisions, in accordance with these specifications and the requirements of Section 106 – Quality (Maine Department of Transportation (MDOT) Standard Specifications, March 2020), the provisions of AASHTO M-323 except where otherwise noted in Sections 401 and 703 of the MDOT Standard Specifications, and the MDOT Policies and Procedures for HMA Sampling and Testing.

MATERIALS

401-2.1 COMPOSITION OF MIXTURES. The Contractor shall compose the Hot Mix Asphalt Pavement with aggregate, Performance Graded Asphalt Binder (PGAB), and mineral filler if required. HMA shall be designed and tested according to AASHTO R-35 and the volumetric criteria in Table 1. The Contractor shall size, uniformly grade, and combine the aggregate fractions in proportions that provide a mixture meeting the grading requirements of the Job Mix Formula (JMF). The Contractor may be allowed to use 15% reclaimed asphalt pavement (RAP) in mixtures used on this project.

The Contractor shall submit a Maine Department of Transportation approved JMF to the Engineer for approval for each mixture to be supplied. Should the Contractor elect to change the JMF during construction, the Contractor shall submit the new JMF to the Engineer for approval a minimum of 14 calendar days prior to scheduled placement. The JMF shall establish a single percentage of aggregate passing each required sieve size within the limits shown in Table 2. The general composition limits given in Table 2 indicate the control points of mixtures permissible under this specification. The JMF shall state the source, gradation, and percentage to be used of each portion of the aggregate, including RAP when utilized, and mineral filler if required. It shall also state the proposed PGAB content, the name and location of the refiner and the supplier for the source of PGAB submitted for approval, and the type of PGAB modification if applicable.

TABLE 1: VOLUMETRIC DESIGN CRITERIA

Required Density (Percent of G_{mm})			Voids in the Mineral Aggregate (VMA) (Minimum Percent)					Voids Filled with Binder (VFB)	Fines/Eff Binder Ratio
$N_{initial}$	N_{design}	N_{max}	Nominal Maximum Aggregate Size						
			37.5 mm	25.0 mm	19.0 mm	12.5 mm	9.5 mm		
≤ 90.5	96.0	≤ 98.0	12.0	13.0	14.0	15.0	16.0	65-78	0.6-1.2

In addition, the Contractor shall provide the following information with the proposed JMF:

Stockpile Gradation Summary
 Design Aggregate Structure Consensus Property Summary
 Design Aggregate Structure Trial Blend Gradation Plots
 Design Aggregate Structure (for a minimum of 3 trial blends)
 Trial Blend Results (for a minimum of 3 asphalt contents)
 PGAB specific gravity and temperature/viscosity charts and recommended mixing and compaction temperatures from supplier
 Material Safety Data Sheets (MSDS) for PGAB.
 Asphalt Content vs. Air Voids Trial Blend Curve
 Summary of RAP test results
 Test report for Contractors Verification sample

TABLE 2: COMPOSITION OF MIXTURES - CONTROL POINTS

SIEVE SIZE	GRADING			
	TYPE 25.0 mm	TYPE 19.0 mm	TYPE 12.5 mm	TYPE 9.5 mm
	PERCENT BY WEIGHT PASSING - COMBINED AGGREGATE			
1 ½ inch	100			
1 inch	90-100	100		
¾ inch	-90	90-100	100	
½ inch	-	-90	90-100	100
3/8 inch	-	-	-90	90-100
No. 4	-	-	-	-90
No. 8	19-45	23-49	28-58	32-67
No. 16	-	-	-	-
No. 30	-	-	-	-
No. 50	-	-	-	-
No. 200	2-6	2-6	2-6	2-7

At the time of JMF submittal, the Contractor shall identify and make available the stockpiles of all proposed aggregates at the plant site. The Engineer may obtain samples for laboratory testing. The Contractor shall also make available to the Engineer the PGAB proposed for use in the mix in sufficient quantity to test the properties of the asphalt and to produce samples for testing of the mixture. Prior to the start of paving, the Contractor and the Engineer shall split a production sample for evaluation. The Contractor shall test its split of the sample and determine if the results are consistent with the JMF. If the results are found to be acceptable, the Contractor will forward their results to the Engineer's Lab, which will test the Engineer's split of the sample. The results of the two split samples will be compared and shared between the Engineer and the Contractor. If the Engineer finds the mixture acceptable, an approved JMF will be forwarded to the Contractor and paving may commence once the Engineer has accepted a test strip.

The Contractor shall submit a new JMF for approval each time a change in aggregate source or a change in PGAB is proposed. The same approval process shall be followed. The cold feed percentage of any aggregate

may be changed up to 10 percent of the amount listed on the JMF, however no aggregate listed on the JMF shall be eliminated.

401-2.2 AGGREGATES. Fine aggregate, that material passing the No. 8 sieve, shall not exceed an absorption of 2.3 percent by weight as determined by AASHTO T-84. The composite blend (minus any RAP) shall have a Micro-Deval value of 18.0 or less as determined by AASHTO T-327. In the event of a failure, the Washington State Degradation test of 1967 shall be run prior to rejection of the material. Material with a value of 30 or more may be accepted. Aggregates shall also meet the following consensus properties. The Engineer reserves the right to sample and test the composite aggregate for any of the following properties at any time.

TABLE 3: AGGREGATE CONSENSUS PROPERTIES CRITERIA
(.3 to <3.0 Million ESAL'S)

ASTM D 5821 Coarse Aggregate Angularity (Minimum)	AASHTO T-304 Method A Uncompacted Void Content of Fine Aggregate (Minimum)	ASTM D 4791 (8.4) Flat and Elongated Particles (Maximum)	AASHTO T-176 Clay Content/Sand Equivalent (Minimum)
75/60	40	10	45

ASTM D 5821 - "75/60" denotes that 75% of the coarse aggregate has one fractured face and 60% has two fractured faces.

AASHTO T304 - Criteria are presented as percent air voids in loosely compacted fine aggregate, (U).

ASTM 4791 - Criteria are presented as maximum percent by weight of flat and elongated particles. (5:1 ratio).

401-2.3 VACANT

401-2.4 TEMPERATURE REQUIREMENTS. After the JMF is established, the temperatures of the mixture shall conform to the following tolerances:

In the truck at the mixing plant 275 - 325 degrees F
At the Paver 275 – 325 degrees F

The JMF and the mix subsequently produced shall meet the requirements of Tables 1 and 3.

401-2.5 PERFORMANCE GRADED ASPHALT BINDER. The PGAB shall be PG 64-28. The PGAB shall meet the applicable requirements of AASHTO M-320 - Standard Specifications for PGAB, in accordance with Section 702.01 Asphalt Cement (MDOT Standard Specifications, March 2020). The Contractor shall provide the Engineer with an approved copy of the Quality Control Plan for PGAB in accordance with AASHTO R 26 Certifying Suppliers of PGAB.

CONSTRUCTION METHODS

401-3.1 Weather and Seasonal Limitations. The bituminous mixture shall not be placed upon a wet surface or when the surface temperature of the underlying course is less than specified in Table 4. The temperature requirements may be waived by the Engineer, if requested; however, all other requirements including compaction shall be met.

TABLE 4. BASE TEMPERATURE LIMITATIONS

Mat Thickness	Base Temperature (Minimum)	
	Deg. F	Deg. C
3 in. (7.5 cm) or greater	40	4
Greater than 1 in. (2.5 cm) but less than 3 in. (7.5 cm)	45	7
1 in. (2.5 cm) or less	50	10

401-3.2 HOT MIX ASPHALT PLANT.

401-3.2.1 GENERAL REQUIREMENTS. Mixing plants shall conform to AASHTO M-156. The mixing plant shall include an efficient dust collecting system to prevent loss of fine material. The material collected may be returned to the mixture at a uniform rate and/or be discarded.

(a) Truck Scales. When the bituminous mixture is to be weighed on scales meeting the requirements of Section 108-Payment (MDOT Standard Specifications, March 2020), the scales shall be inspected and sealed by the State Sealer as often as the Engineer deems necessary to verify their accuracy.

(b) Performance Graded Asphalt Binder. The Contractor shall provide a valve for sampling the bituminous material, located in a circulating feed line connecting the storage tank with the mixing plant or in a line of the storage circulation system. The valve shall be in a readily accessible location offering protection from damage. The Contractor shall maintain this valve in a workable condition and provide a drainage receptacle.

401-3.2.2 AUTOMATION OF BATCHING. Batch plants shall be automated for weighing, recycling, and monitoring the system. In the case of a malfunction of the printing system, the requirements of Subsection 401-3.2.4(c) of this specification will apply.

The batch plant shall accurately proportion the various materials in the proper order by weight. The entire batching and mixing cycle shall be continuous and shall not require any manual operations. The batch plant shall use auxiliary interlock circuits to trigger an audible alarm whenever an error exceeding the acceptable tolerance occurs. Along with the alarm, the printer shall print an asterisk on the delivery slip in the same row containing the out-of-tolerance weight. The automatic proportioning system shall be capable of consistently delivering material within the full range of batch sizes. When RAP is being used the plant must be capable of automatically compensating for the moisture content of the RAP.

All plants shall be equipped with an approved digital recording device. The delivery slip load ticket shall contain information required under Section 108.1.3 Provision Relating to Certain Measurements, Mass

(MDOT Standard Specifications, November 2014), and paragraphs (a) and (b) of Subsection 401.3.2.3 of this Specification.

401-3.2.3 AUTOMATIC TICKET PRINTER SYSTEM ON AUTOMATIC BITUMINOUS MIXING PLANT. An approved automatic ticket printer system shall be used with all approved automatic bituminous mixing plants. The automatic printed ticket will be considered as the Weight Certificate.

The requirements of Section 108.1.3(f) (MDOT Standard Specifications, March 2020) shall be met by the weigh slip or ticket, printed by the automatic system, which accompanies each truckload, except for the following changes:

- (a) The quantity information required shall be individual weights of each batch or total net weight of each truckload.
- (b) Signatures (legible initials acceptable) of Weighmaster (required only in the event of a malfunction below).

Automatic bituminous mixing plants shall have the scales sealed by the State Sealer of Weights and Measures within a period of 12 months preceding the date of any weighing and after each change of location. The Contractor shall make checks on the accuracy and sensitivity of the aggregate and asphalt plant scales in the presence of a representative of the State, at intervals not exceeding 60 days.

401-3.2.4 WEIGHT CHECKS ON AUTOMATIC BITUMINOUS MIXING PLANT. At least twice during each 5 days of production either of the following checks will be performed:

- (a) A loaded truck may be intercepted and weighed on a platform scale that has been sealed by the State Sealer of Weights and Measures within the past 12 months. Whenever the discrepancy in net weights is greater than 1.0 percent, but does not exceed 1.5 percent, the plant inspector will notify the producer to take corrective action; payment will still be governed by the printed ticket. The producer will be allowed a period of two days to make any needed repairs to the plant and/or platform scales so that the discrepancy in net weights between the two is less than 1.0 percent. If the discrepancy exceeds 1.5 percent, the plant will be allowed to operate as long as payment is determined by truck platform scale net weight. Effective corrective action shall be taken within two working days.
- (b) Where platform scales are not readily available, a check will be made to verify the accuracy and sensitivity of each scale within the normal weighing range and to assure that the interlocking devices and automatic printer system are functioning properly.
- (c) In the event of a malfunction of the automatic printer system, production may be continued without the use of platform truck scales for a period not to exceed the next two working days, providing total weights of each batch are recorded on weight tickets and certified by a Licensed Public Weighmaster.

401-3.2.5 TESTING FACILITIES. The Contractor shall provide laboratory facilities at the plant for the use of the Engineer's acceptance testing and the Contractor's Quality Control testing. The Engineer will always have priority in the use of the laboratory. The lab shall have sufficient space and equipment so that both testing representatives (Engineer's and Contractor's) can operate efficiently. The lab shall also meet the requirements of ASTM D 3666.

The plant testing laboratory shall have a floor space area of not less than 150 square feet, with a ceiling height of not less than 7-½ feet. The laboratory shall be weather tight, sufficiently heated in cold weather, air-

conditioned in hot weather to maintain temperatures for testing purposes of 70 degrees F +/- 5 degrees F. The plant testing laboratory shall be located on the plant site to provide an unobstructed view, from one of its windows, of the trucks being loaded with the plant mix materials.

Laboratory facilities shall be kept clean, and all equipment shall be maintained in proper working condition. The Engineer shall be permitted unrestricted access to inspect the Contractor's laboratory facility and witness quality control activities. The Engineer will advise the Contractor in writing of any noted deficiencies concerning the laboratory facility, equipment, supplies, or testing personnel and procedures. When the deficiencies are serious enough to adversely affect the test results, the incorporation of the materials into the work shall be suspended immediately and will not be permitted to resume until the deficiencies are satisfactorily corrected.

As a minimum, the plant testing laboratory shall have:

- (a) Adequate artificial lighting
- (b) Electrical outlets sufficient in number and capacity for operating the required testing equipment and drying samples.
- (c) Fire extinguishers (2), Underwriter's Laboratories approved
- (d) Work benches for testing, minimum 2-½ feet by 10 feet.
- (e) Desk with 2 chairs
- (f) Sanitary facilities convenient to testing laboratory
- (g) Exhaust fan to outside air, minimum 12 inch blade diameter
- (h) A direct telephone line and telephone including a FAX machine operating 24 hours per day, seven days per week
- (i) File cabinet with lock for Engineer
- (j) Sink with running water, attached drain board and drain capable of handling separate material
- (k) Metal stand for holding washing sieves
- (l) Two element hot plate or other comparable heating device, with dial type thermostatic controls for drying aggregates
- (m) Mechanical shaker and appropriate sieves (listed in JMF, Table 3) meeting the requirements of ASTM E 11 for determining the gradation of coarse and fine aggregates in accordance with ASTM C 136
- (n) Superpave Gyratory Compactor
- (o) Oven, thermostatically controlled, inside minimum 1 cubic foot
- (p) Two volumetric specific gravity flasks, 500 cc
- (q) Other necessary hand tools required for sampling and testing
- (r) Library containing contract specifications, latest ASTM volumes 4.01, 4.02, 4.03 and 4.09, AASHTO standard specification parts I and II, and Asphalt Institute Publication MS-2.
- (s) Equipment for Theoretical Specific Gravity testing including a 4,000 cc pycnometer, vacuum pump capable of maintaining 30 ml mercury pressure and a balance, 16-20 kilograms with accuracy of 0.5 grams
- (t) Extraction equipment, centrifuge or binder ignition oven
- (u) A masonry saw with diamond blade for trimming pavement cores and samples
- (v) Telephone

Approval of the plant and testing laboratory by the Engineer requires all facilities and equipment to be in good working order during production, sampling and testing. Failure to provide the specified facilities shall be sufficient cause for disapproving bituminous plant operations.

The Owner shall have access to the lab and the plant whenever Contractor is in production.

401-3.3 HAULING EQUIPMENT. Trucks for hauling Hot Mix Asphalt Pavement shall have tight, clean, smooth metal dump bodies which have been thinly coated with a small amount of lime solution or an approved soap solution or detergent to prevent the mixture from adhering to the bodies.

All truck dump bodies shall have a cover of canvas or other water repellent material capable of heat retention which completely covers the mixture. The cover shall be securely fastened on the loaded truck except when unloading.

All truck bodies shall have an opening on both sides which will accommodate a thermometer stem. The opening shall be located near the midpoint of the body, at least 12 inches above the bed.

401-3.4 PAVERS. Pavers shall be self-contained, self-propelled units with an activated screed (heated if necessary).

The Contractor shall place Hot Mix Asphalt Pavement with a paver using an automatic grade and slope controlled screed, unless otherwise authorized by the Engineer. The controls shall automatically adjust the screed and increase or decrease the layer thickness to compensate for irregularities in the preceding course. The controls shall maintain the proper transverse slope and be readily adjustable so that transitions and superelevated curves can be properly paved. The controls shall operate from a fixed or moving reference such as a grade wire or ski type device (floating beam) with a minimum length of 30 foot.

The Contractor shall operate the paver in such a manner as to produce a visually uniform surface texture and a thickness within the requirements of Subsection 401-3.6 Surface Tolerances. The paver shall have a receiving hopper with sufficient capacity for a uniform spreading operation and a distribution system to place the mixture uniformly, without segregation in front of the screed. The screed assembly shall produce a finished surface of the required evenness and texture without tearing, shoving, or gouging the mixture. Pavers with extendible screeds shall have auger extensions and tunnel extenders as necessary.

The Contractor shall have the paver at the project site sufficiently before the start of paving operations to be inspected and approved by the Engineer. The Contractor shall repair or replace any paver found worn or defective, either before or during placement, to the satisfaction of the Engineer.

401-3.5 ROLLERS. Rollers shall be static steel, pneumatic tire, or approved vibrator type. Rollers shall be in good mechanical condition, capable of starting and stopping smoothly, and be free from backlash when reversing direction. Rollers shall be equipped and operated in such a way as to prevent the picking up of hot mixed material by the roller surface. Use of rollers which result in crushing of the aggregate or displacement of the mixture will not be permitted. Any Hot Mix Asphalt Pavement that becomes loose, broken, contaminated, shows an excess or deficiency of Performance Graded Asphalt Binder, or is in any other way defective shall be removed and replaced with fresh Hot Mix Asphalt Pavement which shall be immediately compacted to conform with the adjacent area at no additional cost.

The type of rollers to be used and their relative position in the compaction sequence shall generally be the Contractor's option, provided specification densities are attained and with the following requirements:

- 1) At least one roller shall be pneumatic-tired on all lifts of pavement.
- 2) Compaction with a vibratory or steel wheel roller shall precede pneumatic-tired rolling, unless

otherwise authorized by the Engineer.

3) Vibratory rollers shall not be operated in the vibratory mode when checking or cracking of the mat occurs.

4) Any method which results in cracking or checking of the mat will be discontinued and corrective action taken.

The maximum operating speed for a steel wheel roller shall not exceed the manufacturer's recommendations.

401-3.6 SURFACE TOLERANCES. The Engineer will check surface tolerance with a 16 foot straightedge or string line placed parallel to the centerline of pavement and with a 10 foot straightedge or string line placed transverse to the centerline of pavement. The Contractor shall correct variations exceeding 1/4 inch by removing defective work and replacing it with new material as directed by the Engineer. The Contractor shall furnish a 10 foot straightedge for the Engineer's use.

401-3.7 CONDITIONING OF EXISTING SURFACE. The Contractor shall thoroughly clean the surface upon which Hot Mix Asphalt Pavement is to be placed of all objectionable material. When the surface of the existing base or pavement is irregular, the Contractor shall bring it to uniform grade and cross section.

401-3.8 HOT MIX ASPHALT MATERIAL DOCUMENTATION. The Contractor and the Engineer shall agree on the amount of Hot Mix Asphalt Pavement that has been placed each day.

401-3.9 PREPARATION OF AGGREGATES. The Contractor shall dry and heat the aggregates for the mixture to the required temperature. The Contractor shall properly adjust flames to avoid physical damage to the aggregate and to avoid depositing soot on the aggregate.

401-3.10 MIXING. The Contractor shall combine the dried aggregate in the mixer in the amount of each fraction of aggregate required to meet the JMF. The Contractor shall measure the amount of PGAB and introduce it into the mixer in the amount specified by the JMF. The Contractor shall produce the mixture at the temperature established by the JMF.

The Contractor shall dry the aggregate sufficiently so that the mixture will not flush, foam excessively, or displace excessively under the action of the rollers. The Contractor shall introduce the aggregate into the mixer at a temperature of not more than 25 degrees F above the temperature at which the viscosity of the bituminous material being used is 0.1008 Lbm/sec*ft.

The Contractor shall store and introduce into the mixer the Performance Graded Asphalt Binder at a uniformly maintained temperature at which the viscosity of the material is between 0.1008 Lbm/sec*ft and 0.2016 Lbm/sec*ft. The aggregate shall be completely and uniformly coated with a thorough distribution of the PGAB. The Contractor shall determine the wet mixing time for each plant and for each type of aggregate used.

401-3.11 SPREADING AND FINISHING. On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impracticable, the Contractor shall spread, rake, and lute the mixture with hand tools to provide the required compacted thickness.

401-3.12 COMPACTION. Immediately after the Hot Mix Asphalt Pavement has been spread, struck off, and any surface irregularities adjusted, the Contractor shall thoroughly and uniformly compact the mixture by rolling.

The Contractor shall roll the surface when the mixture is in the proper condition and when the rolling does not

cause undue displacement, cracking, or shoving. The Contractor shall prevent adhesion of the mixture to the rollers or vibrating compactors without the use of oil.

The Contractor shall immediately correct any displacement occurring as a result of the reversing of the direction of a roller or from other causes to the satisfaction of the Engineer. Any operation other than placement of variable depth shim course that results in breakdown of the aggregate shall be discontinued. Any new pavement that shows obvious cracking, checking, or displacement may be removed and replaced for the full lane width as directed by the Resident at no cost to the Owner.

Along forms, curbs, headers, walls, and other places not accessible to the rollers, the Contractor shall thoroughly compact the mixture with mechanical vibrating compactors. The Contractor shall only use hand tamping in areas inaccessible to all other compaction equipment. On depressed areas, the Contractor may use a trench roller or cleated compression strips under a roller to transmit compression to the depressed area.

401-3.13 JOINTS. The Contractor shall construct wearing course transverse joints in such a manner that minimum tolerances, shown in Section 401-3.6 Surface Tolerances, are met when measured with a straightedge.

The paver shall always maintain a uniform head of material during the joint construction. The bituminous mix shall be free of segregation and meet temperature requirements. Transverse joints of the wearing course shall be straight and neatly trimmed. The Contractor may form a vertical face exposing the full depth of the course by inserting a header, by breaking the bond with the underlying course, or by cutting back with hand tools. Feathered or "lap" joints will not be allowed.

The Contractor shall apply a coating of emulsified asphalt immediately prior to paving all joints, except those formed by pavers operating in echelon. The Contractor shall use an approved spray apparatus designed for covering a narrow surface. The Engineer may approve application by a brush for small surfaces, or in the event of a malfunction of the spray apparatus, but for a period of not more than one working day.

Where pavement under this Contract joins an existing pavement or when the Engineer directs, the Contractor shall cut the existing pavement along a smooth line, producing a neat, even, vertical joint. The Engineer will not permit broken or raveled edges. The cost of all work necessary for the preparation of joints is incidental to related contract pay items.

Longitudinal joints which are irregular, damaged, uncompacted or otherwise defective shall be cut back 3 to 6 inches to expose a clean, sound, uniform vertical surface for the full depth of the course. All cutback material shall be removed from the project. Asphalt tack coat or other product approved by the Engineer shall be applied to the clean, dry joint, prior to placing any additional fresh bituminous pavement against the joint. Any laitance produced from cutting joints shall be removed by vacuuming and washing. The cost of this work shall be considered incidental to the cost of the bituminous pavement.

The Contractor shall provide additional joint density quality control for longitudinal joints and transverse joints whose surface temperature has cooled to less than 175° F by rejuvenating the joint with infrared heaters at the Contractor's expense. Electrically powered infrared heating equipment shall consist of one or more low-level radiant energy heaters that uniformly heat and soften the pavement joints. The heaters should be configured to uniformly heat an area up to 18 inches in width and 3 inches in depth. Infrared equipment shall be thermostatically controlled to provide a uniform, consistent temperature increase throughout the layer being heated up to a maximum temperature range of 200 to 300°F. Infrared heating procedures shall not utilize natural gas or fossil fuels for infrared heat generation and shall not damage existing pavement. If damage is identified, the contractor will be required to remove damaged sections and replace at no additional

cost to the Owner. All contact surfaces shall be given a tack coat of bituminous material prior to placing any fresh bituminous pavement against the joint.

401-3.14 QUALITY CONTROL. The Contractor shall operate in accordance with the approved Quality Control Plan (QCP) to assure a product meeting the contract requirements. The QCP shall meet the requirements of Section 106.4.2 (MDOT Standard Specifications, March 2020) and these Specifications. The Contractor shall not begin paving operations until the QCP is approved in writing by the Engineer.

Prior to placing any mix, the Engineer and the Contractor shall hold a QC Workshop (Formal pre-paving conference) to discuss the paving schedule, source of mix, type and amount of equipment to be used, sequence of paving pattern, rate of mix supply, random sampling, project lots and sublots and air traffic control. All field and plant supervisors including the responsible onsite paving supervisor shall attend this meeting.

The QCP shall address all elements which affect the quality of the Hot Mix Asphalt Pavement including, but not limited to, the following:

- (a) JMF(s)
- (b) Hot asphalt mix plant details
- (c) Stockpile Management (to include provisions for a minimum 2-day stockpile)
- (d) Make & type of paver(s)
- (e) Make & type of rollers including weight, weight per inch of steel wheels, and average contact pressure for pneumatic tired rollers
- (f) Name of QCP Administrator, and certification number
- (g) Name of Process Control Technician(s), and certification number(s)
- (h) Name of Quality Control Technicians(s), and certification number(s)
- (i) Mixing & transportation including process for ensuring that truck bodies are clean and free of debris or contamination that could adversely affect the finished pavement.
- (j) Testing Plan
- (k) Laydown operations including longitudinal joint construction, procedures for avoiding paving in inclement weather, tacking of all joints, methods to ensure that segregation is minimized, procedures to determine the maximum rolling and paving speeds based on best engineering practices as well as past experience in achieving the best possible rideability of the pavement
- (l) Examples of Quality Control forms including a daily plant report and a daily paving report
- (m) Silo management and details (can show storage for use on project of up to 36 hours)
- (n) Provisions for varying mix temperature due to extraordinary conditions.
- (o) Name and responsibilities of the Responsible onsite Paving Supervisor
- (p) Method for calibration/verification of Density Gauge
- (q) A note that all testing will be done in accordance with AASHTO procedures
- (r) A detailed procedure outlining when production will be halted due to QC or QA testing results.

The QCP shall include the following technicians together with these minimum requirements:

(a) QCP Administrator - A qualified individual shall administer the QCP. The QCP Administrator must be a full-time employee of or a consultant engaged by the Contractor or paving subcontractor. The QCP Administrator shall have full authority to institute any and all actions necessary for the successful operation of the QCP. The QCP Administrator (or its designee in the QCP Administrator's absence) shall be available to communicate with the Engineer at all times. The QCP Administrator shall be certified as a Quality Assurance

Technologist by the North East Transportation Training and Certification Program.

(b) Process Control Technician(s) (PCT) shall utilize test results and other quality control practices to assure the quality of aggregates and other mix components and control proportioning to meet the JMF(s). The PCT shall inspect all equipment used in mixing to assure it is operating properly and that mixing conforms to the mix design(s) and other Contract requirements. The QCP shall detail how these duties and responsibilities are to be accomplished and documented and whether more than one PCT is required. The Plan shall include the criteria to be utilized by the PCT to correct or reject unsatisfactory materials. The PCT shall be certified as a Plant Technician by the North East Transportation Training and Certification Program.

(c) Quality Control Technician(s) (QCT) shall perform and utilize quality control tests at the job site to assure that delivered materials meet the requirements of the JMF(s). The QCT shall inspect all equipment utilized in transporting, laydown, and compacting to assure it is operating properly and that all laydown and compaction conform to the Contract requirements. The QCP shall detail how these duties and responsibilities are to be accomplished and documented, and whether more than one QCT is required. The QCP shall include the criteria utilized by the QCT to correct or reject unsatisfactory materials. The QCT shall be certified as a Paving Inspector by the North East Transportation Training and Certification Program.

The QCP shall detail the coordination of the activities of the Plan Administrator, the PCT and the QCT. The project Superintendent shall be named in the QCP, and his responsibilities for successful implementation of the QCP shall be outlined.

The Contractor shall sample, test, and evaluate Hot Mix Asphalt Pavement in accordance with the minimum frequencies presented in Table 5.

The Contractor may utilize innovative equipment or techniques not addressed by the Contract documents to produce or monitor the production of the mix, subject to approval by the Engineer.

The Contractor shall submit all Hot Mix Asphalt Pavement plant test results in writing, signed by the appropriate technician and present them to the Engineer by 1:00 p.m. on the next working day, except when otherwise noted in the QCP due to local restrictions. The Contractor shall make density test results, including randomly sampled densities, available to the Engineer onsite. Summaries of each day's results, including a daily paving report, shall be recorded and signed by the QCT and presented to the Engineer by 1:00 p.m. the next working day.

The Contractor shall have a testing lab at the plant site, equipped with all testing equipment necessary to complete the tests in Table 4. The Contractor shall locate an approved SHRP Gyratory Compactor at the plant testing lab or within 30 minutes of the plant site.

The Contractor shall fill all holes in the pavement resulting from cutting cores by the Contractor or the Engineer with an acceptable mixture no later than the following working day. Before filling, the Contractor shall carefully clean and dry the holes and apply a coating of emulsified asphalt. On surface courses, cores shall not be cut except for Verification of the Nuclear Density Gauge, at a rate not to exceed 3 per day or 2 per 1100 tons placed. On a daily basis, the Contractor shall perform nuclear density testing across the uncompacted mat being placed, at 12 inch intervals. If the values vary by more than 2.0% from the mean, the Contractor shall make adjustments until the inconsistencies are remedied.

TABLE 5: MINIMUM QUALITY CONTROL FREQUENCIES

Test or Action	Frequency	Test Method
Temperature of mix	6 per day at street and plant	-
% TMD (Surface)	1 per 125 tons (As noted in QC Plan)	ASTM D 2950
% TMD (Base)	1 per 250 tons (As noted in QC Plans)	AASHTO T-269
Fines/Effective Binder	1 per 500 tons	AASHTO T-312
Gradation	1 per 500 tons	AASHTO T-30
PGAB content	1 per 500 tons	AASHTO T-164 or T-308
Voids at N _{design}	1 per 500 tons	AASHTO T-312
Voids in Mineral Aggregate at N _{design}	1 per 500 tons	AASHTO T-312
Rice Specific Gravity	1 per 500 tons	AASHTO T-209
Coarse Aggregate Angularity	1 per 5000 tons	ASTM D 5821
Flat and Elongated Particles	1 per 5000 tons	ASTM D 4791
Fine Aggregate Angularity	1 per 5000 tons	AASHTO T-304

The Contractor shall monitor plant production using control charts as specified in Section 106 – Acceptance (MDOT Standard Specifications, November 2014). Action limits shall be as noted in Table 6 below.

TABLE 6: CONTROL LIMITS

Property	UCL and LCL
Passing No. 4 and larger sieves	Target \pm 4.0
Passing No. 8 sieve	Target \pm 2.5
Passing No. 200 sieve	Target \pm 1.2
PGAB Content*	Target \pm 0.3
Voids in the Mineral Aggregate	LCL = LSL + 0.2
% Voids at N _{design}	JMF Target \pm 1.3

*Based on AASHTO T-308

The Contractor shall construct a pavement test strip on the first project constructed with each individual Job Mix Formula (JMF). The test strip quantity shall be excluded from the lot for QA analysis. Prior to placement of the test strip a passing verification test is required. The quantity of Hot Mix Asphalt produced for the test strip shall not exceed 330 tons, or 10 percent of the total quantity for the project, as determined by the Engineer.

The Contractor shall notify the Engineer 48 hours in advance of placing the test strip in order to allow for Engineering personnel to assist with the sampling.

The test strip is intended to:

- 1) Allow the Contractor to establish rolling patterns to achieve optimum density for the mat being laid.
- 2) Allow the Contractor to adjust targets in new JMF's prior to approval.

The Engineer will not sample from the first third of the mat, allowing the Contractor to establish a roller pattern. The Engineer will obtain two random mix samples from the middle third of the test strip and these shall be split with the contractor and the results compared. Five cores shall be randomly sampled from the mat, (excluding the first third) and tested for density verification. Should the resulting values average lower than the LSL for percent TMD, the test strip shall be rejected. Provided that the average of the results is 90 percent or greater the Engineer will pay for the first test strip at 100 percent of the bid price, but the Contractor shall remove and replace subsequent rejected test strips at their expense, as well as the first test strip if it fails to meet a minimum average of 90.0 percent. Production shall not commence until a test strip has met these criteria.

The Contractor shall cease paving operations whenever one of the following occurs on a lot in progress:

- 1) The Pay Factor for VMA, Voids @ N_d , Percent PGAB, composite gradation, VFB, fines to effective binder or density using all Acceptance or all Quality Control tests for the current lot is less than 0.85.
- 2) The Coarse Aggregate Angularity or Fine Aggregate Angularity value falls below the requirements of Table 3.
- 3) The first 2 control tests for the lot fall outside the upper or lower limits for VMA, Voids @ N_d , or PGAB. This includes any case where both tests are out on the same, or different, properties.
- 4) The Flat and Elongated Particles value exceeds 10 percent by ASTM D 4791
- 5) There is any visible damage to the aggregate due to over-densification other than on variable depth shim courses.
- 6) The Contractor fails to follow the approved QCP.
- 7) The Contractors control chart shows the process to be out of control on any property listed in Table 6.

Paving operations shall not resume until the Contractor and the Engineer determine that material meeting the Contract requirements will be produced. The Engineer will consider corrective action acceptable if the pay factor for the failing property increases. If the Engineer determines that the resumption of production involves a significant change to the production process, the current lot will be terminated and a new lot will begin.

401-3.15 ACCEPTANCE.

This method utilizes Quality Level Analysis and pay factor specifications.

The Acceptance Testing Method will be determined by the total quantity of material represented by a JMF. Method A will be used if the total quantity represented by a JMF is expected to be 1500 tons or greater. Method B will be used if the total quantity represented by a JMF is expected to be less than 1500 tons.

For Hot Mix Asphalt Pavement designated for acceptance under Quality Assurance (QA) provisions, the Engineer will sample once per subplot on a statistically random basis, test, and evaluate in accordance with the following Acceptance Criteria:

TABLE 7: ACCEPTANCE CRITERIA

PROPERTIES	POINT OF SAMPLING	TEST METHOD
Gradation	Truck	AASHTO T-30
PGAB Content	Truck	AASHTO T-308
%TMD (Surface)	Mat behind all Rollers	AASHTO T-269
%TMD (Base or Binder)	Mat behind all Rollers	AASHTO T-269
Air Voids at N_d	Truck	AASHTO T-312
Voids in Mineral Aggregate at N_d	Truck	AASHTO T-312
Fines to Effective Binder	Truck	AASHTO T-312
Voids Filled with Binder	Truck	AASHTO T-312

On the first day of production of a new JMF the Engineer will take three random samples which will be used to calculate the quality level of the in-place material in the event the lot is terminated prematurely. Only one of the three will be tested, the other two will be held onsite until at least three random samples have been taken, at which time the other two will be discarded.

(a) Acceptance Method A

Lot Size will be the entire production per JMF for the project, or if so agreed at the Pre-paving Conference, equal lots of up to 4500 tons, with unanticipated over-runs of up to 1500 ton rolled into the last lot. Sublot sizes shall be 750 ton for mixture properties, 500 ton for base or binder densities and 250 ton for surface densities. The minimum number of sublots for mixture properties shall be four, and the minimum number of sublots for density shall be five. If there is less than one-half of a subplot remaining at the end, then it shall be combined with the previous subplot. If there is more than one-half subplot remaining at the end, then it shall constitute the last subplot and shall be represented by test results.

TABLE 8: METHOD A ACCEPTANCE LIMITS

Property	USL and LSL
Passing 4.75 mm and larger sieves	Target +/-7%
Passing 2.36 mm to 1.18 mm sieves	Target +/-4%
Passing 0.60 mm	Target +/-3%
Passing 0.30 mm to 0.075 mm sieve	Target +/-2%
PGAB Content	Target +/-0.4%
Air Voids	4.0% +/-1.5%
Fines to Effective Binder	0.6 to 1.2
Voids in the Mineral Aggregate	LSL Only from Table 1
Voids Filled with Binder	Table 1 values plus a 4% production tolerance for USL only
% TMD (In place density)	95.0% +/- 2.5%

(b) Acceptance Method B

Lot Size will be the entire production per JMF for the project and shall be divided into 3 equal sublots for Mixture Properties and 3 equal sublots for density.

TABLE 9: METHOD B ACCEPTANCE LIMITS

Property	USL and LSL
Percent Passing 4.75 mm and larger sieves	Target +/-7
Percent Passing 2.36 mm to 1.18 mm sieves	Target +/-5
Percent Passing 0.60 mm	Target +/-4
Percent Passing 0.30 mm to 0.075 mm sieve	Target +/-3
PGAB Content	Target +/-0.5
Air Voids	4.0% +/-2.0
Fines to Effective Binder	0.6 to 1.2
Voids in the Mineral Aggregate	LSL from Table 1
Voids Filled with Binder	Table 1 plus a 4% production tolerance for USL.
% TMD (In-place Density)	95.0% +/- 2.5%

(c) For acceptance testing, the Engineer will obtain samples of Hot Mix Asphalt Pavement in conformance with AASHTO T-168 - Sampling Bituminous Paving Mixtures. The Engineer will take the sample randomly within each subplot. Target values shall be as specified in the JMF. The Engineer will use the appropriate Table 8 or 9 depending on the acceptance method, for calculating pay factors for gradation, PGAB Content, Air Voids at N_d , VMA, Fines to Effective Binder and VFB. Upon conclusion of each lot, where there is a minimum of four sublots, results shall be examined for statistical outliers, as stated in Section 106.7.2 – Statistical Outliers (MDOT Standard Specifications, March 2020).

(d) During the course of inspection, should it appear that there is an isolated area that is not representative of the lot based on a lack of observed compactive effort, excessive segregation or any other questionable practice, that area may be isolated and tested separately. An area so isolated that has a calculated pay factor below 0.80 for Method A or below 0.86 for Method B, based on three random tests shall be removed and replaced at the expense of the Contractor for the full lane width and a length not to be less than 150 ft.

(e) The Engineer will measure pavement density using core samples tested according to AASHTO T-166. The Engineer will randomly determine core locations. The Contractor shall cut 6 inch diameter cores at no additional cost to the Owner within 24 hours of placement of the pavement, and immediately give them to the Engineer. At the time of sampling, the Contractor and the Engineer shall mutually determine if a core is damaged. If it is determined that the core(s) is damaged, the Contractor shall cut new core(s) at the same offset and within 3 feet of the initial sample. At the time the core is cut, the Contractor and the Engineer will mutually determine if saw cutting of the core is needed, and will mark the core at the point where sawing is needed. The core may be saw cut by the Contractor in the Engineer's presence onsite, or in the laboratory by the Engineer, without disturbing the layer being tested to remove lower layers of Hot Mix Asphalt Pavement, gravel, or RAP. No recuts are allowed at a test location after the core has been tested. Upon conclusion of each lot, density results shall be examined for statistical outliers as stated in Section 106.7.2 – Statistical Outliers (MDOT Standard Specifications, March 2020).

METHOD OF MEASUREMENT

401-4.1 MEASUREMENT. Hot Mix Asphalt Pavement quantity shall not be measured.

BASIS OF PAYMENT

401-5.1 PAYMENT. The Engineer will pay for the work, in place and accepted, in accordance with the applicable sections of this Specification, for each type of material specified.

The Engineer will pay for the work as specified above for the material used, except that cleaning objectionable material from the pavement and furnishing and applying bituminous material to joints and contact surfaces is incidental.

Payment for this work will be made under Item 2 – Site Work and shall be full compensation for all labor, equipment, materials, and incidentals necessary to meet all related Contract requirements, including design of the JMF, implementation of the QCP, obtaining core samples, transporting cores, filling core holes, applying emulsified asphalt to joints, and providing testing facilities and equipment.

The Engineer will make a pay adjustment for quality below the minimum acceptable level, as specified below.

The total project payment for plant mix bituminous concrete pavement shall not exceed 100 percent of the product of the contract unit price and the total number of tons of bituminous mixture used in the accepted work.

401-5.2 PRICE ADJUSTMENT FOR THE QUALITY OF HOT BITUMINOUS PAVEMENT. The Engineer will sample, test, and evaluate Hot Mix Asphalt Pavement in accordance with Section 106 - Quality (MDOT Standard Specifications, March 2020) and Section 401-3.15 - Acceptance of this specification.

For each lot accepted, the adjusted contract unit price shall be the product of the lot composite pay factor for the lot and the contract unit price. Payment shall be subject to the total project payment limitation specified in Section 401-5.1. Payment in excess of 100 percent for accepted lots of bituminous concrete pavement shall be used to offset payment for accepted lots of bituminous concrete pavement that achieve a lot pay factor less than 100 percent, with the exception of if the lot's factor is less than 0.75. If the lot's pay factor is less than 0.75, then that lot's pay factor cannot be offset by any pay factors greater than 1.00.

401-5.3 PAY FACTOR (PF). The Engineer will use density, Performance Graded Asphalt Binder content,

voids @Nd, VMA, VFB, F/B^e, and the screen sizes listed in Table 10 for the type of material represented in the JMF. The Engineer will evaluate materials using the following price adjustment factors under Section 106.7 - Quality Level Analysis (MDOT Standard Specifications, March 2020).

The Engineer will apply price adjustments to the appropriate Hot Mix Asphalt Pavement pay items. Price adjustments shall be applied based on test results for each lot. If any pay factor for any single property (or composite gradation) falls below 0.85, the Contractor shall shut down the HMA plant. If any single pay factor for PGAB Content, VMA, or Air Voids falls below 0.80 for Method A or 0.86 for Method B, the volumetric composite pay factor for PGAB Content, VMA, and Air Voids shall be 0.55 for Method A or 0.70 for Method B.

If the pay factor for Density falls below 0.80 for Method A or 0.86 for Method B, all of the cores will be randomly recut by Sublot. A new pay factor will be calculated that combines all initial and retest results. If the resulting pay factor is below 0.80 for Method A or 0.86 for Method B, the entire Lot shall be removed and replaced with material meeting the specifications at no additional cost to the Owner¹. Pay factors equal to or greater than the reject level will be paid accordingly.

¹ However, the Engineer may decide to allow the rejected lot to remain. In that case, if the Engineer and Contractor agree in writing that the lot shall not be removed, it shall be paid for at 50 percent of the contract unit price AND THE TOTAL PROJECT PAYMENT LIMITATION SHALL BE REDUCED BY THE AMOUNT WITHHELD FOR THE REJECTED LOT.

TABLE 10: TABLE OF GRADATION COMPOSITE “F” FACTORS
Method A & B

Constituent		“F” Factor			
		¾ inch	½ inch	3/8 inch	3/16 inch
Gradation	1 inch		-	-	-
	¾ inch	4	-	-	-
	½ inch		4	4	-
	3/8 inch				4
	No. 8	6	6	6	8
	No. 16				
	No. 30	2	2	2	2
	No. 50	2	2	2	2
	No. 200	6	6	6	8

For each lot of material, the Engineer will determine a price adjustment as follows:

Gradation. The Engineer will determine a composite pay factor (CPF) using applicable price adjustment

factors “f” from Table 10 and acceptance limits from Table 8 or Table 9. The Engineer will not make price adjustments for gradations, but will monitor them as shutdown criteria.

VFB and Fines to Effective Binder. The Engineer will determine a pay factor (PF) using acceptance limits from Table 8 for Method A or Table 9 for Method B. The Engineer will not make price adjustments for VFB or Fines to Effective Binder, but will monitor them as shutdown criteria.

PGAB Content, VMA and Air Voids. The Engineer will determine a pay factor using acceptance limits from Table 8 for Method A or Table 9 for Method B. The Engineer will calculate the volumetric composite pay factor as follows:

$$\text{VCPF} = [(\text{air voids PF} \times 0.20) + (\text{vma PF} \times 0.20) + (\text{PGAB content PF} \times 0.10)] / (0.50)$$

Where

VCPF = Volumetric composite pay factor

PF = Pay Factor

The maximum VCPF shall be 1.025.

If any single pay factor for PGAB Content, VMA, or Air Voids falls below 0.80 for Method A or 0.86 for Method B, the volumetric composite pay factor for PGAB Content, VMA, and Air Voids shall be 0.55 for Method A or 0.70 for Method B.

Density. The Engineer will determine a pay factor using acceptance limits from Table 8 for Method A or Table 9 for Method B.

The maximum Pay Factor for Density shall be 1.025.

Lot Composite Pay Factor. The Engineer will calculate the lot composite pay factor as follows:

$$\text{LCPF} = (\text{VCPF} \times 0.5) + (\text{Density PF} \times 0.5)$$

Adjusted Price. The Engineer shall calculate the adjusted price as follows:

$$\text{AP} = \text{LCPF} \times \text{price per ton} \times \text{quantity}$$

END OF ITEM M-401

ITEM P-603 EMULSIFIED ASPHALT TACK COAT

DESCRIPTION

603-1.1 This item shall consist of preparing and treating an asphalt or concrete surface with asphalt material in accordance with these specifications and in reasonably close conformity to the lines shown on the plans.

MATERIALS

603-2.1 ASPHALT MATERIALS. The asphalt material shall be an emulsified asphalt as specified in ASTM D3628 as an asphalt application for tack coat appropriate to local conditions. The emulsified asphalt shall not be diluted. The Contractor shall provide a copy of the manufacturer's Certificate of Analysis (COA) for the asphalt material to the Resident Project Representative (RPR) before the asphalt material is applied for review and acceptance. The furnishing of COA for the asphalt material shall not be interpreted as a basis for final acceptance. The manufacturer's COA may be subject to verification by testing the material delivered for use on the project.

CONSTRUCTION METHODS

603-3.1 WEATHER LIMITATIONS. The tack coat shall be applied only when the existing surface is dry and the atmospheric temperature is 50°F (10°C) or above; the temperature has not been below 35°F (2°C) for the 12 hours prior to application; and when the weather is not foggy or rainy. The temperature requirements may be waived when directed by the RPR.

603-3.2 EQUIPMENT. The Contractor shall provide equipment for heating and applying the emulsified asphalt material. The emulsion shall be applied with a manufacturer-approved computer rate-controlled asphalt distributor. The equipment shall be in good working order and contain no contaminants or diluents in the tank. Spray bar tips must be clean, free of burrs, and of a size to maintain an even distribution of the emulsion. Any type of tip or pressure source is suitable that will maintain predetermined flow rates and constant pressure during the application process with application speeds under eight (8) miles per hour (13 km per hour) or seven (700) feet per minute (213 m per minute).

The equipment will be tested under pressure for leaks and to ensure proper set-up before use to verify truck set-up (via a test-shot area), including but not limited to, nozzle tip size appropriate for application, spray-bar height and pressure and pump speed, evidence of triple-overlap spray pattern, lack of leaks, and any other factors relevant to ensure the truck is in good working order before use.

The distributor truck shall be equipped with a minimum 12-foot (3.7-m) spreader spray bar with individual nozzle control with computer-controlled application rates. The distributor truck shall have an easily accessible thermometer that constantly monitors the temperature of the emulsion, and have an operable mechanical tank gauge that can be used to cross-check the computer accuracy. If the distributor is not equipped with an operable quick shutoff valve, the prime operations shall be started and stopped on building paper.

The distributor truck shall be equipped to effectively heat and mix the material to the required temperature prior to application as required. Heating and mixing shall be done in accordance with the manufacturer's recommendations. Do not overheat or over mix the material.

The distributor shall be equipped with a hand sprayer.

Asphalt distributors must be calibrated annually in accordance with ASTM D2995. The Contractor must

furnish a current calibration certification for the asphalt distributor truck from any State or other agency as approved by the RPR.

A power broom and/or power blower suitable for cleaning the surfaces to which the asphalt tack coat is to be applied shall be provided.

603-3.3 APPLICATION OF BITUMINOUS MATERIAL. The emulsified asphalt shall not be diluted. Immediately before applying the emulsified asphalt tack coat, the full width of surface to be treated shall be swept with a power broom and/or power blower to remove all loose dirt and other objectionable material.

The emulsified asphalt material shall be uniformly applied with an asphalt distributor at the rates appropriate for the conditions and surface specified in the table below. The type of asphalt material and application rate shall be approved by the RPR prior to application.

Emulsified Asphalt

Surface Type	Residual Rate, gal/SY (L/square meter)	Emulsion Application Bar Rate, gal/SY (L/square meter)
New asphalt	0.02-0.05 (0.09-0.23)	0.03-0.07 (0.13-0.32)
Existing asphalt	0.04-0.07 (0.18-0.32)	0.06-0.11 (0.27-0.50)
Milled Surface	0.04-0.08 (0.18-0.36)	.06-0.12 (0.27-0.54)
Concrete	0.03-0.05 (0.13-0.23)	0.05-0.08 (0.23-0.36)

After application of the tack coat, the surface shall be allowed to cure without being disturbed for the period of time necessary to permit drying and setting of the tack coat. This period shall be determined by the RPR. The Contractor shall protect the tack coat and maintain the surface until the next course has been placed. When the tack coat has been disturbed by the Contractor, tack coat shall be reapplied at the Contractor's expense.

603-3.4 FREIGHT AND WEIGH BILLS. The Contractor shall submit waybills and delivery tickets, during progress of the work. Before the final statement is allowed, file with the RPR certified waybills and certified delivery tickets for all emulsified asphalt materials used in the construction of the pavement covered by the contract. Do not remove emulsified asphalt material from storage until the initial outage and temperature measurements have been taken. The delivery or storage units will not be released until the final outage has been taken.

METHOD OF MEASUREMENT

603-4.1 The emulsified asphalt material for tack coat shall not be measured.

BASIS OF PAYMENT

603.5-1 Payment shall be made under Item 2 – Site Work. This price shall be full compensation for furnishing all materials, for all preparation, delivery, and application of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

MATERIAL REQUIREMENTS

ASTM D1250 Standard Guide for Use of the Petroleum Measurement Tables

ASTM D2995 Standard Practice for Estimating Application Rate and Residual Application Rate
of Bituminous Distributors

ASTM D3628 Standard Practice for Selection and Use of Emulsified Asphalts

END OF ITEM P-603

ITEM D-705 PIPE UNDERDRAINS AND SOIL FILTER SWALES

DESCRIPTION

705-1.1 This item shall consist of the construction of pipe underdrain or perimeter drain systems in accordance with these specifications and in reasonably close conformity with the lines and grades shown on the plans.

MATERIALS

705-2.1 GENERAL. Materials shall meet the requirements shown on the plans and specified below.

705-2.2 PIPE. The pipe shall be of the type called for on the plans or in the proposal and shall be in accordance with the following appropriate requirements.

AASHTO M252 Standard Specification for Corrugated Polyethylene Drainage Pipe
ASTM D 1785 PolyVinyl Chloride (PVC) Pipe, Schedules 40 and 80

705-2.3 JOINT MORTAR Not Used

705-2.4 ELASTOMERIC SEALS. Elastomeric seals shall conform to the requirements of ASTM F477.

705-2.5 POROUS BACKFILL. Porous backfill shall be free of clay, humus, or other objectionable matter, and shall conform to the gradation in Table 1 when tested in accordance with ASTM C136.

Table 1. Gradation of Porous Backfill

Sieve Designation (square openings)	Percentage by Weight Passing Sieves	
	Porous Material No. 1	Porous Material No. 2
1-1/2 inch (37.5 mm)		100
1 inch (25.0 mm)		90 - 100
3/8 inch (9.5 mm)	100	25 - 60
No. 4 (4.75 mm)	95 - 100	5 - 40
No. 8 (2.36 mm)		0 - 20
No. 16 (1.18 mm)	45 - 80	
No. 50 (300 µm)	10 - 30	
No. 100 (150 µm)	0 - 10	

When two courses of porous backfill are specified in the plans, the finer of the materials shall conform to particle size tabulated herein for porous material No. 1. The coarser granular material shall meet the gradation given in the tabulation for porous material No. 2.

705-2.6 FILTER FABRIC. The filter fabric shall conform to the requirements of AASHTO M288 Class 2 or equivalent.

Table 2. Fabric Properties

Fabric Property	Test Method	Test Requirement
Grab Tensile Strength, lbs	ASTM D4632	125 min
Grab Tensile Elongation %	ASTM D4632	50 min
Burst Strength, psi	ASTM D3785	125 min
Trapezoid Tear Strength, lbs	ASTM D4533	55 min
Puncture Strength, lbs	ASTM D4833	40 min
Abrasion, lbs	ASTM D4886	15 max loss
Equivalent Opening Size	ASTM D4751	70-100
Permittivity sec⁻¹	ASTM D4491	0.80
Accelerated Weathering (UV Stability) (Strength Retained - %)	ASTM D4355 *(500 hrs exposure)	70

705-2.7 COARSE GRAVEL. Coarse gravel used for underdrain in treatment swales shall consist of well graded, clean coarse gravel meeting the MEDOT specification of 703.22 Underdrain type ‘B’ backfill and shall meet the gradation requirements of Table 3 below. The coarse gravel shall contain no more than 5 percent fines passing the #200 sieve.

TABLE 3, COARSE GRAVEL GRADATION REQUIREMENTS

MEDOT Specifications for Underdrain, Type B (MEDOT #703.22)	
Sieve #	Percent passing by weight
1 inch	95-100
½ inch	75-100
4	50-100
20	15-80
50	0-15
200	0-5

CONSTRUCTION METHODS

705-3.1 EQUIPMENT. All equipment required for the construction of pipe underdrains and perimeter drains shall be on the project, in good working condition, and approved by the RPR before construction is permitted to start.

705-3.2 EXCAVATION. The width of the drain trench and pipe trench shall be as close as possible to the minimum width as shown on the plans. The trench walls shall be approximately vertical.

Where rock, hardpan, or other unyielding material is encountered, it shall be removed below the foundation grade for a depth of at least 4 inches (100 mm). The excavation below grade shall be backfilled with selected fine compressible material, such as silty clay or loam, and lightly compacted in layers not over 6 inches (150 mm) in uncompacted depth to form a uniform but yielding foundation.

Where a firm foundation is not encountered at the grade established, due to soft, spongy, or other unstable soil, the unstable soil shall be removed and replaced with approved granular material for the full trench width. The RPR shall determine the depth of removal necessary. The granular material shall be compacted to provide adequate support for the pipe and soil filter.

Excavated material not required or acceptable for backfill shall be disposed of by the Contractor as directed by the RPR. The excavation shall not be carried below the required depth; if this occurs, the trench shall be backfilled at the Contractor's expense with material approved by the RPR and compacted to the density of the surrounding material.

All sharp rocks or other material which may tear the filter fabric shall be removed from the bottom and walls of the trench prior to placement of filter fabric. The RPR shall approve the trench before placement of filter fabric

The pipe bedding shall be constructed uniformly over the full length of the pipe barrel, as required on the plans. The maximum aggregate size shall be 1 inch when the bedding thickness is less than 6 inches, and 1-1/2 inch when the bedding thickness is greater than 6 inches. Bedding shall be loosely placed, uncompacted material under the middle third of the pipe prior to placement of the pipe.

The Contractor shall do trench bracing, sheathing, or shoring necessary to perform and protect the excavation as required for safety and conformance to federal, state and local laws. Unless otherwise provided, the bracing, sheathing, or shoring shall be removed by the Contractor after the backfill has reached at least 12 inches (300 mm) over the top of the pipe. The sheathing or shoring shall be pulled as the granular backfill is placed and compacted to avoid any unfilled spaces between the trench wall and the backfill material. The cost of bracing, sheathing, or shoring, and the removal of same, shall be included in the unit price bid per foot (meter) for the pipe.

705-3.3 PLACING FILTER FABRIC POROUS BACKFILL NO. 2 OR GRAVEL BEDDING, AND LAYING AND INSTALLING PIPE. After the trench has been accepted by the Engineer, the filter fabric shall be laid along the bottom and sides of the trench and smoothed to remove wrinkles. Ends of filter fabric shall overlap a minimum of three feet.

Porous material No. 2 shall be placed to the minimum depth as shown on the plans and smoothed and graded so that the pipe may be laid at the proper elevations as shown on the plans. The pipe shall be laid and accepted by the Engineer before filling.

Coarse gravel bedding material shall be placed to the minimum depth as shown on the plans and smoothed and graded so that the pipe may be laid at the proper elevations as shown on the plans. The pipe shall be laid and accepted by the Engineer prior to backfilling. The laying of the pipe shall be started at the lowest point and laid upgrade. Pipe shall not be laid on frozen ground.

a. Concrete pipe. Not used

b. Metal pipe. Not used

c. PVC, fiberglass, or polyethylene pipe. PVC or polyethylene pipe shall be installed in accordance with the requirements of ASTM D2321. Perforations shall meet the requirements of AASHTO M252 or AASHTO M294 Class 2, unless otherwise indicated on the plans. The pipe shall be laid accurately to line and grade. Fiberglass per ASTM D3839 Standard Guide for Underground Installation of "Fiberglass" (Glass-Fiber Reinforced Thermosetting-Resin) Pipe.

d. All types of pipe. The upgrade end of pipelines, not terminating in a structure, shall be plugged or capped as approved by the RPR. Holes in perforated pipe shall be placed down, unless otherwise shown on the plans.

Unless otherwise shown on the plans, a 4-inch (100 mm) bed of granular backfill material shall be spread in the bottom of the trench throughout the entire length under all perforated pipe underdrains.

Pipe outlets for the underdrains shall be constructed when required or shown on the plans. The pipe shall be laid with tight-fitting joints. Porous backfill is not required around or over pipe outlets for underdrains. Coarse gravel pipe bedding shall be placed around and over pipe outlets for underdrains as shown on the plans. All connections to other drainage pipes or structures shall be made as required and in a satisfactory manner. If connections are not made to other pipes or structures, the outlets shall be protected and constructed as shown on the plans.

e. Filter fabric. The filter fabric shall be installed in accordance with the manufacturer's recommendations, or in accordance with the AASHTO M288 Appendix, unless otherwise shown on the plans.

705-3.4 MORTAR. Not used

705-3.5 JOINTS IN CONCRETE PIPE. Not used

705-3.6 EMBEDMENT AND BACKFILL. Backfill material shall be placed in the trench as directed below and shown on the plans. Backfill materials shall not contain a damaging amount of foreign matter, nor shall earth from the sides of the trench or from the windrow be allowed to filter into the backfill. The backfill shall be placed in loose layers not exceeding 6-inches in depth. When required by the Engineer, a template shall be used to properly place and keep separate the two sizes of backfill.

Coarse gravel material shall be placed in the trench and about the pipe as shown on the plans. Special care shall be taken in placing the backfill. Backfilling shall be done in a manner to avoid injurious top or side pressure on the pipe.

An 18-inch layer of soil media will be placed over the coarse gravel layer. Compaction of the materials shall be accomplished by saturation only. Construction equipment shall be kept off of the placed backfill material at all times. If, in the opinion of the Engineer, the backfill material has been compacted by the actions, or inactions of the Contractor, the Contractor shall remove and replace the backfill material at its own expense, to the limits determined by the Engineer.

a. Earth. The backfill material for the underdrain outlet pipe shall be selected material from excavation or borrow. It shall not contain stones retained on a 3-inch (75 mm) sieve, frozen lumps, chunks or highly plastic clay, or any other material that is objectionable to the Engineer. The material shall be moistened or dried if necessary to be compacted by the method in use. Backfill material shall be approved by the Engineer. Special care shall be taken in placing the backfill. All trenches and excavations shall be backfilled within a reasonable time after the pipes are installed, unless other protection of the pipe is directed.

The embedment material shall be placed in loose layers not exceeding 6 inches (150 mm) in depth under and around the pipe. Backfill material over the pipe shall be placed in lifts not exceeding 8 inches (200 mm). Successive layers shall be added and thoroughly compacted by hand and pneumatic tampers, approved by the RPR, until the trench is completely filled and brought to the planned elevation. Embedment and backfilling shall be done to avoid damaging top or side of the pipe.

In embankments and other unpaved areas, the backfill shall be compacted per Item P-152 to the density required for embankments in unpaved areas. Under paved areas, the subgrade and any backfill shall be compacted per Item P-152 to the density required for embankments for paved areas.

b. Granular backfill. Crushed gravel pipe bedding shall be placed about the underdrain or perimeter drain outlet pipe as shown on the plans.

c. Controlled low-strength material (CLSM). CLSM is not used

d. Special Methods for Vegetated Underdrain Treatment Swales. Care shall be taken to avoid compaction of both the coarse gravel and soil filter media where these materials are used in the construction of treatment swales. Installation of soils filters shall not commence until all site work upstream of the proposed vegetated underdrain treatment swales has been completed, all drainage systems have been installed, and permanent stabilization of the site has been established.

705-3.7 FLEXIBLE PIPE RING DEFLECTION. Not used.

705-3.8 CONNECTIONS. When the plans call for connections to existing or proposed pipe or structures, these connections shall be watertight and made to obtain a smooth uniform flow line throughout the drainage system. When necessary to facilitate work phasing, the Contractor shall either connect existing underdrain to proposed or construct a pipe run for a temporary outlet for new underdrain in a preliminary project phase. Work associated with temporary connections and pipe runs for temporary outlets shall be incidental to this item for payment purposes.

705-3.9 CLEANING AND RESTORATION OF SITE. After the backfill is completed, the Contractor shall dispose of all surplus material, soil, and rubbish from the site. Surplus soil may be deposited in embankments, shoulders, or as directed by the RPR. Except for paved areas of the airport, the Contractor shall restore all disturbed areas to their original condition.

METHOD OF MEASUREMENT

705-4.1 Underdrain system shall not be measured.

BASIS OF PAYMENT

705-5.1 Payment will be made under Item 2 – Site Work. All prices shall be full compensation for furnishing all materials and for all preparation, trenching, excavation, hauling, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete as described herein and as shown on the construction drawings to the satisfaction of the Engineer.

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM International (ASTM)

ASTM A760	Standard Specification for Corrugated Steel Pipe, Metallic Coated for Sewers and Drains
ASTM A762	Standard Specification for Corrugated Steel Pipe, Polymer Precoated for Sewers and Drains
ASTM C136	Standard Test Method for Sieve or Screen Analysis of Fine and Coarse Aggregates
ASTM D2321	Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications
ASTM D3034	Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings
ASTM F477	Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
ASTM F758	Standard Specification for Smooth Wall Poly (Vinyl Chloride) (PVC) Plastic Underdrain Systems for Highway, Airport, and Similar Drainage
ASTM F794	Standard Specification for Poly (Vinyl Chloride) (PVC) Profile Gravity Sewer Pipe & Fittings Based on Controlled Inside Diameter
ASTM F949	Standard Specification for Poly (Vinyl Chloride) (PVC) Corrugated Sewer Pipe with a Smooth Interior and Fittings
AASHTO M252	Standard Specification for Corrugated Polyethylene Drainage Pipe
AASHTO M288-99	Standard Specification for Geotextile Specification for Highway Applications
AASHTO M294	Standard Specification for Corrugated Polyethylene Pipe, 300- to 1500- mm (12- to 60-in.) Diameter
AASHTO M304	Standard Specification for Poly (Vinyl Chloride) (PVC) Profile Wall Drain Pipe and Fittings Based on Controlled Inside Diameter

END OF ITEM D-705

ITEM F-162 FENCING AND VEHICLE GATES

DESCRIPTION

F-162-1.1. This item shall consist of furnishing and erecting vinyl-coated chain-link perimeter fencing and an automatic vehicle slide gate. All components shall be in accordance with these specifications and in reasonably close conformity with the lines and grades shown on the plans or established by the Engineer and as established by these specifications. Exact locations of fence and gates shall be determined in the field by the Contractor and approved by the Engineer prior to construction.

MATERIALS

F-162-2.1 CHAIN-LINK FENCE FABRIC. The fabric shall be woven with a 9-gauge galvanized steel wire in a 1-3/4 or 2-inch mesh spacing as indicated on the plans or and shall meet the requirements of ASTM A 392, Class II. The fabric shall be factory coated with dark green durable vinyl.

F-162-2.2 WOODEN SCREENING FENCE. Not Used.

F-162-2.3 POSTS, RAILS AND BRACES. Posts, rails, and braces furnished for use in conjunction with zinc coated steel fabric shall conform to the requirements of Fed. Spec. RR-F-191/3d, Class I, Grade A or B. All posts and rails shall be factory coated with dark green durable vinyl.

Dimensions of the posts, rails, and braces shall be in accordance with Tables I through VI of Fed. Spec. RR-F-191/3 unless otherwise indicated on the Contract Drawings.

F-162-2.4 GATES AND LOCKS. Gate frames shall consist of galvanized steel pipe and conform to the specifications for the same material under paragraph F-162-2.3. The fabric shall be of the same type material as used in the fence where fabric is required.

F-162-2.5 WIRE TIES AND TENSION WIRES. Wire fabric ties, wire ties, hog rings, and tension wire for use in conjunction with a given type of fabric shall be of the same material identified with the fabric type. The tension wire shall be 7-gauge coiled spring wire coated similarly to the respective wire fabric being used. Wire fabric ties shall be hog rings or galvanized steel wire not less than 9 gauge.

All material shall conform to Fed. Spec. RR-F-191/4.

F-162-2.6 MISCELLANEOUS FITTINGS AND HARDWARE. Miscellaneous steel fittings and hardware for use with galvanized steel fabric shall be of commercial grade steel or better quality, wrought or cast as appropriate to the article, and sufficient in strength to provide a balanced design when used in conjunction with fabric posts, and wires of the quality specified herein.

F-162-2.7 VINYL-COATED CHAIN-LINK FENCING. Vinyl-coated fencing will be provided as a complete system. All components including fabric, posts, tension wires, rails, etc. shall be PVC coated in accordance with ASTM 688-88, Class 2b "Fused and Adhered" to galvanized steel products. All fabric will be 9 gauge core before galvanizing and vinyl coating. Color for all components will be manufacturers' standard dark green color. All components such as posts, tension wires, rails, tie wires, hog rings, braces etc. shall meet the same requirements as specified in paragraphs F-162-2.1 through F-162-2.6 above. Height of fencing shall be as denoted on the drawings.

F-162-2.8 VEHICLE ACCESS GATE. Vehicle access gates shall be provided as a complete system. The gate style shall be a horizontal slide gate with automatic operator, remote access keypad, auxiliary power system, concrete foundation pads and all necessary components as shown and detailed on the construction drawings.

Power for the vehicle access gate will be available from the terminal building electrical system. The load for the vehicle access gate shall not exceed 1440 VA at 120V AC, 1 phase, two wire.

Wiring conduit for the loop detectors shall be in accord with the requirements of the vehicle access gate manufacturer. Wiring and conduit for the keypad shall be in accord with the requirements of the vehicle access gate manufacturer.

Pipe bollards shall be furnished and installed as shown on the construction drawings and shall be considered incidental to the installation of the vehicle gate.

F-162-2.9 CONCRETE. Concrete shall be of a ready-mixed commercial grade with a minimum 28-day compressive strength of 3,000 psi and a maximum aggregate of 3/4 inch. Air entrainment shall be between 4 and 6 percent and shall be accomplished using an air-entrainment admixture. Concrete shall be subject to testing by the Engineer. Costs associated with retests required as a result of the concrete failing to meet any of the specifications cited herein shall be deducted from the periodic contractor's payment applications.

F-162-2.10 MANUFACTURER'S CERTIFICATION. Each roll of fabric shall carry a tag showing the kind of base metal (steel), the gage of the wire, the length of fencing in the roll, and the name of the manufacturer. Posts, wire, and other fittings shall be identified as to manufacturer, kind of base metal (steel), and kind of coating.

F-162-2.11 MISCELLANEOUS FITTINGS AND HARDWARE. Cables, tensioners, connectors, and all associated equipment shall be as indicated on the plans and as specified by the manufacturer.

F-162-2.12 SIGNS AND REFLECTORS. New fence signs and reflectors shall be supplied and installed on the new fence where indicated on the contract drawings. The signs shall be durable and intended for long service outdoor use and highly visible from 50 feet, with a white background. Signs are commercially available from suppliers of airport related items (ie. Sporty's Pilot Shop, Batavia, Ohio, telephone 1-800-LIFTOFF). The contractor shall also supply and securely install durable 3-inch diameter amber reflectors on both sides of the chain-link fence fabric at no more than 25 foot intervals. All signs and reflectors shall be securely attached to the fence fabric with hog ties; the exact locations of all signs and reflectors will be determined in the field by the Engineer.

F-162-2.13 SUBMITTALS. Prior to furnishing any materials for this item, the Contractor shall submit manufacturer's specifications and shop drawings for all fence and gate components and associated materials.

CONSTRUCTION METHODS

F-162-3.1 LAYOUT. The layout of all security fence and access gates shall be performed by the contractor, subject to Engineer approval. The fence itself shall be staked at a minimum of 100 feet on center and at all changes in direction. Layout work shall be considered incidental to the fence and gate construction.

F-162-3.2 CLEARING FENCE LINE. All trees, brush, stumps, logs, rocks, and other debris which would interfere with the proper construction of the fence in the required location shall be removed a width of twelve

(12) feet on each side of the fence centerline before starting fencing operations. As required, the ground shall be graded along the fence line, and six feet each side thereof, to facilitate the construction and as necessary to create mowable surfaces for future maintenance.

All areas disturbed by grading operations, whether performed by machine or hand work, shall be completely restored to include the placement of topsoil, seeding, and hay mulch in accordance with Sections T-901, T-905 and T-908 of these specifications and to the satisfaction of the Engineer.

All materials removed shall be disposed of off of Airport property and in accordance with local, State, and Federal environmental regulations. All clearing, grubbing, grading and restoration operations shall be considered incidental to the fence construction for which no separate or additional payment shall be made under this or any item of the contract.

Brush may be chipped onsite and spread evenly within the ten (10) foot clear area, when those areas are outside of wetland buffer zones. No spreading of chipped wood or brush will be allowed within wetland buffer zones. Care shall be taken not to spread clippings on adjacent property.

F-162-3.3 INSTALLING FENCE AND GATE POSTS. All posts shall be set as shown on the plans and at the required dimensions, depth, and spacing shown on the plans. Fence and gate posts shall be spaced no more than 8 feet apart and should be set a minimum of 48 inches in concrete footings unless otherwise indicated or directed by the Engineer.

The concrete when indicated shall be thoroughly compacted around the posts by tamping or vibrating and shall have a smooth finish flush with the ground and sloped to drain away from the posts. All posts shall be set plumb and to the required grade and alignment. No materials shall be installed on the posts, nor shall the posts be disturbed in any manner within seven (7) days after the individual post footing is completed and the concrete is fully cured.

Should solid rock be encountered at a depth less than the planned footing depth, a hole two (2) inches larger than the greatest dimension of the posts shall be drilled to a depth of 12 inches. After the posts are set, the remainder of the drilled hole shall be filled with grout, composed of one part portland cement and two parts mortar grade sand. Any remaining space above the rock shall be filled with concrete in the manner described above.

In lieu of drilling, the rock may be excavated to the required footing depth. No extra compensation shall be made for rock excavation or rock drilling. All rocks excavated during construction shall be removed from the site.

Any patching of bituminous pavement which is required as a result of the installation of fence / gate posts, shall be considered incidental to the project. The underlying base material shall be compacted to allow placement of bituminous patching with a minimum depth of three (3) inches, or equal in depth to that of the surrounding pavement, which ever is greater. Bituminous pavement shall conform to Maine DOT Standard Specifications.

F-162-3.4 INSTALLING TOP RAILS. The top rail shall be continuous and shall pass through the post tops. The coupling used to join the top rail lengths shall allow for expansion.

F-162-3.5 INSTALLING BRACES. Horizontal brace rails, with diagonal truss rods and turnbuckles, shall be installed at all terminal posts.

F-162-3.6 INSTALLING CHAIN-LINK FABRIC. Wire fabric shall be firmly attached to the posts and braced in the manner shown on the plans. All wire shall be stretched taut and shall be installed to the required elevations. Chain-link fence shall generally follow the contour of the ground, with the bottom of the fence fabric no less than 1 inch or more than four (4) inches from the ground surface. In no case will gaps beneath any fence be filled in with stones, rocks, roots, logs, or any other materials.

Backfill and regrading shall be performed where necessary to provide a neat appearance. All disturbed areas shall be restored by the contractor in accordance with section T-901. If deemed necessary by the Engineer, loam shall be provided to restore / level the work area. This work is considered incidental to the fence construction.

F-162-3.7 ELECTRICAL GROUNDS. Electrical grounds shall be constructed where a power line passes over or under any fence. The ground shall be installed directly below the point of crossing. The ground shall be accomplished with a copperclad rod 8 feet long and a minimum of 5/8" in diameter driven vertically until the top is six inches below the ground surface. A No. 6 solid copper conductor shall be clamped to the rod and to the fence in such a manner that each element of the fence is grounded. Installation of ground rods shall not constitute a pay item and shall be considered incidental to fence construction.

F-162-3.8 INSTALLING VEHICLE ACCESS GATE. All vehicle access gates shall be installed as shown on the plans and at the required dimensions. Pipe bollards shall be installed as shown on the plans and should be set a minimum of 48 inches in concrete footings. Pipe bollard shall utilize 24 inch diameter Sonotube forms for concrete footing placement.

METHOD OF MEASUREMENT

F-162-4.1 Fence of the various sizes and types furnished and installed will not be measured.

F-162-4.2 Vehicle gates, furnished and of the type indicated on the construction drawings, to be furnished and installed will not be measured.

BASIS OF PAYMENT

F-162-5.1 Payment for fence, personnel gates, and vehicle gates of the various types and dimensions as indicated on the construction drawings, furnished, installed, together with all layout, concrete foundation foundations, and hardware, signs, reflectors, and other associated materials, completed and accepted by the Owner will be made under Item 9 – Fence & Vehicle Gate.

MATERIAL REQUIREMENTS

ASTM A 120	Pipe, Steel, Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless, for Ordinary Uses
Fed. Spec.	Fencing, Wire and Post, Metal RR-F-191/1 (Chain-Link Fence Fabric)
Fed. Spec.	Fencing, Wire and Post, Metal (Chain-Link RR-F-191/3 Fence Posts, Top Rails and Braces)
Fed. Spec. ASTM F 668-88	Fencing, Wire and Post, Metal (Chain-Link RR-F-191/4 Fence Accessories) Standard Specification for PVC-Coated Steel Chain Link Fence

AASHTO-AGC
-ARTBA

Joint Cooperative Committee, Task Force 13 Report Guide to
Standardized Highway Barrier Hardware

END OF ITEM F-162

ITEM T-901 SEEDING

DESCRIPTION

901-1.1 This item shall consist of soil preparation, seeding, fertilizing, and liming the areas shown on the plans or as directed by the Engineer in accordance with these specifications.

MATERIALS

901-2.1 SEED The species and application rates of grass, legume, and cover-crop seed furnished shall be those stipulated herein. Seed shall conform to the requirements of Federal Specification JJJ-S-181.

Seed shall be furnished separately or in mixtures in standard containers with the seed name, lot number, net weight, percentages of purity and of germination and hard seed, and percentage of maximum weed seed content clearly marked for each kind of seed. The Contractor shall furnish the Engineer duplicate signed copies of a statement by the vendor certifying that each lot of seed has been tested by a recognized laboratory for seed testing within 6 months of date of delivery. This statement shall include: name and address of laboratory, date of test, lot number for each kind of seed, and the results of tests as to name, percentages of purity and of germination, and percentage of weed content for each kind of seed furnished, and, in case of a mixture, the proportions of each kind of seed.

1. The prescribed seed mixture indicated below shall be applied on all upland areas as follows:

<u>Seed</u>	<u>Minimum Seed Purity (Percent)</u>	<u>Minimum Germination (Percent)</u>	<u>Percent Proportion</u>
Creeping Red Fescue	95	85	50
Kentucky 31	95	85	30
Domestic Rye	98	90	10
Red Top	92	85	5
Ladino Clover	96	85	5

2. The prescribed seed mixture indicated below shall be utilized as “wetland seed mix” for vegetated underdrain filter swale applications.

New England Erosion Control/Restoration Mix for Detention Basins and Moist Sites as supplied by New England Wetland Plants, Inc., Amherst, Massachusetts, Tel: 413-548-8000, or approved equal, containing the following species:

Upland Bentgrass (*Agrostis perennans*), Creeping Bentgrass (*Agrostis stolonifera*), Big Bluestem, Niagra (*Andropogon gerardii*), New England Aster (*Aster novae-angliae*), Fox Sedge (*Carex vulpinoidea*), Virginia Wild Rye (*Elymus virginicus*), Boneset (*Eupatorium perfoliatum*), Grass-leaved Golenrod (*Euthamia graminifolia/Solidago g.*), Creeping Red Fescue (*Festuca rubra*), Soft Rush (*Juncus effusus*), Sensitive Fern (*Onoclea sensibilis*), Switchgrass (*Panicum virgatum*), Little Bluestem (*Schizachurium scoparium*), Green Bulrush (*Scirpus atrovirens*), Woolgrass (*Scirpus cyperinus*), Blue Vervain (*Verbena hastata*).

Seeding shall be performed during the period between April and December, inclusive, but not when the ground is frozen, snow covered, or at other times as directed by the Engineer.

Seed application rate shall be a minimum of 4 lb. per 1,000 square feet (MSF).

901-2.2 LIME. Lime shall be ground limestone containing not less than 85% of total carbonates, and shall be ground to such fineness that 90% will pass through a No. 20 mesh sieve and 50% will pass through a No. 100 mesh sieve. Coarser material will be acceptable, providing the rates of application are increased to provide not less than the minimum quantities and depth specified in the special provisions on the basis of the two sieve requirements above. Dolomitic lime or a high magnesium lime shall contain at least 10% of magnesium oxide. Lime shall be applied at the rate of 30-45 lb. per 1,000 square feet (MSF). All liming materials shall conform to the requirements of ASTM C 602.

901-2.3 FERTILIZER. Fertilizer shall be standard commercial fertilizers supplied separately or in mixtures containing the percentages of total nitrogen, available phosphoric acid, and water-soluble potash (10-20-20). They shall be applied at the rate and to the depth specified herein, and shall meet the requirements of applicable state laws. They shall be furnished in standard containers with name, weight, and guaranteed analysis of contents clearly marked thereon. No cyanamide compounds or hydrated lime shall be permitted in mixed fertilizers.

The fertilizers may be supplied in one of the following forms:

- a. A dry, free-flowing fertilizer suitable for application by a common fertilizer spreader;
- b. A finely-ground fertilizer soluble in water, suitable for application by power sprayers; or
- c. A granular or pellet form suitable for application by blower equipment.

Fertilizers shall be standard commercial fertilizer and shall be spread at the rate of 8 lbs. per 1,000 square feet. At least 40 percent of the fertilizer nitrogen shall be in a slow release form.

901-2.4 SOIL FOR REPAIRS. The soil for fill and topsoiling of areas to be repaired shall be at least of equal quality to that which exists in areas adjacent to the area to be repaired. The soil shall be relatively free from large stones, roots, stumps, or other materials that will interfere with subsequent sowing of seed, compacting, and establishing turf, and shall be approved by the Engineer before being placed.

CONSTRUCTION METHODS

901-3.1 ADVANCE PREPARATION AND CLEANUP. After grading of areas has been completed and before applying fertilizer and ground limestone, areas to be seeded shall be raked or otherwise cleared of stones larger than 2 inches (50 mm) in any diameter, sticks, stumps, and other debris that might interfere with sowing of seed, growth of grasses, or subsequent maintenance of grass-covered areas. If any damage by erosion or other causes has occurred after the completion of grading and before beginning the application of fertilizer and ground limestone, the Contractor shall repair such damage. This may include filling gullies, smoothing irregularities, and repairing other incidental damage.

An area to be seeded shall be considered a satisfactory seedbed without additional treatment if it has recently been thoroughly loosened and worked to a depth of not less than 5 inches (125 mm) as a result of grading operations and, if immediately prior to seeding, the top 3 inches (75 mm) of soil is loose, friable, reasonably free from large clods, rocks, large roots, or other undesirable matter, and if shaped to the required grade.

However, when the area to be seeded is sparsely sodded, weedy, barren and unworked, or packed and hard, any grass and weeds shall first be cut or otherwise satisfactorily disposed of, and the soil then scarified or otherwise loosened to a depth not less than 5 inches. Clods shall be broken and the top 3

inches of soil shall be worked into a satisfactory seedbed by discing, or by use of cultipackers, rollers, drags, harrows, or other appropriate means.

901-3.2 DRY APPLICATION METHOD.

a. Liming. Lime shall be applied separately and prior to the application of any fertilizer or seed and only on seedbeds that have previously been prepared as described above. The lime shall then be worked into the top 3 inches (75 mm) of soil after which the seedbed shall again be properly graded and dressed to a smooth finish.

b. Fertilizing. Following advance preparations and cleanup fertilizer shall be uniformly spread at the rate that will provide not less than the minimum quantity stated in paragraph 901-2.3.

c. Seeding. Grass seed shall be sown at the rate specified in paragraph 901-2.1 immediately after fertilizing, and the fertilizer and seed shall be raked within the depth range stated in the special provisions. Seeds of legumes, either alone or in mixtures, shall be inoculated before mixing or sowing, in accordance with the instructions of the manufacturer of the inoculant. When seeding is required at other than the seasons shown on the plans or in the special provisions, a cover crop shall be sown by the same methods required for grass and legume seeding.

d. Rolling. After the seed has been properly covered, the seedbed shall be immediately compacted by means of an approved lawnroller, weighing 40 to 65 pounds per foot (60 to 97 kg per meter) of width for clay soil (or any soil having a tendency to pack), and weighing 150 to 200 pounds per foot (223 to 298 kg per meter) of width for sandy or light soils.

901-3.3 WET APPLICATION METHOD.

a. General. The Contractor may elect to apply seed and fertilizer (and lime, if required) by spraying them on the previously prepared seedbed in the form of an aqueous mixture and by using the methods and equipment described herein. The rates of application shall be as specified in the special provisions.

b. Spraying Equipment. The spraying equipment shall have a container or water tank equipped with a liquid level gauge calibrated to read in increments not larger than 50 gallons (190 liters) over the entire range of the tank capacity, mounted so as to be visible to the nozzle operator. The container or tank shall also be equipped with a mechanical power-driven agitator capable of keeping all the solids in the mixture in complete suspension at all times until used.

The unit shall also be equipped with a pressure pump capable of delivering 100 gallons (380 liters) per minute at a pressure of 100 pounds per square inch (690 kPa). The pump shall be mounted in a line that will recirculate the mixture through the tank whenever it is not being sprayed from the nozzle. All pump passages and pipe lines shall be capable of providing clearance for 5/8 inch (15 mm) solids. The power unit for the pump and agitator shall have controls mounted so as to be accessible to the nozzle operator. There shall be an indicating pressure gauge connected and mounted immediately at the back of the nozzle.

The nozzle pipe shall be mounted on an elevated supporting stand in such a manner that it can be rotated through 360 degrees horizontally and inclined vertically from at least 20 degrees below to at least 60 degrees above the horizontal. There shall be a quick-acting, three-way control valve connecting the recirculating line to the nozzle pipe and mounted so that the nozzle operator can control and regulate the amount of flow of mixture delivered to the nozzle. At least three different types of nozzles shall be supplied so that mixtures may be properly sprayed over distance varying from 20 to 100 feet (6 to 30 m).

One shall be a close-range ribbon nozzle, one a medium-range ribbon nozzle, and one a long-range jet nozzle. For case of removal and cleaning, all nozzles shall be connected to the nozzle pipe by means of quick-release couplings.

In order to reach areas inaccessible to the regular equipment, an extension hose at least 50 feet (15 m) in length shall be provided to which the nozzles may be connected.

c. Mixtures. Lime, if required, shall be applied separately, in the quantity specified, prior to the fertilizing and seeding operations. Not more than 220 pounds (100 kg) of lime shall be added to and mixed with each 100 gallons (380 liters) of water. Seed and fertilizer shall be mixed together in the relative proportions specified, but not more than a total of 220 pounds (100 kg) of these combined solids shall be added to and mixed with each 100 gallons (380 liters) of water.

All water used shall be obtained from fresh water sources and shall be free from injurious chemicals and other toxic substances harmful to plant life. Brackish water shall not be used at any time. The Contractor shall identify to the Engineer all sources of water at least 2 weeks prior to use. The Engineer may take samples of the water at the source or from the tank at any time and have a laboratory test the samples for chemical and saline content. The Contractor shall not use any water from any source that is disapproved by the Engineer following such tests.

All mixtures shall be constantly agitated from the time they are mixed until they are finally applied to the seedbed. All such mixtures shall be used within 2 hours from the time they were mixed or they shall be wasted and disposed of at locations acceptable to the Engineer.

d. Spraying. Lime, if required, shall be sprayed only upon previously prepared seedbeds. After the applied lime mixture has dried, the lime shall be worked into the top 3 inches (8 cm), after which the seedbed shall again be properly graded and dressed to a smooth finish.

Mixtures of seed and fertilizer shall only be sprayed upon previously prepared seedbeds on which the lime, if required, shall already have been worked in. The mixtures shall be applied by means of a high-pressure spray that shall always be directed upward into the air so that the mixtures will fall to the ground like rain in a uniform spray. Nozzles or sprays shall never be directed toward the ground in such a manner as might produce erosion or runoff.

Particular care shall be exercised to insure that the application is made uniformly and at the prescribed rate and to guard against misses and overlapped areas. Proper predetermined quantities of the mixture in accordance with specifications shall be used to cover specified sections of known area. Checks on the rate and uniformity of application may be made by observing the degree of wetting of the ground or by distributing test sheets of paper or pans over the area at intervals and observing the quantity of material deposited thereon.

On surfaces that are to be mulched as indicated by the plans or designated by the Engineer, seed and fertilizer applied by the spray method need not be raked into the soil or rolled. However, on surfaces on which mulch is not to be used, the raking and rolling operations will be required after the soil has dried.

901-3.4 MAINTENANCE OF SEEDED AREAS. The Contractor shall protect seeded areas against traffic or other use by warning signs or barricades, as approved by the Engineer. Surfaces gullied or otherwise damaged following seeding shall be repaired by regrading and reseeding as directed. The Contractor shall mow, water as directed, and otherwise maintain seeded areas in a satisfactory condition until final inspection and acceptance of the work.

When either the dry or wet application method outlined above is used for work done out of season, it will be required that the Contractor establish a good stand of grass of uniform color and density to the satisfaction of the Engineer. A grass stand shall be considered adequate when bare spots are one square foot or less, randomly dispersed, and do not exceed 3% of the area seeded. If at the time when the contract has been otherwise completed it is not possible to make an adequate determination of the color, density, and uniformity of such stand of grass, payment for the unaccepted portions of the areas seeded out of season will be withheld until such time as these requirements have been met.

METHOD OF MEASUREMENT

901-4.1 The quantity of seeding shall not be measured.

BASIS OF PAYMENT

901-5.1 Payment shall be made under Item 2 – Site Work, which shall be full compensation for furnishing and placing all material and for all labor, equipment, tools, and incidentals necessary to complete the work prescribed in this item.

MATERIAL REQUIREMENTS

ASTM C602	Standard Specification for Agricultural Liming Materials
FED SPEC	JJJ-S-181, Federal Specification, Seeds, Agricultural

END OF ITEM T-901

ITEM T-905 TOPSOILING

DESCRIPTION

905-1.1 This item shall consist of preparing the ground surface for topsoil application, removing topsoil from designated stockpiles or areas to be stripped on the site or from approved sources off the site, and placing and spreading the topsoil on prepared areas in accordance with this specification at the locations shown on the plans or as directed by the Engineer.

MATERIALS

905-2.1 TOPSOIL. Topsoil shall be the surface layer of soil with no admixture of refuse or any material toxic to plant growth, and it shall be reasonably free from subsoil and stumps, roots, brush, stones that are 2 inches or more in diameter, and clay lumps or similar objects. Brush and other vegetation that will not be incorporated with the soil during handling operations shall be cut and removed. Ordinary sods and herbaceous growth such as grass and weeds are not to be removed but shall be thoroughly broken up and intermixed with the soil during handling operations. The topsoil or soil mixture, unless otherwise specified or approved, shall have a pH range of approximately 5.5 to 7.6, when tested in accordance with the methods of testing of the Association of Official Agricultural Chemists in effect on the date of invitation of bids. The organic content shall be not less than 3% nor more than 20% as determined by the wet-combustion method (chromic acid reduction). There shall be not less than 20% nor more than 80% of the material passing the 200 mesh (0.075 mm) sieve as determined by the wash test in accordance with ASTM C 117.

Natural topsoil may be amended by the Contractor with approved materials and methods to meet the above specifications.

905-2.2 INSPECTION AND TESTS. Within 10 days following acceptance of the bid, the Engineer shall be notified of the source of topsoil to be furnished by the Contractor. The topsoil shall be inspected to determine if the selected soil meets the requirements specified and to determine the depth to which stripping will be permitted. At this time, the Contractor may be required to take representative soil samples from several locations within the area under consideration and to the proposed stripping depths, for testing purposes as specified in 905-2.1.

CONSTRUCTION METHODS

905-3.1 GENERAL. Areas to be topsoiled shall be shown on the plans. If topsoil is available on the site, the location of the stockpiles or areas to be stripped of topsoil and the stripping depths shall be shown on the plans.

Suitable equipment necessary for proper preparation and treatment of the ground surface, stripping of topsoil, and for the handling and placing of all required materials shall be on hand, in good condition, and approved by the Engineer before the various operations are started.

905-3.2 PREPARING THE GROUND SURFACE. Immediately prior to dumping and spreading the topsoil on any area, the surface shall be loosened by discs or spike-tooth harrows, or by other means approved by the Engineer, to a minimum depth of 2 inches (50 mm) to facilitate bonding of the topsoil to the covered subgrade soil. The surface of the area to be topsoiled shall be cleared of all stones larger than 2 inches (50 mm) in any diameter and all litter or other material which may be detrimental to proper bonding, the rise of capillary moisture, or the proper growth of the desired planting. Limited areas, as

shown on the plans, which are too compact to respond to these operations shall receive special scarification.

Grades on the area to be topsoiled, which have been established by others as shown on the plans, shall be maintained in a true and even condition. Where grades have not been established, the areas shall be smooth-graded and the surface left at the prescribed grades in an even and properly compacted condition to prevent, insofar as practical, the formation of low places or pockets where water will stand.

905-3.3 OBTAINING TOPSOIL. Prior to the stripping of topsoil from designated areas, any vegetation, briars, stumps and large roots, rubbish or stones found on such areas, which may interfere with subsequent operations, shall be removed using methods approved by the Engineer. Heavy sod or other cover, which cannot be incorporated into the topsoil by discing or other means shall be removed.

When suitable topsoil is available on the site, the Contractor shall remove this material from the designated areas and to the depth as directed by the Engineer. The topsoil shall be spread on areas already tilled and smooth-graded, or stockpiled in areas approved by the Engineer. Any topsoil stockpiled by the Contractor shall be rehandled and placed without additional compensation. Any topsoil that has been stockpiled on the site by others, and is required for topsoiling purposes, shall be removed and placed by the Contractor. The sites of all stockpiles and areas adjacent thereto which have been disturbed by the Contractor shall be graded if required and put into a condition acceptable for seeding.

The available quantity of suitable on-site topsoil shall be completely exhausted prior to the approval for the use of topsoil from off-site sources. When suitable topsoil must be secured from off the airport site, the Contractor shall locate and obtain the supply, subject to the approval of the Engineer. The Contractor shall notify the Engineer sufficiently in advance of operations in order that necessary measurements and tests can be made. The Contractor shall remove the topsoil from approved areas and to the depth as directed. The topsoil shall be hauled to the site of the work and placed for spreading, or spread as required. Any topsoil hauled to the site of the work and stockpiled shall be rehandled and placed without additional compensation.

905-3.4 PLACING TOPSOIL. The topsoil shall be evenly spread on the prepared areas to a uniform depth of 4 inches after compaction, unless otherwise shown on the plans or stated in the special provisions. Spreading shall not be done when the ground or topsoil is frozen, excessively wet, or otherwise in a condition detrimental to the work. Spreading shall be carried on so that turfing operations can proceed with a minimum of soil preparation or tilling.

After spreading, any large, stiff clods and hard lumps shall be broken with a pulverizer or by other effective means, and all stones, rocks, or roots 2 inches (50 mm) or more in size, litter, or any foreign matter shall be raked up and disposed of by the Contractor. After spreading is completed, the topsoil shall be satisfactorily compacted by rolling with a cultipacker or by other means approved by the Engineer. The compacted topsoil surface shall conform to the required lines, grades, and cross sections. Any topsoil or other dirt falling upon pavements as a result of hauling or handling of topsoil shall be promptly removed.

METHOD OF MEASUREMENT

905-4.1 Topsoil obtained from on or off-site sources shall not be measured.

BASIS OF PAYMENT

905-5.1 Payment will be made under Item 2 – Site Work. This price shall be full compensation for furnishing all materials and for all preparation, placing, and spreading of the materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

TESTING MATERIALS

ASTM C 117

Materials Finer than 75- μ m (No. 200) Sieve in Mineral Aggregates by Washing

END OF ITEM T-905

ITEM T-908 MULCHING

DESCRIPTION

908-1.1 This item shall consist of furnishing, hauling, placing, and securing mulch on surfaces indicated on the plans or designated by the Engineer.

MATERIALS

908-2.1 MULCH MATERIAL. Acceptable mulch shall be the materials listed below or any approved locally available material that is similar to those specified. Low grade, musty, spoiled, partially rotted hay, straw, or other materials unfit for animal consumption will be acceptable. Mulch materials, which contain matured seed of species that would volunteer and be detrimental to the proposed overseeding, or to surrounding farm land, will not be acceptable. Straw or other mulch material which is fresh and/or excessively brittle, or which is in such an advanced stage of decomposition as to smother or retard the planted grass, will not be acceptable.

a. Hay. Hay shall be native hay, sudan grass hay, broomsedge hay, legume hay, or similar hay or grass clippings.

b. Straw. Straw shall be the threshed plant residue of oats, wheat, barley, rye, or rice from which grain has been removed.

c. Hay Mulch Containing Seed. Not Used.

d. Manufactured Mulch. Cellulose-fiber or wood-pulp mulch shall be products commercially available for use in spray applications.

e. Asphalt Binder. Asphalt binder material shall conform to the requirements of ASTM D 977, Type SS-1 or RS-1.

908-2.2 INSPECTION. Within 5 days after acceptance of the bid, the Engineer shall be notified of sources and quantities of mulch materials available and the Contractor shall furnish him with representative samples of the materials to be used. These samples may be used as standards with the approval of the Engineer and any materials brought on the site that do not meet these standards shall be rejected.

CONSTRUCTION METHODS

908-3.1 MULCHING. Before spreading mulch, all large clods, stumps, stones, brush, roots, and other foreign material shall be removed from the area to be mulched. Mulch shall be applied immediately after seeding. The spreading of the mulch may be by hand methods, blower, or other mechanical methods, provided a uniform covering is obtained.

Mulch material shall be furnished, hauled, and evenly applied on the area shown on the plans or designated by the Engineer. Straw or hay shall be spread over the surface to a uniform thickness at the rate of 2 to 3 tons per acre (1800-2700 kg per acre) to provide a loose depth of not less than 1-1/2 inches (37 cm) nor more than 3 inches (75 mm). Other organic material shall be spread at the rate directed by the Engineer. Mulch may be blown on the slopes and the use of cutters in the equipment for this purpose will be permitted to the extent that at least 95% of the mulch in place on the slope shall be 6 inches (150 mm) or more in length. When mulches applied by the blowing method are cut, the loose depth in place

shall be not less than 1 inch (25 mm) nor more than 2 inches (50 mm). Loose dry hay or straw mulch shall not be placed within 50 feet of airfield pavement areas without prior Engineer approval.

908-3.2 SECURING MULCH. The mulch shall be held in place by light discing, a very thin covering of topsoil, small brush, pins, stakes, wire mesh, asphalt binder, or other adhesive material approved by the Engineer. Where mulches have been secured by either of the asphalt binder methods, it will not be permissible to walk on the slopes after the binder has been applied. The Contractor is warned that in the application of asphalt binder material he must take every precaution to guard against damaging or disfiguring structures or property on or adjacent to the areas worked and that he will be held responsible for any such damage resulting from his/her operations.

If the “peg and string” method is used, the mulch shall be secured by the use of stakes or wire pins driven into the ground on 5-foot (150 m) centers or less. Binder twine shall be strung between adjacent stakes in straight lines and crisscrossed diagonally over the mulch, after which the stakes shall be firmly driven nearly flush to the ground to draw the twine down tight onto the mulch.

908-3.3 CARE AND REPAIR.

a. The Contractor shall care for the mulched areas until final acceptance of the project. Such care shall consist of providing protection against traffic or other use by placing warning signs, as approved by the Engineer, and erecting any barricades that may be shown on the plans before or immediately after mulching has been completed on the designated areas.

b. The Contractor shall be required to repair or replace any mulching that is defective or becomes damaged until the project is finally accepted. When, in the judgment of the Engineer, such defects or damages are the result of poor workmanship or failure to meet the requirements of the specifications, the cost of the necessary repairs or replacement shall be borne by the Contractor. However, once the Contractor has completed the mulching of any area in accordance with the provisions of the specifications and to the satisfaction of the Engineer, no additional work at his/her expense will be required, but subsequent repairs and replacements deemed necessary by the Engineer shall be made by the Contractor and will be paid for as additional or extra work.

c. If the “asphalt spray” method is used, all mulched surfaces shall be sprayed with asphalt binder material so that the surface has a uniform appearance. The binder shall be uniformly applied to the mulch at the rate of approximately 8.0 gallons (32 liters) per 1,000 square feet (100 square meters), or as directed by the Engineer, with a minimum of 6.0 gallons (24 liters) and a maximum of 10 gallons (40 liters) per 1,000 square feet (100 square meters) depending on the type of mulch and the effectiveness of the binder securing it. Bituminous binder material may be sprayed on the mulched slope areas from either the top or the bottom of the slope. An approved spray nozzle shall be used. The nozzle shall be operated at a distance of not less than 4 feet (120 cm) from the surface of the mulch and uniform distribution of the bituminous material shall be required. A pump or an air compressor of adequate capacity shall be used to insure uniform distribution of the bituminous material.

d. If the “asphalt mix” method is used, the mulch shall be applied by blowing, and the asphalt binder material shall be sprayed into the mulch as it leaves the blower. The binder shall be uniformly applied to the mulch at the rate of approximately 8.0 gallons (32 liters) per 1,000 square feet (100 square meters) or as directed by the Engineer, with a minimum of 6.0 gallons (24 liters) and a maximum of 10 gallons (40 liters) per 1,000 square feet (100 square meters) depending on the type of mulch and the effectiveness of the binder securing it.

METHOD OF MEASUREMENT

908-4.1 Mulching shall not be measured

BASIS OF PAYMENT

908-5.1 Payment will be made under Item 2 – Site Work. The price shall be full compensation for furnishing all materials and for placing and anchoring the materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

MATERIAL REQUIREMENTS

ASTM D 977 Emulsified Asphalt

END OF ITEM T-908

TERMINAL BUILDING PERFORMANCE SPECIFICATIONS

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PROJECT MANUAL

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SECTION PS1030.00**PROJECT CRITERIA****PERFORMANCE**

- A. Provide built elements and site modifications as required to construct a new Terminal Building comprising of public waiting area, restroom facilities, and flight preparation and operations space.
1. The complete project comprises the following elements:
 - a. Substructure (A): Elements below grade and in contact with the ground.
 - b. Shell (B): The superstructure, exterior enclosure, and the roofing.
 - c. Interiors (C): Interior construction, stairs, finishes, and fixtures, except fixtures associated with services and specialized equipment.
 - d. Services (D): Mechanized, artificial, automatic, and unattended means of supply, distribution, transport, removal, disposal, protection, control, and communication.
 2. Code: Make all portions of the project comply with the code. The code referred to herein consists of the most recently adopted versions of all applicable local, State, and federal regulations, unless a different version applies to this project for some documented reason, and may include those listed below:
 - a. Federal regulatory requirements, which may incorporate or amend the following:
 - (1) Americans with Disabilities Act of 1990, as a public accommodation, as implemented in:
 - (a) 28 CFR 35, Department of Justice regulations relating to State and local governments, including ADAAG.
 - (b) 28 CFR 36, Department of Justice regulations, including ADAAG-1994.
 - (c) 49 CFR 27, 37, and 38, Department of Transportation regulations, including ADAAG.
 - (2) 29 CFR 1910, Occupational Safety and Health Standards, as a work place.
 - b. State of Maine regulatory requirements, which may incorporate and/or amend the following, with all addenda, supplements and referenced standards:
 - (1) Maine Uniform Building and Energy Code (MUBEC)
 - (2) ANSI A117.1, Accessible and Usable Buildings and Facilities
 - (3) International Mechanical Code, Maine Edition
 - (4) National Standard Plumbing Code
 - (5) International Energy Conservation Code, Maine Edition
 - (6) International Fuel Gas Code, Maine Edition
 - (7) NFPA 70, National Electrical Code 2017
- B. Amenity and Comfort
 1. Thermal performance: Construct to provide comfortable interior environment in accordance with the code.
-

C. Health and Safety

1. Fire resistance: Provide the Project with a construction classification of minimum Type V-B noncombustible construction in accordance with code.
2. Health Hazards
 - a. Prevent growth of fungus, mold, and bacteria on surfaces and in concealed spaces.
 - b. Indoor air quality: Construct to comply with the code and the following:
 - (1) Acceptable air quality as defined by ANSI/ASHRAE 62.1-2004.
3. Electrically-operated equipment and appliances: UL listed for application or purpose to which they are put; suitable for wet locations listing for exterior use.

D. Structure

1. Capacity: Provide loadbearing substructure members as required by code and designed to distribute dead loads, live loads, and environmental loads so that bearing capacity of soil is not exceeded.
2. Dead loads: Construct to accommodate loads from weights of building materials, construction itself, and all fixed service equipment.
 - a. Design roof to support at least 10 pounds per square foot in excess of code requirements.
3. Live loads: Construct to accommodate loads from use and occupancy of the building, either uniformly distributed loads as prescribed by code or concentrated loads, whichever are more demanding structurally.
4. Environmental loads: Construct to accommodate loads from all environmental forces in accordance with code and the following:
 - a. Wind loads, snow loads, earthquake loads and soil loads.

E. Durability

1. Expected service life span: Expected functional service life of this Project is 50 years.
 - a. Service life spans of individual elements that differ from the overall project life span are defined in other Sections.
 2. Energy efficiency: Minimize energy consumption while providing function, amenity, and comfort specified.
 3. Water consumption: Minimize water consumption.
 4. Waste removal and recycling: As described in the project program.
 5. Ease of operation: Provide facility, equipment, and systems that are easily operated by personnel with a reasonable level of training for similar activities.
 - a. Minimize the need for specialized training in operation of specific equipment or systems; identify all equipment and systems for which the manufacturer recommends or provides training programs.
 - b. Train City personnel in operation of equipment and systems.
 6. Ease of maintenance: Minimize and facilitate the amount of maintenance required.
 - a. Provide elements designed to minimize need for maintenance.
 - b. Provide access to elements, working clearances, and access doors and panels for ease of maintenance throughout.
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- c. Provide elements and access to elements to facilitate maintenance while facility is in operation without undue disruption.

ELEMENTS AND PRODUCTS

- A. Basis of Design: Where brand names are listed, they represent the Basis of Design unless those items are identified as approved proprietary items in project requirements.
 - 1. The Basis of Design for a designated product establishes the quality and salient physical, functional and performance characteristics that must be met in the design and construction of the project.
 - 2. Inclusion of a product other than that listed as the Basis of Design does not constitute a substitution so long as the submittals for the proposed product demonstrate that it will perform as well as or better than the Basis of Design.
- B. Products
 - 1. Where the properties of a product are specified by description and/or with performance criteria, use products that comply with the description and/or performance criteria.
 - 2. Where a type of product is specified without performance criteria specifically applicable to the element, use the type of product specified.
 - 3. Where a type of product is specified with applicable performance criteria, use either the type of product specified or another type of product that meets the performance criteria as proven-in-use or proven-by-mock-up.
 - 4. Where neither types of products nor performance criteria are specified, use products that will perform well within the specified life span of the building.

END OF SECTION PS1030.00

SECTION PS1040.00
MEASUREMENT & PAYMENT

PART 1 GENERAL

1.01 PROCEDURES

- A. All parts of General Provisions, Section 90 will apply unless otherwise specified herein. Provisions contained herein are clarifications and additional requirements to the respective pay items.
- B. For lump sum items, the CONTRACTOR shall be paid in accordance with the progress schedule and schedule of values on the basis of actual work accepted until the work item is completed. Upon completion of the item, 100% of the lump sum price may be paid, less retained amounts.
- C. For the respective lump sum pay items, the CONTRACTOR shall prepare a schedule of values, subject to approval by the Engineer, in the following format.
- D. Each application for payment shall be accompanied by the schedule of values as follows.
- E. For each item, by specification section number and title, provide a column for listing:
 - 1. Item number
 - 2. Description of work
 - 3. Scheduled value
 - 4. Previous applications
 - 5. Work in place
 - 6. Stored materials
 - 7. Authorized change orders
 - 8. Total work completed
 - 9. Materials stored to date of application
 - 10. Percentage of completion
 - 11. Balance to finish
 - 12. Retainage (10%)

For specification sections covering more than one production of work item, list each item separately as a sub-listing to the section. Standard AIA Document G703 Continuation Sheet is acceptable.

- F. Submit format, including scheduled values to be used, to Engineer for review and approval a minimum of ten (10) days prior to the first application for payment.

1.02 SCOPE OF PAYMENT

- A. In accordance with General Provisions, Section 90. Payment for lump sum items will be in accordance with the approved schedule of values for the respective item to be submitted by the Contractor during the Contract award process. Payment will be made at the lump sum price for the item and shall be full compensation for the respective item as shown on the Contract Drawings and specified herein, complete and accepted by the Engineer.
- B. Payment for unit price items will be made at the contract unit price for work completed and approved by the Engineer in accordance with the measurement provisions for the respective item. This price shall be full compensation for furnishing all materials, labor, equipment, tools, and

incidentals necessary to complete the respective item.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.01 GENERAL

A. Lump Sum

The payment for the respective lump sum item listed below shall include all materials, labor, tools, equipment and incidental work necessary to complete the item in accordance with the Drawings and Specifications whether or not the particular work is mentioned in the following paragraphs.

B. Incidental Work

Costs for which there is no specific item or provision for payment in the Schedule of Prices or which are specified to be incidental to the Work will not be paid for directly and will be considered incidental to the various items of the work. Incidental items may include but may not be limited to bid preparation, bonding, mobilization, all temporary traffic control and signage, temporary seeding, temporary site stabilization, preparing and restoring stockpile sites and haul routes outside of the project limits, radio communication, compliance with permitting, and final project aerial photography.

3.02 SCHEDULE OF PRICES ITEMS

Item 1 – Mobilization

This item of work shall consist of, but is not limited to, work and operations necessary for the movement of personnel, equipment, material and supplies to and from the project site for work on the project except as provided in the contract as separate pay items. Based upon the contract lump sum price for “Mobilization” partial payments will be allowed as follows:

- a. With first pay request, 25%.
- b. When 50% or more of the original contract is earned, an additional 40%.
- c. When 90% or more of the original contract is earned, an additional 25%.
- d. After Final Inspection, Staging area clean-up and delivery of all Project Closeout materials as required, the final 10%.

Item 2 – Site Work

This item shall consist of all necessary items to prepare the site for construction activities, included erosion control measures and demolition. In addition, excavation for building foundations and groundwater and stormwater drainage are required. New vehicle parking areas for both long term and short-term visitors will include the placement of new base and subbase structural gravels as outlined in M-304 and asphalt pavement as outlined in M-401. This item will also include the necessary loam, seeding and mulch once building and pavement activities are nearing completion.

Item 3 – Foundation

This item will include the construction of concrete foundations for the proposed Terminal Building. All necessary materials, equipment, personnel and incidentals to form, reinforce, pour and finish concrete

foundations to make ready for framing shall be included. Foundations shall adhere to energy and building codes and provide compliant ridged insulation board and vapor barrier beneath and around all sides of foundation. It should be noted that radiant floor heating is the proposed main heat source for the building. Foundation design, if required by Code, will be the responsibility of the Contractor.

Item 4 – Terminal Building

This item will include framing, sheathing, insulating, and cladding of the superstructure along with installation of all exterior doors and windows. In addition, all interior finishes including drywall, flooring, ceilings, restroom appurtenances, interior doors, kitchenette cabinets, millwork and other finishes shall be included. This item shall require all materials, labor, equipment and incidentals to complete the terminal building as depicted herein and shown on the contract drawings.

Item 5 – Electrical

This item will include providing all electrical wiring, grounding, panelboards, devicing, and finishes for the terminal building construction. All NEC and MUBEC codes shall be followed as required for this item and the electrical subcontractor shall have a minimum of 15 years' experience in commercial projects. Any permits shall be the responsibility of the electrical subcontractor.

Item 6 – Plumbing

This item consists of providing all necessary plumbing for the new terminal building to provide connection from Passamaquoddy Water District and install domestic hot and cold water piping, valves, fittings, etc. as well as all bathroom and kitchenette fixtures. In addition, all wastewater lines from sinks, toilets, etc. shall be connected to a new septic field as described in Item 11. All plumbing and MUBEC codes shall be followed as required and the plumbing subcontractor shall have a minimum of 15 years' experience in commercial projects. Any permits shall be the responsibility of the plumbing subcontractor.

Item 7 – Heating, Ventilation, & Air Conditioning

The proposed building will require HVAC equipment installation. Heating will be propane fired radiant floor system with a centrally located propane fire place in the main common area. Air Conditioning equipment is expected to utilize split heat pumps. It is required that the HVAC subcontractor have a minimum of 15 years' experience with commercial building projects. In addition, all materials, equipment, labor and incidentals to design and install a system for heating, ventilation and air conditioning that will maintain ambient air temperature throughout the building is required.

Item 8 – Electrical Utility Connection

An allowance for the disconnection of electric service to the existing building and reconnection to the proposed building. The contractor will coordinate with the utility company and provide receipts for work completed.

Item 9 – Fence & Vehicle Gate

This item includes the removal of the existing fence and replaced with approximately 150' of 5-foot chain-link security fence along with person gates to provide access to and from the aircraft apron to the proposed terminal building. In addition, an automatic vehicle slide gate shall be installed with keypad entry system to open the gate from landside approaching vehicles and in-pavement sensors to open the gate for airside vehicle exit.

Item 10 – Septic System

This item will provide for the replacement of the existing system and installation of a new 1,000-gallon concrete tank and stone bed and pipe septic field. This item will require the demolition, removal, and disposal of the existing septic field.

END OF SECTION

ELEMENT A SUBSTRUCTURE

A1000.00
FOUNDATIONS

PERFORMANCE

A. Basic Function

1. Provide foundations as required to support the completed and occupied building safely and without uncontrolled subsidence or other movement.
2. Provide foundations that are consistent with the site's environmental and geotechnical constraints.
3. Foundations comprise the following elements:
 - a. Standard Foundations: Includes spread footings below columns, linear spread footings below loadbearing walls, foundation walls not part of basements, caisson (pier) caps, and pile caps.
 - b. Other Foundations: All types of special foundation systems, including permanent shoring and underpinning, raft foundations, piles, drilled piers (caissons), cofferdams, and permanent dewatering systems.
 - c. Floors on Grade: All elements necessary for slab foundations, including trenches, pits, and sumps, equipment bases, integral thermal insulation, slab moisture protection, and subdrainage system.
4. Provide a vapor intrusion system.
5. The Contractor is required to supply foundation plans that have been prepared by a concrete subcontractor whose primary business is concrete foundation construction and who has at least 15 years of experience. The contractor will provide 5 previous project summaries within the last 3 years to the Engineer for approval.
6. Where foundations are integral with elements defined within another element group, meet requirements of both element groups.

B. Amenity and Comfort

1. Thermal Performance
 - a. Provide thermal performance values for individual foundation elements in compliance with code and project requirements.
2. Water Protection
 - a. Waterproofing: Provide permanent waterproofing at portions of foundation that extend below water table and enclose habitable space.
 - b. Drainage: Provide method of collecting and draining water from below portions of foundation that enclose habitable space.

C. Structure

1. Capacity: Provide loadbearing foundation members as required by code and project requirements.

D. Environmental Impacts

1. Construct all foundations in accordance with all codes, regulations, and the requirements and restrictions.
2. Construct all foundations in conformance with sitework plans and specifications approved by the Engineer, in accordance with the project requirements.

END OF SECTION A1000.00

ELEMENT B SHELL

SECTION B2010.00
EXTERIOR WALLS

PERFORMANCE

A. Basic Function

1. Provide physical separation between exterior and interior conditioned space, that keeps out weather, uninvited people, animals and insects.
2. The elements forming the physical separation comprise the exterior walls and consist of the supporting structure, the exterior skin, vapor retarders, air barriers, and insulation, the interior skin if an integral part of the wall, exterior screens and railings, exterior soffits unless they do not form a weather barrier, firestopping and draftstopping within wall and between wall and floors, and other exterior wall elements.
3. Where exterior wall elements also must function as elements defined within another element group, meet requirements of both element groups.

B. Amenity and Comfort

1. Thermal performance: In accordance with applicable energy codes and project requirements.
2. Provide continuous insulation over entire enclosure.
3. Air barrier: Continuous separate membrane over entire exterior enclosure that allows moisture vapor transmission while preventing air infiltration.

C. Structure

1. Wind design: No damage when tested in accordance with ASTM E 330-2002 at 1.5 times positive and negative design wind loads using 10 second duration of maximum load.
 - a. Deflection: 1/240 of span, maximum, unless otherwise indicated.
 - b. Members supporting glass: Maximum deflection of flexure limit of glass; with full recovery of glazing materials.
2. Durability
 - a. Water penetration: Drain water, moisture, and condensation entering assembly to the exterior.
 - b. Joint sealers in exterior skin: Minimize the need for joint sealers in exterior skin consistent with requirements for building movement and joining of dissimilar materials.
 - c. Vapor retarder: Continuous separate membrane over entire exterior enclosure, located on the warm side of the winter dew point.

PRODUCTS

- A. Exterior siding to be of brick material.

END OF SECTION B2010.00

SECTION B2020.00
EXTERIOR WINDOWS

PERFORMANCE

A. Basic Function

1. Fill, cover, close, or otherwise protect all glazed openings in the exterior walls (other than doors) so that the entire exterior enclosure functions as specified, using windows and other opening elements as specified, without using components that must be installed at changes of season.
2. The elements comprising exterior windows and other openings include windows, fixed glazing other than glazed walls, ventilation openings, protection devices for openings, and elements that form or complete the openings, unless an integral part of another element.
3. Where exterior window and other opening elements also must function as elements defined in another element group, meet requirements of both element groups.

B. Amenity and Comfort

1. Thermal Performance of Elements Forming Exterior/Interior Separation: Per Code.
2. Air Infiltration: Per Code.

C. Appearance

1. Sight Lines of Glazed Areas: Provide maximum glazing area with minimum interruption by framing members.
2. Frames: Construct frames of openings to give a flush appearance without shadow lines.

D. Health and Safety

1. Fire Resistance: Rating as required to maintain fire resistance rating of exterior wall in which they occur.
2. Operable Openings
 - a. Where operable units are indicated, provide projecting in- or out-swinging units unless otherwise indicated.
 - b. Provide insect screens to keep insects, birds, and animals out.

E. Structure

1. Lintels: Constructed to span openings and support loads imposed by exterior wall; maximum deflection of 1/720 of span, vertically and horizontally.
2. Wind Design: No damage when tested in accordance with ASTM E 330-2002 at 1.5 times positive and negative design wind loads using 10 second duration of maximum load.

F. Durability

1. Air Intake and Exhaust Openings: Minimize rainwater penetration and protect adjacent interior spaces from damage from water.
 2. Water Penetration: Construct openings and components of openings to positively drain water to exterior of the building.
 - a. Top of Openings: If wall construction does not provide its own methods of drainage, use separate flashing to prevent water from entering opening components or the interior of the building.
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- b. Bottom of Openings: Integral or separate sill or flashing to prevent water running over or draining out of opening components from entering the wall construction below or the interior of the building. Provide end dams and other components in compliance with Materials and Systems Standards.

G. Operation and Maintenance

- 1. Operating Components: Remaining operable for 10 years under normal exposure conditions for the project site.

PRODUCTS

- A. Windows to be vinyl casement type with large picture windows along the southerly side of the building facing the airfield.
- B. Casement windows to be double with a minimum width of 36".

END OF SECTION B2020.00

SECTION B2050.00
EXTERIOR DOORS

PERFORMANCE

A. Basic Function

1. Secure all openings in the exterior wall that function to allow the entrance and exit of people, vehicles, and goods, so that the entire exterior enclosure functions as specified, using doors as specified, without using components that must be installed at changes of season.
2. The elements comprising exterior doors include doors of all sizes and uses, gates, and elements that form or complete the openings, unless an integral part of another element.
3. Where exterior door elements also must function as elements defined within another element group, meet requirements of both element groups.

B. Amenity and Comfort

1. Thermal performance: In accordance with codes and referenced standards.
2. Transparency
 - a. Provide pedestrian doors at building exits and exits from stairways to exterior with vision panels of at least 75 percent of door area.
3. Convenience and Accessibility
 - a. Door handles and knobs: As required by code; where code and other requirements allow an option exit device must be provided.
 - b. Mode of operation: Self-closing, with manual hold-open, unless otherwise indicated.
 - (1) Main entrances: Manual, with power-assisted operation where required by codes and referenced standards.
4. Appearance
 - a. Doors at building entrances: Match glazed wall framing.
 - b. Other pedestrian doors: Provide factory-applied paint finish in custom color(s).
 - (1) Provide factory-installed insulated lites where indicated.

C. Health and Safety

1. Emergency Egress
 - a. Provide exit doors minimum double 36 inch wide in quantity to accommodate occupant load per code.
 2. Fire Resistance
 - a. Doors required by code to be fire resistive: Fire resistance rating as required by code, for fire resistance rating of exterior wall in which doors occur, tested in accordance with a method acceptable to local authorities.
 3. Physical Security
 - a. Doors butt hinges shall be non-removable from outside without use of specialized key.
 - b. Secure each exterior door using a "fail-secure" method that allows entrance plus exit from inside using only one motion.
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- c. Provide keyless touchpad locksets for all exterior doors.

D. Structure

1. Lintels: Constructed to span door openings and support loads imposed by exterior wall with maximum deflection vertically and horizontally of 1/240 of span.
2. Door frames: Constructed to span door opening with maximum deflection vertically and horizontally of 1/240 of span.

E. Durability

1. Water penetration: Construct openings and components of openings to positively drain water to exterior of the building.
 - a. Top of openings: If wall construction does not provide its own methods of drainage, use separate flashing to prevent water from entering opening components or the interior of the building.
 - b. Bottom of openings: Integral or separate sill or flashing to prevent water running over or draining out of opening components from entering the wall construction below or the interior of the building.
2. Wear Resistance
 - a. Door surfaces: Scuff-resistant kick plates/mop plates in areas where foot impact is likely; highly scratch-resistant in areas where hand contact is likely.
 - b. Door handles and knobs: Satin stainless finish unless otherwise noted; highly scratch-resistant and of finish that will minimize appearance changes due to wear; no plated or coated finishes.
3. Flexible seal materials: Minimize deterioration due to operation of doors and aging.
4. Swinging doors: Control door swing to prevent damage due to impact, to either door or element impacted.
5. Corrosion: Provide stainless steel base material for hinges, fasteners, pulls, kick and push plates, strikes, and similar components at doors exposed to weather or in wet locations.

F. Operation and Maintenance

1. Service life span of operating components: Remaining operable for service life of enclosure elements specified in Section B20 under normal exposure conditions for the project site.
2. Ease of use and repair: Provide doors that will be easy to use by occupants, easy to repair or service, and with operating components easy to replace.

PRODUCTS

A. Entrance Doors to be metal framed glass doors.

1. Provide:
 - a. Glazed fiberglass doors with thermally broken frames.
 - b. Weatherstripping and thresholds.
 - c. Factory finish in custom colors where indicated.

B. Concealed Flashings

1. Use:
 - a. Stainless steel flashing.

C. Joint Sealers: Same as specified in Section B2010.

D. Glazing in Doors

1. Double pane insulated glass units, tempered and/or laminated as required by code.

E. Hardware for Swinging Doors

1. Use satin stainless steel finish, BHMA 630, US32D.
 - a. Do not use plated or coated finishes.
2. Use fire-rated hardware on fire-rated doors.
3. Hinges: Continuous hinges.
4. Exit devices: Unless specifically indicated as one type, provide surface mounted vertical rods.
5. Locksets: Unless specifically indicated as one type, rim exit devices.
6. Door closers: Unless specifically indicated as one type, surface overhead frame-mounted type or surface overhead door-mounted type.
7. Door stops: Unless specifically indicated as one type, overhead door/frame mounted type.
8. Protection: Provide mechanically fastened stainless steel push plates and/or kick plates/mop plates at locations subject to service use or use by wheeled carts.

F. Do not use:

1. Different metals subject to galvanic action in direct contact with each other.
2. Aluminum in direct contact with concrete or cementitious materials.

G. Frames

1. Provide steel frames in accordance with door material and appearance.
 2. Frame corners shall be internally reinforced and fully welded unit construction, with corners mitered and continuously welded full depth and width of frame. Frame shall be back welded.
 3. Entrance frames shall be mortised, reinforced, drilled and tapped for all mortise hardware per templates from the hardware supplier.
 4. Exterior doors and frames shall be weatherstripped at head, jambs, sills and meeting rails. Weatherstrip shall be continuous, vandal-resistant and field replaceable.
 5. Knock-down frames will not be accepted.
 6. Entrance door frames shall have continuous internal 12 gauge steel channel in hinge stile and jamb, arranged to reinforce mounting hinges.
 7. Provide caulking stops, filler pieces and trim where required, integrally formed as part of the frame.
 8. Provide hardware reinforcement where specified by hardware manufacturer.
 9. Provide cutouts and reinforcing for security devices as required.
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METHODS OF CONSTRUCTION

- A. Perform work in accordance with the following:
 - 1. Door hardware: See Section CI 030, Interior Doors.
- B. Metal-framed storefront doors: Extruded aluminum, factory-engineered, -fabricated, and -finished, fixed thermal framing supporting glazing, panels, and doors, complete with glazing, glazing seals, flashings, and anchors.
 - 1. Glazing method: Glazing caps with gaskets; allow for reglazing individual panes from exterior without disturbing adjacent panes.
 - 2. Gaskets and setting blocks: EPDM, ASTM C 864-2005; or silicone rubber, ASTM C 1115-2006.
 - 3. Structural glazing sealant: ASTM C 1184-2005 silicone.
- C. Insulated Fiberglass Reinforced Polyester Faced Doors
 - 1. Fiberglass reinforced polyester face material: 0.120-inch minimum thickness, with color integral through full thickness of face sheet and sandstone texture finish.
 - 2. Core material: Urethane foam of 5 pounds per cubic foot density for doors.
 - 3. Frames: Heavy-wall aluminum.
- D. Insulated Steel Doors and Frames
 - 1. Minimum 14-gauge doors and frames.
 - 2. Fully welded construction.
 - 3. Provide hot-dipped zinc-coated steel complying with ASTM A653-G90 or equivalent.
- E. Provide External Doors as indicated on the plans.

END OF SECTION B2050.00

SECTION B2080.00**EXTERIOR WALL APPURTENANCES****PERFORMANCE**

1. Exterior wall appurtenances include all elements attached to the outside of the exterior walls, except where an integral part of equipment or service elements. Appurtenances required are those made necessary by the design and may include the following:
 - a. Exterior louvers.
 - b. Exterior canopies.
 - c. Exterior railings and handrails.
 2. Where exterior wall appurtenances also have a function defined in another element group, design such elements as specified for that element group, in addition to the requirements specified in this section.
 3. Do not provide exterior wall appurtenances that are lower than 12 feet above adjacent grade, with the exception of railings and handrails.
 4. Basis of Design: Where brand names are listed, they represent the Basis of Design unless those items are identified as approved proprietary items in project requirements.
- B. Amenity and Comfort
1. Railings and handrails
 - a. Provide exterior tube railings, balusters, guard rails, wall railings, infill panels and fittings at all stairs, ramps, and other locations to protect, assist and guide people and as required to meet all applicable codes and standards.
 - b. Provide railings and handrails that are in full compliance with barrier-free and all other codes and standards.
 - c. Provide railings and handrails that are smooth in texture, with formed radius ends and bends and all joints welded and ground smooth.
- C. Structure
1. Provide engineered anchorage for all wall appurtenances, to support all dead and applied loads in accordance with codes and other standards.
 2. For louvers, sunscreens, canopies, and other large appurtenances subjected to significant gravity, wind, snow or other loading, provide for structural support from building structural frame and/or foundation rather than from exterior wall.
 3. For railings, signs, and other small appurtenances attached to exterior wall, provide embedments installed during wall construction wherever possible.
 4. Assemble units in the shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces
 5. Thermal Movements: Provide expansion joints that allow for thermal movements resulting from locally anticipated change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to
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both solar heat gain and nighttime-sky heat loss.

D. Durability

1. Water Penetration Resistance

- a. Maintain integrity of exterior wall envelope at all points of wall appurtenance penetration and attachment.
- b. Air Intake and Exhaust Openings: Minimize rainwater penetration and protect adjacent interior spaces from damage from water.

- (1) Provide louvers in compliance with AMCA 511 Penetration Class A for wind-driven rain.

E. Material and Finish

1. Provide appurtenances with all exposed components constructed of stainless steel, aluminum, or other noncorrosive materials.
2. Provide exposed surfaces without painted or coated finishes wherever possible.
3. For painted finishes, provide mica fluoropolymer or metallic fluoropolymer finish complying with AAMA 2605-02, in manufacturer's standard range of colors.

F. Impact Resistance

1. Locate, fabricate and install all exterior wall appurtenances to resist damage from vandalism.
2. Locate, fabricate and install all exterior wall appurtenances to protect building users and passersby, and to resist damage from vehicles and pedestrians.

PRODUCTS

A. Exterior Louvers

1. Provide custom aluminum louvers as follows:
 - a. AMCA 511 Class A for wind-driven rain.
 - b. Sightproof for first floor installations.
2. Provide interior bird screens.
3. Provide insulated blank-off panels to close portions not needed for ventilation.
4. Provide motor operated dampers as required by HVAC design.
5. Provide factory-applied fluoropolymer finish in manufacturer's standard colors.

METHODS OF CONSTRUCTION

A. Materials

1. Provide hot-dip galvanizing or stainless steel for all ferrous components.
2. Provide positive separation of dissimilar metals.

B. Anchorages and Attachments

1. Provide anchorages and attachments that permit and facilitate removal if repair or replacement becomes necessary.
 2. Provide concealed fasteners, anchorages and attachments wherever feasible. Where fasteners, anchorages and attachments must be exposed, provide tamperproof systems.
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3. To the extent possible, provide anchorages for embedment at time of masonry construction.

C. Louvers and other openings

1. Construct openings and components of openings to provide positive drainage of water to exterior of the building.
2. Top of Openings: If wall construction does not provide its own methods of drainage, use separate flashing to prevent water from entering opening components or the interior of the building.
3. Bottom of Openings: Integral or separate sill or flashing to prevent water running over or draining out of opening components from entering the wall construction below or the interior of the building. Provide end dams and other components in compliance with Materials and Systems Standards.

END OF SECTION B2080.00

SECTION B3010.00**ROOFING****PERFORMANCE****A. Basic Function**

1. Provide a weather-resistive covering for roofing where indicated, over the top side of the roof superstructure.
2. Provide roofing to resist the effects of weather and loading conditions without excessive deflection, destruction of adhesive bond, fracture of insulation, or premature failure of the roof system
3. Provide a coordinate system of all weather-resistive components, including the primary weather barrier, vapor retarders, insulation, water collectors and conductors, wearing surfaces, trim and accessories, fully compatible with one another and adjacent materials and with all roof opening elements and roof fixtures under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.
4. Where exterior wall elements also must function as elements defined within another element group, meet requirements of both element groups.

B. Amenity and Comfort

1. Thermal performance and solar reflectance: In accordance with applicable codes and project requirements.
2. Provide continuous moisture barrier and thermal insulation over entire enclosure.

C. Structure

1. Provide roofing structure and substrate sufficiently rigid or dense to support water barrier in a manner that prevents damage due to traffic on roof.
2. Provide roofing capable of withstanding the effects of gravity loads and other loads and stresses within limits and under conditions required by code and referenced standards.
 - a. Wind and snow loads: Determine loads based on code requirements and the project's specific location and design.
 - b. Deflection limits: Roofing assemblies shall withstand wind and snow loads with vertical deflections no greater than 1/240 of span.
 - c. Allow for thermal movements resulting from ambient and surface temperature changes. Base
3. Provide a minimum design slope of 3:12. To the extent possible, slope roof structure to provide positive drainage under design loading conditions.

D. Durability

1. Life Span: In accordance with the project requirements and the following:
 - a. Manufacturer approval of design: Where roof covering manufacturer recommends or requires certain design features for satisfactory performance or for warranty, comply with manufacturer's requirements
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b. Manufacturer Warranty

- (1) Special weathertightness warranty for roofing system: Manufacturer's standard form in which manufacturer agrees to repair or replace roof assemblies that fail to remain weathertight, including leaks, within the specified warranty period.
 - (a) Warranty Period: 20 years from date of Substantial Completion

PRODUCTS

A. Roofing to be of architectural asphalt shingle material

END OF SECTION B3010.00

ELEMENTC INTERIORS

SECTION CI000.00
INTERIOR CONSTRUCTION

PERFORMANCE

A. Basic Function

1. Provide appropriately finished interiors for all spaces indicated in the program, equipped with interior fixtures as required to function properly for specific occupancies.
2. Provide all elements necessary to subdivide and finish space enclosed within the shell, including applied interior surfaces of the exterior enclosure, as well as all elements attached to interior construction that add functionality to enclosed spaces, except for elements classified as equipment or services fixtures.
3. Provide physical separation between spaces, constructed to achieve fire ratings required by code, appropriate security between adjacent spaces, and visual, acoustical, olfactory, and atmospheric isolation as necessary to maintain desirable conditions in each space.
4. Provide finishes for interior surfaces that are appropriate for the functions of each space.
5. Provide interior fixtures that are necessary for the proper functioning of each space.
6. Where interior elements also must function as elements defined within another element group, meet requirements of both element groups.

B. Amenity and Comfort

1. Access: Provide access to all primary interior spaces from circulation spaces. Avoid primary interior spaces that may be accessed exclusively through another primary interior space.
2. Odor Control: Prevent unpleasant odors generated within a space from affecting occupants of adjacent spaces, by providing physical isolation of the spaces, separate ventilation, or a combination of isolation and ventilation.
 - a. Control odors from spaces of the following types:
 - (1) Toilet rooms.

C. Health and Safety

1. Egress: Provide egress from all interior spaces in accordance with code.
2. Fire Resistance: Provide materials with fire resistance in accordance with code.
 - a. For all elements required to have a fire resistive rating and which are not made of materials and systems specified as acceptable by the code, use construction proven by mock-up to be compliant with codes and referenced standards.

D. Structure

1. Structural Performance: Provide interior construction and fixtures to support without damage all loads required by code.

E. Durability

1. Wear Resistance: Provide interiors that are suitable in durability for the degree and type of traffic to be anticipated in each space.
 2. Water Resistance: At toilet rooms, utility rooms, mechanical rooms and custodial spaces, provide interiors that will not be damaged by water or high humidity, and withstand continuous or intermittent exposure without significant changes in dimension.
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3. Corrosion Resistance: At kitchen and toilet rooms, provide interiors that are inherently resistant to corrosion and rot.
4. Ultraviolet Resistance: In interior spaces exposed to direct sunlight, provide interiors that are inherently resistant to fading and discoloration.

F. Operation and Maintenance

1. Cleaning: Provide interiors throughout that will not be damaged by ordinary cleaning and maintenance operations.
2. Special Cleaning: At toilet rooms, shower rooms, trash collection rooms, and janitorial closets, provide interiors that will allow harsh chemical cleaning without damage.

END OF SECTION CI000.00

SECTION C1010.00
INTERIOR PARTITIONS

PERFORMANCE

A. Basic Function

1. Provide physical separation between spaces included in the program, constructed to achieve fire ratings required by code, appropriate security between adjacent spaces, and visual, acoustical, olfactory, and atmospheric isolation as necessary to maintain desirable conditions in each space.
2. Where partition elements also must function as elements defined within another element group, meet requirements of both element groups.
3. Brand Names: Where brand names are listed, they represent the Basis of Design unless those items are identified as approved proprietary items in project requirements.

B. Amenity and Comfort

1. Appearance

- a. Provide partitions that are smooth in texture at all circulation routes.
- b. Provide operable partitions that are compatible in appearance with fixed partitions in the same space, employing similar materials, colors, and textures.

2. Health and Safety

- a. Fire Resistance: Provide fire ratings as required by code.
- b. Sanitation: At spaces used for food preparation, provide smooth, impervious, and water-resistant partition surfaces and integral coved base that will allow chemical cleaning and sterilization without damage.

3. Structure

- a. Lintels: Constructed to span openings in partitions and support imposed loads with maximum deflection vertically and horizontally of 1/360 of span.
- b. Vertical Loads: Provide partitions with sufficient strength to withstand anticipated Code prescribed vertical loads for wall-mounted handrails, equipment, and furnishings without excessive deflection or structural damage.
- c. Horizontal Loads: Provide partitions with sufficient strength and rigidity to withstand anticipated Code prescribed horizontal loading conditions without excessive deflection or structural damage.

PRODUCTS

A. Fixed Partitions

1. Construct all partitions in a manner consistent with Materials and Systems Standards and all project requirements.
 2. Construct partitions using the following:
 - a. Drywall shall be used for partitions at the following locations:
 - (1) Between offices and corridors within office suites.
 - (2) Between offices and other offices.
-

- b. Tile or other water resistant material shall be used for partitions at the following locations:
 - (1) In lavatory, shower, and bathroom spaces.
3. Drywall finish is not required for masonry surfaces where its sole purpose would be to achieve consistency with neighboring drywall finishes.

END OF SECTION C1010.00

SECTION C1030.00**INTERIOR DOORS****PERFORMANCE****A. Basic Function**

1. Equip all openings in partitions that function to allow passage of people, vehicles, and goods, so that openings can be closed and secured when not in use, using components as specified.
2. Where interior door elements also must function as elements defined within another element group, meet requirements of both element groups; interior doors function as partition elements when doors are closed.
3. Brand Names: Where brand names are listed, they represent the Basis of Design unless those items are identified as approved proprietary items in project requirements.

B. Amenity and Comfort**1. Acoustical Performance**

- a. Provide in-place FSTC values for partitions with interior doors that are not less than NIC values specified for interior construction.

2. Convenience

- a. Dimensions: Provide interior doors that are sized appropriately for people, vehicles, and goods likely to move between adjacent spaces.
 - (1) Height: Not less than 84 inches in height.
 - (2) Width: Not less than 36 inches in width, except for doors to shallow closets.
- b. Closing Devices: Required on all doors; provide smooth closing motion, with slower latching speed than closing speed (no slamming).

3. Appearance

- a. Provide interior doors coordinated with adjacent wall surfaces, using coordinated materials, colors, and textures.

C. Health and Safety

1. Fire Safety: Protect door openings in fire-rated walls and partitions in accordance with codes and the following:
 - a. Hold-Open Function: Where required by code or indicated, provide wall mounted hold-open function device that allows the door to swing freely and that automatically closes door upon initiation of alarm.
 - b. Closers: Sufficient closing force to close and latch door despite drafts and wind, but not more than that specified by code.
 2. Emergency Egress: Where doors must be latched or locked, comply with the code and the following.
 - a. Locking devices requiring a key for egress: Not permitted.
 - b. Where required by codes or referenced standards, provide code-compliant exit hardware that releases the locking/latching mechanism upon the application of a force in the direction of egress travel.
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3. Physical Security

- a. Locksets: Secure each room door using a keyed lockset that allows exit from inside using only one motion.

(1) Locking Functions: Appropriate to the space location and function.

- b. Provide code-compliant factory preparation for all security and alarm components, including wiring, in interior doors, frames and hardware.

D. Structure

1. Lintels: Constructed to span door openings and support loads imposed by exterior wall with maximum deflection vertically and horizontally of 1/240 of span.
2. Wood Door frames: Constructed to span door opening with maximum deflection vertically and horizontally of 1/240 of span.

E. Durability

1. Wear Resistance

- a. Door surfaces: Scuff-resistant kick plates and mop plates in areas where foot impact is likely; highly scratch-resistant in areas where hand contact is likely; mechanically fastened applied protective surfaces for vulnerable areas are acceptable.
- b. Door handles and knobs: Brushed/Satin Stainless finish unless otherwise noted; highly scratch-resistant and of finish that will minimize appearance changes due to wear; no plated or coated finishes.

2. Flexible seal materials: Select materials and design to minimize deterioration due to operation of doors and aging.

3. Swinging doors: Control door swing to prevent damage due to impact, to either door or element impacted.

4. Corrosion: Provide stainless steel base material for hinges, fasteners, pulls, kick and push plates, strikes, and similar components at doors exposed to weather or in wet locations.

F. Operation and Maintenance

1. Ease of use and repair: Provide doors that will be easy to use by occupants, easy to repair or service, and with operating components easy to replace.
2. Life span of operating components: Remaining operable for service life of enclosure elements specified in Section B20 under normal exposure conditions for the project site.

PRODUCTS

A. Interior Pedestrian Doors

1. Use one of the following:
 - a. Solid-core flush composite doors for all areas.

END OF SECTION C1030.00

SECTION C1090.40
TOILET ACCESSORIES

PERFORMANCE**A. Basic Function**

1. Provide accessory fixtures as required to accomplish the design as required by code and as indicated in the project documents.
 - a. Mirrors
 - (1) One for each lavatory location, unless otherwise indicated; full width of lavatory unit(s) or 30" minimum.
 - b. Grab bars: Wherever required by code and for safety and assistance in use of toilet and bath fixtures, and at all toilets designated as barrier-free.
 - c. Electric hand dryers: One for every restroom.
 - d. Holders and dispensers for toilet and sink supplies.
 - (1) Toilet paper: Roll, consumer-size; one double-roll dispenser per toilet.
 - (2) Hand soap: Liquid, one dispenser.

B. Accessibility

1. Individual-use rest rooms: Provide all toilet accessories in compliance with accessibility codes and standards.

C. Health and Safety

1. Fire resistance: Provide materials in full compliance with codes and referenced standards.
2. Slip resistance: Surfaces knurled, cross-hatched, or peened as required by codes and referenced standards.
3. Broken glass hazard: Provide only fully tempered float glass for glass in mirrors and fixtures.

D. Structure

1. Grab bars: Strength, design, anchorage, and support as required by code and to withstand 250 pounds-force applied vertically at the center between supports and 250 pounds-force tension applied at any support; supports of sufficient rigidity to prevent rotation of bars under load.

PRODUCTS**A. Mirrors**

1. Angle Frame
 - a. Materials: Type 304 stainless steel angle 3/4 inch x 3/4 inch (19x19mm)
 - b. Construction: One-piece, roll-formed construction with continuous integral stiffener.
 - c. Design: Beveled design on front of angle to hold mirror tightly against frame; prevents exposure to sharp edges.
 - d. Corners: Welded, ground, and polished smooth.
 2. Mirror Glass
 - a. No. 1 quality, 1/4 inch (6mm) fully tempered float/plate glass.
-

- b. Edges: Protected with plastic filler strips.
 - c. Back of mirror: Protected by full-size, shock-absorbing, water-resistant, non-abrasive 3/16 inch (5mm) thick polyethylene padding.
3. Mounting: Removable, galvanized steel back with concealed hanging brackets and concealed, locking fasteners. Attachment by rivets or tabs is not acceptable.
- B. Hand Dryers
1. Performance
 - a. Motor and blower: 5/8 HP, 20,000 RPM.
 - b. Air flow rate: 19,000 linear feet per minute.
 - c. Heater: 900 watts.
 - d. Air temperature: 135 deg F measured at average hand position of 4 inches below air outlet.
 - e. Sound level: Operational sound level less than 80 dB.
- C. Grab Bars
1. Compliance: Dimensions, mounting locations, non-slip grip, carrying capacity and other features to comply fully with codes and referenced standards.
 2. Capacity: Designed to support minimum 900 lbs. (408 kg) in compliant installations.
 3. Materials: 18-8 S, Type 304, 18-gauge (1.2mm) stainless steel tubing with satin finish.
 4. Construction: Ends of grab bar pass through flanges and are set screwed to flanges to form one structural unit.
- D. Holders and Dispensers
1. Dispensing mechanisms, spindles and other components: Manufacturer's standard, heavy-duty, theft- and breakage-resistant components.
 2. Provide units that minimize deliberate excessive consumption or dispensing of supplies.

METHOD OF CONSTRUCTION

- A. Provide products that are installed in strict compliance with manufacturer's written instructions and recommendations and the following:
1. Verify that blocking or substrate preparation has been installed properly.
 2. Verify that location does not interfere with door swings or use of fixtures.
 3. Comply with manufacturer's recommendations for backing and proper support.
 4. Provide solid framing for all attachments at walls and ceilings.
 5. Use fasteners and anchors suitable for substrate and project conditions
 6. Install units rigid, straight, plumb, and level, in accordance with manufacturer's installation instructions and approved shop drawings.
 7. Conceal evidence of drilling, cutting, and fitting to room finish.
 8. Test for proper operation.

END OF SECTION C1090.40

SECTION C1090.70
STORAGE SPECIALTIES

PERFORMANCE

A. Basic Function

1. Provide storage fixtures attached to interior construction as are necessary for proper functioning of spaces required by the project.
2. Storage fixtures comprise the following elements:
 - a. Closed Material and Utensils Storage: Provide modular storage cabinets and countertops with capacity adequate to accommodate required functions in spaces designated in the project.
 - b. Open Material Storage: Provide storage racks or utility shelves for material storage adequate for anticipated needs in spaces designated in the program.
3. Where storage fixtures are integral with elements defined within another element group, meet requirements of both element groups.

B. Amenity and Comfort

1. Accessibility
 - a. Provide storage fixtures that comply with applicable barrier-free codes and standards and the following:
 - (1) Amounts of Storage: Provide accessible storage as depicted on the drawings
 - (2) Countertops: Provide adequate counter space for the proposed kitchenette as shown on the plans.
2. Appearance
 - a. Cabinetry: For closed storage fixtures, provide elements that are designed to complement interior finishes, with concealed hinges and door and drawer pulls integrated into cabinet fronts.
 - b. Countertops and Work Surfaces: Provide light-colored surfaces that are seamless or tightly jointed.

C. Health and Safety

1. Combustibility: Provide storage fixtures throughout the project that are made of totally incombustible or fire-retardant treated materials.
2. Fire Hazard: At locations intended for the storage of flammable or highly combustible materials, provide storage fixtures made of totally incombustible materials and doors that are lockable and airtight.

D. Structure

1. Mounting and Anchorage: Provide solid blocking in partitions for mounting and anchorage of all fixed storage units.
-

PRODUCTS

- A. Built-In Cabinetry and Casework, including Countertops
 - 1. Cabinetry and casework, unless designated otherwise
 - a. Select-grade wood cabinets.
 - b. Granite countertop.
 - c. Integral backsplash.

METHODS OF CONSTRUCTION

- A. Provide storage fixtures using the following methods and techniques:
 - 1. Provide manufactured and factory-finished storage fixtures for field installation throughout the project.
 - 2. Provide factory cutouts for all fixtures, equipment, and utilities.
 - 3. Provide solid blocking for attachment to walls and ceilings.

END OF SECTION C1090.70

SECTION C2000.00
INTERIOR FINISHES

PERFORMANCE

A. Basic Function

1. Provide appropriately finished interiors for all spaces required by the program.
2. Interior finishes comprise the following elements:
 - a. Wall finishes, including those applied to the interior face of exterior walls and to the vertical faces of superstructure elements.
 - b. Floor finishes.
 - c. Applied ceiling finishes.
 - d. Finishes applied to other interior surfaces.
3. Where interior finishes are integral with elements defined within another element group, meet requirements of both element groups.

B. Amenity and Comfort

1. Reflectivity
 - a. Glare: Provide interior finishes that will not result in discomfort glare due to excessive contrast with light sources.
 - (1) Ceiling surfaces: Not less than 90 percent reflectivity, when measured in accordance with ASTM E 1477-1998a (Reapproved 2003).
 - (2) Wall surfaces: Not less than 70 percent reflectivity.
 - (3) Floor surfaces: Not less than 30 percent reflectivity.
2. Acoustical Performance
 - a. Sound absorption: Provide acoustical absorption within interior spaces to achieve reverberation times within the limits specified in Section C - Interiors.
3. Cleanliness
 - a. For spaces such as toilet rooms and kitchenettes, provide wall, ceiling, and floor surfaces that are inherently resistant to moisture and that can be cleaned by caustic agents without damage.
 - b. Provide matching cove base materials or self-cove base systems for all flooring unless otherwise indicated.

C. Health and Safety

1. Slip Resistance
 - a. For spaces subject to floor wetting, including entryways, provide floor finishes with inherent slip resistance under wet conditions.
 - b. At building entries, provide means for reducing or minimizing moisture and debris on shoe soles.
 2. Flammability: Provide finishes with flame spread ratings not greater than the permitted by codes and referenced standards.
-

D. Durability

1. Interior wall finishes at exterior walls: Provide surfaces that will not be damaged by incidental condensation from windows .
2. Wall protection: In corridors and other spaces vulnerable to wheeled equipment, provide impact-resistant wall bumpers, and corner guards or wall surfaces that are inherently resistant to impact damage due to rolling carts and hand trucks.
3. Opening protection: At partition openings intended to accommodate pedestrian or vehicular traffic, provide protection of opening edges in the form of door frames (cased openings), or corner guards.

PRODUCTS

- A. Provide one accent color for entire interior.
- B. Provide tile flooring material for high traffic, common areas and maintenance rooms
- C. Provide carpeting for offices and side rooms
- D. Provide painted gypsum board for wall and ceiling interior finishes

END OF SECTION C2000.00

ELEMENT D SERVICES

SECTION D2010.20**PLUMBING****PERFORMANCE****A. Basic Function**

1. Contractor shall be responsible for designing, furnishing, and installing complete and fully functioning plumbing systems for the project. The contractor will submit 5 reference projects completed within the last 3 years by the plumbing subcontractor to be approved by the Engineer. The plumbing subcontractor shall have a masters license registered in the State of Maine with at least 10 years of experience.
2. All labor, materials, equipment and transportation shall be provided as required to completely install fully functioning plumbing and water systems, with all connections, as shown on drawings and described in these specifications, and as required by code. Plumbing contractor shall be responsible for all elements of plumbing systems to include, but not limited to, all piping within the building and outside of the building for domestic water, sanitary, waste, vent, equipment drain, and propane gas.
3. Domestic water equipment elements may comprise the following:
 - a. Domestic water softeners and treatment equipment.
 - b. Domestic water heaters.
 - c. Other pumps, tanks, treatment, and miscellaneous equipment to provide a complete plumbing system in compliance with project requirements and applicable codes.
4. Where domestic water equipment elements must also function as elements defined within another element group, meet requirements of both element groups.
5. Install gas fired equipment according to NFPA 54, NFPA 58, and the International Fuel Gas Code.
6. Plumbing contractor is responsible for insulation of plumbing piping, sealing and firestopping (where required) for all related penetrations, and all access doors/panels required for service or access to plumbing valves or equipment.

B. Amenity and Comfort

1. Location
 - a. Locate water heaters in mechanical room.
 - b. Do not locate water heaters above ceilings or where the public has access to them.
2. Water conditioning: Provide water supply with conditioning equipment to remove odors, soften, and deliver water at a pH of approximately 7.0 and comply with Maine State drinking water standards as required.

C. Health and Safety

1. Provide all equipment with all labels or certifications from applicable testing agencies as required by codes and referenced standards.
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2. Excess pressure hazard: Provide devices to reduce accidental excess pressure to acceptable level, with maximum overpressure of 10 percent over specified system operating pressure, for the following items:
 - a. Water heaters.
 - b. Hot water storage tanks.
 - c. Booster pumps.
 - d. Hot water recirculating pumps.

D. Durability

1. Moisture: Do not locate water heaters where leakage would cause damage to surrounding building materials.
2. Temperature changes: Provide method of allowing thermal expansion of domestic water in the hot water system.

E. Operation and Maintenance

1. Pressure classification: Provide equipment with a pressure classification of 125 psi.
2. Water Heating Method
 - a. Provide gas-fired water heaters.
3. Ease of Service and Maintenance
 - a. Fixture shut-off: As specified in Plumbing Fixtures.
 - b. Equipment isolation: Provide isolation valves on both supply and discharge sides of equipment for all services.

PRODUCTS

A. Domestic water heaters

1. Condensing gas fired, with or without storage, with adequate capacity for expected use and Code requirements.
2. Low emissions.
3. Adjustable thermostat control.
4. Direct venting.
5. Safety controls to include automatic high temperature limit and low water cutoff devices or systems, electrically operated automatic gas shut off valve, gas pressure regulator.
6. Housekeeping pads for floor-mounted equipment.
7. Vibration isolation.

B. Other pumps, tanks, filters, and miscellaneous equipment as necessary to provide a complete plumbing system in compliance with code and project requirements.

C. All products shall be new, commercial grade, and of the latest design of respective manufacturers. All materials and equipment of the same classification shall be the product of the same manufacturer.

METHODS OF CONSTRUCTION

A. Use the following methods:

1. Install equipment to allow for service and maintenance, provide housekeeping pads to also allow for equipment drain and/or trap assembly.
2. Maintain manufacturer's recommended clearances for all equipment.
3. Install equipment so controls and devices for service are readily accessible.
4. Anchor equipment to substrate.
5. Install piping type heat traps on inlet and outlet piping of domestic water heater storage tanks without integral or fitting type heat traps.
6. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain commercial, gas-fired, domestic-water heaters.
7. Provide inlet and outlet piping sized not smaller than sizes of equipment connections.
8. Use check valves to maintain correct domestic water flow to and from equipment.

END OF SECTION D2020.20

SECTION D2010.60
PLUMBING FIXTURES

PERFORMANCE

A. Basic Function

1. Provide plumbing fixtures necessary for occupancy, use, and sanitation.
2. Fixtures Required: As specified by code, the project program, and as follows:
 - a. Water closets
 - b. Lavatories
 - c. Sinks
 - d. Showers
 - e. Water tempering
 - f. Utility Water Supply
 - (1) Outdoor supplies: Flush mounted, one on each facade of building and yard hydrant.
 - (2) Indoor supplies: Flush mounted, loose key, beneath counters at rest room and mechanical spaces
3. Where plumbing fixture elements must also function as elements defined within another element group, meet requirements of both element groups.

B. Amenity and Comfort

1. Convenience
 - a. Provide space between and around fixtures as required by code.
2. Appearance
 - a. Smooth, corrosion-resistant, non-absorbent, with no crevices to collect dirt.
 - b. Aesthetically pleasing, easy and comfortable to use.
3. Provide barrier-free fixtures where required by code and in all public restroom areas.

C. Health and Safety

1. Hands-free operation: Provide hands-free operation at all restroom water closets, urinals and lavatories, hard-wired with non-hold-open mechanical override.
2. Burning hazard: Protect wheelchair occupants from hot water pipes and drains. Provide tempering valve as required to prevent scalding.
3. Disease and Infection:
 - a. All openings and edges around the sides and bottom of each fixture permanently sealed with waterproof material.

D. Durability

1. Expected service life span of faucet valves: 20 years.
 - a. Substantiation: Manufacturer's unconditional warranty.
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2. Expected service life span of flushing mechanisms: 20 years.
 - a. Substantiation: Manufacturer's unconditional warranty.
3. Wear resistance: Provide fixtures, trim and accessories that are resistant to corrosion, breakage, scratching, burning, fading and chipping due to continual contact with water, human usage, and cleaning with abrasive materials.

E. Operation and Maintenance

1. Fixture Functions
 - a. Lavatories: Standard spout with hands-free operation, with integral front overflow.
 - b. Water closets: Standard flush valve with hands-free operation.
 - c. Kitchenette sinks: Manual operation, swivel spout, water spray nozzle.
2. Water pressure/flow at fixtures: 8 psi, minimum, except as otherwise required by code.
 - a. Flush valves at water closets and urinals: 15 psi, minimum.
3. Water Consumption
 - a. Water closets: Low-consumption 1.6 gallons per flush maximum, with complete waste removal in one flush.
 - b. Lavatory faucets in public restrooms: 0.25 gallon per use.

PRODUCTS

A. Water Closets

1. Use the following:
 - a. Vitreous china.
 - b. Floor mounted fixtures.
 - c. Elongated bowl.
 - d. Open seat.
 - e. Barrier-free.

B. Urinals

1. Use the following:
 - a. Vitreous china.
 - b. Wall mounted fixtures.
 - c. Barrier-free.

C. Lavatories (Single User Bowl)

1. Use the following:
 - a. Vitreous china.
 - b. Wall-hung fixtures
 - c. Self-rimming.
-

- d. Front overflow.
- e. Barrier-free.

D. Showers

- 1. Use the following:
 - a. Composite resin.
 - b. Highly durable acrylic.
 - c. Barrier-free.

E. Lavatory Faucet and Trim

- 1. Use the following:
 - a. Polished chrome plated finish.
 - b. Electronic proximity sensor, hardwired.
 - c. Vandal-resistant construction.

F. Flush Valves

- 1. Use the following:
 - a. Polished chrome plated finish.
 - b. Electronic proximity sensor, hardwired.
 - c. Non-hold-open manual override.
 - d. 24-hour automatic flush.
 - e. High-pressure vacuum breaker.
 - f. Vandal-resistant construction.

G. Water Tempering

- 1. Factory fabricated thermostatic mixing valve.
- 2. Set to fail open to continue cold water flow.
- 3. Provide for all kitchen sinks, lavatories, and showers.

H. Utility Water Fixtures

- a. Exterior Wall Hydrants
 - (1) Box type non-freeze.
 - (2) Integral vacuum breaker.
 - (3) Flush face chrome plate finish, lockable cover.
 - (4) Concealed hose connection.
 - (5) Vandal-resistant construction.
 - b. Exterior Yard Hydrant
 - (1) Non-freeze
 - c. Indoor supplies
-

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- (1) Integral vacuum breaker.
 - (2) Vandal-resistant construction.

I. Kitchenette sink

1. Use the following:
 - a. Stainless steel.
 - b. Counter-mounted, self-rimming or undermount (coordinate with cabinet and countertop).
 - c. Barrier-free.

METHODS OF CONSTRUCTION

- A. Construct using the following practices and procedures:
1. Assemble fixtures, trim, fittings, and other components according to manufacturer's written instructions.
 2. For wall-hanging fixtures, install off-floor supports affixed to building substrate.
 - a. Use carrier supports without waste fitting for fixtures with tubular waste piping;
 - b. Use chair-type carrier supports with rectangular steel uprights for accessible fixtures.
 3. Install counter-mounting fixtures in and attached to casework.
 4. Install fixture level and plumb according to manufacturer's written instructions and roughing-in drawings.
 5. Install water-supply piping with stop on each supply to each fixture to be connected to water distribution piping. Attached supplies to supports or substrate within pipe spaces behind fixtures. Install stops in locations where they can be easily reached for operation.
 6. Install shutoff valves in water-supply piping to fixtures. Use ball valve if specific type valve is not indicated. Install valves chained or locked in open position if permitted. Install valves in locations where they can easily be reached for operation.
 7. Install faucet, flow-control and faucet-spout fittings with specified flow rates and patterns in faucet spouts if faucets are not available with required rates and patterns. Include adapters if required.
 8. Install traps on fixture outlets. Omit trap on fixtures with integral traps.
 9. Set service basins in leveling bed of cement grout.
 10. Seal joints between fixtures and walls, floors, and counters using sanitary-type, one-part, mildew-resistant, silicone sealant. Match sealant color to fixture color.
 11. Install dielectric fitting in supply piping to equipment if piping and equipment connections are made of different metals.
 12. Connect hot- and cold-water supply piping to hot- and cold-water and water-tempering equipment. Connect output from water-tempering equipment to plumbing fixtures.
 13. Connections to plumbing fixtures: Connect fixtures with water supplies, stops, risers,
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traps, and waste piping. Use size fittings required to match fixtures. Connect to plumbing piping.

14. Provide vacuum breakers at points where air or gases may develop on the interior of water distribution systems through piping or hose connections.
15. Ground equipment according to project requirements and code.

END OF SECTION D2010.60

SECTION D3000.00
HEATING, VENTILATION, AND
AIR CONDITIONING (HVAC) PERFORMANCE

PERFORMANCE

A. Basic Function

1. Contractor shall be responsible for designing, furnishing, and installing complete and fully functioning HVAC system for the project. The Contractor will submit evidence for their HVAC installer to include 5 projects within the last 3 years representing competence in heating and ventilation installation. The installer shall have a master license in HVAC with a minimum experience of 15 years. The contractor will be required to provide a heat loss survey to the engineer, along with the aforementioned supporting documentation, for Engineer approval.
 2. Provide artificial means of controlling temperature, velocity, and direction of air motion in the interior spaces enclosed by the shell, and reduction of airborne odors, particulates, and contaminant gases.
 3. The HVAC system consists of the following elements:
 - a. Facility Fuel Systems (D3010.00) : Elements which provide energy used to maintain building comfort.
 - b. Heating Systems (D3020.00): Elements required to heat the building to maintain space comfort.
 - c. HVAC Air Distribution (D3050.50): Elements required to distribute air to maintain building comfort.
 - d. HVAC Design Parameters: Design systems to maintain building comfort in accordance with ASHRAE 55 based on outdoor design conditions as outlined by ASHRAE 90.1 and ASHRAE Fundamentals.
 4. Where HVAC elements also must function as elements defined within another element group, meet the requirements of both element groups.
 5. Codes and standards: Comply with the most recent adopted versions of all codes and standards applicable to the project, which may include the following
 - a. Maine Uniform Building and Energy Code
 - b. International Mechanical Code, 2009 Edition.
 - c. International Energy Conservation Code, latest Edition adopted.
 - d. International Fuel Gas Code, latest Edition.
 - e. NFPA 1 - Fire Code, 2009 Edition
 - f. NFPA 70 - National Electric Code.
 - g. NFPA 90A - Installation of Air Conditioning and Ventilating Systems.
 - h. NFPA 101 - Life Safety Code, 2009 Edition
 - i. NEMA EPAct - Energy Efficient Motors.
 - J. Sheet Metal and Air Conditioning Contractors' National Association (SMACNA/ANSI) , HVAC Duct Construction Standards.
 - k. American Society of Heating Refrigerating and Air Conditioning Engineers (ASHRAE) Handbooks.
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- l. ASHRAE 62.1-2007 Ventilation for Acceptable Indoor Air Quality
 - m. AABC National Standards for Total System Balance; Associated Air Balance Council.
 - n. NEBB (TAB) Procedural Standards for Testing Adjusting Balancing of Environmental Systems, National Environmental Balancing Bureau.
 - o. American National Standards Institute (ANSI).
 - p. Underwriters' Laboratories (UL).
 - q. American Society for Testing and Materials (ASTM).
6. HVAC Systems Descriptions
- a. The HVAC systems descriptions for the building are as follows:
 - (1) Provide complete system composed of outdoor air energy recovery units, exhaust fans, ductwork, air devices, motors, and controls. Air conditioning system shall have mechanical cooling capability.
 - b. Cooling Source
 - (1) Split Heat Pump Systems
 - c. Heating Source
 - (1) Propane/Natural Gas Heating
 - (a) Propane/Natural gas shall be utilized for the domestic water heaters and heating system Boilers.
 - (b) Boiler room and water heater rooms shall be provided with Gas Leak Detection alarm system and Carbon Monoxide (CO) Detection alarm system.
 - (c) Each boiler shall be provided with an IRI compliant gas train valve.
 - (d) Each boiler shall have separate, indirect condensate drains piped from each condensate drain pan, stack and stack Y-connection to a neutralization tank then to floor drain.
 - (e) Provide prefabricated double wall metal vents suitable for use with propane/natural gas fired hot water condensing boilers.
 - (f) Each boiler shall be arranged for single fuel operation of propane/natural gas. All boilers shall utilize linkage-less burners.
 - (1) HVAC System Building Zoning
 - (a) Room and zone names listed below may not correspond exactly to rooms and zones in this Project, and some room and zone names listed may be for spaces not present in this Project. For rooms and zones not listed, provide HVAC systems consistent with rooms and zones with similar functions and activities.
 - (b) The building HVAC system zoning shall be based upon grouping common areas with respect to occupancy, use of space and operating schedules. Ancillary spaces (corridors, closets, etc.) within each building zone shall be served by that building zone's HVAC system of similar type.
 - (i) Building zones of separate systems with similar system type shall be:
 1. Ancillary Rooms.
 2. Main Area

(c) Provide a similar system type for all spaces within a common building zone, except where otherwise noted.

(2) Electrical Distribution Room, Mechanical and Boiler Rooms

(a) Continuously running constant volume heating and ventilation units shall provide the required heating and ventilation. Provide motor operated damper as required for ventilation air and combustion air. Provide conditioning of electrical spaces to maintain 95 degree F indoor temperature to ensure space does not exceed 104 degree F maximum per NEC.

(5) Entry Areas With Vestibules

(a) Unitary cabinet unit heaters shall provide the required heating for each vestibule entry area. Hot water cabinet heaters shall be provided at each vestibule. Provide recessed equipment where construction allows. For vestibules adjacent to continuously occupied staff area, such as security desk, provide base building system ceiling supply air device in order to pressurize vestibule.

(b) Each unit shall be provided with the following components:

- i. Wall mounted remote thermostat.
- ii. Supply Fan.
- iii. Filters

B. Amenity and Comfort

1. Space temperature setpoint: In accordance with all project requirements and MUBEC standards.
2. Relative humidity range: In accordance with all project requirements and MUBEC standards.

C. Health and Safety

1. Electrical Shock Prevention

a. Provide a means of disconnecting power at each piece of equipment.

2. Indoor Air Quality

- a. Provide sufficient ventilation to comply with code and to obtain acceptable indoor quality, determined using either the Ventilation Rate Procedure or the Indoor Air Quality Procedure of ANSI/ASHRAE 62.1-2007.
- b. Locate outside air intakes away from any air contaminants in accordance with ANSI/ASHRAE Standard 62.1 and applicable codes.

B. Durability

1. General Freeze Protection

a. Provide equipment with low ambient controls. Avoid conditions that create the potential for freezing.

C. Operation and Maintenance

1. Maintenance Access

- a. All equipment shall be located to maintain ease of access.
 - b. Equipment utilities shall be routed to allow for access to equipment and replacement without removal of utilities.
 - c. Equipment shall be located in area which will allow for complete removal and replacement without demolition to building infrastructure.
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2. HVAC Controls

- a. Controls shall include capabilities for 7-day programmable night setback and occupied/unoccupied scheduling, with temporary occupant override.

END OF SECTION D3000.00

SECTION D3010.00
FACILITY FUEL SYSTEMS

PERFORMANCE

A. Basic Function

1. Provide propane/natural gas for use by HVAC and plumbing equipment.
2. Comply with the most recently adopted Maine version of the ICC International Fuel Gas Code, and applicable sections of NFPA 54 and NFPA 58.
3. Comply with the most recently adopted Maine version of the ICC International Mechanical Code.
4. Provide detection and alarm systems for notification in the event of leak or failure of fuel gas systems and equipment.

B. Amenity and Comfort

1. Heating
 - a. Provide fuel to all fuel burning equipment that is used to maintain space comfort.
2. Plumbing
 - a. Provide fuel to all fuel burning equipment that is used to produce domestic hot water.

C. Health and Safety

1. System Design Pressure
 - a. Sufficient to satisfy pressure requirements of the greatest supply pressure equipment demand.
2. Propane/Natural Gas System Working Pressure
 - a. Sufficient to satisfy pressure requirements of each individual piece of equipment.
3. Propane/Natural Gas Entrance into Facility
 - a. Locate the regulator at least 3 feet from ignition sources and as required by code.
4. Gas Leak Detection
 - a. Provide gas leak detection for incoming gas meter room and all mechanical spaces and other spaces with gas service and where required by code.
5. Carbon Monoxide Detection
 - a. Provide carbon monoxide detection for all mechanical spaces and other spaces with permanent gas-fired equipment.

D. Durability

1. Expected Service Life Span
 - a. Provide a system which will be viable for the life of building.
 2. Vandalism
 - a. Protect the service from unauthorized access and the public.
-

E. Operation and Maintenance

1. Ease of Service

- a. Provide shut-off valves as required by code and at each branch connection.
- b. Provide emergency gas shut-off valve interlocked with fire alarm detection system located at the entrance to the Boiler Room.

END OF SECTION D3010.00

SECTION D3020.00
HEATING SYSTEMS

PERFORMANCE

A. Basic Function

1. Provide the necessary equipment and infrastructure to deliver heat to the occupied spaces, areas containing life safety systems and areas with freeze potential.
2. Where HVAC elements also must function as elements defined within another element group, meet the requirements of both element groups.

B. Health and Safety

1. Hazards:

- a. Provide heating system equipment which safeguard people, property and equipment from the following potential hazards:
 - (1) Exposure to fuel.
 - (2) Exposure to open flames.
 - (3) Exposure to hot surfaces.
 - (4) Explosion.

C. Durability

1. Temperature Endurance

- a. Provide equipment designed for ambient temperatures ranging from 50 deg F to 122 deg F (10 deg C to 50 deg C).

2. Venting, Chimneys, and Flues

- a. Provide venting, flues, and chimneys designed for flue gas temperature compatible with heater(s), domestic water heaters and other fuel burning equipment, in accordance with manufacturer's recommendations and applicable codes

3. Heating Equipment Design

- a. Choose the heating equipment based upon load calculations, efficiency requirements, and the dimensional constraints of the mechanical room.
- b. Design the heating equipment controls, and its fuel train per applicable code requirements. Specify high tum-down ratio for applications with widely fluctuating loads.

D. Operation and Maintenance

1. Ease of Use

- a. Locate equipment to provide access to and working clearances around heating equipment as required by code and as recommended by the manufacturer.
- b. Provide clearances to allow for maintenance access and replacement of heating equipment without removal of other unrelated utilities.
- c. Provide mechanical room with adequate ventilation per code.

END OF SECTION D3020.00

SECTION D3050.50
HVAC AIR DISTRIBUTION

PERFORMANCE

A. Basic Function

1. Distribute air to maintain the required space conditions.
2. Where air distribution elements also must function as elements defined within another element group, meet the requirements of both element groups.

B. Codes and Standards: Comply with the most recent adopted versions of all codes and standards applicable to the project, which may include the following

1. Maine Uniform Building and Energy Code and all subcodes.
2. NFPA 90A, Installation of Air Conditioning and Ventilating Systems.
3. Sheet Metal and Air Conditioning Contractors' National Association (SMACNA/ANSI), HVAC Duct Construction Standards.

C. Amenity and Comfort

1. Space Temperature Control

- a. Coordinate air distribution system's design and installation with zoning and space temperature requirements specified in project requirements and other Performance Specifications sections.

2. Air Movement

- a. Provide an air distribution system that limits the air velocity within the occupied zone of each space to 50 fpm, maximum.
- b. Adjustments
 - (1) Provide an air distribution system which allows relocation of supply diffusers, adjustment of direction of airflow from supply diffusers, and adjustment of dampers.
 - (2) Provide volume dampers throughout air distribution system as required for air balancing and adjustment. At a minimum provide volume dampers at each air device, each floor duct main take-off of riser, and each duct main split.

- c. Provide the services of a testing, adjusting, and balancing firm certified by either AABC (Associated Air Balance Council) or NEBB (National Environmental Balancing Bureau).

3. Cleanliness:

- a. Provide filtration of all air distributed to the occupied spaces in Accordance with ASHRAE 62.
- b. Provide insect screens at outside air intake openings.

4. Odor: Provide exhaust to remove odors in accordance with code requirements.

5. Appearance

- a. Air Device Color
 - (1) Provide factory-applied finish colors.
-

D. Health and Safety**1. Bacterial Growth**

- a. All ductwork lining installed shall not promote the growth of microorganisms.

2. Fire Sources

- a. Provide air distribution elements constructed from incombustible materials.

3. Fire Spread

- a. Provide interlocks to prevent operation or start-up of air distribution elements when fire or smoke detection systems are in alarm condition.
- b. Provide fire and/or smoke dampers at penetrations through rated assemblies.

4. Accidental Explosion

- a. Provide ventilation to prevent build-up of explosive gases.

E. Durability**1. Expected Service Life Span**

- a. Provide a system which will be viable for the life of building.

2. Aesthetic Life Span

- a. Provide units exposed within the occupied space which will not fade, chip, or peel for a minimum of 10 years.

F. Operation and Maintenance**1. Operating Parameters****a. Duct Construction**

- (1) In accordance with SMACNA HVAC Duct Construction Standards.
- (2) Duct seal class A for duct pressure classes above 2 inches w.g. and above.
- (3) Duct seal class B for duct pressure classes 2 inches w.g. and less.

- b. Penetrations through fire rated partitions shall be fire stopped. Penetrations through non-rated partitions shall be sealed with acoustic caulk and backer rod.

c. Fans

- (1) Match fan pressure characteristics to the air distribution system pressure characteristics including the system effect factors; pressure characteristics based on ANSVAMCA Standard 210 fan ratings and system characteristics based on engineering calculations.

2. Ease of Use

- a. Provide units with individual controls.
 - b. Locate access panels and access doors at service side of all components and ceiling mounted equipment.
-

3. Access

- a. Provide units with removable access panels or hinged access doors to allow cleaning and replacement of filters, coils, humidifiers, enthalpy wheels and fans.
- b. Locate units and other building elements to provide easy access for maintenance and replacement without relocation of other elements.

END OF SECTION D3050.50

SECTION D3050.10**FACILITY HYDRONIC DISTRIBUTION****PERFORMANCE**

- A. Basic Function
 - 1. Distribute heating water to maintain the required space conditions.
 - 2. Systems required include heating hot water system.
 - 3. Configuration—all systems: Direct return and/or reverse return.
 - 4. Where hydronic distribution elements also must function as elements defined within another element group, meet the requirements of both element groups.
- B. Health and Safety
 - 1. Accidental Explosion
 - a. Provide pressure relief valves to prevent over-pressurizing the systems.
 - 2. Fire Source
 - a. Provide distribution elements constructed of incombustible materials.
- C. Durability
 - 1. Expected Service Life Span
 - a. Provide a hydronic distribution system which will be viable for the life of building.
 - 2. Erosion Control
 - a. Provide a means of removing air from hydronic distribution systems to prevent erosion. Design systems in a manner that will prevent cavitation.
 - 3. Pipe Stress and Strain Control
 - a. Provide pipe loops, bends, expansion joints, and flexible pipe connectors to reduce stress and strain due to expansion and contraction.
- D. Operation and Maintenance
 - 1. Operating Parameters
 - a. Building Systems
 - (1) Heating water system pressure: 125 psig, maximum.
 - b. Pumps
 - (1) Match pump pressure and flow characteristics with the pressure and flow characteristics of the distribution system.

PRODUCTS

- A. Distribution Piping
 - 1. Use one or more of the following:
 - a. Pipes 2 inches in diameter and smaller
 - (1) Schedule 40, continuous welded steel pipe with threaded Class 125 cast iron
-

fittings.

(2) Hard copper, Type L with brazed or silver soldered wrought copper fittings.

b. Pipes larger than 2 inches in diameter

(1) Schedule 40, electric resistance welded pipe.

(a) Joints and Fittings

(i) Welded Standard Class wrought steel fittings.

(ii) Flanged Class 150 wrought steel fittings.

(iii) Flanged Class 125 cast iron fittings.

(iv) Flanged Class 250 cast iron fittings.

(v) Grooved ductile iron fittings.

c. Valves

(1) General-duty valves for HVAC piping

(a) Gate, globe, check, ball and butterfly.

(b) Two-piece, full-port, bronze ball valves with bronze trim.

(c) Iron, single-flange butterfly valves.

(d) Bronze swing check valves.

(e) Iron swing check valves.

(2) Calibrated-orifice balancing valves.

(a) Bronze, cast iron, steel

(3) Control valves

(a) 2" and smaller

(i) Pressure independent valves or characterized control valves

(ii) Control valves shall be part of a factory assembled coil connection package supplied by the valve manufacturer.

(iii) Supply side coil connection shall include a strainer/shut-off ball valve/drain, an integrated isolation ball valve/manual air vent with P/T port

(iv) Return side coil connection shall include a union fitting with P/T port, a pressure independent or characterized control valve, an integrated manual balancing valve/union/isolation ball valve/manual air vent with P/T port.

(v) Provide 24" flexible hose set for coil connection

(b) 2-1/2" and larger

(i) Butterfly valves

(ii) Class 150 flanges

(iii) 316 stainless steel disc

d. Dielectric Nipple, Coupling, and Waterways

(1) Separate ferrous and copper alloy connections with nonconductive insulating material

e. Condensate Drain Piping

- (1) Type M or DWV, with wrought copper fittings and soldered joints

B. Pumps

1. Types

- a. Base-mount end-suction
b. Base mounted split case

c. Vertical in-line

2. Cast iron or bronze casing with flanged pump connections
3. Pumps shall be non-overloading at any point on the pump curve
4. Premium efficiency motors with VFD and 10% harmonic distortion filter.

METHODS OF CONSTRUCTION

A. Construct the system using the following methods

1. Piping materials shall bear the label, stamp, or other markings of specified testing agency.
 2. Pipe hangers and supports shall comply with the requirements and recommendations of MSS, Manufacturers Standard Society for the Valve and Fittings Industry, Inc.
 3. Provide thermal-hanger shield inserts for supporting insulated pipes.
 4. Provide vibration isolation and seismic restraints as required by code.
 5. Provide UL listed firestop systems for all pipe penetrations through fire-rated construction.
 6. Provide pipe sleeves for pipes passing through concrete walls, masonry walls, concrete floor slabs, and concrete roof slabs, fire-rated where required.
 7. Provide dielectric fittings for combining systems or components made of dissimilar materials.
 8. Provide welding certificates. Welding shall comply with ASME Boiler and Pressure Vessel Code: Section IX, "Welding and Brazing Qualifications."
 9. Comply with ASME for materials, products, and installation.
 10. Piping shall be insulated to prevent condensation.
 11. Provide protective aluminum or ultraviolet-resistant PVC jackets for insulated piping located outdoors or subject to abuse.
 12. Provide thermometers at each hydronic zone, each boiler, each chiller, each thermal storage tank, and each hydronic heat exchanger.
 13. Provide pressure gauges at the discharge of each pressure reducing valve, suction and discharge of each pump, and chilled water inlets and outlets of each chiller, inlets and outlets of each boiler, hydronic heat exchanger, and water coil.
 14. All hydronic equipment shall be designed with shut-off isolation valves to facilitate maintenance and replacement.
 15. Pipe Identification
 - a. Install manufactured pipe markers indicating service on each piping system. Install with flow indication arrows showing direction of flow.
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16. Valve tags

- a. Install tags on valves and control devices in piping systems except the following:
 - (1) Check valves.
 - (2) Valves within factory-fabricated equipment units.
 - (3) Plumbing fixture supply stops.
 - (4) Shutoff valves.
 - (5) Faucets.
 - (6) Convenience and lawn-watering hose connections.
 - (7) HVAC terminal devices and similar roughing-in connections of end-use fixtures and units.
- b. List tagged valves in a valve schedule.

17. Piping System

- a. Generally, design the system using a constant pressure drop of maximum 3 feet per 100 feet of piping, providing the fluid velocity is within acceptable limits (about 10 FPS maximum).
- b. Use calibrated orifice balancing valves and automatic flow-control valves, or pressure independent control valves.
- c. Incorporate isolation valves so that all equipment and instruments attached to the system may be easily serviced or replaced.
- d. Evaluate the piping system's expansion and show all provisions for anchoring, guiding, and compensation on the drawings.
- e. Provide air vents with all piping systems.
- f. Include an approved backflow preventer with any hydronic system connected to a potable water system.
- g. Insulate, support, and pitch the piping system.
- h. Design the water treatment system as required by the application.
- i. Provide valved and capped connections on branches to facilitate future system modifications and expansion. Provide within mechanical spaces for additional equipment such as pumps, boilers, chillers etc. Provide minimum of 2 within each HVAC system zone for additional future terminal unit equipment.

18. Pumps

- a. Consider any extra fouling that may be present after years of operation of the hydronic piping and equipment when estimating the system's total pressure head.
- b. Choose the type of pump (in-line, base mounted, split case, etc.) that best suits the application.
- c. Pipe the pump installation to include isolation valves, suction "Y" strainer, suction and discharge pressure gauges, check valve, and adequate suction piping length or suction diffuser.
- d. Include VFD, vibration isolators, and flexible piping connections as required by each application.

19. Hydronic Heat Exchangers/Convectors

- a. Choose the type of exchanger (shell-and-tube, plate-and-frame, etc.) that best fits the application.
- b. Size the unit according to the manufacturer's recommendations.
- c. Pipe the exchanger with isolation valves, temperature and pressure gauges, two- or three-way valve and controls that best fit the hydronic system and application.

END OF SECTION D3050.10

SECTION D3050.50**HVAC AIR DISTRIBUTION****PERFORMANCE**

- A. Basic Function
 - 1. Distribute air to maintain the required space conditions.
 - 2. Where air distribution elements also must function as elements defined within another element group, meet the requirements of both element groups.
 - B. Codes and Standards: Comply with the most recent adopted versions of all codes and standards applicable to the project, which may include the following
 - 1. MUBEC and all subcodes.
 - 2. NIH Design Policy and Guidelines.
 - 3. NFPA 90A, Installation of Air Conditioning and Ventilating Systems.
 - 4. NFPA 96, Ventilation Control & Fire Protection of Commercial Cooking Operations
 - 5. Sheet Metal and Air Conditioning Contractors' National Association (SMACNA/ANSI), HVAC Duct Construction Standards.
 - C. Amenity and Comfort
 - 1. Space Temperature Control
 - a. Coordinate air distribution system's design and installation with zoning and space temperature requirements specified in project requirements and other Performance Specifications sections.
 - 2. Humidity Control
 - a. Provide humidification modulation and control for all spaces.
 - b. Maintain relative humidity between 30 and 50 percent in all spaces.
 - 3. Air Movement
 - a. Provide an air distribution system that limits the air velocity within the occupied zone of each space to 50 fpm, maximum.
 - b. Adjustments
 - (1) Provide an air distribution system which allows relocation of supply diffusers, adjustment of direction of airflow from supply diffusers, and adjustment of dampers.
 - (2) Provide volume dampers throughout air distribution system as required for air balancing and adjustment. At a minimum provide volume dampers at each air device, each floor duct main take-off of riser, and each duct main split.
 - 4. Cleanliness:
 - a. Provide filtration of all air distributed to the occupied spaces.
 - b. Provide filtration of outside air at outside air intake openings.
 - c. Provide insect screens at outside air intake openings.
 - 5. Odor: Provide exhaust to remove odors in accordance with code requirements
 - D. Health and Safety
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1. Bacterial Growth
 - a. Provide humidifiers which do not promote the growth of microorganisms.
 - b. All ductwork lining installed shall not promote the growth of microorganisms.
 2. Fire Sources
 - a. Provide air distribution elements constructed from incombustible materials.
 3. Fire Spread
 - a. Provide interlocks to prevent operation or start-up of air distribution elements when fire or smoke detection systems are in alarm condition.
 - b. Provide fire and/or smoke dampers at penetrations through rated assemblies.
 4. Accidental Explosion
 - a. Provide ventilation to prevent build-up of explosive gases.
- E. Durability
1. Expected Service Life Span
 - a. Provide a system which will be viable for the life of building.
 2. Aesthetic Life Span
 - a. Provide units exposed within the occupied space which will not fade, chip, or peel for a minimum of 10 years.
 3. Accidental Damage
 - a. Provide housekeeping pads, roof curbs, raised dunnage, weatherproof enclosures, fan guards, access panels, bollards, and other elements necessary to protect air distribution system and equipment from accidental damage.
- F. Operation and Maintenance
1. Operating Parameters
 - a. Duct Construction
 - (1) In accordance with SMACNA HVAC Duct Construction Standards.
 - (2) Duct seal class A for duct pressure classes above 2 inches w.g. and above.
 - (3) Duct seal class B for duct pressure classes 2 inches w.g. and less.
 - b. Penetrations through fire rated partitions shall be fire stopped. Penetrations through non-rated partitions shall be sealed with acoustic caulk and backer rod.
 - c. Fans
 - (1) Match fan pressure characteristics to the air distribution system pressure characteristics including the system effect factors; pressure characteristics based on ANSI/AMCA Standard 210 fan ratings and system characteristics based on engineering calculations.
 2. Ease of Use
 - a. Provide units with individual controls coordinated with controls specified in Integrated Automation Control of HVAC Systems, Section D8010.50.
 - b. Locate access panels and access doors at service side of all components and ceiling mounted equipment.
-

3. Access

- a. Provide units with removable access panels or hinged access doors to allow cleaning and replacement of filters, coils, humidifiers, enthalpy wheels and fans.
- b. Locate units and other building elements to provide easy access for maintenance and replacement without relocation of other elements.

G. Brand Names: Where brand names are listed, they represent the Basis of Design unless those items are identified as approved proprietary items in project requirements.

METHODS OF CONSTRUCTION

A. Construct the system using the following methods:

1. Construct and install duct and duct accessories in accordance with SMACNA "HVAC Duct Construction Standards - Metal and Flexible."
 2. Fire-Rated Partition Penetrations
 - a. Where ducts pass through interior partitions and exterior walls, install appropriately rated fire dampers, fire/smoke dampers, sleeves, and fire stopping systems. Install fire and smoke dampers, with fusible links, according to manufacturer's UL-approved written instructions.
 3. Protect duct interiors from the elements and foreign materials. Follow SMACNA "Duct Cleanliness for New Construction."
 4. Install ducts with hangers and braces designed to withstand, without damage, seismic force required by applicable codes.
 5. Provide duct accessories of materials similar to ductwork materials installed in: use galvanized-steel accessories in galvanized-steel ducts, stainless-steel accessories in stainless-steel ducts, and aluminum accessories in aluminum ducts.
 6. Provide balancing or volume dampers at points on supply, return, and exhaust systems where branches lead from larger ducts as required for air balancing. Install at a minimum of three duct widths from branch takeoff.
 7. Install backdraft dampers or motorized dampers on exhaust fans or exhaust ducts nearest to outside, except where prohibited by code.
 8. Install flexible connectors in ductwork connections to equipment associated with fans and motorized equipment supported by vibration isolators.
 9. Provide clean outs as required by code at base of vertical risers and transitions.
 10. Install duct access doors to allow for inspecting, adjusting, and maintaining accessories and terminal units. This includes but is not limited to the following:
 - a. On inlet and outlet side of duct mounted coils.
 - b. Adjacent to fire or smoke dampers, providing access to reset or reinstall fusible links.
 - c. Adjacent to duct smoke detectors.
 - d. Duct access doors shall have one dimension minimum of 12 inches.
 11. Fabricate all ducts and components in compliance with all applicable codes and the following:
 - a. Duct coverings and linings, including adhesives when used, shall have a flame spread index not more than 25 and a smoke developed index not more than 50, when tested in accordance with ASTM E84.
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- b. Duct coverings and linings shall not flame, glow, smolder, or smoke when tested in accordance with ASTM C411 at the temperature to which they are exposed in service. The test temperature shall not fall below 250 degrees F.
 - c. Commercial kitchen grease exhaust duct insulation shall have a minimum 2-hour fire rating.
12. Install new filters prior to testing adjusting and balancing.
13. Install new filters immediately before issuance of Certificate of Occupancy.
14. Provide one complete set of extra filters for each piece of equipment that is provided with filters. Where equipment serves outside air with pre-filters and final filter, provide two sets of both types.
15. Do not use any the following methods or procedures:
- a. Duct tape as a sealant on any ducts.
16. Electrical Equipment Spaces
- a. Do not route ducts through or above transformer vaults, electrical equipment spaces and enclosures.
- (1) Exception: Branch ductwork serving the electrical space, not to be run above equipment or equipment panels.

END OF SECTION D3050.50

SECTION D5000.00**ELECTRICAL****PERFORMANCE****A. Basic Function**

- a. Provide electrical power with the appropriate characteristics to operate all electrically operated devices, including those in other services.
- b. The electrical system comprises the following elements:
 - i. Electrical energy generation: Utility power sources.
 - ii. Service and distribution: Service entrance equipment, distribution equipment, transformers, service and feeder wiring (conductors and raceways), transient voltage surge suppressors, control equipment, and other elements required for a complete functional system.
 - iii. Branch circuits: Branch circuit wiring.
- c. Utility revenue meters: Meter incoming electrical service on the low-voltage side of the service transformer (secondary metering).
- d. Where electrical power elements also must function as elements defined within another element group, meet the requirements of both element groups.
- e. Substantiation
 - i. Construction
 1. Install electrical work as indicated, in accordance with equipment manufacturer's written instructions and complying with applicable portions of NEC, the American Electricians Handbook; the National Electrical Safety Code, ANSI C2; and National Electrical Contractors Association's Standard Practices for Good Workmanship in Electrical Construction NECA 1-2006.

B. Health and Safety

- a. Electrical hazards: Construct in accordance with requirements of all NFPA standards that apply to the occupancy, application, and design.
 - i. Protect against unauthorized access to spaces housing electrical components and allow access only by qualified personnel.
 - ii. Provide electrical distribution equipment with locking cabinets, doors, and panels when it is located in public areas.
 - iii. Hazardous locations: Comply with code.
 - b. Emergency systems: Provide emergency power when normal power is interrupted, for the following:
 - i. Systems and areas as required by code.
 - c. Grounding: Provide solidly grounded electrical distribution systems in accordance with NFPA 70 and as follows:
 - i. Ground the neutral terminal of the main service entrance and distribution equipment to the following:
 1. Incoming water service with bonding jumper across meter.
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2. Steel reinforcing in concrete footing.
3. External driven ground rods.
- ii. Bond the ground terminal of the main service entrance and distribution equipment to the following:
 1. Gas service pipe (after meter).
 2. Local interior hot and cold water piping.

C. Operation and Maintenance

- a. Service capacity: Calculated in accordance with NFPA 70; provide 12 volt-amperes per square foot nominal and 15 volt-amperes per square foot maximum for the entire building.
- b. Power Consumption and Efficiency
 - i. Comply with requirements of IEEE Standard 739-1995.
 - ii. Comply with requirements of ASHRAE 90.1-2007.
- c. Protection against disturbances
- d. Locate lighting and appliance panelboards near the center of the load to be served as applicable.

METHODS OF CONSTRUCTION

A. Construct using the following methods:

1. All electro-mechanical installations required by this Section shall be performed as outlined in the American Electricians Handbook, latest edition.
2. Comply with all applicable federal, state and local electrical and safety codes.
3. Comply with all utility company requirements.
4. All electrical material and equipment shall bear the seal of approval of the National Fire Protection Association and the Underwriter's Laboratory Label where such approvals and labeling are applicable.
5. The work shall be installed in cooperation with other trades installing inter-related work. Before installation, make proper provision to avoid interferences with other trades.
6. All electrical cabling shall be located between interior and exterior wall sheeting inside the studded wall cavity.

B. Do not use:

1. Exposed wiring or cable not U.L. listed for the purpose.
2. Wood supports or anchorages.

END OF SECTION D5000.00

SECTION D5020.00**ELECTRICAL SERVICE AND DISTRIBUTION****PERFORMANCE****A. Basic Function:**

1. Distribute electric power for equipment circuits, lighting circuits, receptacle circuits, and electrical utilization devices. Provide a 225 amp, 240/120V main distribution panel with service entrance rated main breaker, 30 branch circuits, and rigid steel conduit mast meeting NEC 2017 for connection of an overhead service by the utility. Provide an external in line meter in compliance with the local utility. Provide grounding electrode pigtailed for connection to ground rods and other equipment.
2. Main electrical service: The utility will provide a service transformer to convert its distribution voltage to the building's utilization voltage. The Contractor will be required to coordinate these efforts with the local power supply utility.
3. Panelboard location: Locate main switchboard in the mechanical/electrical room.
4. Where service and distribution elements must also function as elements defined within another elements group, meet requirements of both groups.
5. Provide a 200 amp, 4 pole breaker to feed the electrical vault.
6. Provide a 2" conduit from the service panel to a pullbox located on the exterior wall of the mechanical/electrical room for routing of feeder conductors to the electrical vault.
7. Provide 15% spare breakers rated at 20 amps, single pole.
8. Ground and bond all metallic systems to the main distribution panel including water piping and interior gas piping.
9. Provide a surge protective device connected to the main distribution panel.

B. Amenity and Comfort

1. Appearance
 - a. Do not locate switchboards, transformers, and panelboards in corridors, lobbies, or stairwells.
 - b. Conceal electrical conduit in walls and behind ceilings in all finished spaces.

C. Health and Safety

1. Protection from breakage: Locate service and distribution equipment in closets, electrical rooms, and mechanical rooms with clearances required by NFPA 70.
2. Intrusion: Protect electrical distribution equipment from unauthorized access and vandalism.

D. Durability

1. Impact resistance: Provide service and distribution equipment with industrial grade enclosures.
2. Branch circuit wiring shall be wired with metalclad cable.

E. Operation and Maintenance

1. Capacity
 - a. Main switchboards: In accordance with code plus 15% spare capacity.
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F. Branch Circuits

1. Provide a GFCI receptacle on a dedicated circuit in the Lavatory.
2. Provide a quad receptacle on each wall of the office using two dedicated circuits.
3. Provide a GFCI, weather resistant receptacle with in-use cover on a dedicated circuit on the exterior of the building near both entrances.
4. Provide GFCI receptacles on dedicated circuits for the kitchen including two for the countertop, one for a refrigerator and another for a vending machine.
5. Provide general use receptacles in the Meeting Room Lounge area every 10' minimum and on every wall. Provide a receptacle in the electrical/mechanical room.
6. Provide branch circuits for all mechanical equipment as required.

END OF SECTION D5020.00

SECTION D5030.10**BRANCH CIRCUITS****PERFORMANCE****A. Basic Function**

1. Power: Provide adequate electrical power and safe and efficient distribution from panelboards to lighting, wiring devices, equipment, appliances, and the locations where it is needed, based on the project program, other requirements in Volumes A through G, and as follows:
2. Branch circuits comprise the following elements:
 - a. Branch circuit breakers.
 - b. Conductors and cable from panelboards to fixtures, wiring devices, and mechanical equipment.
 - c. Raceways and boxes.
 - d. Wiring devices, including, but not limited to, receptacles, floor boxes and plates, wall switches, wall dimmers, remote control switching devices, and wall plates.
3. Where branch circuits are integral with elements defined within another element group, meet requirements of both element groups.
4. Brand Names: Where brand names are listed, they represent the Basis of Design unless those items are identified as approved proprietary items in project requirements.

B. Amenity and Comfort

1. Accessibility: Comply with barrier-free code requirements and the following:
 - a. ICC-ANSI A117.1 and N.J.A.C. 5:23.

C. Health and Safety

1. Tested Materials
 - a. Provide branch circuit elements in compliance with code and that are UL listed or labeled.
 - b. Provide elements that have their flame spread and smoke developed ratings printed on them.

PRODUCTS**A. Conduits**

1. Provide one of the following:
 - a. Below grade, single-run or grouped: RNMC.
 - b. Exterior, exposed or concealed: RMC.
 - c. Exterior connection to vibrating equipment, including transformers and hydraulic, pneumatic, electric solenoid or motor driven equipment: LFMC
 - d. Exterior boxes and enclosures: NEMA 250, Type 3R
 - e. Interior, exposed: EMT.
 - f. Interior, concealed: EMT.
 - g. Interior connection to vibrating equipment, including transformers and hydraulic,
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- pneumatic, electric solenoid or motor driven equipment: FMC, except use LFMC in damp and wet locations.
- h. Interior damp and wet locations: RMC.
 - i. Interior boxes and enclosures: NEMA 250, Type 1, except damp or wet locations Type 4 stainless steel 3R
 - j. Interior concrete slabs 6 inches or greater and below slabs on grade: RNMC with separate insulated equipment grounding conductor. Provide RMC elbows for stub-ups out of the slab.
 - k. Hazardous locations: Use rigid steel conduit and threaded fittings of NEMA type listed and labeled for the location and class of the hazard.
 - l. Minimum raceway size: 3/4 inch.
 - m. Fittings: Compatible with raceway and suitable for use and location. Use compression type up to 1-1/4 inch EMT, set screw type 1-1/2 inch EMT and larger. Cast compression fittings are not acceptable.
2. Minimum raceway size: 3/4 inch (DN 21)
 3. Fittings: Compatible with raceway and suitable for use and location.
- B. Branch Circuit Wiring
1. Use the following:
 - a. Copper.
 - (1) Branch circuits in underground conduit: THHN-THWN, 90 deg C.
 - (2) Interior branch circuits in conduit: Type THHN, 90 deg C.
 - (3) Interior branch circuit homeruns: Type THHN, 90 deg C in conduit from panelboard to first outlet box. Homerun, individual and multiple circuit cables are not to be run from panelboards. After first outlet box, approved cable may be used.
 - (4) Branch circuits: Wiring #10 AWG and smaller in ceiling spaces and for connections from boxes to lighting fixtures and equipment may be Type MC metal-clad cable. Use of MC cable is limited to 30-amp single-phase circuits.
 2. Do not use the following:
 - a. Surface mounted raceway.
- C. Receptacle Cover Plates
1. Use the following:
 - a. Material and finish: Stainless steel, Type 302, brushed, .035 inch thick cover plates. Cover plates for emergency devices shall be red in color.

METHODS OF CONSTRUCTION

- A. Use the following practices and procedures:
1. Conceal cables in finished walls, ceilings, and floors, unless otherwise indicated.
 2. Install cables concealed in ceiling spaces, in hollow spaces of interior masonry walls in dry locations.
 3. Install cables above accessible tile ceilings so that cables do not rest on ceiling tiles.
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4. Securely fastened cables to the building structure at intervals prescribed by NFPA 70 and not pulled through rings or wiring harnesses.
 5. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
 6. Use pulling means including fish tape, cable, rope, and basket-weave wire/cable grips that will not damage cables or raceway.
 7. Lighting circuits: Install no more than one 3-phase circuit or three consecutive 1-phase circuits with common neutral in the same conduit.
 8. Receptacle and computer circuits: Install no more than one 3-phase circuit or three consecutive 1-phase circuits with separate neutrals in same conduit.
 9. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.
 10. Bundle incoming and outgoing feeder conductors together in switchboards and wrap with wire ties 6 inches on center up to within 6 inches of their termination. Ties shall be of sufficient strength to withstand short circuit rating.
 11. Firestop cables penetrating fire rated walls.
 12. Identify and color-code conductors and cables.
 13. Provide full circuit size branch circuit taps up to their overcurrent protection device unless otherwise indicated
 14. Taps and splice branch circuits larger than #10 AWG with insulation piercing connectors or compression splices.
 15. Taps and splice branch circuits #10 AWG and smaller with crimp connectors-with insulated caps, connectors or compression splices.
 16. Connections to fixture and motor leads #10 AWG and smaller: Provide with pre-insulated spring pressure connectors.
 17. Stranded wiring conductors: Use screw terminals with locking fork crimp terminals with nylon insulated grips.
 18. Torque electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A.
 19. Provide splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.
 20. Wiring at outlets: Install conductor at each outlet, with at least 6 inches (150 mm) of slack and pigtail connections
 21. Provide a separate green insulated equipment ground conductor for each branch circuit or group of branch circuits.
- B. Do not use
1. Exposed conduit on exterior surfaces where visible from ground level.
 2. Exposed conduit on finished interior vertical surfaces.

END OF SECTION D5030.10

SECTION D5040.00
ARTIFICIAL LIGHTING

PERFORMANCE

A. Basic Function

1. Provide artificial means of lighting interior and exterior spaces utilizing Light Emitting Diode (LED) technology as applicable to the codes.
2. Artificial lighting comprises the following elements:
 - a. Interior lighting: General room lighting, emergency lighting, and illuminated exit signs. All fixtures including emergency fixtures shall be LED type. Provide emergency egress lighting at the exterior exits.
 - b. Exterior area lighting: General lighting of exterior spaces including entryways, walkways, and parking areas. Provide LED type wall mounted fixtures at the exterior exits that comply with Dark Sky.
3. Where artificial lighting elements also must function as elements defined within another element group, meet the requirements of both element groups.

B. Amenity and Comfort

1. Light levels: Provide maintained ambient illuminance values for various activities that are within the ranges specified in the IESNA Lighting Handbook-2011, 10TH edition.
2. Light quality: Provide luminous environment in each space that is designed to complement the functions and the character of the space.
 - a. Distribution: In keeping with geometry of space and location of visual tasks.
 - b. Character of fixtures: Coordinated with architecture and other building systems and appropriate to finish level. Provide fixtures with 3500 Kelvin ratings.

C. Health and Safety

1. Electrical hazards: Construct in accordance with requirements of all NFPA standards that apply to the occupancy, application, and design.
 - a. Comply with NFPA 70 requirements for hazardous locations applications.
 - b. Emergency systems: Provide backup lighting for periods of normal power interruption, for the Systems and areas as required by code.

D. Durability

1. Moisture resistance: Regardless of whether exposure to moisture is likely or not, provide lighting equipment to be resistant to moisture.
2. Exterior lighting shall have the ability to withstand the natural outdoor wind and weather elements as outlined by the codes.

E. Operation and Maintenance

1. Capacity: Provide lighting to deliver required illumination while operating within intended ratings.
2. Exterior lighting shall be motion and light activated utilizing photocell and motion detection technology.

F. Power Consumption and Efficiency

1. Comply with requirements for energy efficiency of lighting in ASHRAE 90.1 and all applicable requirements in Facilities Section.
2. Provide wall box type occupancy sensor lighting switches in Lavatory and Office.
3. Provide ceiling type dual technology occupancy sensors in the Meeting Room/Lounge.

PRODUCTS

- A. Provide exterior light fixtures at each entryway.
- B. Provide motion activated flood lighting for parking area.
- C. Provide ceiling mounted fixtures for all interior spaces.

END OF SECTION D5040.00

SECTION D6000.00
COMMUNICATIONS

PERFORMANCE

1. Provide the following Communication and Information Technology (IT) system components in accordance with code, referenced standards, and all project requirements:
 - a. Provide internet and telephone wall jacks in each room and security system. Wire to demark area in Telcom/LAN room. All lines shall be Category Serated.
 - b. Provide a security system located in the Telcom/LAN. Wire to occupancy sensors with full coverage of all areas with exterior access via doors or windows. Provide a keypad to be located just inside the side entrance to arm and disarm the system. Provide door contacts for sensing of exterior doors.
- B. General Requirements
 1. Ethernet System
 - a. Provide one ethemet connection port in each space/room for the ability to connect to owner furnished internet access. Cables shall be Category Se rated and wired to the electrical room for connection to the utility demark.
 2. Security System
 - a. Provide a video surveillance system covering the main interior space and exterior viewing with video recording. These devices shall be IP based with day/night viewing capabilities and motion detection and have the ability to send alarms and be viewed remotely utilizing a smart device (phone/tablet/computer).

END OF SECTION D6000.00

SECTION D7050.00**DETECTION AND ALARM****PERFORMANCE**

- A. Provide automatic fire detection and automatic and manual alarm systems as required by code.
 - 1. Integrated systems performing all functions are required, subject to requirements of code for separated, independent systems.
 - 2. Where fire detection and alarm elements also must function as elements defined within another element group, meet the requirements of both element groups.
 - 3. Brand Names: Where brand names are listed, they represent the Basis of Design unless those items are identified as approved proprietary items in project requirements.
 - B. Amenity and Comfort
 - 1. Accessibility: Comply with requirements of local, State, and federal authorities for facilities for the disabled.
 - C. Health and Safety
 - 1. Detection, alarm, notification methods: In accordance with NFPA 72-2002 and other applicable codes.
 - 2. Detection
 - a. Comply with all code requirements.
 - b. Air handling units over 2,000 cfm: Minimum of one detector in the return.
 - c. Upon detection of fire or smoke condition, provide automatic notification of occupants.
 - 3. Alarms
 - a. Means for occupants to communicate same types of alarm as automatic system does.
 - b. Manual stations at minimum of 100 feet intervals along means of egress paths.
 - c. Audible alarms: Minimum of 75 dB at 10 feet and 15 dB over ambient noise, audible throughout the building.
 - d. Visual alarms, in locations required by code and public toilets, corridors, and assembly spaces.
 - e. Separate audible and visual signals for alarms and trouble notification in corridors.
 - 4. Fire Protection Controls
 - a. Provide connections between alarm and detection system and fire suppression system activation sensors.
 - b. Upon alarm, shut down or deactivate the following:
 - (1) HVAC air distribution.
 - (2) Alarm-activated door controls.
 - (3) Locks restricting exit through doors constituting means of egress.
 - 5. Audible and visual trouble notification of operations staff for the following:
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- a. Alarm zone failures
 - b. Annunciator zone failures
 - c. Ground faults
 - d. Backup power failure
6. Error and failure prevention: Provide the following:
 - a. Addressable system
 - b. Tamper sensors at sensitive points
 - c. Products of only one manufacturer or certified by manufacturer as compatible.
 - d. Isolation modules for each floor.
 7. Substantiation
 - a. Construction or closeout: Functional performance tests approved by code authorities.
- D. Operation and Maintenance
1. Power Supplies
 - a. Building power with power line conditioner for all systems.
 - b. Dedicated Battery Backup Power Supply
 - (1) Fire safety systems, 90 minutes.
 2. Ease of Use
 - a. Minimum of one centralized monitoring display for all systems is required; locate in security office.
 3. Personnel training: As required by code and commissioning requirements.

PRODUCTS

- A. Control Systems for All Applications
1. Use one of the following:
 - a. Microprocessor-based hardware.
 - b. Point addressable fire alarm devices.
 2. Do not use:
 - a. Hardwired relay base controls
 - b. Zoned alarm devices.
- B. Fire/Smoke Detectors
1. Use one of the following:
 - a. Photoelectric smoke detectors.
 - b. Beam detectors.
 - c. Thermal detectors.
 2. Do not use:
 - a. Ionization smoke detectors.
- C. Warning Devices
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1. Use one of the following:
 - a. Speakers.
 - b. ADA-compliant strobes.
 - c. Combination speaker /strobes.
 2. Do not use:
 - a. Horns.
 - b. Combination horn/strobes.
- D. Communication Cabling
1. Use one of the following:
 - a. Copper cable complying with manufacturer's requirements.

METHODS OF CONSTRUCTION

- A. Basis of Design: Use products selected for district-wide compatibility.
- B. Provide fire alarm cable installed in conduit.
 1. Do not use loose fire alarm cable without raceway.

END OF SECTION D7050.00
