SERVICE AND CONSTRUCTION

17616.10 SALT STORAGE BUILDING
17616.20 BRINE BUILDING

FAIRFIELD

2010

MAINTENANCE & OPERATIONS

STATE PROJECT

BIDDING INSTRUCTIONS

1. Complete the bid forms with pen and ink.

2. The following are to be completed and returned with the bid:

    a. A copy of the Notice to Contractors
    b. the completed Acknowledgement of Bid Amendments form
    c. the completed Schedule of Items
    d. two (2) copies of the completed and signed Contract Agreement, Offer & Award form
    e. a Bid Guaranty
    f. The completed Contractor Information Sheet
    g. Any other certifications or Bid requirements listed in the Bid Documents as due by Bid opening

3. Include prices for all items in the Schedule of Items.

4. Include a Bid Guaranty. Acceptable forms are:
    a. a properly completed and signed Bid Bond on the Department's prescribed form (or on a form that does not contain any significant variations from the Department's form as determined by the Department) for 5% of the Bid Amount or
    b. an Official Bank Check, Cashier's Check, Certified Check, U.S. Postal Money Order or Negotiable Certificate of Deposit in the amount stated in the Notice to Contractors.

5. For security and other reasons, all Bid Packages which are mailed or delivered, shall be provided in double (one envelope inside the other) envelopes. The *Inner Envelope* shall have the following information provided on it:

    Bid Enclosed - Do Not Open
    Title:
    Town:
    Date of Bid Opening:
    Name of Contractor with mailing address and telephone number:

    In Addition to the usual address information, the *Outer Envelope* should have written or typed on it:

    Double Envelope: Bid Enclosed
    Title:
    Town:
    Date of Bid Opening:
    Name of Contractor:

    Hand-carried Bids may be in one envelope, and should be marked with the following information:

    Bid Enclosed: Do Not Open
    Title:
    Town:
    Name of Contractor:

6. If a paper Bid is to be hand carried, deliver directly to the Reception Desk using the "Public Entrance" which is located on the Capitol Street side of the DOT Headquarters Building in Augusta. If a paper Bid is to be sent express, Federal Express overnight delivery is suggested as the package is delivered directly to the DOT Headquarters Building, Mailroom, in Augusta located at 24 Child Street in Augusta. Other means, such as U.S. Postal's Service Express Mail has proven not to be reliable. If a paper bid is to be mailed, the mailing address is Maine Department of Transportation, 24 Child Street, 16 State House Station, Augusta, ME 04333-0016.

7. If you need further information regarding Bid preparation, call the DOT Contracts Section at (207) 624-3410. For complete bidding requirements, refer to Section 102 of the Maine Department of Transportation, Standard Specification, Revision of December 2002.

January 30, 2004
Supercedes February 11, 2003

NOTICE

The Maine Department of Transportation is attempting to improve the way Bid Amendments/Addendums are handled, and allow for an electronic downloading of bid packages from our website, while continuing to maintain a planholders list.

Prospective bidders, subcontractors or suppliers who wish to download a copy of the bid package and receive a courtesy notification of project specific bid amendments, must provide an email address to Diane Barnes or Mike Babb at the MDOT Contracts mailbox at: MDOT.contracts@maine.gov. Each bid package will require a separate request.

Additionally, interested parties will be responsible for reviewing and retrieving the Bid Amendments in their bids using the Acknowledgement of bid Amendment Form.

The downloading of bid packages from the MDOT website is not the same as providing an electronic bid to the Department. Electronic bids must be submitted via http://www.BIDX.com. For information on electronic bidding contact Larry Childs at Larry.Childs@maine.gov.

STATE OF MAINE DEPARTMENT OF TRANSPORTATION

Bid Guaranty-Bid Bond Form

KNOW ALL MEN BY THESE PRESENTS THAT_____

_____, of the City/Town of _____and State of_____

as Principal, and _____as Surety, a

Corporation duly organized under the laws of the State of_____and having a usual place of

Business in _____and hereby held and firmly bound unto the Treasurer of

the State of Maine in the sum of_____,for payment which Principal and Surety bind

themselves, their heirs, executers, administrators, successors and assigns, jointly and severally.

The condition of this obligation is that the Principal has submitted to the Maine Department of Transportation, hereafter Department, a certain bid, attached hereto and incorporated as a part herein, to enter into a written contract for the construction of _____

_____

_____and if the Department shall accept said bid and the Principal shall execute and deliver a contract in the form attached hereto (properly completed in accordance with said bid) and shall furnish bonds for this faithful performance of said contract, and for the payment of all persons performing labor or furnishing material in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said bid, then this obligation shall be null and void; otherwise it shall remain in full force, and effect.

Signed and sealed this_____day of _____20_____

WITNESS:

_____

_____

_____

WITNESS

_____

_____

_____

PRINCIPAL:

By_____

By:_____

By:_____

SURETY:

By_____

By:_____

Name of Local Agency: _____

NOTICE

Bidders:

Please use the attached “Request for Information” form when faxing questions and comments concerning specific Contracts that have been Advertised for Bid. Include additional numbered pages as required. Questions are to be faxed to the number listed in the Notice to Contractors. This is the only allowable mechanism for answering Project specific questions. Maine DOT will not be bound to any answers to Project specific questions received during the Bidding phase through other processes.

State of Maine
Department of Transportation

REQUEST FOR INFORMATION

Date _____ Time _____

Information Requested: **PIN: _____** **Town(s): _____**

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Request by: _____ **Phone: (_____)_____**
Bid Date: _____ **Fax: (_____)_____**

Complete top portion of form and transmit to the number listed in the Notice to Contractors

RFI No: _____ **RFI received: _____**

Response:_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Response By:_____ Date: _____

Vendor Registration

Prospective Bidders must register as a vendor with the Department of Administrative & Financial Services if the vendor is awarded a contract. Vendors will not be able to receive payment without first being registered. Vendors/Contractors will find information and register through the following link –
http://www.maine.gov/purchases/vendorinfo/vss.htm .

CONTRACTOR INFORMATION

_____ _____

(Date) **(Signature)**

_____

(Name and Title Printed)

_____

(Contractor Name)

_____

Vendor Customer Number

Mailing Address:

_____

Street/PO Box **City** **State** **Zip**

_____ _____ _____

phone **fax** **email**

Sole Proprietorship - Partnership - (circle one)

Corporation – Company - Association - Estate - (circle one)

STATE OF MAINE DEPARTMENT OF TRANSPORTATION
NOTICE TO CONTRACTORS

Sealed Bids addressed to the Maine Department of Transportation, Augusta, Maine 04333 and endorsed on the wrapper "Bids for building Salt Storage Building and Brine Building in the town of **Fairfield**" will be received from contractors at the Reception Desk, Maine DOT Building, Capitol Street, Augusta, Maine, until 11:00 o'clock A.M. (prevailing time) August 25, 2010 and at that time and place publicly opened and read. Bids will be accepted from all bidders. The lowest responsive bidder must demonstrate previous successful completion of projects of similar size and scope to be considered for award of this contract. **We now accept electronic bids for those bid packages posted on the bidx.com website. Electronic bids do not have to be accompanied by paper bids. Please note: the Department will accept a facsimile of the bid bond; however, the original bid bond must then be received at the MDOT Contract Section within 72 hours of the bid opening. Until further notice, dual bids (one paper, one electronic) will be accepted, with the paper copy taking precedence.**

Description: Maine State Project, PIN 17616.10 17616.20

Location: In Somerset County, project is located at 10 Mountain Avenue, Fairfield.

Outline of Work: Construction of Salt Storage and Brine Buildings and other incidental work.

For general information regarding Bidding and Contracting procedures, contact Scott Bickford at (207)624-3410. Our webpage at http://www.maine.gov/mdot/contractor-consultant-information/contractor_cons.php contains a copy of the schedule of items, Plan Holders List, written portions of bid amendments (not drawings), and bid results. For Project-specific information fax all questions to **Gail MacMunn** at (207)624-3431. Questions received after 12:00 noon of Monday prior to bid date will not be answered. Bidders shall not contact any other Departmental staff for clarification of Contract provisions, and the Department will not be responsible for any interpretations so obtained. Hearing impaired persons may call the Telecommunication Device for the Deaf at 888-516-9364.

Bid proposal packages are available at http://www.maine.gov/mdot/comprehensive-list-projects/project-information.php. Plans, specifications and bid forms may be seen at the Maine DOT Building in Augusta, Maine. They may be purchased from the Department between the hours of 8:00 a.m. to 4:30 p.m. by cash, credit card (Visa/Mastercard) or check payable to Treasurer, State of Maine sent to Maine Department of Transportation, Attn.: Mailroom, 16 State House Station, Augusta, Maine 04333-0016. They also may be purchased by telephone at (207) 624-3536 between the hours of 8:00 a.m. to 4:30 p.m. Full size plans $15.00 ($18.50 by mail). Half size plans $7.50 ($9.75 by mail), Bid Book $10 ($13 by mail), Single Sheets $2, payment in advance, all non-refundable.

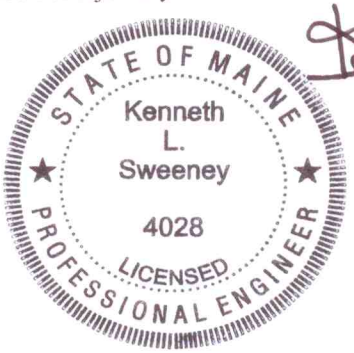
Each Bid must be made upon blank forms provided by the Department and must be accompanied by a bid bond at 5% of the bid amount or an official bank check, cashier's check, certified check, certificate of deposit, or United States postal money order in the amount of $20,000.00 payable to Treasurer, State of Maine as a Bid guarantee. A Contract Performance Surety Bond and a Contract Payment Surety Bond, each in the amount of 100 percent of the Contract price, will be required of the successful Bidder.

This Contract is subject to all applicable State Laws.

All work shall be governed by "State of Maine, Department of Transportation, Standard Specifications, Revision of December 2002", price $10 [$13 by mail], and Standard Details, Revision of December 2002, price $20 [$25 by mail]. Standard Detail updates can be found at http://www.maine.gov/mdot/contractor-consultant-information/contractor_cons.php

The right is hereby reserved to the Maine DOT to reject any or all bids.

Augusta, Maine
August 4, 2010



KENNETH L. SWEENEY P. E.
CHIEF ENGINEER

SPECIAL PROVISION 102.7.3
ACKNOWLEDGMENT OF BID AMENDMENTS

With this form, the Bidder acknowledges its responsibility to check for all Amendments to the Bid Package. For each Project under Advertisement, Amendments are located at http://www.maine.gov/mdot/comprehensive-list-projects/project-information.php It is the responsibility of the Bidder to determine if there are Amendments to the Project, to download them, to incorporate them into their Bid Package, and to reference the Amendment number and the date on the form below. The Maine DOT will not post Bid Amendments any later than noon the day before Bid opening without individually notifying all the planholders.

Amendment Number	Date

The Contractor, for itself, its successors and assigns, hereby acknowledges that it has received all of the above referenced Amendments to the Bid Package.

CONTRACTOR

_____ _____
Date Signature of authorized representative

_____
(Name and Title Printed)

MAINE DEPARTMENT OF TRANSPORTATION PAGE: 1
DATE: 100802
SCHEDULE OF ITEMS REVISED:

CONTRACT ID: 017616.10 PROJECT(S): 17616.10
17616.20

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
	SECTION 0001 PROJECT ITEM					
0010	815.00 BUILDING BRINE BLD.	LUMP	LUMP			
0020	815.00 BUILDING SALT STORAGE BLD.	LUMP	LUMP			
	SECTION 0001 TOTAL					
	TOTAL BID					

CONTRACT AGREEMENT, OFFER & AWARD

AGREEMENT made on the date last signed below, by and between the State of Maine, acting through and by its Department of Transportation (Department), an agency of state government with its principal administrative offices located at Child Street, Augusta, Maine, with a mailing address at 16 State House Station, Augusta, Maine 04333-0016, and **(Contractor)**
a corporation or other legal entity organized under the laws of the State of _____, with its principal place of business located at _____

The Department and the Contractor, in consideration of the mutual promises set forth in this Agreement (the "Contract"), hereby agree as follows:

A. The Work.

The Contractor agrees to complete all Work as specified or indicated in the Contract including Extra Work in conformity with the Contract, PINs. **17616.10 &17616.20** for the **Construction of Salt Storage and Brine Buildings** in the town of **Fairfield**, County of Somerset, Maine. The Work includes construction, maintenance during construction, warranty as provided in the Contract, and other incidental work.

The Contractor shall be responsible for furnishing all supervision, labor, equipment, tools supplies, permanent materials and temporary materials required to perform the Work including construction quality control including inspection, testing and documentation, all required documentation at the conclusion of the project, warranting its work and performing all other work indicated in the Contract.

The Department shall have the right to alter the nature and extent of the Work as provided in the Contract; payment to be made as provided in the same.

B. Time.

The Contractor agrees to complete all Work, except warranty work, on or before **November 19, 2010.** Further, the Department may deduct from moneys otherwise due the Contractor, not as a penalty, but as Liquidated Damages in accordance with Sections 107.7 and 107.8 of the State of Maine Department of Transportation Standard Specifications, Revision of December 2002 and related Special Provisions.

C. Price.

The quantities given in the Schedule of Items of the Bid Package will be used as the basis for determining the original Contract amount and for determining the amounts of the required Performance Surety Bond and Payment Surety Bond, and that the amount of this offer is _____

_____

$_____ Performance Bond and Payment Bond each being 100% of the amount of this Contract.

D. Contract.

This Contract, which may be amended, modified, or supplemented in writing only, consists of the Contract documents as defined in the Plans, Standard Specifications, Revision of December 2002, Standard Details Revision of December 2002 as updated through advertisement, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds. It is agreed and understood that this Contract will be governed by the documents listed above.

E. Certifications.

By signing below, the Contractor hereby certifies that to the best of the Contractor's knowledge and belief:

1. All of the statements, representations, covenants, and/or certifications required or set forth in the Bid and the Bid Documents, including those in the Contract are still complete and accurate as of the date of this Agreement.

2. The Contractor knows of no legal, contractual, or financial impediment to entering into this Contract.

3. The person signing below is legally authorized by the Contractor to sign this Contract on behalf of the Contractor and to legally bind the Contractor to the terms of the Contract.

F. Offer.

The undersigned, having carefully examined the site of work, the Plans, Standard Specifications Revision of December 2002, Standard Details Revision of December 2002 as updated through advertisement, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds contained herein for construction of:

PINs. 17616.10 & 17616.20 for the Construction of Salt Storage and Brine Buildings in the town of Fairfield, State of Maine, on which bids will be received until the time specified in the "Notice to Contractors" do(es) hereby bid and offer to enter into this contract to supply all the materials, tools, equipment and labor to construct the whole of the Work in strict accordance with the terms and conditions of this Contract at the unit prices in the attached "Schedule of Items".

The Offeror agrees to perform the work required at the price specified above and in accordance with the bids provided in the attached "Schedule of Items" in strict accordance with the terms of this solicitation, and to provide the appropriate insurance and bonds if this offer is accepted by the Government in writing.

As Offeror also agrees:

First: To do any extra work, not covered by the attached "Schedule of Items", which may be ordered by the Resident, and to accept as full compensation the amount determined upon a "Force Account" basis as provided in the Standard Specifications, Revision of December 2002, and as addressed in the contract documents.

Second: That the bid bond at 5% of the bid amount or the official bank check, cashier's check, certificate of deposit or U. S. Postal Money Order in the amount given in the "Notice to Contractors", payable to the Treasurer of the State of Maine and accompanying this bid, shall be forfeited, as liquidated damages, if in case this bid is accepted, and the undersigned shall fail to abide by the terms and conditions of the offer and fail to furnish satisfactory insurance and Contract bonds under the conditions stipulated in the Specifications within 15 days of notice of intent to award the contract.

Third: To begin the Work as stated in Section 107.2 of the Standard Specifications Revision of December 2002 and complete the Work within the time limits given in the Special Provisions of this Contract.

Fourth: That this offer shall remain open for 30 calendar days after the date of opening of bids.

Fifth: The Bidder hereby certifies, to the best of its knowledge and belief that: the Bidder has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of competitive bidding in connection with its bid, and its subsequent contract with the Department.

IN WITNESS WHEREOF, the Contractor, for itself, its successors and assigns, hereby execute two duplicate originals of this Agreement and thereby binds itself to all covenants, terms, and obligations contained in the Contract Documents.

CONTRACTOR

_____	_____
Date	(Signature of Legally Authorized Representative of the Contractor)
_____	_____
Witness	(Name and Title Printed)

G. Award.

Your offer is hereby accepted. This award consummates the Contract, and the documents referenced herein.

MAINE DEPARTMENT OF TRANSPORTATION

_____	_____
Date	By: David A. Cole, Commissioner
_____	
Witness	

CONTRACT AGREEMENT, OFFER & AWARD

AGREEMENT made on the date last signed below, by and between the State of Maine, acting through and by its Department of Transportation (Department), an agency of state government with its principal administrative offices located at Child Street, Augusta, Maine, with a mailing address at 16 State House Station, Augusta, Maine 04333-0016, and **(Contractor)** a corporation or other legal entity organized under the laws of the State of _____, with its principal place of business located at _____

The Department and the Contractor, in consideration of the mutual promises set forth in this Agreement (the "Contract"), hereby agree as follows:

A. The Work.

The Contractor agrees to complete all Work as specified or indicated in the Contract including Extra Work in conformity with the Contract, PINs. **17616.10 &17616.20** for the **Construction of Salt Storage and Brine Buildings** in the town of **Fairfield**, County of Somerset, Maine. The Work includes construction, maintenance during construction, warranty as provided in the Contract, and other incidental work.

The Contractor shall be responsible for furnishing all supervision, labor, equipment, tools supplies, permanent materials and temporary materials required to perform the Work including construction quality control including inspection, testing and documentation, all required documentation at the conclusion of the project, warranting its work and performing all other work indicated in the Contract.

The Department shall have the right to alter the nature and extent of the Work as provided in the Contract; payment to be made as provided in the same.

B. Time.

The Contractor agrees to complete all Work, except warranty work, on or before **November 19, 2010.** Further, the Department may deduct from moneys otherwise due the Contractor, not as a penalty, but as Liquidated Damages in accordance with Sections 107.7 and 107.8 of the State of Maine Department of Transportation Standard Specifications, Revision of December 2002 and related Special Provisions.

C. Price.

The quantities given in the Schedule of Items of the Bid Package will be used as the basis for determining the original Contract amount and for determining the amounts of the required Performance Surety Bond and Payment Surety Bond, and that the amount of this offer is _____

_____

$_____ Performance Bond and Payment Bond each being 100% of the amount of this Contract.

D. Contract.

This Contract, which may be amended, modified, or supplemented in writing only, consists of the Contract documents as defined in the Plans, Standard Specifications, Revision of December 2002, Standard Details Revision of December 2002 as updated through advertisement, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds. It is agreed and understood that this Contract will be governed by the documents listed above.

E. Certifications.

By signing below, the Contractor hereby certifies that to the best of the Contractor's knowledge and belief:

1. All of the statements, representations, covenants, and/or certifications required or set forth in the Bid and the Bid Documents, including those in the Contract are still complete and accurate as of the date of this Agreement.

2. The Contractor knows of no legal, contractual, or financial impediment to entering into this Contract.

3. The person signing below is legally authorized by the Contractor to sign this Contract on behalf of the Contractor and to legally bind the Contractor to the terms of the Contract.

F. Offer.

The undersigned, having carefully examined the site of work, the Plans, Standard Specifications Revision of December 2002, Standard Details Revision of December 2002 as updated through advertisement, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds contained herein for construction of:

PINs. 17616.10 & 17616.20 for the Construction of Salt Storage and Brine Buildings in the town of Fairfield, State of Maine, on which bids will be received until the time specified in the "Notice to Contractors" do(es) hereby bid and offer to enter into this contract to supply all the materials, tools, equipment and labor to construct the whole of the Work in strict accordance with the terms and conditions of this Contract at the unit prices in the attached "Schedule of Items".

The Offeror agrees to perform the work required at the price specified above and in accordance with the bids provided in the attached "Schedule of Items" in strict accordance with the terms of this solicitation, and to provide the appropriate insurance and bonds if this offer is accepted by the Government in writing.

As Offeror also agrees:

First: To do any extra work, not covered by the attached "Schedule of Items", which may be ordered by the Resident, and to accept as full compensation the amount determined upon a "Force Account" basis as provided in the Standard Specifications, Revision of December 2002, and as addressed in the contract documents.

Second: That the bid bond at 5% of the bid amount or the official bank check, cashier's check, certificate of deposit or U. S. Postal Money Order in the amount given in the "Notice to Contractors", payable to the Treasurer of the State of Maine and accompanying this bid, shall be forfeited, as liquidated damages, if in case this bid is accepted, and the undersigned shall fail to abide by the terms and conditions of the offer and fail to furnish satisfactory insurance and Contract bonds under the conditions stipulated in the Specifications within 15 days of notice of intent to award the contract.

Third: To begin the Work as stated in Section 107.2 of the Standard Specifications Revision of December 2002 and complete the Work within the time limits given in the Special Provisions of this Contract.

Fourth: That this offer shall remain open for 30 calendar days after the date of opening of bids.

Fifth: The Bidder hereby certifies, to the best of its knowledge and belief that: the Bidder has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of competitive bidding in connection with its bid, and its subsequent contract with the Department.

IN WITNESS WHEREOF, the Contractor, for itself, its successors and assigns, hereby execute two duplicate originals of this Agreement and thereby binds itself to all covenants, terms, and obligations contained in the Contract Documents.

CONTRACTOR

_____	_____
Date	(Signature of Legally Authorized Representative of the Contractor)
_____	_____
Witness	(Name and Title Printed)

G. Award.

Your offer is hereby accepted. This award consummates the Contract, and the documents referenced herein.

MAINE DEPARTMENT OF TRANSPORTATION

_____	_____
Date	By: David A. Cole, Commissioner
_____	
Witness	

CONTRACT AGREEMENT, OFFER & AWARD

AGREEMENT made on the date last signed below, by and between the State of Maine, acting through and by its Department of Transportation (Department), an agency of state government with its principal administrative offices located at Child Street Augusta, Maine, with a mailing address at 16 State House Station, Augusta, Maine 04333-0016, and **(Name of the firm bidding the job)** a corporation or other legal entity organized under the laws of the State of Maine, with its principal place of business located at **(address of the firm bidding the job)**

The Department and the Contractor, in consideration of the mutual promises set forth in this Agreement (the "Contract"), hereby agree as follows:

A. The Work.

The Contractor agrees to complete all Work as specified or indicated in the Contract including Extra Work in conformity with the Contract, PIN No.**1224.00**, for the **Hot Mix Asphalt Overlay** in the town/city of **South Nowhere,** County of **Washington**, Maine. The Work includes construction, maintenance during construction, warranty as provided in the Contract, and other incidental work.

The Contractor shall be responsible for furnishing all supervision, labor, equipment, tools supplies, permanent materials and temporary materials required to perform the Work including construction quality control including inspection, testing and documentation, all required documentation at the conclusion of the project, warranting its work and performing all other work indicated in the Contract.

The Department shall have the right to alter the nature and extent of the Work as provided in the Contract; payment to be made as provided in the same.

B. Time.

The Contractor agrees to complete all Work, except warranty work, on or before **November 15, 2006.** Further, the Department may deduct from moneys otherwise due the Contractor, not as a penalty, but as Liquidated Damages in accordance with Sections 107.7 and 107.8 of the State of Maine Department of Transportation Standard Specifications, Revision of December 2002 and related Special Provisions.

C. Price.

The quantities given in the Schedule of Items of the Bid Package will be used as the basis for determining the original Contract amount and for determining the amounts of the required Performance Surety Bond and Payment Surety Bond, and that the amount of this offer is **(Place bid here in alphabetical form such as One Hundred and Two dollars and 10 cents)** **$ (repeat bid here in numerical terms, such as $102.10)** Performance Bond and Payment Bond each being 100% of the amount of this Contract.

D. Contract.

This Contract, which may be amended, modified, or supplemented in writing only, consists of the Contract documents as defined in the Plans, Standard Specifications, Revision of December 2002, Standard Details Revision of December 2002, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds. It is agreed and understood that this Contract will be governed by the documents listed above.

E. Certifications.

By signing below, the Contractor hereby certifies that to the best of the Contractor's knowledge and belief:

1. All of the statements, representations, covenants, and/or certifications required or set forth in the Bid and the Bid Documents, including those in Appendix A to Division 100 of the Standard Specifications Revision of December 2002 (Federal Contract Provisions Supplement), and the Contract are still complete and accurate as of the date of this Agreement.

2. The Contractor knows of no legal, contractual, or financial impediment to entering into this Contract.

3. The person signing below is legally authorized by the Contractor to sign this Contract on behalf of the Contractor and to legally bind the Contractor to the terms of the Contract.

F. Offer.

The undersigned, having carefully examined the site of work, the Plans, Standard Specifications, Revision of December 2002, Standard Details Revision of December 2002, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds contained herein for construction of:

PIN 1234.00 South Nowhere, Hot Mix Asphalt Overlay ,

State of Maine, on which bids will be received until the time specified in the "Notice to Contractors" do(es) hereby bid and offer to enter into this contract to supply all the materials, tools, equipment and labor to construct the whole of the Work in strict accordance with the terms and conditions of this Contract at the unit prices in the attached "Schedule of Items".

The Offeror agrees to perform the work required at the price specified above and in accordance with the bids provided in the attached "Schedule of Items" in strict accordance with the terms of this solicitation, and to provide the appropriate insurance and bonds if this offer is accepted by the Government in writing.

As Offeror also agrees:

First: To do any extra work, not covered by the attached "Schedule of Items", which may be ordered by the Resident, and to accept as full compensation the amount determined upon a "Force Account" basis as provided in the Standard Specifications, Revision of December 2002, and as addressed in the contract documents.

Second: That the bid bond at 5% of the bid amount or the official bank check, cashier's check, certificate of deposit or U. S. Postal Money Order in the amount given in the "Notice to Contractors", payable to the Treasurer of the State of Maine and accompanying this bid, shall be forfeited, as liquidated damages, if in case this bid is accepted, and the undersigned shall fail to abide by the terms and conditions of the offer and fail to furnish satisfactory insurance and Contract bonds under the conditions stipulated in the Specifications within 15 days of notice of intent to award the contract.

Third: To begin the Work as stated in Section 107.2 of the Standard Specifications Revision of 2002 and complete the Work within the time limits given in the Special Provisions of this Contract.

Fourth: The Contractor will be bound to the Disadvantaged Business Enterprise (DBE) Requirements contained in the attached Notice (Additional Instructions to Bidders) and submit a completed Contractor's Disadvantaged Business Enterprise Utilization Plan with their bid.

Fifth: That this offer shall remain open for 30 calendar days after the date of opening of bids.

Sixth: The Bidder hereby certifies, to the best of its knowledge and belief that: the Bidder has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of competitive bidding in connection with its bid, and its subsequent contract with the Department.

IN WITNESS WHEREOF, the Contractor, for itself, its successors and assigns, hereby execute two duplicate originals of this Agreement and thereby binds itself to all covenants, terms, and obligations contained in the Contract Documents.

CONTRACTOR

_____	**(Sign Here)**
Date	(Signature of Legally Authorized Representative of the Contractor)
____(**Witness Sign Here)**	**(Print Name Here)**
Witness	(Name and Title Printed)

G. Award.

Your offer is hereby accepted. This award consummates the Contract, and the documents referenced herein.

MAINE DEPARTMENT OF TRANSPORTATION

Date	By: David A. Cole, Commissioner
(Witness)	

BOND # _____

CONTRACT PERFORMANCE BOND
(Surety Company Form)

KNOW ALL MEN BY THESE PRESENTS: That _____ _____ **in the State of** _____, as principal, and……....., a corporation duly organized under the laws of the State of ..... and having a usual place of business ...., as Surety, are held and firmly bound unto the Treasurer of the State of Maine in the sum of _____ **and 00/100 Dollars ($)**, to be paid said Treasurer of the State of Maine or his successors in office, for which payment well and truly to be made, Principal and Surety bind themselves, their heirs, executors and administrators, successors and assigns, jointly and severally by these presents.

The condition of this obligation is such that if the Principal designated as Contractor in the Contract to construct Project Number _____ in the Municipality of _____ promptly and faithfully performs the Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

The Surety hereby waives notice of any alteration or extension of time made by the State of Maine.

Signed and sealed this ..... day of ....., 20…. .

WITNESSES:	SIGNATURES:
	CONTRACTOR:
Signature.....	.....….....
Print Name Legibly	Print Name Legibly ...……....
	SURETY:
Signature	....……....
Print Name Legibly	Print Name Legibly .....
SURETY ADDRESS:	NAME OF LOCAL AGENCY:
.....	ADDRESS .....
.....	..……....
.....	.....…….....
TELEPHONE.....	.....…….....

BOND # _____

CONTRACT PAYMENT BOND
(Surety Company Form)

KNOW ALL MEN BY THESE PRESENTS: That _____ _____ **in the State of** _____, as principal, and.....…..... a corporation duly organized under the laws of the State of ..... and having a usual place of business in .....……., as Surety, are held and firmly bound unto the Treasurer of the State of Maine for the use and benefit of claimants as herein below defined, in the sum of _____ **and 00/100 Dollars ($)** for the payment whereof Principal and Surety bind themselves, their heirs, executors and administrators, successors and assigns, jointly and severally by these presents.

The condition of this obligation is such that if the Principal designated as Contractor in the Contract to construct Project Number _____ in the Municipality of _____ promptly satisfies all claims and demands incurred for all labor and material, used or required by him in connection with the work contemplated by said Contract, and fully reimburses the obligee for all outlay and expense which the obligee may incur in making good any default of said Principal, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

A claimant is defined as one having a direct contract with the Principal or with a Subcontractor of the Principal for labor, material or both, used or reasonably required for use in the performance of the contract.

Signed and sealed this ..... day of ...…….....…., 20 ... .

WITNESS:	SIGNATURES:
	CONTRACTOR:
Signature…….....	.....….....
Print Name Legibly .....……..	Print Name Legibly ….....….....
	SURETY:
Signature.....	...….....….....
Print Name Legibly	Print Name Legibly ….....….....
SURETY ADDRESS:	NAME OF LOCAL AGENCY:
...….....….....	ADDRESS ….....….....
.....….....	…….....….....
TELEPHONE	…….....….....

State of Maine
Department of Labor
Bureau of Labor Standards
Technical Services Division
Augusta, Maine 04333-0045
Telephone (207) 623-7906

Wage Determination - In accordance with 26 MRSA §1301 et. seq., this is a determination by the Bureau of Labor Standards, of the fair minimum wage rate to be paid laborers and workers employed on the below titled project.

Title of Project : Fairfield Salt & Brine Buildings

Location of Project : Fairfield, Somerset

2010 Fair Minimum Wage Rates
Building 2 Somerset County
(other than 1 or 2 family homes)

Occupation Title	Minimum Wage	Minimum Benefit	Total	Occupation Title	Minimum Wage	Minimum Benefit	Total
Asbestos Abatement Wrkr	$17.00	$0.66	$17.66	Insulation Installer	$17.20	$1.28	$18.48
Backhoe Loader Operator	$18.00	$2.98	$20.98	Ironworker - Reinforcing	$21.15	$17.05	$38.20
Blaster	$14.50	$1.91	$16.41	Ironworker - Structural	$20.00	$6.46	$26.46
Boilermaker	$30.19	$16.99	$47.18	Laborers/Helper/Tender	$12.50	$1.83	$14.33
Boom Truck Operator	$17.00	$3.13	$20.13	Laborer - Skilled	$14.40	$1.38	$15.78
Bricklayer	$22.28	$3.34	$25.62	Loader Op - Front End	$15.65	$2.59	$18.24
Bulldozer Operator	$17.35	$2.64	$19.99	Mechanic - Automatic Door	$21.75	$7.48	$29.23
Carpenter	$17.00	$1.76	$18.76	Mechanic - Maintenance	$22.20	$3.42	$25.62
Carpenter - Acoustical	$14.00	$2.00	$16.00	Mechanic - Refrigeration	$20.00	$3.16	$23.16
Carpenter - Rough	$15.00	$1.20	$16.20	Millwright	$22.00	$4.90	$26.90
Cement Mason/Finisher	$17.00	$2.15	$19.15	Oil/Fuel Burner Serv & Instr	$20.68	$6.45	$27.13
Commun Equip Installer	$22.00	$3.20	$25.20	Painter	$15.50	$3.95	$19.45
Concrete Mixing Plant Op	$17.43	$5.61	$23.04	Paver - Bituminous	$17.00	$0.83	$17.83
Concrete Pump Operator	$19.50	$3.54	$23.04	Pipe/Stm/Sprkler Fitter	$19.00	$4.77	$23.77
Crane Oprtr =>15 Tons	$20.75	$5.39	$26.14	Pipelayer	$18.50	$4.44	$22.94
Crusher Plant Operator	$15.25	$2.94	$18.19	Plumber (Licensed)	$21.00	$3.85	$24.85
Dry-Wall Applicator	$19.75	$0.72	$20.47	Plumber Hlpr/Trainee (Lic)	$15.00	$2.59	$17.59
Dry-Wall Taper & Finisher	$20.00	$1.42	$21.42	Pump Installer	$15.00	$2.03	$17.03
Electrician - Licensed	$21.75	$6.29	$28.04	Roofer	$14.40	$0.66	$15.06
Electrician Hlpr (Licensed)	$14.00	$2.85	$16.85	Sheet Metal Worker	$16.46	$2.81	$19.27
Elevator Constrctr/Installer	$47.20	$19.69	$66.89	Sider	$13.50	$1.20	$14.70
Excavator Operator	$17.00	$2.53	$19.53	Stone Mason	$15.00	$6.64	$21.64
Fence Setter	$8.00	$0.00	$8.00	Tile Setter	$21.00	$4.01	$25.01
Floor Layer	$16.00	$0.54	$16.54	Truck Driver - Light	$15.75	$2.17	$17.92
Furniture Installer	$15.00	$0.18	$15.18	Truck Driver - Medium	$13.55	$0.73	$14.28
Glazier	$15.00	$1.94	$16.94	Truck Driver - Heavy	$13.48	$1.10	$14.58
HVAC	$18.82	$3.89	$22.71	Truck Driver - Tractor Trailer	$13.55	$1.92	$15.47

The Laborer classifications include a wide range of work duties. Therefore, if any specific occupation to be employed on this project is not listed in this determination, call the Bureau of Labor Standards at the above number for further clarification.

Welders are classified in the trade to which the welding is incidental.

Apprentices - The minimum wage rate for registered apprentices are those set forth in the standards and policies of the Maine State Apprenticeship and Training Council for approved apprenticeship programs.

Posting of Schedule - Posting of this schedule is required in accordance with 26 MRSA §1301 et. seq., by any contractor holding a State contract for construction valued at $50,000 or more and any subcontractors to such a contractor.

Appeal - Any person affected by the determination of these rates may appeal to the Commissioner of Labor by filing a written notice with the Commissioner stating the specific grounds of the objection within ten (10) days from the filing of these rates with the Secretary of State.

Determination No: B2-082-2010

Filing Date: July 28th, 2010

Expiration Date: 12-31-2010

A true copy

Attest: _____
William A. Peabody
Director
Bureau of Labor Standards

BLS 424BU (R2010) (Building 2 Somerset)

March 14, 2007
Supersedes March 3, 1966

Non-federal Projects Only

NOTICE TO CONTRACTORS - PREFERRED EMPLOYEES

Sec. 1303. Public Works; minimum wage

In the employment of laborers in the construction of public works, including state highways, by the State or by persons contracting for the construction, preference must first be given to citizens of the State who are qualified to perform the work to which the employment relates and, if they can not be obtained in sufficient numbers, then to citizens of the United States. Every contract for public works construction must contain a provision for employing citizens of this State or the United States. The hourly wage and benefit rate paid to laborers employed in the construction of public works, including state highways, may not be less than the fair minimum rate as determined in accordance with section 1308. Any contractor who knowingly and willfully violates this section is subject to a fine of not less than $250 per employee violation. Each day that any contractor employs a laborer at less than the wage and benefit minimum stipulated in this section constitutes a separate violation of this section. [1997, c. 757, §1 (amd).]

SPECIAL PROVISION SECTION 104
GENERAL RIGHTS AND RESPONSIBILITIES

104.3.8A. Federal Wage Rates and Labor Laws Delete the entire section 104.3.8A.

104.3.8B State Wage Rates and Labor Laws The State wage rates enclosed apply to this project.

SPECIAL PROVISION
Automated Brine Maker

Description The work shall consist of the furnishing and installing an automated brine maker system in accordance with these specifications, the contract documents and in reasonably close conformance with the plans.

General The brine maker system shall be a new and unused downward flow automatic brine production plant system where the salt acts as a filter bed as the water moves down though to sump area and filter screen. The automatic brine production plant system shall be capable of producing 5,000 gallons of brine per hour (based on available water supply of 6,000 gallon /hr and storage tank configuration static discharge of 45ft. / head pressure); flushing out all sediment collected in the bottom of the vessel with salt level full in the tank; be completely automated and be capable of producing brine without the intervention of an operator; and automatically monitor and control brine consistency monitoring during production. The system shall be capable of automatically selecting recycled water or fresh water for supply and be able to be integrated into a vehicle wash system.

Products will be accepted for consideration on any make or model that is equal or superior to the brine production plant system specified. Decisions of equivalency will be at the sole interpretation of the Department. A blanket statement that equipment proposed will meet all requirements will not be sufficient to establish equivalence. Original manufacturer's brochures of the proposed unit are to be submitted with the proposal. All modifications made to the standard production unit described in the manufacturer's brochures must be certified by the manufacturer and submitted for approval. If a bidder proposes equipment that varies from the equipment specified, the bidder must provide, deliver, and retrieve a demonstrator unit similar to the one proposed at no cost to the Department within thirty (30) days of the contract award for an evaluation period of no less than ten (10) business days.

Brine Maker System

1. Salt Hopper

1.1. The salt hopper shall have a minimum capacity of 5 cubic yards.

1.2. The salt hopper shall hold approximately .75 cubic yard of sediment without interfering with brine outlet.

1.3. Minimum inside dumping width shall be no less than 120" inches.

1.4. The hopper shall be constructed of 16,000 lb tensile strength fiberglass & isophthalic resin.

1.5. All inside surfaces shall be coated with a ceramic resin .050" thick.

1.6. Vessel shall have structural integral ribs to limit flex to within 1" from full to empty.

1.7. Overall thickness of fiberglass and resin in the vessel shall be .35" thick, structural areas such as ribs, corners and floor shall have additional layers of woven fiberglass matt for an overall thickness of .50"

1.8. Sediment collection area shall have a 15 degree slope towards a 14"X 14" sump to promote debris clean out.

1.9. For ease and expediency of cleaning, the system shall be capable of being cleaned via a flush mechanism not to exceed (5) minutes and to be accomplished without disassembly of any components of the unit. Units requiring any disassembly of components for clean out shall be deemed unacceptable.

1.10. For ease and expediency of cleaning accumulated sediment, the system shall be capable of being cleaned with the salt hopper full of salt by a process of opening sump outlet cap and water flush valves. Salt hoppers that require dumping of the hopper or trap doors for clean out shall be deemed unacceptable.

1.11. There shall be fresh water flushing system to force sediment to sump and out of sump.

1.12. There shall be a 4" stainless steel bulkhead fitting for clean out with cam lock cap.

1.13. There shall be no air gaps in the vessel areas between sloped floor and mounting feet.

1.14. Areas with a void shall be filled with high-density foam rated for compression strength of 3 PSI with fiberglass coating on the exterior.

1.15. All Valves, bulkhead fittings, etc. 1" and larger shall be manifold type fittings.

1.16. There shall be a pressure transducer connected to the PLC to activate brine pump on and off and water flow into salt holding tank these levels shall be adjustable from the HMI Interface and shall be adjustable to within 1 inch increments.

1.17. Transducer shall have an air capillary to the inside of salt hopper.

1.18. Vessel shall have 2" male cam-lock type fittings and on/off valves for hose connections (fresh water, brine return, brine outlet to pump).

1.19. There shall be reinforced forklift pockets for moving the vessel.

1.20. All metallic items shall be 304 stainless steel.

1.21. Salt hopper shall have a stainless steel debris screen located above the sump and sediment collection area.

1.21.1. The screen shall have 3/16" diameter perforations.

1.21.2. To allow for maximum flow, the debris screen shall be 60 feet square.

1.21.3. Debris screen shall be capable of supporting 10,000 lb of salt evenly distributed across the total area.

1.21.4. Screen frame shall have six permanently attached 3/8" diameter stainless steel eyebolts connected to a poly sling for ease of removal and shall be removed in one piece.

2. Control System

2.1. The control system shall be a continuous brine production control system to be mounted inside a building.

2.2. Main panel shall be constructed of 304-brushed stainless steel with valve labels and valve functions etched into the panel.

2.3. The Brine sensor shall monitor the brine temperature and automatically compensate brine concentration accordingly.

2.4. Brine pumped from the salt hopper shall be monitored for salt concentration.

2.5. Brine concentration sensors shall be TERODIAL type conductivity sensor.

2.6. All brine exiting the salt hopper shall pass over the brine a concentration sensor that monitors brine between 19.6 and 27.0 % concentration by weight.

2.7. System shall include a 256-color LCD touch screen display. Information on the screen to display shall include, but not be limited to:

2.7.1. Actual brine production concentration in the form of % concentration by weight. <u>For example 23.3%</u>

2.7.2. Gallons of Fresh water used to make brine. <u>For example: Total gallons = 187,324, Gallons of Brine Produced & Salt Used</u>

2.7.3. Self-diagnostic of conductivity sensor. <u>For example: Brine sensor failure</u>

2.7.4. Status of machine operating normal "Automatic Mode" mode along with the status of all electrical components.

2.7.5. Graphic items such as liquid flow, system components, parts manuals, and operational instructions.

2.7.6. Self-diagnostic of electric valves shall indicate if and what valve is not functioning normally and valve status of open or closed.

2.8. Calibration shall be performed from the display located on the face of the machine. Programming parameters shall be password protected.

2.9. There shall be 6 user selectable operating modes (Brine production, Winterization, system test, component rinse, simulation, and default settings)

2.10. The programmable logic controller (PLC) shall have a non-volatile memory with EPROM back up of programming.

2.11. PLC software upgrades of standard programming shall be available for the life of the machine at no charge.

2.12. As the brine concentration is pumped from the salt tank, the brine shall be monitored for the desired concentration. Systems requiring an operator to manually test brine concentration will be deemed unacceptable.

2.13. If the brine concentration is above the target rate, the brine shall be returned to the salt hopper until the correct amount of water is automatically added to the incoming brine to bring product to the desirable concentration.

2.14. Once brine is at an acceptable tolerance is to be + or -. 3% of target concentration the brine is to be diverted to storage tanks.

2.15. In the event that the concentration is below minimum desired concentration, the system shall automatically divert brine to salt tank for a second pass through the salt bed to achieve the desirable concentration.

2.16. The control system shall be configured to accept a signal from a solid-state level sensor located in a storage tank to automatically stop brine production when tank is full. This circuit shall be capable of working with a normally open or closed level device and shall be configurable via operator display.

2.17. Control system shall monitor total gallons of water used, salt used, and brine produced for record keeping.

2.18. The control system shall be programmed with a winterization mode where the system will automatically cycle the brine pump and return the brine to the salt tank. The pump “on” and “off” times shall be programmable to desired parameters via the control panel.

2.19. The control system shall have a component rinse mode that cycles valves and flow system to rinse system out with fresh water at the end of season.

2.20. All valves shall include manual overrides for operation of system in the event of an electrical component failure.

2.21. The system shall be designed with a manual valve counterpart to the electric valve to run parallel for a redundant manual control system.

2.22. The system shall be completely self-diagnostic to include the pump, electrical valve and input signals.

2.23. All electric valves and sensors shall communicate with the controller to confirm the current state.

2.24. In the event of a component failure, the system shall automatically shut down and inform the operator of the specific failure along with a corrective measure, including how to manually override problem and part number failure.

2.25. All wetted parts on control panel except for pump shall manifold type glass filled polypropylene rated for 150 psi.

2.26. Control panel shall be supplied with a 10 ft. S.O. type four-prong cable and plug to an electric supply receptacle. (Required electric supply 30 amp / 220 V / Single phase NEMA L14-30R mating receptacle shall be supplied by the Contractor.

2.27. Electric components mounted onto control panel shall have UL rated conduit protecting connections and wiring outside of the enclosure.

2.28. Individual components over 10A shall have circuit breakers and components less than 10A shall be fuse protected from inside of control panel. Fuses shall have diagnostic LED to detect fuse fault. Fuse falt shall illuminate red.

3. Mechanical Components

3.1. Pump shall be constructed of cast 304 stainless steel with a stainless steel shaft and impeller.

3.2. Electric pump motor shall be thermally protected 3 HP 220 Volt single phases.

3.3. Pump seals shall be constructed of silicon carbide.

3.4. Pump shall be capable of delivering 5,000 gallons per hour of salt brine to storage tanks with a dynamic head of 45 ft.

3.5. All fittings and valves shall be manifold type glass filled polypropylene.

3.6. Wetted Steel components shall be kept to a minimum; all steel components shall be constructed of 304-grade stainless steel

3.7. All exposed eclectic components shall be rated at NEMA 12X.

3.8. 100 Foot of 2" suction / discharge hose shall be supplied with each unit for installation of control panel and salt hopper up to 25 feet apart.

3.9. System shall have 2" cam-lock fittings with mating ends supplied on all connections.

3.10. All fasteners shall be constructed of stainless steel.

4. Fully Automated Remote Truck Mounted Fill Package

4.1. Package shall be two (2) 3-way electric ball valves supplied along with a NEMA 4x switch box with 40 ft. lead to remotely fill trucks with the brine production system and storage tanks at the touch of a button.

4.2. Ball valves will activate pump and divert flow to a discharge hose to fill trucks.

4.3. In the event that the system is producing brine at the same time as filling trucks, the system shall automatically divert brine to the truck fill hose.

4.4. If brine is not being produced then brine from storage tanks shall be diverted to truck fill hose.

5. Tank fitting kit

5.1. Manifold type fitting kit with valve, tee, hose clamps, and hose barbs (note: One unit required for each storage tank)

6. Storage level sensor

6.1. PLC solid state sensor and interconnect kit to connect storage tanks sensor to shut off brine production when storage tank is full

7. Additive Injection System

7.1. The control system shall be capable of automatically injecting a predetermined ratio of brine additive into the finished product tank (0 to 100%).

7.2. There shall be a tank volume sensor to determine if enough additive is available to produce desired volume / ratio of batch

7.3. There shall be a storage tank volume sensor to determine if enough volume is available to produce desired batch / ratio of brine and Additive

7.4. Tank volume Sensors shall be solid state.

7.5. The Control system shall confirm that enough additive is available to produce desired volume / ratio of batch

7.6. The Control system shall confirm that enough storage space is available to hold finished product.

7.7. There shall be a actuated valve to divert brine or additive into the processing pump

7.8. Processing shall be graphically displayed onto HMI (operator display)

7.9. Process shall be self-diagnostic.

8. Warranty

8.1. A full parts and labor warranty shall be provided for the first year or up to 500,000 gallons.

8.2. A parts only warranty shall be provided for the second year or up to 500,000 gallons.

9. Site Preparation

9.1. The Contractor will provide 25 AMP 220 Volt / Single-phase electric supply with neutral and ground leg connected to a (NEMA L14-30R) receptacle within 6 feet of control panel location.

10. Exceptions and Deviations

The Contractor shall fully describe every variance, exception and/or deviation. Additional sheets may be used if required.

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Basis of Payment The accepted automated brine maker system will be considered to be incidental to Item 815.00 Buildings – Brine Building.

Fairfield
17616.10 Salt Storage Building
17616.20 Brine Building
July 29, 2010

SPECIAL PROVISION
SECTION 107
Time
(Contract Time)

1. The completion date for this project is November 19, 2010.

SPECIAL PROVISION
SECTION 502
STRUCTURAL CONCRETE
(Acceptance Methods)

CLASS OF CONCRETE	DESCRIPTION	METHOD
A	Structural Concrete	C

SPECIAL PROVISION
SECTION 502 - STRUCTURAL CONCRETE

502.01 Description This work shall consist of furnishing and placing Portland Cement Concrete for structures and incidental construction in accordance with these Specifications and in conformity with the lines, grades, and dimensions shown on the Plans or established, or for placing concrete fill for foundations where called for on the Plans. For METHOD C, the work shall conform to the requirements of this specification and Section 106- Quality.

502.02 Classification The Portland Cement Concrete shall be the class indicated on the Plans.

502.03 Materials Materials shall meet the requirements specified in the following Sections of Division 700 Materials:

Portland Cement and Portland Pozzolan Cement	701.01
Water	701.02
Air Entraining Admixtures	701.03
Water Reducing Admixtures	701.04
Water Reducing, High Range Admixture	701.0401
Set Retarding Admixtures	701.05
Curing Materials	701.06
Water stops	701.07
Smoothed Surfaced Asphalt Roll Roofing (Formerly Heavy Roofing Felt)	701.08
Fly Ash	701.10
Calcium Nitrite Solution	701.11
Silica Fume	701.12
Ground Granulated Blast Furnace Slag	701.13
Fine Aggregate for Concrete	703.01
Coarse Aggregate for Concrete	703.02
Alkali Silica Reactive Aggregates	703.0201
Preformed Expansion Joint Filler	705.01

502.04 Shipping and Storage Cement may be shipped in bags or in bulk from pre-tested and approved silos at the cement mill. The cement shall be completely protected from rain and moisture. Any cement damaged by moisture or which fails to meet any of the specified requirements shall be rejected and removed from the site. If requested by the Resident, cement stored for a period longer than 60 days shall be retested before being used in the work.

Bags of cement in shipment or storage shall not be piled more than 8 bags high. Bags of cement which for any reason have become partially set or which contain lumps of caked cement shall be rejected. Shipments of cement in bags shall be separately stored in a manner as to provide easy access for identification and inspection of each shipment.

Fly ash and Slag shall be stored in weather tight silos approved by the Resident. All silos shall be completely empty and clean before material is deposited therein, unless the silo already contains material of the same type and properties.

Fly ash or Slag remaining in bulk storage for a period greater than one year after completion of tests will be resampled and retested by the Department before shipment or use.

Handling, shipping and stockpiling of aggregates shall be done in such a way as to minimize segregation and breakage.

Fine aggregate and each size of coarse aggregate shall be stored in completely separate stockpiles on prepared bases constructed of the same material as that to be stockpiled, with a minimum thickness of 300 mm [1 ft]. The ground under the prepared bases shall be reasonably graded to drain away from the stockpile and shall be free of brush or other harmful vegetation. The base shall be left in place, undisturbed for the duration of the use of the stockpile. Prepared bases can be salvaged for reuse provided this material is reprocessed. Barge floors, wood, metal or other approved hard surfaces shall be considered acceptable alternates for the prepared bases described above.

502.05 Composition and Proportioning Concrete shall be composed of a homogeneous mixture of Portland cement or Portland cement with Fly Ash, Silica Fume, or Ground Granulated Blast Furnace Slag, fine aggregate, coarse aggregate, water and admixtures proportioned according to these Specifications and shall conform to the requirements of Table 1. All material shall be approved by the Department prior to use. For Method C concrete, the Contractor shall submit a mix design that meets the requirements of Table 1.

TABLE 1

Concrete CLASS	Minimum Specified Compressive Strength (Psi)	Maximum Slump at Placement	Entrained Air (%)		Notes
			LSL	USL	
A	4350	2”-4”, max 7” with high range water reducer	5.5	8.5	1,5,6

LSL - lower specification limit
USL - upper specification limit

NOTE # 1	Target shall be the midpoint of the range of the LSL and USL
NOTE # 5	Compressive strength testing for all concrete mixes, excluding those containing fly ash (at 20 percent or greater pozzolan cement replacement), will be done at 28 days. Compressive strength testing for concrete mixes containing fly ash, at 20 percent or greater pozzolan cement replacement, will be done at 56 days.
NOTE # 6	Coarse aggregate for concrete shall meet the requirements of Section 703.02 for Class "A" or "AA".

At least 30 days prior to the first placement, a concrete mix design shall be submitted by the Contractor to the Department for approval. No concrete shall be placed on a project until the concrete mix design is approved by the Department.

The mix design submitted by the Contractor shall include the following information:

A. Description of individual coarse aggregate stockpiles, original source, bulk specific gravity, absorption, gradation, and alkali silica reactivity test results. A combined coarse aggregate blended gradation shall be provided.

B. Description of fine aggregate, original source, bulk specific gravity, absorption, colorimetric, gradation and Fineness Modulus (F.M.).

C. Description and amount of cement and pozzolanic material.

D. Target water cement ratio.

E. Target water content by volume.

F. Target strength.

G. Target air content, slump and concrete temperature.

H. Target concrete unit weight.

I. Type and dosages of air entraining and chemical admixtures.

Approval by the Department will be contingent upon the ability of the mix design proportions to produce concrete strength requirement and other factors that affect durability. Pozzolans are included as cementitious material.

Concrete mix designs shall contain not more than 30 percent fly ash or 50 percent slag pozzolan cement replacement, by weight.

Cast-in-place concrete shall contain not more than 377 kg/m^3 [635 lb/yd^3] of cement and not more than 392 kg/m^3 [660 lb/yd^3] of cementitious material.

All concrete mixes must be designed in accordance with the criteria of this Section. The design proportions with the fine aggregates designated as a percent of the total aggregate must be stated in terms of aggregates in a saturated, surface dry condition and the batch weights will be adjusted by the Contractor for the actual moisture of the aggregate at the time of use.

No change in the source or character of the mix ingredients may be made without notice to the Resident and no new mix ingredients shall be used until the Resident has approved such ingredients and new mix proportions, if they change.

502.0501 Quality Control Method C

Under METHOD C the Contractor shall provide a Certificate of Compliance for each truckload of concrete to the Department at the time of the load placement. The Certificate of Compliance shall be a form acceptable to the Department and shall include:

Contract Name & Number
Bridge Name
Manufacturing Plant (Batching Facility)
Name of Contractor (Prime Contractor)
Date
Time Batched/Time Discharged
Truck No.
Quantity (Quantity Batched this Load)
Type of Concrete by Class and Producer Design Mix No.
Cement Brand or Type, and Shipment Certification No.
Temperature of Concrete at Discharge
Target Weights per cubic meter [cubic yard] and Actual Batched Weights for:

1. Cement
2. Pozzolanic Additives, including Fly Ash, Slag Cement, and Microsilica
3. Coarse Concrete Aggregate
4. Fine Concrete Aggregate
5. Water (including free moisture in aggregates and water added at the project)
6. Admixtures Brand and Quantity (ml/cubic meter [fl. oz./cubic yard])

Air-Entraining Admixture
Water Reducing Admixture
Other Admixtures
Placement Location

502.0502 Quality Assurance The Department will determine the acceptability of the concrete through a quality assurance program.

The Department will take verification tests at times deemed appropriate by the Department. Verification tests will include compressive strength and air content. For material represented by a verification test that does not Substantially Conform to the Contract requirements, as determined by the Department, the Department will, at its sole discretion

A. Require the Contractor to remove and replace the entire affected placement with concrete meeting the Contract requirements at no additional expense to the Department, or
B. Accept the material, at a reduced payment as determined by the Department.

Concrete sampling for verification tests will be taken at the discharge point, with pumped concrete sampling taken at the discharge end of the pump line.

Compressive strength test will be completed by the Department in accordance with AASHTO T22 at 28 days except that no slump will be taken. The average of two cylinders will be used to determine compressive strength.

Testing for entrained air in concrete, at the rate of one test per sublot, shall be in accordance with AASHTO T152.

Determination of the concrete cover over reinforcing steel for structural concrete shall be made prior to concrete being placed in the forms. Bar supports, chairs, slab bolsters, and side form spacers shall meet the requirements of CRSI Chapter 3, Section 2.5 Class 1, Section 2.6 Class 1A or Section 4. All supports shall meet the requirements for type and spacing as stated in the Concrete Reinforcing Steel Institute (CRSI) Manual of Standard Practice, Chapter 3. Concrete will not be placed until the placing of the reinforcing steel and supports have been approved by the Resident. If the Contractor fails to secure Department approval prior to placement, the Contractor's failure shall be cause for removal and replacement at the Contractor's expense. The Contractor shall notify the Resident, at least 48 hours prior to the placement, when the reinforcing steel will be ready for checking. Sufficient time must be allowed for the checking process and any needed repairs.

502.06 Batching Measuring and batching of materials for Method C concrete shall be performed at an approved batching plant. The plant shall meet the requirements of AASHTO M-157.

502.07 Delivery

A. Delivery and discharge of the concrete from the mixer shall be completed within a maximum of 1½ hours from the time the cement is added to the aggregate, except that in hot weather when the concrete mix temperature exceeds 21°C [70°F] or under other conditions contributing to quick stiffening of the concrete, delivery and discharge from the mixer shall be completed within 1 hour. When approved by the Resident, the use of a retarding admixture (Type D) may be used for increasing the 1 hour discharge time to 1½ hours, provided concrete temperatures are kept below 27ºC [80ºF] and conditions contributing to quick stiffening of the concrete are not present.

B. Concrete, which has been condemned for any reason, shall be removed immediately from the job site and disposed of properly.

C. Concrete temperature before placement shall not exceed 30°C [85°F].

502.08 Cold Weather Concrete Concrete shall not be placed against frozen surfaces.

All frost, ice, and snow shall be removed from all material that will be in contact with fresh concrete.

Unless authorized by the Resident, the mixing and placing of concrete shall be discontinued when the atmospheric temperature is below 5°C [40°F] in the shade and dropping and shall not be resumed until the atmospheric temperature is as high as 2°C [35°F] in the shade and rising. If authorization is granted for the mixing and placing of concrete under atmospheric conditions different from those specified above, the water shall be heated to a temperature not exceeding 82°C [180°F]. When either the aggregate or water is heated to above 50°C [120°F], they are to be combined first in the mixer before the cement is added. If the atmospheric temperature is below -4°C [25°F], the aggregate shall also be heated when directed by the Resident. Materials containing frost or lumps of frozen material shall not be used. Stockpiled aggregates may be heated by the use of dry heat or steam. Aggregates shall not be heated directly by gas or oil flame or on sheet metal over a fire. When aggregates are heated in bins, steam coil or water coil heating or other methods that will not be detrimental to the aggregates may be used. The heating apparatus shall be capable of heating the mass uniformly and preventing the occurrence of spots of overheated material. The temperature of the mixed concrete shall be between the minimum values shown in Table 4 and 20°C [70°F] when it is placed in the forms. Salt or other chemicals shall not be added to the concrete for any reason whatsoever, except by written permission of the Resident.

Table 4
COLD WEATHER TEMPERATURE TABLE

MINIMUM FORM DIMENSION SIZE			
Less than 300mm(12in)	300 - 900 mm (12 -36 in)	900 - 1800 mm (36 - 72 in)	Greater than 1800mm (72in)
13°C (55°F)	10°C (50°F)	7°C (45°F)	5°C (40°F)
MINIMUM CONCRETE TEMPERATURE AS PLACED			

When permitted by the Resident, footings may be protected by completely submerging them by admitting water inside the cofferdam. Until submersion takes place, the temperature of the concrete and its surface shall be controlled as specified above. Submersion shall proceed slowly and the temperature of the air or water shall be maintained sufficient to prevent ice from forming within the cofferdam for a period of 7 days after the placing of the concrete.

When depositing concrete under water, there shall be no ice inside the cofferdam.

Permission given to place concrete under the conditions mentioned above and as described in the Contractor's QC Plan shall not relieve the Contractor of responsibility for obtaining satisfactory results. The Contractor shall be wholly responsible for the protection of concrete during cold weather operations and any concrete injured by frost action or overheating shall be removed and replaced at the Contractor's expense.

502.10 Forms and False work

A. Construction of Forms All forms shall be well built, substantial and unyielding, securely braced, strutted and tied to prevent motion and distortion while concrete is being placed in them. The forms shall be strong enough to safely support the weight of the concrete and all superimposed loads (such as runways, concrete buggy loads, workers, scaffolding, etc.) placed upon them.

Forms shall be built to conform to the dimensions, location, contours and details shown on the Plans. The faces of forms against which the concrete is to be placed shall be dressed smooth and uniform and shall be free from winds, twists, buckles and other irregularities.

The placing of concrete in excavated pits and trenches without forms will be permitted only in exceptional cases and then at the discretion of the Resident.

All corners within the forms shall be fitted with chamfer strips mitered at their intersections.

Chamfer strips shall have a width across the diagonal face between 15 and 20 mm [½ and ¾ in]. The size to be adopted for a given portion of the work shall depend upon the general dimensions. Except where special size chamfer strips are shown on the Plans, the size of chamfer strips shall be uniform on individual projects. Provision shall be made for the chamfering of the top edges of abutment bridge seats and wing walls, tops of piers and retaining walls, tops of through girders, roadway curbs, etc., by nailing chamfer strips inside the forms. Unless otherwise provided, all chamfer strips shall produce plain flat surfaces on the concrete.

All foreign matter within the forms shall be removed before depositing concrete in them.

In all cases where metal anchorages or ties within or through the face forms are required to hold the forms in their correct position, such anchorages or ties shall be of ample strength and shall be so constructed that the metal work can be removed to a depth of not less than 25 mm [1 in] from the face and back surfaces of the concrete without damaging such surfaces.

All forms shall be inspected and approved by the Department before the placing of any concrete within them.

B. Surface Treatment of Forms The inside surfaces of forms shall be uniformly coated with form oil or other approved surface treatment.

Form surfaces shall be treated before placing the reinforcing steel.

D. Removal of Forms and False work

1. Location, weather conditions, cementitious materials used and the character of the structure involved shall be considered in determining the time for the removal of forms. Forms shall not be removed until concrete cylinders cured with the structure establish that the concrete has developed 80 percent of design strength. The Contractor shall cast and break two cylinders per sublot and furnish the Resident with these test reports before removal of the forms.

When approved by the Resident, the vertical forms of footings, walls, columns and sides of beams and slabs may be removed 48 hours after completion of placement of concrete, exclusive of the time the ambient air temperature is below 7°C [45°F] and provided the following conditions are met:

Immediately after the forms are removed, defects in the concrete surface shall be repaired in accordance with Section 502.13 and the repaired area thoroughly dampened with water. The surfaces of exposed concrete shall be cured for the remainder of the 7-day curing period by the application of a product listed on the Maine Department of Transportation Prequalified list of curing compounds. The curing compound shall be applied continuously by an approved pressure spraying or distributing equipment at a rate necessary to obtain an even, continuous membrane, meeting the manufacturer's recommendation but at a rate of not less than 0.2 L/m² [1 gal/200 ft²] of surface. Other methods of curing concrete may be used with the prior approval of the Resident.

2. Forms and false work, including blocks and bracing, shall not be removed without the consent of the Resident. The Resident's consent shall not relieve the Contractor of responsibility for the safety of the work. In no case shall any portion of the wood forms be left in the concrete. As the forms are removed, all projecting metal devices that have been used for holding the forms in place shall be removed in accordance with Section 502.10. The holes shall be filled as required in Section 502.13.

502.11 Placing Concrete

A. General Concrete shall not be placed until forms and reinforcing steel have been checked and approved by the Resident. The forms shall be clean of all debris. The method and sequence of placing the concrete shall be approved before any concrete is placed.

All concrete shall be placed before it has taken its initial set and, in any case, as specified in Section 502.07. Concrete shall be placed in horizontal layers in such a manner as to avoid separation and segregation. A sufficient number of workers for the proper handling, tamping and operation of vibrators shall be provided to compact each layer before the succeeding layer is placed and to prevent the formation of cold joints between layers. Care shall be taken to prevent mortar from spattering on structural steel, reinforcing steel and forms. Any concrete or mortar that becomes dried on the structural steel, reinforcing steel or forms shall be thoroughly cleaned

off before the final covering with concrete. Following the placing of the concrete, all exposed surfaces shall be thoroughly cleaned as required, with care not to injure any surfaces.

Concrete in any section of a structure shall be placed in approximately horizontal layers of such thickness that the entire surface shall be covered by a succeeding layer before the underlying layer has taken its initial set. Layers shall not exceed 450 mm [18 in] in thickness and be compacted to become an integral part of the layer below. Should the placement be unavoidably delayed long enough to allow the underlying layer to take initial set or produce a so-called "cold joint", the following steps shall be taken:

An incomplete horizontal layer shall be bulk-headed off to produce a vertical joint.

Horizontal joints shall be treated as required in this Section 502.11(f).

Portland cement concrete with a high range, water reducing admixture shall not be placed when the concrete mix temperature is below 5°C [40°F] or above 29°C [85°F].

Fresh concrete, threatened with rain damage shall be protected by approved means. Sufficient material for covering the work expected to be done in one day shall be on hand at all times for emergency use. The covering shall be supported above the surface of the concrete.

B. Chutes, Troughs, Pipes and Buckets Sectional drop chutes or short chutes, troughs, pipes and buckets when used as aids in placing concrete, shall be arranged and used in such a manner that the ingredients of the concrete do not become separated or segregated. Wood and aluminum chutes, troughs, pipes or buckets shall not be used.

Dropping the concrete a distance of more than 2 m [6 ft], unless confined by closed chutes or pipe will not be permitted. The concrete shall be deposited at or as near as possible to its final position.

C. Vibrating Mechanical, high frequency internal vibrators shall be used, operating within the concrete, for compacting the concrete in all structures and precast and cast-in-place piles, with the exception of concrete placed under water. The vibrators shall be an approved type, with a frequency of 5,000 to 10,000 cycles per minute and shall be visibly capable of properly consolidating the designed mixture. A spare vibrator shall be available on the project at all times during the placing of concrete.

Sufficient vibrators shall be used to consolidate the incoming concrete within 5 minutes after placing. Vibrators shall neither be held against forms or reinforcing steel, nor shall they be used for flowing the concrete or spreading it into place. Over-vibrating shall not be allowed.

D. Dewatering Forms All forms shall be dewatered before concrete is placed in them. Pumping will not be permitted from the inside of forms while concrete is being placed. Moving water shall not be permitted to be exposed to fresh concrete.

F. Construction Joints Construction joints shall be located where shown on the Plans or permitted by the Resident. When the concrete is in seawater, except concrete cores for stone masonry, no horizontal construction joint will be permitted between extreme low tide and extreme high tide elevations.

At horizontal construction joints, temporary gage strips having a minimum thickness of 38 mm [1 ½ in] shall be placed horizontally inside the forms along all exposed faces to give the joints straight lines. The joint shall be so constructed that the surface of the concrete will not be less than 6 mm [¼ in] above the bottom of the gage strip. Before placing fresh concrete, the temporary gage strip shall be removed, the surfaces of construction joints shall be thoroughly cleaned, drenched with water until saturated and kept saturated until the new concrete is placed. Immediately prior to placing new concrete, the forms shall be drawn tight against the concrete already in place. Concrete in substructures shall be placed in such a manner that all horizontal joints will be horizontal and if possible, in locations such that they will not be exposed to view in the finished structure.

Where vertical construction joints are necessary, reinforcing bars shall extend across the joint in such a manner as to make the structure monolithic. Construction joints through paneled wing walls or other large surfaces which are to be treated architecturally will not be allowed except as shown on the Plans. All vertical construction joints in abutments and retaining walls shall contain water stops as shown on the Plans. The water stops shall be one continuous piece at each location.

All horizontal construction joints in abutments and retaining walls shall be constructed using a joint cover, as shown on the Plans.

Construction joints in the wearing surface shall be located where called for on the Plans. No other construction joints will be allowed.

All joints shall be formed in the manner detailed on the Plans. The forms shall not be treated with oil or any other bond breaking material that will adhere to the concrete.

Sealing slots shall be provided at all joints in the wearing surface that are located directly over a slab construction joint.

Construction joints in the wearing surface not receiving a sealing slot shall be brushed with a neat cement paste immediately prior to making the adjacent concrete placement.

After the concrete has been cured, sealing slots, when required, shall be sandblasted with approved equipment to remove all laitance and foreign material on the surfaces of the slots. The bottom of the sealing slots shall receive an approved bond breaker. The joint shall then be filled within 3 mm [⅛ in] of the surface with a poured sealant conforming to the following requirements and in accordance with the manufacturer's recommendations. The joint sealant supplied shall be an approved two component, elastomeric sealant capable of 50 percent joint

movement. Both components shall be in liquid form and the combining ratio of components by volume shall be as recommended by the manufacturer.

502.12 Expansion and Contraction Joints Expansion and contraction joints shall be located and constructed as shown on the Plans. Water stops shall be one continuous piece at each location. Joint cover, as shown on the Plans, shall be applied to all joints where water stops cannot physically be installed, as determined by the Resident.

502.13 Repairing Defects and Filling Form Tie Holes in Concrete Surfaces After the forms are removed, all surface defects and holes left by the form ties shall be repaired.

All fins and irregular projections shall be removed from the following: Surfaces which are visible in the completed work; surfaces to be waterproofed; and the portion of vertical surfaces of substructure units which is below the final ground surface to a depth of 300 mm [12 in], not including underwater surfaces.

In patching surface defects, all coarse or fractured material shall be chipped away until a dense uniform surface, exposing solid coarse aggregate is obtained. Feathered edges shall be saw cut away to form faces having a minimum depth of 25 mm [1 in] perpendicular to the surface. All surfaces of the cavity shall be saturated thoroughly with water, after which a thin layer of neat cement paste shall be applied. The cavity shall then be filled with thick, reasonably stiff mortar, not more than 30 minutes old, composed of material of the same type and quality and of the same proportions as that used in the concrete being repaired. The surface of this mortar shall be floated before initial set takes place and shall be neat in appearance. The patch shall be water cured for a period of five days.

If the removal of defective concrete materially impairs the soundness or strength of the structure, as determined by the Resident, the affected unit shall be removed and replaced by the Contractor at their expense.

The holes left by form ties, on the portions of substructure concrete that are to be permanently covered in the finished work, may be filled with an acceptable grade of plastic roofing cement. Holes in the bottom of slabs caused by supporting hangers need not be filled.

502.14 Finishing Concrete Surfaces Neat cement paste, dry cement powder or the use of mortar for topping or plastering of concrete surfaces will not be permitted.

A. Float Finish A float finish for horizontal surfaces shall be achieved by placing an excess of concrete in the form and removing or striking off the excess with a template or screed, forcing the coarse aggregate below the surface. Creation of concave surfaces shall be avoided. After the concrete has been struck off, the surface shall be thoroughly floated to the finished grade with a suitable floating tool. Aluminum and steel floats are not allowed.

Float finish, unless otherwise required, shall be given to all horizontal surfaces.

B. Structural Concrete Slab Structures

Lightweight, vibrating screeds may be used on slab structures and shall have the following features:

1. It shall be portable and easily moved, relocated, or adjusted by no more than four persons.
2. The power unit shall be operable without disturbing the screeded concrete.
3. It shall be self-propelled with controls that will allow a uniform rate of travel and by which the rate of travel can be increased, decreased or stopped.
4. It shall have controlled, uniform, variable frequency vibration, end to end.
5. It shall be fully adjustable for flats, crowns, or valleys.
6. The screed length shall be adjustable to accommodate the available work area.

When a lightweight vibrating screed is utilized, the concrete shall be placed or cut to no more than 13 mm [½ in] above the finished grade in front of the front screed. The screed shall be operated such that at least 1 m [3 ft] of concrete is in position in front of the screed.

The texturing of concrete wearing surfaces shall be applied as approved by the Resident. The surface tolerance and texture shall be acceptable to the Resident, or the placement may be suspended until remedial action has been taken. The Resident may order the removal and replacement of material damaged by rainfall.

In the event of a delay during a concrete placement, all concrete that cannot receive the final curing cover shall be covered with wet burlap.

No vehicles will be allowed, either directly or indirectly, on reinforcing steel before concrete placement.

D. Form Surface Finish The character of the materials used and the care with which forms are constructed and concrete placed shall be considered in determining the amount of rubbing required. If, using first class form material, well-constructed forms and the exercise of special care, concrete surfaces are obtained that are satisfactory to the Resident, the Contractor may be relieved in part from the requirement of rubbing.

1. Ordinary Finish An Ordinary Finish is defined as the finish left on a surface after the removal of the forms, the filling of all holes and the repairing of all defects. The surface shall be true and even, free from stone pockets and depressions or projections and of uniform texture. All formed concrete surfaces shall be given an ordinary finish unless otherwise specified.

Repaired areas that do not meet the above requirements or areas that cannot be satisfactorily repaired to meet the requirements for ordinary finish shall be given a rubbed finish. When a rubbed finish is required on any part of a surface, the entire surface shall be

given a rubbed finish.

2. Rubbed Finish After removal of forms, the rubbing of concrete shall be started as soon as its condition will permit. Immediately before starting this work, the concrete shall be thoroughly saturated with water. Sufficient time shall have elapsed before wetting down to allow the mortar used in ordinary finish to become thoroughly set. Surfaces to be finished shall be rubbed with a medium coarse carborundum stone, using a small amount of mortar on its face. The mortar shall be composed of cement and fine sand mixed in proportions as used in the concrete being finished. Rubbing shall be continued until all form marks, projections and irregularities have been removed, all voids filled and a uniform surface has been obtained. A thin layer of paste produced by this rubbing shall be left on the surfaces.

After all concrete above the surface being treated has been cast, the final finish shall be obtained by a second rubbing with a fine carborundum stone using only water. This rubbing shall be continued until the entire surface is of a smooth texture and uniform color. The paste produced by this second rubbing shall be carefully spread with a moist whitewash brush to form a very thin uniform coating upon the surface of the concrete.

After the final rubbing is completed and the surface has dried, it shall be rubbed lightly with clean and dry burlap to remove excess loose powder and shall be left free from all unsound patches, paste, powder and objectionable marks. This finish shall result in a surface of smooth texture and uniform color.

No surface finishing shall be done in freezing weather or when the concrete contains frost. In cold weather the preliminary rubbing necessary to remove the inert sand and cement materials and the surface irregularities may be done without the application of water to the concrete surfaces.

502.15 Curing Concrete All concrete surfaces shall be kept wet with clean fresh water for a curing period at least 7 days after placing of concrete. All concrete and its surfaces shall be kept above 10°C [50°F] for the first four (4) days of the curing period and above 0°C [32°F] for the remainder of the period.

As an alternative to the above, the Contractor may shorten the seven (7) day curing period when it can be shown that the concrete has developed 80 percent of design strength. The Contractor shall make cylinders and furnish test results to the Resident before curing is stopped. In the 24 hours following the end of the curing period, the temperature of the concrete shall be decreased on a gradual basis, not to exceed a total change of 22°C [40°F] for moderate sections, such as abutments and pier bents, and 17°C [30°F] for mass sections, such as massive piers.

When the ambient temperature is expected to fall below 2°C [35°F] during the shortened curing period and 24 hours following, the Contractor shall make provisions to maintain the temperature of the concrete and its surface above 0°C [32°F].

All slabs and wearing surfaces shall be water cured only and kept continuously wet for the entire approved curing period by covering with one of the following systems:

A. 2 layers of wet burlap,
B. 2 layers of wet cotton mats,
C. 1 layer of wet burlap and either a polyethylene sheet or a polyethylene coated burlap blanket,
D. 1 layer of wet cotton mats and either a polyethylene sheet or a polyethylene coated burlap blanket.

Except as otherwise specified, curing protection for slabs and wearing surfaces shall be applied within 30 minutes after the concrete is screeded and before the surface of the concrete has lost its surface "wetness" or "sheen" appearance. The first layer of either the burlap or the cotton mats shall be wet and shall be applied as soon as it is possible to do so without damaging the concrete surface. Polyethylene sheets shall not be placed directly on the concrete, but may be placed over the fabric cover to prevent drying.

The covering of concrete wearing surfaces, decks, curbs, and sidewalks shall be kept continuously wet for the entire curing period by the use of a continuous wetting system and shall be located to insure a completely wet concrete surface for the entire curing period.

All other surfaces, if not protected by forms, shall be kept thoroughly wet either by sprinkling or by the use of wet burlap, cotton mats or other suitable fabric until the end of the curing period. Polyethylene sheets shall not be placed directly on the concrete, but may be placed over the fabric cover to prevent drying.

SPECIAL PROVISION
SECTION 503 - REINFORCING STEEL

503.01 Description This work shall consist of furnishing and placing reinforcement, either plain or epoxy-coated, in accordance with these specifications and in conformance with the Plans, Supplemental Specifications and Special Provisions.

503.02 Materials Materials shall meet the requirements of the following Sections of Division 700 - Materials:

Reinforcing Steel	709.01
Welded Steel Wire Fabric	709.02

503.03 Schedule of Material When the Department does not furnish reinforcing steel schedules, the Contractor shall submit order lists, bending diagrams and bar layout drawings to the Resident for approval. The reinforcing steel shall not be ordered until these lists and drawings are approved. Approval shall not relieve the Contractor of full responsibility for the satisfactory completion of this item. When the Department allows the use of precast concrete deck panels, or any other significant changes that effect the quantity of reinforcing steel, the Contractor shall be responsible for revising the reinforcing steel schedule; the revised schedule shall be submitted to the Resident for approval.

503.04 Protection of Material Reinforcement, either plain or epoxy-coated, shall be stored on skids or other supports a minimum of 300 mm [12 in] above the ground surface and protected at all times from damage and surface contamination. The storage supports shall be constructed of wood, or other material that will not damage the surface of the reinforcement or epoxy coating. Bundles of bars shall be stored on supports in a single layer. Each bundle shall be placed on the supports out of contact with adjacent bundles.

If it is expected that epoxy-coated bars will be required to be stored outdoors for a period in excess of three months, then they shall be protected from ultraviolet radiation.

503.05 Fabrication Bending of reinforcing bars and tolerances for bending of reinforcing bars shall be in conformance with the latest edition of the "Manual of Standard Practice of the Concrete Reinforcing Steel Institute" and the "Detailing Manual of the American Concrete Institute". Unless otherwise specifically authorized, bars shall be bent cold.

503.051 Epoxy Coating Reinforcing steel, specified on the design drawings to be epoxy coated, shall meet the requirements of AASHTO M284/M284M (ASTM A775/A775M), Epoxy-Coated Reinforcing Steel Bars, and the following requirements:

a. The Contractor shall furnish a written certification that at the point of application of the coating and at the reinforcing bar shop the coating, the coated bars, and the handling and packaging of the coated bars, meet all the requirements specified in Section 5.2.1 and Section 15.1 of AASHTO M284/M284M (ASTM A775/A775M), and Section 503.053 of these specifications.

b. Patching material as specified in Section 5.4 of AASHTO M284/M284M (ASTM A775/A775M), shall be supplied for both shop and field patching of the coated reinforcing steel. The patching material shall be supplied as required, but at not less than the following rates:

#10 to #16 [#3 to #5] bars: 1 L/4800 m [1 qt/15000 ft] of bar, or fraction thereof
#19 to #29 [#6 to #9] bars: 1 L/2550 m [1 qt/8000 ft] of bar, or fraction thereof
#32 [#10] and up: 1 L/1900 m [1 qt/6000 ft] of bar, or fraction thereof

c. All testing shall be as specified in AASHTO M284/M284M (ASTM A775/A775M), except that the frequency of testing for adhesion of the coating shall be two bars of each size out of all bars coated with each individual batch or lot of epoxy resin, or two bars of each size out of all bars coated in an eight hour period, whichever is greater.

d. If a reinforcing bar fabrication shop uses previously stockpiled bars to supply the requirements of this contract, the fabrication shop shall furnish copies of all certificates required to be furnished by the coating applicator under a., above. The certificates furnished shall be directly traceable to the actual bars used through batch numbers, order numbers or similar information. If such certification is not available, the Department reserves the right to perform the tests specified under AASHTO M284/M284M (ASTM A775/A775M), at the expense of the fabrication shop. For bars supplied from stock, the fabrication shop shall supply all patching material specified under b., above.

e. The Contractor shall notify the Resident at least 1 week prior to the start of the coating application, so that the Resident or their designated representative may be present at the beginning of the application of the epoxy coating.

503.052 Patching of Epoxy Coating Patching required at the point of application of the epoxy coating shall be done in conformance with the requirements of AASHTO M284/M284M (ASTM A775/A775M).

At the reinforcing steel fabrication shop and at the job site, all nicks, cuts, scratches, cracks, abrasions, sheared ends etc., visible to the naked eye, shall be repaired using patching material supplied as specified under Section 503.051 b. To the greatest extent possible, repairs to each day's production at the fabrication shop and each day's placement at the job site shall be done before the end of each working day. If damaged areas do become rusted or contaminated with foreign matter, then these areas shall be cleaned by sandblasting, or an equally effective method, such that all visible rust and/or foreign matter is removed prior to patching.

503.053 Packaging and Handling of Epoxy-Coated Bars All handling of epoxy-coated reinforcing bars by mechanical means shall be done by equipment having padded contact areas, or by the use of nylon webbing slings. The use of chains or wire rope slings shall not be allowed, even when used with padding. All bundles of coated bars shall be lifted with a strong back, spreader bar, multiple supports or a platform bridge to prevent bar-to-bar abrasion from

sags in the bundles. Support points during lifting or transporting of bundled epoxy-coated bars shall be spaced at a maximum of 4.5 m [15 ft].

Bundled bars shall be strapped together with non-metallic or padded straps in a manner to prevent bar-to-bar abrasion due to relative movement between bars.

Bars loaded for transport shall be loaded and strapped down in a manner that will prevent damage from motion and vibration, to the greatest extent possible. Bundles of bent bars shall be transported strapped to wooden platforms or shall be crated. All individual bundles and layers of bundles shall be separated, and supported by dunnage.

Individual bars shall be handled in a manner that prevents damage to the coating due to abrasion or impact, and at no time shall any bar be moved by dragging over any surface, including other reinforcing bars. Sufficient personnel shall be assigned to assure that there is complied with the above.

503.06 Placing and Fastening All steel reinforcement shall be accurately placed in the positions shown on the plans and shall be firmly held there during the placing and setting of the concrete. Immediately before placing concrete, steel reinforcement shall be free from all foreign material, which could decrease the bond between the steel and concrete. Such foreign material shall include, but not be limited to, dirt, loose mill scale, excessive rust, paint, oil, bitumen and dried concrete mortar.

Bars shall be fastened together at all intersections except where spacing is less than 300 mm [1 ft] in either direction, in which case, fastening at alternate intersections of each bar with other bars will be permitted providing this will hold all the bars securely in position. This fastening may be tightly twisted wire or by tack welding when permitted by the Resident. All tack welding shall be done in accordance with Section 504, Structural Steel. No tack welding for fastening or supporting reinforcing steel in areas of high tensile stresses will be permitted. Welding on epoxy-coated reinforcing steel will not be permitted under any condition.

In general, no welding will be permitted on the main reinforcing steel of superstructure slabs.

Proper distances from the forms shall be maintained by means of stays, blocks, ties, hangers or other approved means. Blocks used for this purpose shall be precast portland cement mortar blocks of approved shape and dimensions. Chairs may be used for this purpose and, when used, must be plastic, plastic coated, epoxy coated or plastic tipped. Layers of bars may be separated by precast portland cement mortar blocks or other approved devices. The use of pebbles, pieces of broken stone or brick, metal pipe or wooden blocks shall not be permitted. The placing of reinforcement as concrete placement progresses, without definite and secure means of holding the steel in its correct position, shall not be permitted except in the case of welded steel wire fabric or bar mats.

Epoxy-coated reinforcing bars supported on formwork shall rest on coated wire bar supports, or on bar supports made of dielectric material or other acceptable materials. Wire bar supports shall be coated with dielectric material for a minimum distance of 50 mm [2 in] from the point of contact with the reinforcing bars. Reinforcing bars used as support bars shall be epoxy-coated. In walls, spreader bars shall be epoxy-coated.

Tie wire for epoxy-coated reinforcing steel shall be soft annealed wire that has been nylon, epoxy or plastic coated.

Field bending or cutting of epoxy-coated reinforcing bars will not be allowed, unless otherwise indicated on the plans or permitted by the Resident. When field bending or cutting is allowed, all damaged coating areas shall be repaired in accordance with the patching requirements.

Bars in bridge seats shall be placed so as to clear anchor bolts.

When specified on the contract plans, reinforcing steel shall be anchored into drilled holes.

The anchoring material shall be one of the products listed on the Maine Department of Transportation's list of Prequalified Type 3 Anchoring Materials. Installation shall be in accordance with the manufacturer's published recommendations.

At each anchor location, existing reinforcing will be located to avoid drilling through existing bars. Where interferences are found to exist, location adjustments will be determined by the Resident.

Minimum embedment lengths of reinforcing bars shall comply with the manufacturer’s published recommendations for the anchoring material selected. These embedment lengths shall be verified by the Resident before installation of the reinforcing bars. The reinforcing steel lengths indicated on the Plans may be reduced, at the Contractor's option, to the determined minimum embedment lengths.

Reinforcement shall be inspected and approved by the Resident before any concrete is placed.

503.07 Splicing Reinforcing bars shall be spliced in accordance with the requirements of this section, and in the locations shown on the plans. No modifications of, or additions to, the splice arrangements shown on the plans shall be made without the Resident's prior approval. Any additional splices authorized shall be staggered as much as possible. All splices shall be made in a manner that will ensure that not less than 75% of the clear concrete cover and not less than 75% of the minimum clear distance to other bars will be maintained, as compared to the cover and clear distance requirements for the unspliced bar.

Lapped splices shall be made by placing the bars in contact and wiring them together. Splice laps shall be made in accordance with the following table, unless otherwise noted on the plans:

METRIC UNITS

Minimum Lap Splice Length (millimeters) [1]									
Bar Type	Bar Size								
	#10	#13	#16	#19	#22	#25	#29	#32	#36
Plain	350	450	550	650	825	1075	1350	1725	2100
Epoxy Coated	530	675	825	975	1250	1625	2025	2600	3150

US CUSTOMARY UNITS

Minimum Lap Splice Length (inches) [1]									
Bar Type	Bar Size								
	#3	#4	#5	#6	#7	#8	#9	#10	#11
Plain	14	18	22	26	33	43	54	68	83
Epoxy Coated	21	27	33	39	50	64	80	103	124

[1] Lap Splice lengths are based on the following parameters: Minimum center-to-center spacing between bars of 150 mm [6 in]; nominal yield strength of the reinforcing steel of 420 MPa [60 ksi]; minimum 28-day compressive strength of concrete of 30 MPa [4350 psi]. When any of the preceding parameters is altered, appropriate minimum lap splice lengths will be determined by the Resident. When lap splices are placed horizontally in an element where the concrete depth below the splice will be 300 mm [12 in], or more, the indicated lap splice lengths shall be multiplied by a factor of 1.4.

Mechanical couplers may be used for splicing reinforcing bars, provided they are approved by the Resident and conform to the following requirements:

a. Tension Couplers Couplers shall be able to develop 1.25 times the theoretical yield strength of the spliced bar in tension. Bolted and wedge-lock type couplers will not be allowed.

b. Compression Couplers Couplers shall be capable of maintaining the spliced bars in alignment prior to and during concrete placement. For reinforcing bars designed to act in compression, the individual bar ends shall be within 1½° of being "square" to the final 300 mm [12 in] of the bar. Additionally, abutting bar ends shall be in contact, and the angle of the gap between abutting bar ends shall be 3°, or less.

c. Mechanical Couplers Any mechanical couplers using a threaded splicer and dowel in combination, requiring a lapped splice with the reinforcing bars, shall have a minimum lap splice length as required by this Section.

Welded splices may be made by the "Thermit" process or, with the approval of the Resident, by the shielded metal arc welding process or the self-shielded flux-core arc welding process. The latter two processes shall be used in strict conformance with the requirements of the latest edition of AWS D1.4 "Structural Welding Code - Welding Reinforcing Steel" and any

applicable provisions of Section 504, Structural Steel. The Contractor shall submit complete details of their proposed method of making welded splices for the Resident's approval.

503.08 Lapping Sections of welded steel wire fabric shall securely fasten to adjoining sections and overlap. All laps shall be in accordance with Wire Reinforcement Institute Manual of Standard Practice.

Bar mats shall be spliced as required for the individual bars.

503.09 Substitution Substitution of different size bars shall not be permitted except with the written authorization of the Resident.

SPECIAL PROVISION
SECTION 656
Temporary Soil Erosion and Water Pollution Control

Standard Specification 656 of the Standard Specifications is deleted and replaced by this Special Provision.

The following information and requirements will constitute the Soil Erosion and Water Pollution Control Plan for this Project. The soil erosion and water pollution control measures associated with this work are as follows:

1. All work shall be done in accordance with the latest revision of the Maine Department of Transportation Best Management Practices for Erosion and Sediment Control (a.k.a. Best Management Practices manual or BMP Manual). The "Table of Contents" of the latest version is dated "1/19/00" (available at http://www.state.me.us/mdot/mainhtml/bmp/bmpjan2000.pdf.) **Procedures specified shall be according to the BMP Manual unless stated otherwise.**
2. The on-site person responsible for implementation of this plan, shall be the Contractor's Superintendent or other supervisory employee (the "Environmental Coordinator") with the authority to immediately remedy any deficient controls and shall provide the Resident with their numbers (telephone number, cellular phone and pager numbers, if applicable) where the Environmental Coordinator can be reached 24 hours a day.
3. Perimeter sediment control, such as silt fence or erosion control mix berm, shall be installed down gradient from all disturbed soil before any earthmoving activities begin. These practice shall be inspected before and after each rainfall event and on a weekly basis. They shall remain in good working order until final site stabilization. Onsite stockpiles shall be contained behind sediment control practices
4. All disturbed soil shall be stabilized as per the design before removal of sediment control practices. If areas are to be seeded they shall be mulched and that mulch shall be maintained until final vegetative cover is established. All previously mulched areas shall be maintained and re-mulched on a daily basis if bare areas develop.
5. If the Work includes the handling or storage of petroleum products or Hazardous Materials including the on site fueling of Equipment, the Resident must be provided with a Spill Prevention Control and Countermeasure Plan (SPCCP) plan. At a minimum, the SPCCP shall include:
    - The name and emergency response numbers (telephone number, cellular phone and pager numbers, if applicable) of the Contractor's representative responsible for spill prevention;
    - General description and location of (1) handling, transfer, storage, and containment facilities of such products or Materials ("activities and facilities") and (2) potential receptors of such products or Materials including oceans, lakes, ponds, rivers,

SPECIAL PROVISION
SECTION 656
Temporary Soil Erosion and Water Pollution Control

streams, wetlands, and sand and gravel aquifers ("sensitive resources") including the distances between said activities and facilities and said sensitive resources;

- Description of preventative measures to be used to minimize the possibility of a spill including Equipment and/or Materials to be used to prevent discharges including absorbent Materials,
- A contingency response plan to be implemented if a spill should occur including a list of emergency phone/pager numbers including the Contractor's representative, MDEP Spill Response, the Resident, and local police and fire authorities. For a related provision, see *Standard Specification, Section, 105.2.2 - Project Specific Emergency Planning.*

6. The Environmental Coordinator must inspect and maintain daily all controls for the duration of the project.
7. Any costs related to this plan shall be considered incidental to the contract.

SPECIAL PROVISION
SECTION 815
Buildings

Description The work shall consist of the furnishing and construction of the buildings at the Maine Department of Transportation Lot located at 10 Mountain Avenue, Fairfield, Maine in accordance with these contract documents.

Construction The Department will provide the Contractor with two horizontal and vertical control points establishing the top of slab elevation and two corners of the slab. The Contractor shall provide the additional layout necessary to complete the Work. The Contractor shall connect the brine maker to the existing water service.

The Contractor shall provide and install a Liquid Propane heating system, properly sized to adequately heat the insulated portion of the brine building. Approximate size of the area to be heated is 31' x 50' x 19' or 29,450 cubic feet. The location of heating unit to shall be submitted by the Contractor and approved by the Department. All work shall meet the requirements of governmental agencies having jurisdiction and comply with applicable standards and codes. The Contractor shall submit two (2) copies of shop drawings to Department for review at least fifteen (15) days prior to incorporation into the work. Shop drawings shall be approved prior to incorporation into the work. Contractor shall provide written one-year warranty, guaranteeing the heating system from one year following Final Acceptance. The heating system and brine system shall be started and tested prior to final acceptance and the Contractor shall instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.

The Department will provide an electrical service box for each building to which the Contractor shall connect. The Contractor shall coordinate work and schedules with the Department and/or other contractors.

Roof, siding and paint colors shall be selected by Department from manufacturer's standard colors.

Galvanizing shall be in accordance with AASHTO M111 (ASTM A123).

The pre-engineered fabric membrane covered structural steel salt storage facility shall have 9 sf of passive ventilation in each end. The membrane shall form a continuous, weather tight shell over the entire framework and shall have a minimum life expectancy of 20 years. The Contractor shall provide manufacturer's written five (5) year warranty for weather tightness against leaks. The Contractor shall provide detailed instructions for

preventative maintenance and noting a list of harmful substances that may damage the membrane.

Closeout Procedures The Contractor shall make final changeover of permanent locks and deliver keys to Department, and complete final cleaning requirements, including touchup painting, touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects,.

Final Cleaning The Contractor shall clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program and comply with manufacturer's written instructions.

1. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
2. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
3. Remove tools, construction equipment, machinery, and surplus material from Project site.
4. Remove snow and ice to provide safe access to building.
5. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
6. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
7. Sweep concrete floors broom clean in unoccupied spaces.
8. Remove labels that are not permanent.
9. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
10. Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
11. Wipe surfaces of mechanical and electrical equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
    Replace parts subject to unusual operating conditions.

Closeout Documentation The following documents shall be added to the required list of closeout documentation:

Project Record Drawings
Warranties
Maintenance & Operations Manual

The Contractor shall prepare and submit Project Record Documents, operation and maintenance manuals, and similar final record information.

Project Record Drawings Contractor must maintain and submit the Record Drawings. Record Drawings shall be one set of blue- or black-line white prints of Contract Drawings and Shop Drawings. Mark Record Prints to show the actual installation where installation varies from that shown originally. Accurately record information in an understandable drawing technique. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation. Mark Contract Drawings and Shop Drawings. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location. Mark important additional information that was either shown schematically or omitted from original Drawings. Identify and date each Record Drawing; include the designation "AS-BUILT DRAWINGS" in a prominent location.

Warranties The Contractor unconditionally warrants and guarantees that the project will be free from warranty defects for one year from the date of Final Acceptance. Final Acceptance includes receipt of all conforming closeout documentation. If the Department discovers any warranty defects during the warranty period, the Contractor agrees to promptly perform all remedial work at no additional cost or liability to the Department. The Contractor hereby assigns to the Department the right to enforce all manufacturer’s warranties or guarantees on all materials, equipment or products purchased for the work that exceed the nature or duration of the warranty obligations assumed by the Contractor under this Contract.

Contractor shall prepare and submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents. Contractor shall prepare warranties submittal as follows. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

Partial Occupancy: Submit properly executed warranties within 10 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.

Operations and Maintenance Manual The Contractor shall prepare operation and maintenance manuals, including the following:

Emergency data.

Operation data for systems, subsystems, and equipment.

Maintenance data for the care and maintenance of systems and equipment.

Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions

for subsystems, equipment, and components of one system into a single binder. Use Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8 ½ by 11 inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL", Project title or name, and subject matter of contents.

Method of Measurement The Salt Storage Building will be measured for payment as one lump sum, complete in place and accepted.

The Brine Building including the brine maker and heating systems, will be measured for payment as one lump sum, complete in place and accepted.

Basis of Payment The Salt Storage Building will be paid for at the contract lump sum price, complete and accepted which shall be full compensation for the work indicated on the plans and as called for in the contract, including excavation shown on the plans, compacted fill, labor, equipment and materials for building construction, and the backfill to the limits shown on the plans and other contract related incidentals necessary to complete the work.

The Brine Building, including the automated brine maker system and heating system will be paid for at the contract lump sum price, complete and accepted, which shall be full compensation for the work indicated on the plans and as called for in the contract, including removal of designated portions of exiting structure, excavation, compacted fill, backfill, labor, equipment and materials for building construction, and connection of the automated brine maker system and heating system to water and the electrical box provided by the Department and other contract related incidentals necessary to complete the work .

Payment will be made under:

	Pay Item	Pay Unit
815.00	Buildings - Salt Storage Building	Lump Sum
815.00	Buildings - Brine Building	Lump Sum

SPECIAL PROVISION
SECTION 02724
FOUNDATION DRAIN PIPE

PART 1 – GENERAL

1.1 Summary

A. Work Included: Provide and install non-pressure pipe and fittings of the size(s) and type(s) and in the location(s) shown on the Drawings and as specified herein.

1.2 Delivery, Storage and Handling

A. Provide all labor necessary to assist the Department to inspect pipe, fittings, gaskets and other materials.
B. Carefully inspect all materials at the time of delivery and just prior to installation.
C. Carefully inspect all pipe and fittings for:
1. Defects and damage.
2. Deviations beyond allowable tolerances for joint dimensions.
3. Debris and foreign matter.
D. Examine area and structures to receive piping for:
1. Defects such as weak structural components that adversely affect the execution and quality of work.
2. Deviations beyond allowable tolerance for pipe clearances.
E. All materials and methods not meeting the requirements of the Contract Documents will be rejected.
F. Immediately remove all rejected materials from the Project site.
G. Start work only when conditions are correct to the satisfaction of the Department.

PART 2 - PRODUCTS

2.1 Non-Perforated Pipe and Fittings

A. Size 4" dia. and 6" dia. Inclusive.
1. PVC Schedule 40.
2. ASTM D-2665.
3. Fittings and joints to be compatible with pipe.

2.2 Perforated Pipe and Fittings

A. Size 4" dia. and 6" dia. Inclusive:
1. MDOT, Type "B" meeting requirements of Section 605.
2. Corrugated Polyethylene Drainage Tubing for underdrain. ASSHTO M-252.
3. Coiled pipe shall not be used.

SPECIAL PROVISION
SECTION 02724
FOUNDATION DRAIN PIPE

PART 3 - EXECUTION

3.1 Inspection

A. Examine areas to receive piping for the following:
1. Obstructions that adversely affect the installation and quality of the work.
2. Deviations beyond allowable tolerances for clearances.

B. Examine pipe and fittings before installation to assure no defective materials are incorporated. No single piece of pipe shall be laid unless it is generally straight.
C. Remove and replace all defective materials at no additional cost to the Department.
D. Start work only when conditions are satisfactory.

3.2 Installation

A. Install all pipe and fittings to the lines and grades shown on the Drawings and/or as approved by the Department.
B. Begin laying pipe at the downstream end.
C. During installation, close open ends of the pipe with temporary watertight plugs to prevent earth, water and other material from entering the pipe.

SPECIAL PROVISION

SECTION 06100 ROUGH CARPENTRY

PART 1 - GENERAL

1.1 Summary

A. This work consists of all labor, materials and equipment necessary to complete the work as shown on the Drawings and as specified herein.

1.2 References

A. International Building Code, Latest Edition.

1.3 Workmanship

A. Only experienced personnel shall be engaged in this work.

1.4 Delivery, Storage and Handling

A. Deliver the materials to the job site and store in a safe area, out of the way of traffic, shored up off the ground surface and covered to protect from the weather.

PART 2 - PRODUCTS

2.1 Dimension Lumber

A. Dimension lumber shall be Eastern Spruce or other wood approved by the Department and shall comply with grading requirements of the Northeastern Lumber Manufacturers Association for Common, Number 2 or better, and shall bear the grade stamp.

B. When specified on the Plans or in Part 4, stress grade structural lumber shall be provided. Stress grade lumber shall bear appropriate stamp for the specified grade and species.

C. Wood for pressure treating and special installation shall be southern yellow pine meeting the requirements of the Southern Pine Inspection Bureau (SPIB) for Number 2 or better.

D. All lumber shall not exceed 19% moisture content.

2.2 Plywood

A. All plywood shall be 4/5-ply minimum and shall comply with U.S. Product Standard PS-1 for softwood plywood and shall bear the specified grade and stamp of the American Plywood Association.

B. Unless otherwise shown on the Drawings, plywood shall meet the following requirements:

Use	Thickness	Grade	Glue	Span Rating
Roof	5/8" T&G	OSB structural 1	Exterior	40/20
Exterior Sheathing	½"	OSB structural 1	Exterior	32/16
Interior Sheathing	½"	C-D	Exterior	32/16
Electrical Backboard	¾"	BC	Exterior	n/a

C. All OSB shall be coated oriented strand board (OSB) sheathing in lieu of exterior wall sheathing, equivalent to "Advantech" by Huber Industries. Appropriate Sizes & Grades of plywood may be substituted at the contractor's option.

2.3 Accessories

A. Nails shall be new, bright or galvanized as appropriate, common nails of appropriate lengths and sizes to adequately join the wood. Use galvanized where exposed to weather or pressure treated lumber or where shown on the Drawings.

SPECIAL PROVISION

SECTION 06100 ROUGH CARPENTRY

B. Joist hangers, framing anchors shall be 18-gauge, galvanized steel such as manufactured by Kant Sag, Simpson, or approved equivalent.

C. Special nails shall be used where shown on the Drawings or as recommended by manufacturer.

D. Glue shall be an all purpose subfloor and construction adhesive, suitable for interior and exterior use, as manufactured by DAP, GE, Ohio Sealants, or approved equivalents.

2.4 Pressure Treated Lumber (P.T.)

A. Lumber or plywood in contact with ground or fresh water shall be treated in accordance with AWPA Standards C2 and LP-22 and shall be rated 0.60 retention.

B. Lumber in direct contact with concrete, masonry, or steel, not in contact with soil or fresh water shall be treated in accordance with AWPA Standards C2 and LP-2 and shall be rated 0.40 retention.

C. Pressure treatment shall be water borne chromate copper arsenate (ACQ).

D. Wood shall be dried after treatment.

PART 3 - EXECUTION

3.1 Preparation

A. Carefully select individual lumber pieces so that knots and obvious defects will not interfere with placing bolts or proper nailing.

B. Cut out and discard defects which render a piece unable to serve its intended function.

C. Lumber will be rejected by the Department if it is excessively warped, twisted, bowed, mildewed or molded, as well as if it is improperly installed.

3.2 Erection

A. All framing work shall produce joints which are tight, true, and well nailed, with members assembled in accordance with the Drawings and with pertinent codes and regulations.

B. All framing and fastening shall equal or exceed HUD Minimum Property Standards, Manual of Accepted Practices and the requirements of the IBC.

C. Do not shim any framing member.

D. Install horizontal and sloped members with crown up.

E. Do not notch, cut or bore members for pipes, ducts, conduits, or for any other reason, except as shown on the Drawings and as approved by the Department.

F. Bearing surfaces on which structural members rest shall provide a full, even support.

G. Joists, rafters and similar members shall be fastened with at least two (2) galvanized steel hangers or anchors and nailed completely.

H. Install solid block bridging at midpoint of joists or as shown on the Drawings.

I. Provide all shims, blocking and bracing as shown on the Drawings and as approved by the Department to complete the work.

J. In addition to normal framing operations, install wood blocking or backing required to support the work of other trades.

SPECIAL PROVISION

SECTION 06100 ROUGH CARPENTRY

3.3 Plywood Sheathing

A. Unless otherwise specified or approved by the Department, install plywood with the face grain perpendicular to framing and center joints over supports. Leave a 1/16-inch gap where adjacent plywood panels meet.

B. Stagger plywood joints so that all joints do not lie on the same support. Nail as shown in the recommended fastening schedule in this Section.

3.4 Nailing

A. Use common wire nails except as otherwise indicated. Make tight connections between members. Countersink nail heads on exposed carpentry work and fill holes.

B. Install fasteners without splitting wood; pre-drill as required.

C. All nailing shall comply with the IBC, Recommended Fastening Schedule (found in table 2304.9.1), unless special requirements are shown on the Drawings.

3.5 Concrete Bearing

A. All wood which bears against concrete, earth, steel or masonry shall be pressure treated as specified on the Drawings or as approved by the Department.

SPECIAL PROVISION
SECTION 06190
WOOD TRUSSES

PART 1 - GENERAL

1.1 Summary

A. Work Included: Provide wood trusses where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

1.2 Quality Assurance

A. Truss fabrication and installation shall comply with the International Building Code, latest edition and the requirements and recommendations of the following Truss Plate Institute (TPI) publications:

1. "Design Specification for Metal Plate Connected Wood Trusses".
2. "Commentary and Recommendations for Handling and Erecting Wood Trusses".
3. "Commentary and Recommendations for Bracing Wood Trusses".
4. "Quality Control Manual".

B. Trusses and metal truss connector plates shall be manufactured by a firm that practices a quality control program comparable to the TPI "Quality Control Manual".

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

1.3 Submittals

A. Product data: Within 15 calendar days after the Contractor has received the Department's Notice to Proceed, submit:

1. Materials list of items proposed to be provided under this Section.
2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
3. Shop Drawings showing species, sizes, and stress grades of lumber proposed to be used; pitch, span, camber configuration, and spacing of trusses; connector type, thickness, size, location, and design value; and bearing details.
4. Submit two (2) copies of shop drawings showing types and sizes of metal tie down anchors and any other accessories.
5. These submittals shall be provided on Shop Drawings signed and stamped by a structural engineer licensed to practice in the State of Maine.

B. All shop drawings shall be submitted to the Department for review at least 30 days (30) days prior to incorporation into the work. All shop drawings shall be reviewed and approved by the Department prior to incorporating into the work.

1.4 Delivery Storage and Handling

A. Handle and store trusses with care and in accordance with manufacturer's instructions and TPI recommendations, to avoid damage from bending, over-turning, or other cause for which truss is not designed to withstand.

B. Time delivery and erection of trusses to avoid extended on-site storage.

SPECIAL PROVISION
SECTION 06190
WOOD TRUSSES

PART 2 - PRODUCTS

2.1 Wood Trusses

A. Design wood trusses for the loads shown on the Drawings. Modify the trusses at chimneys and other openings as required.

B. Fabrication:

1. Cut truss members to accurate lengths, angles and sizes to produce close fitting joints with proper wood-to-wood bearing in assembled units.
2. Connect truss members by means of metal connector plates accurately located and securely fastened to wood members.

C. Lumber:

1. All lumber used in the fabrication of wood trusses shall not exceed 19% moisture content.

2.2 Permanent Bracing

A. Provide 2" x 4" diagonal bracing of vertical truss members and continuous lateral bracing of intermediate truss members as shown on the Drawings and as approved by the Department.

2.3 Other Materials

A. Provide other materials, not specifically described but required for a complete and proper installation, subject to the approval of the Department.

2.4 Metal Tie Down Anchors

A. Provide metal tie down anchors that are nailed to the truss bottom chord, top wall plate and wall stud.

B. Acceptable Products:

1. Simpson Strong Tie,
2. Kant-Sag RT-9 or
3. Approved equivalents.

PART 3 - EXECUTION

3.1 Surface Conditions

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

3.2 Installation

A. Coordinate as required with other trades to assure proper and adequate provision in the work of those trades for interface with the work of this Section.

B. Install the work of this Section in strict accordance with the original design, the approved Shop Drawings, and recommendations of the manufacturer and the Truss Plate Institute, as approved by the Department, anchoring all components firmly into position.

1. Hoist the trusses into position with proper bracing secured at designated lifting points.

SPECIAL PROVISION
SECTION 06190
WOOD TRUSSES

2. Exercise care to keep bending of trusses to a minimum.
3. Install temporary horizontal and cross bracing to hold trusses plumb and in safe condition until permanent bracing is installed.
4. Install permanent bracing and related components prior to application of loads to trusses.
5. Anchor trusses securely at all bearing points and install metal tie down anchors as shown on the Drawings.
6. Restrict construction loads to prevent overstressing of truss members.
7. Do not cut or remove truss members in the field without approval of Department and truss manufacturer.

SPECIAL PROVISION
SECTION 07611
METAL ROOFING

PART 1 - GENERAL

1.1 Summary

A. Work Included: Install a standing seam metal roofing complete with concealed fasteners and accessories for a watertight system.

1.2 Quality Assurance

A. Contractor shall be approved in writing by the roofing manufacturer and shall substantiate a minimum of three (3) years experience installing standing seam roofing.

1.3 Submittals

A. Submit two (2) copies of shop drawings to Department for review at least fifteen (15) days prior to incorporation into the work. Shop drawings shall be approved and assigned a number by the manufacturer.

B. Shop drawings shall include: Outline of roof and roof size, location and types of penetrations, perimeter details, penetration details, and all manufacturers data on the proposed materials including panels, anchor clips and fasteners.

C. Submit written approval of contractor by manufacturer.

D. Submit sample warranty and maintenance instructions.

1.4 Warranty

A. Provide manufacturer's written twenty (20) year warranty for weather tightness against leaks in roof panels caused by ordinary wear and tear under normal weather conditions.

B. Roof finish coating shall be warranted against rust, peeling, chipping, cracking, and blistering for a period of twenty (20) years.

C. Contractor shall provide written one-year warranty, guaranteeing the roof system to be watertight and free of defects from one year following Final Acceptance.

D. Contractor shall provide detailed instructions for preventative maintenance and noting a list of harmful substances that may damage roofing.

PART 2 - PRODUCTS

2.1 Roof Panels

A. Roof panels shall be 24 gauge-galvanized steel and factory coated with a Kynar 500 finish.

B. Panels shall be interlocking seam design, 16" wide with a 1 3/4" deep seam fold. Panels shall have integral male and female interlocking ribs with a factory applied non-hardening sealant.

C. Panels shall be maximum possible lengths to minimize end laps.

D. Roof panel color shall be selected by Department from manufacturer’s standard colors.

SPECIAL PROVISION
SECTION 07611
METAL ROOFING

2.2 Fasteners

A. Panels shall be fastened to the substrate with a concealed clip system that accommodates thermal movement.

B. Fasteners shall be concealed except as required at rake, eave, ridge, and panel laps.
C. Exposed fasteners shall be fitted with EPDM Weather seal washers and shall be prefinished to match roofing.

2.3 Flashing
A. Flash all other roof penetrations.
B. Flashing shall be as recommended by the roofing manufacturer and as approved by the Department. Flashing shall be minimum .040 aluminum or 24 gauge galvanized steel.
C. Rubber boot pipe flashing shall be used around vent pipes.

2.4 Sealants
A. Sealants between roof panels shall be as recommended by the manufacturer.
B. Provide all required sealants at trim, roof penetration, etc.
C. Sealants shall be non-drying elastomer based material.

2.5 Fascia, Trim and Accessories
A. Fascia and metal trim shall be prefinished .040 aluminum or 24 gauge galvanized steel, aluminized steel. Color shall be white.
B. Ridge cap shall be a continuous venting metal ridge cover, as provided by the roofing manufacturer.

2.6 Acceptable Manufacturers
A. McElroy - Medallion - Lok
B. MBCI - BattenLok
C. Steelox - Lockrib
D. Approved Equivalent

2.7 Provisions for Expansion/Contraction
A. End wall trim and roof transition flashings shall allow the roof panel to move relative to walls as the roof expands and contracts with temperature changes.
B. Movement of roof panels relative to other panels shall be accommodated by the use of clips that allow movement of up to 1" in either direction.
C. Ridge assembly shall be designed to allow roof panels to move lengthwise with expansion/contraction as the roof panel temperature changes. Parts shall be factory prepunched for correct field assembly. Panel closures and interior reinforcing straps shall be installed to seal the panel ends at the ridge. The attachment fasteners shall not be exposed on the weather side. A lock seam plug shall be used to seal the lock seam portion of the panel. A hi-tensile steel ridge cover shall span from panel closure to panel closure and flex as the roof system expands and contracts.

SPECIAL PROVISION
SECTION 07611
METAL ROOFING

PART 3 - EXECUTION

3.1 Inspection

A. Contractor shall inspect the substrate prior to installing metal roofing to insure that the surface is sound and uniform. Correct any irregularities prior to proceeding with the work.

3.2 Installation

A. Fasten metal panels to structural substrate with moveable clips that are seamed into the standing seam side lap.

B. Fasten clips to structural substrate in accordance with manufacturer's recommendations.

C. Panel to panel connections shall be made with a positive, standing lock seam, continuously locked or crimped together by mechanical means during installation.

D. All side lap sealant shall be factory applied.

E. Install accessories such as penetration flashings and eave closures in accordance with manufacturer's recommendations, as approved by the Department.

3.3 Final Inspection

A. A final inspection of the roofing system shall be made by the roofing manufacturer’s representative as soon as construction is complete. Coordinate final manufacturer’s inspection with the Department. Provide written certification that the metal roof system has been installed in accordance with the manufacturer’s recommendations.

SPECIAL PROVISION
SECTION 07920
SEALANTS AND CAULKING

PART 1 - GENERAL

1.1 Summary

A. Provide all labor, materials and equipment to complete sealing and caulking as shown on the drawings and as specified herein.

1.2 Scope of Work

A. Sealing and caulking shall be performed on all exterior joints including but not limited to:

1. Around door, frames and windows.
2. Joints around wall, ceiling and penetrations such as electrical boxes, pipes, etc.
3. Joints between dissimilar building materials such as brick and wood, wood and metal, etc.,where water might enter.

B. Interior caulking of all wall, floor, and ceiling penetrations.

C. Sealing of concrete joints is covered on the plans.

1.3 References

A. All sealants and caulkings shall comply with ASTM C920, Standard Specification for elastomeric joint sealants.

PART 2 - PRODUCTS

2.1 Exterior Caulking

A. Exterior caulking between prefinished surfaces shall be a one component silicone joint sealant; "Spectrum 1" by Tremco Sealant Systems, Dow Corning "795 Silicone Building Sealant", or approved equivalent.

B. Exterior caulking for use on paintable surfaces shall be an acrylic latex joint sealant; "Tremco Acrylic Latex Caulk"; Bostik "Chem-Caulk 600", or approved equivalents.

2.2 Interior Caulking

A. Interior caulking for bedding electrical boxes, outlets, pipes or other wall penetrations and around interior doors, frames and windows shall be a non-hardening sealant; "Tremco Acoustical Sealant"; Bostik "Chem-Caulk 600", or approved equivalents.

B. Interior caulking for penetrations through fire walls or smoke barriers such as conduits, pipes and ducts shall be a one component fire resistant caulk or putty; 3M Fire Barrier Caulk "CP25" or Putty "303", or approved equivalents.

2.3 Joint Filler

A. Joint filler for backing caulking shall be non-absorbent precompressed foam sealant; "Will-Seal 150", by Will-Seal Construction Foams; "York-Seal 100" by York Manufacturing, Inc., or approved equivalents.

SPECIAL PROVISION
SECTION 07920
SEALANTS AND CAULKING

PART 3 - EXECUTION

3.1 Preparation

A. All joints and spaces to be caulked shall be dry, clean and free from dust and loose materials.

B. If necessary mask or otherwise protect adjacent surfaces.

3.2 Installation

A. All sealants and caulking shall be installed according to the manufacturer's recommendations.

B. Caulking shall be applied with suitable equipment such as with a caulking gun.

C. Use foam backing for joints deeper than 1/2-inch. Pack into joint allowing at least 1/4-inch for caulking.

D. Caulking shall be applied so that surfaces are slightly concave, tight and smooth. Joints shall be air and water tight.

E. Caulk or putty around fire and smoke wall penetrations shall be applied so as to provide a complete fire barrier sealing system.

F. Remove excess caulking and clean adjacent surfaces with approved cleaners.

SPECIAL PROVISION
SECTION 08250
DOORS, FRAMES AND HARDWARE

PART 1 - GENERAL

1.1 Summary
A. This work shall include all labor, materials and equipment necessary to complete the work as shown on the drawings and as specified herein.

1.2 Submittals
A. Contractor shall submit two (2) copies of shop drawings to the Department 30 days prior to installation. Only doors for which there are reviewed and approved shop drawings shall be incorporated into the work.

1.3 Quality Assurance
A. Only experienced skilled workmen shall be engaged in this work.

1.4 Delivery Storage and Handling
A. Deliver doors and all necessary equipment in manufacturer's unopened containers.
B. Store materials in a protected area to prevent damage.
C. Protect doors and equipment during and after installation from splashing or the accumulation of paint, concrete, mortar, or other foreign material.

PART 2 – PRODUCTS

2.1 Acceptable Manufacturers
A. Therma-Tru Smooth Star flush panel fiberglass door
B. Sargent Lock Co. 10 line Series Bored Locks
C. Approved equivalents.

2.2 Fiberglass Doors and Frames
A. Fiberglass doors shall be insulated core doors, 1-3/4" thick, of the sizes and type as shown on the drawings and as specified herein.
B. Frames shall be pre-assembled units made of Grade A pine.
C. Doorstops, latches, doorknobs, hinges, fasteners, etc., for all doors installed shall be provided by the Contractor.

2.3 Door Hardware
A. Door hardware shall be equivalent to Sargent.
B. All hardware shall be lever-style handles with a dull chrome finish.
C. Door closers shall be full rack and pinion type contained in a permanent mold aluminum body and equipped with a single valve installed on all doors.
D. Hinges shall be full mortise type, 4" x 4", concealed ball bearing, stainless steel, three (3) per door, equivalent to Hager Tri Con Hinges #BB800.
E. Door stops for interior doors shall be as manufactured by H.B. Ives, wall mounted #65 door stop, aluminum finish.

SPECIAL PROVISION
SECTION 08250
DOORS, FRAMES AND HARDWARE

2.4 Weather-stripping

A. Acceptable Manufacturers:

1. National Guard Products, Inc.
2. Reese
3. Approved equivalents.

B. Head and jamb weather-stripping shall be nylon brush gasket, National Guard Products #C607, 1/2" x 1/4" or approved equivalent.

C. Door bottom seal shall be equivalent to National Guard Products aluminum and vinyl seal, and surface mount nylon brush gasket #D608.

PART 3 - EXECUTION

3.1 Doors and Frames

A. Install units in compliance with the manufacturer's specifications and as approved by the Department.

B. Frames must be rigid and present a neat appearance.

C. Frames must be installed with not less than three wall anchors per jamb and an anchor to the floor at each jamb.

D. The partition shall enter the frame so that the two work as a unit.

E. Install all units plumb, level, straight and snugly fitted.

F. Take care not to damage door surface. Defects in surface finish such as hammer marks, scratches, and chips shall be repaired to the satisfaction of the Department.

3.2 Hardware

A. Install hardware on all doors as specified.

B. Install doorstops for all doors at heights recommended by the manufacturer.

C. Provide necessary shims and blocks to properly install units.

3.3 Finish

A. Paint all doors as shown in Finish Schedule of the Specifications, Section 09000.

B. All colors and products are to be selected and approved by the Department.

3.4 Cleanup and Protection

A. Clean all doors completely. Wash all windows with approved glass cleaner.

B. Protect all door units, replacing any breakage or defective parts until accepted by the Department.

SPECIAL PROVISION
SECTION 08360
OVERHEAD DOORS

PART 1 - GENERAL

1.1 Summary

A. Work Included: Furnish and install overhead doors and accessories of the types and sizes in the locations shown on the Drawings.

1.2 Shop Drawings

A. Two (2) copies of shop drawings shall be submitted to the Department for all doors fabricated off site and to be installed on site.

B. All shop drawings shall be submitted to the Department for review at least ten (10) days prior to incorporation into the work. All shop drawings shall be reviewed and approved by the Department prior to incorporating into the work.

1.3 Delivery, Storage and Handling

A. Deliver doors and all necessary equipment in manufacturers unopened containers.

B. Store materials in a protective area to prevent damage of any nature.

C. Handle using manufacturer's recommendations.

1.4 Protection

A. Protect doors and equipment during and after installation from splashing or the accumulation of paint, concrete, mortar, or other foreign material.

PART 2 - PRODUCTS

2.1 Materials

A. Doors shall be of the following construction:

1. 1 ½" minimum thick sections.
2. Galvalume interior and exterior skin.
3. Combined installed R value of 14 minimum, except exterior doors in "cold" portion of building as determined by the Department.
4. Thermal break between all interior and exterior metal skin.

B. Acceptable Manufacturers:

1. Overhead Door Corporation Thermacore, Series 591.
2. Raynor Company, ThermaSeal Basic
3. Approved Equivalents.

2.2 Seals

A. Doors shall be equipped with the following seals:

1. Joint seals between sections.
2. Perimeter seals on ends of the exterior surface.
3. A top seal in the top section to seal against the header.
4. An astragal on the bottom section.

B. Doors shall have an air infiltration rate of 0.1 CFM/ft at a pressure difference of 0.112 H 0.

C. All seals shall be factory installed.

SPECIAL PROVISION
SECTION 08360
OVERHEAD DOORS

2.3 Weather-stripping

A. Head and jamb weather-stripping shall be EPDM rubber tube seals and door bottoms shall be rubber bulb-type seal.

2.4 Tracks and Hardware

A. Doors shall be equipped with 3" galvanized tracks.
B. Track rollers shall be hardened steel with ball bearing.
C. Tracks shall be angle mounted.
D. Hinges shall be galvanized steel, strap type hinge with 20 gauge reinforcement strips at each hinge location.

2.5 Operators

A. Provide draw bar type door operator Min. 1/2 HP, equivalent to LiftMaster Model DJ Industrial Duty.
B. Provide three-button control. Up/Down/Stop in waterproof box located
C. Provide auxiliary chain hoist.
D. Provide solenoid brake to prevent door coasting.
E. Provide emergency manual operation feature.

2.6 Options

A. Doors shall be equipped with a bottom-sensing edge that stops or reverses the door's travel when meeting an obstruction.

2.7 Warranty

A. Doors and hardware shall have a manufacturer's warranty for one year for all materials and workmanship.

PART 3 - EXECUTION

3.1 Installation

A. Install doors and hardware in accordance with approved shop drawings and manufacturer's instructions.
B. Test operation of doors and make all necessary adjustments to insure proper operation.
C. Door controls to be located outside in waterproof box.

SPECIAL PROVISION
SECTION 09900
PAINTING

PART 1 - GENERAL

1.1 Summary

A. This work shall consist of all labor, materials and equipment necessary to complete painting as shown on the Drawings and as specified herein.

B. In general, all unfinished surfaces shall be painted or stained unless otherwise specified.

1.2 Submittals

A. Contractor shall submit color samples, manufacturer and paint specifications to the Department for review fifteen (15) days prior to incorporation into the work. Provide two (2) copies of product information.

1.3 Scope of Work

A. This work shall include prefinishing and painting or staining of all exposed surfaces and specified unexposed surfaces, except factory or prefinished surfaces. Also included is touching up of prefinished surfaces as required and/or as approved by the Department.

PART 2 - PRODUCTS

2.1 Paint

A. All materials shall be top quality products of the type and texture as shown on the Drawings and/or as specified in Part 4 of these specifications.

B. Acceptable manufacturers include: Glidden, Olympic, California, Benjamin Moore, Sherwin Williams and other approved equivalents.

C. All colors shall be as selected by the Department from samples submitted by the Contractor.

2.2 Painting Accessories

A. Turpentine shall be pure gum spirits conforming to ASTM DB-65.

B. Putty shall be as recommended by paint or stain manufacturers and as approved by the Department.

PART 3 - EXECUTION

3.1 Preparation

A. Prior to painting or staining insure that all surfaces are finished and ready for application.

1. Wood Surfaces:

a. Sand to smooth finish and clean all dust from surfaces. Fill all nail holes, cracks and other irregularities with approved putty. Pre-color all putty to be used under natural finish wood.

b. Shellac all knots and pitch streaks or pockets to prevent bleeding.

c. Apply prime coat as recommended by manufacturer. Sand lightly where necessary to smooth surface.

SPECIAL PROVISION
SECTION 09900
PAINTING

2. Metal Surfaces:

a. Clean all grease, rust and dirt from surface. Feather edges of chipped paint on pre-painted items.

b. If so approved by the Department, sandblast or wire brush all metal surfaces to obtain a suitable surface for painting. This procedure will normally be required for refinishing previously painted surfaces which are chipping or peeling.

c. Prime metal surfaces with approved metal primers.

d. Galvanized and prefinished surfaces shall not be painted unless specified in Painting Schedule.

3.2 All Surfaces

A. Apply paint or stain only to clean, dry surfaces. Do not paint or stain in the rain or in very humid conditions.

B. Use masking tape, drop cloths and other means of protection to adequately protect adjacent surfaces from drips, spatters and overruns.

3.3 Application

A. Apply paint or stain as recommended by the manufacturer on properly prepared surfaces according to the paint schedule on the Drawings or in Part 4 of these Specifications.

B. Thoroughly brush or roll all coats to achieve a uniformly smooth coverage.

C. Allow each coat to dry 48 hours or longer if recommended by manufacturer before applying subsequent coats.

D. Do not apply paint, stain, varnish or shellac when temperatures are below 45EF unless provision for heating is made.

E. All finishes shall be smooth, free from runs and sags, streaks, brush fibers and other defects. All edges shall be straight and sharp.

F. Refinish and paint to match any existing adjacent areas which were disturbed as a result of the work.

3.4 Cleanup and Protection

A. Clean all areas of drippings, spatters and debris. Remove all masking tape and clean glass and other areas as required.

B. Touch up all defective areas to the satisfaction of the Department.

C. Protect all surfaces until acceptance by the Department.

3.5 Touch-Up Materials

A. Partially used cans shall also be left with the Owner.

SPECIAL PROVISION
SECTION 09900
PAINTING

PART 4 - SUPPLEMENTAL SPECIFICATIONS

4.1 Paint Schedule

SURFACE	PRIMER	FINISH
Fiberglass door and frame	1 coat acrylic latex	2 coats acrylic latex semi-gloss
Pipe Bollards	1 coat alkyd enamel rust inhibitor	2 coats alkyd enamel semi-gloss
Interior plywood and misc. wood	1 coat acrylic latex	2 coats acrylic latex egg shell

STANDARD DETAIL UPDATES

Standard Details and Standard Detail updates are available at:
http://www.maine.gov/mdot/contractor-consultant-information/ss_standard_details_updates.php

Detail #	Description	Revision Date
504(15)	Diaphragms	12/30/02
507(04)	Steel Bridge Railing	2/05/03
526(33)	Concrete Transition Barrier	8/18/03
645(06)	H-Beam Posts – Highway Signing	7/21/04
645(09)	Installation of Type II Signs	7/21/04
626(09)	Electrical Junction Box for Traffic Signals and Lighting	2/25/05
604(01)	Catch Basins	11/16/05
604(05)	Type “A” & “B” Catch Basin Tops	11/16/05
604(06)	Type “C” Catch Basin Tops	11/16/05
604(07)	Manhole Top “D”	11/16/05
604(09)	Catch Basin Type “E”	11/16/05
606(02)	Multiple Mailbox Support	11/16/05
606(07)	Reflectorized Beam Guardrail Delineator Details	11/16/05
609(06)	Vertical Bridge Curb	11/16/05
504(23)	Hand-Hold Details	12/08/05
609(03)	Curb Type 3	6/27/06
609(07)	Curb Type 1	6/27/06
535(01)	Precast Superstructure - Shear Key	10/12/06
535(02)	Precast Superstructure - Curb Key & Drip Notch	10/12/06
535(03)	Precast Superstructure - Shear Key	10/12/06

535(04)	Precast Superstructure - Shear Key	10/12/06
535(05)	Precast Superstructure - Post Tensioning	10/12/06
535(06)	Precast Superstructure - Sections	10/12/06
535(07)	Precast Superstructure - Precast Slab & Box	10/12/06
535(08)	Precast Superstructure - Sections	10/12/06
535(09)	Precast Superstructure - Sections	10/12/06
535(10)	Precast Superstructure - Sections	10/12/06
535(11)	Precast Superstructure - Sections	10/12/06
535(12)	Precast Superstructure - Sections	10/12/06
535(13)	Precast Superstructure - Sections	10/12/06
535(14)	Precast Superstructure - Stirrups	10/12/06
535(15)	Precast Superstructure - Plan	10/12/06
535(16)	Precast Superstructure - Reinforcing	10/12/06
535(17)	Precast Superstructure - Notes	10/12/06
801(01)	Drives on Sidewalk Sections	2/06/07
801(02)	Drives on Non-Sidewalk Sections	2/06/07
535(03)	Precast Superstructure - Shear Key	12/5/07
535(04)	Precast Superstructure - Shear Key	12/5/07
535(05)	Precast Superstructure - Post Tensioning	12/5/07
535(17)	Precast Superstructure - Notes	12/5/07
801(01)	Drives on Sidewalk Sections	1/04/08
801(02)	Drives on Non-Sidewalk Sections	1/04/08
203(03)	Backslope Rounding	1/29/08
535(02)	Precast Superstructure - Curb Key & Drip Notch	5/20/08

535(05)	Precast Superstructure - Post Tensioning	5/20/08
502(03)	Concrete Curb - Bituminous Wearing Surface	2/2/09
502(03)A	Concrete Curb - Concrete Wearing Surface	2/2/09
502(07)	Precast Concrete Deck Panels - Layout Plan	2/2/09
502(07)A	Precast Concrete Deck Panels - Layout Plan	2/2/09
502(08)	Precast Concrete Deck Panels - Panel Plan	2/2/09
502(09)	Precast Concrete Deck Panels - Blocking Detail	2/2/09
502(10)	Precast Concrete Deck Panels	2/2/09
502(11)	Precast Concrete Deck Panels	2/2/09
502(12)	Precast Concrete Deck Panels - Notes	2/2/09
502(12)A	Precast Concrete Deck Panels - Notes	2/2/09
526(06)	Permanent Concrete Barrier	2/2/09
526(08)	Permanent Concrete Barrier – Type IIIA	2/2/09
526(08)A	Permanent Concrete Barrier – Type IIIA	2/2/09
526(13)	Permanent Concrete Barrier – Type IIIB	2/2/09
526(14)	Permanent Concrete Barrier – Type IIIB	2/2/09
526(21)	Concrete Transition Barrier	2/2/09
526(39)	Texas Classic Rail – Between Window	2/2/09
526(40)	Texas Classic Rail – Through Window	2/2/09
526(41)	Texas Classic Rail – Through Post	2/2/09
526(42)	Texas Classic Rail – Through Nose	2/2/09
606(20)	Guardrail - Type 3 - Single Rail - Bridge Mounted	2/2/09
606(21)	Guardrail - Type 3 - Single Rail - Bridge Mounted	2/2/09
606(22)	Guardrail - Type 3 - Single Rail - Bridge Mounted	2/2/09

606(23)	Guardrail - Type 3 - Single Rail - Bridge Mounted	2/2/09
609(06)	Vertical Bridge Curb	2/2/09
609(08)	Precast Concrete Transition Curb	2/2/09
502(12)	Precast Concrete Desk Panels	9/09
504(22)	Diaphragm & Crossframe Notes	9/09

SUPPLEMENTAL SPECIFICATION

(Corrections, Additions, & Revisions to Standard Specifications - Revision of December 2002)

SECTION 101
CONTRACT INTERPRETATION

101.2 Definitions

Closeout Documentation Replace the sentence "A letter stating the amount….. DBE goals." with "DBE Goal Attainment Verification Form"

Add "Environmental Information Hazardous waste assessments, dredge material test results, boring logs, geophysical studies, and other records and reports of the environmental conditions. For a related provision, see Section 104.3.14 - Interpretation and Interpolation."

Add "Fabrication Engineer The Department's representative responsible for Quality Assurance of pre-fabricated products that are produced off-site."

Geotechnical Information Replace with the following: "Boring logs, soil reports, geotechnical design reports, ground penetrating radar evaluations, seismic refraction studies, and other records of subsurface conditions. For a related provision, see Section 104.3.14 - Interpretation and Interpolation."

SECTION 102
DELIVERY OF BIDS

102.7.1 Location and Time Add the following sentence "As a minimum, the Bidder will submit a Bid Package consisting of the Notice to Contractors, the completed Acknowledgement of Bid Amendments form, the completed Schedule of Items, 2 copies of the completed Agreement, Offer, & Award form, a Bid Bond or Bid Guarantee, and any other Certifications or Bid Requirements listed in the Bid Book."

102.11.1 Non-curable Bid Defects Replace E. with "E. The unit price and bid amount is not provided or a lump sum price is not provided or is illegible as determined by the Department."

SECTION 103
AWARD AND CONTRACTING

103.3.1 Notice and Information Gathering Change the first paragraph to read as follows: "After Bid Opening and as a condition for Award of a Contract, the Department may require an Apparent Successful Bidder to demonstrate to the Department's satisfaction that the Bidder is responsible and qualified to perform the Work."

SECTION 104
GENERAL RIGHTS AND RESPONSIBILITIES

104.3.14 Interpretation and Interpolation In the first sentence, change "…and Geotechnical Information." to "…Environmental Information, and Geotechnical Information."
Delete the entire Section 104.5.9 and replace with the following:

SECTION 105
GENERAL SCOPE OF WORK

Delete the entire Section 105.6 and replace with the following:

105.6.1 Department Provided Services The Department will provide the Contractor with the description and coordinates of vertical and horizontal control points, set by the Department, within the Project Limits, for full construction Projects and other Projects where survey control is necessary. For Projects of 1,500 feet in length, or less: The Department will provide three points. For Projects between 1,500 and 5,000 feet in length: The Department will provide one set of two points at each end of the Project. For Projects in excess of 5,000 feet in length, the Department will provide one set of two points at each end of the Project, plus one additional set of two points for each mile of Project length. For non-full construction Projects and other Projects where survey control is not necessary, the Department will not set any control points and, therefore, will not provide description and coordinates of any control points. Upon request of the Contractor, the Department will provide the Department's survey data management software and Survey Manual to the Contractor, or its survey Subcontractor, for the exclusive use on the Department's Projects.

105.6.2 Contractor Provided Services Utilizing the survey information and points provided by the Department, described in Subsection 105.6.1, Department Provided Services, the Contractor shall provide all additional survey layout necessary to complete the Work. This may include, but not be limited to, reestablishing all points provided by the Department, establishing additional control points, running axis lines, providing layout and maintenance of all other lines, grades, or points, and survey quality control to ensure conformance with the Contract. The Contractor is also responsible for providing construction centerline, or close reference points, for all Utility Facilities relocations and adjustments as necessary to complete the Work. When the Work is to connect with existing Structures, the Contractor shall verify all dimensions before proceeding with the Work. The Contractor shall employ or retain competent engineering and/or surveying personnel to fulfill these responsibilities.

The Contractor must notify the Department of any errors or inconsistencies regarding the data and layout provided by the Department as provided by Section 104.3.3 - Duty to Notify Department If Ambiguities Discovered.

105.6.2.1 Survey Quality Control The Contractor is responsible for all construction survey quality control. Construction survey quality control is generally defined as, first, performing initial field survey layout of the Work and, second, performing an independent check of the initial layout using independent survey data to assure the accuracy of the initial layout; additional iterations of checks may be required if significant discrepancies are discovered in this process. Construction survey layout quality control also requires written documentation of the layout process such that the process can be followed and repeated, if necessary, by an independent survey crew.

105.6.3 Survey Quality Assurance It is the Department's prerogative to perform construction survey quality assurance. Construction survey quality assurance may, or may not, be performed by the Department. Construction survey quality assurance is generally defined as an independent check of the construction survey quality control. The construction survey

quality assurance process may involve physically checking the Contractor's construction survey layout using independent survey data, or may simply involve reviewing the construction survey quality control written documentation. If the Department elects to physically check the Contractor's survey layout, the Contractor's designated surveyor may be required to be present. The Department will provide a minimum notice of 48 hours to the Contractor, whenever possible, if the Contractor's designated surveyor's presence is required. Any errors discovered through the quality assurance process shall be corrected by the Contractor, at no additional cost to the Department.

105.6.4 Boundary Markers The Contractor shall preserve and protect from damage all monuments or other points that mark the boundaries of the Right-of-Way or abutting parcels that are outside the area that must be disturbed to perform the Work. The Contractor indemnifies and holds harmless the Department from all claims to reestablish the former location of all such monuments or points including claims arising from 14 MRSA § 7554-A. For a related provision, see Section 104.3.11 - Responsibility for Property of Others.

SECTION 106
QUALITY

106.4.3 Testing Change the first sentence in paragraph three from "…maintain records of all inspections and tests." to "…maintain original documentation of all inspections, tests, and calculations used to generate reports."

106.6 Acceptance Add the following to paragraph 1 of A: "This includes Sections 401 - Hot Mix Asphalt, 402 - Pavement Smoothness, and 502 - Structural Concrete - Method A - Air Content."

Add the following to the beginning of paragraph 3 of A: "For pay factors based on Quality Level Analysis, and"

106.7.1 Standard Deviation Method Add the following to F: "Note: In cases where the mean of the values is equal to either the USL or the LSL, then the PWL will be 50 regardless of the computed value of s."

Add the following to H: "Method C Hot Mix Asphalt: PF = [55 + (Quality Level *0.5)] * 0.01"

SECTION 107
TIME

107.3.1 General Add the following: "If a Holiday occurs on a Sunday, the following Monday shall be considered a Holiday. Sunday or Holiday work must be approved by the Department, except that the Contractor may work on Martin Luther King Day, President's Day, Patriot's Day, the Friday after Thanksgiving, and Columbus Day without the Department's approval."

107.7.2 Schedule of Liquidated Damages Replace the table of Liquidated Damages as follows:

From	Up to and	Amount of Liquidated

More Than	Including	Damages per Calendar Day
$0	$100,000	$225
$100,000	$250,000	$350
$250,000	$500,000	$475
$500,000	$1,000,000	$675
$1,000,000	$2,000,000	$900
$2,000,000	$4,000,000	$1,000
$4,000,000	and more	$2,100

SECTION 108
PAYMENT

Remove Section 108.4 and replace with the following:

"108.4 Payment for Materials Obtained and Stored Acting upon a request from the Contractor and accompanied by bills or receipted bills, the Department will pay for all or part of the value of acceptable, non-perishable Materials that are to be incorporated in the Work, including Materials that are to be incorporated into the Work, not delivered on the Work site, and stored at places acceptable to the Department. Examples of such Materials include steel piles, stone masonry, curbing, timber and lumber, metal Culverts, stone and sand, gravel, and other Materials. The Department will not make payment on living or perishable Materials until acceptably planted in their final locations.

If payment for Materials is made to the Contractor based on bills, only, then the Contractor must provide receipted bills to the Department for these Materials within 14 days of the date the Contractor receives payment for the Materials. Failure of the Contractor to provide receipted bills for these Materials within 14 days of the dated the Contractor receives payment will result in the paid amount being withheld from the subsequent progress payment, or payments, until such time the receipted bills are received by the Department.

Materials paid for by the Department are the property of the Department, but the risk of loss shall remain with the Contractor. Payment for Materials does not constitute Acceptance of the Material. If Materials for which the Department has paid are later found to be unacceptable, then the Department may withhold amounts reflecting such unacceptable Materials from payments otherwise due the Contractor.

In the event of Default, the Department may use or cause to be used all paid-for Materials in any manner that is in the best interest of the Department."

SECTION 109
CHANGES

109.1.1 Changes Permitted Add the following to the end of the paragraph: "There will be no adjustment to Contract Time due to an increase or decrease in quantities, compared to those estimated, except as addressed through Contract Modification(s)."

109.1.2 Substantial Changes to Major Items Add the following to the end of the paragraph: "Contract Time adjustments may be made for substantial changes to Major Items when the change affects the Critical Path, as determined by the Department"

109.4.4 Investigation / Adjustment Third sentence, delete the words "subsections (A) - (E)"

109.5.1 Definitions - Types of Delays

B. Compensable Delay Replace (1) with the following; "a weather related Uncontrollable Event of such an unusually severe nature that a Federal Emergency Disaster is declared. The Contractor will only be entitled to an Equitable Adjustment if the Project falls within the geographic boundaries prescribed under the disaster declaration."

109.7.2 Basis of Payment Replace with the following: "Adjustments will be established by mutual Agreement based upon Unit or Lump Sum Prices. These agreed Unit or Lump Sum prices will be full compensation and no additions or mark-ups are allowed. If Agreement cannot be reached, the Contractor shall accept payment on a Force Account basis as provided in Section 109.7.5 - Force Account Work, as full and complete compensation for all Work relating to the Equitable Adjustment."

109.7.3 Compensable Items Delete this Section entirely.

109.7.4 Non-Compensable Items Replace with the following: "The Contractor is not entitled to compensation or reimbursement for any of the following items:

A. Total profit or home office overhead in excess of 15%,
B. ……."

109.7.5 Force Account Work

C. Equipment
Paragraph 2, delete sentence 1 which starts; "Equipment leased…."

Paragraph 6, change sentence 2 from "The Contractor may furnish…" to read "If requested by the Department, the Contractor will produce cost data to assist the Department in the establishment of such rental rate, including all records that are relevant to the Actual Costs including rental Receipts, acquisition costs, financing documents, lease Agreements, and maintenance and operational cost records."
Add the following paragraph; "Equipment leased by the Contractor for Force Account Work and actually used on the Project will be paid for at the actual invoice amount plus 10% markup for administrative costs."

Add the following section;

"F. Subcontractor Work When accomplishing Force Account Work that utilizes Subcontractors, the Contractor will be allowed a maximum markup of 5% for profit and overhead on the Subcontractor's portion of the Force Account Work. If the Department does not accept the Subcontractor quote, then the Subcontractor work will be subject to the Force Account provisions with a 5% markup for profit & overhead.."

SECTION 110
INDEMNIFICATION, BONDING, AND INSURANCE

Delete the entire Section 110.2.3 and replace with the following:
110.2.3 Bonding for Landscape Establishment Period The Contractor shall provide a signed, valid, and enforceable Performance, Warranty, or Maintenance Bond complying with the Contract, to the Department at Final Acceptance.

The bond shall be in the full amount for all Pay Items for work pursuant to Sec 621, Landscape, payable to the "Treasurer - State of Maine," and on the Department's forms, on exact copies thereof, or on forms that do not contain any significant variations from the Department's forms as solely determined by the Department.

The Contractor shall pay all premiums and take all other actions necessary to keep said bond in effect for the duration of the Landscape Establishment Period described in Special Provision 621.0036 - Establishment Period. If the Surety becomes financially insolvent, ceases to be licensed or approved to do business in the State of Maine, or stops operating in the United States, the Contractor shall file new bonds complying with this Section within 10 Days of the date the Contractor is notified or becomes aware of such change.

All Bonds shall be procured from a company organized and operating in the United States, licensed or approved to do business in the State of Maine by the State of Maine Department of Business Regulation, Bureau of Insurance, and listed on the latest Federal Department of the Treasury listing for "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies."

By issuing a bond, the Surety agrees to be bound by all terms of the Contract, including those related to payment, time for performance, quality, warranties, and the Department's self-help remedy provided in Section 112.1 - Default to the same extent as if all terms of the Contract are contained in the bond(s).

Regarding claims related to any obligations covered by the bond, the Surety shall provide, within 60 Days of Receipt of written notice thereof, full payment of the entire claim or written notice of all bases upon which it is denying or contesting payment. Failure of the Surety to provide such notice within the 60-day period constitutes the Surety's waiver of any right to deny or contest payment and the Surety's acknowledgment that the claim is valid and undisputed.

SECTION 202
REMOVING STRUCTURES AND OBSTRUCTIONS

202.02 Removing Buildings Make the following change to the last sentence in the final paragraph, change "…Code of Maine Regulations 401." to "…Department of Environmental Protection Maine Solid Waste Management Rules, 06-096 CMR Ch. 401, Landfill Siting, Design and Operation."

SECTION 203
EXCAVATION AND EMBANKMENT

203.01 Description Under b. Rock Excavation; add the following sentence: "The use of perchlorate is not allowed in blasting operations."

Delete the entire Section 203.041 and replace with the following:
"203.041 Salvage of Existing Hot Mix Asphalt Pavement All existing hot mix asphalt pavement designated to be removed under this contract must be salvaged for utilization. Existing hot mix asphalt pavement material shall not be deposited in any waste area or be placed below subgrade in any embankment.

Methods of utilization may be any of the following:

1. Used as a replacement for untreated aggregate surface course on entrances provided the material contains no particles greater than 50 mm [2 in] in any dimension. Payment will be made under Pay Item 411.09, Untreated Aggregate Surface Course or 411.10, Untreated Aggregate Surface Course, Truck Measure. Material shall be placed, shaped, compacted and stabilized as directed by the Resident.

2. Stockpiled at commercial or approved sites for commercial or MaineDOT use.

3. Other approved methods proposed by the Contractor, and approved by the Resident which will assure proper use of the existing hot mix asphalt pavement.

The cost of salvaging hot mix asphalt material will be included for payment under the applicable pay item, with no additional allowances made, which will be full compensation for removing, temporarily stockpiling, and rehandling, if necessary, and utilizing the material in entrances or other approved uses, or stockpiling at an approved site as described above. The material will also be measured and paid for under the applicable Pay Item if it is reused for aggregate in entrances, or other approved uses."

SECTION 502
STRUCTURAL CONCRETE

502.05 Composition and Proportioning; TABLE #1; NOTE #2; third sentence; Change "…alcohol based saline sealer…" to "alcohol based silane sealer…". Add NOTE #6 to Class S Concrete.

502.0502 Quality Assurance Method A - Rejection by Resident Change the first sentence to read: "For an individual sublot with test results failing to meet the criteria in Table #1, or if the calculated pay factor for Air Content is less than 0.80……"

502.0503 Quality Assurance Method B - Rejection by Resident Change the first sentence to read: "For material represented by a verification test with test results failing to meet the criteria in Table #1, the Department will……"

502.0505 Resolution of Disputed Acceptance Test Results Combine the second and third sentence to read: "Circumstances may arise, however, where the Department may ……"
502.10 Forms and False work

D. Removal of Forms and False work 1., First paragraph; first, second, and third sentence; replace "forms" with "forms and false work"

502.11 Placing Concrete

G. Concrete Wearing Surface and Structural Slabs on Precast Superstructures Last paragraph; third sentence; replace "The temperature of the concrete shall not exceed 24° C [75° F} at the time of placement." with "The temperature of the concrete shall not exceed 24° C [75° F} at the time the concrete is placed in its final position."

502.15 Curing Concrete First paragraph; replace the first sentence with the following; "All concrete surfaces shall be kept wet with clean, fresh water for a curing period of at least 7 days after concrete placing, with the exception of vertical surfaces as provided for in Section 502.10 (D) - Removal of Forms and False work."

Second paragraph; delete the first two sentences.
Third paragraph; delete the entire paragraph which starts "When the ambient temperature…."
Fourth paragraph; delete "approved" to now read "…continuously wet for the entire curing period…"

Fifth paragraph; second sentence; change "…as soon as it is possible to do so without damaging the concrete surface." to "…as soon as possible."

Seventh paragraph; first sentence; change "…until the end of the curing period." to "…until the end of the curing period, except as provided for in Section 502.10(D) - Removal of Forms and False work."

502.19 Basis of Payment First paragraph, second sentence; add "pier nose armor" to the list of items included in the contract price for concrete.

SECTION 503
REINFORCING STEEL

503.06 Placing and Fastening Change the second paragraph, first sentence from: "All tack welding shall be done in accordance with Section 504, Structural Steel." to "All tack welding shall be done in accordance with AWS D1.4 Structural Welding Code - Reinforcing Steel."

SECTION 504
STRUCTURAL STEEL

504.09 Facilities for Inspection Add the follow as the last paragraph: "Failure to comply with the above requirements will be consider to be a denial to allow access to work by the Contractor. The Department will reject any work done when access for inspection is denied."

504.18 Plates for Fabricated Members Change the second paragraph, first sentence from: "…ASTM A 898/A 898 M…" to "…ASTM A 898/A 898 M or ASTM A 435/A 435 M as applicable and…"

504.31 Shop Assembly Add the following as the last sentence: "The minimum assembly length shall include bearing centerlines of at least two substructure units."

504.64 Non Destructive Testing-Ancillary Bridge Products and Support Structures Change the third paragraph, first sentence from "One hundred percent…" to "Twenty five percent…"

SECTION 535
PRECAST, PRESTRESSED CONCRETE SUPERSTRUCTURE

535.02 Materials Change "Steel Strand for Concrete Reinforcement" to "Steel Strand." Add the following to the beginning of the third paragraph; "Concrete shall be Class P conforming to the requirements in this section. 28 day compressive strength shall be as stated on the plans. Coarse aggregate…."

535.05 Inspection Facilities Add the follow as the last paragraph: "If the above requirements are not met, the Contractor shall be considered to be in violation of Standard Specification 104.2.5 – Right to Inspect Work. All work occurring during a violation of this specification will be rejected."

535.26 Lateral Post-Tensioning Replace the first paragraph; "A final tension…" with "Overstressing strands for setting losses cannot be accomplished for chuck to chuck lengths of 7.6 m [25 ft] and less. In such instances, refer to the Plans for all materials and methods. Otherwise, post-tensioning shall be in accordance with PCI standards and shall provide the anchorage force noted in the Plans. The applied jacking force shall be no less than 100% of the design jacking force."

SECTION 603
PIPE CULVERTS AND STORM DRAINS

603.0311 Corrugated Polyethylene Pipe for Option III Replace the Minimum Mandrel Diameter Table with the following:

Nominal Size US Customary (in)	Minimum Mandrel Diameter (in)	Nominal Size Metric (mm)	Minimum Mandrel Diameter (mm)
12	11.23	300	280.73
15	14.04	375	350.91
18	16.84	450	421.09
24	22.46	600	561.45
30	28.07	750	701.81
36	33.69	900	842.18
42	39.30	1050	982.54
48	44.92	1200	1122.90

SECTION 604
MANHOLES, INLETS, AND CATCH BASINS

604.02 Materials Add the following:

"Tops and Traps	712.07
Corrugated Metal Units	712.08
Catch Basin and Manhole Steps	712.09"

SECTION 605
UNDERDRAINS

605.05 Underdrain Outlets Make the following change:

In the first paragraph, second sentence, delete the words "metal pipe".

SECTION 606
GUARDRAIL

606.02 Materials Delete the entire paragraph which reads "The sole patented supplier of multiple mailbox…." and replace with "Acceptable multiple mailbox assemblies shall be listed on the Department's Approved Products List and shall be NCHRP 350 tested and approved."
Delete the entire paragraph which reads "Retroreflective beam guardrail delineators…." and replace with "Reflectorized sheeting for Guardrail Delineators shall meet the requirements of Section 719.01 - Reflective Sheeting. Delineators shall be fabricated from high-impact, ultraviolet and weather resistant thermoplastic.

606.09 Basis of Payment First paragraph; delete the second and third sentence in their entirety and replace with "Butterfly-type guardrail reflectorized delineators shall be mounted on all W-beam guardrail at an interval of every 10 posts [62.5 ft] on tangents sections and every 5 posts [31.25 ft] on curved sections as directed by the Resident. On divided highways, the delineators shall be yellow on the left hand side and silver/white on the right hand side. On two-way roadways, the delineators shall be silver/white on the right hand side. All delineators shall have retroreflective sheeting applied to only the traffic facing side. Reflectorized guardrail delineators will not be paid for directly, but will be considered incidental to the guardrail items."

SECTION 609
CURB

609.04 Bituminous Curb f., Delete the requirement "Color Natural (White)"

SECTION 610
STONE FILL, RIPRAP, STONE BLANKET, AND STONE DITCH PROTECTION

Add the following paragraph to Section 610.02:
"Materials shall meet the requirements of the following Sections of Special Provision 703:

Stone Fill	703.25
Plain and Hand Laid Riprap	703.26
Stone Blanket	703.27
Heavy Riprap	703.28
Definitions	703.32"

Add the following paragraph to Section 610.032.a.
"Stone fill and stone blanket shall be placed on the slope in a well-knit, compact and uniform layer. The surface stones shall be chinked with smaller stone from the same source."

Add the following paragraph to Section 610.032.b:
"Riprap shall be placed on the slope in a well-knit, compact and uniform layer. The surface stones shall be chinked with smaller stone from the same source."

Add the following to Section 610.032: "Section 610.032.d. The grading of riprap, stone fill, stone blanket and stone ditch protection shall be determined by the Resident by visual inspection of the load before it is dumped into place, or, if ordered by the Resident, by dumping individual loads on a flat surface and sorting and measuring the individual rocks contained in the load. A separate, reference pile of stone with the required gradation will be placed by the Contractor at a convenient location where the Resident can see and judge by eye the suitability of the rock being placed during the duration of the project. The Resident reserves the right to reject stone at the job site or stockpile, and in place. Stone rejected at the job site or in place shall be removed from the site at no additional cost to the Department."

SECTION 615
LOAM

615.02 Materials Make the following change:

Organic Content	Percent by Volume
Humus	"5% - 10%", as determined by Ignition Test

SECTION 618
SEEDING

618.01 Description Change the first sentence to read as follows: "This work shall consist of furnishing and applying seed ….." Also remove ",and cellulose fiber mulch" from 618.01(a).
618.03 Rates of Application In 618.03(a), remove the last sentence and replace with the following: "These rates shall apply to Seeding Method 2, 3, and Crown Vetch."

In 618.03(c) "1.8 kg [4 lb]/unit." to "1.95 kg [4 lb]/unit."

618.09 Construction Method In 618.09(a) 1, sentence two, replace "100 mm [4 in]" with "25 mm [1 in] (Method 1 areas) and 50 mm [2 in] (Method 2 areas)"

618.15 Temporary Seeding Change the Pay Unit from Unit to Kg [lb].

SECTION 620
GEOTEXTILES

620.03 Placement Section (c)

Title: Replace "Non-woven" in title with "Erosion Control".
First Paragraph: Replace first word "Non-woven" with "Woven monofilament".
Second Paragraph: Replace second word "Non-woven" with "Erosion Control".

620.07 Shipment, Storage, Protection and Repair of Fabric Section (a)

Replace the second sentence with the following: "Damaged geotextiles, as identified by the Resident, shall be repaired immediately."

620.09 Basis of Payment

Pay Item 620.58: Replace "Non-woven" with "Erosion Control"
Pay Item 620.59: Replace "Non-woven" with "Erosion Control"

SECTION 621
LANDSCAPING

621.0036 Establishment Period In paragraph 4 and 5, change "time of Final Acceptance" to "end of the period of establishment". In Paragraph 7, change "Final Acceptance date" to ""end of the period of establishment" and change "date of Final Acceptance" to "end of the period of establishment".

SECTION 626
HIGHWAY SIGNING

626.034 Concrete Foundations Add to the following to the end of the second paragraph: "Pre-cast and cast-in-place foundations shall be warranteed against leaning and corrosion for two years after the project is completed. If the lean is greater than 2 degrees from normal or the foundation is spalling within the first two years, the Contractor shall replace the foundation at no extra cost."

SECTION 627
PAVEMENT MARKINGS

627.10 Basis of Payment Add to the following to the end of the third paragraph: "If allowed by Special Provision, the Contractor may utilize Temporary Bi-Directional Yellow and White(As required) Delineators as temporary pavement marking lines and paid for at the contract lump sum price. Such payment will include as many applications as required and removal."

SECTION 637
DUST CONTROL

637.06 Basis of Payment Add the following after the second sentence of the third paragraph: "Failure by the Contractor to follow Standard Specification or Special Provision - Section 637 and/or the Contractor's own Soil Erosion and Pollution Control Plan concerning Dust Control and/or the Contractor's own Traffic Control Plan concerning Dust Control and/or visible evidence of excessive dust problems, as determined by the Resident, will result in a reduction in payment, computed by reducing the Lump Sum Total by 5% per occurrence per day. The Department's Resident or any other representative of the Department reserves the right to suspend the work at any time and request a meeting to discuss violations and remedies. The Department shall not be held responsible for any delay in the work due to any suspension under this item. Additional penalties may also be assessed in accordance with Special Provision 652 - Work Zone Traffic Control and Standard Specification 656 - Temporary Soil Erosion and Water Pollution Control."

SECTION 639
ENGINEERING FACILITIES

639.04 Field Offices Change the forth to last paragraph from: "The Contractor shall provide a fully functional desktop copier…" to "….desktop copier/scanner…"

Description Change "Floor Area" to "Floor Area (Outside Dimension)". Change Type B floor area from "15 (160)" to "20 (217)".

639.09 Telephone Paragraph 1 is amended as follows:
"The contractor shall provide **two** telephone lines and two telephones,…."

Add- "In addition the contractor will supply one computer broadband connection, modem lease and router. The router shall have wireless access and be 802.11n or 802.11g capable and wireless. The type of connection supplied will be contingent upon the availability of services (i.e. DSL or Cable Broadband). It shall be the contractor's option to provide dynamic or static IP addresses through the service. **The selected service will have a minimum downstream connection of 1.5 Mbps and 384 Kbps upstream.** The contractor shall be responsible for the installation charges and all reinstallation charges following suspended periods. Monthly service and maintenance charges shall be billed by the Internet Service Provider (ISP) directly to the contractor."

SECTION 652
MAINTENANCE OF TRAFFIC

652.2.3 Flashing Arrow Board Delete the existing 5 paragraphs and replace with the following: Flashing Arrow Panels (FAP) must be of a type that has been submitted to AASHTO's National Transportation Product Evaluation Program (NTPEP) for evaluation and placed on the Maine Department of Transportations' Approved Products List of Portable Changeable Message Signs & Flashing Arrow Panels.

FAP units shall meet requirements of the current Manual on Uniform Traffic Control Devices

(MUTCD) for Type "C" panels as described in Section 6F.56 - Temporary Traffic Control Devices. An FAP shall have matrix of a minimum of 15 low-glare, sealed beam, Par 46 elements capable of either flashing or sequential displays as well as the various operating modes as described in the MUTCD, Chapter 6-F. If an FAP consisting of a bulb matrix is used, each element should be recess-mounted or equipped with an upper hood of not less than 180 degrees. The color presented by the elements shall be yellow.

FAP elements shall be capable of at least a 50 percent dimming from full brilliance. Full brilliance should be used for daytime operation and the dimmed mode shall be used for nighttime operation. FAP shall be at least 2.4 M x 1.2 M [96" x 48"] and finished in non-reflective black. The FAP shall be interpretable for a distance not less than 1.6 km [1 mile].

Operating modes shall include, flashing arrow, sequential arrow, sequential chevron, flashing double arrow, and flashing caution. In the three arrow signals, the second light from the arrow point shall not operate.

The minimum element on-time shall be 50 percent for the flashing mode, with equal intervals of 25 percent for each sequential phase. The flashing rate shall be not less than 25 nor more than 40 flashes per minute. All on-board circuitry shall be solid state.

Primary power source shall be 12 volt solar with a battery back-up to provide continuous operation when failure of the primary power source occurs, up to 30 days with fully charged batteries. Batteries must be capable of being charged from an onboard 110 volt AC power source and the unit shall be equipped with a cable for this purpose.

Controller and battery compartments shall be enclosed in lockable, weather-tight boxes.
The FAP shall be mounted on a pneumatic-tired trailer or other suitable support for hauling to various locations, as directed. The minimum mounting height of an arrow panel should be 2.1 M [7 feet] from the roadway to the bottom of the panel.

The face of the trailer shall be delineated on a permanent basis by affixing retro-reflective material, known as conspicuity material, in a continuous line as seen by oncoming drivers.

A portable changeable message sign may be used to simulate an arrow panel display."

652.2.4 Other Devices Delete the last paragraph and add the following:
"652.2.5 Portable Changeable Message Sign Trailer mounted Portable Changeable Message Signs (PCMS) must be of a type that has been submitted to AASHTO's National Transportation Product Evaluation Program (NTPEP) for evaluation and placed on the Maine Department of Transportations' Approved Products List of Portable Changeable Message Signs & Flashing Arrow Panels. The PCMS unit shall meet or exceed the current specifications of the Manual on Uniform Traffic Control Devices (MUTCD), 6F.55.

The front face of the sign should be covered with a low-glare protective material. The color of the LED elements shall be amber on a black background. The PCMS should be visible from a distance of 0.8 km [0.5 mile] day and night and have a minimum 15º viewing angle. Characters must be legible from a distance of at least 200 M [650 feet].

The message panel should have adjustable display rates (minimum of 3 seconds per phase), so that the entire message can be read at least twice at the posted speed, the off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed. Each message shall consist of either one or two phases. A phase shall consist of up to eight characters per line. The unit must be capable of displaying at least three lines of text with eight characters per line. Each character shall be 457 mm [18"] high. Each character module shall use at least a five wide and seven high pixel matrix. The text of the messages shall not scroll or travel horizontally or vertically across the face of the sign.

Units shall automatically adjust their brightness under varying light conditions to maintain legibility.

The control system shall include a display screen upon which messages can be reviewed before being displayed on the message sign. The control system shall be capable of maintaining memory when power is unavailable. Message must be changeable with either a notebook computer or an on-board keypad. The controller shall have the capability to store a minimum of 200 user-defined and 200 pre-programmed messages. Controller and battery compartments shall be enclosed in lockable, weather-tight boxes.

PCMS units shall have the capability of being made programmable by means of wireless communications. PCMS units shall also be fully capable of having an on-board radar system installed if required for a particular application.

PCMS' primary power source shall be solar with a battery back-up to provide continuous operation when failure of the primary power source occurs. Batteries must be capable of being charged from a 110 volt AC power source. The unit must also be capable of being operated solely from a 110 volt AC power source and be equipped with a cable for this purpose.

The PCMS shall be mounted on a trailer in such a way that the bottom of the message sign panel shall be a minimum of 2.1 M [7 ft] above the roadway in urban areas and 1.5 M [5 ft] above the roadway in rural areas when it is in the operating mode. PCMS trailers should be of a heavy duty type with a 51 mm [2"] ball hitch and a minimum of four leveling jacks (at each corner). The sign shall be capable of being rotated 360° relative to the trailer. The face of the trailer shall be delineated on a permanent basis by affixing retro-reflective material, known as conspicuity material, in a continuous line as seen by oncoming drivers."

652.3.3 Submittal of Traffic Control Plan In item e. change "A list of all certified flaggers…" to "A list of all the Contractor's certified flaggers…"
Add the follow to the list of requirements: "k. The plan for unexpected nighttime work along with a list of emergency nighttime equipment available on-site."
In the last paragraph add the following as the second sentence: "The Department will review and provide comments to the Contractor within 14 days of receipt of the TCP." Add the following as the last sentence: "The creation and modification of the TCP will be considered incidental to the related 652 items."

652.3.5 Installation of Traffic Control Devices In the first paragraph, first sentence; change "Signs shall be erected…" to "Portable signs shall be erected.." In the third sentence; change

"Signs must be erected so that the sign face…" to "Post-mounted signs must also be erected so that the sign face…"

652.4 Flaggers Replace the first paragraph with the following; "The Contractor shall furnish flaggers as required by the TCP or as otherwise specified by the Resident. All flaggers must have successfully completed a flagger test approved by the Department and administered by a Department-approved Flagger-Certifier who is employing that flagger. All flaggers must carry an official certification card with them while flagging that has been issued by their employer. Flaggers shall wear safety apparel meeting ANSI 107-2004 Class 2 risk exposure that clearly identifies the wearer as a person, and is visible at a minimum distance of 300 m [1000 ft], and shall wear a hardhat with 360° retro-reflectivity. For nighttime conditions, Class 3 apparel, meeting ANSI 107-2004, shall be worn along with a hardhat with 360° retro-reflectivity. Retro-reflective or flashing SLOW/STOP paddles shall be used, and the flagger station shall be illuminated to assure visibility in accordance with 652.6.2."

Second paragraph, first sentence; change "…have sufficient distance to stop before entering the workspace." to "…have sufficient distance to stop at the intended stopping point." Third sentence; change "At a spot obstruction…" to "At a spot obstruction with adequate sight distance,…"

Fourth paragraph, delete and replace with "Flaggers shall be provided as a minimum, a 10 minute break, every 2 hours and a 30 minute or longer lunch period away from the work station. Flaggers may only receive 1 unpaid break per day; all other breaks must be paid. Sufficient certified flaggers shall be available onsite to provide for continuous flagging operations during break periods. Breaker flaggers will not be paid for separately, but shall be considered incidental to the appropriate pay item."

Add the following:
"652.5.1 Rumble Strip Crossing When lane shifts or lane closures require traffic to cross a permanent longitudinal rumble strip for 7 calendar days or less, the Contractor shall install warning signs that read "RUMBLE STRIP CROSSING" with a supplemental Motorcycle Plaque, (W8-15P).

When lane shifts or lane closures require traffic to cross a permanent longitudinal rumble strip for more than 7 calendar days, the Contractor shall pave in the rumble strips in the area that traffic will cross, unless otherwise directed by the Resident. Rumble strips shall be replaced prior to the end of the project, when it is no longer necessary to cross them."

652.6 Nightwork Delete this section entirely and replace with the following:
"652.6.1 Daylight Work Times Unless otherwise described in the Contract, the Contractor is allowed to commence work and end work daily according to the Sunrise/Sunset Table at: http://www.sunrisesunset.com/usa/Maine.asp . If the Project town is not listed, the closest town on the list will be used as agreed at the Preconstruction Meeting. Any work conducted before sunrise or after sunset will be considered Night Work.

652.6.2 Night Work When Night Work occurs (either scheduled or unscheduled), the Contractor shall provide and maintain lighting on all equipment and at all work stations.

The lighting facilities shall be capable of providing light of sufficient intensity to permit good workmanship, safety and proper inspection at all times. The lighting shall be cut off and arranged on stanchions at a height that will provide perimeter lighting for each piece of equipment and will not interfere with traffic, including commercial vehicles, approaching the work site from either direction.

The Contractor shall have available portable floodlights for special areas.

The Contractor shall utilize padding, shielding or other insulation of mechanical and electrical equipment, if necessary, to minimize noise, and shall provide sufficient fuel, spare lamps, generators, etc. to maintain lighting of the work site.

The Contractor shall submit a lighting plan at the Preconstruction Conference, showing the type and location of lights to be used for night work. The Resident may require modifications be made to the lighting set up in actual field conditions.

Prior to beginning any Night Work, the Contractor shall furnish a light meter for the Residents use that is capable of measuring the range of light levels from 5 to 20 foot-candles.

Horizontal illumination, for activities on the ground, shall be measured with the photometer parallel to the road surface. For purposes of roadway lighting, the photometer is placed on the pavement. Vertical illumination, for overhead activities, shall be measured with the photometer perpendicular to the road surface. Measurements shall be taken at the height and location of the overhead activity.

The following minimum light levels are required for Night Work lighting;

Level I: (5 foot-candles)

- All work operations by Contractor's personnel in areas of general construction operations, including layout and measurements ahead of the actual work, , cleaning and sweeping, , and seeding.
- Areas where crew movement may take place.
- Stockpile areas.
- At the area of lane closure, continuously through the lane closure, including the setup and removal of the closures.
- State Field Offices and facilities.

Level II: (10 foot-candles)

- On and around (360 degrees) construction equipment in the work zone.
- 50 feet ahead of, 100 feet behind, and along the sides of paving or milling machines in the work zone.

Level III: (20 foot-candles)

- Flagging Stations
- Pavement or structural crack and pothole filling.
- Pavement patching and repairs.
- Installation of signal equipment, or other electrical or mechanical equipment.
- Curb work, drainage, sidewalk work, excavation, landscaping, and any other work using ground labor, supervision, or inspection.

All workers shall wear safety apparel labeled as meeting the ANSI 107-2004 standard performance for Class 3 risk exposure.

The Contractor shall apply 2- inch wide retro-reflective tape, with alternating red and white segments, to outline the front back and sides of construction vehicles and equipment, to define their shape and size to the extent practicable. Pickup trucks and personal vehicles are exempt from this requirement. The Contractor shall furnish approved signs reading "Construction Vehicle - Keep Back" to be used on trucks hauling to the project when such signs are deemed necessary by the Resident. The signs shall be a minimum of 30 inches by 60 inches, Black and Orange, ASTM D 4956 - Type VII, Type VIII, or Type IX (prismatic).

All vehicles used on the project, including pickup trucks and personal vehicles, shall be equipped with amber flashing lights, visible from both front and rear, or by means of single, approved type, revolving, flashing or strobe lights mounted so as to be visible 360º. The vehicle flashing system shall be in continuous operation while the vehicle is on any part of the project.

The Resident or any other representative of the Department reserves the right to suspend the work at any time and request a meeting to discuss violations and remedies. The Department shall not be held responsible for any delay in the work due to any suspension under this item.

Payment for lighting, vehicle mounted signs and other costs accrued because of night work will not be made directly but will be considered incidental to the related contract items."

652.8.2 Other Items Replace the last paragraph with the following: "There will be no payment made under any 652 pay items after the expiration of the adjusted total contract time."

SECTION 653
POLYSTYRENE PLASTIC INSULATION

653.05 Placing Backfill In the second sentence; change "…shall be not less than 150 mm [6 in] loose measure." to "…shall be not less than 250 mm [10 in] loose measure." In the third sentence; change "…crawler type bulldozer of not more than 390 kg/m^2 [80 lb/ft^2] ground contact pressure…" to "…crawler type bulldozer of not more than 4875 kg/m^2 [2000 lb/ft^2] ground contact pressure…"

653.06 Compaction In the last sentence; change "…not more than 390 kg/m^2 [80 lb/ft^2] ground contact…" to "…not more than 4875 kg/m^2 [2000 lb/ft^2] ground contact…"

SECTION 656
TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL

656.5.1 If Pay Item 656.75 Provided Replace the second paragraph with the following: "Failure by the Contractor to follow Standard Specification or Special Provision - Section 656

and/or the Contractor's own Soil Erosion and Pollution Control Plan will result in a reduction in payment, computed by reducing the Lump Sum Total by 5% per occurrence per day. The Department's Resident or any other representative of the Department reserves the right to suspend the work at any time and request a meeting to discuss violations and remedies. The Department shall not be held responsible for any delay in the work due to any suspension under this item."

SECTION 701
STRUCTURAL CONCRETE RELATED MATERIALS

701.10 Fly Ash - Chemical Requirements Change all references from "ASTM C311" to "ASTM C114".

SECTION 703
AGGREGATES

703.05 Aggregate for Sand Leveling Change the percent passing the 9.5 mm [3/8 in] sieve from "85 – 10" to "85 – 100"

703.06 Aggregate for Base and Subbase Delete the first paragraph: "The material shall have…" and replace with "The material shall have a minimum degradation value of 15 as determined by Washington State DOT Test Method T113, Method of Test for Determination of Degradation Value (March 2002 version), except that the reported degradation value will be the result of testing a single specimen from that portion of a sample that passes the 12.5 mm [½ in] sieve and is retained on the 2.00 mm [No. 10] sieve, minus any reclaimed asphalt pavement used."

703.07 Aggregates for HMA Pavements Delete the forth paragraph: "The composite blend shall have…" and replace with "The composite blend, minus any reclaimed asphalt pavement used, shall have a Micro-Deval value of 18.0 or less as determined by AASHTO T 327. In the event the material exceeds the Micro Deval limit, a Washington Degradation test shall be performed. The material shall be acceptable if it has a value of 30 or more as determined by Washington State DOT Test Method T 113, Method of Test for Determination of Degradation Value (March 2002 version) except that the reported degradation value will be the result of testing a single composite specimen from that portion of the sample that passes the 12.5mm [1/2 inch] sieve and is retained on the 2.00mm [No 10] sieve, minus any reclaimed asphalt pavement used."

703.09 HMA Mixture Composition The coarse and fine aggregate shall meet the requirements of Section 703.07. The several aggregate fractions for mixtures shall be sized, graded, and combined in such proportions that the resulting composite blends will meet the grading requirements of the following table.

AGGREGATE GRADATION CONTROL POINTS

SIEVE SIZE	Nominal Maximum Aggregate Size---Control Points (Percent Passing)				
	TYPE 25 mm	TYPE 19 mm	TYPE 12.5 mm	TYPE 9.5 mm	TYPE 4.75 mm
	PERCENT BY WEIGHT PASSING - COMBINED AGGREGATE				
37.5 mm	100				
25 mm	90-100	100			
19 mm	-90	90-100	100		
12.5 mm		-90	90-100	100	100
9.5 mm		-	-90	90-100	95-100
4.75 mm		-	-	-90	80-100
2.36 mm	19-45	23-49	28-58	32-67	40 - 80
1.18 mm		-	-	-	-
600 µm		-	-	-	-
300 µm		-	-	-	-
75 µm	1-7	2-8	2-10	2-10	2-10

Gradation Classification---- The combined aggregate gradation shall be classified as coarse-graded when it passes below the Primary Control Sieve (PCS) control point as defined in the following table. All other gradations shall be classified as fine-graded.

GRADATION CLASSIFICATION

PCS Control Point for Mixture Nominal Maximum Aggregate Size (% passing)				
Nominal Maximum Aggregate Size	TYPE 25 mm	TYPE 19 mm	TYPE 12.5 mm	TYPE 9.5 mm
Primary Control Sieve	4.75 mm	4.75 mm	2.36 mm	2.36 mm
PCS Control Point (% passing)	40	47	39	47

If a Grading "D" mixture is allowed per Special Provision Section 403, it shall meet the following gradation and the aggregate requirements of Section 703.07.

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves
½ inch	100
⅜ inch	93-100
No. 4	60-80
No. 8	46-65
No. 16	25-55
No. 30	16-40
No. 50	10-30
No. 100	6-22
No. 200	3.0-8.0

703.18 Common Borrow Replace the first paragraph with the following: "Common borrow shall consist of earth, suitable for embankment construction. It shall be free from frozen material, perishable rubbish, peat, and other unsuitable material including material currently or

previously contaminated by chemical, radiological, or biological agents unless the material is from a DOT project and authorized by DEP for use."

703.22 Underdrain Backfill Material Change the first paragraph from "…for Underdrain Type B…" to "…for Underdrain Type B and C…"

Replace subsections 703.25 through 703.28 with the following:
"703.25 Stone Fill Stones for stone fill shall consist of hard, sound, durable rock that will not disintegrate by exposure to water or weather. Stone for stone fill shall be angular and rough. Rounded, subrounded, or long thin stones will not be allowed. Stone for stone fill may be obtained from quarries or by screening oversized rock from earth borrow pits. The maximum allowable length to thickness ratio will be 3:1. The minimum stone size (10 lbs) shall have an average dimension of 5 inches. The maximum stone size (500 lbs) shall have a maximum dimension of approximately 36 inches. Larger stones may be used if approved by the Resident. Fifty percent of the stones by volume shall have an average dimension of 12 inches (200 lbs).

703.26 Plain and Hand Laid Riprap Stone for riprap shall consist of hard, sound durable rock that will not disintegrate by exposure to water or weather. Stone for riprap shall be angular and rough. Rounded, subrounded or long thin stones will not be allowed. The maximum allowable length to width ratio will be 3:1. Stone for riprap may be obtained from quarries or by screening oversized rock from earth borrow pits. The minimum stone size (10 lbs) shall have an average dimension of 5 inches. The maximum stone size (200 lbs) shall have an average dimension of approximately 12 inches. Larger stones may be used if approved by the Resident. Fifty percent of the stones by volume shall have an average dimension greater than 9 inches (50 lbs).

703.27 Stone Blanket Stones for stone blanket shall consist of sound durable rock that will not disintegrate by exposure to water or weather. Stone for stone blanket shall be angular and rough. Rounded or subrounded stones will not be allowed. Stones may be obtained from quarries or by screening oversized rock from earth borrow pits. The minimum stone size (300 lbs) shall have minimum dimension of 14 inches, and the maximum stone size (3000 lbs) shall have a maximum dimension of approximately 66 inches. Fifty percent of the stones by volume shall have average dimension greater than 24 inches (1000 lbs).

703.28 Heavy Riprap Stone for heavy riprap shall consist of hard, sound, durable rock that will not disintegrate by exposure to water or weather. Stone for heavy riprap shall be angular and rough. Rounded, subrounded, or thin, flat stones will not be allowed. The maximum allowable length to width ratio will be 3:1. Stone for heavy riprap may be obtained from quarries or by screening oversized rock from earth borrow pits. The minimum stone size (500 lbs) shall have minimum dimension of 15 inches, and at least fifty percent of the stones by volume shall have an average dimension greater than 24 inches (1000 lbs)."

Add the following paragraph:
"703.32 Definitions (ASTM D 2488, Table 1).
Angular: Particles have sharp edges and relatively plane sides with unpolished surfaces
Subrounded: Particles have nearly plane sides but have well-rounded corners and edges
Rounded: Particles have smoothly curved sides and no edges"

SECTION 706
NON-METALLIC PIPE

706.06 Corrugated Polyethylene Pipe for Underdrain, Option I and Option III Culvert Pipe Change the first sentence from "…300 mm diameters to 900 mm" to "…300 mm diameters to 1200 mm" Delete, in it's entirety, the last sentence which begins "This pipe and resins…" and replace with the following; "The manufacturing plants of polyethylene pipe shall be certified by the Eastern States Consortium. Polyethylene pipe shall be accepted based on third party certification by the AASHTO's National Transportation Product Evaluation Program."

SECTION 709
REINFORCING STEEL AND WELDED STEEL WIRE FABIC

709.03 Steel Strand Change the second paragraph from "…shall be 12mm [½ inch] AASHTO M203M/M203 (ASTM A416/A416M)…" to "…shall be 15.24 mm [0.600 inch] diameter AASHTO M203 (ASTM A416)…"

SECTION 710
FENCE AND GUARDRAIL

710.03 Chain Link Fabric Add the following sentence: "Chain Link fabric for PVC coated shall conform to the requirements of AASHTO M181, Type IV-Class B."

710.04 Metal Beam Rail Replace with the following: "Galvanized steel rail elements shall conform to the requirements of AASHTO M 180, Class A, Type II.

When corrosion resistant steel is specified, rail shall conform to AASHTO M 180, Class A, Type IV. Beams of corrosion resistant steel shall not be painted or galvanized. They shall be so handled and stored that the traffic face of these beams, used in a continuous run of guardrail, shall not show a distinctive color differential.

When metal beam rail is to be installed on a curve having a radius of curvature of 150 ft. or less, the beam sections shall be fabricated on an arc to the required radius and permanently stamped or embossed with the designated radius.

The engineer may take one piece of guardrail, a backup plate, and end or buffer section from each 200 pieces in a lot, or from each lot if less than 200 pieces are included therein for determination of compliance with specification requirements. If one piece fails to conform to the requirements of this specification, two other pieces shall be tested. If either of these pieces fails to conform to the requirements of this specification, the lot of material represented by these samples shall be rejected. A lot shall be considered that quantity of material offered for inspection at one time that bears the same heat and coating identification."

710.07 Guardrail Posts Section b. change "…AASHTO M183/M183M…" to "…AASHTO M 270M/M 270 Grade 250 (36)…"

SECTION 712
MISCELLANEOUS HIGHWAY MATERIALS

712.04 Stone Curbing and Edging Delete the existing and replace with the following: "Stone for curbing and edging shall be approved granite from acceptable sources. The stone shall be hard and durable, predominantly gray in color, free from seams that would be likely to impair its structural integrity, and of a smooth splitting character. Natural grain size and color variations characteristic of the source deposit will be permitted. Such natural variations may include bands or clusters of mineral crystallization provided they do not impair the structural integrity of the curb stone. The Contractor shall submit for approval the name of the quarry that is the proposed source of the granite for curb materials along with full scale color photos of the granite. Such submission shall be made sufficiently in advance of ordering so that the Resident may have an opportunity to judge the stone, both as to quality and appearance. Samples of curbing shall be submitted for approval only when requested by the Resident. The dimensions, shape, and other details shall be as shown on the plans."

712.06 Precast Concrete Units In the first paragraph, change "…ASTM C478M…" to "…AASHTO M199…" Delete the second paragraph and replace with the following; "Approved structural fibers may be used as a replacement of 6 x 6 #10 gauge welded wire fabric when used at an approved dosage rate for the construction of manhole and catch basin units. The material used shall be one of the products listed on the Maine Department of Transportation's Approved Product List of Structural Fiber Reinforcement." Delete the fifth paragraph and replace with the following; "The concrete mix design shall be approved by the Department. Concrete shall contain 6% air content, plus or minus 1½% tolerance when tested according to AASHTO T152. All concrete shall develop a minimum compressive strength of 28 MPa [4000 psi] in 28 days when tested according to AASHTO T22. The absorption of a specimen, when tested according to AASHTO T280, Test Method "A", shall not exceed nine percent of the dry mass."

Add the following:
"712.07 Tops, and Traps These metal units shall conform to the plan dimensions and to the following specification requirements for the designated materials.

Gray iron or ductile iron castings shall conform to the requirements of AASHTO M306 unless otherwise designated."

712.08 Corrugated Metal Units The units shall conform to plan dimensions and the metal to AASHTO M36/M36M. Bituminous coating, when specified, shall conform to AASHTO M190 Type A.

712.09 Catch Basin and Manhole Steps Steps for catch basins and for manholes shall conform to ASTM C478M [ASTM C478], Section 13 for either of the following material:

(a) Aluminum steps-ASTM B221M, [ASTM B211] Alloy 6061-T6 or 6005-T5.

(b) Reinforced plastic steps Steel reinforcing bar with injection molded plastic coating copolymer polypropylene. Polypropylene shall conform to ASTM D 4101.

712.23 Flashing Lights Flashing Lights shall be power operated or battery operated as specified.

(a) Power operated flashing lights shall consist of housing, adapters, lamps, sockets, reflectors, lens, hoods and other necessary equipment designed to give clearly visible signal indications within an angle of at least 45 degrees and from 3 to 90 m [10 to 300 ft] under all light and atmospheric conditions.

Two circuit flasher controllers with a two-circuit filter capable of providing alternate flashing operations at the rate of not less than 50 nor more than 60 flashes per minute shall be provided.

The lamps shall be 650 lumens, 120 volt traffic signal lamps with sockets constructed to properly focus and hold the lamp firmly in position.
The housing shall have a rotatable sun visor not less than 175 mm [7 in] in length designed to shield the lens.

Reflectors shall be of such design that light from a properly focused lamp will reflect the light rays parallel. Reflectors shall have a maximum diameter at the point of contact with the lens of approximately 200 mm [8 in].

The lens shall consist of a round one-piece convex amber material which, when mounted, shall have a visible diameter of approximately 200 mm [8 in]. They shall distribute light and not diffuse it. The distribution of the light shall be asymmetrical in a downward direction. The light distribution of the lens shall not be uniform, but shall consist of a small high intensity portion with narrow distribution for long distance throw and a larger low intensity portion with wide distribution for short distance throw. Lenses shall be marked to indicate the top and bottom of the lens.

(b) Battery operated flashing lights shall be self- illuminated by an electric lamp behind the lens. These lights shall also be externally illuminated by reflex-reflective elements built into the lens to enable it to be seen by reflex-reflection of the light from the headlights of oncoming traffic. The batteries must be entirely enclosed in a case. A locking device must secure the case. The light shall have a flash rate of not less than 50 nor more than 60 flashes per minute from minus 30 °C [minus 20 °F] to plus 65 °C [plus 150 °F]. The light shall have an on time of not less than 10 percent of the flash cycle. The light beam projected upon a surface perpendicular to the axis of the light beam shall produce a lighted rectangular projection whose minimum horizontal dimension shall be 5 degrees each side of the horizontal axis. The effective intensity shall not have an initial value greater than 15.0 candelas or drop below 4.0 candelas during the first 336 hours of continuous flashing. The illuminated lens shall appear to be uniformly bright over its entire illuminated surface when viewed from any point within an angle of 9 degrees each side of the vertical axis and 5 degrees each side of the horizontal axis. The lens shall not be less than 175 mm [7 in] in diameter including a reflex-reflector ring of 13 mm [½ in] minimum width around the periphery. The lens shall be yellow in color and have a minimum relative luminous transmittance of 0.440 with a luminance of 2854° Kelvin. The lens shall be one-piece construction. The lens material shall be plastic and meet the luminous transmission requirements of this specification. The case containing the

batteries and circuitry shall be constructed of a material capable of withstanding abuse equal to or greater than 1.21 mm thick steel [No. 18 U.S. Standard Gage Steel]. The housing and the lens frame, if of metal shall be properly cleaned, degreased and pretreated to promote adhesion. It shall be given one or more coats of enamel which, when dry shall completely obscure the metal. The enamel coating shall be of such quality that when the coated case is struck a light blow with a sharp tool, the paint will not chip or crack and if scratched with a knife will not powder. The case shall be so constructed and closed as to exclude moisture that would affect the proper operation of light. The case shall have a weep hole to allow the escape of moisture from condensation. Photoelectric controls, if provided, shall keep the light operating whenever the ambient light falls below 215 lx [20 foot candles]. Each light shall be plainly marked as to the manufacturer's name and model number.

If required by the Resident, certification as to conformance to these specifications shall be furnished based on results of tests made by an independent testing laboratory. All lights are subject to random inspection and testing. All necessary random samples shall be provided to the Resident upon request without cost to the Department. All such samples shall be returned to the Contractor upon completion of the tests.

712.32 Copper Tubing Copper tubing and fittings shall conform to the requirements of ASTM B88M Type A [ASTM B88, Type K] or better.

712.33 Non-metallic Pipe, Flexible Non-metallic pipe and pipe fittings shall be acceptable flexible pipe manufactured from virgin polyethylene polymer suitable for transmitting liquids intended for human or animal consumption.

712.34 Non-metallic Pipe, Rigid Non-metallic pipe shall be Schedule 40 polyvinylchloride (PVC) that meets the requirement of ASTM D1785. Fittings shall be of the same material.

712.341 Metallic Pipe Metallic pipe shall be ANSI, Standard B36.10, Schedule 40 steel pipe conforming to the requirements of ASTM A53 Types E or S, Grade B. End plates shall be steel conforming to ASTM A36/A36M.

Both the sleeve and end plates shall be hot dip galvanized. Pipe sleeve splices shall be welded splices with full penetration weld before galvanizing.

712.35 Epoxy Resin Epoxy resin for grouting or sealing shall consist of a mineral filled thixotropic, flexible epoxy resin having a pot life of approximately one hour at 10°C [50°F]. The grout shall be an approved product suitable for cementing steel dowels into the preformed holes of curb inlets and adjacent curbing. The sealant shall be an approved product, light gray in color and suitable for coating the surface.

712.36 Bituminous Curb The asphalt cement for bituminous curb shall be of the grade required for the wearing course, or shall be Viscosity Grade AC-20 meeting the current requirements of Subsection 702.01 Asphalt Cement. The aggregate shall conform to the requirements of Subsection 703.07. The coarse aggregate portion retained on the 2.36 mm [No. 8] sieve may be either crushed rock or crushed gravel.

The mineral constituents of the bituminous mixture shall be sized and graded and combined in a composite blend that will produce a stable durable curbing with an acceptable texture.

Bituminous material for curb shall meet the requirements of Section 403 - Hot Bituminous Pavement.

712.37 Precast Concrete Slab Portland cement concrete for precast slabs shall meet the requirements of Section 502 - Structural Concrete, Class A.

The slabs shall be precast to the dimension shown on the plans and cross section and in accordance with the Standard Detail plans for Concrete Sidewalk Slab. The surface shall be finished with a float finish in accordance with Subsection 502.14(c). Lift devices of sufficient strength to hold the slab while suspended from cables shall be cast into the top or back of the slab.

712.38 Stone Slab Stone slabs shall be of granite from an acceptable source, hard, durable, predominantly gray in color, free from seams which impair the structural integrity and be of smooth splitting character. Natural color variations characteristic of the deposit will be permitted. Exposed surfaces shall be free from drill holes or indications of drill holes. The granite slabs in any one section of backslope must be all the same finish.

The granite slabs shall be scabble dressed or sawed to an approximately true plane having no projections or depressions over 13 mm [½ in] under a 600 mm [2 ft] straightedge or over 25 mm [1 in] under a 1200 mm [4 ft] straightedge. The arris at the intersection of the top surface and exposed front face shall be pitched so that the arris line is uniform throughout the length of the installed slabs. The sides shall be square to the exposed face unless the slabs are to be set on a radius or other special condition which requires that the joints be cut to fit, but in any case shall be so finished that when the stones are placed side by side no space more than 20 mm [3/4 in] shall show in the joint for the full exposed height.

Liftpin holes in all sides will be allowed except on the exposed face.

SECTION 717
ROADSIDE IMPROVEMENT MATERIAL

717.03 C. Method #3 - Roadside Mixture #3 Change the seed proportions to the following:

Crown Vetch	25%
Perennial Lupine	25%
Red Clover	12.5%
Annual Rye	37.5%

717.05 Mulch Binder Change the third sentence to read as follows:

"Paper fiber mulch may be used as a binder at the rate of 2.3 kg/unit [5 lb/unit]."

SECTION 720
STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS

720.08 U-Channel Posts Change the first sentence from "…, U-Channel posts…" to "…, Rib Back U-Channel posts…"

SECTION 722
GEOTEXTILES

722.01 Stabilization/Reinforcement Geotextile Add the following to note #3; "The strengths specified in the columns labeled"<50%" and "≥ 50%" refer to the elongation at which the geotextile material was tested. For example; if a fabric is tested at 15% elongation then it must meet or exceed the minimum strength shown in the "<50%" column. Submittals must include the percent elongation at which the material was tested."

722.02 Drainage Geotextile Add the following to note #3; "The strengths specified in the columns labeled"<50%" and "≥ 50%" refer to the elongation at which the geotextile material was tested. For example; if a fabric is tested at 15% elongation then it must meet or exceed the minimum strength shown in the "<50%" column. Submittals must include the percent elongation at which the material was tested."

722.01 Erosion Control Geotextile Add the following note to Elongation in the Mechanical Property Table; "The strengths specified in the columns labeled"<50%" and "≥ 50%" refer to the elongation at which the geotextile material was tested. For example; if a fabric is tested at 15% elongation then it must meet or exceed the minimum strength shown in the "<50%" column. Submittals must include the percent elongation at which the material was tested."