Updated 01/06/06

STATE PROJECT

July 6, 2005
Supersedes August 4, 2004

BIDDING INSTRUCTIONS

FOR ALL PROJECTS:

1. Use pen and ink to complete all paper Bids.

2. As a minimum, the following must be received prior to the time of Bid opening:

   For a Paper 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 copies of the completed and signed Contract Offer, Agreement & Award form, e) a Bid Guaranty, and f) any other certifications or Bid requirements listed in the Bid Documents as due by Bid opening.

   For an Electronic Bid:
   a) a completed Bid using Expedite® software and submitted via the Bid Express™ web-based service, b) a Bid Guaranty (as described below) or a faxed copy of a Bid Bond (with original to be delivered within 72 hours), and c) any other certifications or Bid requirements listed in the Bid Documents as due by Bid opening.

3. Include prices for all required items in the Schedule of Items. ("Zero is not considered a Bid price.")

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. If a paper Bid is to be sent, Federal Express overnight delivery is suggested as the package is delivered directly to the DOT Headquarters Building in Augusta. Other means, such as U.S. Postal Service's Express Mail has proven not to be reliable.

IN ADDITION, FOR FEDERAL AID PROJECTS:

6. Complete the DBE Proposed Utilization form in the proper amounts, and deliver to the Contracts section by 4:30 PM on bid opening day

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 Specifications, 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 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 from our web site, and acknowledging receipt and incorporating those 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 contract Larry Childs at **Larry.Childs@maine.gov**.

NOTICE

For security and other reasons, all Bid Packages which are mailed, 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
PIN:
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
PIN:
Town:
Date of Bid Opening:
Name of Contractor:
This should not be much of a change for those of you who use Federal Express or similar services.

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

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

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:

_____

_____

_____

PRINCIPAL:

By_____

By:_____

By:_____

WITNESS

_____

_____

_____

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: _____

State of Maine

VENDOR FORM

For New Vendors & for Updates on Current Vendors

Special Instructions:

PLEASE PRINT CLEARLY

Return this form to:

*** = MUST BE COMPLETED TO PROCESS**

ONLY ONE NAME/VENDOR PER FORM

New Vendor	Address Change	Multi Address	Name Change	Contact Update	ID # Change

Social Security Number*
Individual or Sole Proprietor

S

Business name in "DBA" field below.

OR

Please fill in ONE.

Federal Taxpayer ID Number*
Corporation

E

Business name in "Name" field below.

This form will affect all transactions with ALL state agencies.

NEW:* **Remit to Address:** Individual or Business Name.	**OLD:** Old number:
Name*	Name
DBA or C/O	DBA or C/O
Address*	Address
Tel #*	Tel #

	Is this the same name on your Social Security card?	Acct #	
	If not, have you told Social Security about your name change?	Provider #	

Signature*

Contact Name

Print Name or Title

Accounts Receivable Contact Name

Date* (within 3 months)

Phone # if Different or for Contact Info

Vendor Indicators: Enter Y (Yes) For All Categories Listed Below That Apply To This Vendor

Dealer:		Manufacturer:		Factory Rep:	
Jobber:		Retailer:		Commodity:	
Individual:		Partnership:		Incorporated:	
Minority:		Small Business:		In-State:	

Information on State Agency Submitting Vendor Form

State Agency* & SHS #

Contact Person Name & Title*

Telephone #*

Send to: Maine Department of Transportation/ Contracts 16 SHS, Augusta, ME 04333-0014 Attn: Pat Brown

May-04

INSTRUCTIONS FOR COMPLETING VENDOR FORM

1. **Print Clearly**
2. **All sections marked with an * must be completed for processing**
3. **Send completed form to requesting State agency OR remit to address at bottom of form.**
4. **Do NOT send by Fax. Only originals will be accepted.**

FIELDS	**INFORMATION NEEDED FOR FIELD**
Special Instructions	*Instructions to Vendor from Agency requesting information.*
Return to	*The location of agency where the form is to be mailed back to. If none use address at bottom of form.*
Boxes above SSN/EIN Fields	Please check mark all that apply to the vendor. If other, please specify. If it's a new vendor only one will apply: "New Vendor"
Social Security Number	Individuals, individuals "doing business as", and individuals without a Federal Taxpayer ID #. Use if not using EIN
Federal Taxpayer ID Number*	Businesses or professionals providing services. (ID # needs to be use for REMITTANCE purposes.) Use if not using SSN
New	Current Information
Old	Old information (If another ID# had been used please put it next to "OLD")
Name	Individual's Name or Business Name. ONLY ONE name per a form.
DBA or C/O	"Doing business as" or "In Care Of"
Address	REMITTANCE ADDRESS - Street Address OR PO Box (one or the other)
Tel #	Phone Number of individual or business
Signature	Individual or authorized representative of individual or authorized representative of the business
Date	Current Date (no more than 3 months old)
Contact Name	Contact person at business
Accounts Receivable Contact Name	Contact person at business for accounts receivables.
Phone #	Phone for Act Rec Contact
Vendor Indicators	Indicate all that apply for the vendor, as needed
Agency Info	For Agency personnel submitting the form. Contact info incase of questions.

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 "Bid for building a Highway Maintenance Garage in the town of **Topsham**" will be received from contractors at the Reception Desk, Maine DOT Building, Child Street, Augusta, Maine, until 11:00 o'clock A.M. (prevailing time) on December 20, 2006 , and at that time and place publicly opened and read. **MDOT provides the option of electronic bidding. We 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. During this transition, dual bids (one paper, one electronic) will be accepted, with the paper copy taking precedence.**

Description: PIN 14062.11

Location: In Sagadahoc County, project is located Topsham

Outline of Work: Construction of a pre-engineered metal highway maintenance garage and other incidental work.

For general information regarding Bidding and Contracting procedures, contact Scott Bickford at (207)624-3410. Our webpage at http://www.state.me.us/mdot/project/design/homepg.htm 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 (207) 624-3007.

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 $24.00 ($27.00 by mail). Half size plans $12.00 ($15.00 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 $50,000 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 Federal Laws. This contract is subject to compliance with the Disadvantaged Business Enterprise program requirements as set forth by the Maine Department of Transportation.

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.state.me.us/mdot/project/design/homepg.htm

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

Augusta, Maine
November 29, 2006

JOHN E. DORITY
CHIEF ENGINEER

PIN 14062.11
Topsham Highway Maintenance Garage
August 3, 2004
Supercedes March 17, 2004

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)

CONTRACT ID: 014062.11 PROJECT(S): 014062.11

CONTRACTOR :_____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE DOLLARS	UNIT PRICE CTS	BID AMOUNT DOLLARS	BID AMOUNT CTS
		SECTION 0001				
0010	815.00 BUILDING HIGHWAY MAINTENANCE GARAGE	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

_____

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, PIN No. **14062.11**, for the **Topsham Highway Maintenance Garage** in the town/city of **Topsham**, County of **Sagadahoc**, 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 **September 28, 2007.** 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 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 as updated through advertisement, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds contained herein for construction of: PIN No. **14062.11**, for the **Topsham Highway Maintenance Garage** in the town/city of **Topsham**, County of **Sagadahoc**, 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

_____

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, PIN No. **14062.11**, for the **Topsham Highway Maintenance Garage** in the town/city of **Topsham**, County of **Sagadahoc**, 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 **September 28, 2007.** 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 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 as updated through advertisement, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds contained herein for construction of: PIN No. **14062.11**, for the **Topsham Highway Maintenance Garage** in the town/city of **Topsham**, County of **Sagadahoc**, 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 **West Eastport**, 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**, 2003**.** 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.

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 West Eastport, 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 on the date specified in the Engineer's "Notice to Commence 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 by 4:30pm on the day of bid opening to the Contracts Engineer.

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 _____ _____ **and 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 _____ _____ **and 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	……....

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.

State of Maine
Department of Labor
Bureau of Labor Standards
Technical Services Division
Augusta, Maine 04333-0045
Telephone (207) 624-6445

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 -------- Highway Maintenance Garage

Location of Project -- Topsham, Maine in Sagadahoc County

2006 Fair Minimum Wage Rates
Building 2 Sagadahoc 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	$16.00	$0.65	$16.65	Laborer - Skilled	$13.50	$0.65	$14.15
Asphalt Raker	$12.25	$0.33	$12.58	Loader Op - Front End	$14.50	$2.56	$17.06
Assembler - Metal Bldg	$11.75	$3.58	$15.33	Mechanic - Maintenance	$18.05	$4.26	$22.31
Backhoe Loader Operator	$15.00	$2.45	$17.45	Mechanic - Refrigeration	$18.50	$3.36	$21.86
Boom Truck Operator	$16.00	$3.52	$19.52	Millwright	$17.00	$0.00	$17.00
Bricklayer	$22.00	$1.51	$23.51	Oil/Fuel Burner Serv & Instr	$18.00	$4.48	$22.48
Bulldozer Operator	$16.00	$3.19	$19.19	Painter	$12.00	$3.00	$15.00
Carpenter	$17.00	$2.22	$19.22	Paperhanger	$13.00	$0.00	$13.00
Carpenter - Acoustical	$12.00	$2.02	$14.02	Paver - Bituminous	$14.50	$0.66	$15.16
Carpenter - Rough	$12.75	$2.18	$14.93	Pile Driver Operator	$19.59	$4.73	$24.32
Cement Mason/Finisher	$15.00	$0.00	$15.00	Pipe/Stm/Sprkler Fitter	$19.50	$4.14	$23.64
Commun Equip Installer	$21.00	$2.58	$23.58	Pipelayer	$14.75	$1.45	$16.20
Concrete Pump Operator	$18.50	$2.53	$21.03	Plumber (Licensed)	$18.50	$2.91	$21.41
Crane Operator =>15 Tons	$20.00	$4.65	$24.65	Plumber Hlpr/Trainee (Lic)	$13.00	$2.25	$15.25
Crusher Plant Operator	$14.40	$3.25	$17.65	Pump Installer	$14.84	$2.54	$17.38
Dry-Wall Applicator	$19.00	$0.00	$19.00	Rigger	$16.50	$4.71	$21.21
Dry-Wall Taper & Finisher	$18.00	$0.35	$18.35	Roller Operator - Earth	$13.50	$5.15	$18.65
Electrician	$20.03	$7.24	$27.27	Roller Oprtr - Pavement	$15.25	$5.39	$20.64
Electrician Hlpr (Licensed)	$13.50	$1.95	$15.45	Roofer	$14.00	$1.02	$15.02
Elevator Constrctr/Installer	$35.80	$13.52	$49.32	Screed Operator	$15.58	$6.56	$22.14
Excavator Operator	$15.00	$3.89	$18.89	Sheet Metal Worker	$16.50	$3.02	$19.52
Floor Layer	$12.75	$0.22	$12.97	Stone Mason	$15.00	$2.29	$17.29
Glazier	$13.83	$1.95	$15.78	Tile Setter	$17.50	$2.90	$20.40
Grader/Scraper Operator	$16.25	$2.41	$18.66	Truck Driver - Light	$13.00	$0.67	$13.67
Insulation Installer	$14.25	$0.91	$15.16	Truck Driver - Medium	$12.53	$1.81	$14.34
Ironworker - Reinforcing	$18.00	$3.13	$21.13	Truck Driver - Heavy	$13.33	$2.31	$15.64
Ironworker - Structural	$18.00	$9.20	$27.20	Truck Driver - Tractor Trailer	$12.38	$1.65	$14.03
Laborers/Helper/Tender	$12.00	$1.05	$13.05	Truck Driver - Mixer (Cement)	$10.00	$0.19	$10.19

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: B2-086-2006

Filing Date: October 3, 2006

Expiration Date: 12-31-2006

A true copy

Attest: William A. Peabody

William A. Peabody
Director
Bureau of Labor Standards

Special Provision
Section 107
Time

(Contract Time)

1. The completion date for this project is September 28, 2007.

SPECIAL PROVISION
Section 656

SOIL EROSION AND SEDIMENTATION CONTROL

656.01 GENERAL

Furnish all labor, equipment and materials necessary to prevent erosion and sedimentation from occurring on areas disturbed by construction and any other areas designated on the plans. The Contractor shall be responsible for providing interim protection on disturbed areas until a sufficient vegetative cover has been established. The Contractor shall comply with the requirements of MDOT Standard Specification Section 656, including submission of a SEWPCP.

656.02 EROSION CONTROL METHODS, MATERIALS, AND MAINTENANCE

Erosion control methods, materials, and maintenance shall be per MDOT standard specifications and details unless otherwise noted in the contract documents.

656.03 IMPLEMENTATION SCHEDULE

The following implementation plans for soil erosion and sedimentation control measures will be utilized throughout the project.

Item	Time for Completion
Silt Fence & Hay Bale Installation	1 week prior to excavation
Temporary On-Site Soil Stabilization (Seed & Mulch) • Temporary Road Banks • Soil Stockpiles	2 weeks
Ditch Check Dams	within 1 week
Permanent Seeding	within 2 weeks of completion of each segment
Maintenance	once/week and immediately after significant rainfall

656.04 PERMIT CONDITIONS

Comply with all applicable regulations and permit conditions. If additional permits are needed for proposed work or work methods, obtain them and comply with all requirements. Maine DOT has obtained a Site Location of Development Permit and an NRPA Permit. These may be viewed upon request.

656.05 PROTECTED NATURAL RESOURCES

There is a wetland on the proposed site. An NRPA Teir 2 permit has been received for the disturbance of this wetland. The wetland is not of special significance.

656.06 WINTER CONSTRUCTION PLAN

656.06.01 GENERAL

The winter construction period is from November 1 through April 15. If the construction site is not stabilized with pavement, a road gravel base, 75% mature vegetation cover or riprap by November 15 then the site will be protected with over-winter stabilization. An area considered open is any area not stabilized with pavement; vegetation, mulching, erosion control mats, riprap or gravel base on a road. Winter excavation and earthwork shall be completed such that no more than 1 acre of the site is without stabilization at any one time. Limit the exposed area to those areas in which work is expected to be undertaken during the proceeding 15 days and that can be mulched in one day prior to any snow event. All areas shall be considered to be denuded until the subbase gravel is installed in roadway areas or the areas of future loam and seed have been loamed, seeded and mulched. Hay and straw mulch rate shall be a minimum of 150 lbs./1,000 s.f. (3 tons/acre) and shall be properly anchored.

Continuation of earthwork operations on additional areas shall not begin until the exposed soil surface on the area being worked has been stabilized, in order to minimize areas without erosion control protection.

656.06.02 SOIL STOCKPILES

Stockpiles of soil or subsoil will be mulched for over-winter protection with hay or straw at twice the normal rate or at 150 lbs./1,000 s.f. (3 tons per acre) or with a four-inch layer of woodwaste erosion control mix. This will be done within 24 hours of stocking and re-established prior to any rainfall or snowfall. Any soil stockpile will not be placed (even covered with hay or straw) within 100 feet from any natural resources.

656.06.03 NATURAL RESOURCES PROTECTION

Any areas within 100 feet from any natural resources, if not stabilized with a minimum of 75% mature vegetation catch, shall be mulched by December 1 and anchored with plastic netting or protected with erosion control mats.

During winter construction, a double line of sediment barriers (i.e. silt fence backed with hay bales or erosion control mix) will be placed between any natural resource and the disturbed area.

Projects crossing the natural resource shall be protected a minimum distance of 100 feet on either side from the resource. Existing projects not stabilized by December 1 shall be protected with the second line of sediment barrier to ensure functionality during the spring thaw and rains.

656.06.04 SEDIMENT BARRIERS

During frozen conditions, double sediment barriers shall consist of woodwaste filter berms as frozen soil prevents the proper installation of hay bales and sediment silt fences.

656.06.05 MULCHING

All area shall be considered to be denuded until areas of future loam and seed have been loamed, seeded and mulched. Hay and straw mulch shall be applied at a rate of 150 lb. per 1,000 square feed or 3 tons/acre (twice the normal accepted rate of 45 lbs./1,000 s.f. or 1.5 tons/acre) and shall be properly anchored. Mulch shall not be spread on top of snow. The snow will be removed down to a one-inch depth or less prior to application.

After each day of final grading, the area will be properly stabilized with anchored hay or straw or erosion control matting.

An area shall be considered to have been stabilized when exposed surfaces have been either mulched with straw or hay at a rate of 150 lb. per 1,000 square feet (3 tons/acre) and adequately anchored that ground surface is not visible through the mulch.

Between the dates of November 1 and April 15, all mulch shall be anchored by either peg line, mulch netting, asphalt emulsion chemical, track or wood cellulose fiber. When ground surface is not visible through the mulch then cover is sufficient. After November 1st, mulch and anchoring of all bare soil shall occur at the end of each final grading work day.

656.06.06 MULCHING ON SLOPES AND DITCHES

Slopes shall not be left exposed for any extended time of work suspension unless fully mulched and anchored with peg and netting or with erosion control blankets.

Mulching shall be applied at a rate of 230 lbs./1,000 s.f. on all slopes greater than 8%.
Mulch netting shall be used to anchor mulch in all drainage ways with a slope greater than 3% for slopes exposed to direct winds and for all other slopes greater than 8%.

Erosion control mix can be used to substitute erosion control blankets on all slopes except ditches.

656.06.07 SEEDING

Between the dates of October 15 and April 1st, loam or seed will not be required. During periods of above freezing temperatures finished areas shall be fine graded and either protected with mulch or temporarily seeded and mulched until such time as the final treatment can be applied. If the date is after November 1st and if the exposed area has been loamed, final graded with a uniform surface, then the area may be dormant seeded at a rate of 3 times higher than specified for permanent seed and then mulched.

Dormant seeding may be selected to be placed prior to the placement of mulch and fabric netting anchored with staples.

If dormant seeding is used for the site, all disturbed areas shall receive 4" of loam and seed at an application rate of 4 lbs./1,000 s.f. All areas seeded during the winter will be inspected in the spring for adequate catch. All areas sufficiently vegetated (less than 75% catch) shall be revegetated by replacing loam, seed and mulch.

If dormant seeding is not used for the site, all disturbed areas shall be revegetated in the spring.

656.06.08 TRENCH DEWATERING AND TEMPORARY STREAM DIVERSION

Water from construction trench dewatering or temporary stream diversion will pass first through a filter bag or secondary containment structure (e.g. hay bale lined pool) prior to discharge. The discharge site shall be selected to avoid flooding, icing, and sediment discharges to a protected resource. In no case shall the filter bag or containment structure be located within 100 feet of a protected natural resource.

656.06.09 INSPECTION AND MONITORING

Maintenance measures shall be applied as needed during the entire construction season. After each rainfall, snow storm or period of thawing and runoff, the site contractor shall perform a visual inspection of all installed erosion control measures and perform repairs as needed to insure their continuous function. Following the temporary and/or final seeding and mulching, the contractor shall in the spring inspect and repair any damages and/or unestablished spots. Established vegetative cover means a minimum of 85% to 90% of areas vegetated with vigorous growth.

656.07 BASIS OF PAYMENT

Installation and maintenance of erosion and sedimentation control is incidental to pay item #659.10.

Topsham
14062.11
Highway Maintenance Garage

SPECIAL PROVISION
SECTION 815
Buildings

534.10 Description The work shall consist of the construction of the building and the associated work in accordance with the contract documents.

534.50 Method of Measurement Buildings will measured for payment as one lump sum, complete in place and accepted.

Within ten days after signing the Notice to Proceed, the Contractor shall submit a schedule of values for the following items. This breakdown shall show on the applications for payment. The Contractor will prepare a monthly requisition form which shall be signed by both the Inspector and Contractor's representative indicating complete agreement and approval of quantities listed. Applications shall be made on approved forms.

Site Work

The work under this item includes all labor and materials required to provide site work for the building expansion area as described in the Contract Documents. This includes but is not necessarily limited to rip-rap, grading, erosion control, excavation, SDR 26 PVC pipe and fittings, connection to existing manhole, clearing, grubbing, stripping, compaction, fill, base gravel, screened gravel, crushed stone, layout, tree trimming, loam and seed and cleanup.

Concrete

The work under this item includes all labor and materials required to provide the concrete work as described in the Contract Documents. This includes but is not necessarily limited to cast-in-place reinforced concrete and appurtenances. This item also includes supplying and installing the 4" diameter perforated perimeter drain pipe, crushed stone, filter fabric, and 4" PVC pipe to daylight.

Carpentry

The work under this item includes all labor and materials required to provide a complete building addition as described in the Contract Documents. This includes but is not necessarily limited to windows and doors, door operators, building construction, framing, strapping, vapor barrier, sheathing, trusses, roofing, ridge vent, insulation, sheetrock, siding and trim, fasteners, and any other items necessary to provide a complete building addition.

The work under this item also includes all labor and materials required to provide a complete paint and finish system as called for in the Contract Documents. This also includes but is not necessarily limited to all paint, stains, polyurathanes, clean up and any other items necessary to provide a complete paint / finish system.

Plumbing and Heating

The work under this item includes all labor and materials required to complete the plumbing / heating systems for the building addition as called for in the Contract Documents. This includes but is not necessarily limited to floor drains, unit heaters, Aquastat, hydronic baseboard, copper piping, circular pumps, thermostats, and any other items necessary to complete to plumbing and heating systems.

Electrical

The work under this item includes all labor and materials to provide a complete electrical system as described in the Contract Documents. This includes but is not necessarily limited to all exterior and interior electrical work. Included are any and all conduits (interior and exterior), wire, main service breakers, exterior and interior lighting fixtures and wiring, all circuit breakers and wiring, panel boards, meter trim, complete alarm systems and wiring, heater wiring, telephone wiring, thermostat wiring and other associated work needed to provide complete electrical systems for the building renovations and as specified.

534.60 Basis of Payment The accepted building will be paid for at the contract lump sum price which shall be full compensation for the respective items as indicated on the plans and as called for in the contract, including connection of the building to utilities installed under site contract, MaineDOT PIN 14602.10 and the excavation, grading and backfill to construct the foundation and floor .

Payment will be made under:

	Pay Item	Pay Unit
815.00	Buildings	Lump Sum

October 12, 2006
Supersedes August 31, 2006

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
801(02)	Drives on Non-Sidewalk Sections	4/04/03
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

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:
104.5.9 Landscape Subcontractors The Contractor shall retain only Landscape Subcontractors that are certified by the Department's Environmental Office Landscape Unit.

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

106.6 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"

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 More Than	Up to and Including	Amount of Liquidated Damages per Calendar Day
$0	$100,000	$100
$100,000	$300,000	$200
$300,000	$500,000	$400
$500,000	$1,000,000	$575
$1,000,000	$2,000,000	$750
$2,000,000	$4,000,000	$900
$4,000,000	and more	$1,875

SECTION 108
PAYMENT

108.4 Payment for Materials Obtained and Stored First paragraph, second sentence, delete the words "…Delivered on or near the Work site at acceptable storage places."

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: "Equitable Adjustments will be established by mutual Agreement for compensable items listed in Section 109.7.3-Compensable Items, based upon Unit or Lump Sum Prices. 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 Replace with the following: "The Contractor is entitled to compensation for the following items, with respect to agreed upon Unit or Lump Sum Prices:

1. Labor expenses for non-salaried Workers and salaried foremen.

2. Costs for Materials.

3. A 15 % markup on the totals of Items 1 and 2 of this subsection 109.7.3 for home office overhead and profit of the Contractor, its Subcontractors and suppliers, and any lower tier Subcontractors or suppliers, with no mark-ups on mark-ups.

4. Cost for Equipment, based on Blue Book Rates or leased rates, as set forth in Section 109.7.5(C), or the Contractor's Actual Costs if determined by the Department to be lower.
5. Costs for extended job-site overhead.

6. Time.

7. Subcontractor quoted Work, as set forth below in Section 109.7.5 (F)."

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 Quoted 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."

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."

SECTION 401
HOT MIX ASPHALT PAVEMENT

401.18 Quality Control Method A & B Make the following change to paragraph a. QCP Administrator; in the final sentence, change "…certified as a Plant Technician or Paving Inspector…" to "…certified as a Quality Assurance Technologist…"

401.201 Method A Under a. Lot Size, add the following; "Each lot will be divided into a minimum of four sublots for mix properties and five sublots for percent TMD."

401.203 Method C Second paragraph, fourth sentence, change "…Method B and C Acceptance…" to "…Method B and C Acceptance Limits, Method C the Department will pay the contract unit price. If the test results for each 250 Mg [275 ton] increment are outside these limits, the following deductions (Table 7b) shall…"

SECTION 402
PAVEMENT SMOOTHNESS

Add the following: "Projects to have their pavement smoothness analyzed in accordance with this Specification will be so noted in Special Provision 403 - Bituminous Box."
"402.02 Lot Size Lot size for smoothness will be 1000 lane-meters [3000 lane-feet]. A sublot will consist of 20 lane-meters [50 lane-feet]. Partial lots will be included in the previous lot if less than one-half the size of a normal lot. If greater than one-half the normal lot size, it will be tested as a separate lot."

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 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…"

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…"

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."

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 107-1999 Class 2 risk exposure and clearly identify the wearer as a person, shall be visible at a minimum distance of 300 m [1000 ft], and shall wear a hardhat with retroreflectivity. For nighttime conditions, Class 3 apparel should be considered, retroreflective or flashing SLOW/STOP paddles shall be used, and except in emergency situations the flagger station shall be illuminated to assure visibility."

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."

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."

703.18 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…"

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."

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

SECTION 712
MISCELLANEOUS HIGHWAY MATERIALS

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."

TABLE OF CONTENTS

SPECIAL CONDITIONS

1. STATUTORY REQUIREMENTS IN GENERAL

The Contractor shall keep himself fully informed of all existing and future State and Federal laws and municipal ordinances and regulations in any manner affecting those engaged or employed in the work, or the materials used or employed in the work, or in anyway affecting the conduct of the work, and of all such orders and decrees having any jurisdiction or authority over the same and of all provisions required by law to be a part of this contract, all of which provisions are hereby incorporated by reference and made a part thereof. If any discrepancy or inconsistency is discovered in the drawings or specifications or contract for this work in relation to any such law, ordinance, regulation, order or decree, he shall report the same to the Engineer in writing. He shall at all times himself observe and comply with, and shall cause all of his agents and employees to observe and comply with all such existing and future laws, ordinances, regulations, orders and decrees; and shall protect and indemnify the Owner and Engineer and all of its and their officers, agents, and servants against any claim or liability arising from or based on the violation of such law, ordinance, regulation, order or decree whether by himself or his employees or subcontractors.

2. COORDINATION WITH OWNER

Coordination with Town will be a requirement of this Contract.

3. SAFETY REGULATIONS

The Contractor shall familiarize himself with OSHA regulations and observe same at all times.

4. CONSTRUCTION MATERIALS

The Contractor will furnish all materials required for this project.

5. SUBCONTRACTOR APPROVAL

The Owner and Engineer reserve the right to review the qualifications of any and all subcontractors and major suppliers working under this Contract. If requested by the Engineer, the Contractor shall submit a complete report on the qualifications of any subcontractor or major material supplier.

6. SPECIAL CARE

The Contractor shall take special care with all hazardous materials that may be used in

conjunction with the project. There shall be no dumping of motor oil, salt, form oils, etc. on the site. When possible all such materials will be stored off site.

7. MATERIALS PAYMENT

Partial payments will be made to the Contractor for materials delivered to the project site and properly stored. Requisition for payment shall be accompanied by proof of payment in the form of both signed receipts and copies of canceled checks. Accurate records shall be kept of all materials used and an inventory of unused materials shall be made prior to each monthly requisition.

8. PRE-CONSTRUCTION CONFERENCE

The Contractor, the major suppliers, and the major subcontractors shall attend a pre-construction conference so that each and all parties are fully aware of the terms and conditions of this contract.

9. SUBMITTALS OF SHOP DRAWINGS

The Contractor shall submit to the Engineer four (4) copies of shop drawings, cuts and descriptions of all material and equipment for the Engineer's review and approval.

Any material or equipment submitted for approval which is arranged differently or of a different physical size from that shown or specified shall be accompanied by shop drawings indicating the different arrangements of size and the method of making the various connections to the equipment. The final result will be compatible with the system or structure as designed.

Submittals for minor materials and equipment may be waived with the approval of the Engineer.

10. SUPPLEMENTAL GENERAL CONDITIONS

The Contractor shall become thoroughly familiar with the Supplemental Conditions in Division 1 of these Contract Documents.

DIVISION 1

GENERAL REQUIREMENTS

SECTION 0101
SUMMARY OF WORK

0101.01 LOCATION OF WORK

All work under this contract is located in FAIRFIELD, MAINE.

0101.02 WORK UNDER THIS CONTRACT

Work under this contract is generally described as the construction of the FAIRFIELD PUBLIC WORKS GARAGE

0101.03 ABBREVIATIONS AND SYMBOLS

The following abbreviations may be used in these specifications:

AASHO	-American Association of State Highway Officials
ANSI	-American National Standards Institute
AWWA	-American Water Works Association
ACI	-American Concrete Institute
ASTM	-American Society of Testing Material
AISC	-American Institute of Steel Construction
ASCE	-American Society of Civil Engineers
CPI	-Clay Pipe Institute

Where reference is made to a publication by one of the above mentioned or other association, it is understood that the latest revisions thereof shall apply unless otherwise designated.

In case of conflict, this specification will take precedence over the above references.

SECTION 0130
SUBMITTALS

0130.01 GENERAL

A. Construction Schedule:

1. Submit schedule of values for each bid item for use in determining partial payments.

2. Submit time schedule prior to commencement of work.

3. Provide complete sequence of construction by activity.

4. Engineer will review schedules and return review copy.

5. Update schedule showing changes occurring since previous submission.

6. Distribute copies of reviewed schedules to subcontractors and other concerned parties.

    a. Instruct recipients to report any inability to comply and provide detailed explanation with suggested remedies.

B. Shop Drawings, Project Data, Samples:

1. Submit shop drawings, project data and samples for all products, materials and equipment proposed for the completed project.

SECTION 0131
PROJECT RECORD DOCUMENTS

0131.01 GENERAL

Work included: Keep accurate record documents for all additions, substitutions of material, variations in work, and any other additions or revisions to the Contract.

0131.02 MAINTENANCE OF DOCUMENTS

A. Maintain at job site, one copy of:

1. Contract Documents
2. Specifications
3. Addenda
4. Reviewed Shop Drawings
5. Change Orders
6. Any other modifications to the Contract
7. Field Test Reports

B. Store documents in approved files and racks apart from documents used for construction.

C. Maintain documents in clean, dry, legible condition.

D. Do not use record documents for construction purposes.

E. Make documents available at all times for inspection by Engineer and Owner.

0131.03 RECORDING

A. The General Contractor will be required to provide 5 copies of a complete, bound, organized record of all materials, systems, manufacturer's literature, etc. installed during the course of the project. This includes but is not limited to: manufacturer's catalog cut, specification sheet, installation guide, operation and troubleshooting guide, and any and all information booklets available for each piece of equipment installed in this contract. A transmittal form stating the General Contractor's name and address, as well as subcontractor's and supplier's name and address shall precede each piece of equipment or division. This record material is to be used as an operational aid to the Engineer and Owner when the facility is placed into operation.

B. Label each document "Project Record" in large high printed letters.

C. Keep record documents current and do not permanently conceal any work until required information has been recorded.

D. Contract Drawings: Legibly mark to record actual construction:

1. Depths of various elements of foundations in relation to survey datum.

2. Horizontal and vertical locations of underground utilities and appurtenances referenced to permanent surface improvements.

a) Shall include all water, sewer, steam, air, instrumentation and fuel piping systems and all electrical and communications circuits including all direct burial cables.

b) Whenever any existing utility line is uncovered in the course of excavation for new utility installation, location dimensions for such lines shall be recorded.

c) Method of location and recording shall have prior approval of the Engineer.

3. Location of house service connection points (when applicable) with any utility (water, sewer, electrical, telephone, etc.) And the location of capped or plugged ends of these same house service lines.

a) Locations shall be recorded by accurate “swing ties” or other methods approved by the Engineer.

b) Method of location and recording shall have prior approval of the Engineer.

4. Location of internal utilities and appurtenances concealed in construction referenced to visible an accessible features of structure.

a) Electrical equipment such as conduits, piping, instrumentation located in slabs, walls and ceiling and to include approximate locations and routing.

b) Schematic diagram of actual electric conduit or instrument tubing routing between equipment and supply.

5. Field changes of dimension and detail and changes made by Change Order of Field Order.

6. Details not on original Contract Drawings.

E. Specifications and Addenda: Legibly mark up each Section to record:

1. Manufacture, trade name, catalog number, and supplier of each product and item of equipment actually installed.

2. Changes made by Change Order of Field Order.

0131.04 SUBMITTAL

A. At the completion of the project, deliver record documents to the Engineer.

B. Accompany submittal with transmittal letter, in duplicate, containing:

1. Date, project title and number

2. Contractor's name and address

3. Title and number of each record document with certification that each document is complete and accurate

4. Signature of Contractor, or his authorized representative

C. Failure to record these locations on the Project Record Drawings shall result in non-approval of the final payment to the Contractor and / or if contract time (as specified in the Contract and / or modified in accordance with the Standard General Conditions of the Construction Contract) has elapsed, this shall be grounds for the enactment of the liquidated damages as specified.

SECTION 0140
QUALITY CONTROL

0140.01 GENERAL

A. Testing

It is the Contractor's sole responsibility to provide and use only new materials, new products and new equipment that meet the requirements of the plans and specifications and will result in a completed project that is durable and of high quality in all respects. The Engineer or Owner may request samples of any material that the Contractor proposes to use. Such samples shall be of sufficient size and quantity to allow appropriate testing of the sample. The Owner shall bear all cost of obtaining and providing such sample. The Owner shall bear all costs of testing the sample. However, if testing shows that a sample does not meet the requirements of the plans and specifications, the Contractor shall reimburse the Owner for all costs incurred by the Owner as a result of testing the sample.

B. Inspection Services

The Owner or Engineer or his representative will provide whatever inspection that he feels is necessary. Such inspection in no way reduces the Contractor's responsibility for supervision of quality control. The Contractor shall cooperate fully in the Owner's or Engineer's inspection efforts. The Contractor shall keep the inspector informed of work in progress as well as the schedule of work to be done. The Contractor shall allow complete access to the project by the inspector.

C. General

The Contractor will at all times be responsible for maintaining all areas of the job site. This is to include periods of work suspended due to cold weather. When the Owner or Engineer recognizes defective conditions, the contractor will be notified. The Contractor will be given a reasonable amount of time depending on the degree of the problem to correct the condition.

Examples of defective conditions shall include, but not necessarily be limited to, trench settlement, erosion, pot holes, washouts, etc.

D. Quality Assurance

The Contractor will produce and conform to quality assurance programs as outlined in various sections of the technical specifications. These quality assurance programs are intended to provide for greater reliability of those items of work where failure or a malfunctioning system would pose severe problems to the Owner, human health or the environment.

SECTION 0164
SUBSTITUTIONS AND PRODUCT OPTIONS

0164.01 GENERAL

In these specifications and on accompanying drawings there are specified and shown certain materials or pieces of equipment which are deemed most suitable for the service anticipated. This is not done, however, to eliminate other materials or equipment equally as good and efficient. The Contractor shall prepare his bid on the particular materials and equipment specified. Following award of the Contract, should the Contractor decide to use some other make of machinery, equipment or material, he shall submit to the Owner a written request for such a change and in same shall state the advantage to the Owner, the savings or additional cost involved in this substitution along with complete literature, specifications and working drawing of the equipment so that a realistic review can be made. The determination as to whether or not such a change will be permitted rests solely with the Owner. In the event the request is not allowed, the Contractor shall execute the Contract and supply bond on the basis of his providing materials, equipment and doing the work in absolute accord with the specifications.

DIVISION 2

SITE WORK

SECTION 0201
SITE PREPARATION

0201.01 DESCRIPTION

Site preparation shall consist of supplying all labor, materials and equipment necessary to prepare the site for excavation and / or construction. It shall include clearing, grubbing, and stripping.

0201.02 GENERAL

Included in this section shall be the removal of all material, both natural and man-made above ground in the areas designated on the plan. Vegetation shall be totally removed and disposed of in a satisfactory manner. Man-made material including pavement, curbing, structures and other items so designated shall be removed and disposed of as directed, unless such material is amenable to reuse, in which case it shall be stored. Soils stripped from any designated areas shall be stockpiled for reuse unless such soils are classified as unsuitable by the Engineer. Pavement and / or curbing shall be cut prior to excavation.

0201.03 CONSTRUCTION METHODS

In vegetated areas designated for clearing, grubbing and stripping, the Contractor shall cut and remove all trees, brush, and undergrowth, but shall protect all vegetation outside the limits of the areas designated and any trees so designated within the area. Any branches which must be removed from standing trees shall be removed in a manner in accordance with established arborists' practices. All scars and cuts in standing timber shall be painted with Tree Kote or equal.

In areas to be stripped, the Contractor shall strip the surface to a sufficient depth to expose a uniform subgrade of soil.

Before removing any structure, the Contractor shall obtain approval of the party having jurisdiction.

SECTION 0213
CLEARING, GRUBBING & STRIPPING

0213.01 DEFINITION

Clearing, grubbing and stripping shall consist of supplying all labor, materials and equipment necessary to prepare the site for excavation and / or construction.

0213.02 GENERAL

Included in this section shall be the removal of all material, both natural and man-made above ground in the areas designated on the plan. Vegetation shall be totally removed and disposed of in a manner acceptable to the Engineer. Man-made material including pavement, curbing, structures and other items so designated shall be removed and disposed of if directed, unless such material is amenable to reuse, in which case it shall be stored, if directed. Soils stripped from any designated areas shall be stockpiled for reuse unless such soils are classified as unsuitable in subsequent sections of these specifications.

0213.03 CONSTRUCTION METHODS

In vegetated areas designated for clearing, grubbing and stripping, the Contractor shall cut and remove all trees, brush, and undergrowth, but shall protect all vegetation outside the limits of the areas designated and any trees so designated withing the area. Any branches which must be removed from standing trees shall be removed in a manner in accordance with established arborists' practices. All scars and cuts in standing timber shall be painted with Tree Kote or approved equal.

In areas to be stripped, the Contractor shall strip the surface to a sufficient depth to expose a uniform subgrade of soil, or as directed by the Engineer.

Before removing any structure, the Contractor shall obtain approval of the Engineer.

SECTION 0214
CLEANUP

0214.01 DESCRIPTION

Cleanup shall consist of all work required to maintain all work areas in a neat and orderly condition. Cleanup shall be considered incidental to the appropriate items of the contract.

0214.02 GENERAL

The Contractor shall remove all debris and surplus material resulting from the work, and shall maintain all property, both public and private, in a condition acceptable to the party having jurisdiction. Cleanup of trench areas shall be done concurrently with pipe installation. The Contractor will provide cleanup of the roadways, lawns and trench areas within 500 feet of the point of pipe installation. If requested by the Owner and / or Engineer, pipe installation shall cease and all efforts shall center on cleanup. No compensation shall be paid the Contractor because of the stoppage of the pipe installation for cleanup.

The Contractor shall obtain written permission from private property owners before disturbing any private property and or storing any equipment or materials on private property.

Private property owners shall be satisfied with restoration of private properties. At the request of the Owner or Engineer the Contractor shall obtain written satisfaction or lien waiver from any private property owner effected as a result of construction.

SECTION 0217
EXISTING UTILITIES

0217.01 GENERAL

The Engineer has made a careful attempt to locate all existing utilities that are in the area of the project. These existing utilities are shown on the Contract Drawings. "Existing Utilities" does not include individual house water or sewer services.

0217.02 INTERFERENCES WITH EXISTING UTILITIES

When an interference with an existing utility is shown on the Contract Drawings, the interference shall be rectified by the Contractor at no additional cost to the Owner.

When an interference with an existing utility is NOT shown on the Contract Drawings, the interference shall be rectified by the Contractor and the Contractor shall be reimbursed for the cost as a change order.

The Contractor shall not make any claims against the Owner for delays in the progress of his work that are less than one day in duration and are caused by an interference not shown on the Contract Drawings. A delay shall exist when the work cannot progress because of an interference and no other work on the project is available for the men and machinery at that time. If the delay lasts more than one day, the Contractor may be compensated, based on hourly payroll and equipment rental rate, by the Owner for the actual costs for each day after the initial day. Compensation will not be based on the amount of work that might have been accomplished.

If an interference occurs with a water main and the work is required to be done by the local water district, or if the Contractor requests assistance from the water district, the Contractor shall reimburse the water district for materials, labor, and equipment directly associated with correcting the interference. If the water district does not choose to perform the work or assist the Contractor, then the Contractor will be fully responsible for correcting the interference.

0217.03 HOUSE SERVICES

No effort has been made by the Engineer to show existing individual house utility services.

It shall be the Contractor's responsibility to make every effort possible to locate all existing services prior to excavating and every reasonable caution shall be taken to protect and preserve the integrity of these lines.

The Engineer may assist the Contractor in locating services but the responsibility for their location and integrity is solely the Contractor's.

The Contractor shall make no claims against the Owner for services not shown on the

Contract Drawings.

If services are interrupted, the Contractor shall immediately make suitable repairs to the service.

The Engineer shall inspect all repairs to broken or damaged services and approval of the repairs must be obtained by the Contractor from the Engineer prior to covering the work. The Contractor shall remain responsible for the integrity of broken services even after the work has been backfilled. The Engineer has complete authority to stop work if the Contractor is doing excessive damage to the services and / or utilities and appropriate repairs are not being made or other precautions taken to minimize damage to existing utility services.

When new service pipes are to be connected to existing services, the Contractor shall be solely responsible for locating the existing service and making the necessary connection. Only pipe adapters may be used for connections Mortared joints will not be allowed.

When new services are to be provided but not connected to existing services, the Engineer will direct the location of the end of new service.

SECTION 0222
STRUCTURE EXCAVATION

0222.01 DEFINITION

All excavation for foundations and subsurface structures shall be covered by this specification and shall be classified as either earth excavation or ledge excavation.

Earth excavation shall consist of removal of all grades of soil sufficiently friable to be worked with an excavator. This shall include any other material less than one cubic yard in volume.

Ledge excavation shall consist of removal of all material not classified as earth and more than one cubic yard in volume.

Structure excavation shall include furnishing all equipment, labor and materials necessary to perform the excavation and backfill as indicated on the plans and herein specified.

0222.02 GENERAL

All structure excavation shall provide sufficient working area to construct the structure. The contractor shall provide all sheeting, shoring, bracing, and coffer damming necessary to insure the stability of the sides of the excavation. The contractor shall provide all pumping and / or drainage necessary to maintain a dry, firm bottom.

0222.03 UNSUITABLE MATERIAL

Where unsuitable material is encountered it shall not be incorporated into the work. Unsuitable materials shall be replaced with suitable material in accordance with Division 2 of the specifications.

0222.04 BLASTING AND LEDGE EXCAVATION

The contractor shall remove all overburden from any ledge encountered and shall contact the Engineer for measurement of its volume prior to removal.

All blasting shall comply with all federal, state, and local regulations. Warning signs shall be posted whenever blasting occurs. No blasting shall be permitted without blasting mats or sufficient soil overburden.

All ledge removed shall be considered unsuitable material, and as such, is governed by Section 0223.03. If over blasting occurs, the Contractor shall replace this ledge with material suitable to the Engineer at the Contractor's expense. If material is required to replace ledge removed, its costs will be considered incidental to the ledge removal price as delineated in the Bid Schedule.

0222.05 CONSTRUCTION METHODS

The Contractor shall at all times keep the excavation free of water and saturated soil. Water removed from the excavation shall be disposed of so as not to interfere with adjacent areas. The bottom of the excavations shall be kept dry and firm at all times.

In addition to the requirements of Section 0226, the Contractor shall comply with the following. No backfilling around concrete walls shall be permitted until they have attained sufficient strength to support all loads to which they will be subjected. Compaction of backfill around structures shall be accomplished by water jetting, puddling, tamping, or rolling. Backfill shall be compacted to a density of 95% of the optimum density as determined by the modified proctor test. In place density shall be determined by ASTM D 1556.

0222.06 OVER EXCAVATION

Any excavation beyond the prescribed limits, as shown on the plans or specified herein, shall be filled with crushed stone to the necessary grade at the Contractor's expense.

0222.07 EXCESS EXCAVATED MATERIAL

Any excess material encountered in this project shall remain the property of the Owner. The Contractor will be required to remove this material to a site(s) selected by the Owner within a two mile radius of the Contractor's excess material stockpile.

SECTION 0224
TRENCH EXCAVATION

0224.01 DEFINITION

All trench excavation shall be classified as either earth excavation or ledge excavation.

Earth excavation shall consist of removal of all grades of soil sufficiently friable to be worked with an excavator. This shall include any other material less than 1 cubic yard in volume.

Ledge excavation shall consist of removal, disposal, and replacement of all materials encountered that cannot be excavated with a one (1) cubic yard capacity power shovel without drilling and blasting, or continuous use of a ripper or other special equipment, except such materials that are classified as earth excavation.

0224.02 GENERAL

Information on underground structures and utilities shown on the plans is not guaranteed for accuracy nor completeness, therefore, when excavation approaches such utilities, manual excavation shall be used to locate them.

The Contractor shall be held liable for responsible excavation practices throughout the project. This responsibility shall include the undisturbed maintenance of all structures, above or below grade, which may be affected by the excavation.

The Contractor shall not have any right of property on any excavated material.

No excavations shall be continued into fill material which has been on site less than 12 months without approval of the Engineer.

0224.03 CONSTRUCTION METHODS

A. Ledge

All trench excavations shall be extended to at least 6" below the depth the pipe is to be laid, as shown on the drawings, and backfilled to the required grade with crushed stone or screened gravel. The cost of the crushed stone or screened gravel shall be incidental to the cost to ledge removal. This bed shall be thoroughly compacted by approved means before any pipe is laid.

Trench width shall be at least 16" greater than the diameter of the pipe, but in no case less than 36". At all times the trench shall be kept free of water.

The cost of approval material to replace the excavated ledge shall be considered incidental to the cost of ledge removal.

The pay limits for ledge shall be limited to a maximum width of 3'-0" and to 6" below the invert of the pipe.

B. Earth

All ductile iron pipe shall be laid on undisturbed bottom of trench and at the depth shown on the drawings and specified herein. Trench width shall be at least 16" greater than the diameter of the pipe, but in no case less than 36".

At all times the trench shall be kept free of water. The Contractor shall furnish all labor, equipment and materials necessary to dewater the trench.

Trench bottom shall be excavated below pipe bells so that pipe lays flat on trench bottom.

0224.04 OVER EXCAVATION

Any excavation beyond the prescribed limits shown on the drawings or of Section 0224.03 shall be filled with crushed stone or screened gravel to the necessary grade at the Contractor's expense. This shall include the removal of over blasted ledge.

0224.05 UNSUITABLE MATERIAL

The Engineer shall have the right to reject material as unsuitable for backfill.

Any such material shall be removed from the site and disposed of properly at the contractor's expense.

When so directed by the Engineer, the Contractor shall excavate unsuitable material to a depth of 12" below the bottom of pipe and backfill to grade with crushed stone or screened gravel. Payment shall be according to the supplemental unit prices.

0224.06 SHORING AND BRACING

The Contractor shall establish requirements of trench shoring and bracing to comply with local codes and authorities having jurisdiction.

Materials for shoring and bracing, such as sheet piling, uprights, stringers, and cross-braces shall be provided by the Contractor in good serviceable condition.

The Contractor shall maintain shoring and bracing in excavations regardless of time period excavations will be open. Carry down shoring and bracing as excavation progresses.

0224.07 BLASTING AND LEDGE EXCAVATION

The Contractor shall remove all overburden from any ledge encountered and shall contact the Engineer for measurement of its volume prior to removal.

All blasting shall comply with all federal, state, and local regulations. Warning signs shall be posted whenever blasting occurs. No blasting shall be permitted without blasting mats or sufficient soil overburden.

All ledge shall be replaced with material suitable to the Engineer and the cost of this replacement material shall be considered incidental to the ledge removal cost.

0224.08 RIGHTS-OF-WAY

The Contractor shall maintain clear passage along all rights-of-way affected by the construction. No permanent rights-of-way shall be closed without prior written approval of the proper civil authorities.

0224.09 PROTECTION OF THE PUBLIC

Improved streets, roads, driveways and sidewalks shall be kept open over or around all trenches and excavations and the use of these rendered safe for public use, as required by OSHA. All open excavations, equipment and materials impinging on rights-of-way shall be clearly marked by barricades and flashing yellow lanterns from dusk to dawn.

SECTION 0226
BACKFILLING

0226.01 DEFINITION

Backfilling shall be defined as replacement and compaction of soil in excavation for the purposes of protecting underground construction, maintaining grades, or providing stable foundation material for above ground construction.

0226.02 GENERAL

The scope of work entailed in backfilling shall include furnishing all labor, equipment, and material necessary to completely fill any excavation.

0226.03 MATERIAL

Generally the excavated soil shall be suitable as backfill and shall be replaced in the excavation. Exceptions include frozen fill, fill containing large stones, stumps or other rubble, and any material deemed unsuitable by the Engineer.

When unsuitable material is encountered, the Contractor shall replace it with fill acceptable to the Engineer. This shall also apply to any additional fill required except to replace ledge.

0226.04 CONSTRUCTION METHODS

Backfilling shall proceed as soon as possible after all underground construction has been completed. Underground construction includes encasement of pipe as specified in Section 0224.03, removal of any form work or false work, inspection and testing of any structure by the Engineer at his request, and removal of all trash and debris. Fill material shall be placed in layers not to exceed 12" and compacted to a density equal to at least 95% of the optimum density determined by the modified proctor test. Compacting may be done by hand, vibrating compactor, roller, water, or any combination. With any method the Contractor shall take care not to damage or disturb any structure including his own being backfilled and shall be held liable for any such damage.

Backfill shall be extended to the grade indicated on the plans, compacted and graded. Excavations in paved areas shall be paved according to specification as soon as possible. Other areas shall be loamed and seeded or otherwise restored to a condition equal to or better than that of adjacent areas. The Contractor shall not withdraw any sheeting without the approval of the Engineer. All voids created by such removal shall be filled and compacted. Any backfilling which does not conform to these specifications, or which settles differentially, shall be excavated to a depth sufficient to correct the problem and refilled as required.

SECTION 0229
BORROW AND BEDDING MATERIAL

0229.01 DEFINITION

This section is intended to control the quality of materials and work involved in any permanent placement of borrow or bedding.

0229.02 GENERAL

The Contractor shall furnish all materials, equipment and labor necessary to place and compact all required borrow and bedding. Optimum moisture content shall be as determined by the modified proctor test. Borrow shall be free of frozen material, peat, rubbish, and other debris and other material described as unsuitable in Division 2.

0229.03 COMMON BORROW

Common borrow shall consist of earth suitable for fill or embankment construction. It shall meet the following criteria:

Moisture content	less than 4% above optimum
Particle size	75 mm - .005 mm
D 10 (effective size)	.06 mm - .04 mm
Uniformity coefficient	6 - 10

0229.04 GRAVEL BORROW

Gravel borrow shall be screened or crushed gravel of hard durable particles free from vegetable matter, lumps or balls of clay and other deleterious substances. The maximum stone size is 6". The gradation of the part that passes a 3 inch sieve shall be an even gradation and meet the requirements of the following table.

Sieve Designation	% by Weight Passing
1/4"	25 - 70
No. 40	0 - 30
No. 200	0 - 5

0229.05 SCREENED GRAVEL

This material shall consist of clean, hard, durable particles free of dirt, vegetation, disintegrated or laminated soils, and other unsuitable material.

The gradation of that part which passes a 3" sieve shall meet the requirements of M.D.O.T. Type A aggregate. The maximum stone size is 2". Crushed stone may be substituted for screened gravel.

0229.06 CRUSHED STONE

Crushed stone shall be uniformly graded stone fragments ranging in size from 3/4" to 1 1/4" unless otherwise specified. Stone shall meet the specifications of cleanliness for screened gravel.

0229.07 CONCRETE FILL

Concrete fill shall have a minimum 28 day compressive strength of 2000 psi.

0229.08 PLACEMENT AND COMPACTION

Crushed stone and screened gravel shall be placed in lifts which will compact to a 6" maximum layer. Borrow shall be placed in 12" maximum lifts. Compaction shall be accomplished with mechanical, manual, or vibrational methods to a minimum density equal to 95% of maximum density. Maximum density shall be determined at optimum moisture content in accordance with the latest revision of ASTM D1557. Field testing for the density achieved shall be in accordance with the latest revision of ASTM D1556. Testing shall be performed at no expense to the Contractor.

SECTION 0283
LOAM AND SEED

0283.01 DEFINITION

Loaming and seeding shall consist of supplying all equipment, labor and materials necessary to provide healthy grass cover over areas disturbed by construction and any other such areas as may be designated on the plan.

0283.02 GENERAL

It is the intent of this specification that the Contractor shall be responsible for establishing and maintaining the grass cover in areas disturbed by his operations, and areas so designated on the plan. Such responsibility shall extend 12 months from project completion.

0283.03 MATERIALS

Grass seed shall have the following composition by weight:

20% Kentucky Blue Grass
10% Red Top
20% Stalren Rye Grass
45% Creeping Red Fescue
5% Dutch White Clover

Lime shall be ground limestone containing not less than 85% total carbonate. At least 90% shall pass through a No. 20 sieve and at least 50% shall pass through a No. 100 sieve.

Fertilizer shall be commercial fertilizer with the following minimum percentages:

10% available nitrogen (75% organic)
10% available phosphoric acid
10% available potash

Quantities of lime, fertilizer and seed shall be per MDOT specifications.

Mulch shall be clean hay not more than one (1) year old.

The Contractor shall furnish invoices to the Engineer certifying that the above specifications have been met for all seed, lime and fertilizer.

Topsoil shall be natural, friable clay loam free of stones, weeds, and other vegetable matter, roots, rubble, and other material which might hinder the planting, growth or maintenance of the areas. The minimum depth of loam shall be 4".

0283.05 CONSTRUCTION METHODS

The Contractor may use any method of grading, loaming and seeding he may choose. All seeded areas shall be mulched with hay or cellulose applied at the rate of 40 - 45 lbs. (1 bale) to approximately 300 sq. ft. of area. The result shall be a firm sod with healthy grass growth sufficient to prevent any erosion of the soil.

DIVISION 3

CONCRETE

SECTION 0310

CONCRETE FORM WORK

0310.01 GENERAL

The Contractor shall not use earth cuts as forms for vertical surfaces, unless otherwise specified herein.

0310.02 MATERIALS

A. FORMS shall be of wood, metal or other approved material that will not adversely affect the surface of the concrete and that will produce or facilitate obtaining the specified surface finish of the concrete.

1. Wood forms shall be commercial standard Douglas Fir, moisture-resistant, concrete-form plywood not less than 5-ply and at least ½ inch thick.

2. Metal forms shall be of approved type that will produce surfaces equal to those specified for wood forms.

B. FORM OIL shall be non-staining and shall not cause softening of the concrete, impede the wetting of surfaces to be cured with water or curing compound, nor be otherwise deleterious. Form oil shall be approved by the FDA and EPA for use with potable water when the concrete surface will come in contact with potable water.

C. FORM TIES shall be of an approved design, fixed or adjustable in length and free of devices that will leave a hole larger than 7/8 inch in diameter in surface on concrete. When form ties are used where discoloration of the concrete would be objectionable, the metal remaining after the removal of the external parts of the ties shall be not less than 1 inch below the finished surface. Form ties shall have a rubber water stop to impede seepage.

0310.03 DESIGN

A. Design form work in accordance with “Recommended Practice for Concrete Form work: (ACI 347)” and wind loads as specified by the local building code.

B. Provide temporary openings at the base of column forms and wall forms and at other points where necessary to facilitate cleaning and observation immediately before concrete is deposited.

C. Form accessories to be partially or wholly embedded in the concrete, such as ties and hangers, shall be a commercially manufactured type. Nonfabricated wire is not acceptable. The portion remaining within the concrete shall leave no metal within 1 inch of the surface when the concrete is exposed to view. Spreader cones on ties shall

not exceed 1 inch diameter.

0310.04 TOLERANCES

A. Construct so that concrete surfaces will conform to the tolerances of ACI 347.

B. The maximum deflection of facing materials reflected in concrete surfaces exposed to view shall be 1/240 of the span between structural members. Provide moldings or chamfer strips in the corners of column, beam, and wall forms where the concrete will be exposed to view.

C. Camber form work to compensate for anticipated deflections in the form work due to the weight and pressure of the fresh concrete and construction loads.

D. Provide positive means of adjustment (wedges or jacks) of shores and struts to take up settlement during concrete placing operation. Brace shores and struts securely against lateral deflections.

0310.05 PREPARATION OF FORM SURFACES

A. Construct forms sufficiently tight to prevent leakage of grout or cement plaster. Swell board forms having joints opened by shrinkage of wood until closed by wetting before concrete is placed.

B. Seal plywood and other wood surfaces not subject to shrinkage against absorption of moisture from the concrete by either (1) a field applied, approved form oil or sealer, or (2) a factory applied nonabsorptive liner.

C. Coat forms prior to placing reinforcing steel. Do not allow coating material to stand in puddles in forms nor to come in contact with concrete against which fresh concrete will be placed.

D. Where as-cast finishes are required, do not coat form surfaces with materials which will impart a stain to the concrete. Where the finished surface is required to be painted, coat form surfaces with materials compatible with type of paint to be used.

E. Clean all form surfaces before re-use.

F. Set edge forms and intermediate screed strips accurately to produce the designed elevations and contours; they shall be sufficiently strong to support vibrating bridge screed or roller pipe screeds if finish specified requires use of such equipment. Align concrete surface to the contours of screed strips by use of strike-off templates or approved compacting type screeds.

G. When the form work is cambered, set screeds to a like camber to maintain the proper concrete thicknesses.

0310.06 REMOVAL OF FORMS

A. Delay removal of form work for columns, walls, sides of beams, and other parts not supporting the weight of the concrete until concrete has hardened sufficiently to resist damage form removal operations.

B. Leave form work for beam soffits and slabs and other parts that support the weight of concrete, in place until concrete has reached its specified 28-day strength, unless otherwise specified or permitted.

C. When shored and other vertical supports are so arranged that the form facing material may be removed without loosening or disturbing the shores and supports, the facing material may be removed at an earlier age as specified or permitted.

0310.07 RESHORING

A. Perform reshoring so that at no time will large areas of new construction be required to support their own weight. While reshoring is under way, do not permit live loads on the new construction. Leave reshores in place until concrete has reached its specified 28-day strength, unless otherwise specified or permitted.

B. Reshore floors supporting under set concrete above or leave their original shores in place. The reshores shall have at least one-half the load capacity of the shores above and shall be distributed in approximately the same pattern as those above. Leave these reshores in place until the freshly placed concrete has reached 75 percent of its specified 28-day strength, unless otherwise specified or permitted.

0310.08 REMOVAL STRENGTH

A. When form work removal or reshoring removal is based on the concrete reaching its specified 28-day strength (or a specified percentage thereof) the concrete shall be presumed to have reached this strength when either of the following conditions has been met:

1. When testing cylinders, field cured under the most unfavorable conditions prevailing for any portion of the concrete represented, have reached the required strength . Except for the field curing and age at test, the cylinders shall be molded and tested as specified in Division 3.

2. When the concrete has been cured as specified for the same length of time as the age at test of laboratory cured cylinders which reached the required strength. The length of time the concrete has been cured in the field shall be determined by the cumulative number of days or fractions thereof, not necessarily consecutive, during which temperature of the air in contact with the concrete is above 50 degrees F and the concrete has been damp or thoroughly sealed from evaporation and loss of moisture.

SECTION 0320
CONCRETE REINFORCEMENT

0320.01 GENERAL

Concrete reinforcement shall consist of furnishing all plant, labor, equipment and materials necessary to install reinforcement in the concrete as shown on the accompanying plans.

0320.02 MATERIALS

Reinforcing bars shall be deformed billet steel bars. Bars shall have a minimum yield point of 60,000 psi. And shall be substantially free of mill scale, oil, rust, dirt or other foreign matter. In the cases of mill scale and rust, it is sufficient merely to remove large flakes, wire brushing or sanding is not recommended. Reinforcing bars shall conform to ASTM specification A615, grades 60 and go as indicated on the drawings.

0320.03 DRAWINGS AND SCHEDULES

The Contractor shall submit to the Engineer detailed drawings showing bending and cutting schedules, splice locations, and placement locations for all reinforcing steel. No reinforcement shall be erected until the Engineer has given written approval of these drawings and schedules.

0320.04 FABRICATING AND PLACING REINFORCING

A. Fabrication Tolerances

1. Sheared length:	+/- 1 inch
2. Depth of truss bars:	+ 0, - ½ inch
3. Stirrups, ties and spirals:	+/- ½ inch
4. All other bends:	+/- 1 inch

B. Placement Tolerances

1. Concrete cover to formed surfaces:	+/- 1/4 inch
2. Minimum spacing between bars:	+/- 1/4 inch
3. Top bars in slabs and beams:	
a) Members 8 inch deep or less:	+/- 1/4 inch
b) Members more than 8 inches but not over 2 feet deep:	+/- ½ inch
c) Members more than 2 feet deep:	+/- 1 inch
d) Crosswise of members:	spaced evenly within 2 inches
e) Lengthwise of members:	+/- 2 inches

C. Bar Relocation

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

D. Support

Support all reinforcing bars and wire them together to prevent displacement by construction loads or the placing of concrete beyond the tolerances specified herein. On ground and where necessary, supporting metal chairs shall be used. Use metal, or other approved bar chairs and spacers overform workk. Use galvanized or plastic accessories where concrete surface will be exposed to the weather in the finished structure or where rust would impair architectural finishes.

E. Splices in Fabric, Load Bearing

Lap splice welded wire fabric designated as load carrying reinforcement so that the overlap measured between outermost cross wires plus 2 inches. Support welded wire fabric as required for reinforcing bars.

F. Splices in Fabric, Non Load Bearing

Lap splice welded wire fabric not specifically designated as load carrying reinforcement so that the overlap measured between outermost cross wires of each fabric sheet is not less than 2 inches; extend welded wire fabric across supporting beams and walls and to within 4 inches of concrete edges; extend welded wire fabric through contraction joints and construction joints except keyed joints in slabs on ground. Position welded wire fabric during placing of concrete to insure its proper position in the slab.

G. Bar Splices

Offset vertical bars in columns at least one bar diameter at lapped splices. To insure proper placement, provide templates for all column dowels.

Obtain Owner's Representative's approval of all splices not shown on the project drawings.

H. Bending Bars

Unless permitted, do not bend reinforcement partially embedded in hardened concrete. Field bending shall not be allowed.

SECTION 0331
CAST-IN-PLACE CONCRETE

0331.01 GENERAL

The Contractor shall furnish all labor, materials, equipment and incidentals required to prepare and construct all cast-in-place concrete shown on the drawings.

0331.02 MATERIALS

A. Cement shall conform to ASTM Designation C-150 as revised, Type II.

B. Aggregates shall conform to the Standard Specification for Concrete Aggregates, ASTM Designation C-33 as revised.

C. Sand shall be medium gradation with fineness modules of 2.60 to 2.90.

D. Coarse Aggregates shall not exceed 1 - ½ inches for mass concrete and 3/4 inch for reinforced slabs.

E. Water shall be from an approved water supply and free of oil, acid, salt, alkali, organics or other foreign matter.

F. Air Entraining Agent shall conform to ASTM Designation C-260 and shall be used in all concrete.

0331.03 PROPORTIONING

Concrete shall be a homogenous mixture of Portland Cement, water, and fine and coarse aggregates as specified and within limits stated herein.

Concrete shall be proportioned by weights. The proportion of ingredients shall be selected to produce proper placability, durability, strength, and other properties. The mixture shall be proportioned so it will work readily into rock voids, but will not slump down the slope face or cause the materials to segregate.

If it is found impossible to obtain concrete of the desired placability and workability with the proportions specified, the Contractor shall make such changes in aggregate weights as may be authorized by the Engineer to adjust the workability to a satisfactory condition.

A. Cement: A bag of cement shall be considered to weigh 94 lbs.

B. Water: One gallon of water shall be considered to weigh 8.33 lbs.

C. Admixtures: shall be proportioned in accordance with manufacturer’s recommendations or as determined by trail batches.

Reference for the proportioning and mix design shall be the Portland Cement Association manual “Design and Control of Concrete Mixes”, latest edition.

Proportioning requirements are specified as follows:

28 Day Compressive Strength =	4,000 psi
Maximum Size Coarse Aggregate =	1"
% Air Entrainment =	5.0 +/- 1
Minimum / Maximum Slump* =	1" to 3"
Minimum Cement Content #/cy =	564
Maximum W/C Ratio =	.45

* High range water reducers may be allowed by the Department. If high range water reducers are used the maximum slump shall be 7”.

0331.04 CONSTRUCTION METHODS

A. Forms: The Contractor shall design, furnish, erect forms as required for concrete structures and as specified in Section 0310. Forms shall be of sufficient strength and adequate to retain concrete to design dimensions. Special steel ring forms may be required for cast-in-place manhole based to accept precast wall sections. All forms shall be removed prior to backfilling. The Contractor shall consult with the Engineer on any forming or control guides he wishes to use in placing the concrete.

B. Concrete shall attain a 28-day strength of not less than 4,000 psi. Concrete proportioning, mixing, placing, curing, and protection shall be in accordance with accepted practice as amplified in “Design and Control of Concrete Mixtures” by the Portland Cement Association. The contractor shall comply with recommendations in ACI 302.1R for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces. All interior concrete floor slabs shall be finished true and smooth by finishing machine.

C. Truck Mixers shall be permitted only when the mixers and their operation produce a batch as discharged which meets an approved consistency, mix and grading. Retempering of concrete will not be permitted without approval of the Engineer. Elapsed time between batching and final discharge at the job site shall not exceed 1 - 1 ½ hours. Truck mixers shall be equipped with:

1. Accurate means of measuring mixing water used from the tank on the mixer.

2. Means of verifying the accuracy of this water measurement.

3. A device for counting the number of revolutions of the mixing drum.

4. Facilities for addition of water under such pressure and so directed that the water will be added uniformly from front to back on the mixer.

D. All rock surfaces upon which concrete is to be placed shall be moistened immediately before placement of concrete, but shall be free from standing water, mud, or debris, when the concrete is placed.

E. Curing

Protect all new concrete against injury from weather and construction. Provide moist curing above 50 degrees F for at least 7 days. Walls and vertical surfaces shall be covered continuously with saturated burlap or two coats of Thompson's waterseal, approved curing compound or other approved means. Horizontal surfaces shall be kept wet for the seven day curing period. Do initial curing immediately following finishing operation. Keep concrete continuously moist at least overnight. Use one of the following materials or methods:

1. Ponding of continuously sprinkling.

2. Absorptive mat or fabric kept continuously wet.

3. Continuous steam (not exceeding 150 degrees F) or vapor mist wet.

4. Curing compounds conforming to "Specifications for Liquid Membrane- Forming Compounds for Curing Concrete" (ASTM C309). Apply such compounds in accordance with recommendations of manufacturer; do not use on any surfaces against which additional concrete or other cementitious finished materials are to be bonded, not on surfaces specified herein on which such curing is prohibited.

Protect finished surfaces from direct sunlight. In cold weather, provide 350 day degrees of heat.

Protect freshly deposited concrete from premature drying and excessively hot or cold temperatures, maintain minimal moisture loss at relatively constant temperature for period of time necessary for hydration of the cement and proper hardening of the concrete.

Continue final curing until the cumulative number of days or fractions thereof, not necessarily consecutive, during which temperature of the air in contact with the concrete is above 50 degrees F, totals 7 days.

Prevent rapid drying at the end of the curing period.

Keep steel forms which are heated by the sun, and all wood forms in contact with the concrete, wet during the final curing period. If forms are to be removed during the curing period, cure by one of the above curing materials or methods immediately. Continue such curing for the remainder of the curing period.

F. 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 Department. 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.

0331.05 TESTING

Concrete testing shall be performed by the Department or their representative according to standard practice at the discretion of the Owner or his representative.

0331.06 CONTROL JOINTS

Control joints, type, location, and method to be coordinated by the Contractor with the Engineer.

SECTION 0344
PRECAST ITEMS

0344.01 GENERAL

Copies of shop drawings for the pump chambers shall be sent to the Engineer for approval.

0344.02 MATERIALS

Pump Chambers - Superior Concrete or approved equal, capacities as shown on the plans. All precast items shall be designed by the manufacturer to safely support the imposed loads.

0344.03 INSTALLATION

Locate as shown on the plans.

Waterproof exterior of pump chambers with 2 coats of bitumastic paint. Caulk all interior joints with Sikaflex 1A and grout all exterior joints with a non-shrink grout.

Backfilling - sand and gravel - topsoil on surface.

SECTION 0357
MANHOLES

0357.01 GENERAL

A. Manhole manufacturer is to submit to the Engineer all descriptive literature and recommended method of installation. This literature is to include any shop drawings.

B. Manholes are to be stored to prevent physical damage and protected during transportation and installation.

0357.02 MATERIALS

A. Precast concrete manholes to have 4000 psi concrete construction and have acquired 75% of their ultimate compressive strength before being shipped to the jobsite. Manholes shall have factory cast holes to the proper location and elevation as shown on the Contract Drawings. Manhole sections shall be joined with butyl rubber kent seal No. 2. Minimum thickness of the reinforced barrel sections and base will be 5 inches. The tops of the cones shall be 8 inches thick to accomodate bricks. Two coats of bituminous waterproofing shall be applied to the outside of all manholes. Damaged manholes shall be rejected.

B. Mortar to be used in the construction of inverts and tops to by Type II Portland cement (one part), sand (2 parts) and hydrated lime (not over 10 lbs. per bag of cement).

C. Manhole steps shall be polypropylene plastic coated steel.

D. Frames and covers will be 24" diameter clear opening as shown on the Contract Drawings and will be clearly marked “sewer”. The castings shall be of good quality even grained cast iron and shall be free of lumps, blisters, scales, and other defects. Manhole frames will have six equally spaced guide braces. Manhole covers will have two lift holes and shall be matched to the frames with machined surfaces. Factory coat the covers and frames with a smooth nonbrittle coat of coal tar pitch varnish.

E. The pipe sleeves shall be lock joint flexible sleeves which will be cast into the manhole base. These sleeves will be capable of allowing substantial off center misalignment.

0357.03 INSTALLATION

A. Manhole bases will be installed before laying sewer pipe to the manhole. The manhole base will be set on a compacted gravel bed. Once the sewer pipe has been connected to

the manhole, barrel sections will be installed after kent sealing the joints. There will be a pipe joint within 36 inches of the manhole base.

B. Manhole inverts will be installed using bricks and mortar as shown on the Contract Drawings. The trough shall be at least to the crown of the pipe. The tables shall slope toward the trough for drainage.

0357.04 TESTING

All manholes may be subject to a static hydraulic leakage test. Piping entering the manholes shall be plugged with plugs approved by the Engineer and the manhole filled to the rim elevation with water. If at the end of twenty-four (24) hours, there is a noticeable drop in the level of the water in the manhole, the manhole shall be pumped out, all joints caulked with an approved material and the test repeated until the manhole is considered to be watertight.

DIVISION 5

METALS

SECTION 0519
HATCHES

0519.01 GENERAL

The Contractor shall furnish and install all labor, equipment, materials as specified herein and as shown on the drawings.

0519.02 MATERIALS

Hatches shall be manufactured by the Bilco Company or equal and by approval of the Engineer. They shall conform to the following schedule.

0519.03 HATCH SCHEDULE

The following schedule is based on the models of hatches as manufactured by Bilco. This is intended to be a performance standard if the Contractor wishes to substitute different hatches.

Hatch Schedule

Location	#	Model#	Hatch Opening	Description
Pump Station	1	J-AL	2' - 6" x 4' - 0"	Hinge on 4' - 0" side

0519.04 INSTALLATION

Installation shall be according to manufacturer’s recommendations and as shown on the drawings.

SECTION 0550
METAL FABRICATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division I Specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK:

A. Definition: Metal fabrications include items made from iron and steel shapes, plates, bars, strips, tubes, pipes and castings which are not a part of structural steel or other metal systems specified elsewhere.

B. Extent: Of metal fabrications is indicated on drawings and schedules.

C. Types: Of work in this section include metal fabrication for:

Rough hardware
Miscellaneous framing and supports
Miscellaneous steel trim

1.3 SUBMITTALS:

A. Product Data: Submit manufacturer's specifications, anchor details and installation instructions for products used in miscellaneous metal fabrications, including paint products and grout.

B. Shop Drawings: Submit shop drawings for fabrication and erection of miscellaneous metal fabrications. Include plans, elevations and details of sections and connections. Show anchorage and accessory items. Provide templates for anchor and bolt installation By others.

Where materials or fabrications are indicated to comply with certain requirements for design loadings include structural computations, material properties and other Information needed for structural analysis.

C. Samples: Submit 2 sets of representative samples of materials and finished products as may be requested by Engineer.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Ferrous Metals:

1. Metal Surfaces, General: For fabrication of miscellaneous metal work which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness.

B. Paints

1. Shop Primer for Ferrous Metal: Manufacturer's or Fabricator's Standard, fast-curing lead-free, "universal" primer; selected for good resistance to normal atmosphere corrosion, for compatibility with finish paint systems indicated and for capability to provide a sound foundation for field-applied topcoats despite prolonged exposure; complying with performance requirements of FS TT-P-645.

C. Steel Deck

1. Furnish steel deck in locations shown on the plans. Material shall be equal to 20 gauge Lock Form #P15LF as manufactured by Roll Form Products, Inc. Deck shall be galvanized. The deck shall be designed for a 10 psf live load and dead load of 110 psf. Submit shop drawings and installation procedures to Engineer for approval.

D. Light Gauge Steel Framing

1. Studs and runners shall be screw type, complying with ASTM C645. Provide studs of the sizes shown with runners of compatible size for friction fit to studs. Fabricate from 25 gauge steel with manufacturer's standard zinc protective coating.

2.2 FABRICATION, GENERAL:

A. Workmanship: Use materials of size and thickness indicated or, if not indicated, as required to produce strength and durability in finished product for use intended. Work to dimensions indicated or accepted on shop drawings,using proven details of fabrication and support. Use type of materials indicated or specified for various components of work.

B. Shop Painting: Apply shop primer to surfaces of metal fabrications except those Which are galvanized or as indicated to be embedded in concrete or masonry, unless otherwise indicated, and in compliance with requirements of SSPC-PA1 "Paint Application Specification No. 1" for shop painting.

PART 3 - EXECUTION

3.1 PREPARATION:

A. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication, where possible. Do not delay job progress; allow for trimming and fitting where taking field measurements before fabrication might delay work.

B. Coordinate and furnish: Anchorages, setting drawings, diagrams, templates, instructions, and directions for installation of anchorages, such as concrete inserts, sleeves, anchor bolts and miscellaneous items having integral anchors, which are to be embedded in concrete or masonry construction. Coordinate delivery of such items to project site.

3.2 INSTALLATION:

A. General:

1. Fastening to In-Place Construction: Provide anchorage devices and fasteners Where necessary for securing miscellaneous metal fabrications to in-place construction; including, threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws and other connectors as required.

3.3 LIGHT GAUGE METAL FRAMING

A. Manufacturer's instructions shall be followed to install metal framing and accessories unless otherwise shown or specified.

B. Isolate partitions from structural elements as shown to prevent transfer of structural loads or movements to partitions.

3.4 ADJUST AND CLEAN:

A. Touch-Up Painting: Cleaning and touch-up painting of field welds, bolted connections and abraded areas of the shop paint on miscellaneous metal is specified in Division 9 of these specifications.

DIVISION 6

CARPENTRY

SECTION 0620
CARPENTRY

0620.01 GENERAL

Perform all carpentry and furnish and install all materials as specified in the Contract Documents. Coordinate all carpentry work with other trades and provide carpentry assistance as required by other trades.

0620.02 RELATED WORK SPECIFIED ELSEWHERE

Roofing and insulation are specified in Division 7. Doors and windows are specified in Division 8. Finishes are specified in Division 9.

0620.03 MATERIAL PROTECTION

Only new undamaged materials are to be used. Store all materials under cover and in such a manner as to ensure proper ventilation and drainage. Protect materials from damage and weather. Protect materials from extreme changes in temperature and humidity.

Store materials out of the way of traffic and shore up off the ground. Keep materials clearly identified according to size and grade. Do not allow the installation of damaged or substandard materials.

0620.04 MATERIALS

SILLS: Sill plates shall be pressure treated lumber of the dimensions shown on the plans. Install foam sill sealer between sill and foundation. Sill shall be bolted securely to the foundation with ½" diameter anchor bolts spaced 4' o.c. maximum.

FRAMING LUMBER: Framing lumber shall be kiln dried structural grade native spruce. All lumber shall be dressed four sides and shall bear the grade mark of the appropriate inspection bureau grading to conform with the rules of the Lumber Manufacturer's Association. Unit dimensions of lumber are "nominal" unless otherwise noted.

TIMBERS THICKER THAN 2": Timbers thicker than 2" shall be douglas fir, No. 1 structural.

PLYWOOD: See Section 0995.

EXTERIOR WOOD TRIM: All exposed exterior wood trim shall be No. 2 pine or better. Exterior trim that is to be covered with vinyl or aluminum shall be No. 4 pine or better.

INTERIOR WOOD TRIM: All interior wood trim shall be clear pine. Finger-jointed trim will be allowed for surfaces that are to be painted and not stained. Casing shall be 2 ½" colonial styles. Base shall be 3 ½" plastic / rubber type.

NAILS: All exterior nails shall be galvanized or aluminum. All interior and framing nails shall be common wire nails.

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

0620.05 INSTALLATION

A. ROUGH CARPENTRY

1. Workmanship

All rough carpentry shall produce joints, true, tight, and well nailed, with all members assembled in accordance with the Drawings and with all pertinent codes and regulations. Carefully select all members. Select individual pieces so that knots and obvious defects will not interfere with placing bolts or proper nailing or making connections. Cut out and discard all defects which will render a piece unable to serve its intended function. Lumber shall be rejected for excessive warp, twist, bow, crook, mildew, fungus, or mold, as well as for improper cutting and fitting. Do not shim sills, joists, short studs, trimmers, headers, lintels, or other framing components.

Set all horizontal or sloped members with crown up. Do not notch, bore, or cut members for pipes, ducts, conduits, or other reasons except as shown on the drawings or as specifically approved in advance by the Engineer.
Make all bearings full unless otherwise indicated on the drawings. Finish all bearing surfaces on which structural members are to rest so as to give sure and even support. Where framing members slopes, cut or notch the ends as required to give uniform bearing surface.

Install all blocking required to support all items of finish and to cut off all concealed draft openings, both vertical and horizontal, between ceiling and floor areas. Fire-blocks shall be two inches (nominal) in thickness by the full width of the opening being blocked. Install fire-block in all stud walls at ceiling and floor levels including furred spaces, so that the maximum dimension of each concealed space is not more than eight feet. Install fire-blocks at all other locations where openings could afford passage for rodents or flames.

Install wood cross bridging of not less than two inches by three inches nominal, metal cross bridging of equal strength, or solid blocking between joists where the span exceeds eight feet. The distance between a line of bridging and a bearing shall not exceed eight feet. Install solid blocking between joists at all points of support or wherever sheathing or flooring is discontinuous. Blocking may be omitted where joists rest on ribbons and are nailed to studs, and where joists are supported on metal hangers.

Use no less than two joists spiked together to support partitions running parallel to the joists, provided, however, that where necessary to permit passage of pipes such joists may be separated by solid blocking spaced at no more than four feet on centers.

Make all studs single length, unspliced, and platform framed. Frame all corners and intersections with three or more studs and all required bearing for wall finish.

On all framing members to receive a finished wall or ceiling, align the finish subsurface to vary not more than 1/8 inch from the plane of surfaces of adjacent framing and furring members.

2. FASTENING

For bolts drill holes 1/16 inch larger in diameter than the bolts being used. Drill straight and true from one side only. Bolt threads shall not bear on wood. Use washers under head and nut where both bear on wood; use washers under all nuts. For lag screws and wood screws, pre-bore holes same diameter as root of thread; enlarge holes to shank diameter for length of shank. Screw, do not drive, all lag screws and wood screws.

Use only common wire nails or spikes of the dimension shown on the Nailing Schedule.

For conditions not covered in the Nailing Schedule, provide penetration into the piece receiving the point of not less than ½ inch the length of the nail or spike provided, however, that 16d nails may be used to connect two pieces of two inch nominal thickness.

Do all nailing without splitting wood. Pre-bore as required. Replace all split members.

NAILING SCHEDULE:
The following schedule is summarized from the BOCA Code Appendix A.

Blocking to joist bearing:	Two 10d toenailed each side
Blocking to joist or stud:	Two 10d toenailed each side
One inch brace to stud:	Two 8d face nailed
Two inch brace to stud:	Two 16d face nailed
Bridging to joist:	Two 8d toenailed
Built-up beams eight inches or less in depth:	16d @ 12" on centers, staggered
Joists and rafters:	
to support:	Two 10d toenailed each side
at laps (12") minimum:	Four 16d face nailed
multiple joists:	16d @ 12" on centers, staggered
Joists to sill or girder:	Two 16d toenailed
1" furring to underside of joists:	Two 8d (1 straight, 1 slanted)
2" furring to underside of joists:	Two 8d (1 straight, 1 slanted)
Studs toenailed to plate:	Two 10d each side
Studs end nailed to plate:	Two 20d
Studs nailed together:	16d @ 12" on centers, staggered
Plates:	
Upper to lower:	16d @ 12" on centers, staggered
At splices:	Two 16d face nailed
Plate lap at corners:	Two 16d face nailed

B. FINISH CARPENTRY

1. Installation of Wood Doors

Carry wood doors, do not drag them. Use extreme care in handling to prevent damage. Trim all wood doors as necessary to provide a uniform clearance between 3mm (1/8") and 5mm (3/16") at jambs and head, and a uniform clearance at the threshold or floor to properly clear the floor covering described in Division 9.

Install the door into the opening with the following hinge or butt locations throughout the work. The center of the top hinge shall be 11" below the top of the door and the center of the bottom hinge shall be 13" above the finish floor. The middle hinge shall be equidistant between the top and bottom hinge.

With fine sandpaper, working only in direction of the grain of the wood, remove all rough edges resulting from door trimming and leave the installed door in condition to receive its final finish.

2. Trim

Install the work plumb, level, true and straight with no distortions. Shim as required using concealed shims. Install to a tolerance of 1/8" in 8'-0" for plumb and level and with 1/16" maximum offset in flush adjoining 1/8" maximum offsets in revealed adjoining surfaces.

Scribe and cut work to fit adjoining work, and refinish cut surfaces or repair damaged finish at cuts.

Standing and Running and Miscellaneous Trim: Install with minimum number of joints possible, using full-length pieces (from maximum length of lumber available) to the greatest extent possible. Stagger joints in adjacent and related members. Cope at returns, miter at corners, to produce tight fitting joints with full surface contact throughout length of joint. Use scarf joints for end-to-end joints.

Anchor finish carpentry work to anchorage devices or blocking built-in or directly attached to substrates.

Secure to grounds, stripping and blocking with countersunk, concealed fasteners and blind nailing as required for a complete installation. Except where prefinished matching fasteners heads are required, use fine finishing nail for exposed nailings, countersunk and filled flush with finished surface, and matching final finish where transparent is indicated.
Attach panels to support with countersunk finish nailing where covered by moldings (if any), in accordance with manufacturer’s instructions for concealed-
fastener installation. Putty holes with matching color.

Repair damaged and defective finish carpentry work wherever possible to eliminate defects functionally and visually; where not possible to repair properly,
replace woodwork. Adjust joinery for uniform appearance.

Clean finish carpentry work on exposed and semi-exposed surfaces. Tough-up shop-applied finishes to restore damaged or soiled areas.

Refer to Division 9 sections for final finishing of installed finish carpentry work.

Installer of finish carpentry work shall advise Contractor of final protection and maintained conditions necessary to ensure that work will be without damage or deterioration at time of acceptance.

DIVISION 7

INSULATION, FLASHING AND TRIM, JOINT SEALING AND CAULKING

SECTION 0720
INSULATION

PART 1 - GENERAL

1.1 GENERAL

A. Work Included: Provide insulation required for the Work including, but not Necessarily limited to:

1. Batt insulation for ceilings and walls.

2. Rigid insulation under slab.

3. Rigid insulation outside foundation under pavement.

1.2 PRODUCT HANDLING

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

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

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

PART 2 - PRODUCTS

2.1 INSULATION MATERIALS

A. FIBERGLASS INSULATION BLANKET

Blanket insulation shall be fiberglass blanket vinyl faced (roll) as manufactured by Owens - Corning Fiberglass Corp. Or equal. Thermal resistance “R” values of the insulation shall be not less than 3.1 per inch. Thickness shall be as shown on plans.

B. RIGID INSULATION BOARD

Rigid Thermax insulation board, 2" thick with R value of 8.33 / in. minimum.

2.2 OTHER MATERIALS

All other materials, not specifically described but required for a complete and proper installation of the work of this Section, shall be as selected by the Contractor subject to the approval of the Engineer.

PART 3 - EXECUTION

3.1 INSPECTION

Examine the various locations intended for insulation installation and notify the Engineer and the installing trade of any conditions requiring correction prior to the placement of these materials.

3.2 INSTALLATION

A. All materials in this Section shall be installed as directed by the Engineer and manufacturer's recommendations.

C. Blanket Insulation: Install blankets to fit snugly against all wood members and adjacent blanket. Staple vapor barrier flange to face of studs and trusses. When insulation is installed with Kraft face on the cold face of the blanket, cut 3 - 12" square vent holes in the kraft vapor barrier in each stud space.

SECTION 0762
FLASHING AND TRIM

0762.01 GENERAL

The Contractor shall furnish all necessary labor and materials, and shall install all flashing and trim as indicated on the drawings and as herein specified.

0762.01 MATERIAL

Flashing shall be aluminum or galvanized steel and of a width to accommodate area of installation.

0762.03 INSTALLATION

Flashing shall be installed wherever a roof joins another object such as chimneys, exterior side walls, vent pipes, etc., and over each window and door.

SECTION 0790
JOINT SEALING AND CAULKING

0790.01 GENERAL

The Contractor shall furnish all materials, labor and equipment required to do all caulking and sealing for the proper completion of the project. The caulking shall include exterior and interior windows, doors, all joints, and all exterior wall openings.

0790.02 MATERIALS

All sealants shall be of a single manufacturer if possible. The color shall be approved by the Engineer. Acceptable products are Sikaflex 1-A or approved equal. In general the material shall be a silicone base, water tight, permanently flexible and non-staining.

Waterstops shall be as shown on the drawings and shall be 3/8" by 9" BFG blue vinyl “Lok-Rib”, center bulb style water stops as manufactured by the B.F. Goodrich Company or approved equal.

0790.03 INSTALLATION

All caulking shall be done on clean dry joints to the minimum depth recommended by the manufacturer. All joints shall be vacuum cleaned before caulking . Masonry and concrete work shall be properly covered and dry before caulking. Finish material shall be properly protected by masking tape before caulking.

DIVISION 8

DOORS, WINDOWS, GLASS

SECTION 0809
OVERHEAD DOORS

0809.01 GENERAL

The Contractor shall furnish and install all material and equipment necessary to complete the installation of the overhead doors. All work shall be done as herein specified and as shown on the drawings.

0809.02 MATERIALS

DOOR SECTIONS: Sections shall be full 2" thick, roll formed from commercial quality hot dipped galvanized steel per ASTM A-525 and A-526. Each section shall have tongue and groove joints for weather tight closure between sections. The sections shall have 1 ½" thick rigid foam isocyanurate insulation with a U-factor of .08. The door shall be Series S-24 steel industrial door as manufactured by Raynor Manufacturing Company, Dixon, Illinois or approved equal. See Door schedule on plans for size of each door.

SPRING COUNTER BALANCE: Heavy duty oil tempered wire torsion springs on continuous ball bearing cross header shaft. Galvanized lifting cables with minimum safety factor 7 to 1.

FINISH: Door exterior to be precoated with two (2) coats of baked on polyester enamel finish over epoxy primer. Interior to have baked on grey polyester enamel.

LOW HEADROOM HARDWARE: 3" galvanized tracks shall be provided. Vertical tracks shall be bracket mounted and fully adjustable for weather tight closing.

FRAMES: Door jams and mounting pads shall be furnished as shown on drawings.

GARAGE DOOR OPENER:

1. Standard Hardware
2. Track and pulley system
3. Automatic door opener Model RGT, ½ H.P. motor, 208V, single phase
4. Door opener will be equipped with a safety device to stop closure of door if doorway is obstructed.

HARDWARE: All hinges and brackets shall be galvanized steel. Track rollers shall be hardened steel ball bearing with a minimum of 10 balls of 1/4" diameter per roller. Door shall be adequately reinforced with steel streets as recommended by the manufacturer. The lock shall be a slide lock with five pin tumbler cylinder with night latch. Lock bar shall be provided for additional interior locking.

WEATHERSTRIPPING: Continuous weather stripping shall be a combination of

vinyl and aluminum extrusion. Neoprene rubber jam seals shall be provided around the perimeter of the door.

WARRANTY: The complete door assembly shall have a one year warranty against defective material or workmanship.

0809.03 INSTALLATION

The installation of all overhead doors shall be done by qualified mechanics and shall be done according to the manufacturer's recommendations.

Install units and accessories accurately and neatly into their respective locations in accordance with final shop drawings and manufacturer's data and as herein specified. Doors shall be installed true, plumb and square, such that they remain open in any position.

SECTION 0810
DOORS AND FRAMES

0810.01 GENERAL

The extent of doors and frames is shown on the drawings and schedules. Exact locations and sizes shall be confirmed by the Contractor. The Contractor shall furnish doors, frames, accessory items as indicated on the drawings and / or specified herein.

Shop drawings for the fabrication and installation of doors and frames shall include details of each door and frame type, elevations of floor design types, conditions at openings, details of construction, location and installation requirements of finish hardware and reinforcements, details of joints and connections, anchorage and accessory items.

Deliver doors and frames cartoned or crated to provide protection during transit and job storage. Inspect doors and frames upon delivery for damage. Minor damages may be repaired provided the finish items are equal in all respects to new work and acceptable to the Engineer; otherwise, remove and replace damaged items as directed.

Store doors and frames at the building site under cover. Place the units on at least 4" high wood sills or on the floors in a manner that will prevent rust and damage. If the cardboard wrapper on the door becomes wet, remove carton immediately. Provide a 1/4" space between stacked doors to promote air circulation.

The Contractor must examine the substrate and conditions under which the doors and frames are to be installed and notify the Engineer in writing of any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected.

0810.02 MATERIALS

The following items shall be manufacturer’s standard:

1. Supports and anchors
2. Inserts, bolts and fasteners
3. Shop applied paint
4. Weatherstripping
5. Silencers
6. Thresholds
7. Insulation

Doors and Frames:

Door Designation	Description
Garage Entrance Door	Six (6) Steelcraft Steel, insulated unit 3' - 0" x 6' - 8" No glass panel
Interior Doors	Eleven (11) Steelcraft Steel

Door Accessories:

Finish doors complete with following accessories:

A. Entrance Door
   1. Standard hardware
   2. 2 pairs of butts
   3. Mortised lock and keys
   4. Closer

B. Interior Doors
   1. Standard hardware
   2. 1 - ½ pairs of butts

0810.03 INSTALLATION

Install units and accessories accurately and neatly into their respective locations in accordance with final shop drawings and manufacturer’s data and as herein specified.

SECTION 0850
WINDOWS

0850.01 GENERAL

The extent of each type of window unit is shown on the drawings. Exact sizes and locations are to be confirmed by the Contractor. The Contractor will submit 2 copies of the manufacturer's specifications, recommendations and standard details for window units, including fabrication, finishing, hardware and other components of the work. Shop drawings for the fabrication and installation of window units and associated components shall include wall elevations at scale typical unit elevations at scale and full-sized detail sections of every typical composite member, anchors, hardware, operators and other components not included in the manufacturer's standard data. Include glazing details.

The Contractor must examine the substrate and conditions under which windows are to be installed and notify the Engineer in writing of any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected.

0850.02 MATERIALS

A. Fasteners: Aluminum, stainless steel or other metallic or non-metallic materials guaranteed by the manufacturer to be non-corrosive and compatible with the window members, trim, hardware, anchors and other components of the window units. Provide exposed fasteners which match the finish of the member or hardware being fastened, unless otherwise indicated.

B. Sealant: Unless otherwise indicated for sealants required within the fabricated window units, provide type recommended by window manufacturer for the joint size and movement, to remain permanently elastic, nonshrinking and non-migrating.

C. Windows: The following paragraphs define the operating arrangement for required types of sash in window units, and specify provisions for each type. The drawings show which panels of each window unit are operable sash, and which are fixed.

Typical Window: Anderson Gliding window unit 4' H x 6' W rough opening.

Except as otherwise indicated provide window units complying with the following:

1. Provide means of drainage for water and condensation which may accumulate in members of the window units.
2. Provide sliding weatherstripping wherever sash rails slide along frame of unit.
3. Provide insect screen unit for each operable exterior sash, except outside

of sash, depending upon window type as shown. Wherever possible, design window units and hardware to accommodate screens in a tight-fitting removable arrangement, with a minimum of exposed fasteners and latches and without the necessity of wickets for hardware access. Where wickets are necessary, provide either sliding or hinged type, framed and trimmed for durability during handling and for tight fit.

4. Fabricate units with corners and intersections either mitered and glued or mortised and glued with hairline joints, no open joints (or leakage) and with exposed surfaces dressed smooth.

5. Provide security locks on all exterior windows.

D. Fabrication and Accessories: Provide manufacturer's standard fabrication and accessories, except to the extent more specific or more stringent requirements are indicated. Include complete system for assembly or components and anchorage of window units, and prepare sash for glazing.

E. Check actual window openings in the construction work by accurate field measurement before installation, and show recorded measurements on final shop drawings. However, coordinate installation schedule with construction progress. Do not proceed with installation without field measurements and coordinate installation tolerances to ensure proper fit of window units. It is required that the window units, wherever installation requirements will permit, be glazed in the shop, prior to installation.

0850.03 INSTALLATION

Comply with manufacturer's specifications and recommendations for the installation of window units, hardware, operators, and other components of the work. Set units plumb, level and true to line, without warp or rack of frames or sash. Anchor securely in place. Separate aluminum and other corrodible metal surfaces from sources of corrosion or electrolytic action at points of contact with other materials. Set sill members and other members in a bed of compound as shown, or with joint fillers or gaskets as shown to provide weather tight construction. Adjust operating sash and hardware to provide a tight fit at contact points and at weatherstripping (if any), for smooth operation and weather tight closure. Remove excess glazing and sealant compounds, dirt and other substances. Lubricate hardware and other moving parts.

SECTION 0885
GLASS AND GLAZING

0885.01 GENERAL

The Contractor shall provide and install all glass and glazing as indicated on the contract drawings.

0885.02 MATERIALS

Glass shall be as indicated on the drawings. Substitutions may be allowed only with permission of the Engineer.

Glazing compound shall be DAP aluminum gray glazing compound No. 1012 or approved equal.

Dispatch / Receptionist Area: New glass panel shall be safety glass with slot at counter level for document pass through and circular louver at a level to allow two-way conversations, similar to the existing glass panel configuration. Approximate dimensions of new safety glass panel shall be 3' - 6" high x 6' - 4" wide.

0885.03 INSTALLATION

The Contractor shall install glass in accordance with the current specifications for the installation of flat glass published by the Flat Glass Jobber's Association. No glazing shall be done in temperatures below 40 degrees F. Glazing shall coincide with the frame rabbet with a tolerance of + / - 1/32 inch. Movable lights shall be glazed in the closed position.

0885.04 ACCEPTANCE

Just prior to final inspection, the Contractor shall clean all glass, removing all safety markings and mill stickers. Broken or cracked lights shall be replaced at the Contractor's expense.

DIVISION 9

WALLBOARD, CEILINGS, FLOORING, PAINTING

SECTION 0925
GYPSUM WALLBOARD

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide all gypsum wallboard and accessories complete in place as shown on the Drawings, specified herein, and needed for a complete and proper installation.

B. Textured ceilings where indicated on the finish schedule.

C. Related Work Described Elsewhere:

Rough and finish carpentry - Section 06100

1.2 QUALITY ASSURANCE

A. Standards: Comply with industry standards.

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

C. Qualifications of Installers: 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 PRODUCT HANDLING

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

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

C. Delivery and Storage: Deliver all materials to the job site in their original unopened containers with all labels intact and legible at time of use. Store in strict accordance with the manufacturer’s recommendations as approved by the Engineer.

PART 2 - PRODUCTS

2.1 GYPSUM WALLBOARD

A. Comply with Fed.Spec. SS-L-30, type III, class I, style 3, taper-edged, and of the Grade and form specified below, in 48" widths and in such lengths as will result in the minimum of joints. Unless otherwise stated, thickness shall be 5/8" fire-rated gypsum board.

2.2 METAL TRIM

A. Trim Features: Provide hot-dip galvanized 0.0217" nominal thickness (26 gauge).

B. Casing Beads: Channel shaped with concealed wing not less than 7/8" wide, and an exposed wing.

C. Corner Beads: Provide angle shaped with wings not less than 7/8" wide and perforated for nailing and joint treatment, or with combination metal and paper wings, bonded together, not less than 1 - 1/4" wide and suitable for joint treatment.

D. Perimeter Edge Beads: Edge beads for use at perimeter of ceilings shall be angle shaped with wings not less than 3/4" wide. Concealed wing shall be perforated for nailing and exposed wing shall be folded flat. Exposed wing may be factory finished in a white color.

2.3 JOINTING SYSTEM

A. The jointing system shall include reinforcing tape and compound designed as a system to be used together and shall be only as recommended by the manufacturer of the gypsum wallboard used. Jointing compound may be used for finishing if so recommended by the manufacturer.

2.4 FASTENING DEVICES

A. For fastening the gypsum wallboard in place, use flathead screws, shouldered, specially designed for use with power-driven tools, not less than 1" long, with self-tapping threads and self-drilling points.

2.5 WATER FOR COMPOUND

A. If the approved jointing system requires job-addition of water, use only clean and potable water for that purpose.

2.6 OTHER MATERIALS

A. All other materials, not specifically described but required for a complete and operable installation of the work of this Section, shall be new, first quality of their respective kinds, and subject to the approval of the Engineer.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Inspection: Prior to installation of the work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence. Check that the wall studs or ceiling members are straight and in line. Verify that gypsum wallboard may be installed in strict accordance with all pertinent codes and regulations, the manufacturer's recommendations as approved by the Engineer, and the original design.

B. Discrepancies: Do not install gypsum drywall until all unsatisfactory conditions have been corrected. Commencement of the work of this Section signifies acceptance of the conditions by this contractor.

3.2 INSTALLATION

A. General: Install the gypsum wallboard with the separate boards in moderate contact but not forced into place. At internal and external corners, conceal the cut edges of the board by the overlapping covered edges of the abutting boards. Stagger the boards so that corners of any four boards will not meet at a common point except in vertical corners.

B. Ceilings: Install the gypsum wallboard to ceilings with the long dimension of the wallboard at right angles to the supporting members, except that wallboard may be installed with the long dimension parallel to supporting members that are spaced 16" on center when attachment members are provided at end joints.

C. Walls: Install the gypsum wallboard to studs at right angles to the furring or framing members. Make end joints, where required, over furring or framing members.

D. Attaching: Drive the specified screws with clutch-controlled power screwdrivers, spacing the screws 12" on centers at ceilings and 16" on centers at walls, except that where framing members are spaced 24" apart on walls screw spacing shall be 12" on centers.

3.3 JOINT TREATMENT

General:

A. Inspect all areas to be joint treated, ascertaining that the gypsum wallboard fits snugly against supporting framework.

B. In areas where joint treatment and compound finishing will be performed, maintain a temperature of not less than 55 degrees F. for 24 hours prior to commencing treatment, for the entire period of treatment, and until joint and finishing compounds have dried.

C. Apply the joint treatment and finishing compound by machine or hand tool.

D. Provide a minimum drying time of 24 hours between coats, with additional drying time in poorly ventilated areas.

E. Embedding Compound: Apply to gypsum wallboard joints and fastener heads in a thin uniform layer. Spread the compound not less than 3" wide at joints, center the reinforcing tape in the joint, and embed the tape in the compound. Then spread a thin layer of compound over the tape. After this treatment has dried, apply a second coat of embedding compound to joints and fastener heads, spreading in a thin uniform coat to not less than 6" wide at joints, and feather edged. When thoroughly dry, sandpaper to eliminate ridges and high points.

F. Finishing Compound: After embedding compound is thoroughly dry and has been completely sanded, apply a coat of finishing compound to all joints and fastener heads. Feather the finishing compound to not less than 12" wide. When thoroughly dry, sandpaper to obtain uniformly smooth surfaces, taking all necessary care to not scuff the paper surface of the wallboard.

3.4 CORNER TREATMENT

A. Internal Corners: Treat as specified for joints, except that the reinforcing tape shall be folded lengthwise through the middle and fitted nearly into the corner.

B. External Corners: Install a corner bead fitting neatly over the corner and secured with the same type fasteners used for applying the wallboard, spacing the fasteners approximately 6" on centers and driving through the wallboard into the framing or furring member.

C. After the corner piece has been secured into position, treat the corner with joint compound and reinforcing tape as specified for joints, feathering the joint compound out from 8" to 10" on each side of the corner.

SECTION 0954
SUSPENDED CEILINGS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Rework suspended ceilings to accommodate renovations, including all associated hardware, as shown on Drawings, specified herein, and needed for a complete and proper installation. Products required for this work include, but are not necessarily limited to:

1. Suspended ceiling tiles.

2. Ceiling grid system.

3. Grid system suspension hangers.

4. Coordination with other trades.

1.2 QUALITY ASSURANCE

A. Standards: Comply with ASTM C635 “Recommended Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels”.

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

C. Qualifications of Installers: 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. Manufacturers’ Data: Within 10 calendar days after award of Contract, submit:

1. Complete materials list of all items proposed to be furnished and installed under this Section.

2. Manufacturer’s recommended installation procedures.

1.4 PRODUCT HANDLING

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

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

C. Delivery and Storage: Deliver all materials to the job site in their original unopened containers with all labels intact and legible at time of use. Store in strict accordance with the manufacturer's recommendations.

PART 2 - PRODUCTS

2.1 GENERAL

A. Whenever possible, for each type of application, use the products of the same manufacturer for panels, suspension system, and accessories, and as approved in submittals to the Engineer.

2.2 CEILING PANELS AND SUSPENSION SYSTEM

A. Ceiling panels and suspension system shall have a two (2) hour fire rating manufactured by Armstrong Cortega 815 24" x 24" x 5/8" angled tegular lay-in Fire Guard (UL Label) for Prelude Fire Guard 15/16" exposed Tee Guard.

2.3 HANGERS / ACCESSORIES

A. Wire: Use 12 gauge soft annealed steel.

B. Top Fasteners: Use hook-eyes or other suitable attachment sufficient to support the entire system when attached to the truss joist system.

C. Clips: Provide metal hold-down clips for securing tiles in place. Minimum 4 clips per tile.

PART 3 - EXECUTION

3.1 INSPECTION

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

3.2 INSTALLATION

A. Profile Alignment: Inspect the Drawings and the field conditions to determine the minimum and maximum elevations of the grid system.

B. Hanger Attachment: Determine prior to commencing any work, the hanging procedures necessary to meet the strength, alignment, and two (2) hour fire rating requirements of this installation.

C. Panel Installation: Take extreme care in handling the ceiling panels. Do not allow edges to be damaged or surfaces to be soiled. Install panels so as to conform to configuration indicated on Drawings.

D. Cutting of Panels: Cut planar panels for lighting fixtures and other equipment penetrating the ceiling as required by Drawings and as determined by coordination with installers of other work. This Contractor shall cut and trim the suspended ceiling for lighting and air handling where required, as shown on Drawings.

E. Patching and Repairing: Patch and repair all surfaces where existing equipment is removed, and match the existing surrounding surfaces in material and finish to approval of the Engineer.

F. Cleaning and Touch up: After complete installation has been made, clean all surfaces of the installation, remove discolorations and foreign matter, and touch up all damaged parts and edges with the same finish as was used for the factory-applied finish of the components.

SECTION 0965
RESILIENT FLOORING

0965.01 GENERAL

A. Work included: Install resilient flooring in all offices, lunch room, bathrooms and locker room.

B. Related Work Specified Elsewhere:

1. Cleaning up is specified in Division 1
2. Concrete work, cast-in-place concrete and grout are specified in Division 3.

0965.02 QUALITY ASSURANCE

Only first quality resilient flooring materials shall be installed. Any material not approved by the Engineer and rejected after being installed shall be carefully removed and replaced with approved material without additional cost to the Owner. Include on label of all containers and packages (1) manufacturer's name, (2) manufacturer's stock number, and (3) manufacturer's lot number. Acceptable manufacturers are Armstrong, Grafstar, or approved equal.

0965.03 SUBMITTALS TO THE ENGINEER

Submit boxed samples of all colors and patterns of tile proposed for approval.

0965.04 DELIVERY AND STORAGE

Materials shall be delivered and stored in original unopened cartons.

0965.05 JOB CONDITIONS

A. Temperature of not less than 70 degrees F shall be maintained for not less than 48 hours before installation of resilient materials and continued for 48 hours after completion, 55 degrees F thereafter.

B. Inspect all surfaces to receive resilient materials and report to the Engineer any conditions that will adversely affect the proper installation of materials. Commencement of installation will indicate acceptance of the sub-surfaces.

C. Protect finished installation as required with undyed, untreated building paper.

0965.06 MATERIALS

A. Flooring shall match accepted sample previously submitted by contractor.

0965.07 INSTALLATION

Use qualified workmen to install all materials in strict accordance with the manufacturer's written specifications. Install all resilient materials so as to ensure uniform contact with the backing surface. All finished surfaces shall be smooth, free from buckles, waves or other imperfections. Neatly fit all flooring to walls and around door frames. Firmly cement all vinyl bases to vertical surfaces including cabinet bases.

0965.08 CLEANING AND FINISHING

Not sooner than five days after installation, clean the finished resilient flooring, including bases, with a cleaner recommended by the flooring manufacturer. Follow by a thorough rinsing with clear water. After cleaning finish all resilient flooring with one coat of heavy duty water - emulsion finish of a type recommended by the flooring manufacturer. Buff all finish flooring with a mechanical buffer. Actual time of cleaning and finishing will be as approved by the Engineer.

SECTION 0990
PAINTING

PART 1 - GENERAL

1.1 SCOPE

A. Furnish all labor, materials, appliances and equipment necessary to complete all Painting and Finishing work as shown on the drawings and as described herein.

B. Include all staging and scaffolding required in the performance of the work in this Section of the Specifications.

C. The Painting Contractor shall examine the Specifications for the various other trades and shall thoroughly familiarize himself with all their provisions regarding their painting. All surfaces that are left unfinished by the requirements of other Sections of these Specifications shall be painted or finished as a part of the work in this Section of the Specifications.

D. Chromium plate, nickel, stainless steel, aluminum, monel metal, lead and lead coated copper shall not be painted or finished except as otherwise specified.

E. The Painting Contractor shall be responsible for inspecting the work of others prior to the application of any paint or finishing materials. If any surface to be finished cannot be put in proper condition for finishing by customary cleaning, sanding, and puttying operations, the Painting Contractor shall immediately notify the General Contractor in writing, or assume responsibility for and rectify any resulting unsatisfactory finish.

F. The General Conditions and Special Provisions of the General Contract are made a part of this Section.

PART 2 - PRODUCTS

2.1 BASIC MATERIALS

A. Labels: All paint shall bear a label and all labels shall bear a complete formulation covering the ingredients with the can (%).

B. Rags: Shall be clean painter's rags, completely sterilized.

C. Putty: Putty shall be pure linseed oil putty meeting ASTM specifications D317-33.

D. Linseed Oil: Raw and boiled to meet latest ASTM standards.

E. Alcohol: Denatured.

F. Spackle: Best of its kind, suited for its purpose.

2.2 PAINTS AND SURFACES TO BE PAINTED

A. Exposed steel (over shop coat)

1. First Coat: Sherwin Williams KEM Kromik Metal Primer

2. Second Coat: Sherwin Williams Professional Promar 400 Alkyd Eg-Shel Enamel

B. Gypsum Walls

1. First Coat: Sherwin Williams Promar 400 Latex Wall primer. (Flat)

2. Second and Third Coats: Sherwin Williams Pro-Mar 400 Latex wall paint. (Eg-Shel)

C. Wood Trim (Interior)

1. First Coat: Sherwin Williams Enamel Undercoater or equal.

2. Top Coat: Sherwin Williams Pro-Mar 400 Semi-Gloss Latex Enamel.

D. Wood Trim (Exterior)

1. First Coat: Sherwin Williams Weather Perfect Exterior Undercoater.

2. Second Coat: Sherwin Williams Gloss Latex House and Trim Paint. A-100

E. Metal Doors: Base coats by door manufacturer.

1. Two top Coats: Sherwin Williams Acrylic DTM Gloss Coating.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Inspection: Prior to installation of the work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence. Verify that painting may be completed in strict accordance with the original design and with the manufacturers' recommendations as approved by the Engineer.

B. Discrepancies: Do not proceed in areas of discrepancy until all such discrepancies

Have been fully resolved.

3.2 METHODS AND WORKMANSHIP

A. All surfaces shall be clean, dry and free of all foreign matter and protrusions.

B. All materials shall be used only as specified by the manufacturer's directions. All containers shall bear the manufacturer's label at the time of application.

C. All colors shall be selected by the Owner's Representative or by the Engineer prior to the start of the work. Primers shall be tinted as nearly as possible to match the color of the finish coat. Workmanship shall be of the very best and only skilled painters shall be employed in this phase of the work. Painting shall not be carried out in wet, damp or below 50 degrees F. weather or extreme hot sun. All irregularities such as nail holes and air pockets shall be patched with suitable materials to produce a smooth surface.

D. Protect work at all times with suitable cover to avoid damage to the painted surfaces by paint spatter. Remove all foreign paint spots from adjacent surfaces.

E. Storage of Materials: Store all materials used on the job in a single place, kept neat and clean. The painting contractor shall be responsible for all damage resulting from his operations.

F. Special precautions shall be made to remove all soiled or oily rags from the premises each night and all precautions shall be taken to avoid any danger from fire.

G. Clean-up: Remove all rubbish and accumulated materials leaving the premises in a clean, orderly and acceptable condition.

DIVISION 11

EQUIPMENT

SECTION 1131
SEWER EJECTION PUMP STATION

1131.01 GENERAL

Furnish and install pumping station as shown on the drawings with heavy duty duplex submersible sewage pumps and accessories.

1131.02 EQUIPMENT

A. Pump Station - Myers - Model WHR7 - 3/4 HP - 2" Duplex Sewerage Pumps.

B. Provide the following equipment at the pumping station:

1. Two heavy duty submersible sewage pumps with motor as specified above.

2. Iron body, bronze mounted gate valves and check valves rated for 125 psi service.

3. Ductile iron flanged pipe and fittings rated for 125 psi service.

4. One (1) lifting chain per pump.

5. Four (4) mercury float switches with mounting staff.

6. Electrical controls for duplexing, alternation, alarm, and control circuit reconnect relay contained in NEMA 4 enclosure mounted outside the pumping station. Running lights for both pumps are required.

7. Breakaway guide rail configuration for pump discharges per manufacturer's specifications.

8. Elapsed time indicators for each pump to be mounted inside the control panel.

9. Contractor to supply a heavy duty padlock for the control panel and disconnect box and these shall be keyed per Engineer's requirements.

10. Bottom of pump chamber to be sloped toward pumps - see drawings.

11. Supplier shall certify impeller size prior to installation.

12. Push button alarm light tester mounted on inside of control panel.

1131.03 INSTALLATION

A. Install per manufacturer’s recommendations.

B. Provide services of manufacturer’s field service representative to check installation and operation of completed pumping station.

DIVISION 15

MECHANICAL

SECTION 15001
WATER SYSTEM

PART 1 - GENERAL

1.1 SCOPE

A. The work under this section shall include all labor and material to install a domestic water system as shown on the drawings or specified herein or both.

1.2 GENERAL CONDITIONS

A. Refer to General Provisions Section 15000 for provisions affecting work in this section.

1.3 CROSS CONNECTIONS

A. No piping shall be installed to permit any back siphonage or flow of any polluted Liquid into water distribution system.

B. Vacuum breakers, air gaps or funnel type drains shall be used as required by local and State Plumbing Codes. All piping to faucets with hose threaded outlets and all fixtures with their outlets below the overflow shall have vacuum breakers.

1.4 WORK INCLUDED

A. The work shall include, but shall not be limited to the following:

1. Hot and cold water systems.

2. Piping, hangers, sleeves, fittings, valves, gauges, controls, etc., required to complete the system.

1.5 WORK BY OTHERS

A. The following work, which is incidental to the installation will be executed by others under the direction of the Plumbing Contractor.

1. Execute all required masonry and carpentry work, cutting, patching, furrings, plastering, etc., except as herein noted. (General Contractor)

2. Finished painting of piping, supports except as herein noted.

3. Access panels in ceilings and walls for access to valves.

PART 2 - PRODUCTS

2.1 BASIC MATERIALS AND METHODS

A. Unless otherwise indicated, the materials to be furnished under this contract shall be standard products of manufacturers regularly engaged in the production of such equipment, and shall be the manufacturer's latest standard design that complies with the specification requirements.

B. All copper tubing shall be cut through; the ends shall be reamed out to the full inside diameter of the pipe.

2.2 DOMESTIC HOT AND COLD WATER SYSTEM

A. Copper tubing shall be Type "L" for above ground, ASTM B-88.

B. Copper tubing shall be Type "K" for underground, ASTM B-88.

C. Types "K" and "L" copper tubing shall have joints of either wrought-copper or case brass solder joint fittings.

D. Copper tubing and fittings shall be equivalent to Mueller Brass Co. Streamline Products.

2.3 SOLDER

A. Solder for all accessible joints shall be "Lead Free" made up of 95.5 percent tin, and 4 percent copper and .5% silver equal to Engelhard Silver Brite 100. Flux shall be non-corrosive. All joints shall be wiped clean of solder and flux. Piping under ground or slab on grade shall have silver solder joints of at least 1000 degrees solder.

2.4 VALVES

A. All valves shall be Nibco-Scott, Hammand, Fairbanks, or equivalent. They shall be installed where indicated and otherwise required to provide for complete operation and drainage of the system. Gate valves shall be used for shut-offs and drains, glove valves shall be used for throttling and plug type for balancing. Solder or screw type may be used up to 2" size, screw type only for 2 - 1/2" size and over. All above ground valves shall be of one manufacture.

2.5 WATER HAMMER ELIMINATORS

Furnish and install air chambers to serve as water hammer eliminators at each branch hot and cold water feeds.

2.6 EXPANSION JOINTS, LOOPS AND ANCHORS

Provide expansion joints and loops on hot water supply and circulating returns where required to control expansion. Provide rigid anchors where required. Anchors shall be bolted collars held by angular braces in direction of piping. Provide guides on each side of all expansion joints.

2.7 THERMAL EXPANSION TANK

Furnish and install where shown on drawings thermal expansion tanks. Units shall be rated for 150 psig working pressure, have a steel shell, butyl diaphragm, and polypropylene liner. Unit scheduled on drawings.

PART 3 - EXECUTION

3.1 BASIC WATER PIPING SYSTEM

A. Furnish and install the complete domestic hot water and cold water systems Essentially as indicated on the drawings connecting to all fixtures and equipment requiring these
services.

B. Piping shall be new, run parallel, and graded evenly to draining points.

C. Provide ½ inch drain valves at each low point in each piping system so that all parts of each system can be drained.

D. No plumbing fixtures, devices, or piping shall be installed which will provide a cross or inter-connection between a distributing supply for a drinking water system or domestic water system and a polluted supply or drainage system or plant water system.

E. Changes in pipe sizes shall be made with reducing fittings.

F. Piping shall run as high and as close as possible and parallel to the walls, or as shown.

G. Escutcheons shall be used for all insulated pipes passing through walls and finished spaces.

H. No water pipe shall be installed outside of the building or in an exterior wall unless adequate provision is made to protect such pipe from freezing. The Contractor under this section shall make all final water connections to all equipment requiring these services that are furnished under other sections of this specification or furnished by the Owner, all as shown on the drawings. Connections shall include shut-off valves, flow restrictors, vacuum breakers, unions and such other trim as hereinafter specified.

J. Provide gate valve at base of all domestic water risers and stop and check valves on all supplies to thermostatic mixing and shower valves, and gate and check valves on all circulating hot water return branches to main.

K. Provide shock absorbers, chains, anchors, guides and expansion loops or joints as indicated or otherwise required to control pipe movement and any water hammer noise.

3.2 DOMESTIC COLD WATER

A. The building cold water system shall begin at the Western Avenue Kennebec Water District water main.

B. All underground water main piping from KWD main to building meter to be 2" CTS Polyethyene tubing.

C. The cold water system includes furnishing cold water main with risers, drops and branches to all fixtures, equipment and hose stations.

D. Provide suitable means to protect all water piping from water hammer.

3.3 DOMESTIC HOT WATER SYSTEM

A. The main hot water system shall include connecting hot water and cold water piping to hot water heaters as shown on plans, hot water supply mains with risers and branches to all fixtures and equipment.

B. Hot water piping shall be kept at least 6 inches away from cold water lines.

C. Provide suitable means for thermal expansion for all hot water piping, using swing joints, expansion loops and long off-sets, as required.

D. Vent all high points in the hot water system. All hot water piping shall be pitched up toward fixtures and risers for proper air relief. (Fixture supplies shall be considered vents.)

E. Provide a suitable means to protect all water piping from water hammer.

SECTION 15002
SANITARY SYSTEM

PART 1 - GENERAL

1.1 SCOPE

A. The work under this section shall include all labor and material to install a sanitary soil, wast and drainage system as shown on the drawings or specified herein or both, from building to Western Avenue Pump Station.

1.2 GENERAL CONDITIONS

A. Refer to General Provisions, Section 15000 for provisions affecting work in this section.

1.3 WORK INCLUDED

A. The work covered by this section of the specifications shall include, but is not limited to, the following:

1. Fixtures connected (whether supplied or not).

2. Piping, hangers, sleeves, cleanouts, vents, fittings, traps, controls, manholes, pumps, valves, etc., required to complete the system.

1.4 WORK BY OTHERS

A. The following work, which is incidental to the installation will be executed by others under the direction of the Plumbing Contractor:

1. Execute all required masonry and carpentry work, cutting, patching, furrings, plastering, etc., except as herein noted.

2. Execute all required excavation work, backfilling, grading, etc. for water, drains, sewers, storm water, etc.

3. Finished painting of piping supports and insulation, except as herein noted.

PART 2 - PRODUCTS

2.1 BASIC MATERIALS AND METHODS

Unless otherwise indicated, the materials to be furnished under this contract shall be standard products of manufacturers regularly engaged in the production of such equipment, and shall be the manufacturer's latest standard design that complies with the specification requirements.

2.2 SANITARY SYSTEM

A. All sanitary soil, waste and vent piping and fittings below lowest floor, in earth or concrete, shall be PVC. All pipe and fittings used for drain, waste and vent piping shall conform to requirements of Maine State Plumbing Code for material and gauge.

B. All joints for PVC pipe shall be secured only with solvent cement that is Recommended by the pipe manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION AND WORKMANSHIP

A. All plumbing work must be installed in accordance with plans and specifications except as otherwise required by local and State requirements. This Contractor shall obtain and pay for all necessary permits, licenses and fees in accordance with installation of services.

B. All piping shall be located approximately as shown. Slight relocations will be permitted to improve function, clearance and appearance.

C. Pitch sanitary, waste and vent piping 1/4" per foot or as indicated. Conceal all piping where possible.

SECTION 1549
PRESSURE TEST

1549.01 GENERAL

All water mains shall be tested prior to acceptance. The Contractor shall provide all necessary labor, equipment and materials to perform pressure tests as specified below. Test shall be conducted only under the direct supervision of the Engineer or his authorized representative. The Contractor shall notify the Engineer at least 48 hours in advance of any testing.

1549.02 PROCEDURE

After the pipe has been laid and completely backfilled, the Contractor shall perform a pressure test in accordance with the AWWA C600 - 64 standard. The pressure test shall have a duration of 1 hour. The test shall be performed at 150 psi.

Each valved section of pipe shall be slowly filled with water and the specified test pressure, based on the lowest point of the line under test and corrected to elevation of the test gage. Pressure shall be applied by means of a pump connected to the pipe in a manner satisfactory to the Owner and Engineer. The pump, pipe connection and all necessary apparatus except gages shall be furnished by the Contractor. The Owner shall furnish the gages for the test. The Contractor shall furnish all necessary labor, equipment and materials for installing the taps and conducting the test.

Before applying the specified test pressure, all air shall be expelled from the pipe. If permanent air vents are not located at all high points, the Contractor shall install corporation cocks at such points so the air can be expelled as the line is filled with water. After all the air has been expelled, the corporation cocks shall be closed and the test pressure applied.

All pipe and fittings shall be inspected and such joints as may be defective shall be cut out or removed and replaced by the Contractor at the direction of the Engineer.

Leakage test shall then be performed and permissible leakage shall be as shown in Table 6 of AWWA C 600 - 82 and as follows:

A. For 12" pipe the allowable leakage shall be 1.1 gph per 1000 ft at 150 psi.

B. For 10" pipe the allowable leakage shall be 0.92 gph per 1000 ft at 150 psi.

C. For 8" pipe the allowable leakage shall be 0.74 gph per 1000 ft at 150 psi.

D. For 6" pipe the allowable leakage shall be 0.55 gph per 1000 ft at 150 psi.

Should the leakage test fail, the Contractor shall then make the necessary repairs at his own expense.

1549.03 ACCEPTANCE

Acceptance of the pipe will be made when the pressure test has been satisfactorily performed.

SECTION 1565
FORCEMAIN PRESSURE TEST

1565.01 GENERAL

All Forcemains shall be tested prior to acceptance. The Contractor shall provide all necessary labor, equipment and materials to perform pressure tests as specified below. Test shall be conducted only under the direct supervision of the Engineer or his authorized representative. The Contractor shall notify the Engineer at least 48 hours in advance of any testing.

1565.02 PROCEDURE

After the pipe has been laid and completely backfilled, the Contractor shall perform a pressure test in accordance with the AWWA C600 - 64 standard. The pressure test shall have a duration of 1 hour. The test shall be performed at 150 psi.

Each valved section of pipe shall be slowly filled with water and the specified test pressure, based on the lowest point of the line under test and corrected to elevation of the test gage.

Pressure shall be applied by means of a pump connected to the pipe in a manner satisfactory to the Owner and Engineer. The pump, pipe connection and all necessary apparatus except gages shall be furnished by the Contractor. The Owner shall furnish the gages for the test. The Contractor shall furnish all necessary labor, equipment and materials for installing the taps and conducting the test. The Contractor shall install all necessary caps, plugs and valves needed to test the pipe.

Before applying the specified test pressure, all air shall be expelled from the pipe. If permanent air vents are not located at all high points, the Contractor shall install corporation cocks at such points so the air can be expelled as the line is filled with water. After all the air has been expelled, the corporation cocks shall be closed and the test pressure applied.

All pipe and fittings shall be inspected and such joints as may be defective shall be cut and or removed and replaced by the Contractor at the direction of the Engineer.

Leakage test shall then be performed and permissible leakage shall be as shown in Table 6 of AWWA C 600 - 82 and as follows:

A. For 12" pipe the allowable leakage shall be 1.1 gph per 1000 ft at 150 psi.
B. For 10" pipe the allowable leakage shall be 0.92 gph per 1000 ft at 150 psi.

C. For 8" pipe the allowable leakage shall be 0.74 gph per 1000 ft at 150 psi.

D. For 6" pipe the allowable leakage shall be 0.55 gph per 1000 ft at 150 psi.

Should the leakage test fail, the Contractor shall then make the necessary repairs at his own expense.

1565.03 ACCEPTANCE

Acceptance of the pipe will be made when the pressure test has been satisfactorily performed.

SECTION 15650
HEATING, VENTILATION and AIR CONDITIONING

PART 1 - GENERAL

1.1 GENERAL CONDITIONS OF THE CONTRACT: All of the provisions of the General Conditions, Information for Bidders, Special Provisions of the General Contract are a part of this section. The heating subcontractor should be familiar with these sections of the project.

1.2 SCOPE OF WORK: The Heating subcontractor shall furnish all labor and materials to complete all work as shown on the drawings or herein specified, or both. The drawings do not show all the details for the pipes, valves, fittings, hangers, duct work and equipment to be used for complete installation, but show general arrangement and extent of the work to be performed. Included in this contractor's work (but not limited to) are:

A. Boiler and accessories.

B. Grilles and combustion air duct work.

C. Building Heating zones.

D. Piping and supports.

E. Valves, fittings and related items.

F. Insulation of piping.

G. Fuel supply system.

H. Hot water specialties: i.e. air vents, and drains, etc.

I. Room automatic temperature control system and all low voltage control wiring.

J. Cut all holes for piping in walls, floors and ceilings.

1.3 WORK EXCLUDED

A. General cutting and patching.

B. Grouting and sealing of piping penetrations.

C. Line voltage electrical work.

D. Painting of piping and associated heating and ventilation equipment unless Specifically specified herein.

1.4 SPECIAL CONDITIONS

A. All materials shall be new and of the latest design of the respective manufacturers. All materials and equipment of the same classification shall be of the same manufacturer unless otherwise specified.

B. Codes constitute minimum requirements. If a higher standard is specified, the higher standard shall supersede the code requirements. Any conflicts shall be resolved to the satisfaction of the Engineer before proceeding with construction. The latest edition of the Standards for the Installation of Oil Burning Equipment, State of Maine Department of Insurance and all other applicable codes shall be the standard for this project. Interpretations of these codes must be acceptable to the Engineer.

C. Specification by brand name, manufacturer, or type is to establish standards of quality and style. Under the contract these materials shall be furnished as specified, unless a change has been approved by the Project Engineer. Where two or more designations are listed, the Contractor may select at his option.

D. Drawings shall be considered as though part of the specifications. All information contained on the drawings supplied by the Engineer shall be as though it were written in these specifications, subject to the following:

1. Drawings are not to be scaled for dimensions.

2. Layouts are not absolute. It is subject to minor changes to facilitate installation.

3. Locations are not exact, but are as close as clear drafting practice will allow. Field verification with the Engineer or his designated representative shall be the responsibility of this Contractor.

4. This contractor shall keep fully informed on the space and position Requirements of his work and shall give information to the General Contractor to allow coordination with other trades. Particular attention shall be paid to proper clearance from other pipes, electrical conduit, etc., as well as any other structural components.

5. A set of AS-BUILT DRAWINGS, clean and clearly marked in red, shall be kept on the job at all times and turned over to the Engineer upon completion of the project.

1.5 SUBSTITUTIONS

A. Any proposal for substitution shall be made in writing by the heating subcontractor who shall submit full details for consideration and obtain written approval of the Engineer. The Engineer's decision as to acceptability of the substitute material or equipment shall be final. Approval by the Engineer for such substitutions shall not relieve the heating subcontractor from responsibility regarding a satisfactory installation of such work in accordance with the intent of the plans and specifications and shall not effect his guarantee covering all parts of the work.

B. Any additional cost resulting from the substitution of equipment shall be paid by this subcontractor.

1.6 SHOP DRAWINGS

A. A minimum of 6 copies of shop drawings consisting of sepias of shop drawings, cuts and descriptions of materials and equipment shall be submitted to the Engineer for approval.

B. Any materials or equipment submitted for approval which are arranged differently or of a different physical size from that shown or specified shall be accompanied by shop drawings indicating the different arrangement or size and the method of making the various connections to the equipment. The final result shall be compatible with the system as designed.

1.7 EXISTING CONDITIONS: This subcontractor shall visit the site and be familiar with all existing conditions prior to submitting a bid. The Contractor shall also check the Engineer's building plan for elevations, locations of concealed piping and ductwork, location of grilles and registers. Failure to do so does not relieve the subcontractor of his responsibility regarding satisfactory installation of the system.

1.8 CO-ORDINATION WITH OTHER TRADES: This subcontractor shall be responsible for the co-ordination of his work with the electrical and plumbing subcontractors and shall make the necessary adjustments and changes to facilitate installation of all ducts, conduits and piping in the spaces available.

1.9 PROTECTION OF WORK: This subcontractor shall assume full responsibility for the care and protection of all materials and mechanical work until the project is accepted by the Owner. Any material damaged or destroyed shall be immediately removed from the premises and replaced with equipment in full compliance with the specification without expense to the Owner.

1.10 OBJECTIONABLE NOISE AND VIBRATION: Mechanical equipment shall operate without objectionable noise and vibration. Should objectionable noise or vibration be transmitted to any occupied part of the building by apparatus, piping or ducts, as determined by the Engineer, the necessary changes eliminating the noise or vibration shall be made by the heating subcontractor at no extra cost to the Owner.

1.11 ORDINANCES, PERMITS AND FEES: The heating subcontractor shall obtain all licenses or permits, pay all fees, and comply with all local and state rules and regulations as well as those of the National Board of Fire Underwriters.

1.12 INSURANCE: See General Conditions and Special Provisions of the General Contract.

1.13 STATEMENT OF INTENT: It is the intent of the drawings and specifications to provide for the installation of a H.V.A.C. system which is safe, quiet, and economical in operation and complete in all respects. System shall maintain 72 degrees F inside temperature at -15 degrees F outside.

1.14 DEMOLITION OF EXISTING HEATING AND VENTILATION WORK: The Contractor shall remove all existing equipment necessary to carry out the project. All equipment removed shall remain on the site and shall be placed in an area on the site designated by the Engineer. All such equipment shall remain the property of the Owner.

PART 2 - PRODUCTS AND MATERIALS

2.1 PIPING

A. Hot Water - Type M hard drawn copper tubing, above grade and 1/2" ID Heatway Entran Onix with Aluminum Oxide barrier within concrete, to be installed in exactly 300' lengths as per manufacturer’s recommendations.

B. Cold Water - Type-L hard drawn copper tubing.

C. Drains and Vents - Type-M hard drawn copper tubing.

D. Pipe Sleeves - Schedule 40 black iron through masonry. 18 Gage galvanized steel or heavier in wood construction.

2.2 VALVES AND RELATED MATERIALS

A. Fittings:

1. Screwed - 125# cast iron screwed pattern ASTM A126, ASA B16.1

2. Unions - 250# malleable iron with brass to iron ground seats.

3. Flanges - 150# forged steel slip-on ASTM A234.

4. Sweat - Cast bronze or wrought copper.

5. Connections to equipment - Screwed unions.

B. Gaskets: Gaskets shall be ring type, 1/16" thick “Garlock” or equal.

2.15 VENTILATION DUCTWORK: Duct work shall be of galvanized sheet metal and shall be new copper-bearing sheets of lock-forming quality. Zinc coating that will flake or peel under any forming operation, or laminated sheets will not be allowed. Thickness of metal for rectangular ducts, including elbows and other details, shall be as follows:

Longest Rectangular Dimension of Duct Inches	Thickness Galv. Steel USS Gauge
Up thru 12	26
13 thru 30	24
31 thru 54	22
55 thru 84	20

Ductwork shall be reinforced in accordance with the latest ASHRAE Guide and Data Book of Fundamentals and Equipment. All dampers and deflectors shall be #22 gauge and stiffened as required.

2.16 STACKS AND BREECHING

A. The stack system shall be factory-built modular connector, manifold type, listed by Underwriters Laboratories, for use with building heating equipment which produce exhaust flue gases at a temperature not exceeding 1000 degrees F, under continuous operating conditions and not exceeding 1400 degrees F under intermittent operating conditions, when burning liquid fuels as described NFPA 211. The stack system shall be designed and installed to be gas tight and prevent leakage of combustion products into the building. The system shall be designed to compensate for all flue

gas induced thermal expansions.

B. The double wall stack shall have an inner pipe of type 304 stainless steel, 1 inch air space between the walls, and outer jacket of aluminum coated steel.

C. The stack system shall be installed according to the manufacturer's installation instructions and shall comply with all local codes.

D. Stack shall terminate 4' minimum above the roof. Provide chimney round top cap, storm collar, ventilated roof thimble, base section, clean-out, drain, tee cap, flashings, wall guides, floor guides, and clamp flanges as necessary.

E. The entire stack system from each boiler to the termination, including accessories, shall be from one manufacturer.

F. Breeching stack system shall be Metlvent Model TD 2100 degrees F or approved equal. The Contractor shall submit sketch of configuration of proposed components for approval.

2.17 DUCT INSULATION

A. Flexible Blanket: Ductwork required to be insulated shall be insulated with 2" Thickness 1 lb. density flexible Glass fiber duct insulation with Foil-Skrim-Kraft facing. Insulation equal to Knauf Ductwrap with commercial FSK face.

2.18 FUEL OIL TANK

Furnish and install a single wall 330 gallon steel fuel tank which is U.L. Listed approved by the State of Maine Oil Burner Licensing Board. The tank shall be constructed from seven gauge steel with a red primer protective coating. Touch-up damaged coating immediately prior to setting tank. Provide 4" concrete slab on grade as shown on the Drawings.

2.19 FUEL OIL PIPING

Furnish and install copper tubing for oil piping with all necessary accessories. Tubing to be provided with a flexible plastic sleeve for protection. See details on Drawings.

2.20 FUEL OIL TANK GAGE

Provide and install a tank gauging system for the 330 gallon oil tank. The system shall be supplied complete including transmission tubing, air bell, and tank fittings.

PART 3 - EXECUTION

3.1 PIPING - GENERAL

A. Provide and install the hot water supply and return piping shown on the plans and as required to complete the intended installation. The heating subcontractor shall make such offsets as are shown or required to place all piping in proper position to avoid other work (especially other piping and electrical).

B. The size and general arrangements as well as the methods of connecting all piping, valves, equipment, etc., shall be as indicated, or as approved by the Engineer.

C. All piping shall be erected to provide for the easy and noiseless passage of water under all working conditions. Inverted eccentric reducing fittings shall be used wherever hot water pipes reduce in size. Provide ½" gate valves with hose couplings for drains at all low points in the piping system.

D. All water mains shall be run level or pitch slightly upward so that no air pockets are formed in the piping. The mains shall be set at elevations such that the runouts feeding heating equipment shall have no pockets where air can collect or where vents are provided.

E. In the erection of water piping care must be taken to make proper allowances for expansion and contraction; piping shall be anchored as necessary to control the expansion. Runouts to radiation shall be the size indicated on the plans and shall come off the top of the mains at a 45 degree angle for upfeed radiators and downward at 45 degree angle for downfeed radiators.

F. Install a sufficient number of flanged fittings and / or unions to facilitate assembly and disassembly of piping and removal of equipment. Install gate valves on each side of unit heaters, cabinet heaters and circulation pumps.

G. All water mains 3" and larger shall have welded connections using standard factory fabricated tees, elbows, reducers, caps, etc. Branch outlets in welded sizes shall be made with tees for full size or one size reduction and with either “weldolets” or factory shaped nipples for all other sizes. All welds shall be made by qualified welders capable of welding in any position “in the field”. All welds shall conform with the rules set forth in the Standard Manual of Pipe Welding of the Heating, Piping and Air-Conditioning Contractors National Association.

H. Water piping 2 ½" and smaller shall have screwed connections in the case of black iron pipe and sweat fittings in the case of hard drawn copper. Copper fittings shall be

joined with 50 / 50 solder above grade and silver solder below grade.

I. Pipe Hangers: Shall be provided at maximum intervals of ten feet, for horizontal pipes. Hangers shall be as shown on plans or equivalent, with Engineer's approval. Vertical pipes shall be supported by adjustable malleable iron brackets.

J. Pipe Sleeves: Furnish and install pipe sleeves for heating pipes passing through walls and ceilings. All pipe sleeves shall be sized to permit continuous pipe insulation to pass through.

K. Escutheons: Furnish and install chrome steel escutcheons plates in all finished areas where piping passes through walls or ceiling.

3.2 HEATING SPECIALTIES

A. Balancing Fittings: Shall be applied to all heating units and shall allow for tight shut off without upsetting balance.

B. Drain Valves: Shall be installed at all system low points and as indicated, to provide positive water drainage of all system zones and individual heating units. Drain valves shall be globe valves and shall be sized as indicated. Drain valves installed as piping drains shall be equipped with hose nipples.

C. Water Pressure Reducing Valves: A pressure reducing valve shall be provided and installed in the cold water supply to the heating system. The valve shall be set to Maintain 15 psi in the system.

D. Air Vents

1. Air vents shall be provided to eliminate all air from the system and installed as shown on the plan or where required.

2. Drain from automatic air vents shall be as shown on plans, with a gate valve installed in each drain. An air chamber shall be installed at each air vent, and shall be line size.

3. Manual air vents shall be installed as required in an accessible location.

3.3 BOILER CONTROL

Install a complete set of boiler controls. All controls shall be compatible with the 24 volt control voltage.

3.4 STACK, BREECHING and CHIMNEY

Stack and breeching shall be furnished and installed for the boiler unit. Pipe shall be Sized as indicated on the drawings, and all joints shall be such that assembly is gas tight. All supports shall be provided by the Heating Contractor and set by the General Contractor.

3.5 FUEL OIL PIPING

A. Furnish all piping and make all connections to the oil tank. Furnish and install all piping, fittings, valves, filter, sleeves, and miscellaneous items to connect oil supply tank to burners.

B. Provide a fusible valve, check valve and fuel oil filter, replaceable cartridge type, with capacity greater than oil pump capacity. Piping to be to the burner and be enclosed in a sleeve for protection.

C. Verify proper size of oil piping with Engineer before starting any piping work.

3.6 OIL BURNER INSTALLATION

A complete system of electrical wiring and controls shall be provided for the oil burners.

Fused line voltage circuits for the boiler shall be provided by the electrical subcontractor. (Electrical Section).

The complete oil burner installation shall be done to conform to all local and state rules and regulations, the codes of the National Board of Fire Underwriters, and the State of Maine Oil Burner Code.

3.7 CIRCULATORS

Furnish and install circulating pumps for the hot water heating system in locations shown on the drawings.

3.8 PIPE INSULATION

A. GENERAL

1. Provide and install insulation for all surfaces of piping and specialties as indicated and specified.

2. Application shall be by experienced insulation mechanics in a neat and workmanlike manner in accordance with the best practice of the trade using methods recommended by the manufacturer and approved hy the Engineer.

3. Systems shall be tested and proven tight, and surfaces painted where required before application of insulation.

4. Surfaces shall be clean and dry before starting and during application.

5. Insulation for piping and sheet metal work operating at temperatures below ambient room temperatures shall be continuous through the wall, floors, partitions, hangers, supports, etc.

6. Insulation shall be neatly finished at pipe hangers, pipe anchors, and pipe covering protection saddles as specified for fittings and valves. Seal all ends of insulation.

B. ABOVE GRADE HEAT PIPING

1. The entire new piping system shall be completely insulated and all piping in the boiler room.

2. Insulation shall not be applied to the following:

Screwed unions
Valves, flanges and unions

3. Fittings and joints shall be insulated to a thickness equal to the adjoining pipe insulation.

3.9 SHEET METAL AND DUCTWORK

A. General - Furnish and install all required sheet metal work and duct systems including: intake ducts, back-draft dampers, weatherhoods, turning vanes, deflectors, operators, louvers and screens, grilles, diffusers, collars, sleeves, stop-offs, access doors, flexible connections, supports, etc., for the complete installation as shown on the drawings or noted herein, or required to make the installation complete in accordance with the intent of the drawings and specifications.

B. Installation: Fabricate and install in accordance with applicable requirements of the ASHRAE Guid and Data Book. Ductwork shall be neat, accurate, rigidly constructed And mechanically tight, as well as substantially airtight and shall provide quiet system of air transportation. Offsets of exposed ductwork shall be made on sides opposite to walls, and ceilings, unless otherwise shown on the drawings or specified. Sizes, as marked on

the plans, shall be adhered to as closely as possible. The right is reserved to vary the size of ducts and flues to accommodate structural conditions during the progress of the work, without additional cost to the owner.

B. All Joints in sheet metal ducts shall be sealed and made air tight and all branches, turns, etc., shall be made with long radius elbows and fittings.

D. All ducts shall be installed with necessary offsets, changes in cross sections, etc., and shall be constructed with approved joints and be substantially supported in an approved manner. Ductwork shall have no standing seams.

E. Access Doors: Shall be installed in building construction, casings, plenum chambers and ducts where shown and wherever else required for ready access to operating parts of any kind.

F. Registers, Grilles, Diffusers and Louvers: Each air outlet and inlet shall be provided with finished terminal fitting as indicated and in accordance with the drawings and schedule. All items shall be as specified or an approved equal.

G. Adjustments: After completion of the installation work called for in this specification, the contractor and his subcontractors shall furnish necessary mechanics or engineers for the adjustment and operation of the plant, to the end that the plant may be perfectly adjusted and turned ove to the owners in perfect working order. The Contractor shall further instruct the Owner's authorized representative in the care and operation of the installation providing all required framed instruction charts, directions, etc.

3.10 DUCT INSULATION

A. Flexible Blanket: Butt all edges of insulation tightly and seal all joints and breaks with tape or flange of a 4" minimum width in accordance with manufacturer's recommendations.

This insulation shall be additionally secured with mechanical fasteners which shall compress the duct liner sufficiently to hold it firmly in place.

3.11 ELECTRICAL

Furnish and install all low voltage (less than 120 v.) wiring associated with the H.V.A.C. system and its control. All wiring shall be done by licensed electricians and be installed in accordance with the National Electric Code.

3.12 VALVE AND PIPE IDENTIFICATION

Identify all piping and valves according to the following marking system:

A. Nameplates: Provide and install “Seton” or approved equal, embossed vinyl-plastic name tags with white letters on black background to identify equipment, controls, etc.

B. Tags and Charts: Attach to each valve a 1-1/2" round or octagonal brass tag with 1/2" indented numerals filled with a durable black compound. In addition to the valve numbers each tag shall identify the system it controls. Tags shall be securely attached to stems of valves with copper or brass “S” hooks, or chain. Valve charts shall be provided for each piping system and shall consist of schematic drawings of piping layouts, showing and identifying each valve and describing its function. Upon completion of the work, one copy of each chart, sealed to rigid backboard with clear lacquer placed under glass and framed, shall be hung where directed. Two additional unmounted copies shall be delivered to the Engineer.

3.13 MAINTENANCE MANUALS AND OPERATING INSTRUCTION

A. At completion of the work, the Heating Contractor shall provide the Engineer two complete sets of operation and maintenance instructions for all heating and ventilating equipment. These shall be bound together in two notebooks for the owner.

B. The Owner or his representative shall be completely instructed in the operation of the heating and ventilating system and all its components and advised of good and correct operating and maintenance procedures.

3.14 SYSTEM BALANCE

A. System balancing work shall be performed by personnel, experienced in HVAC balancing techniques, using state of the art and properly calibrated instrumentation. The H & V subcontractor must obtain approval from the Engineer for the balancing program. Three (3) bound, typewritten copies of the balancing report, shall be delivered to the Engineer for approval at the completion of the work. If the report is found to be incomplete or inaccurate, the affected portions shall be repeated at no additional cost.

B. Water Balancing: Adjust the triple duty valves and CBV’s as necessary to produce the specified flow rates throughout the piping system. Desired flow rates shall be reviewed by the Engineer before start of work.

DIVISION 16

ELECTRICAL

SECTION 16401
ELECTRICAL WORK

PART 1 - GENERAL

1.01 GENERAL

Include Conditions of the Contract and applicable parts of Division 1.

Examine all other sections of the specifications for requirements which affect the work of the Section, whether or not such requirements are particularly mentioned herein.

Coordinate the work of this Section with the related work of other trades, and cooperate with such trades to assure the steady progress of all work of this Contract.

1.02 SCOPE

The work covered by this Section consists of furnishing all labor, materials, equipment, supplies, devices, electrical apparatus, and the performance of all operations necessary for the installation of electrical facilities for the new garage addition and interior renovations including provision of new electric distribution and lighting equipment in and about the structure, as indicated on the Contract Documents.

1.03 WORK OF OTHER SECTIONS

Temporary lights and power
Excavations and backfill for underground utilities
Miscellaneous metals
Painting
Mechanical

1.04 SUBMITTALS

A. Shop Drawings: Within 30 days after award of the Contract, submit shop drawings in accordance with the requirements of the General Conditions and in the manner described therein. Shop drawings shall indicate specification section and paragraph requiring equipment indicated.

Shop drawings are required on all major pieces of equipment in the following list, but not necessarily limited thereto: breakers, panelboards, motor starters, contactors, relays of all types involved, pull, junction, and terminal boxes, disconnect switches, lighting fixtures, fire alarm system, components, etc.

Shop drawings and manufacturer’s data submitted must bear the Electrical Subcontractor’s

stamp stating that the shop drawings and data have been checked and met the plans and specifications before being submitted for Engineer's approval, or they will not be considered and will be returned fro resubmission. If the shop drawings and data show proposed variations from the requirements of the plans and specifications because of standard practice or other reason, specific mention shall be of such variations in the letter of transmittal.

The Electrical Subcontractor shall assume the entire cost and responsibility for any changes in the work which may be occasioned by approval of materials other than those specified.

Errors, omissions, and coordination of shop drawings shall be the sole responsibility of the Subcontractor whether or not the shop drawings are approved.

In the event that any specified manufacturer's number has been superseded by a new number since the writing of this specification, the new manufacturer's number shall be immediately submitted to the Engineer or Architect of any superseded manufacturer's numbers mentioned in these specifications.

B. Record Drawings: In accordance with requirements of the Supplementary General Conditions, the Subcontractor shall furnish and keep on the job at all times one (1) complete set of black line prints of the electrical work, on which shall be clearly, neatly and accurately noted, promptly as the work progresses, all architectural and electrical changes, revisions and additions to the work. Wherever work is installed otherwise than as shown on the Contract Drawings, such changes shall be noted.

The Subcontractor shall indicate on these prints the daily progress by coloring in the various apparatus and associated appurtenances as they are installed.

No approval of requisition for payment for work installed will be given unless supported by record prints as required above.

At the conclusion of work, prepare record drawings in accordance with the requirements of the Supplementary General Conditions.

C. Operating Instructions and Maintenance Manual: The subcontractor shall instruct, to the Owner's satisfaction, such persons as the Owner designates in the proper operation and maintenance of the systems and their parts.

Parties indicated above shall sign affidavits stating that the above instructions were given by the Electrical Subcontractor.

Furnish in accordance with General Conditions operating and maintenance manuals and forward same to the Engineer for transmittal to the Owner. The operating instructions shall include copies of posted specific instructions.

For maintenance purposes, provide shop drawings, parts lists, specifications and manufacturer's maintenance bulletins for each piece of equipment. Provide name, address and telephone

number of the manufacturer's representative and service company, for each piece of equipment so that service or spare parts can be readily obtained.

1.05 APPLICABLE STANDARDS, PERMITS AND CODES

The installation shall comply with all laws applying to electrical installations in effect in Fairfield, ME, and with regulations of any other governmental body or agency having jurisdiction with regulations of the National Electrical Code where such regulations do not conflict with those laws, with the regulations of the electrical utility company involved, with the telephone utility.

File all required notices and plans. Obtain and pay for all permits, inspections, licenses, and certificates required for work under this Section.

If any portion of the electrical plans or specifications conflict with any laws or ordinances with regard to type of materials, equipment, or fixtures to be used, the Electrical Subcontractor shall bring it to the Engineer's attention at least seven (7) days before submitting the bid.

Otherwise the cost of all work necessary to make the installation comply with said laws or ordinances shall be paid by the Electrical Subcontractor and shall become a part of this Contract at no added cost to the Owner.

1.06 EXAMINATION OF SITE AND CONTRACT DOCUMENTS

Before submitting prices or beginning work, thoroughly examine the site and the Contract Documents.

No claim for extra compensation will be recognized if difficulties are encountered which an examination of site conditions and Contract Documents prior to executing the Contract would have revealed.

1.07 DRAWINGS

The Subcontractor shall refer to the electrical drawings and the architectural floor plans and details for a full comprehension of the extent and detail of the work to be performed. These drawings are intended to be supplementary to the specifications, and any work indicated, mentioned, or implied in either is to be considered as specified by both.

All work shown on the drawings is intended to be approximately correct to the scale of the drawings, but figured dimensions and detailed drawings are in all cases to assume precedence over them. The electrical drawings are diagrammatic and are not intended to show every detail of construction or the exact location of equipment. Where building construction makes it advisable or necessary to change the location of equipment, the Subcontractor shall perform such work without cost to the Owner on written request of the Engineer. Any doubt as to the intended location of the equipment shall be resolved by the Engineer before proceeding with the installation.

The intent is to obtain an electrical installation of all systems, complete in every detail within and about the building, and with all facilities properly interconnected with power and telephone. The Electrical Subcontractor shall furnish and install all such parts as may be necessary to complete the system in accordance with the best trade practice and to the satisfaction of the Engineer. Upon completion, the electrical systems and all equipment throughout the structures shall operate properly and adequately and function as intended.

In any discrepancy between requirements of any Section, between notes on the drawings, between drawings, between details in the specifications, or between drawings and specifications, that which is in the best interest of the Owner shall apply.

1.08 ELECTRICAL REFERENCE SYMBOLS

Standard symbols have been employed where such will meet the need. These are augmented and modified to illustrate as necessary. The chart on the Contract Drawings are intended to illustrate all symbols and explain the function and installation method of the device represented. When not clear, or where one has been inadvertently omitted, it shall be the responsibility of the Electrical Subcontractor to obtain a ruling on the intent before proceeding with any work.

1.09 TEMPORARY POWER

The Electrical Subcontractor shall furnish and install temporary feeders of proper capacity power required for the building while under construction.

Sufficient outlets shall be installed at convenient locations so that extensions cords of not over 50 feet will reach all areas requiring power.
It is the intent that temporary power be obtained from existing building facilities. Refer to General Conditions to determine if change will be made for power utilized.

The General Contractor and all subcontractors shall furnish their own extension cords and such lamps as may be required for their work, and shall pay for the cost of temporary wiring of construction offices or shanties used by them and any temporary wiring of a special nature for light and power required other than that mentioned above.

1.11 BID ALTERNATES

The Electrical Subcontractor shall review various bid alternates in the Contract Documents to ensure his bid reflects various alternatives in its submission. Refer to Division 1 of Specifications.

PART 2 - MATERIALS AND METHODS

2.01 GENERAL REQUIREMENTS

A. All materials, devices, and equipment, unless specifically excepted, shall be new.

B. Identification. All materials shall bear UL labels where such have been established for the particular device.

All devices shall show make, type, serial number (where applicable), voltage, amperage, wattage, motor ratings, and all other pertinent data.

All wire shall have make, type of insulation, size, and voltage rating clearly marked upon it.

C. Sleeves / Junction Boxes / Anchors. The Subcontractor shall advise the Contractor of locations of all sleeves, openings, anchors, supports, conduits and boxes, and shall provide same so that they may be built into the job wherever feasible.

D. Nameplates. Provide black lamaloid micarta nameplates with white lettering for all panels, disconnects, etc.

2.02 ACCESS PANELS

Furnish, for installation by the General Contractor, all metal access panels required for access to services provided under this Section.

Panels shall be type described in Miscellaneous Metals.

Coordinate locations and sizes of all such panels with the Contractor, subject to the Engineer's approval.

2.03 CONDUITS / SURFACE METAL WIREWAY

A. Exterior. Direct buried conduit and conduit in concrete or below concrete floor slabs in earth shall be Schedule 40 PVC or galvanized steel. Where steel is used, it shall be double coated with bitumastic dried at least 24 hours between coats before installation. Where PVC is used, rigid galvanized steel shall be provided for all offsets, elbows and all foundation penetrations and extensions to above grade.

B. Interior. Where interior conduits are provided, they shall be rigid galvanized steel, intermediate metallic conduit or electrical metallic tubing. Fittings, boxes and related items for interior work shall be manufactured by Steel City Electric Co., Appleton, Raco or approved equal.

Minimum size conduit for light and power wiring, where required, shall be 3/4".

C. General. The use of nonmetallic conduit or raceway within a building or above grade is not permitted, except under slabs. PVC may be used where underground only.

Rigid galvanized conduit or electrical metallic tubing shall be manufactured by Youngstown sheet and Tube Company, Republic Steel, or equivalent.

Flexible metallic conduit shall be used to tie in all motors. Where motors or control equipment are exposed to moisture, liquid-tight flexible metallic conduit shall be used.

PVC conduit shall be Type II by Carlon Products or approved equal.

Aluminum conduit shall not used on this project.

Conduit for telephone cable entry to the building is required.

All terminations of conduits or tubing shall have smooth, rounded bushings.

All conduit 1" and larger and all tubing shall have insulation which may be integral with the bushing connector; or an insulated bushing may be added.

All rigid conduit joints shall be threaded. Do NOT use any type of clamp on fittings. All plastic joints shall be cemented or heat welded.

2.04 WIRE AND CABLE

All cable and wire shall comply with the latest requirements and specifications of the NFPA and / or the Insulated Power Cable Engineers Association (IPCEA) and shall be as manufactured by General Cable, General Electric, Anaconda, Phelps Dodge, or approved equal, unless otherwise specified or indicated.

All conductors used in the wiring system shall be soft-drawn copper wire having a conductivity of not less than 98 percent of that of pure copper, unless otherwise indicated or specified. Wire No. 10 AWG and smaller may be solid and wire
No. 8 AWG and larger shall be stranded.

All wire and cable shall be stamped approximately every two (2) feet to indicate voltage, type, temperature rating, UL listing, manufacturer’s name, size, etc.

All cable and wire shall be: 600 volt; installed in approved raceways or conduit; not less than No. 12 AWG (except that No. 14 AWG may be used for control wiring).

Insulation for cable and wire shall be as follows:

General Use Areas	THWN, XHHW
Feeders to Panels	XHHW
damp locations	
Service Entrance	XHHW

All internal wiring to fixtures shall be minimum No. 13 AWG,
silicon rubber (150 degrees C) with minimum 300 volt insulation.

All branch circuit wiring from panelboards to any outlet on the circuit over 50' but under 100' shall be No. 10 AWG for the first half of the circuit, over 100' but under 175', use No. 8 AWG for the first half. All exit or emergency wiring shall be No. 10 AWG.

The following color code shall be used for all conductors. The colors must be fast, fadeless, and capable of withstanding cleaning.

	120 / 240 volt
Phase A	Black
Phase B	Red
Phase C	---
Neutral	White
Bond	Green

All circuit wires shall be tagged in cabinets, etc., with 1/16" thick tags securely fastened to the conductors with a heavy type of linen wrap at time wires are pulled in and tested. Circuit numbers shall be indicated on tags. Tags shall not be removed for any reason.

At least 8" loops or ends shall be left at each outlet for the installation of devices or fixtures in the future. All wires in outlet boxes not for the connection to fixtures at that outlet shall be rolled up, connected together, and taped.

Wires and cables shall be carefully handled during installation.

When a lubricant is necessary for pulling wires, it must be listed by UL and be of such consistency that it will leave no obstruction or tackiness that will prevent pulling out old wires or pulling in new wires or additional wires.
No soap flakes or vegetable soaps will be permitted.

Conductors shall be continuous from panelboard to outlet and from outlet to outlet. No splices shall be made except within junction boxes.

Splices and taps in wires No. 8 AWG and larger shall be made with Burndy “Polytap” or equal solderless connectors designed for the purpose. All connections between wires at fixtures and

boxes shall be made with UL approved 600-volt pressure connectors equal to Ideal “Wire-Nut” or “Wing-Nut”.

Use of MC cables is permitted on this project where concealed above ceilings or within walls.

All conductors and connections shall be free of grounds, shorts, and opens.

Aluminum conductors are not permitted on this project.

2.05 OUTLET BOXES

For concealed wiring to wall switches and duplex outlets, use gangable steel boxes not less than 2 3/4" deep, such as Raco 560 to 568 Series.

These may have cable clamps or a connector added to them. 4" square or larger boxes with raised plaster rings are equally acceptable. These boxes may be directly nailed to a stud if they fall adjacent to one; otherwise, wood straps a minimum
of 2 1/2" x 3/4" between studs shall be added and mounting shall be by ears on the box. Solid or adjustable bar hangers are equally acceptable.

Flush ceiling and device outlet boxes shall be 4" octagonal by 2 1/8" deep
or 4" square boxes with raised plaster rings.

Set all flush boxes to have edge precisely in the same plane as the finished wall surfaces.

All boxes shall be held to wood surfaces by wood screws. On metal surface, boxes shall be held by metal-to-metal screws or by machine bolts.

Exposed boxes in unfinished areas (if any) shall be 4" square by 2 1/8" deep or where volume is adequate, 4" x 2 1/8" handy boxes may be used.
Covers for these shall match the box and be designed for them.

Any outside boxes mounted exposed shall be cast metal type with integral threaded hubs, Type FS or FD.

2.06 PULL BOXES AND JUNCTION BOXES

Pull boxes, cabinet boxes and junction boxes shall be constructed of code gauge galvanized sheet metal of not less than the minimum size recommended by the National Electrical Code. Boxes shall be furnished with screw-fastening covers. Where several feeders pass through a common pull box, they shall be tagged to indicate clearly their electrical characteristics, circuit number and panel designation. Where pull boxes must be used in finished areas, the Engineer shall be consulted for the location, style of cover, and finish of box. The location shall always be as inconspicuous as possible. Where shown on the drawings, sizes of pull boxes, terminal boxes and junction boxes shall be followed or next larger standard trade size shall be used. Add pull boxes when such are deemed advantageous. If installed in areas specified as corrosive, provide

as cast metal boxes with integral hubs.

2.07 PULLING CABLES

Except for telephone conduits, all raceways are to be equipped with conductors. Swab all conduit before cable is drawn into them. Any crushed raceways shall be replaced before drawing in cable. Where cable pulling compounds are required, materials specifically intended for that purpose may be utilized.

2.08 DISCONNECTS

Where shown on the drawings, or when NEC required whether or not shown, install disconnect switches appropriate for the application. When serving motors, they shall be motor rated. Those for equipment (if any) outdoors shall be in rain-tight enclosures, or as otherwise indicated on Contract Drawings. Those in corrosive areas shall be in rain-tight enclosures.

Switches shall be heavy duty quick make and break type. They are to be non-fused by a solid copper bar, silver plated may be used to convert heavy duty on motors over 2 Hp.

For small motors (1/8 Hp or less), a toggle switch, motor rated, may be used; otherwise, they shall be similar to General Electric Type TH in NEMA 12
enclosures. Manual starters with overload protection built in are approved when NEC acceptable.

2.09 OVERCURRENT PROTECTION DEVICES

Overcurrent protection for motors is to be in the starters. There is to be protection in each phase wire. Overcurrent protection of conductors is by thermal and magnetic molded case circuit breakers in the panelboards. Where combination starters are used, the breaker is to be a motor circuit protector with only magnetic trips. These must be supplied from branch circuit protectors by a thermal and magnetic trip breaker.

2.10 WIRE CONNECTORS AND DEVICES

All wire joints shall be made with a pressure squeezed connector such as T & G Stakon and Ideal, or bolted clamp such as made by Dossert. Twist-on type wire nuts are also permitted for general lighting and receptacle circuits, only. Make up to terminals shall be by mechanical squeeze connector. Whenever only a screw connector is available, install a conductor terminal like T & G Stakon spade or donut and designed for the application and compression set to the conductor.

Cover all joints made with non-insulated clamp device with Scotch brand plastic electrical tape. Type #88 may be used at any joint and shall be used whenever the temperature of joint or the room is below 50 degrees F. In the summer or when temperature is above 60 degrees F, new type #33 plus may be used. Triple wrap joints, each wrap having a 50% overlay.

2.11 SWITCHES AND PLATES

Switches shall be specification grade, 20 amperes at 120 / 277 volts, with ivory handle, such as Bryant 4901-l, for SPST applications. For three-way
use No. 4903-l, and for four-way use 4904-l. Provide with green ground bond screw.

Mount all switches vertically, wall-flush, and at a height of 4'-0" (except where specifically noted otherwise, adjusted to minimize cut of tile or masonry unit, unless otherwise specified. Heights of installation shall conform to Handicap code.
All switches must have machine screw held wire and be back wired. Automatic grips will not be permitted. All switches must be classed as heavy duty.

Switch with pilot shall be equal to regular switch, but with red pilot when switch is “on”.

All flush plates are to be smooth-line galvanized nylon by Bryant, ivory in color; one piece construction for all grouped switches or Hubbell equivalent.

Switches and plates shall be a product of Bryant or Hubbell.

2.12 CONVENIENCE AND OTHER OUTLETS AND PLATES

Ground Fault Receptacles shall be Bryant GFR53FTI, 20 Ampere, 125 volt or approved equal. Each receptacle noted as “GFI” is an individually protected GFI receptacle.

Clock outlets shall be Bryant 2528GS.

Receptacles shall be specification grade, Bryant 5362-l, 20 ampere, 125 volt rated.
Plates shall be ivory color, smooth type, nylon by Bryant.

Outdoors and elsewhere as shown use weatherproof covers, Bryant RB245AL with double covers, spring held gasketed or similar to match ground fault receptacle provided. Mount the outlet horizontally.

Special outlets, if any, shall be per Contract Drawings.

Automatic grip set outlets are not permitted.

On exposed FS and FD boxes, use cast feraloy covers matching the box. Outdoor and in damp locations, use twin spring loaded weather-proof covers,
Bryant 4500-FS.

Outlets and plates shall be product of Bryant or Hubbell.

2.13 MOTORS

These specifications relating to motors and motor control apply to all motors and controls

furnished by this Section or any other section.

Each section supplying motor drive apparatus will be responsible for supplying an electric motor of sufficient size for the duty performed.

These shall not be oversized beyond a normal safety factor, except that standard design ratings for next above motor size required will be used. Unless otherwise specified, all motors shall have open frames, Class A insulation and continuous duty classification based on a 40 degree F ambient temperature of reference.

Motor ½ h.p. and larger shall be, and those smaller may be 240 volts, one phase, 60 hertz. Motors 1/3 h.p. and smaller shall be 120 volts, single phase, 60 hertz.

MOTOR CONTROL: Each motor, or group of motors, requiring a single control shall be provided with a suitable controller and devices which shall perform the functions as specified for the respective motors in other sections of these specifications. All controllers shall conform to the adopted standards and recommended practices of the Industrial Control Standards of the National Electrical Manufacturers Association and the Standards for Industrial Control Equipment of Underwriters' Laboratories, Inc.

THERMAL OVERLOAD PROTECTION: Each motor shall be provided with an overload protective device, integral with either the motor or controller. Unless otherwise specified, the protective device shall be of the manually reset type. Manual controllers for motors shall be specifically designed for the purpose, and shall have a horse-power rating adequate for the motor. Automatic control devices such as thermostats for float motors directly are satisfactory, provided they are designed for that purpose and have an adequate horsepower rating.

2.14 SECONDARY SERVICE

Electrical utility service shall be replaced, underground by Base Bid, or overhead by Alternate Bid.

2.15 ELECTRICAL SERVICE AND DISTRIBUTION SYSTEM

The electrical utility company shall provide the electrical service of the characteristics as shown on the drawings. The Subcontractor's work will begin where the utility company's work ends.

All costs chargeable by the utility company for the service shall be obtained by the Subcontractor and included in this bid, including all extension costs (if applicable).

The Subcontractor shall furnish all labor, materials, etc. necessary for a complete approved electrical service as required by the structure, including inspection and approval by the utility and local inspection departments.

The Subcontractor shall notify the utility company in writing, with a copy to the Engineer, no later than 10 days after signing construction contracts, as to when the building power service will

be required.

2.16 OVERHEAD ELECTRICAL SERVICE

Overhead service shall comply with all the requirements of the National Electrical Safety Code, local utility company, and local enforcing authority.

Wire sizes noted on Contract Drawings are selected on a voltage drop basis.

2.17 PRIMARY POWER SERVICE

Primary power to the site is to be underground from relocated local utility power pole.

2.18 METERING

The structure shall be metered.

The Electrical Subcontractor shall furnish and install all equipment and meter trim for metering, in accordance with utility company requirements, except that the utility meter will be provided by the local utility.

Where the local utility does not provide the meter sockets, the Electrical Subcontractor shall provide them to the local utility's specifications.

Any utility charges for poles, service cable, meters, etc. in connection with the provision of the temporary building power shall be paid in full by the Electrical Subcontractor under this Section. This does not include the cost of temporary power used as covered elsewhere.

Remove existing meter and service after new service is activated and connected to existing distribution.

2.19 PANELBOARDS, 120 / 240 VOLT, SINGLE PHASE

Panelboards shall be provided with a top-mounted main breaker or remote main breaker to panel main lugs and branch circuit breakers, according to the schedule on the Drawings.

The general requirements for the panels are shown on the drawings, including mounting and gutters. Mount the panels 6' - 6" up to top of roughing cabinets. Gutters not less than 5" will be considered meeting specifications. Breaker frame size is shown on the drawings. Handle ties will not be permitted anywhere.
Multi-pole breakers shall have common trip and one handle.

Provide a typewritten tabulation indicating fixture outlets, devices, machines or apparatus served by each breaker and their room location. This shall follow coding on the drawings with breakers numbered from top to bottom. Mount tabulation inside the door in a frame for the purpose, with a transparent plastic cover.

For holding breakers in “ON” position, provide each panelboard with indicated quantity of slip on screw set devices for holding breakers on “ON” position. These are to be used, as described, to prohibit switching breakers unless clip is first removed. These devices shall not interfere with normal breaker tripping on overload conditions.

Panels shall be manufactured by Cutler - Hammer.

2.20 BALANCING OF LOADS

The Contractor shall balance all loads between phases in all panels, etc., around the neutral. No common neutral wiring is permitted. Neutral conductors shall be the same as phase conductors unless specifically noted otherwise.

All circuits shall be distributed among the phase so as to restrict any phase load imbalanced to less than 10% at any panelboard.

After completion of the installation, record under full load conditions the current flow in each phase feeder. Upon request, submit four (4) copies to the Engineer giving name and locations of each panel, etc.

Circuit numbers assigned to home runs and devices on the Drawings are for the purpose of indicating individual circuit and are intended to correspond with the circuit numbers in the panels. The panelboard directory shall designate each circuit and its associated load. If the numbers deviate from the drawings, the as-built drawings shall reflect this.

2.21 LIGHTING FIXTURES

Wire directly to an outlet box for each fixture in and on the building.

General building wire is to be used to these outlets, except recessed fixtures without self-contained outlet box shall be served via greenfield silicon rubber insulated wire ground. From outlet into fixture, use No. 14 AWG silicon rubber, color coded to make up to fixture socket or ballast supply leads. Add a bond wire to ground all fluorescent fixtures.

Where fixtures are hung from or recessed in suspended ceiling construction, this Contractor shall support these fixtures from the building structure and not from the ceiling suspension. Furnish 6' - 0" prewired greenfield on each recessed fixture.

All recessed fixtures shall fully conform to NEC Articles 410-64, 410-65, 410-73 as applicable.

The lighting fixtures listed on the drawings are to indicate quality, appearance, lamping and photometric characteristics acceptable. Alternative fixtures may be proposed for the project where they provide the equivalent characteristics, quality and appearance, and subject to Engineer approval. The Engineer’s decision regarding approval of alternative items is final.

Suitable fireproofing enclosures shall be provided by this Contractor for recessed fixtures, to keep insulation supported clear of fixtures (if applicable).

2.22 LAMPS, BALLASTS AND ACCESSORIES

Except as otherwise specified, all fluorescent ballasts are to be for rapid start lamps and power factor corrected to approximately 95% lagging. All ballasts shall carry E.T.L. approved, and where available on the type needed, shall carry an A sound rating. All ballasts shall be super premium, high power factor fully electronic type for T12 lamps, and shall have a minimum harmonic content. Ballasts of high intensity discharge lighting shall have a crest factor of less than 1.7.

Fluorescent lamp ballasts shall be so mounted as to avoid amplifying hum, and any ballast which, within one (1) year, develops a hum considered excessive by the Engineer shall be replaced free of charge with another of a noise level that is considered satisfactory by the Engineer. Indicated fixtures shall utilize low energy electronic ballasts.

All lamps shall be color or type specified. Incandescent lamps shall be for 125 volt service. They shall be the product of General Electric, Sylvania or Westinghouse, and be so labeled. Provide low energy T12 fluorescent lamps.

2.23 TELEPHONE

Service is existing.

For each telephone outlet, provide a 2 ½" deep wall box. This electrical subcontractor will pre-wire the building in accordance with local utility practices. Coordinate fully with the telephone company.

2.24 OUTDOOR LIGHTING

All outdoor lighting will be done according to all local and National Electric code.

2.25 EMERGENCY LIGHTS - EXIT LIGHTS

See Fixture Schedule on Contract Drawings for further information. Provide guards for emergency and exit lights in garage area. DC wiring from battery to remote fixture shall <u>not</u> be smaller than #10 AWG, and shall be sized by the Electrical Subcontractor to provide no greater than a 5% voltage drop at the most remote fixture on each circuit.

2.26 FUSES (if any)

Provide a complete set of fuses for each fusible switch. Time-current characteristics curves of fuses serving motors or connected in series with circuit breakers or other circuit protective devices shall be coordinated for proper operation; submit coordination data for approval. Fuses

shall have a voltage rating not less than the circuit voltage.
Cartridges Fuses, Current-limiting type (Class R): UL 198E, Class RK-1 time-delay type. Associated fuseholders shall be Class R only.

2.27 WIRING OF MECHANICAL AND PLUMBING EQUIPMENT

Provide all power wire to disconnects, starters, and from starters to motors for all heating equipment, ventilation equipment and plumbing equipment as provided by mechanical and / or other contractors, all wiring of temperature control equipment is provided by mechanical subcontractors and is by him.

All line voltage wiring (120v or high) is by electrical contractor. All equipment shall be properly grounded and installed in accordance with the manufacturer's instructions and recommendations. All required local disconnects are provided by the Electrical Subcontractor where required by Code, whether indicated or not. Supplying trade provides contactors, motor starters, etc. as part of the equipment.

Review mechanical, plumbing and other plans and specifications for requirements of special conduits between controls, equipment and interior and exterior devices. Provide all required conduit, all power wiring, and all control wiring at 120 volt or greater in full according with information to be provided by the
trade / subcontractor / vendor for the equipment involved.

2.28 SIGN LIGHTS

NO sign lighting modifications are part of this Project.

2.29 HAZARDOUS AREA WIRING

There are no known hazardous locations at time of design. All wiring within 18 inches of the garage floor is Class I, Group C and D as is all wiring what so ever in the new storage room. If any others are encountered at time of construction, provide wiring per appropriate requirements at the NEC.

2.30 CLOCKS

Any clocks will be Owner furnished and installed.

2.31 DELIVERY, STORAGE AND PROTECTION

The Subcontractor shall be responsible for the work and equipment until finally inspected, tested and accepted. Carefully store materials and equipment which are not immediately installed after delivery to the site. Close open ends of work with temporary covers or plugs during construction to prevent entry of obstructing materials.

Each Subcontractor shall protect work and material of other trades from damage that might by

caused by that Subcontractor's work or workers and shall make good damage thus caused.

PART 3 - INSTALLATION

3.01 GENERAL

This entire work provided in this specification shall be constructed and finished in every respect in a workmanlike and substantial manner.

The Subcontractor shall obtain detailed information from the manufacturers of apparatus as to the proper method of installing and connecting same. The Subcontractor shall also obtain all information from the Contractor and the other Subcontractors that may be necessary to facilitate the work and the completion of the whole project.

Before installing any of the work the Subcontractor shall see that is does not interfere with the clearances required for finished columns, pilasters, partitions, walls, and ceilings, as shown on the Contract architectural drawings and details.

Work installed by the Subcontractor which interferes with or modifies the architectural design as shown on the Contract drawings shall be changed as directed by the Engineer, and all costs incident to such changes shall be paid by the Subcontractor.

In any and all cases of discrepancy in figures, plans or specifications, the matter shall be immediately submitted to the Engineer for decision.

3.02 SITE VISITS

The Subcontractor will be required to visit the site as the work progresses and to carefully investigate the structural and finished conditions affecting all details of the work, and shall arrange such work required to meet such conditions.

3.03 CUTTING AND PATCHING

It is the duty of the Subcontractor to furnish and install all sleeves required in the performance of this Contract and to furnish to the Contractor the size and location of all openings required on the performance of this Contract; and it shall be the duty of the Contractor to provide the required openings during building construction.

If this Subcontractor fails to provide for all sleeves and openings as required in the performance of this Contract, the subcontractor shall instruct the Contractor, who shall do such cutting, drilling, patching, and grouting and so forth necessary for the proper installation of this Subcontractor's work. The Contractor is to charge this Subcontractor for this work and it shall be done at no additional expense to the Owner.

Should the Contractor, after having been fully advised by the Subcontractor, fail to arrange for this work, the Subcontractor shall promptly notify the Engineer in writing of such failure. In the

event of any disagreement between the Electrical Subcontractor and the Contractor over the foregoing, and in the absence of any written requests or agreements between the two, the decision of the Engineer shall be final.

3.04 ALUMINUM CONDUIT

Aluminum conduits shall not be installed where buried in or passing through poured concrete.

3.05 INTERIOR CONDUIT SYSTEMS

Electrical Subcontractor shall coordinate with Engineer as to locations, sizes and number of conduit sleeves to be installed through cast concrete.

Exposed runs of conduit shall have supports not more than 8' - 0" apart and shall be installed with runs parallel or perpendicular to walls, structural members, or intersections of vertical planes and ceilings, with right angle turns consisting of cast metal fittings or symmetrical bends. Conduit bends and offsets shall be avoided where possible but where necessary, shall be made with an approved hickey or conduit bending machine. Conduit which has been crushed or deformed in any way shall not be installed. Expansion fittings shall be used to provide for expansion joints. Wooden plugs inserted in masonry or concrete shall not be used to secure conduits or boxes. Conduit shall be installed in such a manner as to insure against trouble from the collection of condensation, and all runs of conduit shall be so arranged as to be devoid of traps wherever possible. The Contractor shall exercise the necessary precautions to prevent the lodgement of dirt, trash, or plaster in conduits, fittings, or boxes during the course of installation. A run of conduit which has become clogged shall be entirely freed of the accumulation or shall be replaced.

Conduits shall be securely fastened to all sheet metal outlets, junction boxes, pull boxes and panelboards with galvanized locknuts and bushings, care being taken to establish a firm mechanical and electrical contact between the box and the conduit.

Flexible conduit shall be installed only where necessary to overcome vibration at motor connection, and shall be as short as possible between the motor terminal and the junction box on the branch circuit rigid conduit. All flexible conduit shall be of the liquid tight type similar to “Sealtite”, with proper fittings.

All rigid electrical tubing shall utilize threaded fittings. All electrical metallic tubing fittings shall be of the compression type.

Pull boxes, junction boxes and cabinet boxes shall be construction of code gauge galvanized sheet steel of not less than the minimum size recommended by the National Electrical Code. Boxes shall be furnished with screw fastened covers. Where pull boxes are used in finished areas, the Engineer shall be consulted as to the location style of cover, and finish of box and cover. Locations shall be as inconspicuous as possible.

3.06 CONDUCTORS

A complete system of conductors shall be installed in the raceway system, except where otherwise noted. Conductors shall be continuous from outlet to outlet, and no splices shall be made except within outlet or junction boxes. Compression type connectors properly taped shall be utilized for all splices. Non-metallic sheathed cable is not permitted on this project.

3.07 OUTLETS

Outlets shall be installed in locations as indicated on the Contract Drawings. The Contractors shall study the general building plans in relation to the spaces surrounding each outlet in order that the work may fit the other work required by the specifications. Where necessary, the Contractor shall relocate outlets so that installed fixtures are symmetrically located according to room layout and will not interfere with other work or equipment.

3.08 DEVICE PLATES

Device plates shall be installed on each outlet to suit the device installed therein. Plates shall normally be installed vertically, with an alignment tolerance of 1/16".

3.09 GROUNDING

The conduit system and the neutral conductor of the wiring system shall be grounded. The grounded connection between the electric system neutral and the conduit system shall be made at the main electrical service panel. A bare copper conductor sized per NEC shall be installed in nonmetallic conduit from the breaker enclosure to the entrance of the water service. Connection to the water pipe shall be made by a suitable ground clamp or a lug connection to a plugged tee. If flanged pipes are encountered, the connection shall be made with the lug bolted to the street side of the flange connection.

If nonmetallic water lines are provided on the project, the ground electrode conductor shall be connected by a process approved equal to “Cadweld” process to copperweld ground rods, 3/4" diameter by 10 feet long. Provide certified test by recognized testing agency that ground resistance does not exceed 25 ohms.

Ground wires shall be grouped and bonded to panel boxes, not to system neutrals. The ground terminal or receptacles shall be bonded to outlet boxes with #12 AWG bare or green insulated wire, or other suitable means per the National Electrical Code.

Where flexible metallic conduit is used, it shall be suitable for grounding service.
All electric heating equipment shall be grounded.

Conduit and / or raceway shall not be utilized as the bonding conductor.

3.10 PULLING CABLES

Cables shall be installed utilizing pulling equipment designed for the types of wireways or

conduits installed. Where lubricating materials are required, it shall be a material manufactured for and designated by UL label as suitable for the types of insulation involved on the conductors. Care shall be taken during cable pulling not to cause kinks or sharp bends in the conductors. If insulation on conductors is cut or knicked during pulling, the conductors involved shall be removed and replaced at no added cost to the Owner. During pulling, the maximum strain applied to the conductors shall not exceed 50% of the ultimate strength of the conductors.

3.11 EXAMINATION AND APPROVAL OF WORK

No work shall be covered before examination and approval by the Engineer and by all inspectors and authorities having jurisdiction. Replace any imperfect or condemned work with work conforming to requirements and satisfactory to the Engineer, without extra cost to the Owner. If work is covered before due inspection and approval, the Subcontractor shall pay all costs of uncovering and reinstating work.

3.12 CLEAN UP AND REPAIR

At the completion of the work, the work area shall be left clean. Any damage caused to work of other trades by electrical installation shall be repaired at the expense of the Electrical Subcontractor.

3.13 GUARANTEE

Attention is directed to provisions of the General Conditions regarding guarantees and warranties for work under this Contract.

Manufacturer shall provide standard guarantees for work under this Section. However, such guarantees shall be in addition to and not in lieu of all other liabilities which the manufacturer and Subcontractor may have by law or by other provisions of the Contract Documents.

All materials, items of equipment and workmanship furnished under this Section shall carry the standard warranty against all defects in material and workmanship for a period of not less than one (1) year from the date of final acceptance of the work. Any fault due to defective or improper material, equipment, workmanship or design which may develop within that period shall be made good, forthwith by and at the expense of the Subcontractor, including all other damage done to areas, materials and other systems resulting from this failure.

This Subcontractor shall guarantee that all elements of the systems are of sufficient capacity to meet the specified performance requirements as are set forth herein or as indicated.

Upon receipt of notice from the Owner of failure of any part of the systems or equipment during the guarantee period, the affected part or parts shall be replaced by the Subcontractor.

This Subcontractor shall furnish, before the final payment is made, a written guarantee covering the above requirements.

DEP PERMITS

The MaineDOT has obtained a Site Location of Development and Natural Resources Protection Act Permit from the Maine Department of Environmental Protection (DEP). The Contractor shall comply with the Permits and their conditions. Copies of the permits may be viewed at the MaineDOT headquarters in Augusta, Maine.

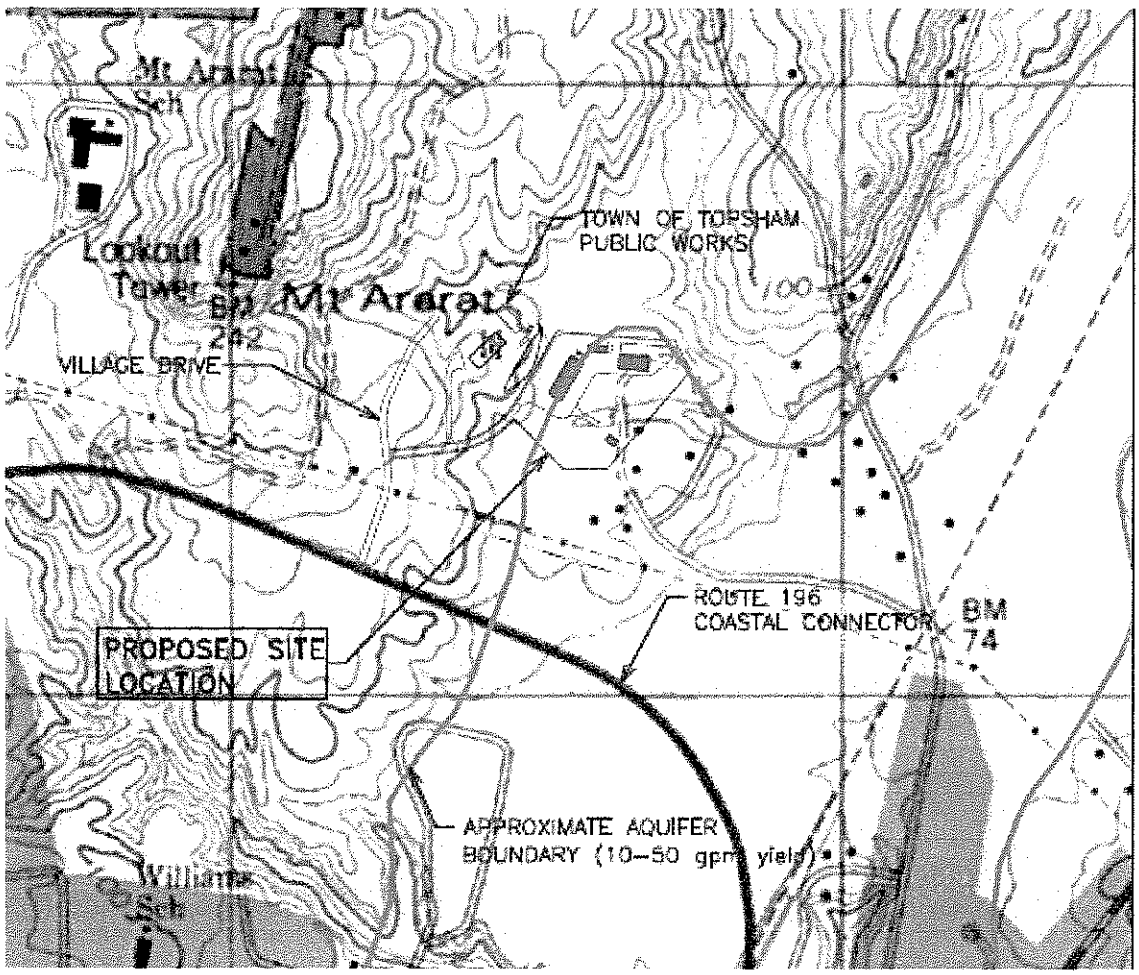
BLASTING ASSESSMENT

As part of the MaineDOT's Site Location of Development Permit from the Maine Department of Environmental Protection (DEP), the Contractor must comply with the requirements and recommendations of the following Blasting Assessment. Included in this requirement are the following: blasting plan, blasting schedule, pre-blast survey, groundwater testing, and blast monitoring.

All blasting shall comply with the Town of Topsham regulations.

BLASTING ASSESSMENT
PROPOSED TOPSHAM MAINTENANCE FACILITY
TOPSHAM, MAINE

04-0611.1 G MAY 05, 2005



04-0611.1 G

May 05, 2005

Dirigo Engineering
Attention: Mr. James Lord, P.E.
168 College Avenue
P.O. Box 557
Waterville, ME 04903-0557

Subject: Blasting Assessment
Proposed Topsham Maintenance Facility
Topsham, Maine

1.0 INTRODUCTION

In accordance with your request, we have developed the following assessment for construction blasting at the proposed Maine Department of Transportation (MDOT) Maintenance Facility in Topsham, Maine. It is our understanding that the purpose of the assessment is to provide guidance for contractors and regulators during construction blasting at the site.

2.0 SITE PLAN AND NARRATIVE

The site is located in the City of Topsham, about 500 to 1000 feet north of the Route 196 Coastal Connector, and north of the Central Maine Power Corridor. The Site Location of Development Application (revised February 2002) requires that a site plan be developed which indicates the "locations of all off-site structures and wells not owned or controlled by the applicant within 2000 feet of any blast site."

We understand that the blasting will primarily be associated with an access road to the facility. However, blasting may also be required for utilities associated with the development. A plan provided by Dirigo Engineering showing the anticipated area of blasting is presented on Sheet 1. A map showing the location of the facility is presented on the cover of this Assessment.

Information on grading and site features provided by Dirigo Engineering indicates that the depth of bedrock excavation requiring blasting will be equal to or less than 10 feet.

Overburden depths have not been explored throughout the area where blasting is anticipated, but it appears that the overburden is likely less than 10 feet deep. Nearby mobile homes and other structures may be served by private wells. The mobile homes appear to be situated more than 500 feet from the anticipated area of blasting.

3.0 ASSESSMENT

3.1 Anticipated Effects of Blasting

We believe that minimal adverse effects of blasting can be anticipated provided that blasting activities are done as outlined below and in general conformance with the "Blasting Guidance Manual," Office of Surface Mining, Reclamation, and Enforcement, U.S. Department of Interior (OSMRE).

3.2 Blasting Plan

A blasting plan should be prepared by the blasting contractor prior to the commencement of the blasting operation. The blasting plan should include proposed sketches of the location of each blast, drill patterns, delay periods, and decking. The plan should also indicate the type and amount of explosives to be used, including weight of explosives per delay, stemming, critical dimensions and the location and general description of structures to be protected.

3.2.a. Airblast

The blasting program should be designed so that sound at the property line (airblast) nearest the blasting should not exceed the following limits.

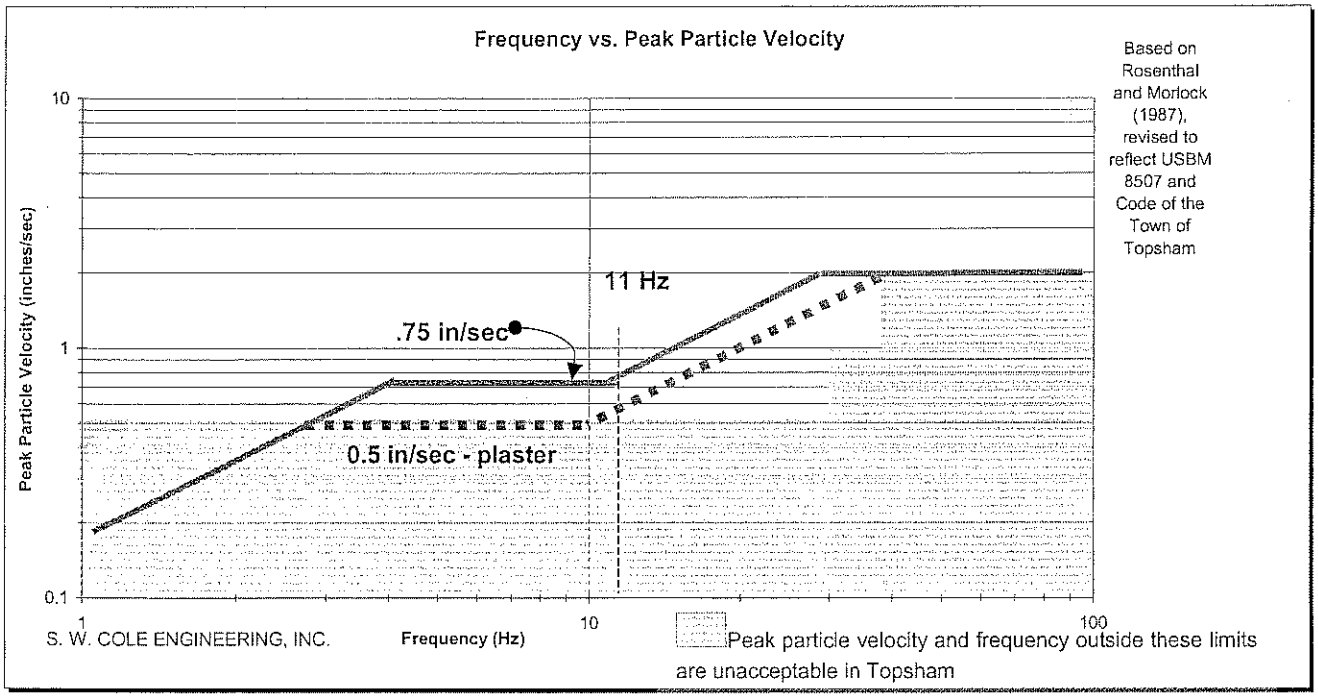
Lower Frequency Limit (Hz)	Max Level dB
2 or Lower	133 Peak
6 or Lower	129 Peak

3.2.b. Peak Particle Velocity and Frequency

U.S. Bureau of Mines RI 8507, (Figure B-1 of Appendix B) requires that frequency and peak particle velocity of blasts remain below the dashed line shown on the graph below at the structure nearest the blasting. The Town of Topsham (Code of the Town of

Topsham, Maine v14 Updated 8-1-2004, Part II General legislation, Chapter 85, Blasting §85-5 Performance Standards) requires that peak particle velocity at a frequency of up to 30 Hertz not exceed 0.5 inches per second; that from 31 to 40 Hertz, the peak particle Velocity not exceed 1.0 inches per second; and that for frequencies in excess of 40 Hertz, the peak particle velocity not exceed 2.0 inches per second. It has been our experience that blasts with a low frequency generally cause more public concern than those with a high frequency. In any case, we recommend that peak particle velocity not exceed 1.25 in/sec. We recommend that peak recorded particle velocities that exceed 1.25 in/sec be reported to the blaster as soon as the record is available.

The Town of Topsham requires that a seismographic record of each blast be provided to the Code Enforcement Officer, Town Planner and/or the Town of Topsham Planning Board.



It is our opinion that detailed pre-blast survey information and use of seismographs will provide better information for assessment of damage after the event than reference to a scaled distance.

3.3 Blasting Schedule

A blasting schedule should be prepared by the blaster and published in a newspaper of general circulation, in the locality of the site, at least 10, but no more than 30, days prior to the commencement of blasting. In addition, copies of the blasting schedule should be distributed to local governments and public utilities and to each local residence within 1/2 mile of the proposed blasting. The notices should be sent by first class mail in accordance with Code of the Town of Topsham, Maine v14 Updated 8-1-2004, Part II General legislation, Chapter 85, Blasting §85-6 Notices.

As outlined in 30 CFR 816.64, the notices should include the following:

- Name, address, and telephone number of operator
- Identification of the specific areas where blasting will occur
- Dates and times of blasts
- Methods to be used to control access to the area in which blasting is anticipated
- Entity to contact if a pre-blast survey or well test is being requested by the owner of the structure (name, address and telephone number)
- Description of the blasting signals to be used prior to the blast

In accordance with Town of Topsham regulations, notice shall be given to the Town of Topsham Code Enforcement Officer by telephone 24 hours before blasting commences. The time of blast should be defined within 2 hours. In addition, the Code Enforcement Officer should be notified of the following:

- Location of the planned detonation
- Amount of explosives to be used
- Name and business address of the person responsible for the blasting operation

Additional notification of the Code Enforcement Officer by telephone is required within the hour of proposed blasting, giving the time of blasting within 30 minutes.

3.4 Pre-Blast Survey

A pre-blast survey should be performed on all structures within 500 feet of the project. Structures outside of the 500-foot radius will not be surveyed unless a request for a survey is made in writing by the property owner.

An appointment for a pre-blast survey should be established with the owner of each structure at least 1 week prior to the blasting. The purpose of scheduling the pre-blast survey in advance of the blasting is to allow the blaster and the owner of the home or structure to arrange for access inside and outside each structure.

The pre-blast survey should include a photographic survey of the interior and exterior of each building with a video camera and 35 mm camera where applicable. A pre-blast survey form should be utilized and placed on file when the survey is completed. The form should provide information on the location of visual observations made at the particular buildings and grounds that are surveyed. All records of the pre-blast survey should be turned over to the Town of Topsham at the end of a period of 6 months after completion of construction.

3.5 Groundwater

It appears that some private wells are used for water supply within 1000 feet of the proposed blasting. We recommend that wells located within 1000 feet of the proposed blasting be tested for nitrate, turbidity and coliform prior to the blasting to establish baseline water quality. According to the Town of Topsham Maine Code (v14 Updated 8-1-2004, Part II General Legislation, Chapter 85, Blasting §85-5 Performance Standards), post-blast water quality testing should be provided for wells within 250 feet of the blast site "no sooner than 24 hours or no later than 48 hours following a blast." We further recommend that all private wells within 500 feet of the blast site be similarly tested after blasting is complete.

3.6 Blast Monitoring

A seismograph should be set up at the structure that is closest to the blasting operation and should measure the air blast, peak particle velocity and frequency of each shot.

Code of the Town of Topsham regulations (Chapter 85 §85-7 Instrumentation) requires that seismographs used in the blasting operation have the following minimum operating specifications:

- a seismic frequency range of 2 to 200 Hz
- a sound frequency of 2 to 200 Hz
- a velocity range from 0.02 to 4.0 inches per second
- a sound range from 110 to 140 dB
- capability of recording longitudinal, transverse and vertical peak particle motion
- wave-form recording

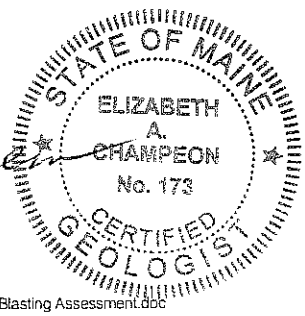
We recommend that the following information be recorded and printed out for each blast:

- Seismograph operator
- Date, location and time of blast
- Name of blaster in charge
- Type of material to be blasted
- Number of holes, burden and spacing
- Diameter and depth of holes
- Types of explosives used
- Amounts of explosives used
- Maximum amount of explosives per delay period of 8 milliseconds of greater
- Maximum number of holes per delay period of 8 milliseconds or greater
- Method of firing and type of circuit
- Weather conditions, including precipitation and cloud cover
- Instrument type
- Instrument calibration date
- Instrument location and its location relative to the blast, nearest structure
- Stratum or structure on which geophone has been placed during recording
- Distance to blast
- Peak particle velocity (in/sec) (horizontal, vertical and transverse)
- Frequency
- Airblast (dB or psi)

It has been a pleasure to assist you in this phase of your project.

Very truly yours,

S. W. COLE ENGINEERING, INC.



Elizabeth A. Champeon, C.G.
Senior Geologist

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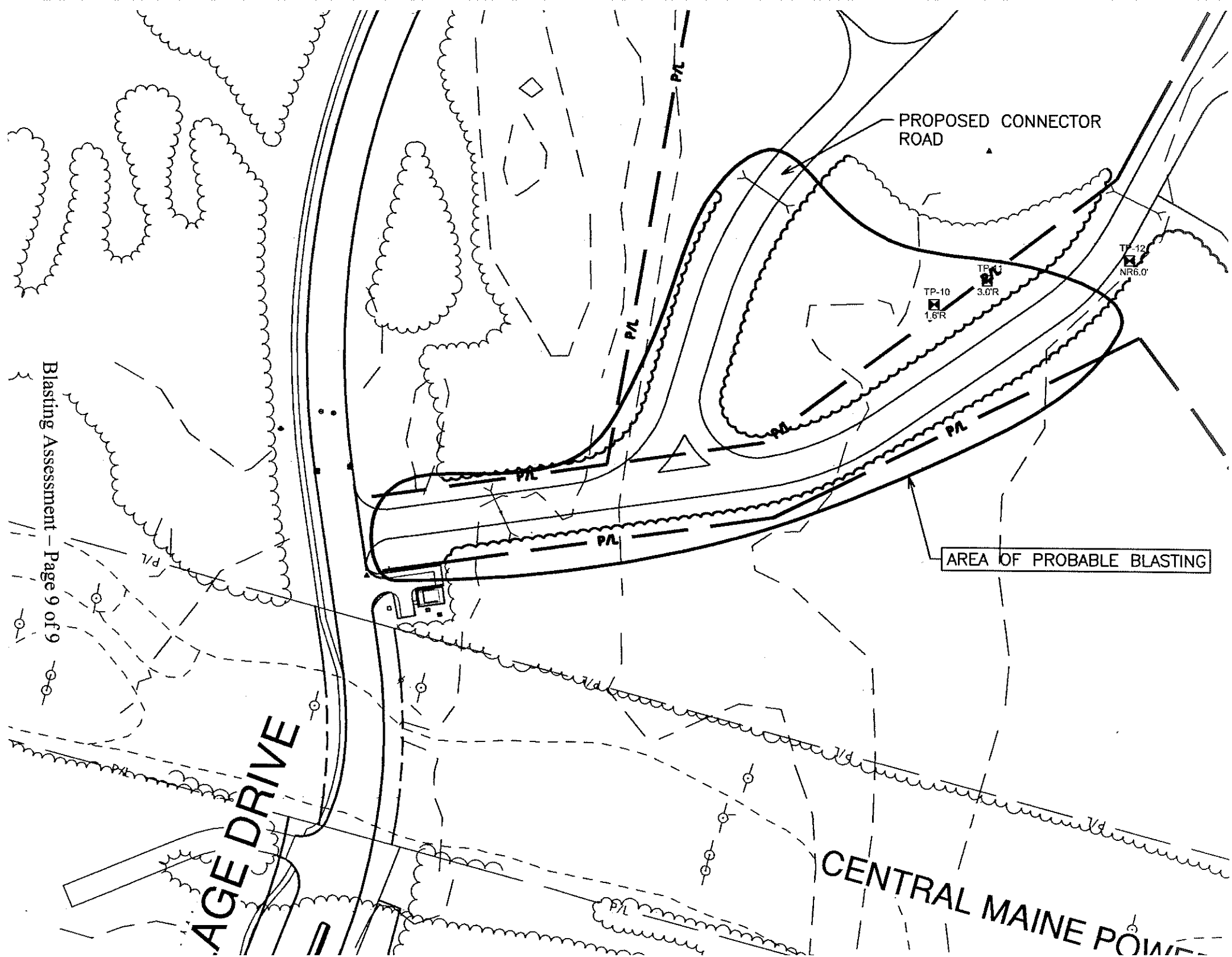

PROPOSED CONNECTOR ROAD
AREA OF PROBABLE BLASTING
TP-10
1.6'R
3.0'R
NR6.0'
P/L
AGE DRIVE
CENTRAL MAINE POWE

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE HOUSE STATION 17 AUGUSTA, MAINE 04333

DEPARTMENT ORDER

IN THE MATTER OF

MAINE DEPARTMENT OF TRANSPORTATION	) SITE LOCATION OF DEVELOPMENT ACT
Topsham, Sagadahoc County	) NATURAL RESOURCES PROTECTION ACT
MAINTENANCE GARAGE	) WATER QUALITY CERTIFICATION
L-22469-26-A-N / L-22469-TD-B-N (approval)	) FINDINGS OF FACT AND ORDER

Pursuant to the provisions of 38 M R.S A Sections 481 et seq and 480-A et seq, and Section 401 of the Federal Water Pollution Control Act, the Department of Environmental Protection has considered the application of MAINE DEPARTMENT OF TRANSPORTATION with the supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS

1 PROJECT DESCRIPTION

A Summary The applicant proposes to construct a maintenance facility to serve its region #1 operations The facility will be constructed in phases on a 13 15-acre parcel adjacent to the Town of Topsham's public works center and include a paved access road (partly on Town of Topsham property), a 19,200 square foot maintenance vehicle garage, a 10,000 gallon above ground storage tank, a 4,800 square foot secondary garage, cold storage and brine operations building, a 12,800 square foot sand/salt storage building, a 2,400 square foot refrigerated storage building, vehicle parking lots, and gravel operations area, all shown on a set of plans the first of which is entitled "Proposed Site Plan," prepared by the Shawmut Design Group, and dated June 6, 2005, with a last revision date of September 14, 2005 The project site is located on Village Drive in the Town of Topsham

B Current Use of Site The site of the proposed project is currently undeveloped fields and woodland There are no structures on the property

2 FINANCIAL CAPACITY

The total cost of the project is estimated to be $4,531,000 Funding for the project will be through the Maine Department of Transportation's Capital Funding budget The only portion of the project that will be funded differently is the sand/salt storage building and associated equipment This will be paid for through Sand Salt Storage Program Appropriations As the project is proposed in phases the funding will also be funded in phases Phase I and IV will be funded by regular appropriations, and Phase II and III will be funded by special appropriations

The Department finds that the applicant has demonstrated adequate financial capacity to comply with Department standards

3 TECHNICAL ABILITY

The applicant provided resume information for key persons involved with the project and a list of projects successfully constructed by the applicant The applicant also retained the services of the Shawmut Design Group, a professional engineering firm, to assist in the design and engineering of the project

The Department finds that the applicant has demonstrated adequate technical ability to comply with Department standards

4 NOISE

The Department finds that no regulated sources of noise have been identified

5 SCENIC CHARACTER

The proposed project is located in a developed area consistent with the proposed activity The proposed site is bordered by the Town of Topsham's public works garage and sand/salt building

Based on the project's location and design, the Department finds that the proposed project will not have an unreasonable adverse effect on the scenic character of the surrounding area

6 WILDLIFE AND FISHERIES

The Maine Department of Inland Fisheries & Wildlife (MDIFW) reviewed the proposed project In its comments, MDIFW stated that it found no records of any essential or significant wildlife habitats, or other wildlife habitats of special concern associated with this site No fisheries concerns were identified

The Department finds that the applicant has made adequate provision for the protection of wildlife and fisheries

7 HISTORIC SITES AND UNUSUAL NATURAL AREAS

The Maine Historic Preservation Commission reviewed the proposed project and stated that it will have no effect upon any structure or site of historic, architectural, or archaeological significance as defined by the National Historic Preservation Act of 1966

The Maine Natural Areas Program database does not contain any records documenting the existence of rare or unique botanical features on the project site and, as discussed in

Finding 6, MDIFW did not identify any unusual wildlife habitats located on the project site

The Department finds that the proposed development will not have an adverse effect on the preservation of historic sites or unusual natural areas either on or near the development site

8 BUFFER STRIPS

The applicant proposes buffers as part of the stormwater management system as described in Finding 11 The applicant proposes to construct a 10-foot tall earthen berm on the north side of the site and plant vegetation on the berm The applicant also proposes a 50-foot strip along the north and east sides of the lot for additional visual buffers

The Department finds that the applicant has made adequate provision for buffer strips

9 SURFACE WATER QUALITY

The proposed project includes approximately 6 91-acres of impervious area and is located within the watershed of Tedford Brook, a sensitive and threatened tributary of the Cathance River Because of the project's location and size, stormwater runoff from the project site must be treated to meet the sliding scale total suspended solids (TSS) standard outline in Chapter 500 of the Department Rules The applicant proposes to remove 70% of TSS from the project's stormwater runoff

As discussed in Finding 11, the applicant's proposed stormwater management system was reviewed by, and revised in response to, comments from the Division of Watershed Management of the Bureau of Land and Water Quality (DWM) Specific aspects of the system, including measures to protect water quality, are further discussed in Finding 11

Based on the stormwater management system's design and the comments discussed above, the Department finds that the applicant has made adequate provision to ensure that the proposed project will meet the stormwater quality standards contained in Department Rules, Chapter 500 and to ensure that the project will not have an unreasonable adverse impact on surface water quality

10 SOILS

The applicant submitted a class A high intensity soil survey map and report based on the soils found at the project site This report was prepared by a registered professional engineer and reviewed by staff from the Division of Environmental Assessment of the Bureau of Land and Water Quality (DEA)

The Department finds that, based on this report and DEA's review, the soils on the project site present no limitations to the proposed project that cannot be overcome through standard engineering practices

11 STORMWATER MANAGEMENT

The applicant proposes to utilize a stormwater management system consisting of under-drained grass filter basins, level spreaders, and buffers This system is based on estimates of pre- and post-development stormwater runoff flows obtained by using the methodology outlined in "Urban Hydrology for Small Watersheds," Technical Release #20, U S D A , Soil Conservation Service and detains stormwater from 24-hour storms of 2-, 10-, and 25-year frequency The post-development peak flow from the site will not exceed the pre-development peak flow from the site and the peak flow of the receiving water will not be increased as a result of stormwater runoff from the development site The stormwater management system proposed by the applicant was reviewed by, and revised in response to, comments from the Division of Watershed Management of the Bureau of Land and Water Quality (DWM)

STORMWATER QUANTITY CONTROL The applicant proposes to construct a maintenance facility including structures as described in Finding 1 The development will add approximately 6 91-acres of new impervious area to the site, increasing runoff rates significantly To mitigate these increases, the applicant will install and maintain three under-drained grass filter basins to capture and slowly release runoff from the site Together, these basins will keep post-development peak flow rates to the site's east property line at or slightly below pre-development levels for the 2-year, 10-year, and 25-year storms Discharge from the basins will be via level spreaders to wetlands adjacent to a natural swale running east off the site

Locations of the proposed under-drained grass filter basins can be found on plan sheet #2a entitled "Proposed Site Plan," prepared by the Shawmut Design Group, and dated by revision September 14, 2005 Grading for the basins can be found on plan sheet #6 entitled "Site Grading & Erosion Control Plan," prepared by the Shawmut Design Group, and dated by revision September 14, 2005 Details and specifications for constructing the basins can be found on plan sheet #10 entitled "Detention Basin Details," prepared by the Shawmut Design Group, and date by revision September 14, 2005

STORMWATER QUALITY CONTROL Runoff from the proposed project drains to Tedford Brook, a sensitive and threatened tributary of the Cathance River This requires that the project include treatment measures to meet the sliding scale TSS standard Under this standard, the treatment measures must remove at least 64% of the total suspended solids from the site's impervious area runoff before it is discharged off the site or to protected natural resources on the site To do this, the applicant will install three under-drained grass filter basins on the site and preserve five wooded buffers on the site to treat runoff from most of the site's impervious area Together, these measures achieve a TSS removal rate of approximately 70% for the site As shown on the plan sheet #2a prepared

by the Shawmut Design Group, and dated by revision September 14, 2005, all buffers that will serve as stormwater Best Management Practices (BMPs) for quality treatment must be protected from alteration through the execution of a conservation easement The Department has third-party rights of enforcement to the conservation easement The applicant must file finalized conservation easements for the stormwater buffer areas referencing the revised site plans, dated September 14, 2005, with the Sagadahoc County Registry of Deeds prior to construction Evidence of filing must be submitted to the Bureau of Land and Water Quality, Division of Land Resource Regulation, within 30 days of the filing date Evidence must consist of copies of the restrictions stamped with the book and page numbers or accompanied by a letter from the Registrar

Locations of the under-drained grass filters and wooded buffers can be found on plan sheet #2a entitled "Proposed Site Plan," prepared by the Shawmut Design Group" and dated by revision September 14, 2005 Grading, details, and specifications for the under-drained grass filters can be found on the plan sheets referenced under stormwater quantity control above

Based on the system's design and these comments, the Department finds that the applicant has made adequate provision to ensure that the proposed project will meet the stormwater quantity standards for (1) peak flow from the site and peak flow of the receiving waters, (2) grading or other construction activity, (3) channel limits and runoff areas, (4) detention basins, (5) maintenance, (6) easements and covenants, (7) buffers, (8) discharge to freshwater or coastal wetlands, (9) level spreaders, and (10) wellhead protection areas of public water supplies

12 MAINTENANCE OF COMMON FACILITIES

The applicant will be responsible for the maintenance of all common facilities including the road and stormwater management system, which maintenance will include, but not be limited to, any necessary erosion and sedimentation control measures, and the long-term maintenance of the stormwater management system as outlined in Section 13 of the application The applicant has submitted an acceptable inspection and maintenance plan for the facility's stormwater management system

13 EROSION AND SEDIMENTATION CONTROL

The applicant submitted an Erosion and Sedimentation Control Plan as Section 14 of the application This plan and plan sheets containing erosion control details were reviewed by, and revised in response to the comments of DWM The applicant prepared an acceptable erosion and sediment control plan for the facility's construction and stabilization Construction is expected to disturb approximately 8 5-acres Critical areas for control include the wetlands adjacent to the swale running east off the site and wetlands southeast of the proposed facility Controls proposed for the site include sediment barriers, stone check dams, and daily mulching adjacent to wetland areas The proposed detention basin at the center of the site will also be used for sediment removal

during construction Locations of the proposed installation of structural controls can be found on plan sheets #5 and #6 entitled "Site Grading & Erosion Control Plan," prepared by the Shawmut Design Group, and dated by revision September 14, 2005 Details and specifications for the controls can be found on plan sheet #11 entitled "Stormwater Treatment & Erosion Control Details," prepared by the Shawmut Design Group, and dated by revision September 14, 2005 and in section 14 of the permit application (Volume 2 revised on September 15, 2005)

The Department finds that the applicant has made adequate provision to control erosion and sedimentation

14 GROUNDWATER

The project site is partially located over a mapped significant sand and gravel aquifer with an estimated potential yield of 10 to 50 gallons per minute as confirmed by a DEA geologist

There are several potential sources of contamination in the proposed development; however, the applicant has address each potential and minimized to the greatest extent practicable The site will be connected to the public sanitary sewer collection and treatment system therefore limiting the potential for contamination from the wastewater system The salt brine will be mixed inside the building with the storage tanks adjacent to the salt building on a concrete pad The applicant applied for and received a variance form the Department's Division of Water Resource Regulation for the sand/salt building to be placed on the aquifer The maintenance garage and truck wash bay will be surrounded by pavement and will have concrete floors with floor drains that discharge to the public sewer system The proposed 10,000-gallon fuel storage tank and pump station will be located on the site to supply both heating and truck fuel The tank will be a horizontal double wall tank and located on pavement near the center of the site

The applicant has submitted a SPCC Plan for the 10,000 gallon fuel storage tank This plan includes all equipment, training, and response procedures related to the above ground fuel storage tank The applicant also submitted the Bureau of Maintenance and Operations Environmental Policies & Procedures Manual This manual addresses various aspects of a Groundwater Protection Plan such as the Environmental and Safety Auditing, Emergency Preparedness and Response Planning, Hazardous Waste Management, Hazardous Chemicals Handling and Storage, Floor Drain Management, etc

The Department finds that the proposed project will not pose an unreasonable risk that a discharge to a significant groundwater aquifer will occur Therefore the Department further finds that the proposed project will not have an unreasonable adverse effect on ground water quality

15 WATER SUPPLY

When completed, the proposed project is anticipated to use approximately 750 gallons of water per day during the months of May to October, approximately 4,700 gallons per day during the months of October to May, with a maximum design flow of 18,750 gallons per day for months between October through May Water will be supplied by the Brunswick-Topsham Water District The applicant submitted a letter from the District, dated October 18, 2004, indicating that it will be capable of servicing this project

The Department finds that the applicant has made adequate provision for securing and maintaining a sufficient and healthful water supply

16 WASTEWATER DISPOSAL

When completed, the proposed project is anticipated to discharge approximately 750 gallons of wastewater per day The Topsham Sewer District owns and operates the sewer collection system, treatment is provided by the Brunswick Sewer District The Topsham Sewer District stated that it has the capacity will accept these flows, and has indicated that the proposed development could discharge to either Village Drive with a pump station and private force main, or through a gravity sewer main along King Street down to Tedford Road The applicant submitted a letter from the Brunswick Sewer District dated October 13, 2004 stating that they have the capacity to treat the amount of anticipated wastewater discharge from this project This project was reviewed by the Division of Engineering, Compliance and Technical Assistance of the Bureau of Land and Water Quality (DECTA), which commented that the Topsham and Brunswick Sewer Districts have the capacity to transport and treat these flows and are operating in compliance with the water quality laws of the State of Maine DECTA commented that if the applicant chooses to install a pump station and force main, the design plans and specifications must be submitted to the Department for review and approval prior to construction of the water/wastewater system

Based on DECTA's comments, the Department finds that the applicant has made adequate provision for wastewater disposal at a facility that has the capacity to ensure satisfactory treatment

17 SOLID WASTE

When completed, the proposed project is anticipated to generate 20 86 tons of (household, general office, etc.) solid waste per year All general solid wastes from the proposed project will be disposed of at the Bath Landfill, which is currently in substantial compliance with the Solid Waste Management Regulations of the State of Maine

The proposed project will generate stumps and grubbings All stumps and grubbings generated will be disposed of on site, either chipped or burned, with the remainder to be

worked into the soil, in compliance with Solid Waste Management Regulations of the State of Maine provided that the chipper is on site less than 30 days and that all stockpiled chips are utilized as erosion control material within 30 days of completing chipping

The proposed project will generate minimal amounts of construction debris and demolition debris All construction and demolition debris generated will be disposed of at the Bath Landfill, which is currently in substantial compliance with the Solid Waste Management Regulations of the State of Maine

Based on the above information, the Department finds that the applicant has made adequate provision for solid waste disposal

18 FLOODING

The proposed project is not located within the 100-year floodway of any river or stream

The Department finds that the proposed project is unlikely to cause or increase flooding or cause an unreasonable flood hazard to any structure

19 WETLAND IMPACTS

The applicant proposes to alter 18,000 square feet of freshwater forested and scrub shrub wetland to construct a maintenance facility as described in Finding 1 There are two wetland complexes on the parcel designated Wetland A and B These wetlands are part of the same wetland system and are both classified as forested/scrub shrub wetlands Wetland A includes a small intermittent stream channel that appears to continue off site to the south Wetland A has four areas of disturbance for a total of 17,000 square feet Wetland B has only one area of impact for the access road equaling approximately 1,000 square feet The Wetland Protection Rules, Chapter 310 require that the applicant to meet the following standards

a Avoidance No activity, which would cause a loss in wetland area, functions and values, will be permitted if there is a practicable alternative to the project that will be less damaging to the environment The applicant submitted an alternative analysis for the proposed project The alternative analysis stated that the applicant seriously considered different locations within the immediate area excluding them due to difficult access to the site, high visibility and strong opposition to the other sites Once the site was chosen, the applicant worked closely with a consultant to develop a site layout that provided for the needs of the applicant and avoided as much wetland disturbance as possible

b Minimal Alteration The applicant is required to minimize the amount of wetland alteration while meeting the project's purpose The applicant presented six design layouts and chose the layout with the least amount of impact while still meeting project purpose and need

c Compensation The applicant is required to replace lost wetland functions and values associated with the proposed wetland In accordance with Chapter 310, neither a functional assessment nor compensation is required for freshwater wetland alterations totaling less than 20,000 square feet Therefore, the Department did not require that the applicant perform a function and value assessment of the wetland and or provide compensation for the proposed impacts to the wetland

The Department finds that the applicant has avoided and minimized wetland impacts to the greatest extent practicable, and that the proposed project represents the least environmentally damaging alternative that meets the project's purpose

20 BLASTING

The applicant anticipates blasting for the construction of the road and installation of utilities The applicant submitted a blasting assessment prepared by a certified geologist at S W Cole Engineering, Inc The blasting assessment was review by, and revised in response to comments from the Department's Division of Environmental Assessment (DEA) The applicant must submit a signed pre-blast survey and blasting plan, prepared by the contractor, to the Department for review and approval prior to any blasting The applicant must adhere to the assessment submitted in the application Any variation to this plan must be submitted to the Department for review and approval prior to blasting

21 AIR QUALITY

The Department finds that no significant source of air emissions has been identified

22 ODORS

No significant sources of odors have been identified

23 ALTERATION OF CLIMATE/WATER VAPOR

The proposed project does not involve any significant sources of water vapor emissions

24 ACCESS TO SUNLIGHT

The proposed project will not cast shadows on any adjacent properties

BASED on the above findings of fact, and subject to the conditions listed below, the Department makes the following conclusions pursuant to 38 M R S A Sections 480-A et seq and Section 401 of the Federal Water Pollution Control Act

A The proposed activity will not unreasonably interfere with existing scenic, aesthetic, recreational, or navigational uses

B The proposed activity will not cause unreasonable erosion of soil or sediment

C The proposed activity will not unreasonably inhibit the natural transfer of soil from the terrestrial to the marine or freshwater environment provided that the project is completed as proposed and that the applicant meets all of the requirements in Finding 11

D The proposed activity will not unreasonably harm any significant wildlife habitat, freshwater wetland plant habitat, threatened or endangered plant habitat, aquatic habitat, travel corridor, freshwater, estuarine, or marine fisheries or other aquatic life

E The proposed activity will not unreasonably interfere with the natural flow of any surface or subsurface waters

F The proposed activity will not violate any state water quality law including those governing the classifications of the State's waters provided that the project is completed as proposed and that the applicant meets all of the requirements in Finding 11

G The proposed activity will not unreasonably cause or increase the flooding of the alteration area or adjacent properties

H The proposed activity is not on or adjacent to a sand dune

I The proposed activity is not on an outstanding river segment as noted in 38 M R S A Section 480-P

BASED on the above findings of fact, and subject to the conditions listed below, the Department makes the following conclusions pursuant to 38 M R S A Sections 481 et seq

A The applicant has provided adequate evidence of financial capacity and technical ability to develop the project in a manner consistent with state environmental standards

B The applicant has made adequate provision for fitting the development harmoniously into the existing natural environment and the development will not adversely affect existing uses, scenic character, air quality, water quality or other natural resources in the municipality or in neighboring municipalities

C The proposed development will be built on soil types which are suitable to the nature of the undertaking and will not cause unreasonable erosion of soil or sediment nor inhibit the natural transfer of soil

D The proposed development meets the standards for storm water management in Section 420-D and the standard for erosion and sedimentation control in Section 420-C provided that the project is completed as proposed and that the applicant meets all of the requirements in Finding 11

E The proposed development will not pose an unreasonable risk that a discharge to a significant groundwater aquifer will occur

F The applicant has made adequate provision of utilities, including water supplies, sewerage facilities, solid waste disposal and roadways required for the development and the development will not have an unreasonable adverse effect on the existing or proposed utilities and roadways in the municipality or area served by those services provided that the project is completed as proposed and that the applicant meets all of the requirements in Findings 16, 17 and 20

G The activity will not unreasonably cause or increase the flooding of the alteration area or adjacent properties nor create an unreasonable flood hazard to any structure

THEREFORE, the Department APPROVES the application of MAINE DEPARTMENT OF TRANSPORTATION to construct a maintenance garage, SUBJECT TO THE FOLLOWING CONDITIONS and all applicable standards and regulations

1 The Standard Conditions of Approval, a copy attached

2 In addition to any specific erosion control measures described in this or previous orders, the applicant shall take all necessary actions to ensure that its activities or those of its agents do not result in noticeable erosion of soils or fugitive dust emissions on the site during the construction and operation of the project covered by this approval

3 The applicant shall file finalized conservation easements for the stormwater buffer areas referencing the revised site plans, dated September 14, 2005, with the Sagadahoc County Registry of Deeds prior to construction Evidence of filing shall be submitted to the Bureau of Land and Water Quality, Division of Land Resource Regulation, within 30 days of the filing date Evidence shall consist of copies of the restrictions stamped with the book and page numbers or accompanied by a letter from the Registrar

4 If the applicant chooses to install a pump station and force main, design plans and specifications shall be submitted to the Department for review and approval prior to construction of the water/wastewater system

5 The chipper shall be on site less than 30 days from start of clearing and all stockpiled chips shall be utilized as erosion control material within 30 days of completing chipping

6 The applicant shall submit a signed pre-blast survey and blasting plan, prepared by the contractor, to the Department for review and approval prior to any blasting The applicant shall adhere to the contingency plan submitted in the application Any variation to this plan shall be submitted to the Department for review and approval prior to blasting

7 Severability The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

THIS APPROVAL DOES NOT CONSTITUTE OR SUBSTITUTE FOR ANY OTHER REQUIRED STATE, FEDERAL OR LOCAL APPROVALS NOR DOES IT VERIFY COMPLIANCE WITH ANY APPLICABLE SHORELAND ZONING ORDINANCES

DONE AND DATED AT AUGUSTA, MAINE, THIS 27TH DAY OF December, 2005

DEPARTMENT OF ENVIRONMENTAL PROTECTION

By _____
DAVID P LITTELL, ACTING COMMISSIONER

PLEASE NOTE THE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application June 17, 2005
Date of application acceptance June 24, 2005

Date filed with Board of Environmental Protection
LK/55557/55558/L22469AN/L22469BN

FILED
DEC 28 2005
BOARD OF ENVIRONMENTAL PROT
STATE OF MAINE

NATURAL RESOURCE PROTECTION ACT (NRPA)
STANDARD CONDITIONS

THE FOLLOWING STANDARD CONDITIONS SHALL APPLY TO ALL PERMITS GRANTED UNDER THE NATURAL RESOURCE PROTECTION ACT, TITLE 38, M.R.S.A. SECTION 480-A ET.SEQ. UNLESS OTHERWISE SPECIFICALLY STATED IN THE PERMIT.

A **Approval of Variations From Plans.** The granting of this permit is dependent upon and limited to the proposals and plans contained in the application and supporting documents submitted and affirmed to by the applicant Any variation from these plans, proposals, and supporting documents is subject to review and approval prior to implementation

B **Compliance With All Applicable Laws** The applicant shall secure and comply with all applicable federal, state, and local licenses, permits, authorizations, conditions, agreements, and orders prior to or during construction and operation, as appropriate

C **Erosion Control.** The applicant shall take all necessary measures to ensure that his activities or those of his agents do not result in measurable erosion of soils on the site during the construction and operation of the project covered by this Approval

D **Compliance With Conditions.** Should the project be found, at any time, not to be in compliance with any of the Conditions of this Approval, or should the applicant construct or operate this development in any way other the specified in the Application or Supporting Documents, as modified by the Conditions of this Approval, then the terms of this Approval shall be considered to have been violated

E **Initiation of Activity Within Two Years.** If construction or operation of the activity is not begun within two years, this permit shall lapse and the applicant shall reapply to the Board for a new permit The applicant may not begin construction or operation of the activity until a new permit is granted Reapplications for permits shall state the reasons why the applicant will be able to begin the activity within two years form the granting of a new permit, if so granted Reapplications for permits may include information submitted in the initial application by reference

F **Reexamination After Five Years.** If the approved activity is not completed within five years from the date of the granting of a permit, the Board may reexamine its permit approval and impose additional terms or conditions to respond to significant changes in circumstances which may have occurred during the five-year period

G **No Construction Equipment Below High Water.** No construction equipment used in the undertaking of an approved activity is allowed below the mean high water line unless otherwise specified by this permit

H **Permit Included In Contract Bids.** A copy of this permit must be included in or attached to all contract bid specifications for the approved activity

I **Permit Shown To Contractor.** Work done by a contractor pursuant to this permit shall not begin before the contractor has been shown by the applicant a copy of this permit

Revised (4/92)
DEP LW0428

Erosion Control

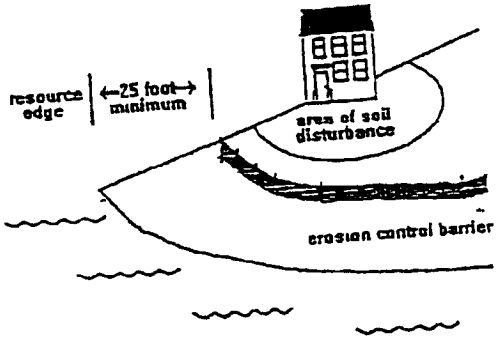
Before Construction

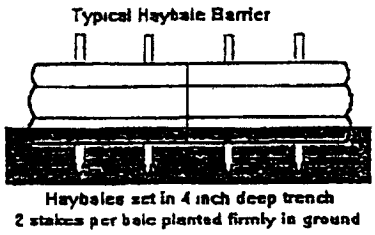
1 If you have hired a contractor, make sure you have discussed your permit with them Talk about what measures they plan to take to control erosion. Everybody involved should understand what the resource is and where it is located Most people could identify the edge of a lake or a river The edges of wetlands, however, are often not obvious Your contractor may be the person actually pushing dirt around but you are both responsible for complying with the permit.

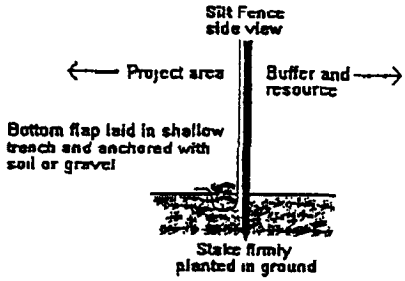
2 Call around and find sources for your erosion controls You will probably need silt fence, hay bales and grass seed or conservation mix Some good places to check are feed stores, hardware stores, landscapers and contractor supply houses It is not always easy to find hay or straw during late winter and early spring It may also be more expensive during those times of year Plan ahead Purchase a supply early and keep it under a tarp

3 Before any soil is disturbed, make sure an erosion control barrier has been installed The barrier can be either a silt fence, a row of staked hay bales, or both. Use the drawings below as a guide for correct installation and placement The barrier should be placed as close as possible to the activity.

4 If a contractor is installing the barrier, double check it as a precaution Erosion control barriers should be installed "on the contour", meaning at the same level along the land slope, whenever possible This keeps stormwater from flowing to the lowest point of the barrier where it builds up and overflows or destroys it.







During Construction

1 Use lots of hay or straw mulch on disturbed soil. The idea behind mulch is to prevent rain from striking the soil directly. It is the force of raindrops striking the soil that causes a lot of erosion. More than 90% of erosion is prevented by keeping the soil covered

2 Inspect your erosion control barriers frequently This is especially important after a rainfall. If there is muddy water leaving the project site, then your erosion controls are not working as intended In that situation, stop work and figure out what can be done to prevent more soil from getting past the barrier

After Construction

1 After the project is complete, replant the area. All ground covers are not equal For instance, a mix of creeping red fescue and Kentucky bluegrass is a good choice for lawns and other high maintenance areas The same mix would not be a good choice for stabilizing a road shoulder or a cut bank that you don't intend to mow

2 If you finish your project after September 15, then do not spread grass seed There is a very good chance that the seed will germinate and be killed by a frost before it has a chance to become established Instead, mulch the site with a thick layer of hay or straw In the spring rake off the mulch and seed the area Don t forget to mulch again to hold in moisture and prevent the seed from washing away

3 Keep your erosion control barrier up and maintained until the area is permanently stabilized

DEP INFORMATION SHEET

Appealing a Commissioner's Licensing Decision

Dated. May 2004 **Contact: (207) 287-2811**

SUMMARY

There are two methods available to an aggrieved person seeking to appeal a licensing decision made by the Department of Environmental Protection's (DEP) Commissioner (1) in an administrative process before the Board of Environmental Protection (Board), or (2) in a judicial process before Maine's Superior Court This INFORMATION SHEET, in conjunction with consulting statutory and regulatory provisions referred to herein, can help aggrieved persons with understanding their rights and obligations in filing an administrative or judicial appeal

I. ADMINISTRATIVE APPEALS TO THE BOARD

LEGAL REFERENCES

DEP's *General Laws*, 38 M R S A § 341-D(4), and its *Rules Concerning the Processing of Applications and Other Administrative Matters* (Chapter 2), 06-096 CMR 2 24 (April 1, 2003)

HOW LONG YOU HAVE TO SUBMIT AN APPEAL TO THE BOARD

The Board must receive a written notice of appeal within 30 calendar days of the date on which the Commissioner's decision was filed with the Board Appeals filed after 30 calendar days will be rejected

HOW TO SUBMIT AN APPEAL TO THE BOARD

Signed original appeal documents must be sent to Chair, Board of Environmental Protection, c/o Department of Environmental Protection, 17 State House Station, Augusta, ME 04333-0017, faxes are acceptable for purposes of meeting the deadline when followed by receipt of mailed original documents within five (5) working days Receipt on a particular day must be by 5 00 PM at DEP's offices in Augusta, materials received after 5 00 PM are not considered received until the following day The person appealing a licensing decision must also send the DEP's Commissioner and the applicant a copy of the documents All the information listed in the next section must be submitted at the time the appeal is filed Only the extraordinary circumstances described at the end of that section will justify evidence not in the DEP's record at the time of decision being added to the record for consideration by the Board as part of an appeal

WHAT YOUR APPEAL PAPERWORK MUST CONTAIN

The materials constituting an appeal must contain the following information at the time submitted

1 *Aggrieved Status* Standing to maintain an appeal requires the appellant to show they are particularly injured by the Commissioner's decision

2 *The findings, conclusions or conditions objected to or believed to be in error* Specific references and facts regarding the appellant's issues with the decision must be provided in the notice of appeal

3 *The basis of the objections or challenge* If possible, specific regulations, statutes or other facts should be referenced This may include citing omissions of relevant requirements, and errors believed to have been made in interpretations, conclusions, and relevant requirements

4 *The remedy sought* This can range from reversal of the Commissioner's decision on the license or permit to changes in specific permit conditions

5 *All the matters to be contested* The Board will limit its consideration to those arguments specifically raised in the written notice of appeal

6 *Request for hearing* The Board will hear presentations on appeals at its regularly scheduled meetings, unless a public hearing is requested and granted A request for public hearing on an appeal must be filed as part of the notice of appeal

7 *New or additional evidence to be offered* The Board may allow new or additional evidence as part of an appeal only when the person seeking to add information to the record can show due diligence in bringing the evidence to the DEP's attention at the earliest possible time in the licensing process or show that the evidence itself is newly discovered and could not have been presented earlier in the process Specific requirements for additional evidence are found in Chapter 2, Section 24(B)(5)

OTHER CONSIDERATIONS IN APPEALING A DECISION TO THE BOARD

1 *Be familiar with all relevant material in the DEP record* A license file is public information made easily accessible by DEP Upon request, the DEP will make the material available during normal working hours, provide space to review the file, and provide opportunity for photocopying materials There is a charge for copies or copying services

2 *Be familiar with the regulations and laws under which the application was processed, and the procedural rules governing your appeal* DEP staff will provide this information on request and answer questions regarding applicable requirements

3 *The filing of an appeal does not operate as a stay to any decision* An applicant proceeding with a project pending the outcome of an appeal runs the risk of the decision being reversed or modified as a result of the appeal

WHAT TO EXPECT ONCE YOU FILE A TIMELY APPEAL WITH THE BOARD

The Board will formally acknowledge initiation of the appeals procedure, including the name of the DEP project manager assigned to the specific appeal, within 15 days of receiving a timely filing The notice of appeal, all materials accepted by the Board Chair as additional evidence, and any materials submitted in response to the appeal will be sent to Board members along with a briefing and recommendation from DEP staff Parties filing appeals and interested persons are notified in advance of the final date set for Board consideration of an appeal or request for public hearing With or without holding a public hearing, the Board may affirm, amend, or reverse a Commissioner decision The Board will notify parties to an appeal and interested persons of its decision

II. APPEALS TO MAINE SUPERIOR COURT

Maine law allows aggrieved persons to appeal final Commissioner licensing decisions to Maine's Superior Court, see 38 M R S A § 346(1), 06-096 CMR 2 26, 5 M R S A § 11001, & MRCivP 80C Parties to the licensing decision must file a petition for review within 30 days after receipt of notice of the Commissioner's written decision A petition for review by any other person aggrieved must be filed within 40-days from the date the written decision is rendered The laws cited in this paragraph and other legal procedures govern the contents and processing of a Superior Court appeal

ADDITIONAL INFORMATION

If you have questions or need additional information on the appeal process, contact the DEP's Director of Procedures and Enforcement at (207) 287-2811

Note: The DEP provides this INFORMATION SHEET for general guidance only; it is not intended for use as a legal reference Maine law governs an appellant's rights.