TOWN OF CAMDEN, MAINE

BID BOOK AND PLAN SET

for

Camden Public Landing – SHIP Grant Project

MaineDOT WIN: 18534.12

April 2015

STATE OF MAINE
KATHERINE E. KERN
No. 6413
LICENSED PROFESSIONAL ENGINEER
4-22-15

Updated 11/05/14

STATE PROJECT

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, (if required), 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) an electronic Bid Guaranty (if required) 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 items in the Schedule of Items (excluding non-selected alternates).
4. 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 or
   c) an electronic bid bond submitted with an electronic bid.

5. If a paper Bid is to be sent, "FedEx First Overnight" delivery is suggested as the package is delivered directly to the DOT Headquarters Building located at 16 Child Street 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, and submit with your bid. If you are submitting your bid electronically, you must FAX the form to (207) 624-3431. This is a curable defect.

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, November 2014 Edition.

January 19, 2012
Supersedes September 09, 2011

NOTICE

Town of Camden will issue Bid Amendments/Addendums via email based on the planholder's list.

Prospective bidders, subcontractors, or suppliers who wish to obtain a copy of the bid package must contact the Town of Camden.

Interested parties shall be responsible for reviewing Bid Amendments provided to them, acknowledging receipt, and incorporating those Bid Amendments in their bids using the Acknowledgement of Bid Amendment Form.

Electronic bids will not be accepted for this project.

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:

October 16, 2001

TOWN OF CAMDEN

Bid Guaranty-Bid Bond Form

KNOW ALL MEN BY THESE PRESENTS THAT_____

_____, of the City/Town of _____and State of_____

as Principal, and _____as Surety, a

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

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

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

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

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

_____

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

Signed and sealed this_____day of _____20_____

WITNESS:

_____

_____

_____

WITNESS

_____

_____

_____

PRINCIPAL:

By_____

By:_____

By:_____

SURETY:

By_____

By:_____

Name of Local Agency: _____

NOTICE

Bidders:

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

Town of Camden

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: _____

NOTICE TO CONTRACTORS

Sealed Bids addressed to the Town of Camden, Maine 04843 and endorsed on the wrapper "Bid for WIN: 18534.12 Camden Public Landing SHIP Grant Project in Camden, Maine" will be received from contractors at Camden Town Hall until 3:00 PM EST on Friday, May 8, 2015 and at that time will be publicly opened and read in the Town Manager's office. Bids will be accepted from all bidders. The lowest responsive bidder must demonstrate successful completion of projects of similar size and scope to be awarded for this contract.

Description: STATE WIN: 18534.12

Location: In Knox County, the project is located at the Public Landing located off of Bayview Street (US Route 1) at Commercial Street.

Outline of Work: Timber fender and guide pile installations; timber framing, face sheathing, and ladder installations; timber float construction and installations; reinforced concrete foundation construction for the 1,000 LB hoist (supplied and installed by others); electrical improvements; and other incidental work.

The basis of award will be on the sum of base bid.

For general information regarding Bidding and Contracting procedures, contact Pat Finnigan at (207) 236-3353. For Project-specific information, email all questions to Pat Finnigan at pfinnigan@camdenmaine.gov. Questions received after 12:00 noon of the Wednesday prior to bid date will not be answered. Bidders shall not contact any other Town staff for clarification of Contract provisions, and the Town will not be responsible for any interpretations so obtained. A non-mandatory prebid meeting will be held on site at 1:00 PM on Thursday, April 30, 2015.

Plans, specifications, and bid forms may be seen and purchased at Town Manager's office at Camden Town Hall during the following hours:

Mon - Friday 8:00 AM- 4:30 PM

The documents can be purchased by cash, credit card (Visa/Mastercard), or check payable to Town of Camden. A Bid Book and set of full-size plans is $50 ($60 by mail), non-refundable. The documents are also available electronically at www.camdenmaine.gov.

Each Bid must be made upon blank forms provided by the Town 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 payable to Town of Camden as a Bid guarantee. A Contract Performance Surety Bond and a Contract Payment Surety Bond, each in the amount of 100 percent of the Contract price, will be required of the successful Bidder.

This Contract is subject to all applicable State and Federal Laws. There is no Disadvantaged Business Enterprise (DBE) Program requirement associated with this project; however, contractors are encouraged to consider the use of a qualified DBE firm whenever possible.

All work shall be governed by "State of Maine, Department of Transportation, Standard Specifications, Revision of November 2014", and Standard Details, Revision of November 2014. Standard Detail updates can be found at http://maine.gov/mdot/contractors/publications/standardspec/index2014.shtml

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

Camden, Maine
April 24, 2015

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 www.camdenmaine.gov. 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 Town of Camden will not post Bid Amendments any later than noon the day before Bid opening without individually notifying all plan holders.

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)

BASE BID FORM – CAMDEN PUBLIC LANDING – SHIP GRANT PROJECT					
ITEM NO.	*ITEM*	*UNIT*	*QUANTITY*	*UNIT COST*	*COST*
501.203	*GREENHEART GUIDE PILE*	*EA*	*7*		
501.204	*GREENHEART FENDER PILE*	*EA*	*5*		
502.111	*HOIST FOUNDATION*	*LS*	*1*		
528.493	*FENDERING, FACE SHEATHING, AND LADDERS*	*LS*	*1*		
528.49	*CAP REPLACEMENT*	*LF*	*85*		
528.4906	*TIMBER FLOAT*	*EA*	*2*		
626.45	*ELECTRICAL CONDUIT, WIRING, & TRENCHING*	*LS*	*1*		
634.01	*REMOVE AND / OR RELOCATE EXISTING POLE, MAINTAIN / RESTORE POWER & TELEPHONE SERVICE*	*LS*	*1*		
634.02	*RECEPTACLE – MOUNTED*	*EA*	*2*		
652.33	*DRUM*	*EA*	*15*		
652.34	*CONE*	*EA*	*15*		
652.35	*CONSTRUCTION SIGNS*	*SF*	*100*		
659.10	*MOBILIZATION*	*LS*	*1*		
				WIN 18534.12 Total Base Bid Amount	

ALTERNATE BID FORM – CAMDEN PUBLIC LANDING – SHIP GRANT PROJECT					
ITEM NO.	*ITEM*	*UNIT*	*QUANTITY*	*UNIT COST*	*COST*
501.19	*OAK FENDER PILES*	*EA*	*1*		
501.56	*SUBSTITUTE COMPOSITE PILES*	*EA*	*1*		
				WIN 18534.12 Total Alternate Bid Amount	

CONTRACT AGREEMENT, OFFER & AWARD

AGREEMENT made on the date last signed below, by and between the Town of Camden (Town), with a mailing address at Camden Town Hall, 29 Elm Street, Camden, Maine 04843, and

_____

a corporation or other legal entity organized under the laws of the State of Maine, with its principal place of business located at _____

_____

The Town 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, WIN No.**18534.12**, for the **Camden Public Landing SHIP Grant Project** in the Town of Camden**,** County of **Knox**, 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 Town 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 **December 31, 2015.** Further, the Town 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 November 2014 and related Special Provisions.

C. Price.

The quantities given in the Base Bid Form 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 November 2014, Standard Details Revision of November 2014, 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 November 2014 (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 November 2014, Standard Details Revision of November 2014, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds contained herein for construction of:

WIN 18534.12 Camden Public Landing SHIP Grant Project ,

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 Town 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 November 2014, 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 Town of Camden 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 2014 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 Town.

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.

TOWN OF CAMDEN

Date	Patricia J. Finnigan, Town Manager
(Witness)	

CONTRACT AGREEMENT, OFFER & AWARD

AGREEMENT made on the date last signed below, by and between the Town of Camden (Town), with a mailing address at Camden Town Hall, 29 Elm Street, Camden, Maine 04843, and

_____

a corporation or other legal entity organized under the laws of the State of Maine, with its principal place of business located at _____

_____

The Town 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, WIN No.**18534.12**, for the **Camden Public Landing SHIP Grant Project** in the Town of Camden**,** County of **Knox**, 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 Town 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 **December 31, 2015.** Further, the Town 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 November 2014 and related Special Provisions.

C. Price.

The quantities given in the Base Bid Form 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 November 2014, Standard Details Revision of November 2014, 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 November 2014 (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 November 2014, Standard Details Revision of November 2014, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds contained herein for construction of:

WIN 18534.12 Camden Public Landing SHIP Grant Project ,

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 Town 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 November 2014, 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 Town of Camden 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 2014 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 Town.

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.

TOWN OF CAMDEN

Date	Patricia J. Finnigan, Town Manager
(Witness)	

CONTRACT AGREEMENT, OFFER & AWARD

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

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

A. The Work.

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

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

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

B. Time.

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

C. Price.

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

D. Contract.

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

E. Certifications.

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

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

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

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

F. Offer.

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

PIN 1234.00 South Nowhere, Hot Mix Asphalt Overlay ,

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

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

As Offeror also agrees:

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

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

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

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

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

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

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

CONTRACTOR

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

G. Award.

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

MAINE DEPARTMENT OF TRANSPORTATION

Date	By: David Bernhardt, Commissioner
(Witness)	

BOND # _____

CONTRACT PERFORMANCE BOND
(Surety Company Form)

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

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

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

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

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

BOND # _____

CONTRACT PAYMENT BOND
(Surety Company Form)

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

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

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

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

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

July 16, 2009

SPECIAL PROVISION
SECTION 102.3
EXAMINATION OF DOCUMENTS, SITE, AND OTHER INFORMATION
(Geotechnical Information)

Add the following to Section 102.3, Examination of Documents, Site and Other Information:

102.3.1 Geotechnical Information In most cases, Geotechnical Information pertaining to the project has been collected and assembled. Bidders and Contractors are obligated to examine and, if necessary, obtain geotechnical information. If one is available, the project geotechnical report may be accessed at the following web address:

http://www.maine.gov/mdot/comprehensive-list-projects/project-information.php.

The Department shall not be responsible for the Bidders' and Contractors' interpretations of or estimates or conclusions drawn from the Geotechnical Information. Data provided may not be representative of the subsurface conditions between the boring locations.

This section does not diminish the duties imposed upon parties in Section 102 or in any other sections.

PREVAILING WAGE RATES

This project is being partially funded by a Small Harbor Improvement Project (SHIP) Grant from MaineDOT. All project invoices will be paid by the Town with reimbursement from the State; therefore, prevailing wage rates do not apply.

There is no federal funding on this project.

March 14, 2007
Supersedes March 3, 1966

Non-federal Projects Only

NOTICE TO CONTRACTORS - PREFERRED EMPLOYEES

Sec. 1303. Public Works; minimum wage

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

Town: **Camden**
Project: **WIN: 18534.12**
Location: **Public Landing**
SHIP Grant Project
Date: **April 22, 2015**

SPECIAL PROVISION
SECTION 104
Utilities

MEETING

A Pre-construction Utility Conference, as defined in Subsection 104.4.6 of the Standard Specifications **is not** required.

GENERAL INFORMATION

These Special Provisions outline the arrangements that have been made by T.Y. Lin International on behalf of the Town of Camden and the Maine Department of Transportation (MaineDOT) for coordination of utility work to be undertaken in conjunction with this project. The following list identifies all known utilities having facilities presently located within or near the limits of this project or intending to install facilities during project construction, unless otherwise provided.

Utility	Contact	Phone	E-mail
Central Maine Power Company	Michael Vannah	207-458-1910	michael.vannah@cmpco.com
Fairpoint Communications	Jim Scheid	207-626-2031 207-712-8400	jscheid@fairpoint.com
Time Warner Cable	Chris Verzoni	207-458-8017	chris.verzoni@twcable.com
Maine Water Company	David Beaulieu	207- 236-8428 207- 975-5311	ddbeaulieu@mainewater.com
Town of Camden Wastewater Department	David Bolstridge	207-236-7955	dbolstridge@camdenmaine.gov

Temporary utility adjustments **are** anticipated as part of this project. If temporary utility relocation becomes necessary, the Contractor shall notify the affected utilities. Sufficient time will be needed to be allocated prior to the construction for all required temporary relocation.

Utility working days are Monday through Friday, condition permitting. Any times that are estimated shall be on the basis of a single crew for each utility.

Any times and dates mentioned are estimates only and are dependent on favorable weather conditions, and freedom from emergencies. The Contractor shall have no claim against the Department if they are exceeded.

In all cases, the utilities should be notified by the Contractor well in advance (three weeks) before work in any area is to commence.

The Contractor shall plan and schedule work in such manner that the utilities that are located on this project will not be harmed, damaged, or impacted in any way. The Contractor and the Utilities will coordinate their work plans in an effort not to interfere with each others' progress or the completion of the project.

AERIAL UTILITY ADJUSTMENTS

Central Maine Power Company

CMP has indicated that they own Pole 2.1 at the end of the alleyway, and a few years ago abandoned and gave Pole .2 to the Town so that the Town could run their own service from that point. No pole or overhead adjustments are required.

FairPoint Communications

FairPoint Communications has indicated they have aboveground utilities that run to Pole 0.2 where they have a drop. No pole or overhead adjustments are required.

Time Warner Cable

Time Warner Cable has aboveground utilities that run to Pole 0.2 where they have a drop. Their line appears to be cut at this point.

UNDERGROUND/SURFACE UTILITY ADJUSTMENTS

Central Maine Power Company

CMP has indicated that they have no underground service in the project area.

FairPoint Communications

FairPoint Communications has indicated they have a drop and believe they have a buried service wire that goes to the pole next to the Harbormaster's Building. This will be impacted within the limits of work for the project, but this can be relocated or worked around. FairPoint would like three (3) days notice before work in this area is conducted.

Time Warner Cable

Time Warner Cable has indicated they have drop but they are not sure if it is active; it appears to be cut. They will have the line identified and rerouted / removed if needed during the project. They indicated that they would like seven (7) days notice before work in this area is conducted, and that it would take very limited time to complete.

Maine Water Company

Maine Water Company has a public water main on Commercial Street, but they have infrastructure within the limits of work for this project.

Town of Camden (Wastewater)

The Town of Camden has indicated they have infrastructure at the Public Landing that runs down Commercial Street and to the pump station / restrooms, and that there are two lines – a 24" effluent pipe and 6" force main – that run in parallel toward the harbor from that location (the force main actually is coming from the Sea St. pump station across the harbor). They verified that they have no underground facilities that will be impacted within the limits of work for the project.

SIGNING

Although there are no plans for utilities companies to be performing utility relocations as a result of this project, they may be performing maintenance work, etc. Any utility company working within the construction limits of this project shall ensure that the traveling public is adequately protected at all times. All work areas shall be signed and lighted (if needed), and flaggers shall employed as field conditions determine. All traffic controls shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices for Streets and Highways, as issued by the Federal Highway Administration.

BLASTING

Blasting is not anticipated for the work under this contract. However, in addition to any other notice that may be required, the Contractor shall notify an authorized representative of each utility company having facilities close to the work site no later than **24 hours** before a blast. The notice shall state the approximate time of the blast.

SAFE PRACTICES AROUND UTILITY FACILITIES

Aerial work under this contract consists of placement of three (3) overhead signs along a span wire. The Contractor shall be responsible for complying with M.R.S.A. Title § 35-A, Chapter 7-A-Sections 751-761 Overhead High Voltage Line Safety Act (Act). Prior to commencing any work that may come within ten (10) feet of any aerial utilities, the Contractor shall notify the aerial utilities as per Section 757 of the Act.

DIG SAFE

The Contractor shall be responsible for determining the presence of underground utility facilities prior to commencing any excavation work and shall notify utilities of proposed excavation in accordance with M.R.S.A. Title § 3360-A, Maine "Dig Safe" System. The Contractor shall be responsible for maintaining the buried utility location markings following the initial locating by the appropriate utility or their designated representative.

SPECIAL PROVISION
SECTION 104.5.5
GENERAL RIGHTS AND RESPONSIBILITIES
Prompt Payment of Subcontractors

104.5.5

104.5.5 Prompt Payment of Subcontractors

A. Pay When Paid The Contractor shall pay Subcontractors for all Work satisfactorily performed and Invoiced by the Subcontractor no later than 30 Days from the date the Contractor receives payment from the Department for such Subcontractor's Work.

B. Payment Tracking Federal Projects On federally funded projects, the prime contractor, subcontractors and lower-tier subcontractors will track and confirm the delivery and receipt of all payments through the Elation System. They will be responsible for entering all payments to all sub and lower tier contractors. MaineDOT will run a query monthly to ensure that contractors are complying and generate an e-mail to contractors who have not responded to confirm receipt of MaineDOT payment or contractor payment to lower tier subcontractors.

C. Retainage The Contractor shall return to the Subcontractor all retainage withheld from the Subcontractor within 30 Days after the date the Subcontractor's Work is satisfactorily completed. If there is a Delay in such return of retainage, the Subcontractor may pursue all rights it may have under the claims procedure referenced in Section 104.5.6 - Subcontractor Claims for Payment.

SPECIAL PROVISION 105
OVERLIMIT PERMITS

Title 29-A § 2382 MRSA Overlimit Movement Permits.

1. Overlimit movement permits issued by State. The Secretary of State, acting under guidelines and advice of the Commissioner of Transportation, may grant permits to move nondivisible objects having a length, width, height or weight greater than specified in this Title over a way or bridge maintained by the Department of Transportation

2. Permit fee. The Secretary of State, with the advice of the Commissioner of Transportation, may set the fee for single trip permits, at not less than $6, nor more than $30, based on weight, height, length and width. The Secretary of State may, by rule, implement fees that have been set by the Commissioner of Transportation for multiple trip, long-term overweight movement permits. Rules established pursuant to this section are routine technical rules pursuant to Title 5, chapter 375, subchapter II-A.

3. County and municipal permits. A county commissioner or municipal officer may grant a permit, for a reasonable fee, for travel over a way or bridge maintained by that county or municipality

4. Permits for weight. A vehicle granted a permit for excess weight must first be registered for the maximum gross vehicle weight allowed for that vehicle.

5. Special mobile equipment. The Secretary of State may grant a permit, for no more than one year, to move pneumatic-tire equipment under its own power, including Class A and Class B special mobile equipment, over ways and bridges maintained by the Department of Transportation. The fee for that permit is $15 for each 30-day period.

6. Scope of permit. A permit is limited to the particular vehicle or object to be moved, the trailer or semitrailer hauling the overlimit object and particular ways and bridges.

7. Construction permits. A permit for a stated period of time may be issued for loads and equipment employed on public way construction projects, United States Government projects or construction of private ways, when within construction areas established by the Department of Transportation. The permit:

A. Must be procured from the municipal officers for a construction area within that municipality;

B. May require the contractor to be responsible for damage to ways used in the construction areas and may provide for:

(1) Withholding by the agency contracting the work of final payment under contract; or

(2) The furnishing of a bond by the contractor to guarantee suitable repair or payment of damages.

The suitability of repairs or the amount of damage is to be determined by the Department of Transportation on state-maintained ways and bridges, otherwise by the municipal officers;

C. May be granted by the Department of Transportation or by the state engineer in charge of the construction contract; and

D. For construction areas, carries no fee and does not come within the scope of this section.

8. Gross vehicle weight permits. The following may grant permits to operate a vehicle having a gross vehicle weight exceeding the prescribed limit:

A. The Secretary of State, with the consent of the Department of Transportation, for state and state aid highways and bridges within city or compact village limits;

B. Municipal officers, for all other ways and bridges within that city and compact village limits; and

C. The county commissioners, for county roads and bridges located in unorganized territory.

9. Pilot vehicles. The following restrictions apply to pilot vehicles.

A. Pilot vehicles required by a permit must be equipped with warning lights and signs as required by the Secretary of State with the advice of the Department of Transportation.

B. Warning lights may be operated and lettering on the signs may be visible on a pilot vehicle only while it is escorting a vehicle with a permit on a public way.

With the advice of the Commissioner of Transportation and the Chief of the State Police, the Secretary of State shall establish rules for the operation of pilot vehicles.

9-A. Police escort. A person may not operate a single vehicle or a combination of vehicles of 125 feet or more in length or 16 feet or more in width on a public way unless the vehicle or combination of vehicles is accompanied by a police escort. The Secretary of State, with the advice of the Commissioner of Transportation, may require a police escort for vehicles of lesser dimensions.

A. The Bureau of State Police shall establish a fee for state police escorts to defray the costs of providing a police escort. A county sheriff or municipal police department may establish a fee to defray the costs of providing police escorts.

B. The Bureau of State Police shall provide a police escort if a request is made by a permittee. A county sheriff or municipal police department may refuse a permittee's request for a police escort.

C. A vehicle or combination of vehicles for which a police escort is required must be accompanied by a state police escort when operating on the interstate highway system.

10. Taxes paid. A permit for a mobile home may not be granted unless the applicant provides reasonable assurance that all property taxes, sewage disposal charges and drain and sewer assessments applicable to the mobile home, including those for the current tax year, have been paid or that the mobile home is exempt from those taxes. A municipality may waive the requirement that those taxes be paid before the issuance of a permit if the mobile home is to be moved from one location in the municipality to another location in the same municipality for purposes not related to the sale of the mobile home.

11. Violation. A person who moves an object over the public way in violation of this section commits a traffic infraction.

Section History:
PL 1993, Ch. 683, §A2 (NEW).
PL 1993, Ch. 683, §B5 (AFF).
PL 1997, Ch. 144, §1,2 (AMD).
PL 1999, Ch. 117, §2 (AMD).
PL 1999, Ch. 125, §1 (AMD).
PL 1999, Ch. 580, §13 (AMD).
PL 2001, Ch. 671, §30 (AMD).
PL 2003, Ch. 166, §13 (AMD).
PL 2003, Ch. 452, §Q73,74 (AMD).
PL 2003, Ch. 452, §X2 (AFF).

SPECIAL PROVISION
SECTION 105
GENERAL SCOPE OF WORK

In these documents, wherever the owner is specified as the Maine Department of Transportation, it shall mean the Town of Camden.

SPECIAL PROVISION
SECTION 107
Prosecution and Progress
(Contract Time)

There are two separate dates for completion of work under this contract.

The hoist foundation and associated work shall be completed no later than June 26, 2015.

The timber fender and guide pile installations, timber framing, face sheathing, and ladder installations, and timber floats construction and installation work shall be completed no later than December 31, 2015.

SPECIAL PROVISION
SECTION 107
PROSECUTION AND PROGRESS
(Scheduled Events)

Description. There will be ongoing marine operations (e.g., commercial fishing, day sailor operations) as well as tourism, recreational boating, etc. within and adjacent to the limits of work during time of this contract. The Public Landing is also the location of a heavily-used municipal parking lot. The Contractor shall coordinate with the Town Harbormaster, Town Public Works, and private owners as appropriate. The work under this contract has been divided into two separate mobilizations in order to avoid the majority of summertime community events that are held at and / or nearby the Public Landing.

Public Landing Operations. The Contractor shall coordinate with the Harbormaster to ensure that work does not adversely affect daily activities at the landing such as commercial fishing, parking, etc. (Steve Pixley 207-236-7969)

Municipal Parking Lot. There is a municipal parking lot that comprises much of the area of the Public Landing. The parking lot is very busy from Memorial Day weekend through Columbus Day weekend, with June, July, and August being the busiest months of use.

Community Events. There are events happening at the Public Landing from mid-May through October. There are numerous events in other parts of Town that will increase parking at the Public Landing as well. The Town will coordinate with the Contractor regarding these events and exact dates.

SPECIAL PROVISION
SECTION 107
SCHEDULING OF WORK

Replace Section 107.4.2 with the following:

"107.4.2 Schedule of Work Required Within 21 Days of Contract Execution and before beginning any on-site activities, the Contractor shall provide the Department with its Schedule of Work. The Contractor shall plan the Work, including the activity of Subcontractors, vendors, and suppliers, such that all Work will be performed in Substantial Conformity with its Schedule of Work. The Schedule must include sufficient time for the Department to perform its functions as indicated in this Contract, including QA inspection and testing, approval of the Contractor's TCP, SEWPCP and QCP, and review of Working Drawings.

At a minimum, the Schedule of Work shall include a bar chart which shows the major Work activities, milestones, durations, **submittals and approvals**, and a timeline. Milestones to be included in the schedule include: (A) start of Work, (B) beginning and ending of planned Work suspensions, (C) Completion of Physical Work, and (D) Completion. If the Contractor Plans to Complete the Work before the specified Completion date, the Schedule shall so indicate.

Any restrictions that affect the Schedule of Work such as paving restrictions or In-Stream Work windows must be charted with the related activities to demonstrate that the Schedule of Work complies with the Contract.

The Department will review the Schedule of Work and provide comments to the Contractor within 20 days of receipt of the schedule. The Contractor will make the requested changes to the schedule and issue the finalized version to the Department."

SPECIAL PROVISION
SECTION 107
TIME
(Scheduling of Work – Projected Payment Schedule)

Description The Contractor shall also provide the Department with a Quarterly Projected Payment Schedule that estimates the value of the Work as scheduled, including requests for payment of Delivered Materials. The Projected Payment Schedule must be in accordance with the Contractor's Schedule of Work and prices submitted by the Contractor's Bid. The Contractor shall submit the Projected Payment Schedule as a condition of Award.

SPECIAL PROVISION 400 - PAVEMENTS

SECTION 401 - HOT MIX ASPHALT PAVEMENT

401.01 Description The Contractor shall furnish a uniformly blended, homogeneous mixture placed as one or more courses of Hot Mix Asphalt Pavement (HMA) on an approved base in accordance with the contract documents and in reasonably close conformity with the lines, grades, thickness, and typical cross sections shown on the plans or established by the Resident. The Department will accept this work under Quality Assurance provisions, in accordance with these specifications and the requirements of Section 106 – Quality, the provisions of AASHTO M 323 except where otherwise noted in sections 401 and 703 of these specifications, and the MaineDOT Policies and Procedures for HMA Sampling and Testing.

401.02 Materials Materials shall meet the requirements specified in Section 700 - Materials:

Asphalt Cement	702.01
Aggregates for HMA Pavement	703.07
RAP for HMA Pavement	703.08
HMA Mixture Composition	703.09

401.03 Composition of Mixtures The Contractor shall compose the Hot Mix Asphalt Pavement with aggregate, Performance Graded Asphalt Binder (PGAB), and mineral filler if required. HMA shall be designed and tested according to AASHTO R35 and the volumetric criteria in Table 1. The Contractor shall size, uniformly grade, and combine the aggregate fractions in proportions that provide a mixture meeting the grading requirements of the Job Mix Formula (JMF).

The Contractor shall submit for Department approval a JMF to the Central Laboratory in Bangor for each mixture to be supplied. The Department may approve 1 active design per nominal maximum size, per traffic level, per plant, plus a 9.5mm "fine" mix for shimming and where required, a non-RAP design for bridge decks. The Department shall then have 15 calendar days in which to process a new design before approval. The JMF shall establish a single percentage of aggregate passing each sieve size within the limits shown in section 703.09. The mixture shall be designed and produced, including all production tolerances, to comply with the allowable control points for the particular type of mixture as outlined in 703.09. The JMF shall state the original source, gradation, and percentage to be used of each portion of the aggregate including RAP when utilized, and mineral filler if required. It shall also state the proposed PGAB content, the name and location of the refiner, the supplier, the source of PGAB submitted for approval, the type of PGAB modification if applicable, and the location of the terminal if applicable.

In addition, the Contractor shall provide the following information with the proposed JMF:

- Properly completed JMF indicating all mix properties (Gmm, VMA, VFB, etc.)
- Stockpile Gradation Summary
- Design Aggregate Structure Consensus Property Summary
- Design Aggregate Structure Trial Blend Gradation Plots (0.45 power chart)
- Trial Blend Test Results for at least three different asphalt contents
- Design Aggregate Structure for at least three trial blends
- Test results for the selected aggregate blend at a minimum of three binder contents
- Specific Gravity and temperature/viscosity charts for the PGAB to be used
- Recommended mixing and compaction temperatures from the PGAB supplier
- Material Safety Data Sheets (MSDS) For PGAB
- Asphalt Content vs. Air Voids trial blend curve
- Test report for Contractor's Verification sample

Summary of RAP test results (if used), including count, average and standard deviation of binder content and gradation

At the time of JMF submittal, the Contractor shall identify and make available the stockpiles of all proposed aggregates at the plant site. There must be a minimum of 150 ton for stone stockpiles, 75 ton for sand stockpiles, and 50 ton of blend sand before the Department will sample. The Department shall obtain samples for laboratory testing. The Contractor shall also make available to the Department the PGAB proposed for use in the mix in sufficient quantity to test the properties of the asphalt and to produce samples for testing of the mixture. Before the start of paving, the Contractor and the Department shall split a production sample for evaluation. The Contractor shall test its split of the sample and determine if the results meet the requirements of the Department's written policy for mix design verification (See MaineDOT Policies and Procedures for HMA Sampling and Testing available at the Central Laboratory in Bangor). If the results are found to be acceptable, the Contractor will forward their results to the Department's Lab, which will test the Department's split of the sample. The results of the two split samples will be compared and shared between the Department and the Contractor. If the Department finds the mixture acceptable, an approved JMF will be forwarded to the Contractor and paving may commence. The first day's production shall be monitored, and the approval may be withdrawn if the mixture exhibits undesirable characteristics such as checking, shoving or displacement.

The Contractor shall be allowed to submit aim changes within 24 hours of receipt of the first Acceptance test result. Should all of the Acceptance samples of a Lot be obtained prior to the receipt of the first Acceptance result, the Department will not allow the aim changes to be applied to that Lot. Adjustments will be allowed of up to 2% on the percent passing the 2.36 mm sieve through the 0.075 mm and 3% on the percent passing the 4.75 mm or larger sieves. Adjustments will be allowed on the %PGAB of up to 0.2%. Adjustments will be allowed on GMM of up to 0.010.

The Contractor shall submit a new JMF for approval each time a change in material source or materials properties is proposed. The same approval process shall be followed. The cold feed percentage of any aggregate may be adjusted up to 10 percentage points from the amount listed on the JMF, however no aggregate listed on the JMF shall be eliminated. The cold feed percentage for RAP may be reduced up to 10 percentage points from the amount listed on the JMF and shall not exceed the percentage of RAP approved in the JMF or for the specific application under any circumstances.

TABLE 1: VOLUMETRIC DESIGN CRITERIA

Design ESAL's (Millions)	Required Density (Percent of G_{mm})			Voids in the Mineral Aggregate (VMA)(Minimum Percent)					Voids Filled with Binder (VFB) (Minimum %)	Fines/Eff. Binder Ratio
				Nominal Maximum Aggregate Size (mm)						
	$N_{initial}$	N_{design}	N_{max}	25	19	12.5	9.5	4.75		
<0.3	≤91.5	96.0	≤98.0	13.0	14.0	15.0	16.0	16.0	70-80	0.6-1.2
0.3 to <3	≤90.5								65-80	
3 to <10	≤89.0								65-80*	
10 to <30										
≥ 30										

*For 9.5 mm nominal maximum aggregate size mixtures, the maximum VFB is 82.
*For 4.75 mm nominal maximum aggregate size mixtures, the maximum VFB is 84.

401.031 Warm Mix Technology The Contractor may place Hot Mix Asphalt Pavement produced with an accepted WMA technology if approved by the Department. Methods or technologies shall generally be at the Contractors option, but will be limited to proven, Agency and Industry accepted practice. Mixture production,

placement and volumetric testing details, including temperatures, shall be included in the project specific QCP, and submitted to the Department for approval prior to any work.

401.04 Temperature Requirements After the JMF is established, the temperatures of the mixture shall conform to the following tolerances:

In the truck at the mixing plant – allowable range 275 to 325°F
At the Paver – allowable range 275 to 325°F

The JMF and the mix subsequently produced shall meet the requirements of Tables 1 and Section 703.07.

401.05 Performance Graded Asphalt Binder Unless otherwise noted in Special Provision 403 - Hot Mix Asphalt Pavement, the Contractor may utilize either a 64-28 or 58-28 PGAB. The Contractor must stipulate which PGAB grading will be used to construct the entire HMA pavement structure prior to starting work. For mixtures containing greater than 20 percent but no more than 30 percent RAP the PGAB shall be PG 58-34 (or PG 52-34 when approved by the Department). The PGAB shall meet the applicable requirements of AASHTO M320 - Standard Specification for PGAB. Polymer-modified PGAB shall meet the applicable requirements of AASHTO MP 19. The Contractor shall provide the Department with an approved copy of the Quality Control Plan for PGAB in accordance with AASHTO R 26 Certifying Suppliers of PGAB.
The Contractor shall request approval from the Department for a change in PGAB supplier or source by submitting documentation stating the new supplier or source a minimum of 24 hours prior to the change. In the event that the PGAB supplier or source is changed, the Contractor shall make efforts to minimize the occurrence of PGAB co-mingling.

401.06 Weather and Seasonal Limitations The State is divided into two paving zones as follows:

a. Zone 1 Areas north of US Route 2 from Gilead to Bangor and north of Route 9 from Bangor to Calais.
b. Zone 2 Areas south of Zone 1 including the US Route 2 and Route 9 boundaries.

The Contractor may place Hot Mix Asphalt Pavement for use other than a traveled way wearing course in either Zone between the dates of April 15th and November 15th, provided that the air temperature as determined by an approved thermometer (placed in the shade at the paving location) is 40°F or higher.
The Contractor may place Hot Mix Asphalt Pavement produced with an accepted WMA technology for any base, intermediate base, or shim course in either Zone between the dates of April 15th and November 15th, provided that the air temperature as determined by an approved thermometer (placed in the shade at the paving location) is 35°F or higher, and the area to be paved is not frozen. The Hot Mix Asphalt Pavement produced with an approved WMA technology shall meet the requirements of section 401.04 - Temperature Requirements, unless otherwise approved by the Department.

The Contractor may place Hot Mix Asphalt Pavement as traveled way wearing course in Zone 1 between the dates of May 1st and the Saturday following October 1st and in Zone 2 between the dates of April 15th and the Saturday following October 15th, provided the air temperature determined as above is 50°F or higher. For the purposes of this Section, the traveled way includes truck lanes, ramps, approach roads and auxiliary lanes. The atmospheric temperature for all courses on bridge decks shall be 50°F or higher.

Hot Mix Asphalt Pavement used for curb, driveways, sidewalks, islands, or other incidentals is not subject to seasonal limitations, except that conditions shall be satisfactory for proper handling and finishing of the mixture. All mixtures used for curb, driveways, sidewalks, islands, or other incidentals shall conform to section 401.04 - Temperature Requirements. Unless otherwise specified, the Contractor shall not place Hot Mix Asphalt Pavement on a wet or frozen surface and the air temperature shall be 40°F or higher.

On all sections of overlay with wearing courses less than 1 in thick, the wearing course for the travelway and adjacent shoulders shall be placed between the dates of May 15th and the Saturday following September 15th.

On all sections of overlay with wearing courses less than 1 inch thick, the wearing course for the travelway and adjacent shoulders shall be placed between the dates of June 1st and the Saturday following September 1st if the work is to be performed, either by contract requirement, or Contractor option, during conditions defined as "night work".

401.07 Hot Mix Asphalt Plant

401.071 General Requirements HMA plants shall conform to AASHTO M156.

a. Truck Scales When the hot mix asphalt is to be weighed on scales meeting the requirements of Section 108 - Payment, the scales shall be inspected and sealed by the State Sealer as often as the Department deems necessary to verify their accuracy.

Plant scales shall be checked prior to the start of the paving season, and each time a plant is moved to a new location. Subsequent checks will be made as determined by the Resident. The Contractor will have at least ten 20 Kg [50 pound] masses for scale testing.

401.072 Automation of Batching Batch plants shall be automated for weighing, recycling, and monitoring the system. In the case of a malfunction of the printing system, the requirements of Section 401.074 c. of this specification will apply.

The batch plant shall accurately proportion the various materials in the proper order by weight. The entire batching and mixing cycle shall be continuous and shall not require any manual operations. The batch plant shall use auxiliary interlock circuits to trigger an audible alarm whenever an error exceeding the acceptable tolerance occurs. Along with the alarm, the printer shall print an asterisk on the delivery slip in the same row containing the out-of-tolerance weight. The automatic proportioning system shall be capable of consistently delivering material within the full range of batch sizes. When RAP is being used, the plant must be capable of automatically compensating for the moisture content of the RAP.

All plants shall be equipped with an approved digital recording device. The delivery slip load ticket shall contain information required under Section 108.1.3 - Provisions Relating to Certain Measurements, Mass and paragraphs a, b, and c of Section 401.073

401.073 Automatic Ticket Printer System on Automatic HMA Plant An approved automatic ticket printer system shall be used with all approved automatic HMA plants. The requirements for delivery slips for payment of materials measured by weight, as given in the following Sections, shall be waived: 108.1.3 a., 108.1.3 b., 108.1.3 c., and 108.1.3 d. The automatic printed ticket will be considered as the Weight Certificate.

The requirements of Section 108.1.3 f. - Delivery Slips, shall be met by the weigh slip or ticket, printed by the automatic system, which accompanies each truckload, except for the following changes:

a. The quantity information required shall be individual weights of each batch or total net weight of each truckload.
b. Signatures (legible initials acceptable) of Weighmaster (required only in the event of a malfunction as described in 401.074 c.).
c. The MaineDOT designation for the JMF.

401.074 Weight Checks on Automatic HMA Plant At least twice during each 5 days of production either of the following checks will be performed:

a. A loaded truck may be intercepted and weighed on a platform scale that has been sealed by the State Sealer of Weights and Measures within the past 12 months. The inspector will notify the producer to take corrective action on any discrepancy over 1.0%. The producer may continue to operate for 48 hours under the following conditions.

1. If the discrepancy does not exceed 1.5%; payment will still be governed by the printed ticket.
2. If the discrepancy exceeds 1.5%, the plant will be allowed to operate as long as payment is determined by truck platform scale net weight.

If, after 48 hours the discrepancy has not been addressed and reduced below 1.0%, than plant operations will cease. Plant operation may resume after the discrepancy has been brought within 1.0%.

b. Where platform scales are not readily available, a check will be made to verify the accuracy and sensitivity of each scale within the normal weighing range and to assure that the interlocking devices and automatic printer system are functioning properly.

c. In the event of a malfunction of the automatic printer system, production may be continued without the use of platform truck scales for a period not to exceed the next two working days, providing total weights of each batch are recorded on weight tickets and certified by a Licensed Public Weighmaster.

401.08 Hauling Equipment Trucks for hauling Hot Mix Asphalt Pavement shall have tight, clean, and smooth metal dump bodies, which have been thinly coated with a small amount of approved release agent to prevent the mixture from adhering to the bodies. Solvent based agents developed to strip asphalts from aggregates will not be allowed as release agents.

All truck dump bodies shall have a cover of canvas or other water repellent material capable of heat retention, which completely covers the mixture. The cover shall be securely fastened on the truck, unless unloading.

All truck bodies shall have an opening on both sides, which will accommodate a thermometer stem. The opening shall be located near the midpoint of the body, at least 12 in above the bed.

401.09 Pavers Pavers shall be self-contained, self-propelled units with an activated screed (heated if necessary) capable of placing courses of Hot Mix Asphalt Pavement in full lane widths specified in the contract on the main line, shoulder, or similar construction.

On projects with no price adjustment for smoothness, pavers shall be of sufficient class and size to place Hot Mix Asphalt Pavement over the full width of the mainline travel way with a 10 ft minimum main screed with activated extensions.

The Contractor shall place Hot Mix Asphalt Pavement on the main line with a paver using an automatic grade and slope controlled screed, unless otherwise authorized by the Department. The controls shall automatically adjust the screed and increase or decrease the layer thickness to compensate for irregularities in the preceding course. The controls shall maintain the proper transverse slope and be readily adjustable so that transitions and superelevated curves can be properly paved. The controls shall operate from a fixed or moving reference such as a grade wire or ski type device (floating beam) with a minimum length of 30 ft, a non-contact grade control with a minimum span of 24 ft, except that a 40 ft reference shall be used on Expressway projects.

The Contractor shall operate the paver in such a manner as to produce a visually uniform surface texture and a thickness within the requirements of Section 401.101 - Surface Tolerances. The paver shall have a receiving hopper with sufficient capacity for a uniform spreading operation and a distribution system to place the mixture uniformly, without segregation in front of the screed. The screed assembly shall produce a finished surface of the required evenness and texture without tearing, shoving, or gouging the mixture. Pavers with extendible screeds shall have auger extensions and tunnel extenders as per the manufacturer's recommendations, a copy of which shall be available if requested.

The Contractor shall have the paver at the project site sufficiently before the start of paving operations to be inspected and approved by the Department. The Contractor shall repair or replace any paver found worn or defective, either before or during placement, to the satisfaction of the Department. Pavers that produce an unevenly textured or non-uniform mat will be repaired or replaced before continuing to place HMA on MaineDOT projects.

On a daily basis, the Contractor shall perform density testing across the mat being placed, prior to being compacted by equipment at 12 in intervals. If the density values vary by more than 2.0% from the mean, the Contractor shall make adjustments to the screed until the inconsistencies are remedied. Failure to replace or repair defective placement equipment may result in a letter of suspension of work and notification of a quality control violation resulting in possible monetary penalties as governed by Section 106 - Quality

401.10 Rollers Rollers shall be static steel, pneumatic tire, oscillatory, or approved vibrator type. Rollers shall be in good mechanical condition, capable of starting and stopping smoothly, and be free from backlash when reversing direction. Rollers shall be equipped and operated in such a way as to prevent the picking up of hot mixed material by the roller surface. The use of rollers, which result in crushing of the aggregate or in displacement of the HMA will not be permitted. Any Hot Mix Asphalt Pavement that becomes loose, broken, contaminated, shows an excess or deficiency of Performance Graded Asphalt Binder, or is in any other way defective shall be removed and replaced at no additional cost with fresh Hot Mix Asphalt Pavement, which shall be immediately compacted to conform to the adjacent area.

The Contractor shall repair or replace any roller found to be worn or defective, either before or during placement, to the satisfaction of the Department. Rollers that produce grooved, unevenly textured or non-uniform mat will be repaired or replaced before continuing to place HMA on MaineDOT projects. The type of rollers to be used and their relative position in the compaction sequence shall generally be the Contractor's option, provided specification densities are attained and with the following requirements:

a. On variable-depth courses, the first lift of pavement over gravel, reclaimed pavement, on irregular or milled surfaces, or on bridges, at least one roller shall be 16 ton pneumatic-tired. Unless otherwise allowed by the Resident, pneumatic-tired rollers shall be equipped with skirting to minimize the pickup of HMA materials from the paved surface. When required by the Resident, the roller shall be ballasted to 20 ton.

b. Compaction with a vibratory or steel wheel roller shall precede pneumatic-tired rolling, unless otherwise authorized by the Department.

c. Vibratory rollers shall not be operated in the vibratory mode when checking or cracking of the mat occurs, or on bridge decks.

d. Any method, which results in cracking or checking of the mat, will be discontinued and corrective action taken.

e. The use of an oscillating steel roller shall be required to compact all mixtures placed on bridge decks.

The maximum operating speed for a steel wheel or pneumatic roller shall not exceed the manufacturer's recommendations, a copy of which shall be available if requested.

401.101 Surface Tolerances The Department will check surface tolerance utilizing the following methods :

a.) A 16 ft straightedge or string line placed directly on the surface, parallel to the centerline of pavement.
b.) A 10 ft straightedge or string line placed directly on the surface, transverse to the centerline of pavement.

The Contractor shall correct variations exceeding ¼ in by removing defective work and replacing it with new material as directed by the Department. The Contractor shall furnish a 10 foot straightedge for the Departments use.

401.11 Preparation of Existing Surface The Contractor shall thoroughly clean the surface upon which Hot Mix Asphalt Pavement is to be placed of all objectionable material. When the surface of the existing base or pavement is irregular, the Contractor shall bring it to uniform grade and cross section. All surfaces shall have a tack coat applied prior to placing any new HMA course. Tack coat shall conform to the requirements of Section 409 – Bituminous Tack Coat, Section 702 – Bituminous Material, and all applicable sections of the contract.

401.12 Hot Mix Asphalt Documentation The Contractor and the Department shall agree on the amount of Hot Mix Asphalt Pavement that has been placed each day. All delivery slips shall conform to the requirements of 401.073.

401.13 Preparation of Aggregates The Contractor shall dry and heat the aggregates for the HMA to the required temperature. The Contractor shall properly adjust flames to avoid physical damage to the aggregate and to avoid depositing soot on the aggregate.

401.14 Mixing The Contractor shall combine the dried aggregate in the mixer in the amount of each fraction of aggregate required to meet the JMF. The Contractor shall measure the amount of PGAB and introduce it into the mixer in the amount specified by the JMF.

The Contractor shall produce the HMA at the temperature established by the JMF.

The Contractor shall dry the aggregate sufficiently so that the HMA will not flush, foam excessively, or displace excessively under the action of the rollers. The Contractor shall introduce the aggregate into the mixer at a temperature of not more than 25°F above the temperature at which the viscosity of the PGAB being used is 0.150 Pa·s.

The Contractor shall store and introduce into the mixer the Performance Graded Asphalt Binder at a uniformly maintained temperature at which the viscosity of the PGAB is between 0.150 Pa·s and 0.300 Pa·s. The aggregate shall be coated completely and uniformly with a thorough distribution of the PGAB. The Contractor shall determine the wet mixing time for each plant and for each type of aggregate used. The resultant material shall be a uniformly blended, homogeneous HMA mixture.

401.15 Spreading and Finishing On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impracticable, the Contractor shall spread, rake, and lute the HMA with hand tools to provide the required compacted thickness. Solvent based agents developed to strip asphalts from aggregates will not be allowed as release agents.

On roadways with adjoining lanes carrying traffic, the Contractor shall place each course over the full width of the traveled way section being paved that day, unless otherwise noted by the Department in Section 403 - Hot Mix Asphalt Pavement.

In addition, hot mix asphalt pavement placed on bridges shall also conform to Section 508.04 and the following requirements.

a. The bottom course shall be placed with an approved rubber mounted paver of such type and operated in such a manner that the membrane waterproofing will not be damaged in any way.

b. The top course shall not be placed until the bottom course has cooled sufficiently to provide stability.

c. The Contractor will not be required to cut sample cores from the compacted pavement on the bridge deck, unless otherwise directed by Special Provision.

d. After the top course has been placed, the shoulder areas shall be sealed 3 ft wide with two applications of an emulsified bituminous sealer meeting the requirements of Section 612.03 – Sealing and Section 702.12 - Emulsified Bituminous Sealing Compound. The first application shall be pre-mixed with fine, sharp sand, similar to mortar sand, as needed to fill all voids in the mix in the area being sealed. The second application may be applied without sand. The sealer shall be carried to the curb at the gutter line in sufficient quantity to leave a bead or fillet of material at the face of the curb. The area to be sealed shall be clean, dry and the surface shall be at ambient temperature.

e. The furnishing and applying of the required quantity of sealer for the bridge shoulder areas shall be incidental to placing the hot mix asphalt pavement.

f. The atmospheric temperature for all courses placed on bridge decks shall be 50°F or higher.

401.16 Compaction Immediately after the Hot Mix Asphalt Pavement has been spread, struck off, and any surface irregularities adjusted, the Contractor shall thoroughly and uniformly compact the HMA by rolling.

The Contractor shall roll the surface when the mixture is in the proper condition and when the rolling does not cause undue displacement, cracking, or shoving. The Contractor shall prevent adhesion of the HMA to the rollers or vibrating compactors without the use of fuel oil or other petroleum based release agents. Solvents designed to strip asphalt binders from aggregates will not be permitted as release agents on equipment, tools, or pavement surfaces.

The Contractor shall immediately correct any displacement occurring as a result of the reversing of the direction of a roller or from other causes to the satisfaction of the Department. Any operation other than placement of variable depth shim course that results in breakdown of the aggregate shall be discontinued. Any new pavement that shows obvious cracking, checking, or displacement shall be removed and replaced for the full lane width as directed by the Resident at no cost to the Department.

Along forms, curbs, headers, walls, and other places not accessible to the rollers, the Contractor shall thoroughly compact the HMA with mechanical vibrating compactors. The Contractor shall only use hand tamping in areas inaccessible to all other compaction equipment. On depressed areas, the Contractor may use a trench roller or cleated compression strips under a roller to transmit compression to the depressed area.

Any HMA that becomes unacceptable due to cooling, cracking, checking, segregation or deformation as a result of an interruption in mix delivery shall be removed and replaced, with material that meets contract specifications at no cost to the Department.

401.17 Joints The Contractor shall construct wearing course transverse and longitudinal joints in such a manner that minimum tolerances shown in Section 401.101 - Surface Tolerances are met when measured with a straightedge.

The paver shall maintain a uniform head of HMA during transverse and longitudinal joint construction.

The HMA shall be free of segregation and meet temperature requirements outlined in section 401.04. Transverse joints of the wearing course shall be straight and neatly trimmed. The Contractor may form a vertical face exposing the full depth of the course by inserting a header, by breaking the bond with the underlying course, or by cutting back with hand tools. The Department may allow feathered or "lap" joints on lower base courses or when matching existing base type pavements.

Longitudinal joints shall be generally straight to the line of travel, and constructed in a manner that best ensure joint integrity. Methods or activities that prove detrimental to the construction of straight, sound longitudinal joints will be discontinued.

The Contractor shall apply a coating of emulsified asphalt immediately before paving all joints to the vertical face and 3 in of the adjacent portion of any pavement being overlaid except those formed by pavers operating in echelon. The Contractor shall use an approved spray apparatus designed for covering a narrow surface. The Department may approve application by a brush for small surfaces, or in the event of a malfunction of the spray apparatus, but for a period of not more than one working day.

Where pavement under this contract joins an existing pavement, or when the Department directs, the Contractor shall cut the existing pavement along a smooth line, producing a neat, even, vertical joint. The Department will not permit broken or raveled edges. The cost of all work necessary for the preparation of joints is incidental to related contract pay items.

401.18 Quality Control Method A, B & C The Contractor shall operate in accordance with the approved Quality Control Plan (QCP) to assure a product meeting the contract requirements. The QCP shall meet the requirements of Section 106.6 - Acceptance and this Section. The Contractor shall not begin paving operations until the Department approves the QCP in writing.

Prior to placing any mix, the Department and the Contractor shall hold a Pre-paving conference to discuss the paving schedule, source of mix, type and amount of equipment to be used, sequence of paving pattern, rate of mix supply, random sampling, project lots and sublots and traffic control. A copy of the QC random numbers to be used on the project shall be provided to The Resident. The Departments' random numbers for Acceptance testing shall be generated and on file with the Resident and the Project Manager. All personnel of the Department and the Contractor who have significant information relevant to the paving items shall attend, including the responsible onsite paving supervisor for the Contractor. The Resident will prepare minutes of the conference and distribute them to all attendees. Any requests to revise the minutes must be made to the Resident within 7 Days of Receipt. These minutes will constitute the final record of the Pre-paving conference.

The QCP shall address any items that affect the quality of the Hot Mix Asphalt Pavement including, but not limited to, the following:

a. JMF(s)
b. Hot mix asphalt plant details
c. Stockpile Management (to include provisions for a minimum 2 day stockpile)
d. Make and type of paver(s)
e. Make and type of rollers including weight, weight per inch of steel wheels, and average contact pressure for pneumatic tired rollers
f. Name of QCP Administrator, and certification number
g. Name of Process Control Technician(s) and certification number(s)
h. Name of Quality Control Technicians(s) and certification number(s)
i. Mixing & transportation including process for ensuring that truck bodies are clean and free of debris or contamination that could adversely affect the finished pavement
j. Testing Plan
k. Laydown operations including longitudinal joint construction, procedures for avoiding paving in inclement weather, type of release agent to be used on trucks tools and rollers, compaction of shoulders, tacking of all joints, methods to ensure that segregation is minimized, procedures to determine the maximum rolling and paving speeds based on best engineering practices as well as past experience in achieving the best possible smoothness of the pavement. Solvent based agents developed to strip asphalts from aggregates will not be allowed as release agents.
l. Examples of Quality Control forms including a daily plant report, daily paving report, and delivery slip template for any plant to be utilized.
m. Silo management and details (can show storage for use on project of up to 36 hours)
n. Provisions for varying mix temperature due to extraordinary conditions or production limitations. If a warm-mix technology is utilized, a proposed target production temperature range (not to exceed 50°F) will be provided for each mix design.
o. Name and responsibilities of the Responsible onsite Paving Supervisor.
p. Method for calibration/verification of Density Gauge
q. A note that all testing will be done in accordance with AASHTO and the MaineDOT Policies and Procedures for HMA Sampling and Testing.
r. A detailed description of RAP processing, stockpiling and introduction into the plant as well as a note detailing conditions under which the percent of RAP will vary from that specified on the JMF.
s. A detailed procedure outlining when production will be halted due to QC or Acceptance testing results.
t. A plan to address the change in PGAB source or supplier and the potential co-mingling of differing PGAB's.
u. A procedure to take immediate possession of acceptance samples once released by MaineDOT and deliver said samples to the designated acceptance laboratory.
v. Provisions for how the QCP will be communicated to the Contractor's field personnel

The QCP shall include the following technicians together with following minimum requirements:

a. QCP Administrator - A qualified individual shall administer the QCP. The QCP Administrator must be a full-time employee of or a consultant engaged by the Contractor or paving subcontractor. The QCP Administrator shall have full authority to institute any and all actions necessary for the successful operation of the QCP. The QCP Administrator (or its designee in the QCP Administrator's absence) shall be available to communicate with the Department at all times. The QCP Administrator shall be certified as a Quality Assurance Technologist certified by the New England Transportation Technician Certification Program (NETTCP).

b. Process Control Technician(s) (PCT) shall utilize test results and other quality control practices to assure the quality of aggregates and other mix components and control proportioning to meet the JMF(s). The PCT shall inspect all equipment used in mixing to assure it is operating properly and that mixing conforms to the mix design(s) and other Contract requirements, and that delivery slips and plant recordation accurately reflects the mix being produced with all the required information. The QCP shall detail how these duties and responsibilities are to be accomplished and documented, and whether more than one PCT is required. The Plan shall include the criteria to be utilized by the PCT to correct or reject unsatisfactory materials. The PCT shall be certified as a Plant Technician by the NETTCP.

c. Quality Control Technician(s) (QCT) shall perform and utilize quality control tests at the job site to assure that delivered materials meet the requirements of the JMF(s). The QCT shall inspect all equipment utilized in transporting, laydown, and compacting to assure it is operating properly and that all laydown and compaction conform to the Contract requirements. The QCP shall detail how these duties and responsibilities are to be accomplished and documented, and whether more than one QCT is required. The QCP shall include the criteria utilized by the QCT to correct or reject unsatisfactory materials. The QCT shall be certified as a Paving Inspector by the NETTCP.

The QCP shall detail the coordination of the activities of the Plan Administrator, the PCT and the QCT. The Project Superintendent shall be named in the QCP, and the responsibilities for successful implementation of the QCP shall be outlined.

The Contractor shall sample, test, and evaluate Hot Mix Asphalt Pavement in accordance with the following minimum frequencies:

TABLE 2 : MINIMUM QUALITY CONTROL FREQUENCIES

Test or Action	Frequency	Test Method
Temperature of mix	6 per day at street and plant	-
Temperature of mat	4 per day	-
%TMD (Surface)	1 per 125 ton (As noted in QC Plan)	ASTM D2950
%TMD (Base)	1 per 250 ton (As noted in QC Plan)	AASHTO T269
Fines / Effective Binder	1 per 500 ton	AASHTO T 312*
Gradation	1 per 500 ton	AASHTO T30
PGAB content	1 per 500 ton	AASHTO T164 or T308
Voids at N_{design}	1 per 500 ton	AASHTO T 312*
Voids in Mineral Aggregate at N_{design}	1 per 500 ton	AASHTO T 312*
Rice Specific Gravity	1 per 500 ton	AASHTO T209
Coarse Aggregate Angularity	1 per 5000 ton	ASTM D5821
Flat and Elongated Particles	1 Per 5000 ton	ASTM D4791
Fine Aggregate Angularity	1 Per 5000 ton	AASHTO T304

*Method A and B only

The Contractor may utilize innovative equipment or techniques not addressed by the Contract documents to produce or monitor the production of the mix, subject to approval by the Department.

The Contractor shall submit all Hot Mix Asphalt Pavement plant test reports, inspection reports and updated pay factors in writing, signed by the appropriate technician and present them to the Department by 1:00 P.M. on the next working day, except when otherwise noted in the QCP due to local restrictions. The Contractor shall also retain splits of the previous 5 QC tests, with QC results enclosed for random selection and testing by The Department during QA inspections of the HMA production facility. Test results of splits that do not meet the Dispute Resolution Variance Limits in Table 10 shall trigger an investigation by the MaineDOT Independent Assurance Unit, and may result in that lab losing NETTCP certification and the ability to request a dispute [Section 401.223 - Process for Dispute Resolution (Methods A , B and C only)].

The Contractor shall make density test results, including randomly sampled densities, available to the Department onsite. Summaries of each day's results, including a daily paving report, shall be recorded and signed by the QCT and presented to the Department by 1:00 p.m. the next working day.

The Contractor shall have a testing lab at the plant site, equipped with all testing equipment necessary to complete the tests in Table 2. The Contractor shall locate an approved Gyratory Compactor at the plant testing lab or within 30 minutes of the plant site.

The Contractor shall fill all holes in the pavement resulting from cutting cores by the Contractor or the Department with a properly compacted, acceptable mixture no later than the following working day. Before filling, the Contractor shall carefully clean the holes and apply a coating of emulsified asphalt. On surface courses, cores shall not be cut except for Verification of the Nuclear Density Gauge, at a rate not to exceed 3 per day or 2 per 1000 Mg [1000 ton] placed.

The Contractor shall monitor plant production using running average of three control charts as specified in Section 106 - Quality. Control limits shall be as noted in Table 3 below. The UCL and LCL, shall not exceed the allowable gradation control points for the particular type of mixture as outlined in Table 1 of section 703.09

TABLE 3: Control Limits

Property	UCL and LCL
Passing 4.75 mm and larger sieves	Target +/-4.0
Passing 2.36 mm sieve	Target +/-2.5
Passing .075 mm sieve	Target +/-1.2
PGAB Content*	Target +/-0.3
Voids in the Mineral Aggregate	LCL = LSL + 0.2
% Voids at N_{design}	JMF Target +/-1.3

*Based on AASHTO T 308

The Contractor shall cease paving operations whenever one of the following occurs on a lot in progress:

a. Method A: The Pay Factor for VMA, Voids @ N_d, Percent PGAB, composite gradation, VFB, fines to effective binder or density using all Acceptance or all Quality Control tests for the current lot is less than 0.85.
b. Method B: The Pay Factor for VMA, Voids @ N_d, Percent PGAB, composite gradation, VFB, fines to effective binder or density using all Acceptance or all Quality Control tests for the current lot is less than 0.90.
c. Method C: The Pay Factor for VMA, Voids @ N_d, Percent PGAB, percent passing the nominal maximum sieve, percent passing 2.36 mm sieve, percent passing 0.300 mm sieve, percent passing 0.075 mm sieve or density using all Acceptance or all available Quality Control tests for the current lot is less than 0.85.

d. The Coarse Aggregate Angularity or Fine Aggregate Angularity value falls below the requirements of Table 3: Aggregate Consensus Properties Criteria in Section 703.07 for the design traffic level.
e. Each of the first 2 control tests for a Method A or B lot fall outside the upper or lower limits for VMA, Voids @ Nd, or Percent PGAB; or under Method C, each of the first 2 control tests for the lot fall outside the upper or lower limits for the nominal maximum, 2.36 mm, 0.300 mm or 0.075 mm sieves, or percent PGAB.
f. The Flat and Elongated Particles value exceeds 10% by ASTM D4791.
g. There is any visible damage to the aggregate due to over-densification other than on variable depth shim courses.
h. The Contractor fails to follow the approved QCP.

The Contractor shall notify the Resident in writing as to the reason for shutdown, as well as the proposed corrective action, by the end of the work day. Failure to do so will be treated as a second incident under 106.4.6 QCP Non-compliance. The Department will consider corrective action acceptable if the pay factor for the failing property increases, based on samples already in transit, or a verification sample is tested and the property falls within the specification limits.

In cases where the corrective action can be accomplished immediately, such as batch weight or cold feed changes, the Contractor may elect to resume production once the corrective action is completed. Additional QC testing shall be performed to verify the effectiveness of the corrective action. Subsequent occurrences of shutdown for the same property in a Lot in progress will require paving operations to cease. Paving operations shall not resume until the Contactor and the Department determines that material meeting the Contract requirements will be produced. The Department may allow the Contractor to resume production based upon a passing QC sample, with a split of the sample being sent to the Department for verification testing. If the submitted verification sample test results fall outside the specification limits, the Contractor shall cease production until a verification sample is submitted to the Department has been tested by the Department and found to be within specification limits.

If the Contractor's control chart shows the process to be out of control (defined as a single point outside of the control limits on the running average of three chart) on any property listed in Table 3: Control Limits, the Contractor shall notify the Resident in writing of any proposed corrective action by 1:00 PM the next working day.

The Department retains the exclusive right, with the exception of the first day's production of a new JMF, to determine whether the resumption of production involves a significant change to the production process. If the Department so determines, then the current lot will be terminated, a pay factor established, and a new lot will begin.

401.19 Quality Control Method D For Items covered under Method D, the Contractor shall submit a modified QC Plan detailing, how the mix is to be placed, what equipment is to be used, and what HMA plant is to be used. All mix designs (JMF) shall be approved and verified by MaineDOT prior to use. Certified QC personnel shall not be required. The Contractor shall certify the mix and the test results for each item by a Certificate of Compliance.

401.20 Acceptance Method A, B & C These methods utilizes Quality Level Analysis and pay factor specifications. For Hot Mix Asphalt Pavement designated for acceptance under Quality Assurance provisions, the Department will sample once per sublot on a statistically random basis, test, and evaluate in accordance with the following Acceptance Criteria:

TABLE 4: ACCEPTANCE CRITERIA

PROPERTIES	POINT OF SAMPLING	TEST METHOD
Gradation	Paver Hopper	AASHTO T30
PGAB Content	Paver Hopper	AASHTO T308
%TMD (Surface)	Mat behind all Rollers	AASHTO T269
%TMD (Base or Binder)	Mat behind all Rollers	AASHTO T269
Air Voids at N_d	Paver Hopper	AASHTO T 312
%VMA at N_d	Paver Hopper	AASHTO T 312
Fines to Effective Binder	Paver Hopper	AASHTO T 312
%VFB	Paver Hopper	AASHTO T 312

In the event the Department terminates a Lot prematurely but fails to obtain the required number of acceptance samples to calculate the volumetric property pay factor under the test method specified in the contract, the pay factor shall be calculated using the number of samples actually obtained from the contract. Should the number of acceptance samples taken total less than three, the resulting pay factor shall be 1.0 for volumetric properties. A minimum of three cores will be used for a density pay factor using the contract's specified Acceptance method, if applicable, for quantities placed to date.

Should the Contractor request a termination of the Lot in progress prior to three acceptance samples being obtained, and the Department agrees to terminate the Lot, then the pay factor for mixture properties shall be 0.80. A minimum of three cores will be used to determine a density pay factor using the contract's specified Acceptance method, if applicable, for quantities placed to date.

Lot Size For purposes of evaluating all acceptance test properties, a lot shall consist of the total quantity represented by each item listed under the lot size heading.

Sublot size - Refer to section 401.201, 401.202, and 401.203 for minimum size and number of sublots. The quantity represented by each sample will constitute a sublot.

If there is less than one-half of a sublot remaining at the end, then it shall be combined with the previous sublot. If there is more than one-half sublot remaining at the end, then it shall constitute the last sublot and shall be represented by test results. If it becomes apparent partway through a Lot that, due to an underrun, there will be insufficient mix quantity to obtain the minimum number of sublots needed, the Resident may adjust the size of the remaining sublots and select new sample locations based on the estimated quantity of material remaining in the Lot.

Acceptance Testing The Department will obtain samples of Hot Mix Asphalt Pavement in conformance with AASHTO T168 Sampling Bituminous Paving Mixtures, and the MaineDOT Policies and Procedures for HMA Sampling and Testing, which will then be transported by the Contractor to the designated MaineDOT Laboratory within 48 hours (except when otherwise noted in the project specific QCP due to local restrictions), as directed by MaineDOT in approved transport containers to be provided by the Department, unless otherwise directed by the Resident. Failure to deliver an acceptance sample to the designated acceptance laboratory will be considered the second incident under 106.4.6–QCP Non-Compliance.

The Department will take the sample randomly within each sublot. Target values shall be as specified in the JMF. The Department will use Table 5 for calculating pay factors for gradation, PGAB Content, Air Voids at N_{design}, VMA, Fines to Effective Binder and VFB. The Department will withhold reporting of the test results for the Acceptance sample until 7:00 AM, on the second working day of receipt of the sample, or after receipt of the Contractors results of the Acceptance sample split. Upon conclusion of each lot, where there is a minimum of four sublots, results shall be examined for statistical outliers, as stated in Section 106.7.2 - Statistical Outliers.

Isolated Areas During the course of inspection, should it appear that there is an isolated area that is not representative of the lot based on a lack of observed compactive effort, excessive segregation, a change in process or any other questionable practice, that area may be isolated and tested separately. An area so isolated that has a calculated pay factor below 0.80 for Method A and C or below 0.86 for Method B, based on three random tests shall be removed and replaced at the expense of the Contractor for the full lane width and a length not to be less than 150 ft.

Pavement Density The Department will measure pavement density using core samples tested according to AASHTO T-166. The Department will randomly determine core locations. The Contractor shall cut 6 inch diameter cores at no additional cost to the Department by the end of the working day following the day the pavement is placed, and immediately give them to the Department. Cores for Acceptance testing shall be cut such that the nearest edge is never within 9 inches of any joint. The cores will be placed in a transport container provided by the Department and transported by the Contractor to the designated MaineDOT Lab as directed by the Department. Pre-testing of the cores will not be allowed. At the time of sampling, the Contractor and the Department shall mutually determine if a core is damaged. If it is determined that the core(s) is damaged, the Contractor shall cut new core(s) at the same offset and within 3 ft of the initial sample. At the time the core is cut, the Contractor and the Department will mutually determine if saw cutting of the core is needed, and will mark the core at the point where sawing is needed. The core may be saw cut by the Contractor in the Department's presence onsite, or in an MaineDOT Lab by The Department, without disturbing the layer being tested to remove lower layers of Hot Mix Asphalt Pavement, gravel, or RAP. No recuts are allowed at a test location after the core has been tested. Upon conclusion of each lot, density results shall be examined for statistical outliers as stated in Section 106.7.2.

On all sections of overlay with wearing courses designed to be 3/4 in or less in thickness, there shall be no pay adjustment for density otherwise noted in Section 403 - Hot Mix Asphalt Pavement. For overlays designed to be 3/4 in or less in thickness, density shall be obtained by the same rolling train and methods as used on mainline travelway surface courses with a pay adjustments for density, unless otherwise directed by the Department.

There shall be no pay adjustment for density on shoulders unless otherwise noted in Section 403 - Hot Mix Asphalt Pavement. Density for shoulders shall be obtained by the same rolling train and methods as used on mainline travelway, unless otherwise directed by the Department. Efforts to obtain optimum compaction will not be waived by the Department unless it is apparent during construction that local conditions make densification to this point detrimental to the finished pavement surface course.

401.201 Method A Lot Size will be the entire production per JMF for the project, or if so agreed at the Pre-paving Conference, equal lots of up to 4500 tons, with unanticipated over-runs of up to 1500 ton rolled into the last lot. Sublot sizes shall be 750 ton for mixture properties, 500 ton for base or binder densities and 250 ton for surface densities. The minimum number of sublots for mixture properties shall be 4, and the minimum number of sublots for density shall be five.

TABLE 5: METHOD A ACCEPTANCE LIMITS

Percent Passing 4.75 mm and larger sieves	USL and LSL
Percent Passing 2.36 mm to 1.18 mm sieves	Target +/-7%
Percent Passing 0.60 mm	Target +/-4%
Percent Passing 0.30 mm to 0.075 mm sieve	Target +/-3%
PGAB Content	Target +/-2%
Air Voids	Target +/-0.4%
Fines to Effective Binder	4.0% +/-1.5%
Voids in the Mineral Aggregate	0.9 +/-0.3
Voids Filled with Binder	LSL Only from Table 1
% TMD (In-place Density)	Table 1 values plus a 4% production tolerance for USL only
Percent Passing 4.75 mm and larger sieves	95.0% +/- 2.5%

401.202 Method B Lot Size will be the entire production per JMF for the project and shall be divided into 3 equal sublots for Mixture Properties and 3 equal sublots for density.

TABLE 6: METHOD B ACCEPTANCE LIMITS

Property	USL and LSL
Percent Passing 4.75 mm and larger sieves	Target +/-7
Percent Passing 2.36 mm to 1.18 mm sieves	Target +/-5
Percent Passing 0.60 mm	Target +/-4
Percent Passing 0.30 mm to 0.075 mm sieve	Target +/-3
PGAB Content	Target +/-0.5
Air Voids	4.0% +/-2.0
Fines to Effective Binder	0.9 +/-0.3
Voids in the Mineral Aggregate	LSL from Table 1
Voids Filled with Binder	Table1 plus a 4% production tolerance for USL.
% TMD (In-place Density)	95.0% +/- 2.5%

401.203 Method C Lot Size will be the entire production per JMF for the project, or if so agreed at the Pre-paving Conference, equal lots of up to 4500 tons, with unanticipated over-runs of up to 1500 ton rolled into the last lot. Sublot sizes shall be 750 ton for mixture properties, 500 ton for base or binder densities and 250 ton for surface densities. The minimum number of sublots for mixture properties shall be 4, and the minimum number of sublots for density shall be five.

TABLE 7: METHOD C ACCEPTANCE LIMITS

Property	USL and LSL
Passing 4.75 mm and larger sieves	Target +/-7%
Passing 2.36 mm to 1.18 mm sieves	Target +/-5%
Passing 0.60 mm	Target +/-4%
Passing 0.30 mm to 0.075 mm sieve	Target +/-2%
PGAB Content	Target +/-0.4%
Air Voids	4.0% +/-1.5%
Fines to Effective Binder	0.9 +/-0.3
Voids in the Mineral Aggregate	LSL Only from Table 1
Voids Filled with Binder	Table 1 values plus a 4% production tolerance for USL only
% TMD (In place density)	95.0% +/- 2.5%

401.204 Method D For hot mix asphalt items designated as Method D in Section 403 - Hot Mix Asphalt Pavement, one sample will be taken from the paver hopper or the truck body per 250 ton per pay item. The mix will be tested for gradation and PGAB content. Disputes will not be allowed. If the mix is within the tolerances listed in Table 8: Method D Acceptance Limits, the Department will pay the contract unit price. Contractor shall cut two 6 in cores, which shall be tested for percent TMD per AASHTO T-269 unless otherwise noted in Section 403 - Hot Mix Asphalt Pavement. If the average for the two tests falls below 92.5% the disincentive shall apply. If the test results for each 250 ton increment are outside these limits, the following deductions (Table 8B) shall apply to the HMA quantity represented by the test.

TABLE 8: METHOD D ACCEPTANCE LIMITS

Property	USL and LSL
Percent Passing 4.75 mm and larger sieves	Target +/-7
Percent Passing 2.36 mm to 1.18 mm sieves	Target +/-5
Percent Passing 0.60 mm	Target +/-4
Percent Passing 0.30 mm to 0.075 mm sieve	Target +/-3
PGAB Content	Target +/-0.5
% TMD (In-place Density)	95.0% +/- 2.5%

TABLE 8B Method "D" Price Adjustments

PGAB Content	-5%
2.36 mm sieve	-2%
0.30 mm sieve	-1%
0.075 mm sieve	-2%
Density	-10%

401.21 Method of Measurement The Department will measure Hot Mix Asphalt Pavement by the ton in accordance with Section 108.1 - Measurement of Quantities for Payment.

401.22 Basis of Payment The Department will pay for the work, in place and accepted, in accordance with the applicable sections of this Section, for each type of HMA specified.

The Department will pay for the work specified in Section 401.11, for the HMA used, except that cleaning objectionable material from the pavement and furnishing and applying bituminous material to joints and contact surfaces is incidental. Payment for this work under the appropriate pay items shall be full compensation for all labor, equipment, materials, and incidentals necessary to meet all related contract requirements, including design

of the JMF, implementation of the QCP, obtaining core samples, transporting cores and samples, filling core holes, applying emulsified asphalt to joints, and providing testing facilities and equipment.
The Department will make a pay adjustment for quality as specified below.

401.221 Pay Adjustment The Department will sample, test, and evaluate Hot Mix Asphalt Pavement in accordance with Section 106 - Quality and Section 401.20 - Acceptance, of this Specification.

In addition, for 9.5 mm NMAS mixtures the following pay adjustment shall also apply:

The average percent passing for the 0.075 mm sieve shall be evaluated for each Lot. If the average is greater than 6.5%, a pay adjustment according to Table 8C below shall apply in addition to the other pay adjustments for the given method of testing.

TABLE 8C: 0.075 mm SIEVE PAY ADJUSTMENT

AVERAGE PERCENT PASSING 0.075 MM SIEVE	PAY ADJUSTMENT
6.6% - 7.0%	-5% Pay Adjustment
> 7.0%	-10% Pay Adjustment

The Department shall notify the Contractor whenever the average of at least three samples in a given Lot is greater than 6.5%.

401.222 Pay Factor (PF) The Department will use the following criteria for pay adjustment using the pay adjustment factors under Section 106.7 - Quality Level Analysis:

Density If the pay factor for Density falls below 0.80 for Method A or C or 0.86 for Method B, all of the cores will be randomly re-cut by Sublot. A new pay factor will be calculated that combines all initial and retest results. If the resulting pay factor is below 0.80 for Method A or C or below 0.86 for Method B, the entire Lot shall be removed and replaced with material meeting the specifications at no additional cost to the Department, except that the Department may, when it appears that there is a distinct pattern of defective material, isolate any defective material by investigating each mix sample sublot and require removal of defective mix sample sublots only, leaving any acceptable material in place if it is found to be free of defective material. Pay factors equal to or greater than the reject level will be paid accordingly.

Gradation For HMA evaluated under Acceptance Method A or B, the Department will determine a composite pay factor (CPF) using applicable price adjustment factors “f“ from Table 9: Table of Gradation Composite “f” Factors, and Acceptance limits from Table 5: Method A Acceptance Limits, for Method A or Table 6: Method B Acceptance Limits, for Method B. The Department will not make price adjustments for gradation on Methods A and B except for 9.5mm NMAS mixtures as outlined in Table 4A. Gradations for Methods A and B shall be monitored as shutdown criteria.

TABLE 9: TABLE OF GRADATION COMPOSITE " f " FACTORS (Methods A and B)

Constituent		"f" Factor			
		19 mm	12.5 mm	9.5 mm	4.75 mm
Gradation	25 mm	-	-	-	-
	19 mm	4	-	-	-
	12.5 mm		4	4	-
	9.50 mm				4
	2.36 mm	6	6	6	8
	1.18 mm				
	0.60 mm	2	2	2	2
	0.30 mm	2	2	2	2
	0.075 mm	6	6	6	8

For HMA evaluated under Acceptance Method C, the Department will determine a pay factor using acceptance limits from Table **7**: Method C Acceptance Limits.

VMA, Air Voids, VFB and Fines to Effective Binder The Department will determine a pay factor (PF) using the applicable Acceptance Limits.

The following variables will be used for pay adjustment:

PA = Pay Adjustment
Q = Quantity represented by PF in ton
P = Contract price per ton
PF = Pay Factor

Pay Adjustment Method A

The Department will use the following criteria for pay adjustment: density, Performance Graded Asphalt Binder content, voids @N_d, VMA, VFB, F/B_{eff}, and the screen sizes listed in Table 9 for the type of HMA represented in the JMF. If any single pay factor for PGAB Content, VMA, or Air Voids falls below 0.80, then the composite pay factor for PGAB Content, VMA, and Air Voids shall be 0.55.

Density: For mixes having a density requirement, the Department will determine a pay factor using Table 5: Method A Acceptance Limits:

PA = (density PF- 1.0)(Q)(P)x0.50

PGAB Content, VMA and Air Voids: The Department will determine a pay adjustment using Table 5: Method A Acceptance Limits as follows:

PA = (voids @ N_d PF- 1.0)(Q)(P)x0.20 + (VMA @ N_d PF- 1.0)(Q)(P)x0.20 + (PGAB PF- 1.0)(Q)(P)x0.10

VFB and Fines to Effective Binder The Department will determine a pay factor (PF) using Table 5: Method A Acceptance Limits. The Department will not make price adjustments for VFB or Fines to Effective Binder, but will monitor them as shutdown criteria.

Pay Adjustment Method B

The Department will use the following criteria for pay adjustment: density, Performance Graded Asphalt Binder content, voids @$N_{d,}$ VMA, VFB, F/B_{eff}, and the screen sizes listed in Table 9 for the type of HMA represented in the JMF. If any single pay factor for PGAB Content, VMA, or Air Voids falls below 0.86, then the composite pay factor for PGAB Content, VMA, and Air Voids shall be 0.70.

Density: For mixes having a density requirement, the Department will determine a pay factor using Table 6: Method B Acceptance Limits:

PA = (density PF- 1.0)(Q)(P)x0.50

PGAB Content, VMA and Air Voids: The Department will determine a pay adjustment using Table 6: Method B Acceptance Limits as follows:

PA = (voids @ N_d PF- 1.0)(Q)(P)x0.20 + (VMA @ N_d PF- 1.0)(Q)(P)x0.20 + (PGAB PF-1.0)(Q)(P)x0.10

VFB and Fines to Effective Binder The Department will determine a pay factor (PF) using Table 6: Method B Acceptance Limits. The Department will not make price adjustments for VFB or Fines to Effective Binder, but will monitor them as shutdown criteria.

Pay Adjustment Method C

The Department will use density, Performance Graded Asphalt Binder content, and the percent passing the nominal maximum, 2.36 mm, 0.300 mm and 0.075 mm sieves for the type of HMA represented in the JMF. If the PGAB content falls below 0.80, then the PGAB pay factor shall be 0.55.

Density: For mixes having a density requirement, the Department will determine a pay factor using Table 7: Method C Acceptance Limits:

PA = (density PF- 1.0)(Q)(P)x0.50

PGAB Content and Gradation The Department will determine a pay factor using Table **7**: Method C Acceptance Limits. The Department will calculate the price adjustment for Mixture Properties as follows:

PA = (% Passing Nom. Max PF-1.0)(Q)(P)X0.05+(% passing 2.36 mm PF-1.0)(Q)(P)X0.05+(%passing 0.30 mm PF-1.0)(Q)(P)X0.05+(%passing 0.075 mm PF-1.0)(Q)(P)X0.10+(PGAB PF-1.0)(Q)(P)X0.25

VMA, Air Voids, VFB and Fines to Effective Binder The Department will determine a pay factor (PF) using Table 7: Method C Acceptance Limits. The Department will not make price adjustments for VMA, Air Voids, VFB or Fines to Effective Binder, but will monitor them as shutdown criteria.

Pay Adjustment Method D

The Department will use density, Performance Graded Asphalt Binder content, and the screen sizes listed in Table 8b for the type of HMA represented in the JMF. If test results do not meet the Table 8 requirements, deducts as shown in Table 8b shall be applied to the quantity of mix represented by the test.

401.223 Process for Dispute Resolution (Methods A B & C only)

a. Dispute Resolution sampling At the time of Hot-Mix Asphalt sampling, the Department will obtain a split sample of each Acceptance test random sample for possible dispute resolution testing. The Contractor shall also obtain a split sample of the HMA at this same time. If the Contractor wishes to retain the option of requesting dispute testing of the initial Acceptance sample, the Contractor will test their split of the

Acceptance sample and shall report their results to the Resident, with a copy to the QA Engineer by 7:00 AM, on the second working day from time of QA sampling, otherwise dispute resolution will not be initiated. The Department's dispute resolution split sample will be properly labeled and stored for a period of at least two weeks, or until the sample is tested.

b. Disputing Acceptance results The Contractor may dispute the Department's Acceptance results and request (Methods A, B, & C) that the dispute resolution split sample be tested by notifying the Department's Resident and the QA Engineer in writing within two working days after receiving the results of the Acceptance test. The following shall be provided in the request:

- Acceptance sample reference number
- The specific test result(s) or property(ies) being disputed, and
- The complete, signed report of the Contractor's testing (In a lab certified by the NETTCP and MaineDOT) of their split of the Acceptance sample indicating that the variances in Table10: Dispute Resolution Variance Limits, for the specific test result(s) or property(ies) were exceeded.

c. Disputable items

For Methods A and B: The Contractor may dispute any or all of the following test results when the difference between the Department's value and the Contractor's value for that test equals or exceeds the corresponding allowable variation in Table 10: Dispute Resolution Variance Limits, PGAB content, G_{mb}, and G_{mm}. In addition, if the allowable variation for the G_{mb} or G_{mm} is not met or exceeded, the Contractor may dispute either or both of the following material properties provided the difference between results for them equals or exceeds the corresponding allowable variation in Table 10: Voids at N_{design}, and VMA. The Contractor may dispute the 0.075 mm sieve test result when a 9.5 mm NMAS mixture is used.

For Method C only: The results for PGAB content and the screen sizes used for pay adjustment may be disputed.

d. Outcome The value of any disputed result or property reported for the initial Acceptance sample shall stand if the value reported for the dispute resolution sample is not closer to the value the Contractor reported for their split sample than to the value reported for the initial Acceptance sample. If the value reported for the dispute resolution falls precisely half-way between the other two values the value reported for the dispute resolution will replace the original acceptance value. Otherwise, the value reported for the dispute resolution sample will replace the value reported for the initial Acceptance sample, and will be used to re-calculate any other affected results or properties.

TABLE 10: DISPUTE RESOLUTION VARIANCE LIMITS

PGAB Content	+/-0.4%
G_{mb}	+/-0.030
G_{mm}	+/-0.020
Voids @ N_d	+/-0.8%
VMA	+/-0.8%
Passing 4.75 mm and larger sieves	+/- 4.0%
Passing 2.36 mm to 0.60 mm sieves	+/- 3.0%
Passing 0.30 mm to 0.15	+/- 2.0 %
0.075 mm sieve	+/- 1.0%

SECTION 402 - PAVEMENT SMOOTHNESS

402.00 Smoothness Projects Projects to have their pavement smoothness analyzed in accordance with this Specification will be so noted in Special Provision 403 - Hot Mix Asphalt Pavement

402.01 Pavement Smoothness The final pavement surface shall be evaluated for smoothness using a Class I or Class II profiler as defined by ASTM E950 (94). Smoothness measurements will be expressed in terms of the International Roughness Index (IRI) as defined by the World Bank, in units of inches/mile.

402.02 Lot Size Lot size for smoothness will be 3000 lane-feet. A sublot will consist of 20 50 lane-feet. Partial lots will be included in the previous lot if less than one-half the size of a normal lot. If equal to or greater than one-half the normal lot size, it will be tested as a separate lot.

402.03 Acceptance Testing The Department will conduct Acceptance testing following completion of the surface course. Sections to be excluded from testing include the following:

Bridge decks and joints (no smoothness measurements will be taken within 100 ft of bridge joints)
Acceleration and deceleration lanes
Shoulders and ramps
Side streets and roads
Within 100 ft of transverse joints at the beginning and end of the project
Within 100 ft of railroad crossings
Urban areas with speed limits of 30 mph or lower

Each lot shall have 2 measurements made in each wheel path. The average of the 4 measurements will determine the smoothness for that lot.

The smoothness measurements will be statistically evaluated for pay factors as described in Subsection 106.7 - Quality Level Analysis, using the specification limits shown below.

ACCEPTANCE LIMITS

Level	USL
I	60 in/mile
II	70 in/mile
III	80 in/mile

Computation of Smoothness Pay Adjustment:

PA = (PF-1.0)(Q)(P)
where:
Q = Quantity of surface course in the Lot (excluding shoulders, side streets, bridge decks, ramps, acceleration and deceleration lanes)
PF = smoothness pay factor for the Lot
P = Contract unit price for surface pavement
PA = pay adjustment

402.04 Unacceptable Work In the event that any Lot is found to have a pay factor less than 0.80, the Contractor shall take whatever remedial action is required to correct the pavement surface in that Lot at no additional expense to the Department. Such remedial action may include but is not limited to removal and replacement of the unacceptable pavement. In the event remedial action is necessary, the Contractor shall submit a written plan to the Resident outlining the scope of the remedial work. The Resident must approve this plan before the remedial work can begin. Following remedial work, the Lot shall be retested, and will be subject to the specification limits listed above. The resulting pay factor, if within the acceptable range, will be used in the final pay adjustment. The Contractor shall pay the cost of retesting the pavement following corrective action. Localized surface tolerance defects will be subject to the provisions outlined in Section 401.101 Surface Tolerances.

Payment will be made under:

Pay Item	Pay Unit
402.10 Incentive/Disincentive - Pavement Smoothness	Lump Sum

SECTION 403 - HOT MIX ASPHALT PAVEMENT

403.01 Description This work shall consist of constructing one or more courses of Hot Mix Asphalt pavement on an approved base in accordance with these specifications, and in reasonably close conformity with the lines, grades, thickness and typical cross sections shown on the plans or established.

The HMA pavement shall be composed of a mixture of aggregate, filler if required, and asphalt material.

403.02 General The materials and their use shall conform to the requirements of Section 401 - Hot Mix Asphalt Pavement.

403.03 Construction The construction requirements shall be as specified in Section 401 - Hot Mix Asphalt Pavement.

403.04 Method of Measurement Hot mix asphalt pavement will be measured as specified in Section 401.21-Method of Measurement.

403.05 Basis of Payment The accepted quantities of hot mix asphalt pavement will be paid for at the contract unit price per ton for the mixtures, including hot mix asphalt material complete in place.

Method A, Method B, Method C and Method D shall be used for acceptance as specified in Section 401 - Hot Mix Asphalt Pavements. (See Complementary Notes, Section 403 - Hot Mix Asphalt Pavement, for Method location).

Payment will be made under:

	Pay Item	Pay Unit
403.102	Hot Mix Asphalt Pavement for Special Areas	Ton
403.206	Hot Mix Asphalt, 25 mm Nominal Maximum Size	Ton
403.207	Hot Mix Asphalt, 19.0 mm Nominal Maximum Size	Ton
403.2071	Hot Mix Asphalt , 19.0 mm Nominal Maximum Size (Polymer Modified)	Ton
403.2072	Asphalt Rich Hot Mix Asphalt, 19.0 mm Nominal Maximum Size (Asphalt Rich Base and Intermediate course)	Ton
403.2073	Warm Mix Asphalt, 19.0 mm Nominal Maximum Size	Ton
403.208	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size	Ton
403.2081	Hot Mix Asphalt - 12.5 mm Nominal Maximum Size (Polymer Modified)	Ton
403.20813	Warm Mix Asphalt - 12.5 mm Nominal Maximum Size (Polymer Modified)	Ton
403.2083	Warm Mix Asphalt, 12.5 mm Nominal Maximum Size	Ton
403.209	Hot Mix Asphalt, 9.5 mm Nominal Maximum Size (sidewalks, drives, islands & incidentals)	Ton
403.210	Hot Mix Asphalt, 9.5 mm Nominal Maximum Size	Ton
403.2101	Hot Mix Asphalt, 9.5 mm Nominal Maximum Size (Polymer Modified)	Ton
403.2102	Asphalt Rich Hot Mix Asphalt, 9.5 mm Nominal Maximum Size (Asphalt Rich Intermediate course)	Ton
403.2103	Warm Mix Asphalt, 9.5 mm Nominal Maximum Size	Ton
403.2104	Hot Mix Asphalt, 9.5 mm Nominal Maximum Size (Thin Lift Surface Treatment)	Ton
403.211	Hot Mix Asphalt, 9.5 mm Nominal Maximum Size (Shimming)	Ton
403.2111	Hot Mix Asphalt, 9.5 mm Nominal Maximum Size (Shimming, Polymer Modified))	Ton
403.2113	Warm Mix Asphalt, 9.5 mm Nominal Maximum Size (Shimming)	Ton
403.212	Hot Mix Asphalt, 4.75 mm Nominal Maximum Size	Ton
403.2123	Warm Mix Asphalt, 4.75 mm Nominal Maximum Size	Ton
403.213	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (Base and Intermediate Base course)	Ton
403.2131	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (Base and Intermediate Base course, Polymer Modified)	Ton
403.2132	Asphalt Rich Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (Base and Intermediate Base course)	Ton
403.2133	Warm Mix Asphalt, 12.5 mm Nominal Maximum Size (Base and Intermediate Base course)	Ton
403.214	Hot Mix Asphalt, 4.75 Nominal Maximum Size (5/8” Surface Treatment)	Ton
403.2143	Warm Mix Asphalt, 4.75 Nominal Maximum Size (5/8” Surface Treatment)	Ton

SPECIAL PROVISION
SECTION 403
HOT MIX ASPHALT

Desc. Of Course	Grad Design.	Item Number	Bit Cont. % of Mix	Total Thick	No. Of Layers	Comp. Notes
3" HMA – Excavation/Trench Repair Hoist Platform Area and Conduit Trenches						
Wearing	9.5 mm	403.210	N/A	1 ½"	1	18
Base	12.5 mm	403.213	N/A	1 ½"	1	18

COMPLEMENTARY NOTES

18. The Resident will accept or reject any HMA based on a visual basis, either prior to its use, during placement, or in its final disposition. Informational mix samples may be obtained at any time for verification of material properties. All HMA mixtures shall be sourced from one approved JMF, per type of mix.

Tack Coat

A tack coat of emulsified asphalt, RS-1, Item 409.15 shall be applied to all pavement joints and between layers of pavement is incidental to the work under this contract.

SPECIAL PROVISION 500
SECTIONS 501, 502, 528
Working Waterfront Improvements

Description: This work shall consist of improvements to the Camden Public Landing working waterfront, including installation of timber fender and guide piles, installation of timber framing, face sheathing, and ladders, construction and installation of timber floats, and construction of a reinforced concrete foundation for a 1,000-lb hoist supplied and installed by others. Refer to the attached specifications:

- Section 02361 Timber Piles
- Section 02370 Composite Piles
- Section 03002 Reinforced Concrete
- Section 05500 Metal Fabrications
- Section 06130 Timber Framing
- Section 06131 Timber Floats
- Section 14600 Working Waterfront Hoist (Design, Fabrication, Supply, & Installation)
  Note: Work under specification Section 14600 is under a separate contract. Section 14600 is provided here for reference only.
- Section 14601 Working Waterfront Hoist (Coordination & Installation Support)

Measurement and Payment

Method of Measurement: The work covered by this Special Provision and the associated reference specifications includes both Lump Sum and Unit Cost pay items. The method of measurement for each pay item listed in Table 1 shall be for the completed work, in place, based on the Pay Units listed in Table 1.

Basis of Payment: The accepted quantities of Pay Items covered by this Special Provision will be paid for at the contract unit price per individual unit in place. Payment shall be full compensation for furnishing and installing, and for all incidentals necessary to complete the work. Payment will be made under:

Table 1-Special Provision Pay Items

Pay Item	Description	Pay Unit
501.203	Greenheart Guide Piles *All materials, work, equipment, and installation associated with the installation of seven (7) greenheart float guide piles in the Working Waterfront Area, including galvanized steel pile standoff brackets, and all associated hardware.*	EA
501.204	Greenheart Fender Piles *All materials, work, equipment, and installation associated with the installation of five (5) greenheart fender piles in the working waterfront area, including all associated hardware.*	EA
502.111	Hoist Foundation *All materials, work, and equipment associated with the construction of the reinforced concrete hoist foundation, including all excavation, backfill, compaction, and incidental demolition and disposal.*	LS
528.493	Fendering, Face Sheathing, and Ladders *All materials, work, equipment, and installation associated with the construction of timber fendering and bulkhead face sheathing in the working waterfront area, and construction and installation of two ladders.*	LS
528.49	Cap Replacement *All materials, work, and equipment associated with the installation of approximately 85 LF of timber cap beam, including pinning cap beam to granite wall.*	LF
528.4906	Timber Floats *All materials, work, equipment, delivery, and installation associated with the construction of two (2) 8x20 timber floats, including installation of float guide hardware, connection of float hardware to adjacent existing floats, and removal of existing floats.*	EA

ALTERNATE BID ITEMS

Alternate bid items covered by this Special Provision are described in Table 2.

Table 2-Alternate Bid Pay Items

Pay Item	Description	Pay Unit
501.19	Oak Fender Piles *All materials, work, equipment, and installation associated with the in-kind replacement of bulkhead fender piles with new oak sections in areas outside of the Working Waterfront Area, including all associated hardware. If selected, up to twenty-five (25) piles will be installed under this Alternate Bid Item at locations as directed by the Owner.*	EA
501.56	Substitute Composite Piles *This alternate bid item covers the additional cost per pile of substituting composite pile sections in place of greenheart pile sections for seven (7) guide piles and five (5) fender piles in the working waterfront area.*	EA

SECTION 02361

TIMBER PILES

PART 1 GENERAL

1.01 WORK INCLUDED

A. Untreated Greenheart fender and guide piles.

B. Untreated Class B Oak fender piles.

1.02 PERFORMANCE REQUIREMENTS

A. Piles shall be driven to minimum embedment indicated on Sheets S-1 & S-4.

B. Avoid damage to piles that results from over driving.

C. Minimum pile penetration lengths indicated on the drawings are estimated. The Contractor should order piles at least 5-ft longer than estimated so additional embedment can be obtained if need at the discretion of the Engineer based on conditions encountered.

1.03 SUBMITTALS

A. Submit in accordance with Maine DOT Standard Specifications.

1. Pile Hammer specifications that include hammer type, hammer base, cushion material and rated energy.
2. Driving records for each driven pile with the following information:

- Installation date and time.
- Equipment used.
- Rate of operation.
- Total driving time.
- Blows required per foot for each foot of penetration.
- Pile location.
- Tip designation.
- Ground elevation.
- Cut-off elevation.
- Unusual behavior during driving.
- Pile energy calculation.

1.04 DELIVERY STORAGE AND HANDLING

A. Deliver products to site in accordance with Maine DOT Standard Specifications.

B. Handle and store piles in a manner to prevent damage or distortion. Replace all

damaged or distorted piles.

1.05 PROJECT RECORD DOCUMENTS

A. Submit in accordance with Maine DOT Standard Specifications.

B. Record Documents shall include Pile Driving Records.

1.06 PRE-INSTALLATION CONFERENCE

A. Convene one week prior to commencing work of this Section, in accordance with Maine DOT Standard Specifications.

1.07 FIELD MEASUREMENTS

A. Verify field measurements and survey benchmarks are as indicated on Drawings.

1.08 SCHEDULING

A. Schedule Work in accordance with the Maine DOT Standard Specifications.

B. Schedule Work to perform driving between 8AM and 5PM.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Pile Tips – Pile tips are not required.

2.02 MATERIALS

A. Guide Piles: Single length, non-spliced, Greenheart piles that meet or exceed the dimensional and material stress requirements of ASTM D25.

B. Fender Piles (Within Working Waterfront Area): Single length, non-spliced, Greenheart piles that meet or exceed the dimensional and material stress requirements of ASTM D25.

C. Fender Piles (All Other Locations): Single length, non-spliced, Class B Oak piles that meet or exceed the dimensional and material stress requirements of ASTM D25.

D. Minimum tip circumference as indicated on the drawings.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify site conditions in accordance with Maine DOT Standard Specifications.

B. Verify that site conditions will support equipment for performing pile-driving operations.

C. Visually inspect pile and reject those with a poor surface profile that may bind or hang up on pile guides mounted to the float.

3.02 PREPARATION

A. Use driving method that will not cause damage to nearby structures.

B. Protect structures near the work from damage.

C. Review location of approximate refusal surface to determine piles that require positive anchorage to ledge surface.

3.03 PILE HAMMERS

A. The use of a vibratory hammer is considered suitable for setting piles.

B. Diesel and Steam Powered Hammers: Shall be operated at the rate recommended by the manufacturer, throughout the entire driving period. Sufficient pressure shall be maintained at the steam hammer so that: (a) for double-acting hammer the number of blows per minute during and at the completion of driving of a pile is equal approximately to that at which the hammer is rated; (b) for single-acting hammer, there is full upward stroke of the ram; and (c) for differential type hammer, there is a slight rise of the hammer base during each upward stroke.

3.04 INSTALLATION

A. Mark each pile at 1-foot intervals prior to driving. Pile length shall be painted on the head.

B. Frozen piles shall not be driven.

C. Protect pile head during driving using collar, with full bearing on pile butt for even distribution of hammer blow.

D. Deliver hammer blows to central axis of pile.

E. If driving is interrupted before refusal, drive an additional 12 inches before resuming recording of performance data.

F. Re-drive piles that have lifted due to driving adjacent piles, or by soil uplift.

G. Remove piles damaged during installation. Splices will not be permitted.

H. Cut off tops of piles to elevations indicated and prepare pile top to receive pile cap.

I. Prevent surface damage to treated piles.

J. Cut or damaged surfaces of piles shall be retreated with two coats of preservative, in such quantity as to coat the holes, fill all shakes and splits and thoroughly penetrate the cut surface.

K. Apply stainless steel band to top of pile to prevent splitting.

3.05 TOLERANCES

A. Maximum Variation from Vertical for Plumb Piles: 1 in 48. Butts shall be within 2 inches of the location indicated.

B. Top Cut-off Elevation: Maximum 1/8 inches from elevation indicated. Pile head cut-offs shall be disposed of offsite.

3.06 UNACCEPTABLE PILES

A. Unacceptable Piles: Piles that are placed out of tolerances and piles that are considered structurally damaged in the opinion of the Engineer.

B. Sudden decrease in driving resistance shall be investigated with regard to the possibility of damage to the pile, and if such decrease cannot be correlated to boring data or some incident of the driving, it shall be considered defective and removed.

C. Remove unacceptable piles and replace with new piles.

PART 4 MEASUREMENT AND PAYMENT

4.01 See Special Provision Section 528 for measurement and payment for work associated with this specification.

END OF SECTION

SECTION 02370

COMPOSITE PILES

PART 1 GENERAL

1.01 WORK INCLUDED

A. All materials, labor, delivery, and installation associated with the use of Fiber Reinforced Polymer (FRP) Composite piles.

1.02 PERFORMANCE REQUIREMENTS

A. Piles shall be driven to minimum embedment indicated on Sheets S-1 & S-4.

B. Avoid damage to piles that results from over driving.

C. Pile penetration lengths indicated on the drawings are estimated. The Contractor should order piles at least 5-ft longer than estimated to allow for additional penetration and removal of top section damaged during driving.

1.03 SUBMITTALS

Submit in accordance with Maine DOT Standard Specifications.

1. Pile Hammer specifications that include hammer type, hammer base, cushion material and rated energy.
2. Driving records for each driven pile with the following information:
    - Installation date and time.
    - Equipment used.
    - Rate of operation.
    - Total driving time.
    - Blows required per foot for each foot of penetration.
    - Pile location.
    - Tip designation.
    - Ground elevation.
    - Cut-off elevation.
    - Unusual behavior during driving.
    - Pile energy calculation.

1.04 DELIVERY STORAGE AND HANDLING

A. Deliver products to site in accordance with Maine DOT Standard Specifications.

B. Pilings are to be handled with ropes or slings and must not be dropped, gouged, dragged or treated in any manner which damages the outer surface.

C. Pilings are to be stored and supported by blocking to keep them level and off the ground.

D. Pilings shall be stacked with spacers in between layers to allow air flow and access to the pilings.

E. Handle and store piles in a manner to prevent damage or distortion. Replace all damaged or distorted piles.

1.05 PROJECT RECORD DOCUMENTS

A. Submit in accordance with Maine DOT Standard Specifications.

B. Record Documents shall include Pile Driving Records.

1.06 PRE-INSTALLATION CONFERENCE

Convene one week prior to commencing work of this Section, in accordance with Maine DOT Standard Specifications.

1.07 FIELD MEASUREMENTS

Verify field measurements and survey benchmarks are as indicated on Drawings.

1.08 SCHEDULING

A. Schedule Work in accordance with Maine DOT Standard Specifications.

B. Schedule Work to perform driving between 8AM and 5PM.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Piles – 13”, 4-ply HarborPile by Harbor Technologies, LLC, 8 Business Parkway, Brunswick, ME 04011.

B. Substitutions: In accordance with Maine DOT Standard Specifications.

2.02 PHYSICAL PROPERTIES

A. Composite pilings are cylindrical piles fabricated of glass fibers embedded in a resin system.

B. Pilings are supplied as hollow tubes with an HDPE sleeve.

C. The composite pilings shall be constructed using a vacuum assisted resin infusion process to insure proper glass to resin ratio of 65:35.

D. Pilings are one continuous piece and are not to be spliced.

E. Standard Piling colors are black, gray and brown. Other colors can be special ordered.

F. Each piling is to be marked with the appropriate serial number and manufacturers’ name. These should be found 2-4 feet from the top of the piling and be clearly visible.

2.03 MATERIALS

A. Glass Fibers shall consist of multi-axial E-glass reinforcement with a minimum of 50% in the 0° orientation, a minimum of 25% in the 90° orientation and the remainder in the +/- 45° orientation.

B. Minimum diameter as indicated on the drawings.

C. Pilings meet or exceed these minimum physical properties. These values are ultimate strength, no safety factors have been applied to these numbers.

Laminate Properties

Bending Stress 48,821 psi

In Plane Shear Stress 5,959 psi

Modulus of Elasticity 3,600,000 psi

Specific Gravity 1.75

Density 0.066 lb. /in2

Compressive Strength 57,600 psi

Tensile Strength 79,800 psi

Fiber Percent by Volume 50%

Fiber Percent by Weight 65%

Laminate Void Content 2%

Fiberglass to Resin Ratio 65:35

Piling Properties

EI Value 9.17 E+08 lbs. – in2

Moment 92 kip – feet

Max yield stress in bending 24 ksi

Moment of Inertia 262 in4

Shear 22 kips

Piling Actual Outer Diameter (Sleeve) 12.75 inches

Piling Actual Outer Diameter (FRP) 11.5 inches

Fiberglass Piling Wall Thickness 0.5 inches
Total weight per linear foot 14 pounds

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify site conditions in accordance with Maine DOT Standard Specifications.

B. Verify that site conditions will support equipment for performing pile-driving operations.

C. Visually inspect pile and reject those with visible defects.

3.02 PREPARATION

A. Use driving method that will not cause damage to nearby structures.

B. Protect structures near the work from damage.

C. Review location of approximate refusal surface to determine piles that require positive anchorage to ledge surface.

3.03 PILE HAMMERS

A. The use of a vibratory hammer is considered suitable for setting piles.

B. Diesel and Steam Powered Hammers: Shall be operated at the rate recommended by the manufacturer, throughout the entire driving period. Sufficient pressure shall be maintained at the steam hammer so that: (a) for double-acting hammer the number of blows per minute during and at the completion of driving of a pile is equal approximately to that at which the hammer is rated; (b) for single-acting hammer, there is full upward stroke of the ram; and (c) for differential type hammer, there is a slight rise of the hammer base during each upward stroke.

3.04 INSTALLATION

A. Mark each pile at 1-foot intervals prior to driving. Pile length shall be painted on the head.

B. Frozen piles shall not be driven.

C. Protect pile head during driving using collar, with full bearing on pile butt for even distribution of hammer blow.

D. Deliver hammer blows to central axis of pile.

E. If driving is interrupted before refusal, drive an additional 12 inches before resuming recording of performance data.

F. Re-drive piles that have lifted due to driving adjacent piles, or by soil uplift.

G. Remove piles damaged during installation. Splices will not be permitted.

H. Cut off tops of piles to elevations indicated and prepare pile top to receive pile cap.

I. Prevent surface damage to piles.

J. Cut or damaged surfaces of piles shall be retreated with two coats of preservative, in such quantity as to coat the holes, fill all shakes and splits and thoroughly penetrate the cut surface.

3.05 TOLERANCES

A. Maximum Variation from Vertical for Plumb Piles: 1 in 48. Butts shall be within 2 inches of the location indicated.

B. Top Cut-off Elevation: Maximum 1/8 inches from elevation indicated. Pile head cut-offs shall be disposed of offsite.

3.06 UNACCEPTABLE PILES

A. Unacceptable Piles: Piles that are placed out of tolerances and piles that are

considered structurally damaged in the opinion of the Engineer.

B. Sudden decrease in driving resistance shall be investigated with regard to the possibility of damage to the pile, and if such decrease cannot be correlated to boring data or some incident of the driving, it shall be considered defective and removed.

C. Remove unacceptable piles and replace with new piles.

PART 4 MEASUREMENT AND PAYMENT

4.01 See Special Provision Section 528 for measurement and payment for work associated with this specification.

END OF SECTION

SECTION 03002

REINFORCED CONCRETE

PART 1 GENERAL

1.01 WORK INCLUDED

A. Formwork, shoring, bracing, placement, and curing associated with reinforced concrete hoist foundation.

B. Connections and embedments associated with adjacent work.

1.02 RELATED SECTIONS

A. Section 05500 – Miscellaneous Metals

B. Section 14600 – Working Waterfront Hoist (Design, Fabrication, Supply, & Installation)

C. Section 14601 – Working Waterfront Hoist (Coordination and Installation Support)

1.03 REFERENCES

A. State of Maine Department of Transportation Standard Specifications Highways and Bridges, revision of Nov 2014 hereafter designated as MDOT Specifications.

B. MDOT Additions and Special Provisions that modify the MDOT Specifications for this project.

C. All associated ACI provisions.

1.04 TESTS

A. Submit proposed mix design to Engineer for review prior to commencement of work.

B. Testing and analysis of concrete will be undertaken by an independent Testing Agency paid for by Contractor.

C. The Contractor is required to arrange for the testing to be taken at concrete placement. Three concrete test cylinders will be taken for every 75 or less cubic yards of concrete placed each day.

PART 2 PRODUCTS

2.01 FORM MATERIALS

A. Conform to ACI 301 – Specifications for Structural Concrete.

B. Plywood Forms: Spruce species; solid one side, high-density overlaid one side, sound undamaged sheets.

C. Lumber: Spruce species; No. 2 grade; with grade stamp clearly visible.

D. Steel Forms: Stiffened to support weight of concrete with minimum deflection.

E. Form Ties: fiberglass, non-metallic.

2.02 REINFORCING STEEL

A. Reinforcing Steel: ASTM A615, 60 ksi yield grade billet steel deformed bars; epoxy coated finish.

B. Welded Steel Wire Fabric: Deformed type, ANSI/ASTM A497; in flat sheets; or coiled rolls; epoxy coated finish.

2.03 CONCRETE MATERIALS

A. Cement: ASTM C150, normal - Type 1 Portland, gray color.

B. Fine and Coarse Aggregates: ASTM C33.

C. Water: Fresh Clean and not detrimental to concrete.

2.04 ADMIXTURES.

A. Air Entrainment Admixture: ASTM C260.

B. Calcium Nitrite shall be added at a rate of 3gal/cubic yard.

2.05 ACCESSORIES

A. Non-Shrink Grout: Premixed compound with non-metallic aggregate, cement, water reducing and plasticizing agents; capable of minimum compressive strength of 2400 psi.

B. Form Release Agent: Colorless material, which will not stain concrete, and is non-toxic to coastal environment.

2.06 CURING MATERIALS

A. Water: Clean and drinkable.

B. Absorptive Mat: Burlap-polyethylene, 8-oz/sq. yd, bonded to prevent separation during use.

2.07 CONCRETE MIX

A. MDOT Class A Concrete in accordance with MDOT Section 502-Structural Concrete as amended by MDOT Special Provision 502sp.

1. Calcium Nitrite (3gal/cubic yard) and pozzolan added to meet the permeability ratings.

2. Maximum water/cement ratio = 0.40 (ratio by weight).

3. Method of Acceptance shall be METHOD C that may allow for mix design approval based on test documentation from another project that has been approved for use in the same construction season.

2.08 CONCRETE GROUT

A. Grout must be on the approved MDOT List of cement based grout materials.

B. Manufacturer to verify that material is suitable for the application.

PART 3 EXECUTION

3.01 FORMWORK ERECTION

A. Verify lines, levels, and measurement before proceeding with formwork.

B. Hand trim sides and bottom of earth forms; remove loose dirt.

C. Align form joints.

D. Do not apply form release agent where concrete surfaces receive special finishes or applied coatings, which may be affected by agent.

E. Coordinate work of other Sections in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors, and other inserts.

3.02 REINFORCEMENT

A. Place, support, and secure reinforcement against displacement.

3.03 PLACING CONCRETE

A. Notify Engineer minimum 24 hours prior to commencement of concrete placement.

B. Maximum slump 5 inches.

3.04 TOLERANCES

A. Provide Class B tolerance to horizontal surfaces of ¼" in 10 feet.

3.05 CURING

A. Wet cure concrete for minimum of 7 days with burlap.

B. Alternate curing methods may be used if approved by Engineer.

3.06 FINISHES

A. Finish exposed concrete as shown on drawings.

B. Formed Surfaces:

1. Rough form finish to concrete where backfill will be placed.
2. Broom finish to create non-skid walkway surfaces.
3. Rubbed finish to all exposed non-walkway surfaces.
4. Chamfer edges with tool.

3.07 PROTECTION

A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures and mechanical injury.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

PART 4 MEASUREMENT AND PAYMENT

4.01 See Special Provision Section 528 for measurement and payment for work associated with this specification.

END OF SECTION

SECTION 05500

METAL FABRICATIONS

PART 1 GENERAL

1.01 WORK INCLUDED

A. Shop fabricated metal items and fasteners.

B. Refer to Schedule at end of this Section.

1.02 RELATED REQUIREMENTS

A. Section 02361 – Timber Piles

B. Section 14600 – Working Waterfront Hoist (Design, Fabrication, Supply, & Installation)

C. Section 14601 – Working Waterfront Hoist (Coordination and Installation Support)

D. Section 06131 – Timber Floats

1.03 SHOP SUBMITTALS

A. Submit shop drawings for metal fabrications for review by engineer.

B. Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories.

C. Include erection drawings, elevations, and details where applicable.

D. Indicate welded connections using standard AWS welding symbols. Indicate net weld lengths.

1.04 CERTIFICATION

A. Submit a certificate with initial shipment of hot dip galvanized items to job site, two notarized affidavits from hot-dip galvanizer, certifying compliance with requirements specified herein.

B. Welders shall be AWS Certified. Copies of certification documents shall be provided.

1.05 DELIVERY, STORAGE AND HANDLING

A. Not Used.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Not used

2.02 MATERIALS

A. Steel

1. Steel Plates, Shapes and Bars: ASTM A36 unless otherwise noted.

2. Steel Plates; Bent or Cold Formed: ASTM A283, Grade C.
3. Steel Tubing: Hot-formed, welded or seamless, ASTM A501.
4. Cold-Finished Steel Bars: ASTM A108, grade as selected by fabricator.

B. Galvanizing Repair Paint: High zinc dust content paint for re-galvanizing welds in hot dip galvanized steel, complying with Mil-P-21035.

C. Aluminum

1. Plates, Shapes and Bars: 6061-T6 Marine Grade aluminum.

2.03 FASTENERS

A. General: Provide hot dip galvanized fasteners. Select fasteners for type, grade and class required.

1. Anchor Bolts: ASTM F1554, heavy hex-headed type, unless otherwise noted, hot dip galvanized.
2. High Strength Bolts, Nuts and Washers: ASTM A325-N unless otherwise noted, hot dip galvanized.
3. Unfinished Threaded Fasteners: ASTM A307, Grade A, hot dip galvanized.
4. Plain Washers: Galvanized, carbon steel, FS FF-W-92. Size as noted below:
5. Steel connections: Standard cut washers.

B. Timber Connections:

1. All bolt locations - N.Y. Dock Dept. Washers unless otherwise specified.
2. Lock Washers: Helical spring type carbon steel, FS FF-W-84 galvanized to ASTM A-153.

C. Concrete Inserts:

1. Provide bolts, washers and shims as required, hot-dip galvanized ASTM A153.

2.04 FINISH

A. Ferrous Metals

1. Galvanizing: Provide hot dip galvanizing for all items unless noted otherwise on drawings or schedule appended to this section.
   a. ASTM A153 for hot dip galvanizing iron and steel hardware.
   b. ASTM A123 for hot dip galvanizing rolled, pressed and forged steel shapes, plates, bars and strip 1/8" thick and heavier.
   c. ASTM A386 for hot dip galvanizing assembled steel products.

PART 3 EXECUTION

3.01 PREPARATION

A. Obtain Engineer approval prior to site cutting or making adjustments not scheduled.

B. Make provision for erection loads with temporary bracing. Keep work in alignment.

C. Supply items required to be cast into concrete with setting templates, to appropriate sections.

3.02 INSTALLATION

A. Install item plumb and level, accurately fitted, free from distortion or defects.

B. Perform field welding in accordance with AWS D1.1.

3.03 FABRICATION

A. Verify dimensions on site prior to shop fabrication.

B. Fabricate items with joints tightly fitted and secured.

C. Fit and shop assemble in largest practical sections, for delivery to site.

D. Provide continuous welds.

E. Grind exposed welds flush and smooth with adjacent finished surface. Ease exposed edges to small uniform radius.

F. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of structure, except where specifically noted otherwise.

G. Make exposed joints butt tight, flush, and hairline.

H. Supply components required for anchorage of metal fabrications. Fabricate anchorage and related components of same material and finish as metal fabrication, except where specifically noted otherwise.

3.04 ASSEMBLY

A. Miscellaneous Strapping and Supports

1. Provide miscellaneous steel strapping and supports as required to complete work.

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

3. Except as otherwise shown, fabricate from structural steel shapes and plates and steel bars, of welded construction using mitered joints for field connection.

4. Cut, drill and tap units to receive hardware and similar items.

5. Equip units with integrally welded anchors for casting into concrete. Furnish inserts if units must be installed after concrete is placed.
6. Galvanize exterior miscellaneous frames and supports unless otherwise indicated.

B. Miscellaneous Steel Shapes

1. Provide shapes and sizes for profiles shown.
2. Except as otherwise noted, fabricate units from structural steel shapes and plates and steel bars, with continuously welded joints and smooth exposed edges. Use concealed field splices wherever possible.
3. Provide cutouts, fittings and anchorages as required for coordination of assembly and installation with other work.
4. Galvanize or paint miscellaneous steel shapes as indicated.

3.05 SCHEDULE

Refer to Drawing details for items not specifically described.

Metal Fabrication	Location	Finish
All Fasteners	Pile Connections	Hot dip galvanized
Steel Shapes, Brackets	Fender Pile Brackets, Hoist	Hot dip galvanized
Bar, Pipe, Seats	Ladder Rungs and Rail	Hot dip galvanized

PART 4 MEASUREMENT AND PAYMENT

4.01 See Special Provision Section 528 for measurement and payment for work associated with this specification.

END OF SECTION

SECTION 06130

TIMBER FRAMING

PART 1 GENERAL

1.01 WORK INCLUDED

A. Heavy structural timber for boardwalk end cap.

B. Pressure impregnated preservative treatment.

C. Connection hardware.

1.02 RELATED WORK

A. Section 02361 - Timber Piles.

B. Section 02370 - Composite Piles.

C. Section 05500 - Metal Fabrications.

D. Section 06131 – Timber Floats.

1.03 QUALITY ASSURANCE

A. Lumber Grading Agency: Certified by ALSC.

B. Manufacturer: Company specializing in manufacture of heavy timber framing certified by AITC with three years minimum experience.

C. Timber Preservative Treatment: Each piece of treated lumber or timber shall be branded by the producer in accordance with AWPA M6.

1.04 SUBMITTALS

A. Submit product data in accordance with Maine DOT Standard Specifications.

B. Certified Inspection Report by an independent inspection agency stating that timber products comply with applicable AWPA standards.

PART 2 PRODUCTS

2.01 MATERIAL

A. Lumber Grading Rules: Comply with SPIB.

B. Lumber: Stress group Southern Yellow Pine species; surface four sides. Grade and moisture content indicated on Sheet S-1.

2.02 ACCESSORIES

A. Bolts, Nuts, Washers, Lags, Stainless Steel screws: Medium carbon steel; galvanized coating; size and type to suit application.

2.03 FINISHES

A. Galvanize connectors in accordance with ASTM A123.

2.04 WOOD TREATMENT

A. Wood preservative (pressure treatment): Refer to treatment designation and rating in the Timber Schedule on Sheet S-1.

PART 3 EXECUTION

3.01 ERECTION

A. Set members level and plumb, in correct position.

B. Make provision for erection loads, and for sufficient temporary bracing to maintain structure safe, plumb, and in true alignment until completion of erection and installation of permanent bracing.

C. Cut and frame all lumber and timber so that joints will fit over contact surface. Secure timbers in alignment. Open joints are unacceptable. Shimming is not allowed. Bore holes for pins and dowels with a bit 1/16-inch (2mm) less in diameter than the pin or dowel. Bore holes for lag screws in two parts. Make lead hold for shank the same diameter as shank. Make lead hole for the threaded portion approximately two-thirds of the shank diameter. Bore holes in small timbers with a bit of the same diameter or smallest dimension of the spike to prevent splitting. Countersink wherever smooth faces are indicated or specified.

D. Fastening: Use washers of the size and type specified under bolt heads and nuts in contact with wood. Burr threads of all bolts after nuts have been finally tightened. Vertical bolts shall have nuts on the lower end. Where bolts are used to fasten timber-to-timber, timber to concrete, or timber to steel, bolt members together when they are installed and retighten immediately prior to final acceptance of contract. Provide bolts having sufficient additional threading to provide at least 3/8-inch per foot thickness of timber for future re-tightening. Provide timber connectors of types indicated.

E. Do not field cut or alter structural members without approval of Engineer.

3.02 FIELD TREATMENT

A. Timber work: Field treat all cuts, bevels, notches, re-facing and abrasions made in the field in treated piles or timbers in accordance with AWPA M4. Trim all cuts and abrasions before field treatment. Paint all depressions or openings around bolt holes, joints, or gaps including recessed formed by counter-boring, with preservative treatment used for timber.

B. Galvanized Surfaces: Repair and recoat zinc coating which has been field or shop cut, burned by welding, abraded, or otherwise damaged to such an extent as to expose the base metal. Thoroughly clean the damaged area by wire brushing and remove all traces of welding flux and loose or cracked zinc coating prior to painting. Paint cleaned area with two coats of zinc oxide-zinc dust paint conforming to Mil. Spec. DOD-P-21035. Compound paint with a suitable vehicle in a ratio of one part zinc oxide to four parts zinc dust by weight.

END OF SECTION

SECTION 06131

TIMBER FLOATS

PART 1 GENERAL

1.01 WORK INCLUDED

A. Fabrication and placement of timber floats sized in accordance with the drawings.

1. Refer to Drawings and Sheet S-1 Schedule for location, new float dimensions and connectivity.
2. The work shall include all timber materials, fendering, drum floatation units, hardware, cleats and pile guides as specified and necessary for the installation.
3. New floats shall have a 2”x6” ACQ (0.60) pressure treated southern Yellow pine No. 1 grade deck.
4. All new floats shall be built with 4 No. integral longitudinal pressure treated 4x 6 skids to facilitate seasonal removal from the water.
5. All new floats and existing floats that are shown with new connectivity are to be fitted or retrofitted with a hinge and pin connection system provided by the same supplier. .

B. Provide experienced personnel from manufacturer to assist and supervise the field installation, pile placement and adjustment of the floats.

1.02 RELATED SECTIONS

A. Section 05500 – Metal Fabrications: Hot dip galvanized plate and fasteners.

B. Section 06130 – Timber Framing

1.03 QUALIFICATIONS

A. Manufacturer shall have a minimum of three (3) years of experience manufacturing timber floats.

1.04 SUBMITTALS

A. Submit shop drawings and list of hardware. Drawings shall detail the following elements:

1. All framing elements, including skids, main and secondary joists, spanner boards, decking and bracing.
2. All hardware connection assemblies include face and backing plates, brackets, hinges and float connecting pins.
3. Location and mounting details for each drum.

4. Calculations that show freeboard with no live load and maximum live load capacity when drums are submerged. Additional floatation shall be provided at gangway landings to maintain level float with no live load.

B. Certifications/ Warranties

1. Timber material pressure treated certification shall be provided.

2. The float drum manufacturer shall provide a written warranty that certifies the product to include all labor and materials for repairs required during a fifteen (15) year period from date of installation. Warranty exclusion may be made for storm damage with sustained wave action in excess of three (3) ft.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Float Drums; Hardware, Fasteners:

1. Custom Float Services; 36 Union Wharf; Portland, Maine 04112; 207-772-3796; http://www.customfloat.com/

2. Seaport Marine Corporation; PO Box 3108; Chesapeake, VA 23327; (757) 436-4400; http://www.seaport-marine.com/

B. Fendering: Proprietary marine fendering by Edgepro; 1.5 plf min. weight; minimum 3-inch vertical x 1.1-inch offset profile; fastened with #12 x 1-1/4" stainless steel pan head screws with finish washers @ 6-inch spacing.

C. Approved Equal.

2.02 METAL PLATE

A. Structural steel weldments and shapes shall conform to ASTM A-36 and be hot-dip hot dip galvanized after fabrication in accordance with ASTM a-123.

B. All metal brackets and timber connection assemblies shall have a minimum thickness of 3/8-inch.

C. All corner pieces, connections and attachments to have backing plates that are a minimum of ¼-inch.

2.03 FASTENERS

A. Deck fasteners shall be #10x4" square drive 316-stainless steel deck screws located as per deck manufacturer's specification.

B. Bolts: Hot dip galvanized A301. Exposed fasteners to be carriage bolts or countersunk to prevent damage to boats.

2.04 FLOATATION

A. Floatation shall be comprised of modular drum units bolted to the main float frame assembly with the following parameters.

1. The units shall comprise a foam filled heavy duty polyethylene shell suitable for long-term exposure to the marine environment.
2. Float drums shall be rotationally molded polyethylene and shall meet Army Corps of Engineers absorption rate standards. Minimum wall thickness is 3/16”
3. All units shall be through-bolted to the timber float frame.

B. Unless specified on the drawings, the number of floatation units installed on each float shall be adequate to provide a stable float platform that meets the following design criteria.

1. Float Freeboard (No applied load) = 18 inches +/- 2-inches. No timber material (with the exception of the skids) shall be immersed in the water.
2. Aggregate float Live Load Capacity (maintain positive freeboard) = 40psf

2.05 TIMBER

A. Float Framing: Pressure Treated Southern Yellow Pine No. 2; 1.0 pcf CCA or equivalent. Main members shall be a nominal 4-inch wide section. Secondary and fascia members may be nominal 2-inch wide section.

B. Exposed decking, trim, fascia boards, subject to human contact: Pressure Treated Southern Yellow Pine No. 1; 0.60 pcf ACQ or equivalent.

2.06 FLOAT HARDWARE

A. All hardware and fasteners shall be hot-dipped galvanized.

B. Minimum Bolt size shall be ½” carriage bolts;

C. All construction joints, inside, outside corners, blocking and cleat locations shall have heavy duty hot-dipped-galvanized hardware applied;

D. Corner hardware shall be 3/8” plate with 2 and 3 tab (1/2-inch) connections to accept a 1” diameter pin.

E. Cleats shall be 12” long heavy duty, 10-lb weight, hot-dipped-galvanized and fastened to float frame with thru-bolts and steel backing plates.

2.07 FLOAT CONNECTIONS

A. Float to Float connections shall be with a three (3) tab

B. Pile Guide Assemblies shall be provided at each new float connection. Existing assembles may be used at existing floats.

1. ½-inch hot dip galvanized chain or equivalent hot dip galvanized cable with thimble ends.
2. UHMW rollers- ½ -inch wall thickness x 3-inch long sleeved over chain or cable.
3. 3/8-inch plate brackets thru-bolted with backing plates at float.
4. 2-inch x 24-inch x 8-inch UHMW chafing plate bolted to float.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

A. Floats shall be launched, connected and temporarily restrained in place prior to the placement of guide piles.

3.02 FLOAT ADJUSTMENT

A. All connections shall be designed to be accessible, adjustable and positioned to facilitate seasonal removal.

B. The Contractor shall adjust the float system when installed so that all pile guides and chafing blocks line up with the installed pile configuration. Adjustments shall be made as required to maintain float location to the satisfaction of the Harbormaster.

C. During the first season, the Contractor will be responsible for additional adjustments that may be required to prevent unreasonable pile wearor float chafing throughout the tide cycle.

PART 4 MEASUREMENT AND PAYMENT

4.01 See Special Provision Section 528 for measurement and payment for work associated with this specification.

END OF SECTION

SECTION 14600

WORKING WATERFRONT HOIST

(DESIGN, FABRICATION, SUPPLY, & INSTALLATION)

Note: Work under specification Section 14600 is under a separate contract and is provided here for reference only.

PART 1 GENERAL

1.01 WORK INCLUDED

A. Design and fabrication of a hoist with 1000-LB working load and 14-FT maximum reach, including all associated structural, mechanical, hydraulic, and rigging components as specified herein or otherwise required to provide a fully functional installation.

B. Delivery of the hoist to the Camden Public Landing, located at the intersection of Main Street (US Route One) and Bayview Street, Camden, ME 04843.

C. Installation of the hoist on the reinforced concrete hoist foundation, to be constructed by others as part of a separate contract to be awarded under Maine DOT WIN 018534.12. Installation shall include hoist placement, fastening to foundation, connection to electrical supply, and any related work to provide a functional installation.

D. Trial operation of the hoist under the supervision of the Town Harbormaster and the Engineer.

1.02 DESIGN CRITERIA

A. Materials

1. Structural components of the hoist shall be of Hot Dipped Galvanized or Stainless Steel construction suitable for installation in a marine environment.

2. All hardware shall be Hot Dipped Galvanized or Stainless Steel. Connections between dissimilar metals shall be insulated to prevent galvanic corrosion.

B. Hoist Design

1. This specification and the associated plans provide general performance criteria for the hoist. Final design and detailing of the hoist shall be the responsibility of the selected supplier.

2. The hoist shall generally consist of a vertical mast, with an attached boom that provides vertical articulation and horizontal rotation (see schematic shown on Sheet S-3 of the project plans).

3. The hoist shall be capable of supporting a 1000-LB Working Load at the maximum reach of 14-FT.

4. The boom range of motion shall be approximately 250°, with orientation as indicated on the plans.
5. The boom shall be capable of lifting at least 6-ft above the adjacent ground elevation.
6. Boom height shall be controlled by a hydraulic ram with in-line regulator to allow for adjustment of boom speed. Boom swing shall be manually operated.
7. Winching shall be provided by a hydraulic cargo winch with variable speed control capable of hoisting at minimum 70-FPM at high speed operation. Provide a backup winch in the event of winch failure. Backup winch may be of manual operation.
8. Winching line shall be braided Polyethylene (Dacron, or equivalent), that is UV resistant and suitable for use in a wet environment. Line shall be rated for lifting with a minimum working load capacity of 1,000-LB. Provide a sling hook with latch with working load of 1,000-LB minimum.
9. Provide two (2) work lights mounted to the top of the hoist mast. Lights shall be model OLFL-14-PE-BZ by Lithonia Lighting or approved equal.

C. Safety Features

1. The winch shall incorporate safety features that generally allow for safe operation, and prevent hazardous conditions resulting from loss of hydraulic pressure or electric service. These shall include, at a minimum, but are not limited to:
   a. The winch shall be located on the hoist boom such that it is at minimum 4-FT vertically above the baseplate.
   b. Provide adjustable safety chain between top of mast and end of boom.
   c. Provide in-line safety valves for winch and boom hydraulics.

D. Connection to Foundation

1. Provide base plate and anchor bolts for connection to reinforced concrete foundation. Anchor bolt layout shall be detailed in the supplier's shop drawings. Anchor bolts and associated hardware shall be provided by the hoist manufacturer.

E. Electrical Supply

1. Electrical supply at the hoist site will be 240V, 20 amp, single-phase electrical service. All components shall be capable of being operated from this service.

1.03 QUALIFICATIONS

A. Manufacturer shall have a minimum of five (5) years of experience in custom metal fabrication, and shall provide three (3) references for recently completed projects of similar scope.

B. Manufacturer shall provide experienced personnel to supervise the initial field installation, and trial operation of the hoist.

1.04 SUBMITTALS

A. Prior to fabrication, the supplier shall submit for review a shop drawing package to include the following, at minimum:

1. Design drawings depicting hoist layout, member sizes, connection details, etc.
2. Manufacturer's cut sheets for hydraulic, mechanical components, and rigging line and hooks.
3. Structural calculations, with resultant material stresses under applied loading.

B. Warranty- The hoist manufacturer shall provide a written warranty that covers the product to include all labor and materials for repairs required during a three (3) year period from date of installation. Warranty exclusion may be made for damage occurring from use of the hoist other than its intended use.

PART 2 PRODUCTS

2.01 MECHANICAL AND HYDRAULIC COMPONENTS

A. Provide min. 5hp motor with 6-gal tank

B. 1,000-LB cargo winch

C. Hydraulic and electrical components shall be housed in an enclosed compartment to limit exposure to marine environment.

PART 3 EXECUTION

3.01 TIMING OF WORK

A. The hoist shall be complete and available for delivery by May 20, 2015, or 30 days after a contract is executed, whichever is later.

3.02 TRIAL OPERATION AND ADJUSTMENT

A. Following initial installation, the Hoist Manufacturer shall provide an experienced representative onsite to perform a trial operation and initial adjustment to ensure a complete and functional installation. The hoist operation shall be observed by the engineer and the Town's representative. Adjustments shall be made as required to the satisfaction of the Engineer.

PART 4 MEASUREMENT AND PAYMENT

4.01 Work under this specification is covered under a separate lump sum contract between the Town of Camden and the selected hoist manufacturer.

END OF SECTION

SECTION 14601

WORKING WATERFRONT HOIST
(COORDINATION & INSTALLATION SUPPORT)

PART 1 GENERAL

1.01 WORK INCLUDED

A. Under a separate contract, the Town of Camden will procure a 1,000-lb capacity working waterfront hoist, including all design, fabrication, supply, installation, and trial operation.

B. This work includes the coordination of hoist foundation and conduit requirements with hoist manufacturer's final design, and installation of anchor bolts into the hoist foundation per the layout and quantity specified by the hoist manufacturer.

C. A trial operation of the hoist will be performed by the hoist manufacturer under the supervision of the Town of Camden Harbormaster and the Engineer. The contractor shall provide a representative onsite during the trial operation.

1.02 DESIGN CRITERIA

A. The hoist design, fabrication, and installation are the responsibility of the manufacturer selected by the Town. Manufacturer's shop drawings will be made available to the contractor prior to delivery and installation of the hoist to allow for coordination of connection components.

B. Connection of Hoist to Foundation

1. The contractor shall install anchor bolts according to the layout shown on the hoist manufacturer's shop drawings.

2. Anchor bolts, nuts, washers, and any associated hardware shall be supplied by the hoist manufacturer.

3. Anchor Bolts shall be ASTM F1554 Grade 36.

C. Electrical Service Connection

1. Electrical supply to the hoist foundation shall be provided as specified on the plans. The contractor shall coordinate final position and layout of electrical components with the hoist manufacturer's shop drawings. Final connection of the hoist to the electrical supply shall be the responsibility of the hoist supplier.

PART 2 PRODUCTS

2.01 Not used

PART 3 EXECUTION

3.01 TIMING OF WORK

A. The hoist shall be complete and available for delivery by May 20, 2015, or 30 days after a contract is executed, whichever is later.

3.02 OPERATION AND ADJUSTMENT

A. Following initial installation of the hoist, the hoist manufacturer shall perform a trial operation of the hoist. A representative from the contractor will be onsite to monitor the initial use and adjustment of the hoist by the hoist manufacturer. The hoist operation shall be observed by the Harbormaster, the Engineer and the Contractor's representative.

PART 4 MEASUREMENT AND PAYMENT

4.01 See Special Provision Section 528 for measurement and payment for work associated with this specification.

END OF SECTION

Town: Camden
WIN: 018534.12
April 16, 2015

SUPPLEMENTAL SPECIFICATIONS
SECTION 634
HIGHWAY LIGHTING

The applicable provisions of Section 634 of the Standard Specifications shall apply with the following additions and modifications:

634.1 DESCRIPTION

This work shall consist of furnishing and installing of underground conduit and wire from the existing Harbormaster's building panelboard to the hoist area; installation of receptacles at hoist; installation of new circuit breakers in Harbormaster's building panelboard; connection of new power, lighting, and receptacle circuits; and the removal of existing pole (decorative piles) and maintaining power and telephone service to Harbormaster's building and pier facilities all as indicated on drawings.

Final connection of the hoist to the electrical supply shall be the responsibility of the hoist supplier (not part of this contract).

634.2 GENERAL

Motorized hoist complete with work lights will be furnished and installed by hoist supplier. Hoist supplier shall make final connections to the power and lighting circuits on the hoist.

634.021 MATERIALS

Materials shall meet the applicable requirements specified in the following Subsection of Division 700 – Materials:

Steel Conduit	715.02
Non-Metallic Conduit	715.03
Secondary Wiring	715.07
Miscellaneous Material	As specified on drawings.

634.4 CONDUCTOR INSTALLATION

All conductors shall be furnished and installed under this contract. The Contractor shall furnish and install conductors, and shall make connections to hoist as indicated on drawings.

The trench shall be excavated to a width of 18" and a depth of 30", in accordance with Standard Detail 626(07).

634.81 BONDING AND GROUNDING

A separate, continuous, green insulated ground conductor shall be provided to extend from all equipment and devices to equipment ground bus at the existing panel.

634.92 BASIS OF PAYMENT

Payment shall be based on a lump sum for all electrical work indicated on the drawings and outlined in the specifications.

This price shall include the cost of furnishing and installing wiring conductors, terminations, labor, equipment and incidentals necessary to complete the work. Trenching, backfill, placement of aggregate subbase course gravel (Item 304.10) and pavement (See Special Provision 403) will be incidental to Pay Item 626.45. Pavement markings will also be incidental to this item and shall be meet the requirements of Item 627.733 White or Yellow Painted Pavement Marking Line.

Payment will be made under:

Pay Item		Pay Unit
626.45	Electrical Conduit, Wiring, & Trenching	Lump Sum
634.01	Remove and/or /Relocate Existing Pole , Maintain/Restore Power & Telephone Service	Lump Sum
634.02	Receptacles – Mounted	Each

Town: Camden
WIN: 18534.12
Date: April 17, 2015

SPECIAL PROVISION

SECTION 656

Temporary Soil Erosion and Water Pollution Control

The following information supplements the requirements of Section 656 of the Standard Specifications and shall be incorporated into the Contractor's Soil Erosion and Water Pollution Control Plan for this Project. The soil erosion and water pollution control measures associated with this work are as follows:

All work shall be done in accordance with the latest revision of the Maine Department of Transportation Best Management Practices for Erosion and Sediment Control (a.k.a. Best Management Practices manual or BMP Manual). The latest version is dated February 2008 and is available at the MaineDOT website:

http://maine.gov/mdot/env/docs/bmp/BMP2008full.pdf

Procedures specified shall be according to the BMP Manual unless stated otherwise.

1. The on-site person responsible for implementation of this plan, shall be the Contractor's Superintendent or other supervisory employee (the "Environmental Coordinator") with the authority to immediately remedy any deficient controls and shall provide the Resident with their numbers (telephone number, cellular phone and pager numbers, if applicable) where the Environmental Coordinator can be reached 24 hours a day.
2. The Contractor shall implement appropriate BMP measures at the hoist foundation excavation and along conduit trenches to minimize erosion and sedimentation (e.g., anchored silt fence) where soil is disturbed. These measures shall be checked on a daily basis.
3. Winter stabilization BMPs shall be applied in accordance with the MDOT BMP Manual between November 1 and April 15 or during frozen ground conditions.
4. If the Work includes the handling or storage of petroleum products or Hazardous Materials including the on-site fueling of equipment, the Resident must be provided with a Spill Prevention Control and Countermeasure Plan (SPCCP) plan. At a minimum, the SPCCP shall include:
    a. The name and emergency response numbers (telephone number, cellular phone and pager numbers, if applicable) of the Contractor's representative responsible for spill prevention;
    b. General description and location of (1) handling, transfer, storage, and containment facilities of such products or Materials ("activities and facilities") and (2) potential receptors of such products or Materials including oceans, lakes, ponds, rivers, streams, wetlands, and sand and gravel aquifers ("sensitive

resources") including the distances between said activities and facilities and said sensitive resources;

c. Description of preventative measures to be used to minimize the possibility of a spill including Equipment and/or Materials to be used to prevent discharges including absorbent Materials,

d. A contingency response plan to be implemented if a spill should occur including a list of emergency phone/pager numbers including the Contractor's representative, MDEP Spill Response, the Resident, and local police and fire authorities. For a related provision, see *Standard Specification, Section, 105.2.2 - Project Specific Emergency Planning*.

5. The Environmental Coordinator must inspect and maintain daily all controls for the duration of the project.

6. If the Project Resident directs new soil disturbance that requires temporary erosion and sedimentation control, all permits shall be obtained by the MaineDOT and a full SEWPCP will be required and paid for as Extra Work.

Project-Specific Information: The work under this contract will have two mobilizations:

1) Hoist Foundation - June 2015; and

2) Timber Fender and Guide Pile Installations, Timber Framing, Face Sheathing, and Ladder Installations, and Timber Floats - October through December 2015.

As such, there shall be two separate implementations of soil erosion and water pollution control measures.

The bidder shall note that there is no Pay Item 656.75 and therefore in accordance with 656.5.2 If No Pay Item of the Standard Specifications, this work is incidental to the Contract.

SPECIAL PROVISION 700 - MATERIALS

SECTION 702 - BITUMINOUS MATERIAL

702.01 Asphalt Cement Performance Graded Asphalt Binder shall conform to the requirements of AASHTO M 320 or AASHTO MP 19, whichever is indicated in the contract documents. For Performance-Graded Asphalt Binder (PGAB), the Contractor shall arrange for the Supplier to furnish the following items to the Department's Materials Testing Engineer.

a. A Quality-Control Plan for PGAB that conforms to the requirements of AASHTO R 26 "Certifying Suppliers of Performance-Graded Asphalt Binders" and

b. A CERTIFICATE OF ANALYSIS for all asphalt materials furnished for use on the project. The Certificate shall include the actual test results of the material in storage from which the shipments are being made. Certificates shall be supplied for each lot, batch, or blend of each type and grade of material. A new certificate shall be issued at least every 30 days or upon receiving or manufacture of a new material. The original of each Certificate of Analysis shall be mailed to the Departments Materials Testing Engineer.

The Contractor shall give the supplier sufficient advance notice of orders to permit testing. Material not represented by tests will not be accepted for use on the work.

Deliveries of asphalt materials shall be accompanied by a loading invoice, delivery ticket, or slip, as required under Section l08.1.3 f. The Loading Invoice shall include the applicable certificate number and shall include a printed or stamped statement such as the following:

> "THIS IS TO CERTIFY THAT THE ASPHALT MATERIAL REPRESENTED BY THIS LOADING INVOICE CONFORMS TO THE SPECIFICATIONS OF THE PURCHASER FOR THE MATERIAL TYPE AND GRADE STATED THEREON."

In the event an intermediate hauler of the asphalt material is involved, a copy of their own delivery slip shall be furnished, as well as a copy of the supplier's loading invoice. The hauler's delivery slip and the supplier's loading invoice shall be cross-referenced by use of their respective serial numbers.

702.04 Emulsified Asphalt Emulsified Asphalt shall conform to the requirements of AASHTO M 140. Cationic emulsified asphalt shall conform to the requirements of AASHTO M 208.

Use of all emulsified asphalt shall comply with all Department of Environmental Protection (DEP) regulations regarding maximum amount of oil distillate, seasonal limitations, etc.

For emulsified asphalts, the Contractor shall arrange for the Supplier to furnish the following item to the Department's Materials Testing Engineer.

A CERTIFICATE OF ANALYSIS for all asphalt emulsion materials furnished for use on the project. The Certificate shall include the actual test results of the material in storage from which the shipments are being made. Certificates shall be supplied for each lot or batch for each

grade/type of emulsion. A new certificate shall be issued at least every 30 days or upon receiving or manufacture of a new material. The original of each Certificate of Analysis shall be mailed to the Department's Materials Testing Engineer.

Deliveries of emulsion materials shall be accompanied by a loading invoice, delivery ticket, or slip, as required under Section l08.1.3 f. The Loading Invoice shall include the applicable certificate number and shall include a printed or stamped statement such as the following:

> "THIS IS TO CERTIFY THAT THE ASPHALT MATERIAL REPRESENTED BY THIS LOADING INVOICE CONFORMS TO THE SPECIFICATIONS OF THE PURCHASER FOR THE MATERIAL TYPE AND GRADE STATED THEREON."

In the event an intermediate hauler of the asphalt material is involved, a copy of their own delivery slip shall be furnished, as well as a copy of the supplier's loading invoice. The hauler's delivery slip and the supplier's loading invoice shall be cross-referenced by use of their respective serial numbers.

SECTION 703 - AGGREGATES

703.07 Aggregates for HMA Pavements Coarse aggregate and fine aggregate for hot mix asphalt pavements shall be of such gradation that when combined in the proper proportions, including filler, if required, the resultant blend will meet the composition of mixture for the type of pavement specified.

Coarse aggregate, that material retained on the No. 4 sieve, shall be crushed stone or crushed gravel and, unless otherwise stipulated, shall consist of clean, tough, durable fragments free from an excess of soft or disintegrated pieces and free from stone coated with dirt or other objectionable matter. Coarse aggregate, shall not exceed an absorption of 2.0 percent by weight as determined by AASHTO T 85.

Fine aggregate, material that passes the No. 4 sieve, shall consist of natural sand, manufactured sand, or a combination of these. It shall consist of hard, tough grains, free from injurious amounts of clay, loam, or other deleterious substances. Fine aggregate, shall not exceed an absorption of 2.3 percent by weight as determined by AASHTO T 84.

The composite blend, minus any recycled asphalt pavement used (RAP), shall have a Micro-Deval value of 18.0 percent 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 (January 2009 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 ½ inch sieve and is retained on the No. 10 sieve, minus any reclaimed asphalt pavement used.

Aggregates shall also meet the following consensus properties, except that aggregates extracted from RAP will not be included in the sand equivalent test. The Department reserves the right to sample and test the composite aggregate for any of the following properties at any time:

TABLE 3: Aggregate Consensus Properties Criteria

Estimated Traffic, Million 18 kip ESALs	AASHTO T 335 Coarse Aggregate Angularity (minimum)	AASHTO T 304 Method A Uncompacted Void Content of Fine Aggregate (min)	ASTM D 4791 (8.4) Flat and Elongated Particles (maximum)	AASHTO T 176 Clay Content/ Sand Equivalent (minimum)
< 0.3	60/60	40	10	45
0.3 to < 3.0	75/60			
3.0 to < 10	85/80	45		
10 to < 30	95/90			
≥ 30	100/100			50

ASTM D 5821 - "85/80 denotes that 85 percent of the coarse aggregate has one fractured face and 80 percent has two fractured faces.

AASHTO T 304 - Criteria are presented as percent air voids in loosely compacted fine aggregate, (U).

ASTM D 4791 - Criteria are presented as maximum percent by weight of flat and elongated particles (5:1 ratio).

The entire HMA wearing course shall come from the same source of material and the same job mix formula, except when permission is obtained from the Department to change sources.

703.08 Recycled Asphalt Pavement Recycled asphalt pavement shall consist of salvaged asphalt materials from milled pavements or production waste that has been processed before use to meet the requirements of the job mix formula. It shall be free of winter sand, granular fill, construction debris, or other materials not generally considered asphalt pavement.

703.081 RAP for Asphalt Pavement Recycled Asphalt Pavement (RAP) may be introduced into hot-mix asphalt pavement at percentages approved by the Department according to the MaineDOT Policies and Procedures for HMA Sampling and Testing. If approved by the Department, the Contractor shall provide documentation stating the source, test results for average residual asphalt content, and stockpile gradations showing RAP materials have been sized to meet the maximum aggregate size requirements of each mix designation. The Department will obtain samples for verification and approval prior to its use.

The maximum allowable percent of RAP shall be determined by the asphalt content, the percent passing the 0.075 mm sieve, and Coarse Micro-Deval loss values as tested by the Department. The numerical average of the percent passing the 0.075 mm sieve values will be used for the approval. The maximum percentage of RAP allowable shall be the lowest percentage as determined according to Table 4 below:

TABLE 4: Maximum Percent RAP According to Test Results

Classification	Maximum RAP Percentage Allowed	Asphalt content standard deviation	Percent passing 0.075 mm sieve	Residual aggregate M-D loss value
Class III	10%	N/A	> 11.0	≤ 18
Class II	20%	≤ 0.5	≤ 11.0	
Class I	30%	≤ 0.3	≤ 8.0	

The Department will monitor RAP asphalt content and gradation during production by testing samples from the stockpile at approximately 15,000 T intervals (in terms of mix production). The allowable variance limits (from the numerical average values used for mix designs) for this testing are determined based upon the maximum allowable RAP percentage, and are shown below in Table 5.

TABLE 5: RAP Verification Limits

Classification	Maximum RAP Percentage Allowed	Asphalt content (compared to aim)	Percent passing 0.075 mm sieve (compared to aim)	Percent passing 0.075 mm sieve
Class III	10%	± 1.5	± 2.0	N/A
Class II	20%	± 1.0	± 1.5	≤ 11.0
Class I	30%	± 0.5	± 1.0	≤ 8.0

For specification purposes, RAP will be categorized as follows:

Class III – A maximum of 10.0 percent of Class III RAP may be used in any base, intermediate base, surface, or shim mixture. A maximum of 20.0 percent of Class III RAP may be used in hand-placed mixes for item 403.209.

Class II – A maximum of 20.0 percent Class II RAP in any base, binder, surface, or shim course.

Class I – A maximum of 20.0 percent Class I RAP may be used in any base, intermediate base, surface, or shim mixture without requiring a change to the specified asphalt binder. A maximum of 30.0 percent Class I RAP may be used in in any base or intermediate base mixture provided that a PG 58-28 asphalt binder is used. A maximum of 30.0 percent Class I RAP may be used in any surface or shim mixture provided that PG 58-34 or 52-34 asphalt binder is used. Mixtures exceeding 20.0 percent Class I RAP must be evaluated and approved by the Department.

The Contractor may use up to two different RAP sources in any one mix design. The total RAP percentage of the mix shall not exceed the maximum allowed for the highest classification RAP source used (i.e. if a Class I & Class III used, total RAP must not exceed 30.0%). The blended RAP material must meet all the requirements of the classification for which the RAP is entered (i.e. 10% Class III with 20% Class I, blend must meet Class I criteria). The Department may take belt cuts of the blended RAP to verify the material meets these requirements. If the

Contractor elects to use more than one RAP source in a design, the Contractor shall provide an acceptable point of sampling blended RAP material from the feed belt.

In the event that RAP source or properties change, the Contractor shall notify the Department of the change and submit new documentation stating the new source or properties a minimum of 72 hours prior to the change to allow for obtaining new samples and approval.

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

Aggregate Gradation Control Points

Sieve Designation	Nominal Maximum Aggregate Size---Control Points (Percent Passing)					
	Type 25 mm	Type 19 mm	Type 12.5 mm	Type 9.5 mm	Type 9.5 mm Thin Lift Mixture (TLM)	Type 4.75 mm
	Percent By Weight Passing - Combined Aggregate					
37.5 mm	100					
25 mm	90-100	100				
19 mm	-90	90-100	100			
12.5 mm		-90	90-100	100	100	100
9.5 mm		-	-90	90-100	95-100	95-100
4.75 mm		-	-	-90	60-95	80-100
2.36 mm	19-45	23-49	28-58	32-67	40-65	40 - 80
1.18 mm		-	-	-	-	-
600 µm		-	-	-	-	-
300 µm		-	-	-	-	-
75 µm	2.0-6.0	2.0-6.0	2.0-6.0	2.0-7.0*	2.0-7.0*	2.0-7.0

* For 9.5 mm nominal maximum aggregate size mixtures, the maximum design aim for the percent passing the 75 µm sieve is 6.5%.

March 05, 2015
Supersedes November 05, 2014

STANDARD DETAIL UPDATES

Standard Details and Standard Detail updates are available at:
http://maine.gov/mdot/contractors/publications/standarddetail/

Detail #	Description	Revision Date
501(02)	Pipe Pile Splice	3/05/2015
501(03)	H – Pile Splice	3/05/2015

SUPPLEMENTAL SPECIFICATION
(Corrections, Additions, & Revisions to Standard Specifications - November 2014)

SECTION 101
CONTRACT INTERPRETATION

101.2 Definitions
Page 1-5 – Remove the definition of Bridge in its entirety and replace with:
"**Bridge A structure that is erected over a depression or an obstruction, such as water, a highway or a railway, and has an opening measured along the centerline of the Roadway of more than 20 feet between: The faces of abutments; spring line of arches; extreme ends of openings of box culverts, pipes or pipe arches; or the extreme ends of openings for multiple box culverts, pipes or pipe arches**."

Page 1-12 – Remove the definition of Large Culvert in its entirety and replace with:
"**Large Culvert Any structure not defined as a Culvert or Bridge that provides a drainage or non-drainage opening under the Roadway or Approaches to the Roadway, with an opening that is 5 feet but less than 10 feet**."

Remove the definition of Minor Span in its entirety and replace with:
"**Minor Span Same definition as Bridge, except having an opening of between 10 feet and 20 feet, inclusive**."

SECTION 104
GENERAL RIGHTS AND RESPONSIBILITES

104.5.5 Prompt Payment of Subcontractors Add the following paragraph to this subsection:

C. Payment Tracking Federal Projects On federally funded projects, the prime contractor, subcontractors and lower-tier subcontractors will track and confirm the delivery and receipt of all payments through the Elation System. They will be responsible for entering all payments to all sub and lower tier contractors. MaineDOT will run a query monthly to ensure that contractors are complying and generate an e-mail to contractors who have not responded to confirm receipt of MaineDOT payment or contractor payment to lower tier subcontractors.

SECTION 105
GENERAL SCOPE OF WORK

105.4.5 Special Detours Remove this subsection in its entirety and replace with:
"105.4.5 Maintenance of Existing Structures When a new Bridge or Minor Span is being installed on a new alignment and the existing structure is to remain in service, the Department will maintain the existing structure and the portions of the roadway required for maintaining traffic until such time that the new structure is opened to traffic and the existing structure is taken out of service. A similar situation exists when a new Bridge or Minor Span is being installed on the same alignment as the existing structure, requiring a temporary detour to be installed by the Contractor per Section 510, Special Detours,

prior to removal of the existing structure. In this case, the Department will maintain the existing structure and the portions of the existing roadway required for maintaining traffic until such time that either the temporary detour is opened to traffic or the Contractor begins any work on the existing structure, including, but not limited to, repairs, modifications, moving, demolition or removal. In either case, once the new structure or temporary detour is opened to traffic, or the Contractor begins any work on the existing structure, the Contractor shall be solely responsible for all maintenance of the existing structure and the portions of the existing approaches that lie outside the new roadway or the temporary detour, respectively. This specification is not intended to supersede Standard Specification Section 104.3.11, Responsibility for Property of Others."

105.6.2.4 Department Verification Add the following to the end of the first sentence:
"**or other approved method, such as reference staking, to allow the Department to independently verify the accuracy of the work, as approved by the Department."**

SECTION 109
CHANGES

109.5.1 Definitions - Types of Delays In Paragraph 'A' delete "Equitable Adjustment" and replace with "adjustment of time".

APPENDIX A TO DIVISION 100

Remove Section D in its entirety as this is now covered in Section 105.10 EQUAL OPPORTUNITY AND CIVIL RIGHTS.

SECTION 203
EXCAVATION AND EMBANKMENT

203.02 Materials
At the bottom of page 2-12, add as the first item in the list:

Crushed Stone, ¾ inch 703.13

203.042 Rock Excavation and Blasting
On page 2-16, add the word "**No**" to the third sentence in Section 5 Submittals, Subsection V, 1 so that it reads:
"***No*** **blasting products will be allowed on the job site if the date codes are missing**."

SECTION 304
AGGREGATE BASE AND SUBBASE COURSE

304.02 Aggregate
Remove the sentence "Aggregate for base and subbase courses shall be material meeting the aggregate type requirements specified in the following table" in its entirety and the table that follows it with headings of 'Material' and 'Aggregate Type'.

304.02 – Aggregate Add the following sentence before the sentence starting with "When designated on the plans…": **"Aggregate Base Course – Type C will be capped with 2" of millings or Untreated Aggregate Surface Course – Type B. Payment for this material will be made under 304.16"**

SECTION 307
FULL DEPTH RECYCLED PAVEMENT

Remove this Section in its entirety and replace with:

SECTION 307
FULL DEPTH RECYCLING
(UNTREATED OR TREATED WITH EMULSIFIED ASPHALT STABILIZER)

307.01 Description This work shall consist of pulverizing a portion of the existing roadway structure into a homogenous mass, adding an emulsified asphalt stabilizer (if required) to the depth of the pulverized material specified in the contract, placing and compacting this material to the lines, grades, and dimensions shown on the plans or established by the Resident.

MATERIALS

307.02 Pulverized Material Pulverized material shall consist of the existing asphalt pavement layers and one inch or more as specified of the underlying gravel, pulverized and blended into a homogenous mass. Pulverized material will be processed to 100% passing a 2 inch square mesh sieve.

307.021 New Aggregate and Additional Recycled Material New aggregate, if required by the contract, shall meet the requirements of Subsection 703.10 - Aggregate for Untreated Surface Course and Leveling Course, Type A. Aggregate Subbase Course Gravel Type D processed to 100 percent passing a 2 inch square mesh sieve and meeting the requirements of 703.06 – Aggregate for Base and Subbase may be used in areas requiring depths greater than 2 inches. New aggregate, will be measured and paid for under the appropriate item.

Recycled material, if required, shall consist of salvaged asphalt material from the project or from off-site stockpiles that has been processed before use to 100 percent passing a 2 inch square mesh sieve. Recycled material shall be conditionally accepted at the source by the Resident. It shall be free of winter sand, granular fill, construction debris, or other materials not generally considered asphalt pavement.

Recycled material generated and salvaged from the project shall be used within the roadway limits to the extent it is available as described in 307.09. No additional payment will be made for material salvaged from the project.

Recycled material supplied from off-site stockpiles shall be paid for as described in the contract, or by contract modification.

307.022 Emulsified Asphalt Stabilizer. If required, the emulsified asphalt stabilizer shall be grade MS-2, MS-4, SS-1, or CSS-1 meeting the requirements of Subsection 702.04 Emulsified Asphalt.

307.023 Water Water shall be clean and free from deleterious concentrations of acids, alkalis, salts or other organic or chemical substances.

307.024 Portland Cement If required, Portland Cement shall be Type I or II meeting the requirements of AASHTO M85.

307.025 Hydrated Lime If required, Hydrated Lime shall meet the requirements of AASHTO M216.

EQUIPMENT

307.03 Pulverizer The pulverizer shall be a self-propelled machine, specifically manufactured for full-depth recycling work and capable of reducing the required existing materials to a size that will pass a 2 inch square mesh sieve. The machine shall be equipped with standard automatic depth controls and must maintain a consistent cutting depth and width. The machine also shall be equipped with a gauge to show depth of material being processed.

307.04 Liquid Mixer Unit or Distributor. If treatment of the recycled layer with emulsified asphalt is required by the contract, a liquid mixing unit or distributor shall be used to introduce the emulsified asphalt stabilizer into the pulverized material. The mixing unit shall contain a liquid distribution and mixing system which has been specifically manufactured for full-depth recycling work, capable of mixing the pulverized material with an evenly metered distribution of emulsified asphalt into a homogeneous mixture, to the depth and width required.

The mixing unit shall be designed, equipped, maintained, and operated so that emulsified asphalt stabilizer at constant temperature may be applied uniformly on variable widths of pulverized material up to 6 feet at readily determined and controlled rates from 0.01 to 1.06 gal/yd^2 with uniform pressure and with an allowable variation from any specified rate not to exceed 0.01 gal/ yd^2. Mixing units shall include a tachometer, pressure gages, and accurate volume measuring devices or a calibrated tank and a thermometer for measuring temperatures of tank contents.

307.041 Cement or Lime Spreader If required by the contract, spreading of the Portland Cement or Hydrated Lime shall be done with a spreader truck designed to spread dry particulate (such as Portland Cement or Lime) or other approved means to insure a uniform distribution across the roadway and minimize fugitive dust. Pneumatic

application, including through a slotted pipe, will not be permitted. Other systems that have been developed include fog systems, vacuum systems, etc. Slurry applications may also be accepted. The Department reserves the right to accept or reject the method of spreading cement. The Contractor shall provide a method for verifying that the correct amount of cement is being applied.

307.05 Placement Equipment **Placement of the Full Depth recycled material to the required slope and grade shall be done with an approved highway grader or by another method approved by the Resident.**

307.06 Rollers **The full depth recycled material shall be rolled with a vibratory pad foot roller, a vibratory steel drum soil compactor and a pneumatic tire roller. The pad foot roller drum shall have a minimum of 112 tamping feet 3 inches in height, a minimum contact area per foot of 17 inch^2, and a minimum width of 84 inches. The vibratory steel drum roller shall have a minimum 84 inch width single drum. The pneumatic tire roller shall meet the requirements of Section 401.10 and the minimum allowable tire pressure shall be 85 psi.**

MIX DESIGN

If treatment of the recycled layer with emulsified asphalt is required by the contract, the Department will supply a mix design for the emulsified asphalt stabilized material based on test results from pavement and soil analysis taken to the design depth. The Department will provide the following information prior to construction:

1. **Percent of emulsified asphalt to be used.**
2. **Quantity of lime or cement to be added.**
3. **Optimum moisture content for proper compaction.**
4. **Additional aggregate (if required).**

After a test strip has been completed or as the work progresses, it may be necessary for the Resident to make necessary adjustments to the mix design. Changes to compensation will be in accordance with the Mix Design Special Provision.

CONSTRUCTION REQUIREMENTS

307.06 Pulverizing **The entire depth of existing pavement shall be pulverized together with 1 inch or more of the underlying gravel into a homogenous mass. All pulverizing shall be done with equipment that will provide a homogenous mass of pulverized material, processed in-place, which will pass a 2 inch square mesh sieve.**

307.07 Weather Limitations **Full depth recycled work shall be performed when;**

A. Recycling operations will be allowed between May 15th and September 15th inclusive in Zone 1 - Areas north of US Route 2 from Gilead to Bangor and north of Route 9 from Bangor to Calais.

B. The atmospheric temperature, as determined by an approved thermometer placed in the shade at the recycling location, is 50°F and rising.

C. When there is no standing water on the surface.
D. During generally dry conditions, or when weather conditions are such that proper pulverizing, mixing, grading, finishing and curing can be obtained using proper procedures, and when compaction can be accomplished as determined by the Resident.
E. When the surface is not frozen and when overnight temperatures are expected to be above 32°F.
F. Wind conditions are such that the spreading of lime or cement on the roadway ahead of the recycling machine will not adversely affect the operation.

307.08 Surface Tolerance The complete surface of the Full Depth Recycled course shall be shaped and maintained to a tolerance, above or below the required cross sectional shape, of ⅜ inch.

307.09 Full Depth Recycling Procedure New aggregate or recycled material meeting the requirements of Section 307.021 - New Aggregate and Additional Recycled Material, shall be added as necessary to restore cross-slope and/or grade before pulverizing. Locations will be shown on the plans or described in the construction notes. The Resident may add other locations while construction of the project is in progress. The Contractor will use recycled material to the extent it is available, in lieu of new aggregate. The material shall then be pulverized, processed, and blended into a homogeneous mass passing a 2 inch square mesh sieve. Material found not pulverized down to a 2 inch size will be required to be reprocessed by the recycler with successive passes until approved by the Resident.

Should the Contractor be required to add new aggregate or recycled material to restore cross-slope and/or grade after the initial pulverizing process, those areas will require re-processing to blend into a homogenous mass passing a 2 in square mesh sieve.

Sufficient water shall be added during the recycling process to maintain optimum moisture for compaction.

The resultant material from the initial pulverizing processes shall be graded and compacted to the cross-slope and profile shown on the plans or as directed by the Resident. The Contractor will also be responsible for re-establishing the existing profile grade. The completed surface of the full depth recycled course shall be shaped and maintained to a tolerance, above or below the required cross sectional shape, of ⅜ inch. Areas not meeting this tolerance will be repaired as described in Section 307.091. The initial pulverizing process density requirements will be the same as Section 307.101 unless otherwise directed by the Resident.

Additives, if required, shall be introduced following completion of the initial pulverizing and blending process. Emulsified asphalt stabilizer shall be incorporated into the top of the processed material as specified in section 307.04 to the depth specified in the contract by use of the liquid mixer unit or a distributor, at the rate specified in the mix design. The emulsified asphalt shall then be uniformly blended into a homogeneous mass until an apparent uniform distribution has occurred. The rate of application may be adjusted as necessary by the Resident. Cement or lime shall be introduced as described in section

307.041. The resultant material shall be graded and compacted to the cross-slope and profile shown on the plans or as directed by the Resident. The Contractor will also be responsible for re-establishing the existing profile grade.

After final compaction, the roadway surface shall be treated with a light application of water, and rolled with pneumatic-tired rollers to create a close-knit texture. The finished layer shall be free from:

A. Surface laminations.
B. Segregation of fine and coarse aggregate.
C. Corrugations, centerline differential, potholes, or any other defects that may adversely affect the performance of the layer, or any layers to be placed upon it.

The Contractor shall protect and maintain the recycled layer until a lift of pavement is applied. Any damage or defects in the layer shall be repaired immediately. An even and uniform surface shall be maintained. The recycled surface shall be swept prior to hot mix asphalt overlay placement.

307.091 Repairs Repairs and maintenance of the recycled layers, resulting from damage caused by traffic, weather or environmental conditions, or resulting from damage caused by the Contractor's operations or equipment, shall be completed at no additional cost to the Department.

For recycled layers stabilized with emulsified asphalt, low areas will be repaired using a hot mix asphalt shim. Areas up to 1 inch high can be repaired by milling or shimming with hot mix asphalt. Areas greater than 1 inch high will be repaired using a hot mix asphalt shim. All repair work will be done with the Resident's approval at the Contractor's expense.

TESTING REQUIREMENTS

307.10 Quality Control The Contractor shall operate in accordance with the approved Quality Control Plan (QCP) to assure a product meeting the contract requirements. The QCP shall meet the requirements of Section 106.4 - Quality Control and this Section. The Contractor shall not begin recycling operations until the Department approves the QCP in writing.

Prior to performing any recycling process, the Department and the Contractor shall hold a Pre-recycle conference to discuss the recycling schedule, type and amount of equipment to be used, sequence of operations, and traffic control. A copy of the QC random numbers to be used on the project shall be provided to the Resident. All field supervisors including the responsible onsite recycling process supervisor shall attend this meeting.

The QCP shall address any items that affect the quality of the Recycling Process including, but not limited to, the following:

A. Sources for all materials, including New Aggregate and Additional Recycled Material.
B. Make and type of rollers including weight, weight per inch of steel wheels, and average contact pressure for pneumatic tired rollers.
C. Testing Plan.
D. Recycling operations including recycling speed, methods to ensure that segregation is minimized, grading and compacting operations.
E. Methods for protecting the finished product from damage and procedures for any necessary corrective action.
F. Method of grade checks.
G. Examples of Quality Control forms.
H. Name, responsibilities, and qualifications of the Responsible onsite Recycling Supervisor experienced and knowledgeable with the process.
I. A note that all testing will be done in accordance with AASHTO and MDOT/ACM procedures.

The Project Superintendent shall be named in the QCP, and the responsibilities for successful implementation of the QCP shall be outlined.

The Contractor shall sample, test, and evaluate the full depth reclamation process in accordance with the following minimum frequencies:

MINIMUM QUALITY CONTROL FREQUENCIES

Test or Action	Frequency	Test Method
Density	**1 per 1000 feet / lane**	**AASHTO T 310**
Air Temperature	**4 per day at even intervals**	
Surface Temperature	**At the beginning and end of each days operation**	
Yield of all materials (Daily yield, yield since last test, and total project yield.)	**1 per 1000 ft/lane**	

The Department may view any QC test and request a QC test at any time. The Contractor shall submit all QC test reports and summaries in writing, signed by the appropriate technician, to the Department's onsite representative by 1:00 P.M. on the next working day, except when otherwise noted in the QCP due to local restrictions. The Contractor shall make all test results, including randomly sampled densities, available to the Department onsite.

The Contractor shall cease recycling operations whenever one of the following occurs:

A. The Contractor fails to follow the approved QCP.
B. The Contractor fails to achieve 98 percent density after corrective action has been taken.
C. The finished product is visually defective, as determined by the Resident.

D. The computed yield differs from the mix design by 10 percent or more.

Recycling operations shall not resume until the Department approves the corrective action to be taken.

307.101 Test Strip The contractor shall assemble all items of equipment for the recycling operation on the first day of the recycling work. The Contractor shall construct a test strip for the project at a location approved by the Resident. The Responsible onsite Recycling Supervisor will work with Department personnel to determine the suitability of the mixed material, moisture control within the mixed material, and compaction and surface finish. The test strip section is required to:

A. Demonstrate that the equipment and processes can produce recycled layers to meet the requirements specified in these special provisions.
B. Determine the effect on the gradation of the recycled material by varying the forward speed of the recycling machine and the rotation rate of the milling drum.
C. Determine the optimum moisture necessary to achieve proper compaction of the recycled layer.
D. Determine the sequence and manner of rolling necessary to obtain the compaction requirements and establish a target density. The Contractor and the Department will both conduct testing with their respective gauges at this time.

The test strip shall be at least 300 feet in length of a full lane-width (or a half-road width). Full recycling production will not start until a passing test strip has been accomplished. If a test strip fails to meet the requirements of this specification, the Contractor will be required to repair or replace the test strip to the satisfaction of the Resident. Any repairs, replacement, or duplication of the test strip will be at the Contractor's expense.

After the test strip has been pulverized, and the roadway brought to proper shape, the Contractor shall add water until it is determined that optimum moisture has been obtained. The test strip shall then be rolled using the specified compaction equipment as directed until the density readings show an increase in dry density of less than 1 pcf for the final four roller passes of each roller. The Contractor and Department will each determine a target density using their respective gauges by performing several additional density tests and averaging them. The average of these tests will be used as the target density of the recycled material for QC and Acceptance purposes.

Following completion of the test strip, compaction of the material shall continue until a density of not less than 98 percent of the test strip target density has been achieved for the full width and depth of the layer. During the construction and compaction of the Full Depth Recycled base, should three consecutive Acceptance test results for density fail to meet a minimum of 95 percent of the target density, or exceed 102 percent of target density, a new test strip shall be constructed.

ACCEPTANCE TEST FREQUENCY

Property	Frequency	Test Method
In-place Density	1 per 2000 ft / lane	AASHTO T 310

308.102 Curing. No new pavement shall be placed on the full depth recycled pavement until curing has reduced the moisture content to 1 percent or less by total weight of the mixture, or a curing period of 4 days has elapsed, whichever comes first.

307.11 Method of Measurement Full Depth Recycled Pavement (Untreated or Treated with Emulsified Asphalt Stabilizer) will be measured by the square yard.

307.12 Basis of Payment The accepted quantity of Full Depth Recycled Asphalt Pavement (Untreated or Treated with Emulsified Asphalt Stabilizer) will be paid for at the contract unit price per square yard, complete in-place which price will be full compensation for furnishing all equipment, materials and labor for pulverizing, blending, placing, grading, compacting, and for all incidentals necessary to complete the work.

The addition of materials to restore profile grade and/or cross-slope in areas shown on the plans or described in the construction notes will be paid separately under designated pay items within the contract. No additional payment will be made for materials salvaged from the project.

Payments will be made under:

Pay Item	Pay Unit
307.331 Full Depth Recycled Pavement (Untreated)	**Square Yard**
307.332 Full Depth Recycled Pavement (with Emulsified Asphalt Stabilizer) 5 in. depth	**Square Yard**
307.333 Full Depth Recycled Pavement (with Emulsified Asphalt Stabilizer) 6 in. depth	**Square Yard**

SECTION 411
UNTREATED AGGRAGATE SURFACE COURSE

411.02 – Aggregate Add the following to the end of the first sentence: **"- Type A"**

SECTION 502
STRUCTURAL CONCRETE

502.05 Composition and Proportioning

Replace Table 1 with

TABLE 1

Concrete CLASS	Minimum Compressive Strength (PSI)	Permeability as indicated by Surface Resistivity (KOhm-cm)	Entrained Air (%)		Notes
		LSL	LSL	USL	
S	3,000	N/A	N/A	N/A	4,5
A	4,000	14	6.0	9.0	1,4,5
P	-----	-----	5.5	7.5	1,2,3,4
LP	5,000	17	6.0	9.0	1,4,5
Fill	3,000	N/A	6.0	9.0	4,5

In the list of information submitted by the contractor for a mix design:

Item J Replace "Target Coulomb Value." with "Target KOhm-cm Value."

502.1703 Acceptance Methods A and B

In the paragraph that starts with "The Department will take Acceptance…" Remove the word chloride from chloride permeability in the last sentence.

Replace the paragraph starting with "Rapid Chloride Permeability specimens…" With the following:

"Surface Resistivity specimens will be tested by the Department in accordance with AASHTO TP-95 at an age ≥ 56 days. Four 4 inch x 8 inch cylinders will be cast per sublot placed. The average of three concrete specimens per sublot will constitute a test result and this average will be used to determine the permeability for pay adjustment computations."

502.1706 Acceptance Method C

Remove in its entirety and Replace with:

502.1706 Acceptance Method C The Department will determine the acceptability of the concrete through Acceptance testing. Acceptance tests will include compressive strength, air content and permeability. Method C concrete with a failing permeability as indicated by the surface resistivity test may be tested for permeability in accordance with the Rapid Chloride Permeability Test AASHTO T-277 averaging the results from two specimens cut from the samples prepared for the surface resistivity test. Method C concrete not meeting the requirements listed in Table 1 or if the Rapid Chloride Permeability test results in values exceeding 2000 coulombs for Class LP or 2400 for Class A, shall be removed and replaced at no cost to the Department. At the Department's sole discretion, material not meeting requirements may be left in place and paid for at a reduced price as described in Section 502.195.

502.1707 Resolution of Disputed Acceptance Test Results

Section B

Remove "Rapid Chloride" from the section heading.

In paragraph 4 replace T-277 with TP-95

502.192 Pay Adjustment for Chloride Permeability
Remove "Chloride" from the heading and from the first sentence.

Replace the sentence that starts with "values greater than…" and replace with "values less than 10 KOhms-cm for Class A concrete or 11 KOhms-cm for Class LP concrete shall be subject to rejection and replacement, at no additional cost to the Department."

502.194 Pay Adjustments for Compressive Strength, Chloride Permeability and Air Content, Methods A and B

Remove the word "Chloride" from the section heading and from the equation for CPF.

502.195 Pay Adjustment Method C

Table 6: Method C Pay Reductions (page 5-53)
Under "Entrained Air" for "Class Fill", in the first line,
change from "< 4.0 (Removal)" to **"< 4.5 (Removal)**"

In Table 6: Method C PAY REDUCTIONS remove the word 'Chloride' from 'Chloride Permeability'.

SECTION 619
MULCH

619.07 Basis of Payment
In the list of Pay Items add "**619.12 Mulch**" with a Pay Unit of " **Unit** ".
Change the description of 619.1201 from "Mulch" to "**Mulch – Plan Quantity**"

In the list of Pay Items add "**619.13 Bark Mulch**" with a Pay Unit of " **CY** ".
Change the description of 619.1301 from "Bark Mulch" to "**Mulch – Plan Quantity**"

In the list of Pay Items add "**619.14 Erosion Control Mix**" with a Pay Unit of " **CY** ".
Change the description of 619.1401 from "Erosion Control Mix" to "**Mulch – Plan Quantity**"

SECTION 621
LANDSCAPING

621.0002 Materials - General
In the list of items change "Organic Humus" to "**Humus**".

621.0019 Plant Pits and Beds
c Class A Planting
In the third paragraph beginning with " The plant pit…" change "½ inch" to "**1 inch**"

SECTION 626
FOUNDATIONS, CONDUIT AND JUNTION BOXES FOR HIGHWAY SIGNING, LIGHTING AND SIGNALS

626.034 Concrete Foundations

On Page 6-85, add the following paragraph before the paragraph beginning with "Drilled shafts shall not be…".

No foundation design will be required for 18- and 24-inch diameter foundations for structures less than 30-feet tall and with no projecting arms. A foundation design prepared by a Professional Engineer licensed in accordance with the laws of the State of Maine will be required for all other foundations Precast foundations will be permitted for 18 and 24-inch diameter foundations for structures less than 30-feet tall and with no projecting arms. Where precast foundations are permitted flowable concrete fill shall be used as backfill in the annular space, and placed from the bottom up. Construction of precast foundations shall conform to the Standard Details and all requirements of Section 712.061 except that the concrete shall have a minimum permeability of 17 kOhm-cm and the use of calcium nitrite will not be required.

On Page 6-86, add the following to the paragraph beginning with "Concrete for drilled shafts…" so that it reads as follows:

"….The Contractor shall provide temporary dewatering of excavations for foundations such that concrete is placed in the dry. **Concrete for drilled shafts shall be placed in accordance with Section 503.10 as temporary casing is withdrawn to prevent debris from contaminating the foundation and to ensure concrete is cast against the surrounding soil. Concrete for drilled shafts and spread footings shall be Class A in accordance with Section 502 - Structural Concrete. Precast foundations will not be permitted except as specified above in this Section.** Backfill for spread footing foundations shall be Gravel Borrow meeting the requirements of Section 703.20 - Gravel Borrow….."

SECTION 652
MAINTENANCE OF TRAFFIC

652.3 Submittal of Traffic Control Plan On page **6-148**, note **f,** in the last sentence change the 105.2.2 to 105.2.3 so that the last sentence reads, "**For a related provision, see Section 105.2.3 – Project Specific Emergency Planning**.".

SECTION 660
ON-THE-JOB TRAINING

660.06 Method of Measurement

Remove the first sentence in its entirety and replace with " **The OJT item will be measured by the number of OJT hours by a trainee who has successfully completed an approved training program.**"

660.07 Basis of payment to the Contractor

Remove the last word in the first sentence so that the first sentence reads " The OJT shall be paid for once successfully completed at the contract unit price per **hour**."

Payment will be made under

Change the Pay Item from "660.22" to "**660.21**" and change the Pay Unit from "Each" to "**Hour**".

SECTION 677

On page 6 - 203 change "636.041" to "677.041"

SECTION 703
AGGREGATES

703,0201 Alkali Silica Reactive Aggregates
Remove this section in its entirety and replace with the following:

703.0201 Alkali Silica Reactive Aggregates. All coarse and fine aggregates proposed for use in concrete shall be tested for Alkali Silica Reactivity (ASR) potential under AASHTO T 303 (ASTM C 1260), Accelerated Detection of Potentially Deleterious Expansion of Mortar Bars Due to Alkali-Silica Reaction, prior to being accepted for use. Acceptance will be based on testing performed by an accredited independent lab submitted to the Department. Aggregate submittals will be required on a 5-year cycle, unless the source or character of the aggregate in question has changed within 5 years from the last test date.
As per AASHTO T 303 (ASTM C 1260): Use of a particular coarse or fine aggregate will be allowed with no restrictions when the mortar bars made with this aggregate expand less than or equal to 0.10 percent at 30 days from casting. Use of a particular coarse or fine aggregate will be classified as potentially reactive when the mortar bars made with this aggregate expand greater than 0.10 percent at 30 days from casting. Use of this aggregate will only be allowed with the use of cement-pozzolan blends and/or chemical admixtures that result in mortar bar expansion of less than 0.10 percent at 30 days from casting as tested under ASTM C 1567.

Acceptable pozzolans and chemical admixtures that may be used when an aggregate is classified as potentially reactive include, but are not limited to the following:

Class F Coal Fly Ash meeting the requirements of AASHTO M 295.
Ground Granulated Blast Furnace Slag (Grade 100 or 120) meeting the requirements of AASHTO M 302.
Densified Silica Fume meeting the requirements of AASHTO M 307.
Lithium based admixtures
Metakaolin

Pozzolans or chemical admixtures required to offset the effects of potentially reactive aggregates will be incorporated into the concrete at no additional cost to the Department.

703.06 Aggregate for Base and Subbase

Remove the first two paragraphs in their entirety and replace with these:

"**The following shall apply to Sections (a.) and (c.) below. The material shall have a Micro-Deval value of 25.0 or less as determined by AASHTO T 327. If the Micro- Deval value exceeds 25.0, the Washington State Degradation DOT Test Method T113, Method of Test for Determination of Degradation Value (January 2009 version) shall be performed, except that the test shall be performed on the portion of the sample that passes the ½ in sieve and is retained on the No. 10 sieve. If the material has a Washington Degradation value of less than 15, the material shall be rejected.**

The material used in Section (b.) below shall have a Micro-Deval value of 25.0 or less as determined by AASHTO T 327. If the Micro-Deval value exceeds 25.0 the material may be used if it does not exceed 25 percent loss on AASHTO T 96, Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine. "

703.33 Stone Ballast

In the third paragraph, remove the words " less than" before 2.60 and add the words "**or greater**" after 2.60.

SECTION 717
ROADSIDE IMPROVEMENT MATERIAL

717.02 Agricultural Ground Limestone

In the table after the third paragraph which starts with "Liquid lime…" change the Specification for Nitrogen (N) from "15.5 percent of which 1% is from ammoniac nitrogen and 14.5 /5 is from Nitrate Nitrogen" to read "**15.5 % of which 1% is from Ammoniacal Nitrogen and 14.5 % is from Nitrate Nitrogen**"

SUMMIT
GEOENGINEERING SERVICES

GEOTECHNICAL REPORT

FISHERMAN JIB HOIST
PUBLIC LANDING
CAMDEN, MAINE

Prepared for:

Town of Camden
29 Elm Street
Camden, Maine 04843

Prepared by:

Summit Geoengineering Services
Project #15038
April 2015

April 16, 2015
Summit #15038

Town of Camden
Attn: Patricia Finnigan
29 Elm St
Camden, ME 04843

Reference: Geotechnical Engineering Services
Fisherman Jib Hoist – Public Landing Camden, Maine

Dear Ms. Finnigan;

We have completed our geotechnical investigation for the proposed fisherman jib hoist located at the Public Landing (harbor) in Camden, Maine. Our scope of services included performing one test boring at the site and preparing this report summarizing our findings and geotechnical recommendations.

1.0 Project Description

Summit Geoengineering Services (SGS) was asked by the Town of Camden to conduct a geotechnical investigation for a proposed fisherman jib hoist located at the Public Landing (harbor) in Camden, Maine. The hoist will extend from the edge of the boardwalk at a proposed location north of the harbor master building. We understand the hoist will be rated for 1,000 lbs of lift capacity. The hoist will be support by a reinforced concrete (anchor block) foundation having dimensions of 6 feet in width, 6 feet in length, and 4 feet in depth.

The fisherman hoist is part of the Public Landing Improvements project referred to as WIN #18534.12 by the State of Maine Department of Transportation. Design information for the project has been provided by T.Y. Lyn International and Baker Design Consultants.

2.0 Exploration

Summit Geoengineering Services (SGS) observed the subsurface conditions by drilling one test boring on April 9, 2015 using a rubber track mounted Power Probe 9500 VTR. The boring was advanced to a depth of refusal encountered at 19.1 feet using hollow stem augers with SPT split spoon sampling. The boring location is shown on the Exploration Location Plan in Appendix A. Copy of the boring log and photographs of the site are provided in Appendix B.

Due to the presence of private underground utilities Dig Smart of Maine was subcontracted by SGS to locate private utilities prior to drilling the test boring. Location of identified private utilities is shown on the photographs in Appendix B.

3.0 Subsurface Conditions

The subsurface conditions consist of ***fill*** (0 to 16 feet) overlying ***marine deposits*** (16 to 19 feet) overlying ***bedrock*** further described as follows:

The upper ***fill*** beneath the bituminous pavement, from a depth of 0 to 7 feet, consists of brown sandy gravel with little silt (GP-GM) in accordance with the Unified Soil Classification System (USCS). The upper fill is loose and moist. The lower fill, from a depth of 7 to 16 feet, consists of dark brown sandy gravel with some silt and brick debris (GM) in accordance with the USCS. The lower fill is very loose and wet.

The ***marine deposit*** consists of black organic silt (OL) overlying mottled brown silty sand with some gravel (SM) in accordance with the USCS. The marine deposit is soft/very loose and wet.

Bedrock based on auger refusal was encountered at a depth of 19.1 feet. Mapping by the Maine Geological Survey (MGS) indicates the bedrock at the site is part of the Ogler Point Formation consisting of interbedded pelite/sandstone or the Megunticook Formation consisting of pelite.

Groundwater was measured at a depth of 12.7 feet in boring B-1. Depth from the edge of the boardwalk to the water surface (harbor) was 13 feet during groundwater measurement. Due to the close proximity groundwater depth will fluctuate by tidal ebb and flow. Wet soil conditions within the lower fill indicate groundwater (tidal) becomes present up to a depth of 7 feet.

4.0 Geotechnical Recommendations

We recommend the hoist foundation be designed using a net allowable bearing pressure of 3,000 psf. Settlement is estimated at less than 1 inch. This bearing pressure is based on the following:

- Existing construction debris discovered within the hoist foundation is inspected by the geotechnical engineer to determine if stabilization or removal is necessary.

- The hoist foundation is constructed on a minimum 12-inch layer of Crushed Stone overlying geotextile (Mirafi 500X or similar).

- Backfill adjacent to the hoist foundation consists of Foundation Backfill compacted to a minimum of 95 percent of its maximum dry density per ASTM D1557.

Construction of the hoist will be located within existing or former structures. Should debris such as wood, concrete, steel, brick or similar become encountered during excavation we recommend the subgrade be visually inspected by the geotechnical engineer to determine if additional stabilization and/or removal is necessary as part of preparation for the hoist foundation.

We recommend the base of the hoist foundation be constructed on a minimum of 12 inches of Crushed Stone overlying geotextile fabric such as Mirafi 500X or equivalent. Crushed Stone should be tamped to lock the stone structure together. Geotextile fabric and crushed stone will assist in providing a stable base for foundation construction overlying the existing loose fill.

We recommend the following design parameters be used for foundation design:

PARAMETER	FOUNDATION BACKFILL	EXISTING FILL	MARINE DEPOSIT
Total Natural (moist) Unit Weight (γ_t)	130 pcf [1]	120 pcf	115 pcf
Saturated (buoyant) Unit Weight (γ_s)	68 pcf [1]	58 pcf	53 pcf
Friction Coefficient (f)	0.55	0.45	0.40
Passive Earth Pressure Coefficient (K_p)	3.54	3.00	3.00
Active Earth Pressure Coefficient (K_a)	0.28	0.33	0.33
Friction Angle (f_c)	34^0 [1]	30^0	30^0
Cohesion (c)	0	0	0

[1] Based on 95% compaction of fill by ASTM D1557, Modified Proctor Density

We recommend hoist foundation be backfilled with soil meeting the following specification:

FOUNDATION BACKFILL	
Sieve Size	**Percent Passing**
3 inch	100
½ inch	35-80
¼ inch	25-65
No. 40	0-30
No. 200	0-7

Reference: MDOT Specification 703.06, Type D

The maximum particle size should be limited to 6 inches. The Foundation Backfill should be compacted to a minimum of 95 percent of its maximum dry density, determined in accordance with ASTM D1557.

Crushed Stone should meet the following gradation specification:

CRUSHED STONE ¾ INCH	
Sieve Size	**Percent finer**
1 inch	100
¾ inch	90 to 100
½ inch	20 to 55
⅜ inch	0 to 15
No. 4	0 to 5

Reference: MDOT Specification 703.13, Crushed Stone ¾-Inch (2014)

Crushed Stone should be should be tamped to lock the stone structure together.

5.0 Closure

Our recommendations are based on professional judgment and generally accepted principles of geotechnical engineering. Some changes in subsurface conditions from those presented in this report may occur. Should these conditions differ materially from those described in this report, Summit Geoengineering Services (SGS) should be notified so that we can re-evaluate our recommendations.

It is recommended that this report be made available in its entirety to contractors for informational purposes and be incorporated in the construction Contract Documents. We recommend that Summit Geoengineering Services (SGS) be retained to review final construction documents relevant to the recommendations in this report.

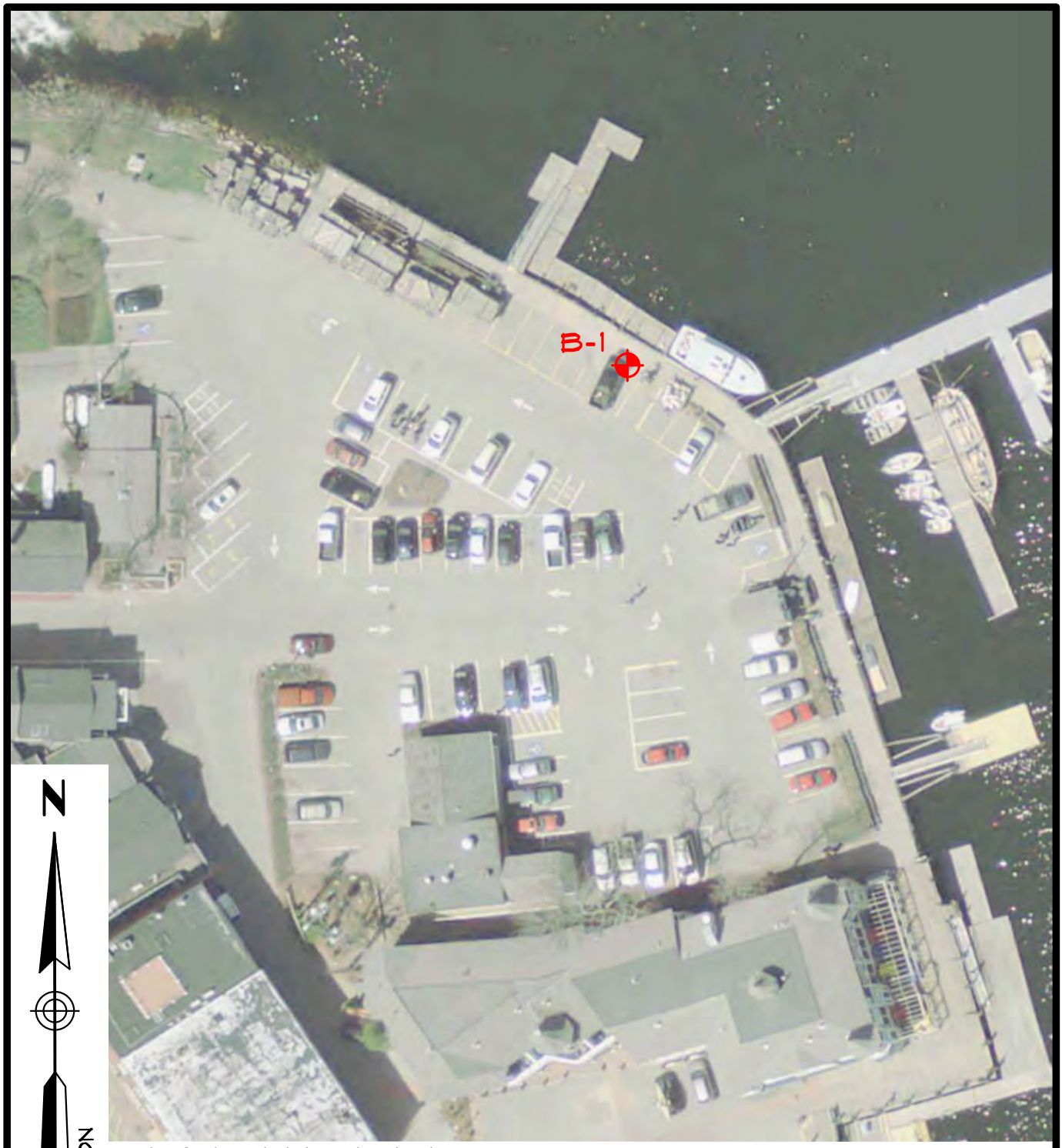
We appreciate the opportunity to serve you during this phase of your project. If there are any questions or additional information is required, please do not hesitate to call.

Sincerely yours,
Summit Geoengineering Services

Craig W. Coolidge, P.E.
Vice President
Principal Engineer

APPENDIX A

SITE LOCATION PLAN
EXPLORATION LOCATION PLAN



PLAN REFERENCE

AERIAL IMAGE (2013) OBTAINED FROM MAINE OFFICE OF G.I.S.

LEGEND

B-1 — SUMMIT TEST BORING (APRIL 9, 2015)

SITE LOCATION PLAN
PROPOSED MARINE HOIST

TOWN LANDING - CAMDEN, MAINE

PREPARED FOR

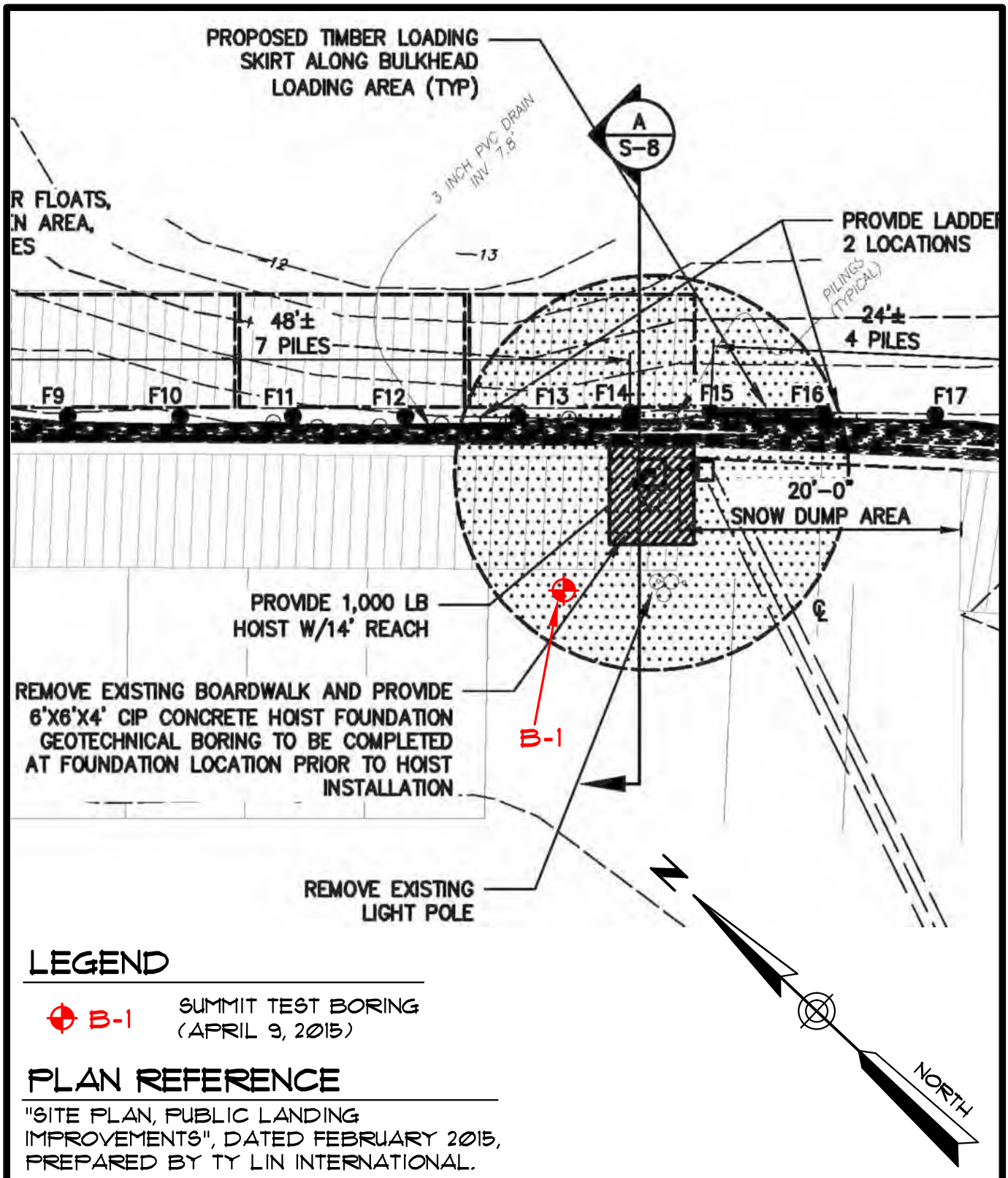
TOWN OF CAMDEN

DATE: 4-13-2015	DRAWN BY: KRF	CHECKED BY: CWC
JOB: 15038	SCALE: 1" = 50'	FILE: 15038 MAPS

145 LISBON ST. - SUITE 601
LEWISTON, ME 04240
Tel.: (207) 576-3313

173 PLEASANT STREET
ROCKLAND, ME 04841
Tel.: (207) 318-7761

SUMMIT
GEOENGINEERING SERVICES
www.summitgeoeng.com



LEGEND

B-1 — SUMMIT TEST BORING (APRIL 9, 2015)

PLAN REFERENCE

"SITE PLAN, PUBLIC LANDING IMPROVEMENTS", DATED FEBRUARY 2015, PREPARED BY TY LIN INTERNATIONAL.

TEST BORING LOCATION PLAN
PROPOSED MARINE HOIST

TOWN LANDING - CAMDEN, MAINE
PREPARED FOR
TOWN OF CAMDEN

DATE: 4-13-2015	DRAWN BY: KRF	CHECKED BY: CWC
JOB: 15038	SCALE: 1" = 10'	FILE: 15038 MAPS

145 LISBON ST. - SUITE 601
LEWISTON, ME 04240
Tel.: (207) 576-3313

173 PLEASANT STREET
ROCKLAND, ME 04841
Tel.: (207) 318-7761

SUMMIT
GEOENGINEERING SERVICES
www.summitgeoeng.com

APPENDIX B

BORING LOG
PHOTOGRAPHS

EXPLORATION COVER SHEET

The exploration logs are prepared by the geotechnical engineer from both field and laboratory data. Soil descriptions are based upon the Unified Soil Classification System (USCS) per ASTM D2487 and/or ASTM D2488 as applicable. Supplemental descriptive terms for estimated particle percentage, color, density, moisture condition, and bedrock may also be included to further describe conditions.

Drilling and Sampling Symbols:

SS = Split Spoon Sample
UT = Thin Wall Shelby Tube
SSA = Solid Stem Auger
HSA = Hollow Stem Auger
RW = Rotary Wash
SV = Shear Vane
PP = Pocket Penetrometer
RC = Rock Core Sample
Hyd = Hydraulic Advancement of Drilling Rods
Push = Direct Push of Drilling Rods
WOH = Weight of Hammer
WOR = Weight of Rod
PI = Plasticity Index
LL = Liquid Limit
W = Natural Water Content
USCS = Unified Soil Classification System

Water Level Measurements:

Water levels indicated on the boring logs are the levels measured in the boring at the times indicated. In pervious soils, the indicated elevations are considered reliable groundwater levels. In impervious soils, the accurate determination of groundwater elevations may not be possible, even after several days of observations. Groundwater monitoring wells may be required to record accurate depths and fluctuation.

Gradation Description and Terminology:

Boulders:	Over 12 inches	Trace:	Less than 5%
Cobbles:	12 inches to 3 inches	Little:	5% to 15%
Gravel:	3 inches to No.4 sieve	Some:	15% to 30%
Sand:	No.4 to No. 200 sieve	Silty, Sandy, etc.:	Greater than 30%
Silt:	No. 200 sieve to 0.005 mm		
Clay:	less than 0.005 mm		

Density of Granular Soils and Consistency of Cohesive Soils:

CONSISTENCY OF COHESIVE SOILS		DENSITY OF GRANULAR SOILS	
SPT N-value blows/ft	**Consistency**	**SPT N-value blows/ft**	**Relative Density**
0 to 2	Very Soft	0 to 4	Very Loose
2 to 4	Soft	5 to 10	Loose
5 to 8	Firm	11 to 30	Compact
9 to 15	Stiff	31 to 50	Dense
16 to 30	Very Stiff	>50	Very Dense
>30	Hard		

SUMMIT
GEOENGINEERING SERVICES

SOIL BORING LOG

Boring #: **B-1**

Project:	Fisherman Hoist	Project #:	15038
Location:	2 Public Landing	Sheet:	1 of 1
City, State:	Camden, Maine	Chkd by:	CWC

Drilling Co:	Summit Geoengineering Services	Boring Elevation:	8 feet +/-
Driller:	Craig Coolidge, P.E.	Reference:	Site Plan Topography by Baker Design Consultants
Summit Staff:	Kevin Farrar, P.L.S.	Date started: 4/9/2015	Date Completed: 4/9/2015

DRILLING METHOD		SAMPLER	
Vehicle:	AMS	Length:	24" SS
Model:	9500 VTR	Diameter:	2"OD/1.5"ID
Method:	2.25" HSA	Hammer:	140 lb
Hammer Style:	Auto Drop	Method:	ASTM D1586

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
4/9/2015	12.7 ft	-5 ft	Measurement in augers (boring)
			Tide at 13 ft below ground surface

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	N_{60}	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
						Bituminous Pavement (2 inches thick)		PAVEMENT
1	S-1	24/12	0.5 - 2.5	4		Brown Sandy GRAVEL, little Silt, loose, moist, GP-GM		0.2'
				3				FILL
2				4				
				4				
3	S-2	24/8	2.5 - 4.5	3		Brown Sandy GRAVEL, little Silt, loose, moist, GP-GM		
				2				
4				3				
				3				
5								
	S-3	24/6	5 - 7	2		Brown Sandy GRAVEL, little Silt, loose, moist, GP-GM		
6				3				
				3				
7				3				
	S-4	24/3	7 - 9	1		Dark brown Sandy GRAVEL, some Silt, brick debris,		7'
8				2		very loose, wet, GM		
				1				
9				2				
10								
	S-5	24/3	10 - 12	1		Dark brown Sandy GRAVEL, some Silt, brick debris,		
11				3		very loose, wet, GM		
				1				
12				1				
	S-6	24/3	12 - 14	2		Dark brown Sandy GRAVEL, some Silt, brick debris,		
13				2		very loose, wet, GM	Water at 12.7' (10:30 am)	Tide Level at 13' BGS (10:30 am)
				2				
14				2				
15								
	S-7	24/3	15 - 17	2		Dark brown Sandy GRAVEL, some Silt, brick debris,		
16				3		loose, wet, GM		
				2		Black organic SILT, some Sand, soft, wet, OL		16'
17				2				MARINE DEPOSITS
	S-8	24/10	17 - 19	2		Mottled brown Silty SAND, some Gravel,		
18				2		very loose, wet, SM		
				2				
19				2				
						End of Exploration at 19.1', Auger Refusal		19.1'
20								BEDROCK
21								
22								

Granular Soils		Cohesive Soils		% Composition
Blows/ft.	Density	Blows/ft.	Consistency	ASTM D2487
0-4	V. Loose	<2	V. soft	
5-10	Loose	2-4	Soft	< 5% Trace
11-30	Compact	5-8	Firm	5-15% Little
31-50	Dense	9-15	Stiff	15-30% Some
>50	V. Dense	16-30	V. Stiff	> 30% With
		>30	Hard	

NOTES: PP = Pocket Penetrometer, MC = Moisture Content
LL = Liquid Limit, PI = Plastic Index

Bedrock Joints
Shallow = 0 to 35 degrees
Dipping = 35 to 55 degrees
Steep = 55 to 90 degrees

Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches
Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200

Soil Moisture Condition
Dry: S = 0%
Humid: S = 1 to 25%
Damp: S = 26 to 50%
Moist: S = 51 to 75%
Wet: S = 76 to 99%
Saturated: S = 100%

SUMMIT
GEOENGINEERING SERVICES

PHOTOGRAPHIC LOG

Client Name:	**Project No.**
Town of Camden	15038

Photo No. 1

Date: 4-9-2015

Site Location:

2 Public Landing
Camden, Maine

Description:

Photograph of site and boring B-1.

Photo No. 2

Date: 4-9-2015

Site Location:

2 Public Landing
Camden, Maine

Description:

Photograph of SPT split spoon sample from boring B-1.

SUMMIT
GEOENGINEERING SERVICES

PHOTOGRAPHIC LOG

Client Name:	**Project No.**
Town of Camden	15038

Photo No. 3

Date: 4-8-2015

Site Location:

2 Public Landing
Camden, Maine

Description:

Photograph of site showing private utility locator marking for "private" underground power and cable/fiber. Red indicates power, orange is cable/fiber.

Photo No. 4

Date: 4-8-2015

Site Location:

2 Public Landing
Camden, Maine

Description:

Photograph of site showing utility locations for underground power and cable/fiber. Red indicates power. Orange is cable/fiber. Green is boring location.

TOWN OF
CAMDEN, MAINE

PLAN LEGEND

Town, County, State		Centerline-Existing	
Property Lines		Centerline-Proposed	10+00
R/W Lines-Existing		Travelway-Existing	
R/W Lines-Proposed		Travelway-Proposed	
Culvert-Existing		Railroad	
Culvert Proposed		Catch Basins	Existing ■ Proposed
Curbing	Existing Proposed	Manholes	Existing ● Proposed
Type 1		Proposed Underdrain	
Type 3		Proposed Ditch	
Type 5		Existing Ditch	
Outline of Bodies of Water		Utlity Poles	Existing ♦ Proposed
Ledge		Fire Hydrants	Existing ◆ Proposed
Buildings		Existing Water Line	
Trees	Conifer Deciduous	Existing San. Sewer	
Tree Line		Existing San. Sewer Manhole	
Clearing Limit Line	CLL CLL	Guardrail-Existing	
		Guardrail-Proposed	
		Guardrail-Cable, Other	

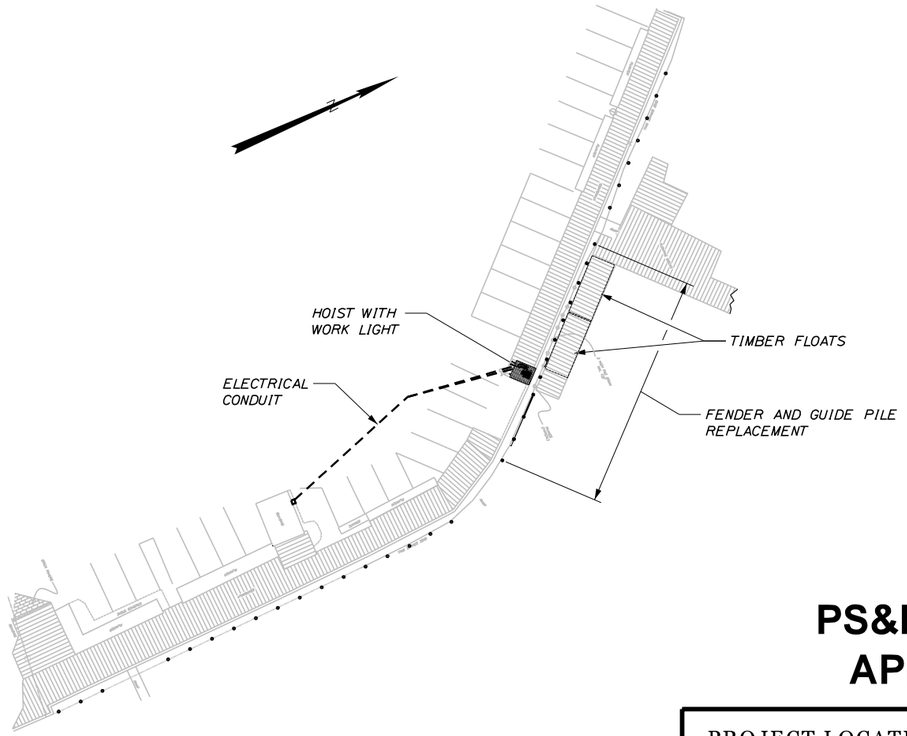
CAMDEN

KNOX COUNTY

PUBLIC LANDING IMPROVEMENTS

WIN 018534.12

INDEX OF SHEETS



LAYOUT SCALE

25 0 25 50

Scale in Feet

PS&E SUBMITTAL
APRIL 21, 2015

T·Y LIN INTERNATIONAL

PROJECT LOCATION:	INTERSECTION OF MAIN STREET (U.S. ROUTE ONE) AND COMMERCIAL STREET
OUTLINE OF WORK:	TIMBER FENDER AND GUIDE PILE INSTALLATIONS; TIMBER FRAMING, FACE SHEATHING, AND LADDER INSTALLATIONS; TIMBER FLOAT CONSTRUCTION AND INSTALLATION; REINFORCED CONCRETE FOUNDATION CONSTRUCTION FOR 1,000 LB HOIST (SUPPLIED AND INSTALLED BY OTHERS); AND ELECTRICAL IMPROVEMENTS

TOWN OF CAMDEN

APPROVED DATE

STATE OF MAINE KATHERINE E. KERN No. 6413 PROFESSIONAL ENGINEER

SIGNATURE 6413 P.E. NUMBER 04-21-2015 DATE

PROJECT INFORMATION

PROGRAM	
PROJECT MANAGER	PAT FINNIGAN
DESIGNER	KATHERINE KERN
CONSULTANT	T.Y. LIN INTERNATIONAL
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

CAMDEN PUBLIC LANDING IMPROVEMENTS

TITLE SHEET

WIN 018534.12

SHEET NUMBER

T-1

Filename: ...\00\HIGHWAY\MSTA\Title.dgn Division: HIGHWAY Username: Date:4/21/2015

GENERAL NOTES

1. THE CONTRACTOR SHALL BE GOVERNED BY THE CONSTRUCTION SAFETY RULES AS ADOPTED BY THE STATE BOARD OF CONSTRUCTION SAFETY, AUGUSTA, MAINE AND THE SAFETY AND HEALTH REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA) AS PROMULGATED BY THE US DEPARTMENT OF LABOR.
2. THE CONTRACTOR SHALL INCLUDE IN HIS BID, COSTS FOR COMPLIANCE WITH FEDERAL, STATE AND LOCAL REGULATORY REQUIREMENTS.
3. UNLESS OTHERWISE NOTED, THE CONTRACTOR SHALL MAKE ALL IMPROVEMENTS IN ACCORDANCE WITH THE STATE OF MAINE DEPARTMENT OF TRANSPORATION STANDARD SPECIFICATION; NOVEMBER 2014 EDITION.
4. THE CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF ALL CONSTRUCTION DEBRIS AT AN APPROVED FACILITY IN ACCORDANCE WITH ALL APPLICABLE LOCAL STATE AND FEDERAL REGULATORY REQUIREMENTS.

CONSTRUCTION SEQUENCE & COORDINATION

1. SCHEDULE FOR ALL ACTIVITIES SHALL BE COORDINATED WITH THE TOWN OF CAMDEN AND THE HARBORMASTER SO AS TO MINIMIZE DISRUPTION TO WORKING WATERFRONT ACTIVITIES.
2. INSTALLATION OF HOIST FOUNDATION SHALL BE COMPLETED DURING THE FIRST MOBILIZATION TO ALLOW FOR INSTALLATION OF THE HOIST BY OTHERS. DATE OF COMPLETION SHALL BE AS INDICATED IN THE PROJECT SPECIFICATIONS.
3. PILE AND FLOAT REPLACEMENT SHALL DURING THE SECOND MOBILIZATION. DATES FOR MOBILIZATION AND COMPLETION SHALL BE AS INDICATED IN THE PROJECT SPECIFICATIONS.

EROSION CONTROL NOTES

1. APPLICATION OF TEMPORARY AND PERMANENT EROSION CONTROL MEASURES FOR THE PROJECT SHALL BE IN ACCORDANCE WITH PROCEDURES AND SPECIFICATIONS OF THE CURRENT MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION; BEST MANAGEMENT PRACTICES.
2. ALL WORK SHALL BE EXECUTED FROM SHORE OR BARGE. NO TRACKED OR WHEELED EQUIPMENT SHALL BE OPERATED OR PLACED BELOW THE TIDE LEVEL.
3. TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED UPON COMPLETION OF GRADING OPERATIONS AND ESTABLISHMENT OF ACCEPTABLE GROUND COVER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL MEASURES DURING CONSTRUCTION.

DEMOLITION NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL DEMOLITION MATERIALS FROM THE SITE THAT ARE NOT SELECTED FOR RETAINAGE BY THE OWNER.
2. EXISTING TIMBER AND PILE MEMBERS RETAINED BY THE OWNER SHALL BE SET ASIDE IN A PROTECTED AREA FOR REUSE OR REMOVAL FROM THE SITE BY THE OWNER.
3. THE CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF DEMOLITION MATERIALS AT AN APPROVED FACILITY IN ACCORDANCE WITH ALL APPLICABLE REGULATORY REQUIREMENTS.

SURVEY NOTES

1. BASE SURVEY IS FROM A PLAN ENTITLED "TOPOGRAPHIC SURVEY OF THE TOWN OF CAMDEN PUBLIC LANDING, COMMERCIAL STREET, TOWN OF CAMDEN, KNOX COUNTY, MAINE" PREPARED BY GOOD DEEDS, INC. LAND SURVEYING FOR T.Y. LIN INTERNATIONAL, DATED JUNE 24, 2014 AND REVISED THROUGH JULY 9, 2014.
2. BOUNDARY INFORMATION SHOWN HAS BEEN REPRODUCED FROM A PLAN ENTITLED "BOUNDARY SURVEY, TOWN OF CAMDEN PUBLIC LANDING" PREPARED BY GARTLEY & DORSKY ENGINEERING & SURVEYING FOR THE TOWN OF CAMDEN, DATED AUGUST 20, 2010.
3. ALL ELEVATIONS ARE TO NAVD88 UNLESS OTHERWISE NOTED.
4. LIMIT OF FEDERAL NAVIGATION CHANNEL DIGITIZED FROM "TOWN OF CAMDEN ZONING MAP B" PREPARED BY GARTLEY & DORSKY ENGINEERING & SURVEYING FOR THE TOWN OF CAMDEN, DATED AUGUST 12, 2008. LOCATION IS APPROXIMATE.
5. BASE FLOOD/TIDAL INFORMATION TAKEN FROM MEDEP, FEMA AND NOAA PUBLISHED DATA FOR ROCKLAND.

PROJECT ELEVATIONS (BY DATUM)

ELEVATION	CHART (ft)	NGVD29 (ft)	NAVD88 (ft)	Notes
Base Flood Elevation	16.1	11.0	10.3	FEMA Zone "AE" (Effective 1988 FIS/FIRM)
500 Year Stillwater	16.1	11.0	10.3	
100 Year Stillwater	15.4	10.3	9.6	
50 Year Stillwater	15.1	10.0	9.3	
10 Year Stillwater	14.3	9.2	8.5	
Highest Annual Tide	12.7	7.7	7.0	2015 MDEP Predictions
MHHW	10.6	5.5	4.8	BASED ON TIDAL BM "ROCKLAND"
MHW	10.2	5.1	4.4	
NAVD88	5.7	0.7	0.0	
NGVD29	5.1	0.0	-0.7	
MLW	0.4	-4.7	-5.4	
MLLW	0.0	-5.1	-5.7	

1. BASE FLOOD INFORMATION TAKEN FROM FEMA FLOOD INSURANCE RATE MAP
2. HIGHEST ANNUAL TIDE TAKEN FROM MAINE DEP PUBLISHED PREDICTIONS
3. TIDAL INFORMATION TAKEN FROM NOAA PUBLISHED DATA

DESIGN CRITERIA

1. FISHERMAN'S HOIST (SEPARATE CONTRACT)
   - MAXIMUM LIFT - 1,000 LB
   - MAXIMUM SWING - 14 FT
   - RANGE OF MOTION - AS INDICATED ON DRAWINGS
2. ALL VESSELS TO PROVIDE FENDERING AND SHALL DOCK IN SETTLED WEATHER.
3. ALL COMPONENTS TO BE SUPPORTED DURING HANDLING TO PREVENT DAMAGE. ANY DAMAGE (INCLUDING BUT NOT LIMITED TO FRACTURED, BENT OR CRACKED SECTIONS, THAT IMPACT THE STRUCTURAL, FUNCTIONAL OR VISUAL INTEGRITY WILL BE REJECTED AT THE SITE.
4. FLOATS (SEE SPECIFICATION SECTION 05131)
   - DL FREEBOARD - 18" +/-2"
   - LIVE LOAD CAPACITY (FLOAT DRUMS FULLY SUBMERGED) - 20 PSF
   - A CONCENTRATED LIVE LOAD OF 400 LBS APPLIED AT ANY POINT SHALL NOT TILT THE DECK MORE THAN SIX DEGREES TO THE HORIZONTAL.

STRUCTURAL NOTES

TIMBER PILES

1. TIMBER PILES SHALL HAVE A MINIMUM PILE BUTT DIAMETER OF 12-INCHES AT 3-FEET FROM THE BUTT AND MEET ASTM D2899 DESIGN VALUES FOR ROUND TIMBER PILES, WITH MINIMUM TIP CIRCUMFERENCE AND DESIGN LOAD CAPACITY AS INDICATED BELOW:

LOCATION	TIP	P (KIPS)	MATERIAL
GUIDE PILES	22"	5	GREENHEART
FENDER PILES WORKING AREA	22"	5	GREENHEART
FENDER PILES OTHER	22"	5	OAK

2. VERTICAL TIMBER PILES SHALL CONFORM TO ASTM D25. PROVIDE PROTECTION TO PILE TIP AND BUTT TO AVOID DAMAGE DURING DRIVING.
3. EXPOSED FASTENERS TO PILES SHALL BE COUNTERSUNK A MINIMUM OF 1-1/2 INCHES.
4. ALL FENDER PILES SHALL BE BANDED WITH ¾" STAINLESS STEEL UTILITY STRAPPING BY BAND-IT IDEX INC. (800-525-0758), "GIANT BAND" PRODUCT #G44099 OR EQUAL, AND FITTED WITH BLACK UV RESISTANT, LOW DENSITY, CONICAL, POLYETHYLENE CAPS BY FOLLANSBEE (800-223-3444) OR EQUAL. SELECT SIZE TO MATCH PILE DIAMETER AND FASTEN WITH STAINLESS STEEL SCREWS. STAINLESS STRAPS SHALL BE INSTALLED APPROXIMATELY 6" BELOW THE CUTOFF ELEVATION PRIOR TO MAKING THE FINAL CUT.
5. REFER TO SPECIFICATIONS FOR PILE DRIVING CRITERIA. THE CONTRACTOR IS CAUTIONED OF ANTICIPATED RAPID INCREASE IN DRIVING RESISTANCE DUE TO ABRUPT CHANGES IN SOIL STRATA. CARE SHOULD BE TAKEN TO AVOID DAMAGE TO THE PILE.
6. THE CONTRACTOR SHALL ORDER PILES OF SUFFICIENT LENGTH TO ALLOW FOR 5 FT VARIATION IN THE TABULATED LENGTH PROVIDED. REFER TO PILE SCHEDULE ON SHEET S-1 AND DETAILS ON SHEET S-4.

TIMBER STRUCTURAL MEMBERS

1. REFER TO TIMBER SCHEDULE.
2. ALL EXPOSED EDGES SHALL BE PLANED OR SANDED TO PROVIDE SMOOTH SURFACE FREE OF ROUGH EDGES OR DEFECTS.
3. ALL EXPOSED FASTENERS SHALL BE COUNTERSUNK.

CAST-IN-PLACE CONCRETE

1. MIX DESIGN:
   a. MDOT CLASS A, f_c = 4,000 PSI
2. DCI ADMIXTURE; 3-GAL/CY
3. MINIMUM COVER TO REINFORCEMENT = 3"
4. REINFORCING STEEL:
   a. ASTM A615 GRADE 60; f_s = 60,000 PSI, EPOXY COATED

MISCELLANEOUS METALS AND FASTENERS

1. ALL METAL ITEMS TO BE A36 STEEL, HOT-DIP GALVANIZED AFTER FABRICATION UNLESS OTHERWISE NOTED.
2. ALL FASTENERS SHALL BE HOT DIPPED GALVANIZED OR STAINLESS STEEL.
3. ALL BOLTS SHALL CONFORM TO ASTM A-307. MINIMUM SIZE SHALL BE ¾" DIA. UNLESS OTHERWISE NOTED. ALL BOLTS TO BE HEAVY HEX UNLESS OTHERWISE NOTED.
4. AT ALL TIMBER CONNECTIONS, WASHERS SHALL BE PROVIDED AT FASTENER BEARING AS NOTED BELOW:
   a. FENDER PILE CONNECTIONS - OGEE WASHERS
   b. OTHER BOLTED CONNECTIONS - NY DOCK WASHERS

TIMBER SCHEDULE

Timber Size	Location	Species	% Moisure at Treatment	Treatment Type	Treatment pcf	Grading to SPIB	Surface Finishing	Minimum Length (if not shown on drawings)
6 x 10	Walers	SYP	25%	CCA	2.5	No. 2	S2E	16'-0"
6 x 10	Chocks	SYP	25%	CCA	2.5	No. 2	S2E	Full width between piles
10 X 10	Curbs	SYP	19%	ACQ	0.6	No. 1	S4S	10'-0"
4 x 12	Pier Face Sheathing	SYP	25%	CCA	2.5	No. 2	S4S	10'-0"
4 x 10	Ladder Rails	SYP	19%	ACQ	0.6	No. 1	S4S	Full length

Chromated Copper Arsenate (CCA)
Alkaline Copper Quaternary (ACQ) OR APPROVED EQUAL
Quantities shall include sufficient material to include blocking and splices (where authorized).
R = Rough Sawn, S2E = Finished Top and Bottom, S2S = Finished Each Side, S4S = Finished All Sides.

FASTENER SCHEDULE

Location	Diameter in	No./ Connection	Finish	Length in
Timber Bolted Connections (Heavy Hex unless otherwise noted)				
Fender Pile Top Connection	1"	1	Hot Dip Galv.	Length to Suit Construction
Guide Pile Top Connection	1"	3	Hot Dip Galv.	
Guide Pile Standoff Brackets	1"	4	Hot Dip Galv.	
Pile Chocks	1"	2 (min), 1per 4'	Hot Dip Galv.	
Pile Walers	1"	2 (min), 1per 4'	Hot Dip Galv.	
Sheathing Framing	1"	2 per plank at each waler connection	Hot Dip Galvanized "Weather Tuff" Timber Bolts Sea Port Marine (800) 446-8056, or Equal	

PILE SCHEDULE
Elevations based on NAVD88 Datum

Location	Pile	Pile Type	Bid Item	Approx. Cutoff Elev.	Approx. Ground Elev.	Minimum Pile Embedment	Pile Tip Elevation	Est. Pile Length	Pile Order Length	Quantity	Total Pile Length
Greeenheart Piles - Base Bid											
Guide Piles	P1-P7	Greenheart	501.203	12.5	-7.0	6.0	-13.0	26	30	7	210
Fender Piles	P8-P12	Greenheart	501.204	8.3	-8.0	6.0	-14.0	22	25	5	125
										Approximate Total Pile Length	335
										No. of Piles	12
										Avg Pile Length FT	27.9
Oak Piles - Alternate Bid Item - UNIT PRICE ITEM											
Bulkhead Fender Piles	All Other	OAK	501.19	12.5	-8.0	6.0	-14.0	27	30	--	30

FLOAT SCHEDULE

Unit		New Float No.	Width FT	Length FT	Float Area SF	Connection Requirements: Pile Guide	End	Side	Cleats (See Specification Below)
EF	1	---	---	---	---	---	---	1	
EF	1	1	8	20	160	2	2	---	2 Type A on outer face
PF	2	1	8	20	160	2	2	---	2 Type A on outer face
Total New		2			320	4	4	1	

Cleat Size/specification (Hot Dip Galvanized; Seaport Marine (800) 436-4400 or approved equal)
Type A = 12 in SPC 190 Ship

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NO.	DATE	INT.
B	4-16-15	DJB
A	3-30-15	DJB
	DRAFT PS&E SUBMISSION	
	FINAL PS&E	

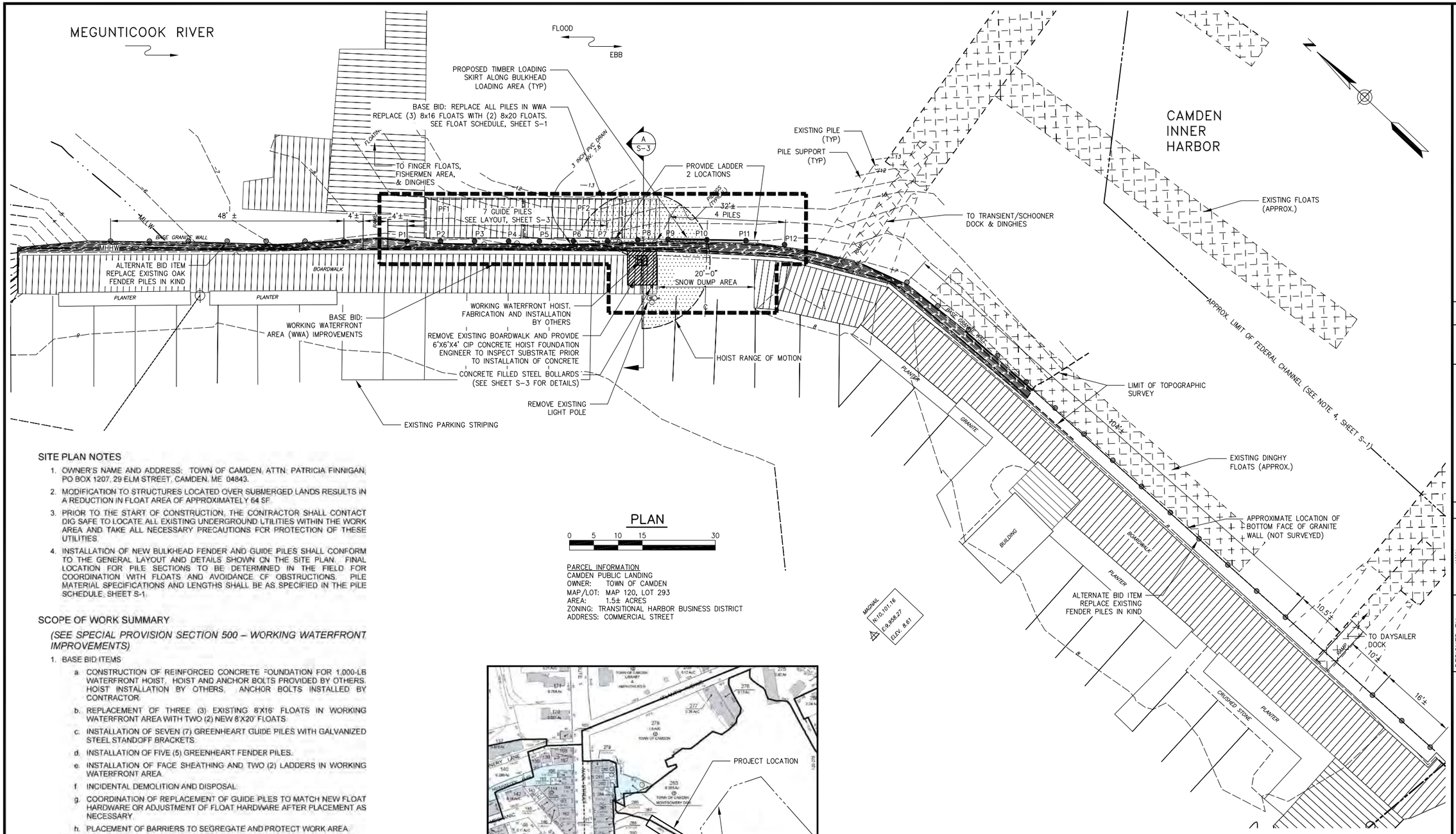
STATE OF MAINE
BARNEY J. BAKER No. 5737
LICENSED PROFESSIONAL ENGINEER

DESIGNED BY: DJB
DRAWN BY: JJC
CHECKED BY: BJB
SCALE: AS SHOWN

SHEET TITLE: STRUCTURAL NOTES & SCHEDULES

PROJECT: PUBLIC LANDING IMPROVEMENTS
TOWN OF CAMDEN
CAMDEN, MAINE

DATE MAR 2015
CONTRACT NO. 14-15
SHEET NO. S-1
REV. B



SITE PLAN NOTES

1. OWNER'S NAME AND ADDRESS: TOWN OF CAMDEN, ATTN: PATRICIA FINNIGAN, PO BOX 1207, 29 ELM STREET, CAMDEN, ME 04843.
2. MODIFICATION TO STRUCTURES LOCATED OVER SUBMERGED LANDS RESULTS IN A REDUCTION IN FLOAT AREA OF APPROXIMATELY 64 SF.
3. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL CONTACT DIG SAFE TO LOCATE ALL EXISTING UNDERGROUND UTILITIES WITHIN THE WORK AREA AND TAKE ALL NECESSARY PRECAUTIONS FOR PROTECTION OF THESE UTILITIES.
4. INSTALLATION OF NEW BULKHEAD FENDER AND GUIDE PILES SHALL CONFORM TO THE GENERAL LAYOUT AND DETAILS SHOWN ON THE SITE PLAN. FINAL LOCATION FOR PILE SECTIONS TO BE DETERMINED IN THE FIELD FOR COORDINATION WITH FLOATS AND AVOIDANCE OF OBSTRUCTIONS. PILE MATERIAL SPECIFICATIONS AND LENGTHS SHALL BE AS SPECIFIED IN THE PILE SCHEDULE, SHEET S-1.

SCOPE OF WORK SUMMARY

(SEE SPECIAL PROVISION SECTION 500 – WORKING WATERFRONT IMPROVEMENTS)

1. BASE BID ITEMS
   a. CONSTRUCTION OF REINFORCED CONCRETE FOUNDATION FOR 1,000-LB WATERFRONT HOIST. HOIST AND ANCHOR BOLTS PROVIDED BY OTHERS. HOIST INSTALLATION BY OTHERS. ANCHOR BOLTS INSTALLED BY CONTRACTOR.
   b. REPLACEMENT OF THREE (3) EXISTING 8'X16' FLOATS IN WORKING WATERFRONT AREA WITH TWO (2) NEW 8'X20' FLOATS.
   c. INSTALLATION OF SEVEN (7) GREENHEART GUIDE PILES WITH GALVANIZED STEEL STANDOFF BRACKETS.
   d. INSTALLATION OF FIVE (5) GREENHEART FENDER PILES.
   e. INSTALLATION OF FACE SHEATHING AND TWO (2) LADDERS IN WORKING WATERFRONT AREA.
   f. INCIDENTAL DEMOLITION AND DISPOSAL.
   g. COORDINATION OF REPLACEMENT OF GUIDE PILES TO MATCH NEW FLOAT HARDWARE OR ADJUSTMENT OF FLOAT HARDWARE AFTER PLACEMENT AS NECESSARY.
   h. PLACEMENT OF BARRIERS TO SEGREGATE AND PROTECT WORK AREA.
2. ALTERNATE BID ITEMS
   a. REPLACEMENT OF EXISTING OAK FENDER PILES OUTSIDE OF THE WORKING WATERFRONT AREA IN-KIND WITH NEW OAK SECTIONS AS DIRECTED BY THE OWNER. REPLACEMENT OF UP TO TWENTY FIVE (25) OAK PILES IS WILL BE PAID AT THE UNIT BID PRICE. TOTAL QUANTITY OF OAK PILES TO BE REPLACED WILL BE DETERMINED AT CONTRACT AWARD.
   b. SUBSTITUTE COMPOSITE PILE SECTIONS IN PLACE OF GREENHEART PILES IN THE WORKING WATERFRONT AREA.
3. WORK BY OTHERS
   a. FABRICATION, SUPPLY (INCLUDING ALL ASSOCIATED RIGGING, WINCHING, ELECTRICAL AND HYDRAULIC COMPONENTS), INSTALLATION (INCLUDING ELECTRICAL CONNECTION), TRIAL OPERATIONAL, AND FIELD ADJUSTMENT FOR NEW WORKING WATERFRONT HOIST ARE PART OF A SEPARATE CONTRACT AND SHALL BE PROVIDED BY OTHERS.

PLAN

0 5 10 15 30

PARCEL INFORMATION
CAMDEN PUBLIC LANDING
OWNER: TOWN OF CAMDEN
MAP/LOT: MAP 120, LOT 293
AREA: 1.5± ACRES
ZONING: TRANSITIONAL HARBOR BUSINESS DISTRICT
ADDRESS: COMMERCIAL STREET

MAGNAIL
N:10,101.16
E:9,958.27
ELEV. 8.61

TAX MAP 120

LEGEND:
- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- ● P17 BASE BID FENDER / GUIDE PILES
- ⊘ ALTERNATE BID FENDER PILES
  APPROXIMATE SPACING/LOCATION SHOWN FOR REFERENCE ONLY, PILE REPLACEMENT IS IN-KIND AS DIRECTED BY THE OWNER

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NO.	DATE	INT.
A	REVISED SITE PLAN APPLICATION SUBMISSION	2-27-15	DJB
B	DRAFT PS&E	3-30-15	DJB
C	FINAL PS&E	4-16-15	DJB

STATE OF MAINE
BARNEY J. BAKER
No. 5737
LICENSED PROFESSIONAL ENGINEER

DESIGNED BY:	DJB	CHECKED BY:	BJB
DRAWN BY:	JJC	SCALE:	AS SHOWN

SHEET TITLE: SITE PLAN

PROJECT: TOWN OF CAMDEN
PUBLIC LANDING IMPROVEMENTS
CAMDEN, MAINE

DATE
FEB 2015

CONTRACT NO.
14–15

SHEET NO. S-2 | REV. C

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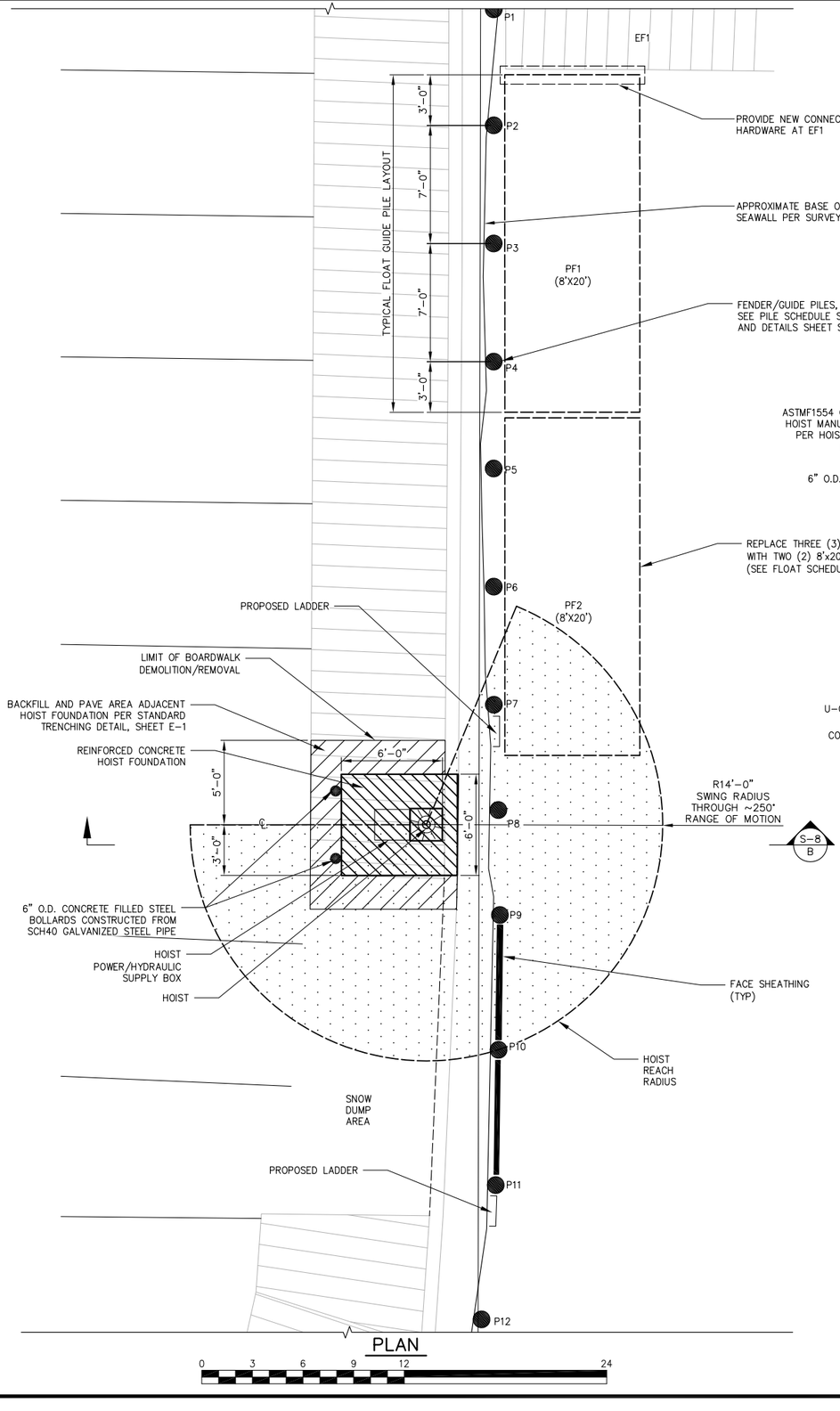

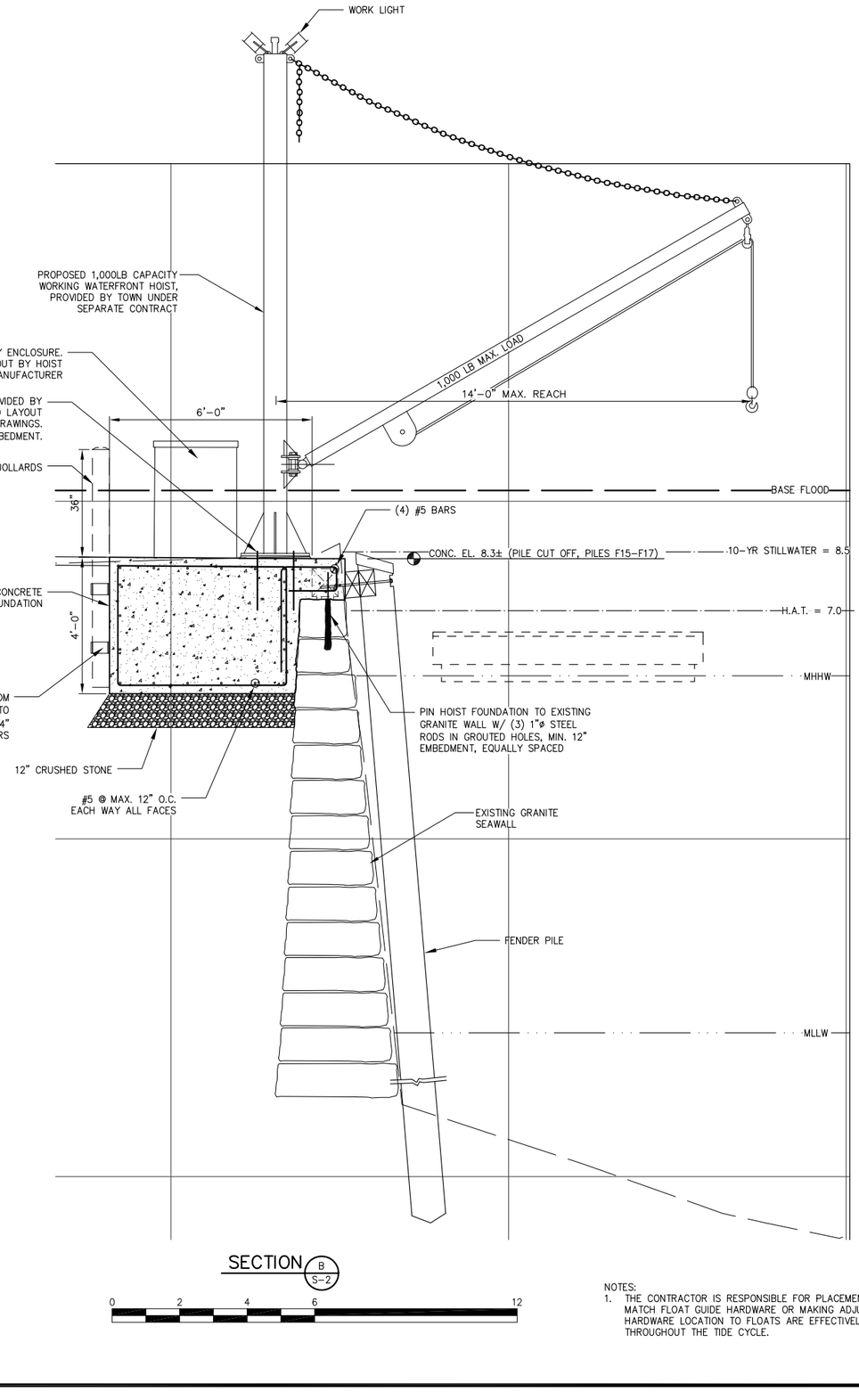

NOTES:
1. THE CONTRACTOR IS RESPONSIBLE FOR PLACEMENT OF GUIDE PILES TO MATCH FLOAT GUIDE HARDWARE OR MAKING ADJUSTMENTS TO FLOAT HARDWARE LOCATION TO FLOATS ARE EFFECTIVELY RESTRAINED THROUGHOUT THE TIDE CYCLE.

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NO.	DATE	INT.
A	4-16-15	DJB
B	3-30-15	DJB
	FINAL PS&E	
	DRAFT PS&E SUBMISSION	

STATE OF MAINE
BARNEY J. BAKER No. 5737
LICENSED PROFESSIONAL ENGINEER

DESIGNED BY: DJB
DRAWN BY: JJC
CHECKED BY: BJB
SCALE: AS SHOWN

SHEET TITLE: HOIST AREA PLAN & ELEVATION

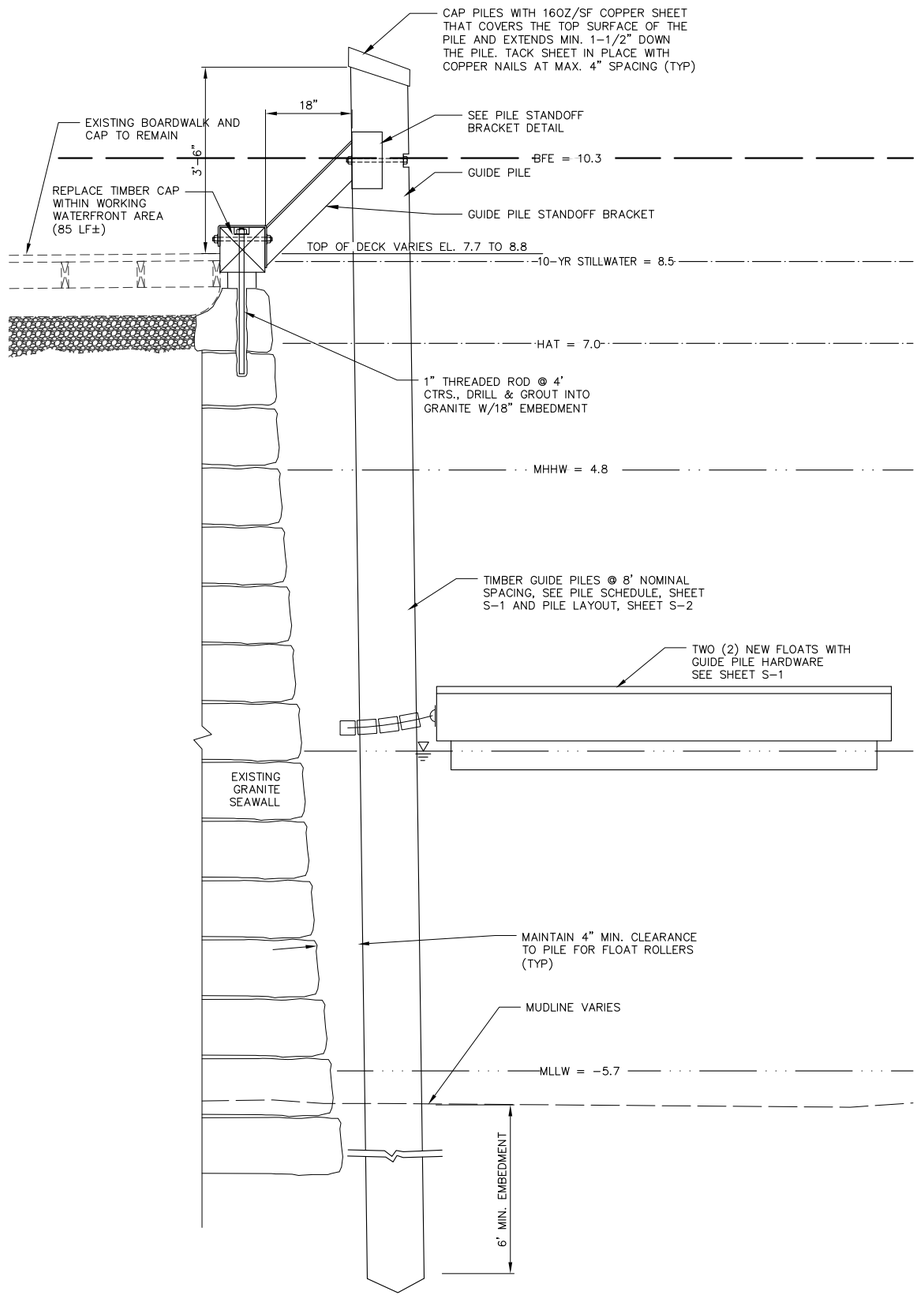
PROJECT: PUBLIC LANDING IMPROVEMENTS
TOWN OF CAMDEN
CAMDEN, MAINE

DATE: MAR 2015

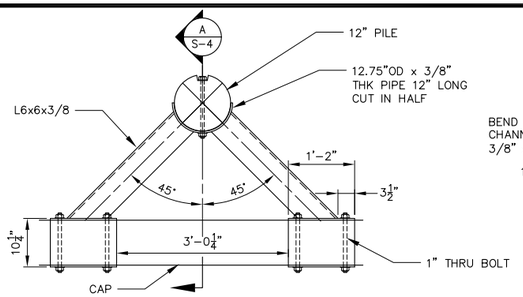
CONTRACT NO. 14-15

SHEET NO. S-3

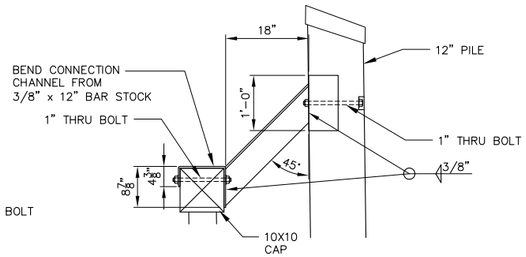
REV. B



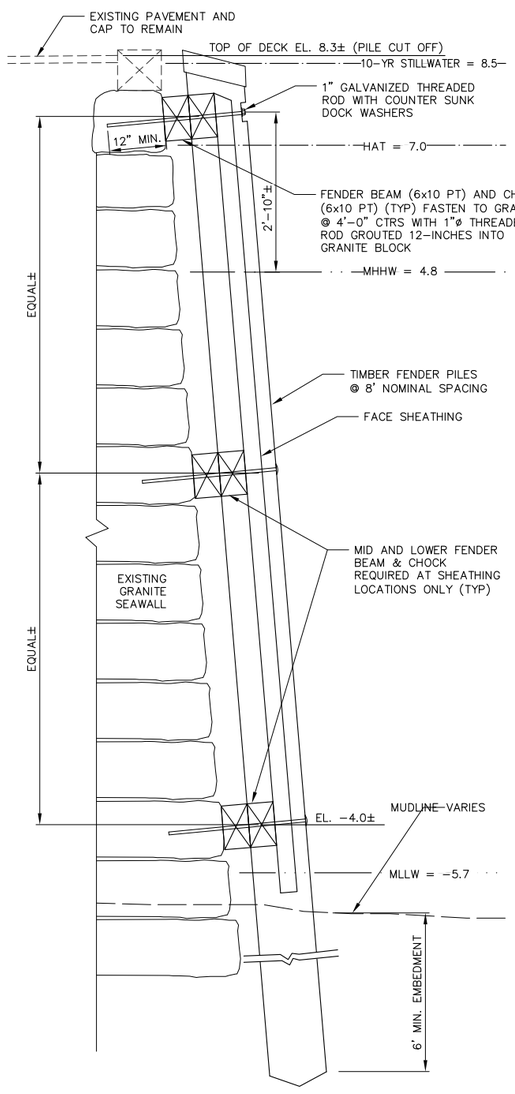
GUIDE PILE CONNECTION DETAIL PILES P1 THRU P7



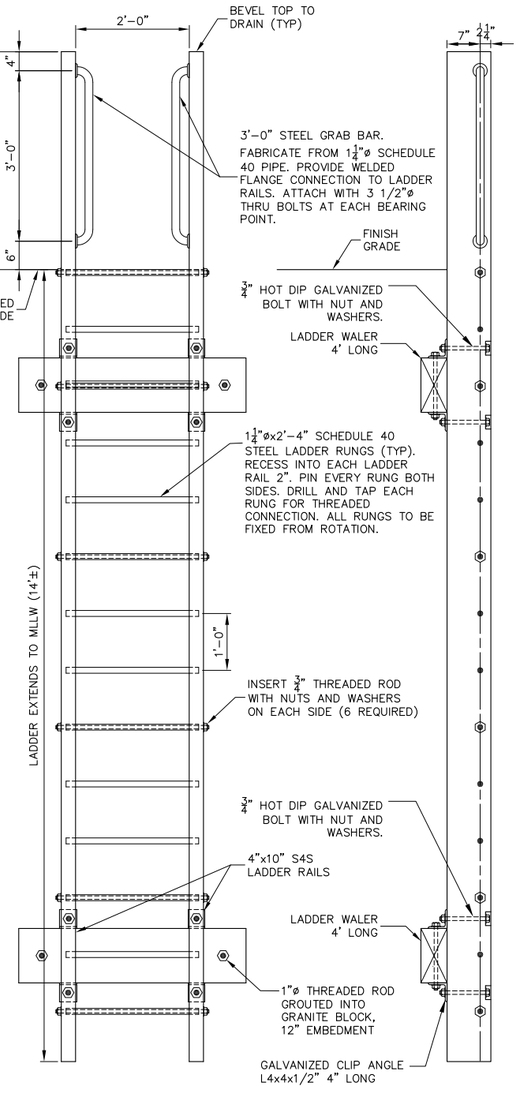
PILE STANDOFF BRACKET – PLAN



SECTION A



FENDER PILE CONNECTION DETAIL
WITH FACE SHEATING AT PILES P8 THRU P12



ELEVATION TYPICAL SECTION

LADDER DETAIL

0 1 2 3 4 8

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NO.	DATE	INT.
B	4-16-15	DJB
A	3-30-15	DJB
	DRAFT PS&E SUBMISSION	
	FINAL PS&E	

STATE OF MAINE
BARNEY J. BAKER
No. 5737
LICENSED PROFESSIONAL ENGINEER

DESIGNED BY:	DJB
DRAWN BY:	JJC
CHECKED BY:	BJB
SCALE:	AS SHOWN

SHEET TITLE: STRUCTURAL DETAILS

PROJECT: PUBLIC LANDING IMPROVEMENTS
TOWN OF CAMDEN
CAMDEN, MAINE

DATE MAR 2015

CONTRACT NO. 14-15

SHEET NO. S-4 REV. B

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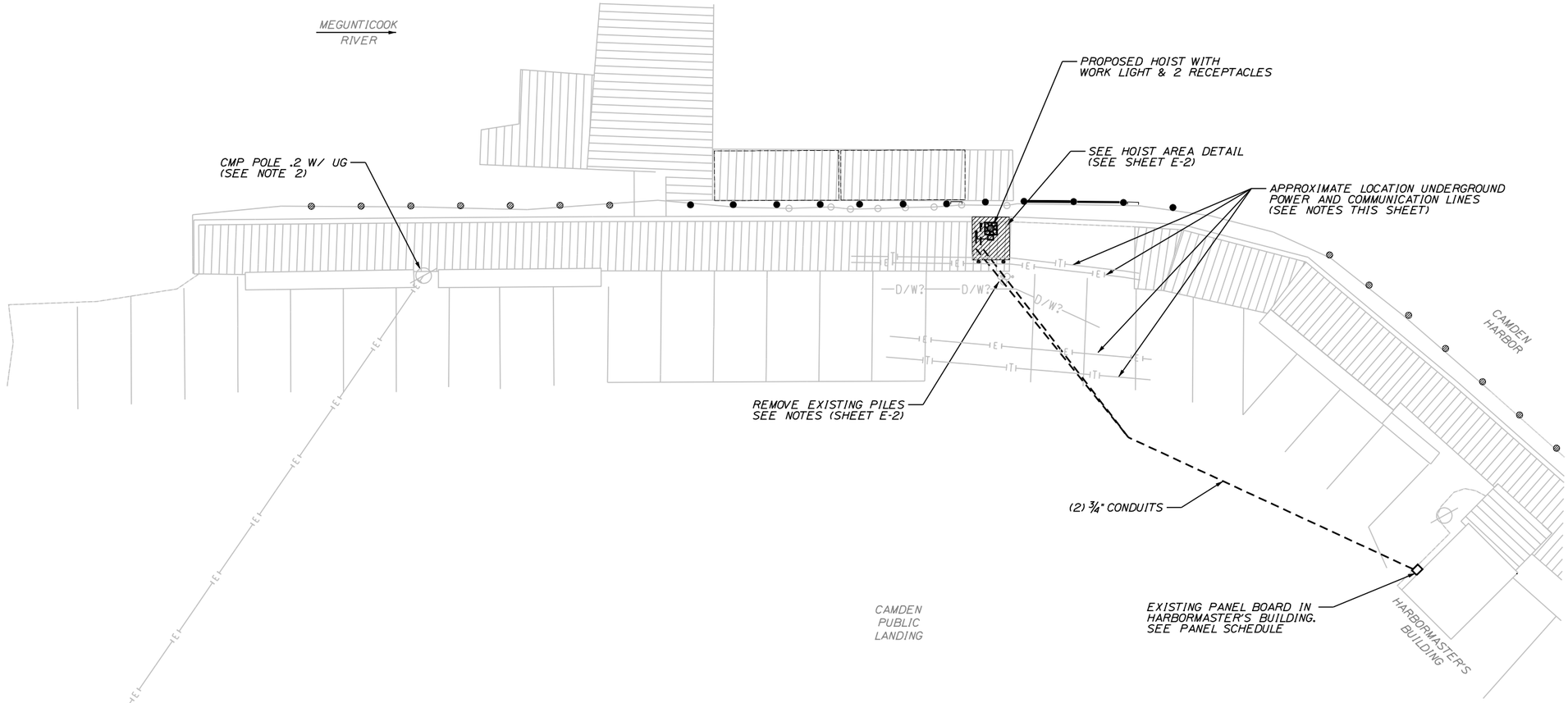


NOTES:

1. IN PREPARATION FOR A RECENT GEOTECHNICAL PROGRAM IN SUPPORT OF THIS WORK, BOTH DIGSAFE AND A PRIVATE UTILITY LOCATOR WERE CONTACTED TO LOCATE UTILITIES AT THE SITE.
   - DIGSAFE NOTED: NO CMP. NO TWC. NO H20.
   - THE PRIVATE UTILITY LOCATOR LOCATED TWO SEPARATE RUNS OF BOTH UNDERGROUND POWER AND COMMUNICATION LINES - UNDER THE BOARDWALK AND ACROSS THE PARKING SPACES IN THE LOCATION OF THE PROPOSED HOIST.
2. THE TOWN IS AWARE OF THE UNDERGROUND POWER AND COMMUNICATIONS LINES BUT THEY DO NOT HAVE ANY RECORD DRAWINGS SHOWING THEIR LOCATIONS. CMP HAS INDICATED THEY HAVE NO UNDERGROUND FACILITIES HERE, AND THAT POLE 2.2 WAS GIVEN TO THE TOWN SOME YEARS BACK SO THAT THEY (THE TOWN) COULD PUT THEIR SERVICE ON IT. FAIRPOINT INDICATED THEY HAVE A DROP IN THIS AREA.
3. THE UNDERGROUND LINE MARKED "D/W?" IS A LINE ALSO LOCATED BY THE PRIVATE UTILITY COORDINATORAT A DEPTH OF APPROXIMATELY 5 FEET. THIS COULD BE A TOWN WATER LINE OR DRAINAGE LINE.
4. PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL CONTACT DIGSAFE TO LOCATE ALL UTILITIES WITHIN THE WORK AREA. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS OF ALL UNDERGROUND UTILITIES - INCLUDING THOSE IDENTIFIED BY PRIVATE UTILITY LOCATION AS PART OF THE GEOTECHNICAL PROGRAM - PRIOR TO PERFORMING INTRUSIVE WORK AT THE SITE.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STATE OF MAINE · CARL L. ANDERSON · No. 10104 · PROFESSIONAL ENGINEER

Carl L. Anderson
SIGNATURE
10104
P.E. NUMBER
04-21-2015
DATE

PROJ. MANAGER	P. Finnigan		
DESIGN-DETAILED	CLA	BY	DATE
CHECKED-REVIEWED	KEK	PEM	4/6/2012
DESIGN2-DETAILED2		CLA	7/13/2012
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

CAMDEN
PUBLIC LANDING

LIGHTING PLAN

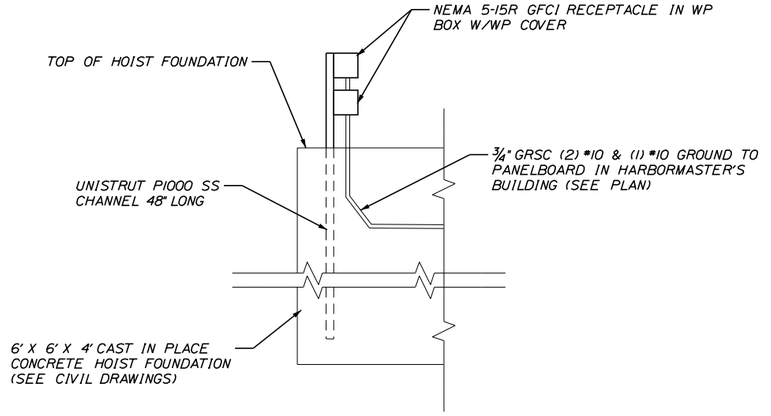
SHEET NUMBER
E-1

TY·LIN INTERNATIONAL

Filename: ...\MSTA\LightingPlan_E-1.dgn Division: HIGHWAY Username: Date:4/21/2015

CIRCUIT DIRECTORY EXISTING PANEL			
1	(L1) EXIST. CIR. TO REMAIN	2	(L1) EXIST. CIR. TO REMAIN
3	(L2) EXIST. CIR. TO REMAIN	4	(L2) EXIST. CIR. TO REMAIN
5	(L1) WORK LIGHT 50A/2P *	6	(2) RECEPTACLES AT HOIST *
7	(L2) HOIST 50A/2P *		

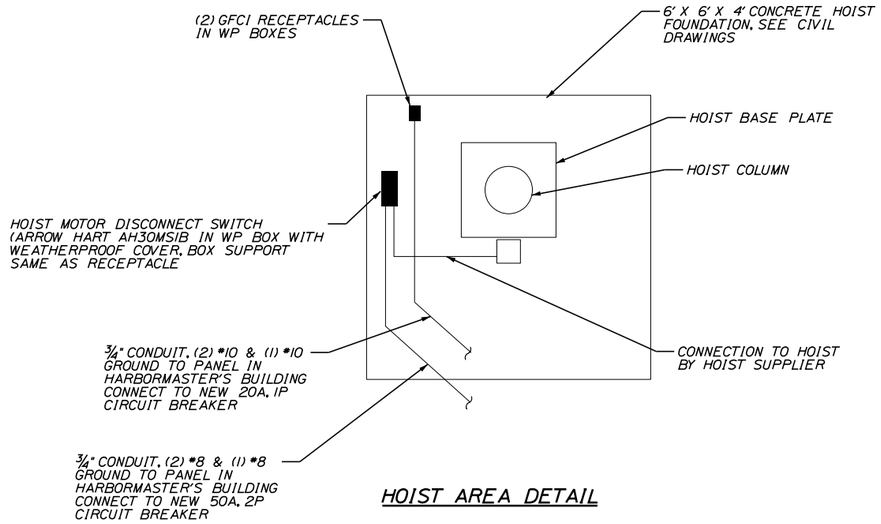
* PROVIDE (2) GE 1" THQL CIRCUIT BREAKERS FOR NEW CIRCUITS 5/7 & 6.



RECEPTACLE MOUNTING DETAIL

LIGHTING NOTES:

1. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE CURRENT EDITION OF THE NATIONAL ELECTRICAL CODE (NEC), TOWN OF CAMDEN REQUIREMENTS AND APPLICABLE ITEMS OF THE MOST RECENT MAINE DEPT. OF TRANSPORTATION (MEDOT) SPECIFICATIONS FOR MISCELLANEOUS CONSTRUCTION, SECTION 634- HIGHWAY LIGHTING AND STANDARD DETAILS FOR DIVISION 600 MISCELLANEOUS CONTRUCTION UNLESS NOTED OTHERWISE.
2. WHERE CONDUIT IS REQUIRED TO PASS OVER DRAINAGE CULVERTS OR OTHER OBSTRUCTIONS AND THE SPECIFIED BURIAL DEPTH OF CONDUIT CANNOT BE MAINTAINED THE CONTRACTOR SHALL PROVIDE CONCRETE PROTECTION OF CONDUIT IN ACCORDANCE WITH NEC TABLE 300.5.
3. IN GENERAL THE SCOPE OF WORK WILL INCLUDE THE INSTALLATION OF A COMPLETE SYSTEM INCLUDING CONDUIT, CIRCUIT CONDUCTORS, GROUNDING, JUNCTION BOXES, RECEPTACLES, SUPPORT OF RECEPTACLES, CONNECTION TO HOIST, WORK LIGHT AND EXISTING PANEL BOARD WORK. BACKFILLING, PLACEMENT OF AGGREGATE SUBBASE AND HMA, AND PAVEMENT MARKINGS ARE INCIDENTAL TO PAY ITEM 626.45.
4. DRAWINGS ARE DIAGRAMETRIC. THE ACTUAL CONDUIT , WORK LIGHT AND RECEPTACLE PLACEMENT SHALL BE SUCH AS TO NOT CONFLICT WITH ANY EXISTING OR NEW UTILITIES OR SITE FEATURES. PLACEMENT OF RECEPTACLES AND DISCONNECT SWITCH AT HOIST LOCATION SHALL NOT INTERFERE WITH OPERATION OR MOVEMENT OF HOIST.
5. INSTALLATION OF ALL UNDERGROUND CONDUITS WILL COMPLY WITH MAINE DOT STANDARD DETAIL 626 (07).
6. ALL CONDUCTORS SHALL BE COPPER WITH TYPE XHHW INSULATION.
7. ALL RECEPTACLES SHALL BE 15 AMP GFCI TYPE NEMA 5-15R WITH NYLON FACE AND BODY IN CAST MALIABLE IRON GALVANIZED BOX WITH WEATHERPROOF WHILE IN-USE COVER (COOPER WIU-IVX OR EQUAL).
8. THE EXISTING PILES WITH DECORATIVE LIGHTING AND RECEPTACLES (FORMERLY POLE P5 1/3) SHALL BE REMOVED. THE CONTRACTOR SHALL MAINTAIN ELECTRIC AND TELEPHONE SERVICES TO HARBORMASTER'S BUILDING AND DOCK/PIER FACILITIES.
9. CONDUIT LOCATED UNDERGROUND MAY BE SCHEDULE 40 PVC. PRIOR TO RISING UP FROM BELOW GROUND TRANSITION TO RIGID TO RIGID STEEL CONDUIT. ALL EXPOSED CONDUIT SHALL BE GALVANIZED RIGID STEEL.



HOIST AREA DETAIL

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STATE OF MAINE * CARL L. ANDERSON No. 10104 * REGISTERED PROFESSIONAL ENGINEER

Carl L. Anderson — SIGNATURE
10104 — P.E. NUMBER
04-21-2015 — DATE

PROJ. MANAGER	P. Finnigan		
DESIGN-DETAILED	CLA	PEM	4/6/2012
CHECKED-REVIEWED	KEK	CLA	7/13/2012
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

CAMDEN
PUBLIC LANDING

LIGHTING PLAN NOTES & DETAILS

SHEET NUMBER
E-2

TYLIN INTERNATIONAL

Filename: ...\MSTA\LightingPlan_E-2.dgn Division: HIGHWAY Username: Date:4/21/2015