Updated 04/08/14

FEDERAL PROJECT

Effective January 19, 2012
Supersedes December 23, 2011

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, Revision of December 2002.

January 19, 2012
Supersedes September 09, 2011

NOTICE

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

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

Additionally, interested parties will be responsible for reviewing and retrieving the Bid Amendments from our web site, and acknowledging receipt and incorporating those Bid Amendments in their bids using the Acknowledgement of Bid Amendment Form.

The downloading of bid packages from the MDOT website is not the same as providing an electronic bid to the Department. Electronic bids must be submitted via http://www.BIDX.com. For information on electronic bidding contact Patrick Corum at patrick.corum@maine.gov , Rebecca Snowden at rebecca.snowden@maine.gov or Diane Barnes at diane.barnes@maine.gov.

NOTICE

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

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

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

Double Envelope: Bid Enclosed
PIN:
Town:
Date of Bid Opening:
Name of Contractor:
This should not be much of a change for those of you who use Federal Express or similar services.

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

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

STATE OF MAINE DEPARTMENT OF TRANSPORTATION

Bid Guaranty-Bid Bond Form

KNOW ALL MEN BY THESE PRESENTS THAT_____

_____, of the City/Town of _____and State of_____

as Principal, and _____as Surety, a

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

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

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

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

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

_____

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

Signed and sealed this_____day of _____20_____

WITNESS:

_____

_____

_____

WITNESS

_____

_____

_____

PRINCIPAL:

By_____

By:_____

By:_____

SURETY:

By_____

By:_____

Name of Local Agency: _____

SAMPLE

NOTICE

Bidders:

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

City of Auburn, Maine

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

Disadvantaged Business Enterprise Proposed Utilization

The Apparent Low Bidder shall submit the Disadvantaged Business Enterprise Proposed Utilization form with their bid. This is a curable bid defect.

The Contractor's Disadvantaged Business Enterprise Proposed Utilization Plan form contains additional information that is required by USDOT.

The Contractor's Disadvantaged Business Enterprise Proposed Utilization Plan form should be used.

A copy of the new Contractor's Disadvantaged Business Enterprise Proposed Utilization Plan and instructions for completing it are attached.

Note: Questions about DBE firms, or to obtain a printed copy of the DBE Directory, contact The Office of Civil Rights at (207) 624-3066.

MDOTs DBE Directory of Certified firms can also be obtained at http://www.maine.gov/mdot/civilrights/dbe.htm

INSTRUCTIONS FOR PREPARING THE MaineDOT CONTRACTOR'S DBE/SUBCONTRACTOR UTILIZATION FORM

The Contractor Shall Extend equal opportunity to MaineDOT certified DBE firms (as listed in MaineDOT's DBE Directory of Certified Businesses) in the selection and utilization of Subcontractors and Suppliers.

SPECIFIC INSTRUCTIONS FOR COMPLETING THE FORM:

Insert Contractor name, the name of the person(s) preparing the form, and that person(s) telephone, fax number and e-mail address.

Calculate and provide percentage of your bid that will be allocated to DBE firms, Federal Project Identification Number, and location of the Project work.

In the columns, name each subcontractor, DBE and non-DBE firm to be used, provide the Unit/Item cost of the work/product to be provided by the subcontractor, give a brief description and the dollar value of the work.

Revised 1/12

DBE GOAL NOTICE FFY 2013-15

Maine Department of Transportation
Disadvantaged Business Enterprise Program

Notice is hereby given that in accordance with US DOT regulation 49 CFR Part 26, the Maine Department of Transportation has established a DBE Program for disadvantaged business participation in the federal-aid highway and bridge construction program; MaineDOT contracts covered by the program include consulting, construction, supplies, manufacturing, and service contracts.

For FFY 2013-15 (October 1, 2012 through September 30, 2015) MaineDOT has established an annual DBE participation goal of **4.0%** to be achieved through race/gender neutral means. This goal has been approved by the Federal Highway Administration and remains in effect through September 30, 2015. Maine DOT must meet this goal each federal fiscal year. If the goal is not met, MaineDOT must provide a justification for not meeting the goal and provide a plan to ensure the goal is met, which may include contract goals on certain projects that contractors will be required to meet.

MaineDOT asks all contractors, consultants and subcontractors to seek certified DBE firms for projects and to work to meet the determined 4.0% goal without the need to impose contract goals. DBE firms are listed on the MaineDOT website at:

http://www.maine.gov/mdot/civilrights/dbe.htm

Interested parties may view MaineDOT's DBE goal setting methodology also posted on this website. If you have questions regarding this goal or the DBE program you may contact Sherry Tompkins at the Maine Department of Transportation, Civil Rights Office by telephone at (207) 624-3066 or by e-mail at: sherry.tompkins@maine.gov

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MaineDOT CONTRACTOR'S DBE/SUBCONTRACTOR PROPOSED UTILIZATION FORM

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

Contractor: _____ **Telephone:** _____ **Ext** _____

Contact Person: _____ **Fax:** _____

E-mail: _____

BID DATE: _____

FEDERAL PROJECT PIN # _____ **PROJECT LOCATION:** _____

TOTAL ANTICIPATED DBE ____ % PARTICIPATION FOR THIS CONTRACT

WBE	DBE	Non DBE	Firm Name	Item Number & Description of Work	Quantity	Cost Per Unit/Item	Anticipated $ Value
						Subcontractor Total>	
						DBE Total >	

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

Equal Opportunity Use:

Form received: ___/___/___ Verified by: _____

FHWA ☐ FTA ☐ FAA ☐

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

Rev. 05/13

Maine Department of Transportation Civil Rights Office

Directory of Certified Disadvantaged Business Enterprises

Listing can be found at:

http://www.maine.gov/mdot/civilrights/dbe.htm

For additional information and guidance contact:

Civil Rights Office at (207) 624-3066

It is the responsibility of the Contractor to access the DBE Directory at this site in order to have the most current listing.

September 14, 2007

Vendor Registration

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

NOTICE TO CONTRACTORS

CITY OF AUBURN, MAINE
SOUTH MAIN STREET ROADWAY RECONSTRUCTION: PHASE II

Maine Department of Transportation WIN: 014787.20
Federal Project No: STP-1478(720)X

1. RECEIPT OF BIDS
The City of Auburn will receive sealed Bids plainly marked to indicate the name of the bidder along with "Bids for South Main Street Roadway Reconstruction, Auburn, ME" addressed to City of Auburn, 60 Court Street, Suite 114, Auburn, ME 04210 until **2:00 pm** prevailing local time on **December 17th, 2014** at which time the Bids will be publicly opened and read aloud at Auburn City Hall located at 60 Court Street, Suite 114, Auburn, ME.

2. GENERAL INFORMATION
All questions shall be directed in writing ONLY to Dan Goyette, City Engineer, at the above address and be received at least five business days prior to the bid opening date (Fax 207.333.6625, or e-mail dgoyette@auburnmaine.gov). Questions received after this time will not be addressed. Responses from the City that substantially alter this bid will be issued in the form of a written addendum to all bid holders registered in the City Manager's/Engineer's Office. Oral explanations or interpretations given before the award of the contract will not be binding.

3. PRE-BID MEETING
A mandatory pre-bid meeting shall be held at Auburn City Hall, Suite 114, at **10:00 am** on **December 4th, 2014**. Attendance will be taken at the pre-bid meeting. Bids received from Contractors not in attendance at the mandatory pre-bid meeting shall be rejected.

4. PROJECT
The South Main Street Roadway Reconstruction: Phase II project (WIN 014787.20) consists of the reconstruction of South Main Street in Auburn, Maine, from the intersection of Loring Avenue to the intersection of Cook Street. This project includes approximately 0.32 miles of roadway and sidewalk reconstruction with associated drainage and finish improvements as outlined and implied in the Plans and Specifications.

5. CONTRACT TIME
The Bidder agrees to final completion of the Work within the time limits given in the Special Provisions and that the Owner may retain 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.

6. PLANS AND SPECIFICATIONS
Copies of plans, specifications, and bid forms may be obtained from the City of Auburn website. They are only available electronically at http://www.auburnmaine.gov/Pages/Government/Bid-Notices at no cost. They may be viewed at the City between the hours of 8:00 a.m. and 4:30 p.m. The bid documents cannot be purchased at the City.

7. BID BOND
A certified check or bank draft payable to the City of Auburn, Maine or a satisfactory Bid Bond executed by the Bidder and a Surety Company in the amount equal to five percent (5%) of the Bid shall be submitted with each

bid. No bid may be withdrawn for at least 60 days after receipt of bids unless released by the City of Auburn.

8. BASIS OF AWARD
The basis of award will be the sum of the bid amount for each item in the Schedule of Items.

9. AWARD OF CONTRACT
The City reserves the right to reject any or all Bids and to waive any informalities or irregularities in Bidding. The Successful Bidder shall be required to furnish the necessary Bonds and Insurance Certificates prior to Award of Contract.

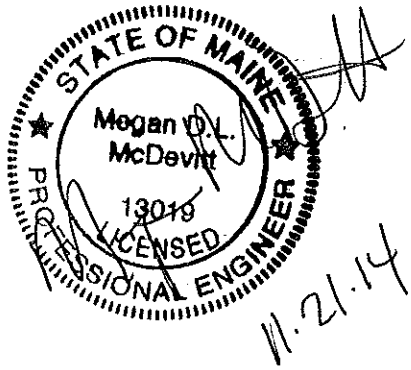
10. QUALIFICATIONS
Bids will be accepted from all bidders. The lowest responsible bidder must demonstrate successful completion of projects of similar size and scope to be considered for the award of this contract.

11. DISADVANTAGED BUSINESS ENTERPRISES REQUIRMENTS
Each bidder shall take special notice of the Disadvantaged Business Enterprises (DBE) requirements in sub-agreements. Failure to complete the requirements of this program may result in finding that the bidder is non-responsible and therefore, not entitled to award of this contract. Complete requirements are detailed in the Bid Documents.

12. REQUIRED WAGE RATES AND LABOR PROVISIONS
The Project is funded under a Federal Grant and the Contractor shall be required to comply with the Davis Bacon standard wage rates and labor provisions as outlined in the Contract Documents.

13. BUY AMERICA
The Contractor must comply with all of the Buy America Certification requirements.

November 2014
Dan Goyette, P.E.
City Engineer



ACKNOWLEDGEMENT OF BID AMENDMENTS

With this form, the Bidder acknowledges its responsibility to check for all Amendments to the Bid Package. For this project, Amendments will be sent directly to the identified plan holders using the email address or fax number provided by the Bidder when they receive the Construction Documents.

It is the responsibility of the Bidder to incorporate the Amendments into their Bid Package, and to reference the Amendment number and the date on the form below.

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)

SCHEDULE OF ITEMS

SOUTH MAIN STREET RECONSTRUCTION PROJECT - PHASE II

AUBURN, MAINE

			UNIT PRICE		TOTAL PRICE	
Item No	Quantity	Item with Unit Bid Price Written in Words	Dollars	Cents	Dollars	Cents
201.23	EA 5	Removing Single Tree Top Only @_____ Per Each				
201.24	EA 5	Removing Stump @_____ Each				
202.15	EA 1	Removing Existing Manhole or Catch Basin @_____ Per Each				
202.16	LF 300	Removing Existing Storm/Sewer Pipe @_____ Per Linear Foot				
202.20	SY 7,650	Removing Bituminous Concrete Pavement @_____ Per Square Yard				
202.203	SY 130	Pavement Butt Joints @_____ Per Square Yard				
203.20	CY 6,700	Common Excavation @_____ Per Cubic Yard				
203.25	CY 100	Granular Borrow @_____ Per Cubic Yard				
203.29	CY 100	Crushed Stone (Over depth) @_____ Per Cubic Yard				
206.061	CY 100	Structural Earth Excavation, Drainage Minor Structure Below Grade @_____ Per Cubic Yard				
206.07	CY 50	Structural Rock Excavation-Drainage & Minor Structures @_____ Per Cubic Yard				
304.09	CY 550	Aggregate Base Course - Crushed @_____ Per Cubic Yard				

SCHEDULE OF ITEMS

SOUTH MAIN STREET RECONSTRUCTION PROJECT - PHASE II

AUBURN, MAINE

			UNIT PRICE		TOTAL PRICE	
Item No	Quantity	Item with Unit Bid Price Written in Words	Dollars	Cents	Dollars	Cents
304.10	CY 6,150	Aggregate Subbase Course - Gravel @_____ _____ Per Cubic Yard				
403.208	TON 750	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size, Surface @_____ _____ Per Ton				
403.209	TON 250	Hot Mix Asphalt, 9.5 mm Nominal Maximum Size (sidewalks, drives, islands & incidentals) @_____ Per Ton				
403.213	TON 1,220	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size, Base @_____ _____ Per Ton				
409.15	GALLON 250	Bituminous Tack Coat, Applied @_____ _____ Per Gallon				
603.159	LF 50	12" Culvert Pipe Option III @_____ _____ Per Linear Foot				
603.169	LF 300	15" Culvert Pipe Option III @_____ _____ Per Linear Foot				
603.179	LF 180	18" Culvert Pipe Option III @_____ _____ Per Linear Foot				
603.199	LF 20	24" Culvert Pipe Option III @_____ _____ Per Linear Foot				
604.15	EA 1	Manhole @_____ _____ Per Each				
604.16	EA 2	Altering Catch Basin to Manhole @_____ _____ Per Each				
604.161	EA 2	Altering Catch Basin @_____ _____ Per Each				

SCHEDULE OF ITEMS

SOUTH MAIN STREET RECONSTRUCTION PROJECT - PHASE II

AUBURN, MAINE

			UNIT PRICE		TOTAL PRICE	
Item No	Quantity	Item with Unit Bid Price Written in Words	Dollars	Cents	Dollars	Cents
604.18	EA 8	Adjusting Manhole or Catch Basin to Grade @_____ _____ Per Each				
604.252	EA 8	Catch Basin Type A5-C @_____ _____ Per Each				
604.2521	EA 1	60" Catch Basin Type A5-C @_____ _____ Per Each				
605.09	LF 2,460	6" Underdrain Type B @_____ _____ Per Linear Foot				
605.11	LF 610	12" Underdrain Type C @_____ _____ Per Linear Foot				
605.12	LF 290	15" Underdrain Type C @_____ _____ Per Linear Foot				
607.22	LF 48	Cedar Rail Fence @_____ _____ Per Linear Foot				
608.26	SF 20	Curb Ramp Detectable Warning Field @_____ _____ Per Square Foot				
609.11	LF 2,070	Vertical Curb Type 1 @_____ _____ Per Linear Foot				
609.12	LF 80	Vertical Curb Type 1 - Circular @_____ _____ Per Linear Foot				
609.234	EA 1	Terminal Curb Type 1 - 4 Foot @_____ _____ Per Each				
609.237	EA 50	Terminal Curb Type 1 - 7 Foot @_____ _____ Per Each				

SCHEDULE OF ITEMS

SOUTH MAIN STREET RECONSTRUCTION PROJECT - PHASE II

AUBURN, MAINE

			UNIT PRICE		TOTAL PRICE	
Item No	Quantity	Item with Unit Bid Price Written in Words	Dollars	Cents	Dollars	Cents
609.238	EA 3	Terminal Curb Type 1 - 8 Foot @_____ Per Each				
610.08	CY 3	Plain Riprap @_____ Per Cubic Yard				
613.319	SY 140	Erosion Control Blanket @_____ Per Square Yard				
615.07	CY 480	Loam @_____ Per Cubic Yard				
618.1301	UNIT 41	Seeding Method Number 1, Plan Quantity @_____ Per Unit				
619.1201	UNIT 41	Mulch, Plan Quantity @_____ Per Unit				
620.58	SY 10	Erosion Control Geotextile @_____ Per Square Yard				
627.733	LF 6,760	4" White or Yellow Painted Pavement Marking Line @_____ Per Linear Foot				
627.75	SF 350	White or Yellow Pavement & Curb Marking @_____ Per Square Foot				
629.05	HR 20	Hand Labor, Straight Time @_____ Per Hour				
631.12	HR 20	All Purpose Excavator (including operator) @_____ Per Hour				
631.13	HR 20	Bulldozer (including operator) @_____ Per Hour				

SCHEDULE OF ITEMS

SOUTH MAIN STREET RECONSTRUCTION PROJECT - PHASE II

AUBURN, MAINE

			UNIT PRICE		TOTAL PRICE	
Item No	Quantity	Item with Unit Bid Price Written in Words	Dollars	Cents	Dollars	Cents
631.15	HR 20	Roller, Earth and Base (including operator) @_____ Per Hour				
631.22	HR 20	Front End Loader (including operator) @_____ Per Hour				
635.31	SF 1,980	Prefab Concrete Block Gravity Wall @_____ Per Square Foot				
637.071	LS 1	Dust Control @_____ Per Lump Sum				
645.106	EA 3	Demount Regulatory, Warning, Confirmation and Route Marker Assembly @_____ Per Each				
645.108	EA 3	Demount Pole @_____ Per Each				
645.116	EA 3	Reinstall Regulatory, Warning, Confirmation and Route Marker Assembly @_____ Per Each				
645.118	EA 3	Reinstall Pole @_____ Per Each				
652.33	EA 35	Drum @_____ Per Each				
652.34	EA 35	Cone @_____ Per Each				
652.35	SF 180	Construction Signs @_____ Per Square Foot				
652.36	DAY 80	Maintenance of Traffic Control Devices @_____ Per Calendar Day				

SCHEDULE OF ITEMS

SOUTH MAIN STREET RECONSTRUCTION PROJECT - PHASE II

AUBURN, MAINE

			UNIT PRICE		TOTAL PRICE	
Item No	Quantity	Item with Unit Bid Price Written in Words	Dollars	Cents	Dollars	Cents
652.38	HR 2,560	Flaggers @_____ _____ Per Hour				
659.10	LS 1	Mobilization @_____ _____ Per Lump Sum				
803.01	EA 33	Test Pit @_____ _____ Per Each				
803.136	LF 100	Sewer Service Relocation @_____ _____ Per Linear Foot				
812.162	EA 6	Adjust Sewer Manhole to Grade @_____ _____ Per Each				
824.321	EA 1	Removing and Relocating Hydrant @_____ _____ Per Each				
830.102	LF 100	Water Service Replacement @_____ _____ Per Linear Foot				

Total Cost in Figures

Total Amount of Base Bid, Written In Words	
_____ _____	

(BASIS OF AWARD)

CONTRACT AGREEMENT, OFFER & AWARD

AGREEMENT made on the date last signed below, by and between the City of Auburn, Maine, acting through and by its City Engineer an agency of state government with its principal administrative offices located at 60 Court Street, Auburn, Maine, with a mailing address at 60 Court Street, Suite 114, Auburn , Maine 04210, 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 City 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. **014787.20** for the **South Main Street Roadway Reconstruction** in the City of **Auburn,** County of **Androscoggin**, 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 City 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 **July 31, 2015**. Further, the City may deduct from moneys otherwise due the Contractor, not as a penalty, but as Liquidated Damages in accordance with Sections 107.7 and 107.8 of the State of Maine Department of Transportation Standard Specifications, Revision of December 2002 and related Special Provisions.

C. Price.

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

_____

$_____

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

D. Contract.

This Contract, which may be amended, modified, or supplemented in writing only, consists of the Contract documents as defined in the Plans and Specifications, including Plans; Maine Department of Transportation (MDOT) 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 MDOT 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; MDOT 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: **WIN 014787.20 South Main Street Roadway Reconstruction,** City of Auburn, 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 Offerer 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 Offerer also agrees:

First: To do any extra work, not covered by the attached "Schedule of Items", which may be ordered by the Engineer, 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 City of Auburn, and accompanying this bid, shall be forfeited, as liquidated damages, if in case this bid is accepted, and the undersigned shall fail to abide by the terms and conditions of the offer and fail to furnish satisfactory insurance and Contract bonds under the conditions stipulated in the Specifications within 15 days of notice of intent to award the contract.

Third: To begin the Work on the date specified in the Engineer's "Notice to Commence Work" as stated in Section 107.2 of the Standard Specifications Revision of 2002 and complete the Work within the time limits given in the Special Provisions of this Contract.

Fourth: The Contractor will be bound to the Disadvantaged Business Enterprise (DBE) Requirements contained in the attached Notice (Additional Instructions to Bidders) and submit a completed Contractor's Disadvantaged Business Enterprise Utilization Plan by 4:30pm on the day of bid opening to the Contracts Engineer.

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

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

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	
_____	_____
Witness	(Name and Title Printed)

G. Award.

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

CITY OF AUBURN, MAINE

_____	_____
Date	By: Dan Goyette, City Engineer
_____	
(Witness)	

CONTRACT AGREEMENT, OFFER & AWARD

AGREEMENT made on the date last signed below, by and between the City of Auburn, Maine, acting through and by its City Engineer an agency of state government with its principal administrative offices located at 60 Court Street, Auburn, Maine, with a mailing address at 60 Court Street, Suite 114, Auburn , Maine 04210, 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 City 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. **014787.20** for the **South Main Street Roadway Reconstruction** in the City of **Auburn,** County of **Androscoggin**, 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 City 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 **July 31, 2015**. Further, the City may deduct from moneys otherwise due the Contractor, not as a penalty, but as Liquidated Damages in accordance with Sections 107.7 and 107.8 of the State of Maine Department of Transportation Standard Specifications, Revision of December 2002 and related Special Provisions.

C. Price.

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

_____

$_____

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

D. Contract.

This Contract, which may be amended, modified, or supplemented in writing only, consists of the Contract documents as defined in the Plans and Specifications, including Plans; Maine Department of Transportation (MDOT) 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 MDOT 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; MDOT 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: **WIN 014787.20 South Main Street Roadway Reconstruction,** City of Auburn, 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 Offerer 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 Offerer also agrees:

First: To do any extra work, not covered by the attached "Schedule of Items", which may be ordered by the Engineer, 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 City of Auburn, and accompanying this bid, shall be forfeited, as liquidated damages, if in case this bid is accepted, and the undersigned shall fail to abide by the terms and conditions of the offer and fail to furnish satisfactory insurance and Contract bonds under the conditions stipulated in the Specifications within 15 days of notice of intent to award the contract.

Third: To begin the Work on the date specified in the Engineer's "Notice to Commence Work" as stated in Section 107.2 of the Standard Specifications Revision of 2002 and complete the Work within the time limits given in the Special Provisions of this Contract.

Fourth: The Contractor will be bound to the Disadvantaged Business Enterprise (DBE) Requirements contained in the attached Notice (Additional Instructions to Bidders) and submit a completed Contractor's Disadvantaged Business Enterprise Utilization Plan by 4:30pm on the day of bid opening to the Contracts Engineer.

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

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

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	
_____	_____
Witness	(Name and Title Printed)

G. Award.

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

CITY OF AUBURN, MAINE

_____	_____
Date	By: Dan Goyette, City Engineer
_____	
(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:

SAMPLE

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.

SAMPLE

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.

SAMPLE

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)

SAMPLE

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 **_____ _____ and the City 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 City of Auburn in the sum of **_____ and 00/100 Dollars ($)**, to be paid said Treasurer of the City of Auburn 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 City of Auburn.

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.....	.....……....

SAMPLE

BOND # _____

CONTRACT PAYMENT BOND
(Surety Company Form)

KNOW ALL MEN BY THESE PRESENTS: That **_____ _____ and the City 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 City of Auburn 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	…….…....

SAMPLE

General Decision Number: ME140049 08/22/2014 ME49

Superseded General Decision Number: ME20130049

State: Maine

Construction Type: Highway

County: Androscoggin County in Maine.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Modification Number	Publication Date
0	01/03/2014
1	02/07/2014
2	05/09/2014
3	08/08/2014
4	08/22/2014

* ENGI0004-006 04/01/2014

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Milling Machine	$ 20.75	10.84

IRON0007-008 03/16/2014

	Rates	Fringes
IRONWORKER, REINFORCING	$ 22.65	20.17

SUME2011-044 09/14/2011

	Rates	Fringes
CARPENTER, Includes Form Work	$ 16.99	1.95
CEMENT MASON/CONCRETE FINISHER	$ 16.94	0.00
ELECTRICIAN	$ 21.41	3.40
INSTALLER - GUARDRAIL	$ 15.91	2.85
IRONWORKER, STRUCTURAL	$ 18.75	4.56
LABORER: Asphalt Raker	$ 14.75	0.42
LABORER: Common or General	$ 12.58	1.27
LABORER: Flagger	$ 9.06	0.00

LABORER: Landscape	$ 15.43	2.09
LABORER: Wheelman	$ 18.76	4.93
OPERATOR: Backhoe	$ 17.92	2.44
OPERATOR: Bobcat/Skid Steer/Skid Loader	$ 16.98	4.65
OPERATOR: Broom/Sweeper	$ 14.08	0.00
OPERATOR: Bulldozer	$ 17.09	3.71
OPERATOR: Crane	$ 20.08	0.00
OPERATOR: Excavator	$ 18.14	5.20
OPERATOR: Grader/Blade	$ 27.40	8.46
OPERATOR: Loader	$ 17.46	5.80
OPERATOR: Mechanic	$ 21.39	6.24
OPERATOR: Milling Machine Reclaimer Combo	$ 24.77	8.39
OPERATOR: Paver (Asphalt, Aggregate, and Concrete)	$ 17.49	4.26
OPERATOR: Roller, Base (Ride Along)	$ 13.00	1.54
OPERATOR: Screed	$ 19.58	5.95
PILEDRIVERMAN	$ 19.95	5.26
TRUCK DRIVER, Includes all axles including Dump Trucks	$ 13.95	2.01
TRUCK DRIVER: Lowboy Truck	$ 15.15	5.62

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

==========

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

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters , PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable , i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union majority rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

WAGE DETERMINATION APPEALS PROCESS

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

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

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

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

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

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

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

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

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

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

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

==========

END OF GENERAL DECISION

SPECIAL PROVISION
SECTION 102.3
EXAMINATION OF DOCUMENTS, SITE AND OTHER INFORMATION

The subsection shall be revised to read as follows: Plans, Specifications and Proposal Forms may be seen and purchased at Auburn City Hall, 60 Court Street, Suite 114, Auburn, ME, as specified in the published "Notice to Contractors".

SPECIAL PROVISIONS
SECTION 104
UTILITIES

MEETING

A Preconstruction Utility Conference, as defined in Subsection 104.4.6 of the Maine Department of Transportation's Standard Specifications is required.

GENERAL INFORMATION

These Special Provisions outline the arrangements that have been made by the Municipality for utility work to be undertaken in conjunction with this project. The following list identifies all known utilities having facilities presently located within the limits of this project or intending to install facilities during project construction.

Overview:

Utility	Aerial	Underground
Auburn Water & Sewerage Districts		X
Central Maine Power Company	X	
Fairpoint Communications	X	
Oxford Networks	X	
Time Warner Cable	X	
Unitil Corporation		X

Temporary utility adjustments are **not** anticipated.

Unless otherwise specified, any underground utility facilities shown on the project plans represent approximate locations gathered from available information. The City cannot certify the level of accuracy of this data. Underground facilities indicated on the topographic sheets (plan views) have been collected from historical records and/or on-site designations provided by the respective utility companies. Underground facilities indicated on the cross-sections have been carried over from the plan view data and may also include further approximations of the elevations (depths) based upon straight-line interpolation from the nearest manholes, gate valves, or test pits.

All adjustments are to be made by the respective utility/railroad unless otherwise specified herein.

All clearing and tree removal in areas where utilities are involved must be completed before the utilities are able to relocate their facilities.

Fire hydrants shall not be disturbed until all necessary work has been accomplished to provide proper fire protection.

AERIAL

Summary:

Utility	Pole Set	New Wires/ Cables	Trans. Wires/ Cables	Remove Poles	Estimated Working Days
Central Maine Power Company					5
Fairpoint Communications					5
Oxford Networks					0
Time Warner Cable					0

Pole List:

Existing Pole #	Existing Station	Left/ Right		Existing Offset	Proposed Station	Left/ Right		Proposed Offset	Comments
		LT	RT			LT	RT		
39	35+34.0	LT		22.5					REMOVE & REPLACE

SUBSURFACE

Summary:

Utility	Summary of Work	Estimated Working Days
Auburn Water & Sewerage Districts		0
Unitil Corporation		0

Utility Specific Issues:

Auburn Water & Sewerage Districts
The Auburn Water & Sewerage Districts (AWSD) does not anticipate any working days during construction.

Adjustment to waterstops, gate valves, and hydrants shall be completed by the Contractor; AWSD will provide shutdown and reactivation of the water main for hydrant relocation. Contractor shall coordinate with AWSD as required.

Unitil Corporation
Unitil Corporation does not anticipate any relocations and will coordinate field adjustments with the Contractor as needed.

SAFE PRACTICES AROUND UTILITY FACILITIES
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. Prior to commencing any work that may come within ten feet of any aerial electric line, the Contractor shall notify the aerial utilities as per Section 757 of the above act.

The Contractor will be responsible for maintaining the buried utility location markings following the initial locating by the appropriate utility or their designated representative.

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 23 Section 3360-A, Maine “Dig Safe” System.

THE CONTRACTOR SHALL PLAN AND CONDUCT HIS WORK ACCORDINGLY.

SPECIAL PROVISION
SECTION 104
GENERAL RIGHTS AND RESPONSIBILITIES
(Electronic Payroll Submission)
(Payment Tracking)

104.3.8.1 Electronic Payroll Submission The prime contractor and all subcontractors and lower-tier subcontractors will submit their certified payrolls electronically on this contract utilizing the Elation System web based reporting. There is no charge to the contracting community for the use of this service. The submission of paper payrolls will not be allowed or accepted. Additional information can be found at http://www.maine.gov/mdot/comprehensive-list-projects/project-information.php under the first "Notice".

104.3.8.2 Payment Tracking The prime contractor and all subcontractors and lower-tier subcontractors will track and confirm the delivery and receipt of all payments through the Elation System

May 18, 2012

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
SECTION 105
GENERAL SCOPE OF WORK
(Buy America Certification)

105.11 Federal Requirements Add the following as the third and subsequent paragraphs:

"Prior to payment by the Department, the Contractor shall provide a certification from the producer of steel or iron, or any product containing steel or iron as a component, stating that all steel or iron furnished or incorporated into the furnished product was manufactured in the United States in accordance with the requirements of the Buy America provisions of 23 CFR 635.410, as amended. Such certification shall also include (1) a statement that the iron or steel product or component was produced entirely within the United States, or (2) a statement that the iron or steel product or component was produced within the United States except for minimal quantities of foreign steel and iron valued at $ (actual value).

All manufacturing processes must take place domestically. Manufacturing begins with the initial melting and mixing, and continues through the coating stage. Any process which modifies the chemical content, the physical size and shape, or the final finish is considered a manufacturing process. These processes include rolling, extruding, machining, bending, grinding, drilling, and coating. "Coating" includes epoxy coating, galvanizing, painting, or any other coating that protects or enhances the value of the material.

A Buy America Certification is required from each manufacturer, fabricator, supplier, subcontractor, etc. that meets the "manufacturing" definition above.

Buy America does not apply to raw materials (iron ore and alloys), scrap, pig iron, or processed, pelletized, and reduced iron ore."

SPECIAL PROVISION 105
GENERAL SCOPE OF WORK
Equal Opportunity and Civil Rights
(Disadvantaged Business Enterprises Program)

105.10.1.1 Disadvantaged Business Enterprises Program The Maine Department of Transportation (MaineDOT) has established a Disadvantaged Business Enterprise (DBE) program in accordance with regulations of the United States Department of Transportation (USDOT), 49 CFR Part 26. The MaineDOT receives federal financial assistance from USDOT, and as a condition of receiving this assistance, the Department has signed an assurance that it will comply with 49 CFR Part 26.The MaineDOT is responsible for determining the eligibility of and certifying DBE firms in Maine.

A DBE is defined as a for-profit business that is owned and controlled by one or more socially and economically disadvantaged person(s). For the purpose of this definition:

1. "Socially and economically disadvantaged person" means an individual who is a citizen or lawful permanent resident of the United States and who is Black, Hispanic, Native American, Asian, Female; or a member of another group or an individual found to be disadvantaged by the Small Business Administration pursuant to Section 3 of the Small Business Act.
2. "Owned and controlled" means a business which is:
   a. A sole proprietorship legitimately owned and controlled by an individual who is a disadvantaged person.
   b. A partnership or limited liability company in which at least 51% of the beneficial ownership interests legitimately are held by a disadvantaged person(s).
   c. A corporation or other entity in which at least 51% of the voting interest and 51% of the beneficial ownership interests legitimately are held by a disadvantaged person(s).

The disadvantaged group owner(s) or stockholder(s) must possess control over management, interest in capital, and interest in earnings commensurate with the percentage of ownership. If the disadvantaged group ownership interests are real, substantial and continuing and not created solely to meet the requirements of this program, a firm is considered a bona fide DBE.

105.10.1.2 Commercially Useful Function MaineDOT will count expenditures of a DBE contractor toward DBE goals only if the DBE is performing a commercially useful function on that contract. A DBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. Credit will only be given when the DBE meets all conditions for a CUF. Credit for labor will be in accordance with the responsibilities outlined in the contract. To perform a commercially useful function, the DBE must also be responsible, with respect to materials and supplies used on the Contract, for negotiating price, determining quality and quantity, ordering the materials, and installing (where applicable) and paying for the material itself. To determine whether a DBE is performing a commercially useful function, MaineDOT will evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the Contract is commensurate with the work it is actually performing and DBE credit claimed for its performance of the work, and other relevant factors.

Rented equipment used by the DBE must not be rented from the Prime Contractor on a job that the DBE is subcontracted with that Prime Contractor for regular course of business.

A current listing of certified DBEs that may wish to participate in the highway construction program and the scope of work for which they are certified can be found at http://www.maine.gov/mdot/disadvantaged-business-enterprises/pdf/directory.pdf. Credit will be given for the value described by a DBE performing as:

A. A prime contractor; 100% of actual value of work performed by own workforces.
B. An approved subcontractor; 100% of work performed by own workforces.
C. An owner-operator of construction equipment; 100% of expenditures committed.
D. A manufacturer; 100% of expenditures committed. The manufacturer must be a firm that operates or maintains a factory or establishment that produces on the premises the materials or supplies obtained by the Contractor. Brokers and packagers shall not be regarded as manufacturers.
E. A regular dealer; 60% of expenditures committed. A regular dealer is defined as a firm that owns, operates, or maintains a store, warehouse or other establishment in which the materials or supplies required for the performance of the contract are bought, kept in stock, and regularly sold to the public. For purposes of this provision a "Broker" is a DBE that has entered into a legally binding relationship to provide goods or services delivered or performed by a third party. Brokers and packagers shall not be regarded as regular dealers.
F. A bona fide service provider; 100% of reasonable fees or commissions. Eligible services include professional, technical, consultant, or managerial, services and assistance in the procurement of essential personnel, facilities, equipment, materials or supplies required for the performance of the contract. Eligible services also include agencies providing bonding and insurance specifically required for the performance of the contract.
G. A trucking, hauling or delivery operation. 100% of expenditures committed when trucks are owned, operated, licensed and insured by the DBE and used on the contract and, if applicable, includes the cost of the self supplied materials and supplies.100% of expenditures committed when the DBE leases trucks from another DBE firm including an owner-operator. 100% of reasonable fees or commissions the DBE receives as a result of a lease arrangement for trucks from a non-DBE, including an owner-operator.
H. Any combination of the above.

105.10.1.3 Race-neutral Goals The Maine DOT is required to set an annual goal (approved on a three year basis) for DBE participation in Federal-aid projects. In order to fulfill that goal, bidders are encouraged to utilize DBE businesses certified by the MaineDOT. MaineDOT seeks to meet the established DBE goal solely through race-neutral means. *Race-neutral* DBE participation occurs when a DBE is awarded a prime contract through customary competitive procurement procedures, is awarded a subcontract on a contract that does not carry a DBE contract goal, or wins a subcontract from a prime contractor that did not consider its DBE status in making the award. A DBE/subcontractor Utilization Proposed Form is required to be included in bid documents.

MaineDOT will analyze each project and create a Project Availability Target (PAT), based on a number of factors including project scope, available DBE firms, firms certified in particular project work, etc. Each bid will request that the contractor attempt to meet the PAT. This PAT is developed to assist contractors to better understand what the MaineDOT expectations are for a

specific project. The PAT is NOT a mandate but an assessment of what this particular project can bear for DBE participation. The Department anticipates that each contractor will make the best effort to reach or exceed this PAT for the project.

105.10.1.4 Race-conscious Project Goals If it is determined by the Department that the annual DBE goal will not be met through *race-neutral* means, the Department may implement *race-conscious contract goals* on some projects. Race-conscious contract goals are goals that are enforceable by the Department and require that the prime contractor use good faith effort to achieve the goal set by the Department for that particular project. If race conscious means are implemented on a project, the Prime must comply with the requirements of 49 CFR.

At the time of the bid opening, all Bidders shall submit with their bid a Disadvantaged Business Enterprise (DBE) Commitment Form provided by the Department. This form will list the DBE and non-DBE firms that are proposed to be used during the execution of the Work. The list shall show the name of the firm, the item/material/type of work involved and the dollar amount of work to be performed. The dollar total of each commitment shall be totaled and a percentage determined.

If the project goal is not met, acceptable documentation showing all good faith efforts made to obtain participation may be required in order to award the project. Failure to provide the required listing with the dollar participation total or acceptable documentation of good faith efforts to obtain DBE participation within 3 days after the bid opening date will be considered a lack of responsiveness on the part of the low bidder. Rejection of the low bid under these circumstances will require the low bidder to surrender the Proposal Guaranty to the Department. The submission and approval of the above forms does not constitute a formal subcontract.

If for any reason during the progress of the Work the Contractor finds that DBEs included on the list are unable to perform the proposed work, the Contractor, with written release by the committed DBE or approval of the Department, may substitute other DBE firms for those named on the list. If the Contractor is able to clearly document their inability to find qualified substitute firms to meet the project goal, the Contractor may request in writing approval to substitute the DBE with a non-DBE firm. If at any time during the life of the Contract it is determined that the Contractor is not fulfilling the goal or commitment(s) and is not making a good faith effort to fulfill the DBE requirement, the Department may withhold progress payments. If good faith effort is determined by the Department, failure to meet the DBE contract goal will not be a detriment to the bid award. Fulfillment of the goal percentage shall be determined by dividing the dollars committed to the DBEs by the actual contract dollars. These requirements are in addition to all other Equal Employment Opportunity requirements on Federal-aid contracts.

105.10.1.5 Certification of DBE attainment on Contracts The MaineDOT must certify that it has conducted post-award monitoring of all contracts to ensure that DBEs had done the work for which credit was claimed. The certification is for the purpose of ensuring accountability for monitoring which the regulation already requires. The MaineDOT will certify these contracts through review of CUF forms, Elations sub-contract payment tracking as well as occasional on-site reviews of projects and through the project's final closeout documentation provided by our Contracts Section.

105.10.1.6 Bidders' List Survey Pursuant to 49 CFR 26.11 the MaineDOT is required to "create and maintain" a bidders list and gather bidder information on our construction/consultant projects, Contractors will maintain information on all subcontract bids submitted by DBE and Non-DBE firms and provide that information to the Department. The Following information is required:

Firm Name
Firm Address
Firm status (DBE or non-DBE)
Age of firm (years)
And the annual gross receipts amount as indicated by defined brackets, i.e. $500,000 to $800,000, rather than requesting exact figures.

Not only is this information critical in determining the availability of DBE businesses relative to other businesses that do similar work, but the Federal Highway Administration requires that we obtain this information.

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
(Limitations of Operations)

1. The Permitted Work Days are Monday through Friday (work hours 7AM to 6 PM). The Contractor shall not work on Saturdays, Sundays and the Holidays listed below without advanced permission by the City.
    - Veterans Day – 11/11/14
    - Thanksgiving Day – 11/27/14
    - Christmas Day – 12/25/14
    - New Year's Day – 1/1/15
    - Memorial Day – 5/25/15
    - Independence Day – 7/4/15

    Once work begins, it shall be continuous through to completion.

2. No nighttime weekend work will be permitted.

3. The Contractor shall conduct his operations in such a manner that South Main Street is open to traffic with alternating one way traffic minimum, except during weekdays from 6am-9am and 3pm-6pm when two 11 ft. wide travel lanes shall be maintained (1 lane in each direction).

4. All roadways and driveway entrances shall remain open at all times unless otherwise noted herein or approved

Town: Auburn
PIN #: 14787.20
Date: 7/7/14

SPECIAL PROVISION
SECTION 105
General Scope of Work
(Environmental Requirements)

The northern long eared bat (*Myotis septentrionalis*) (hereafter referred to as 'NLE bat') was proposed for listing under the Federal Endangered Species Act (ESA) on October 2, 2013 (Federal Register Vol. 78, No. 191, pages 61046-61080). This species is expected to be listed as Endangered under the ESA around April 1, 2015.

The following conditions must be met to minimize harm to the NLE bat.

I. Special Conditions:

1. **All clearing and or tree clearing for the entire project must occur prior to April 1, 2015.**

City of Auburn
WIN 14787.20
August 2014

SPECIAL PROVISIONS
SECTION 107
PROSECUTION AND PROGRESS
(CONTRACT TIME)

The contractor will be allowed to commence work on this project as long as all applicable plans as required under this contract have been submitted and approved and required notice has been provided.

The completion date for this contract is **July 31, 2015**.

For every weekday not worked once operations commence, the Contractor will be charged Supplemental Liquidated Damages per calendar day at the rate stated in Section 107.7.2 of the Supplemental Standard Specifications (excluding days lost to inclement weather).

The contractor shall not carry on construction operations on Sundays or Holidays as per Section 107.3.3.

All travel lanes shall be open to traffic and the roadway in safe operating condition when the contractor suspends work for holidays or extended periods of time as directed.

All work schedule changes must be submitted for approval to the Department a minimum of 10 calendar days prior to the requested change.

SPECIAL PROVISION
SECTION 107
Control of Work

The Contractor shall notify the Engineer three (3) working days prior to the commencement of construction activities.

The work shall not commence until the traffic control plan has been approved. Once the Contractor begins work at one project location, the Contractor shall continue to work at that location until the project is complete, unless otherwise approved by the Engineer.

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
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 City 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 City 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 City 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 City."

SPECIAL PROVISION
SECTION 108
PAYMENT
(Asphalt Escalator)

108.4.1 Price Adjustment for Hot Mix Asphalt: For all contracts with hot mix asphalt in excess of 500 tons total, a price adjustment for performance graded binder will be made for the following pay items:

Item 403.102 Mot Mix Asphalt – Special Areas
Item 403.206 Hot Mix Asphalt - 25 mm
Item 403.207 Hot Mix Asphalt - 19 mm
Item 403.2071 Hot Mix Asphalt - 19 mm (Polymer Modified)
Item 403.2072 Hot Mix Asphalt - 19 mm (Asphalt Rich Base)
Item 403.2073 Warm Mix Asphalt - 19 mm
Item 403.208 Hot Mix Asphalt - 12.5 mm
Item 403.2081 Hot Mix Asphalt - 12.5 mm (Polymer Modified)
Item 403.20813 Warm Mix Asphalt - 12.5 mm (Polymer Modified)
Item 403.2083 Warm Mix Asphalt - 12.5 mm
Item 403.209 Hot Mix Asphalt - 9.5 mm (sidewalks, drives, & incidentals)
Item 403.210 Hot Mix Asphalt - 9.5 mm
Item 403.2101 Hot Mix Asphalt - 9.5 mm (Polymer Modified)
Item 403.2102 Hot Mix Asphalt - 9.5 mm (Asphalt Rich Base)
Item 403.2103 Warm Mix Asphalt - 9.5 mm
Item 403.2104 Hot Mix Asphalt - 9.5 mm (3/4” Surface)
Item 403.211 Hot Mix Asphalt – Shim
Item 403.2111 Hot Mix Asphalt – Shim (Polymer Modified)
Item 403.2113 Warm Mix Asphalt - Shim
Item 403.212 Hot Mix Asphalt - 4.75 mm (Shim)
Item 403.2123 Warm Mix Asphalt - 4.75 mm (Shim)
Item 403.213 Hot Mix Asphalt - 12.5 mm (base and intermediate course)
Item 403.2131 Hot Mix Asphalt - 12.5 mm (base and intermediate course Polymer Modified)
Item 403.2132 Hot Mix Asphalt - 12.5 mm (Asphalt Rich Base and intermediate course)
Item 403.2133 Warm Mix Asphalt - 12.5 mm (base and intermediate course)
Item 403.214 Hot Mix Asphalt - 4.75 mm (Surface)
Item 403.2143 Warm Mix Asphalt - 4.75 mm (Surface)
Item 403.301 Hot Mix Asphalt (Asphalt Rubber Gap-Graded)
Item 404.70 Colored Hot Mix Asphalt – 9.5mm (Surface)
Item 404.72 Colored Hot Mix Asphalt – 9.5mm (Islands, sidewalks, & incidentals)
Item 461.13 Maintenance Surface Treatment

Price adjustments will be based on the variance in costs for the performance graded binder component of hot mix asphalt. They will be determined as follows:

The quantity of hot mix asphalt for each pay item will be multiplied by the performance graded binder percentages given in the table below times the difference in price between the base price and the period price of asphalt cement. Adjustments will be made upward or downward, as prices increase or decrease.

Item 403.102–6.2%			
Item 403.206–4.8%			
Item 403.207–5.2%	Item 403.2071–5.2%	Item 403.2072–5.8%	Item 403.2073–5.2%
Item 403.208–5.6%	Item 403.2081–5.6%	Item 403.20813–5.6%	Item 403.2083–5.6%
Item 403.209–6.2%			
Item 403.210–6.2%	Item 403.2101–6.2%	Item 403.2102–6.8%	Item 403.2103–6.2%
Item 403.2104–6.2%			
Item 403.211–6.2%	Item 403.2111–6.2%		Item 403.2113–6.2%
Item 403.212–6.8%			Item 403.2123–6.8%
Item 403.213–5.6%	Item 403.2131–5.6%	Item 403.2132–6.2%	Item 403.2133–5.6%
Item 403.214–6.8%			Item 403.2143–6.8%
Item 403.301–6.2%			
Item 404.70–6.2%			
Item 404.72–6.2%			
Item 461.13–6.4%			

Hot Mix Asphalt**:** The quantity of hot mix asphalt will be determined from the quantity shown on the progress estimate for each pay period.

Base Price: The base price of performance graded binder to be used is the price per standard ton current with the bid opening date. This price is determined by using the average New England Selling Price (Excluding the Connecticut market area), as listed in the Asphalt Weekly Monitor.

Period Price: The period price of performance graded binder will be determined by the Department by using the average New England Selling Price (Excluding the Connecticut market area), listed in the Asphalt Weekly Monitor current with the paving date. The maximum Period Price for paving after the adjusted Contract Completion Date will be the Period Price on the adjusted Contract Completion Date.

SPECIAL PROVISION
SECTION 202
REMOVING STRUCTURES AND OBSTRUCTIONS

The provisions of Section 202 of the Standard Specifications shall apply with the following additions and modifications:

202.07 Method of Measurement
Removing existing storm and sewer pipes shall be measured per linear foot.

Pavement butt joints for driveways will be considered incidental to the Contract and will not require measurement.

202.08 Basis of Payment
The accepted quantity of removal of existing storm and sewer pipe shall be at the contract unit price per linear foot, which will be full compensation for removal of a pipe outside the horizontal limits of excavation for a proposed pipe or structure by four or more feet. Removal of existing pipe within four feet of the horizontal limits of excavation for a proposed pipe will be considered incidental to that applicable pipe pay item.

Pavement butt joints for driveways will be considered incidental to the Contract and will not require payment.

Payment will be made under:

Pay Item		Pay Unit
202.16	Removing Existing Storm/Sewer Pipe	Linear Foot

SPECIAL PROVISION
SECTION 203
EXCAVATION AND EMBANKMENT

The provisions of Section 203 of the Standard Specifications shall apply with the following additions and modifications:

203.02 Materials
MDOT 703.31 - Crushed Stone.

203.18 Method of Measurement
Crushed Stone will be measured by the number of cubic yards measured in its original position by cross sectional elevations of the area excavated. Refer to MDOT Standard Specifications

203.19 Basis of Payment
The accepted quantities of crushed stone will be paid for by the measured number of cubic yards in its original position

Payment will be made under:

Pay Item		Pay Unit
203.29	Crushed Stone (Over depth)	Cubic Yard

SPECIAL PROVISION
DIVISION 400
PAVEMENTS

SECTION 401 - HOT MIX ASPHALT PAVEMENT

401.01 Description The Contractor shall furnish and place 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 Maine DOT 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
HMA Mixture Composition	703.09

401.021 Recycled Asphalt Materials Recycled Asphalt Pavement (RAP) may be introduced into the mixture at percentages approved by the Department according to the Maine DOT 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.

For specification purposes, RAP will be categorized as follows:

Class III – The Contractor may use a maximum of 10 percent Class III RAP in any base, binder, surface, or shim course. Class III RAP will be allowed in hand-placed mixes for item 403.209 at a rate of up to 20 percent.

Class II – The Contractor may use a maximum of 20 percent Class II RAP in any base, binder, surface, or shim course.

Class I – The Contractor may use a maximum of 30 percent Class I RAP in any base, binder, surface, or shim course provided that PG 58-34 asphalt binder is used in the mixture. A PG 52-34 may be used when approved by the Department.

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.

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 Mg [150 ton] for stone stockpiles, 75 Mg [75 ton] for sand stockpiles, and 50 Mg [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 Maine DOT 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.
**For 4.75 mm nominal maximum aggregate size mixtures, the Fines/Effective Binder Ratio is 0.6-1.4.

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 135° to 163°C [275 to 325°F]
At the Paver – allowable range 135° to 163°C [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. 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 4°C [40°F] or higher and the area to

be paved is not frozen. 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 10°C [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 10°C [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 4°C [40°F] or higher.

On all sections of overlay with wearing courses less than 25 mm [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 MDOT 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 300 mm [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 3 m [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 10 m [30 ft], a non-contact grade control with a minimum span of 7.3 m [24 ft], except that a 12 m [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 nuclear density testing across the mat being placed, prior to being compacted by equipment., at 300 mm [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 14.5 Mg [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 18.1 Mg [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.

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 5 m [16 ft] straightedge or string line placed directly on the surface, parallel to the centerline of pavement.
b.) A 3 m [10 ft] straightedge or string line placed directly on the surface, transverse to the centerline of pavement.

The Contractor shall correct variations exceeding 6 mm [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.

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 14°C [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.

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 Bituminous Pavement.

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 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 75 mm [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 field and plant supervisors including the responsible onsite paving supervisor shall attend this meeting.

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 and a daily paving report
m. Silo management and details (can show storage for use on project of up to 36 hours)
n. Provisions for varying mix temperature due to extraordinary conditions.
o. Name and responsibilities of the Responsible onsite Paving Supervisor.
p. Method for calibration/verification of Density Gauge
q. A note that all testing will be done in accordance with AASHTO and the Maine DOT 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. 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 Mg [125 ton] (As noted in QC Plan)	ASTM D2950
%TMD (Base)	1 per 250 Mg [250 ton] (As noted in QC Plan)	AASHTO T269
Fines / Effective Binder	1 per 500 Mg [500 ton]	AASHTO T 312*
Gradation	1 per 500 Mg [500 ton]	AASHTO T30
PGAB content	1 per 500 Mg [500 ton]	AASHTO T164 or T308
Voids at N_{design}	1 per 500 Mg [500 ton]	AASHTO T 312*
Voids in Mineral Aggregate at N_{design}	1 per 500 Mg [500 ton]	AASHTO T 312*
Rice Specific Gravity	1 per 500 Mg [500 ton]	AASHTO T209
Coarse Aggregate Angularity	1 per 5000 Mg [5000 ton]	ASTM D5821
Flat and Elongated Particles	1 Per 5000 Mg [5000 ton]	ASTM D4791
Fine Aggregate Angularity	1 Per 5000 Mg [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 MDOT 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 MDOT 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, 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, 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 Maine DOT Policies and Procedures for HMA Sampling and Testing, which will then be transported by the Contractor to the designated MDOT Laboratory within 48 hours (except when otherwise noted in the project specific QCP due to local restrictions), as directed by MDOT 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 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, 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 50 m [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 0.225 m (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 MDOT 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 1 m [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 MDOT 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 19 mm [3/4 in] or less in thickness, there shall be no pay adjustment for density otherwise noted in Section 403 - Hot Bituminous Pavement. For overlays designed to be 19 mm [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 Bituminous 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 Mg [4500 tons], with unanticipated over-runs of up to 1500 Mg [1500 ton] rolled into the last lot. Sublot sizes shall be 750 Mg [750 ton] for mixture properties, 500 Mg [500 ton] for base or binder densities and 250 Mg [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

Property	USL and LSL
Passing 4.75 mm and larger sieves	Target +/-7%
Passing 2.36 mm to 1.18 mm sieves	Target +/-4%
Passing 0.60 mm	Target +/-3%
Passing 0.30 mm to 0.075 mm sieve	Target +/-2%
PGAB Content	Target +/-0.4%
Air Voids	4.0% +/-1.5%
Fines to Effective Binder	0.9 +/-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%

**For 4.75 mm nominal maximum aggregate size mixtures, the Fines/Effective Binder Ratio is 0.6-1.4.

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 Testing 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 Mg [4500 tons], with unanticipated over-runs of up to 1500 Mg [1500 ton] rolled into the last lot. Sublot sizes shall be 750 Mg [750 ton] for mixture properties, 500 Mg [500 ton] for base or binder densities and 250 Mg [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%

**For 4.75 mm nominal maximum aggregate size mixtures, the Fines/Effective Binder Ratio is 0.6-1.4.

401.204 Testing Method D For hot mix asphalt items designated as Method D in Section 403 - Hot Bituminous Pavement, one sample will be taken from the paver hopper or the truck body per 250 Mg [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 150 mm [6 in] cores, which shall be tested for percent TMD per AASHTO T-269 unless otherwise noted in Section 403 - Hot Bituminous Pavement. If the average for the two tests falls below 92.5% the disincentive shall apply. If the test results for each 250 Mg [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 Mg [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.

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, but will monitor them 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 Mg [ton]
P = Contract price per Mg [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 at the Central Laboratory in Bangor 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 at the Central Laboratory in Bangor 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 MDOT) 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 The Contractor may dispute any or all of the following Method A or B 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 these tests 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.
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 - Bituminous Box

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 1000 lane-meters [3000 lane-feet]. A sublot will consist of 20 lane-meters [50 lane-feet]. Partial lots will be included in the previous lot if less than one-half the size of a normal lot. If 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 30 m [100 ft] of bridge joints)
Acceleration and deceleration lanes
Shoulders and ramps
Side streets and roads
Within 30 m [100 ft] of transverse joints at the beginning and end of the project
Within 30 m [100 ft] of railroad crossings
Urban areas with speed limits of 50 kph [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	0.95 m/km [60 in/mile]
II	1.10 m/km [70 in/mile]
III	1.25 m/km [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 BITUMINOUS PAVEMENT

403.01 Description This work shall consist of constructing one or more courses of bituminous 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 bituminous pavement shall be composed of a mixture of aggregate, filler if required, and bituminous 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.
In addition, hot bituminous pavement placed on bridges shall also conform to the following requirements.

a. The mixture shall be composed of aggregate, PGAB and mineral filler but no recycled asphalt pavement and placed in courses as specified in the Special Provisions.

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

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

d. The Contractor will not be required to cut sample cores from the compacted pavement on the bridge deck.

e. After the top course has been placed, the shoulder areas shall be sealed 1 meter [3 ft] wide with two applications of an emulsified bituminous sealer meeting the requirements of 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.

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

g. The atmospheric temperature for all courses on bridge decks shall be 10°C [50°F] or higher.

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

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

403.05 Basis of Payment The accepted quantities of hot bituminous pavement will be paid for at the contract unit price per Megagram [ton] for the bituminous mixtures, including bituminous 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 Bituminous Pavement, for Method location).

Payment will be made under:

Pay Item		Pay Unit
403.102	Hot Mix Asphalt Pavement for Special Areas	MG [Ton]
403.206	Hot Mix Asphalt, 25 mm Nominal Maximum Size	MG [Ton]
403.207	Hot Mix Asphalt, 19.0 mm Nominal Maximum Size	MG [Ton]
403.2071	Hot Mix Asphalt , 19.0 mm Nominal Maximum Size	MG [Ton]
403.2072	Asphalt Rich Hot Mix Asphalt,19.0 mm Nominal Maximum Size (Asphalt Rich Base and Intermediate course)	MG [Ton]
403.208	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size	MG [Ton]
403.2081	Hot Mix Asphalt - 12.5 mm Nominal Maximum Size (PG 70-28)	MG [Ton]
403.209	Hot Mix Asphalt, 9.5 mm Nominal Maximum Size (sidewalks, drives, islands & incidentals)	MG [Ton]
403.210	Hot Mix Asphalt, 9.5 mm Nominal Maximum Size	MG [Ton]
403.2101	Hot Mix Asphalt - 9.5 mm Nominal Maximum Size (PG 70-28)	MG [Ton]
403.2102	Asphalt Rich Hot Mix Asphalt, 9.5 mm Nominal Maximum Size (Asphalt Rich Intermediate course)	MG [Ton]
403.211	Hot Mix Asphalt (shimming)	MG [Ton]
403.212	Hot Mix Asphalt, 4.75 mm Nominal Maximum Size	MG [Ton]

403.2131	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size, (PG 70-28) (Base and Intermediate Base course)	MG [Ton]
403.2132	Asphalt Rich Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (Base and Intermediate Base course)	MG [Ton]

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SPECIAL PROVISION
SECTION 703
AGGREGATES

The Standard Specifications, Revision of 2002 Section 700 - Materials, Subsection 703.09 HMA Mixture Composition has been revised as follows:

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

TABLE 1: COMPOSITION OF MIXTURES - CONTROL POINTS

SIEVE SIZE	GRADING			
	TYPE 19 mm	TYPE 12.5 mm	TYPE 9.5 mm	TYPE 4.75 mm
	PERCENT BY WEIGHT PASSING - COMBINED AGGREGATE			
37.5 mm				
25 mm	100			
19 mm	90-100	100		
12.5 mm	-90	90-100	100	100
9.5 mm	-	-90	90-100	95-100
4.75 mm	-	-	-90	80-100
2.36 mm	23-49	28-58	32-67	40 - 80
1.18 mm	-	-	-	-
600 µm	-	-	-	-
300 µm	-	-	-	-
75 µm	**2-7**	**2-7**	**2-7**	**2-7**

SIEVE SIZE	RESTRICTED ZONES			
	TYPE 19 mm [¾ in]	TYPE 12.5 mm [½ in]	*TYPE 9.5 mm [⅜ in]	TYPE 4.75 mm [#40]
	PERCENT BY WEIGHT PASSING - COMBINED			AGGREGATE
37.5 mm [1½ in]	-	-	-	-
25 mm [1 in]	-	-	-	-
19 mm [¾ in]	-	-	-	-
12.5 mm [½ in]	-	-	-	-
9.5 mm [⅜ in]	-	-	-	-
4.75 mm [No. 4]	-	-	-	-
2.36 mm [No. 8]	34.6	39.1	47.2	-
1.18 mm [No. 16]	22.3-28.3	25.6-31.6	31.6-37.6	-
600 µm [No. 30]	16.7-20.7	19.1-23.1	23.5-27.5	-
300 µm [No. 50]	13.7	15.5	18.7	-
75 µm [No. 200]	-	-	-	-

* The restricted zone is presented for information and definition of “Fine” 9.5mm mixes only.

SPECIAL PROVISION
SECTION 403
HOT MIX ASPHALT

Desc. Of Course	Grad Design.	Item Number	Total Thick	No. Of Layers	Comp. Notes
4" HMA Overlay Areas					
Full Reconstruction Areas					
Mainline Travelway, Shoulders, & Approach Roads					
Wearing	12.5 mm	403.208	1 ½"	1	1,4,8,20
Base	12.5 mm	403.213	2 ½"	1	1,4,8
Sidewalks, Drives, Misc.					
Wearing	9.5 mm	403.209	2" - 3"	2/more	2,3,10,11,14

COMPLEMENTARY NOTES

1. The required PGAB for this mixture will meet a **PG 64-28** grading.
2. The incentive/disincentive provisions for density shall not apply. Rollers shall meet the requirements of this special provision. The use of an oscillating steel roller shall be required to compact all mixtures pavements placed on bridge decks.
3. The design traffic level for mix placed shall be <0.3 million ESALS. The design, verification, Quality Control, and Acceptance tests for this mix will be performed at **50 gyrations**.
4. The design traffic level for mix placed shall be 0.3 to <3 million ESALS. The design, verification, Quality Control, and Acceptance tests for this mix will be performed at **50 gyrations**.
8. Section 106.6 Acceptance, (2) Method B. The Contractor may request a contract modification to change to testing method "A" prior to work starting on this item.
10. Section 106.6 Acceptance, (2) Method D.
11. The combined aggregate gradation required for this item shall be classified as a 9.5mm "**fine graded "** mixture, (using the Primary Control Sieve control point) as defined in 703.09.
14. The combined aggregate gradation required for this item shall be classified as a 9.5mm Thin Lift Mixture (TLM) mixture, using the Aggregate Gradation Control Points as defined in 703.09.
20. The Contractor may place the specified HMA pavement course, not to exceed 2" inch compacted depth, over the full single travel lane width, for each production day. If this option is utilized the Contractor will be required to place a matching course of HMA over the adjacent section of travel lane before the end of the following calendar day. The Contractor will also be responsible for installing additional warning signage that clearly defines the centerline elevation differential hazard, as well as additional centerline delineation such as double RPM application, or temporary painted line. The Traffic Control Plan shall be amended to include this option and the additional requirements. All signs and traffic control devices will conform to Section 719.01, and Section 652, and will be installed prior to the work, at a maximum spacing of 0.50 mile for the entire length of effected roadway section. On roadways with two-way traffic, the Contractor will be required to place the specified course over the full width of the mainline traveled way being paved prior to opening the sections to weekend or holiday traffic. If this option is utilized, all additional signing, labor, traffic control devices, or incidentals will not be paid for directly, will be considered incidental to the appropriate 652 items.

Tack Coat

A tack coat of emulsified asphalt, RS-1, Item 409.15 shall be applied to any existing pavement at a rate of approximately 0.025 gal/yd², and on milled pavement approximately 0.05 gal/yd² prior to placing a new course. A fog coat of emulsified asphalt shall be applied between shim /base courses and the surface course, at a rate not to exceed 0.025 gal/yd². Tack used between layers of pavement will be paid for at the contract unit price for Item 409.15 Bituminous Tack Coat.

SPECIAL PROVISION
SECTION 604
MANHOLES, INLETS, AND CATCH BASINS

The following items shall be considered additions to the Standard Specifications under Section 604.

604.05 Method of Measurement
Measurement shall be in accordance with Subsection 604.05.

604.06 Basis of Payment
Payment shall be in accordance with Subsection 604.06.

Payment will be made under:

Pay Item		Pay Unit
604.2521	60" Catch Basin Type A5-C	Each

SPECIAL PROVISION
SECTION 607
FENCES

The provisions of Section 607 of the Standard Specifications shall apply with the following additions and modifications:

607.01 Description
This work shall consist of the demolition of existing fencing and installation of new fencing in accordance with these specifications and in reasonably close conformity with the lines and grades as shown on the Drawings.

607.03 Construction Requirements
The following paragraphs shall be added as Section 607.031:
Install fencing as per manufacturer's recommendation in the locations indicated on the plans and in accordance with the details.

The Contractor is responsible for locating, marking and avoiding all subsurface utilities during the post driving.

607.07 Basis of Payment
The following paragraph shall be to Section 607.07:

The demolition of existing fencing shall be considered incidental to the applicable fence pay item.

SPECIAL PROVISION
SECTION 608
DETACTABLE WARNINGS
(Cast Iron)

The provisions of Section 608 of the Standard Specifications shall apply with the following additions and modifications:

Description
This work shall consist of furnishing and installing curb ramp detectable warning plates with truncated domes at the locations shown on the plans or as established by the Resident.

Materials
Detectable Warnings: The Contractor shall provide new cast iron detectable warning plates as manufactured by one of the manufacturers listed on Maine DOT's Qualified Products list of Cast Iron Detectable Warning Plates. This list can be found at:

http://www.maine.gov/mdot/tr/qpl/.

Each field shall match the width of the ramp and shall have a natural finish.

Prior to starting this work, the Contractor shall submit for approval the name of the selected supplier, manufacturer's literature describing the product, installation procedures, and routine maintenance required.

Concrete: Portland cement concrete shall meet the requirements of Section 502, Structural Concrete, Class A

Construction Requirements
Existing Concrete Curb Ramps: Existing Concrete shall be saw-cut to a dimension 4 in larger than the detectable warning plates. New concrete shall be placed in the resulting opening and finished, and the new plates set into the wet concrete, according to manufacturer recommendations. New plates shall be set square with the curb edge and the base of the truncated domes shall be flush with adjacent surfaces to allow proper drainage.

New Concrete Curb Ramps: New concrete shall be placed and finished for the ramp, and the new plates set into the wet concrete, according to manufacturer recommendations. New plates shall be set square with the curb edge and the base of the truncated domes shall be flush with adjacent surfaces to allow proper drainage

New Asphalt Ramps: Asphalt shall be saw cut and removed to provide an opening that will allow for the dimensions of the cast iron plate surrounded by an additional 4 in border on all sides of the plate. New concrete shall be placed in the resulting opening and finished, and the new plates set into the wet concrete, according to manufacturer truncated domes shall be flush with adjacent surfaces to allow proper drainage.

Method of Measurement
Detectable warning fields properly placed and accepted shall be measured for payment by the square foot. Measurement shall include actual plate area, not surrounding concrete.

Basis of Payment
Payment will be full compensation at the contract unit price for all labor, materials, and equipment required to install the detectable warning fields. This shall include surface preparation and removal of concrete or asphalt, and necessary replacement concrete. On new concrete ramps, concrete shall be paid for under separate items

Payment will be made under:

Pay Item		Pay Unit
608.26	Curb Ramp Detectable Warning Field	Square Foot

SPECIAL PROVISION
SECTION 627
PAVEMENT MARKINGS

The provisions of Section 627 of the Standard Specifications shall apply with the following additions or modifications:

627.09 Method of Measurement
Measurement shall be in accordance with Subsection 627.09.

627.10 Basis of Payment
Payment shall be in accordance with Subsection 627.10.

Payment will be made under:

Pay Item		Pay Unit
627.733	4" White or Yellow Painted Pavement Marking Line	Linear Foot

SPECIAL PROVISION
SECTION 635
PRECAST CONCRETE BLOCK GRAVITY WALL

The following replaces Section 635 in the Standard Specifications in its entirety:

635.01 Description The work under this item shall consist of design, fabrication, furnishing and construction of a Precast Concrete Block Gravity Wall in accordance with these specifications and in close conformance with the lines and grades shown on the Plans, or established by the Resident. The Precast Concrete Block Gravity Wall shall consist of facing blocks made of wet cast concrete made from Portland cement, water, chemical admixtures, and aggregates, supported on concrete leveling pads, and if required, geosynthetic-reinforced backfill.

Included in the scope of the precast gravity wall construction are**:** geotechnical design of any wall with a exposed height greater than 4.5 feet or as specified on the Plans, all grading necessary for wall construction, compaction of the wall foundation soil, backfill, piped drainage, construction of leveling pads, and block wall installation. The top of the upper row of blocks shall be at or above the top of the face elevation shown on the Plans.

635.02 Quality Assurance The wall system shall be one of the approved combinations of facing block and soil reinforcement systems noted in the Plans or on the Department's Qualified Products List (QPL). Alternate wall systems will not be considered for this Item.

All design calculations and Shop Drawings shall be signed and sealed by a Professional Engineer licensed in the State of Maine.

The Contractor shall require the wall design-supplier to provide an on-site, qualified experienced technical representative to advise the Contractor concerning proper installation procedures. The technical representative shall be on-site during initial stages of installation and thereafter shall remain available for consultation as necessary for the Contractor or as required by the Resident.

635.03 Materials Materials for walls shall meet the requirements of the following sections of Division 700:

Gravel Borrow	703.20
Underdrain Backfill Type C	703.22
Underdrain Pipe	706.06 or 706.09
Reinforcing Steel	709.01
Structural Precast Concrete Units	712.061
Reinforcement Geotextile	722.01
Drainage Geotextile	722.02

The Contractor is cautioned that all of the materials listed are not required for every Precast Concrete Block Gravity Wall. The Contractor shall furnish the Resident a Materials

Certification Letter certifying that the applicable materials comply with this section of the specifications. Materials shall meet the following additional requirements:

635.031 Concrete Units The Materials Certification Letter described above shall contain the date of concrete casting, a lot identification number, compressive strength results, and entrained air results. All prefabricated concrete units shall conform to the requirements of 712.061 with the following exceptions:

A. Materials Materials are modified as follows: the maximum water cement ratio shall be 0.42, use of calcium nitrite is not required, and the minimum 28 day compressive strength shall be 4600 psi.

B. Quality Control and Quality Assurance. Quality Control and Quality Assurance is modified as follows: delete the second paragraph.

C. Construction. Construction requirements are modified as follows:

Replace the first sentence in the paragraph which begins "Forms shall remain …" with the following:
The forms shall remain in place until the concrete has gained sufficient strength such that removal of the forms and subsequent handling will not damage the units.

Add the following paragraph at the end of the Construction section:
Face texture of the units shall be a formed finish on all exposed surfaces. Pigment shall be added during the casting process of the concrete unit to achieve a consistent shade of gray or other color as determined by the Resident.

D. Concrete Testing. Concrete testing requirements are modified as follows:
Replace the paragraph which begins "The Contractor shall cast a minimum of 8 …." With the following:
The Contractor shall make and test at least one set of cylinders for every 50 CY of production concrete used to cast the concrete units.

Replace the paragraph which begins "At least once …" with the following:
The Contractor shall make four cylinders for use by the Department to represent every 200 CY or fraction thereof.

E. Tolerances. Maximum dimensional deviation of formed unit dimensions shall be ½ - inch or 2 percent or the manufacturer's published tolerances, whichever is less. Units not meeting the specified tolerances will be rejected.

635.032 Geosynthetic Reinforcement Geosynthetic reinforcement shall be as required by the proprietary wall system manufacturer or wall designer. Geosynthetic reinforcement shall consist of a geotextile or geogrid approved by the Geotechnical Engineer. Substitution of a geosynthetic other than that required by the proprietary wall system manufacturer shall not be

allowed unless approved by the Geotechnical Engineer after submittal of shop drawings and pullout and interface friction test data.

A. Geotextiles and Thread for Sewing. Woven or nonwoven geotextiles shall consist of long chain polymeric filaments or yarns formed into a stable network such that the filaments or yarns retain their position relative to each other during handling, placement, and design life. At least 95 percent by weight of the long chain polymer shall be polyolefin or polyester. The material shall be free of defects and tears. Geotextiles used for reinforcement shall conform as a minimum to the properties indicated for 722.01, Stabilization/Reinforcement Geotextile and shall meet the requirements of part D and E below. Geotextiles shall have a minimum permeability greater or equal to that shown on the Shop Drawings and the reinforced soil permeability.

B. Geogrids. The geogrid shall be a regular network of integrally connected polymer tensile elements with aperture geometry sufficient to permit significant mechanical interlock with the surrounding soil or rock. The geogrid structure shall be dimensionally stable and able to retain its geometry under manufacture, transport and installation. Geogrids shall conform as a minimum to the criteria specified in part D and E below.

C. Required Properties. The specific geosynthetic materials shall be preapproved and shall the have the ultimate tensile strength (T_{ult}) shown on the approved Shop Drawings for the geosynthetic specified and for the fill type shown. T_{ult} shall be determined from wide width tests specified in ASTM D 4595 for geotextiles and ASTM D 6637 or GRI:GG1 for geogrids. The ultimate tensile strength value is based on the minimum average roll values (MARV) for the product.

D. The geosynthetic shall conform to the following criteria:
    1. PP and HDPE: Min. retained strength of 70 percent after 150 hours, per ASTM D-4355.
    2. HDPE: Grade = E-4, E-5, E-8, E-9, E-10, E-11, J-3, J-4, or J-5, per ASTM D-1248.
    3. PET: Molecular weight (Mn) > 25,000, per GRI:GG8 and ASTM D-4603.
    4. PET: Carboxyl end group (CEG) ≥ 15 mmol/kg, GRI:GG7.
    5. All polymers: Minimum Weight per Unit Area of 8 oz/yd^2, per ASTM D-5261.
    6. All Polymers: Maximum 0 percent post consumer recycled material by weight.
    7. A default total reduction factor for creep, durability, and installation damage of RF = 7 may be used in design, provided the criteria of 2 through 6 are satisfied and 1 is adjusted to 70 percent after 500 hours is satisfied.

E. Manufacturer Quality Control. The geosynthetic reinforcements shall be manufactured with a high degree of quality control. The Manufacturer is responsible for establishing and maintaining a quality control program to ensure compliance with the requirements of the specification. The purpose of the QC testing program is to verify that the reinforcement geosynthetic being supplied to the project is representative of the material used for performance testing and approval. Conformance testing shall be performed as part of the manufacturing process and may vary for each type of product. As a minimum

the following index tests shall be considered as applicable for an acceptable QA/QC program:

Property	Test Procedure
1. Specific Gravity (HDPE only)	ASTM D-1505
2. Ultimate Tensile Strength	ASTM D-4595 GRI:GG1
3. Melt Flow (HDPE and PP only)	ASTM D-1238
4. Intrinsic Viscosity (PET only)	ASTM D-4603
5. Carboxyl End Group (PET only)	ASTM D-2455

F. Sampling Testing and Acceptance. Sampling and conformance testing shall be in accordance with ASTM D-4354. Conformance testing procedures are established above. Geosynthetic product acceptance shall be based on ASTM D-4759. The quality control certificate shall include:

1. Roll numbers and identification
2. Sampling procedures
3. Results of quality control tests, including a description of test methods used.

G. Certification. The Contractor shall submit a manufacturer's certification that the geosynthetics supplied meet the respective index criteria set when the geosynthetic was approved, measured in full accordance with all test methods and standards specified, or referenced, in this specification.

The manufacturer's certificate shall state that the furnished geosynthetic meets the requirements of these specifications as evaluated by the manufacturer's quality control program. The values submitted shall be certified by a person having legal authority to bond the manufacturer. In case of dispute over validity of values, the Resident can require the Contractor to supply test data from an agency approved laboratory to support the values submitted, at the Contractor's cost.

635.033 Geosynthetic Connection Reinforcing bar used in the geosynthetic connection shall be ½-inch diameter epoxy coated reinforcing bar, coated on the ends and meeting the requirements of Section 503, Reinforcing Steel. Installation shall be in accordance with manufacturer's recommendations.

635.034 Concrete Leveling Pad Concrete for leveling pads shall be Fill Concrete conforming to the requirements of Section 502 Structural Concrete. Unless otherwise specified, concrete for leveling pads shall be accepted under Method "C" requirements.

635.035 Backfill Material Backfill material placed behind the concrete units shall meet the requirements of Section 703.20 Gravel Borrow, except that the backfill material shall only contain particles that will pass the 3-inch square mesh sieve. The contractor is required to submit a grain size distribution curve (ASTM D 422) and a moisture-density relationship curve (AASHTO T-180) for acceptance of the proposed backfill material and determination of the appropriate installation damage reduction factor (RF_{ID}).

Walls with reinforced backfill require that the backfill material be subjected to pH testing to determine the appropriate durability reduction factor (RF_D).

Material between blocks must be Gravel Borrow, or Underdrain Backfill Material meeting the requirements of Section 703.22, Type C.

635.036 Materials Certification Letter The Contractor, or the supplier as his agent, shall furnish the Resident a Materials Certification Letter for the above materials, including the backfill material, in accordance with Section 700 of the Standard Specifications. A copy of all test results performed by the Contractor or his supplier necessary to assure contract compliance shall also be furnished to the Resident. The Resident will base acceptance upon the materials Certificate Letter, accompanying test reports, and visual inspection.

635.04 Design Requirements The wall shall be designed with a service life of not less than 75 years. The Precast Concrete Block Gravity Wall shall be designed and sealed by a Professional Engineer licensed in the State of Maine. The wall shall be designed in accordance with the following:

1. AASHTO LRFD Bridge Design Specifications, current edition, herein referred to as LRFD
2. FHWA-NHI-10-024 and FHWA-NHI-025 Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes, Volume I and II, 2009
3. FHWA-NHI-09-087 Corrosion/Degradation of Soil Reinforcements for Mechanically Stabilized Earth Walls and Reinforced Soil Slopes, 2009
4. The Contract Plans
5. The requirements specified herein
6. The manufacturer's requirements

Where conflicting requirements occur, the more stringent requirements shall govern.

Forty-five days prior to beginning construction of the wall, the design computations shall be submitted to the Resident for review by the Geotechnical Engineer. Any additional design or costs arising as a result of rejection of a wall design by the Geotechnical Engineer shall be borne by the Contractor.

Design calculations that consist of computer program generated output shall be supplemented with at least one hand calculation and graphic demonstrating the design methodology used. Design calculations shall provide thorough documentation of the sources of equations used and material properties. The design by the wall system supplier shall consider the stability of the wall as outlined below and in the Contract Documents:

A. Failure Plane The theoretical failure plane within the reinforced soil mass shall be determined in accordance with LRFD Article 11 and be analyzed so that the soil stabilizing components extend sufficiently beyond the failure plane within the reinforced soil mass to stabilize the material.

B. External Loads External loads which affect the internal and external stability such as those applied through traffic loadings, impact on traffic barrier posts, slope surcharge, hydrostatic, and seismic loads shall be accounted for in the design. Traffic surcharge and traffic impact loads shall be calculated and applied in compliance with LRFD Section 11.

C. External Stability Loads and load combinations selected for design shall be consistent with LRFD. Application of load factors shall be taken as specified in LRFD Section 11. Sliding resistance factors and bearing resistance factors shall be consistent with LRFD. Overturning and sliding provisions of LRFD shall apply.

D. Internal Stability Evaluation of reinforcement pullout, reinforcement rupture and reinforcement/block connection pullout or rupture shall be consistent with LRFD Section 11, and checked at each level. Loads, load combinations and load factors shall be as specified in LRFD Section 11. Resistance factors for internal design are specified in LRFD Section 11. Maximum reinforcement loads shall be calculated using the Simplified Method approach. Calculations for factored stresses and resistances shall be based upon assumed conditions at the end of the design life.

a. Geosynthetic Reinforcement Design Tensile Resistance The nominal long term reinforcement design strength (T_{al}) shall be determined by reducing T_{ult} by reduction factors (RF) in accordance with the documents referenced above. The designer shall procure and use the manufacturers tested and certified geosynthetic reinforcement reduction factors for creep (RF_{CR}), durability (RF_D), and installation damage (RF_{ID}) to determine T_{al}. In absence of manufacturers tested and certified reduction factors, a combined default reduction factor RF = 7 shall be used in accordance with the referenced documents. For RF_{ID}, the installation damage reduction factor shall be checked in accordance with LRFD and FHWA-NHI-00-044.

b. Reinforcement/Facing Connection Design Strength The nominal long-term connection strength between the geosynthetic reinforcement and the concrete blocks shall be checked in accordance with LRFD and FHWA-NHI-00-043.

c. Reinforcement Pullout The pullout resistance factor, (F*), and scale effect correction factor (α) used in pullout design, shall be determined from project specific pullout tests using the proposed geosynthetic in the specified project backfill material or equivalent soil. The pullout resistance factors shall be determined in accordance with LRFD and FHWA-NHI-00-043. In the absence of test data, empirical relationships may be used to determine the pullout resistance factors, any empirical relationships used in design shall be referenced in the design calculations.

E. Backfill and Foundation Soils Parameters The friction angle of the backfill used in the reinforced fill zone for internal stability design shall be assumed have a friction angle of 34 degrees unless specific project select backfill is tested for frictional strength. The

friction angle of the foundation soils and random backfill shall be assumed to be 30 degrees unless otherwise shown on the plans.

F. Reinforcement Length The soil reinforcement shall be the same length from the bottom to the top of each wall section. The reinforcement length defining the width of the entire reinforced soil mass may vary with wall height. The minimum length of the soil reinforcement shall be 8 ft, but shall not be less than 70 percent of the wall height, H, for walls with level surcharges, or 70 percent of H1 for walls with a sloped surcharge or walls supporting an abutment. The mechanical wall height, H or H1, shall be the vertical difference between the top of the leveling footing and the elevation at which the failure surface, as described above, intercepts the ground surface supported by the wall.

G. Bearing Resistance The factored bearing pressures under the Precast Concrete Block Gravity Wall shall be clearly indicated on the Shop Drawings. Walls shall be dimensioned so that the factored bearing resistance of the foundation soils, as noted on the Plans, is not exceeded.

H. Facing Stability Stability calculations for the concrete facing blocks shall be in accordance with LRFD, and shall include an evaluation of the maximum vertical spacing between reinforcement layers.

I. Stability During Construction Walls shall be designed to resist failure by instability of temporary construction slope. Passive pressure in front of the wall mass shall be assumed to be zero for design purposes.

J. Design Life The wall design life shall be a minimum of 75 years.

K. Depth of Embedment The depth of embedment for frost protection and stability shall be at or below the elevation shown on the Plans and the approved Shop Drawings.

L. Drainage System Piped drainage shall be designed to collect and dispose of water from the base of the reinforced soil zone and backfill soil. This shall outlet into surrounding drainage systems or ditches.

635.05 Submittals The Contractor shall supply wall design computations, wall details, dimensions, quantities, and cross sections necessary to construct the wall. A sample hand calculation including all equations, parameter values used, units, theory, free-body diagram, comparison to design requirements, etc. shall be provided. Spread sheet calculations alone are not acceptable.

Forty-five days prior to beginning construction of the wall, four (4) sets of the wall design computations and Shop Drawings shall be submitted to the Resident for review by the Geotechnical Engineer. Mix design information shall be submitted at the same time, including aggregate source, current gradation, aggregate quality information and concrete unit weight.

The contractor shall also submit backfill material test results as part of the wall submittal package. Backfill material test results shall include grain size distribution curve, moisture-density relationship curve, and pH test results required for reinforced backfill only.

If geotechnical design is required, the fully detailed plans shall be prepared in conformance with Section 105 and shall include, but not be limited to the following items:

A. A plan and elevation sheet or sheets for each wall, containing the following: elevations at the top of leveling pads, the distance along the face of the wall to all steps in the leveling pads, the location of the original and final ground line.

B. All details for foundations and leveling pads, including details for steps in the leveling pads, as well as allowable and actual maximum bearing pressures shall be provided.

C. Details for the barriers, posts, curbs and facing as required by the project conditions.

D. Design computations prepared and sealed by a licensed Professional Engineer.

E. Prior to the beginning of construction, the contractor shall supply the Resident with two copies of the design-supplier's Installation Manual. In addition, the Contractor shall have two copies of the Installation Manual on the project site.

635.06 Construction Requirements The Precast Concrete Block Gravity Wall shall have the following construction requirements:

A. Excavation. The excavation and use as fill or disposal of all excavated material shall meet the requirements of Section 203 - Excavation and Embankment, except as modified herein.

B. Foundation. The area upon which the prefabricated block gravity wall structure is to rest, and within the limits shown on the submitted plans, shall be graded for a width equal to, or exceeding, the length of the blocks. Prior to wall and leveling pad construction, this foundation material shall be compacted to at least 95 percent of maximum laboratory dry density (AASHTO T-180 Method C or D). Frozen and unsuitable soil shall be removed and replaced with gravel borrow compacted to 95 percent of AASHTO T-180.

   A concrete leveling pad shall be constructed as indicated on the plans. Dimensions may be modified per the wall supplier's recommendations, with written approval of the Geotechnical Engineer. The leveling pad shall be cast to the design elevations as shown on the plans, or as required by the wall supplier upon written approval of the Geotechnical Engineer. The allowable elevation tolerances from the design elevations are +0.01 feet and -0.02 feet. Leveling pads which do not meet this requirement shall be repaired or replaced as directed by the Resident at no additional cost to the Department. Placement of wall units may begin after the strength of the concrete leveling pad reaches

1000 psi or is adequate to support the proposed loads. Contractor may begin placement of concrete block units after 12 hours at his own risk.

C. Method and Equipment. Prior to erection of the prefabricated concrete block wall, the Contractor shall furnish the Resident with detailed information concerning the proposed construction method and equipment to be used. The erection procedure shall be in accordance with the manufacturer's instructions. Any units that are damaged due to handling will be replaced at the Contractor's expense.

D. Installation of Wall Units. A field representative from the wall system being used shall be available, as needed, during the erection of the wall. The services of the representative shall be at no additional cost to the project. Horizontal joint fillers shall be installed as needed.

The maximum offset in any unit horizontal joint shall be 1/4 inch. The prefabricated wall blocks shall be installed to a tolerance of plus or minus 3/4 inch in 10 feet in vertical alignment and horizontal alignment.

E. Backfill Placement. Backfill placement shall closely follow the erection of each row of prefabricated wall units. The Contractor shall decrease the lift thickness if necessary to obtain the specified density. The maximum lift thickness shall be 8 inches loose. Gravel borrow backfill shall be compacted in accordance with Section 203.12 except that the minimum required compaction shall be at least 92 percent of maximum density as determined by AASHTO T-180 Method C or D. Backfill compaction shall be accomplished without disturbance or displacement of the wall blocks. Sheepsfoot rollers will not be allowed. Whenever a compaction test fails, no additional backfill shall be placed over the area until the lift is recompacted and a passing test achieved.

The moisture content of the backfill material prior to and during compaction shall be uniform throughout each layer. Backfill material shall have a placement moisture content less than or equal to the optimum moisture content. Backfill material with a placement moisture content in excess of the optimum moisture content shall be removed and reworked until the moisture content is uniform and acceptable throughout the entire lift. The optimum moisture content shall be determined in accordance with AASHTO T-180, Method C or D. At the end of the day's operations, the Contractor shall shape the last level of backfill so as to direct runoff of rain water away from the wall face.

Material between blocks must be Gravel Borrow or Underdrain Backfill Material meeting the requirements of Section 703.22, Type C. If Gravel Borrow is used between blocks, 722.02 drainage geotextile shall be placed behind vertical joints to prevent loss of granular material between blocks. Compliance with the gradation requirements shall be the responsibility of the Contractor, who shall furnish a copy of the backfill test results prior to construction. If Underdrain Backfill Material is used between blocks, no geotextile is required behind vertical joints.

635.07 Method of Measurement Precast Concrete Block Gravity Wall will be measured by the square foot of front surface not to exceed the dimensions shown on the Contract Plans unless authorized by the Resident. Vertical and horizontal dimensions will be from the edges of the blocks. No field measurements for computations will be made unless the Resident specifies, in writing, a change in the limits indicated on the Plans.

635.08 Basis of Payment The accepted quantity of Precast Concrete Block Gravity Wall will be paid for at the contract unit price per square foot complete in place. Payment shall be full compensation for furnishing geotechnical design as required, all labor, equipment and materials including all precast concrete units, hardware, joint fillers, geosynthetics, reinforcing steel, drainage pipe, backfill materials and technical field representative.

Cost of cast-in-place concrete for leveling pad will not be paid for separately, but will be considered incidental to the Precast Concrete Block Gravity Wall. Excavation, foundation material and backfill material will all be incidental to the Precast Concrete Block Gravity Wall.

There will be no allowance for excavating and backfilling for the Precast Concrete Block Gravity Wall beyond the limits shown on the approved submitted plans, except for excavation required to remove unsuitable subsoil in preparation for the foundation. Payment for excavating unsuitable subsoil shall be full compensation for all costs of pumping, drainage, sheeting, bracing and incidentals for proper execution of the work, and will be paid as Common Excavation in accordance with Section 203.

Payment will be made under:

Pay Item	Pay Unit
635.31 Precast Concrete Block Gravity Wall	square foot

SPECIAL PROVISION
SECTION 652
MAINTENANCE OF TRAFFIC
(Traffic Control)

Failure by the contractor to follow the Contracts 652 Special Provisions and Standard Specification and/or The Manual on Uniform Traffic Control Devices (MUTCD) and/or The Contractors own Traffic Control Plan will result in a violation letter and result in a reduction in payment as shown in the schedule below. The Department's Resident or any other representative of The Department reserves the right to suspend the work at any time and request a meeting to discuss violations and remedies. The Department shall not be held responsible for any delay in the work due to any suspension under this item. Any reduction in payment under this Special Provision will be in addition to forfeiting payment of maintenance of traffic control devices for that day.

ORIGINAL CONTRACT AMOUNT				
From	**Up to and**	**Amount of Penalty Damages per Violation**		
More Than	**Including**	**1st**	**2nd**	**3rd & Subsequent**
$0	$1,000,000	$250	$500	$1,250
$1,000,000	$2,000,000	$500	$1,000	$2,500
$2,000,000	$4,000,000	$1,000	$2,000	$5,000
$4,000,000	and more	$2,000	$4,000	$10,000

February 4, 2011
Supersedes February 27, 2003

SPECIAL PROVISION
SECTION 652
MAINTENANCE OF TRAFFIC

Approaches Approach signing shall include the following signs as a minimum. Field conditions may warrant the use of additional signs as determined by the Resident.

Road work Next x Miles
Road work 500 Feet
End Road Work

Work Area At each work site, signs and channelizing devices shall be used as directed by the Resident. Signs include:

Road Work xxxx [1]
One Lane Road Ahead
Flagger Sign

Other typical signs include:

Be Prepared to Stop
Low Shoulder
Bump
Pavement Ends

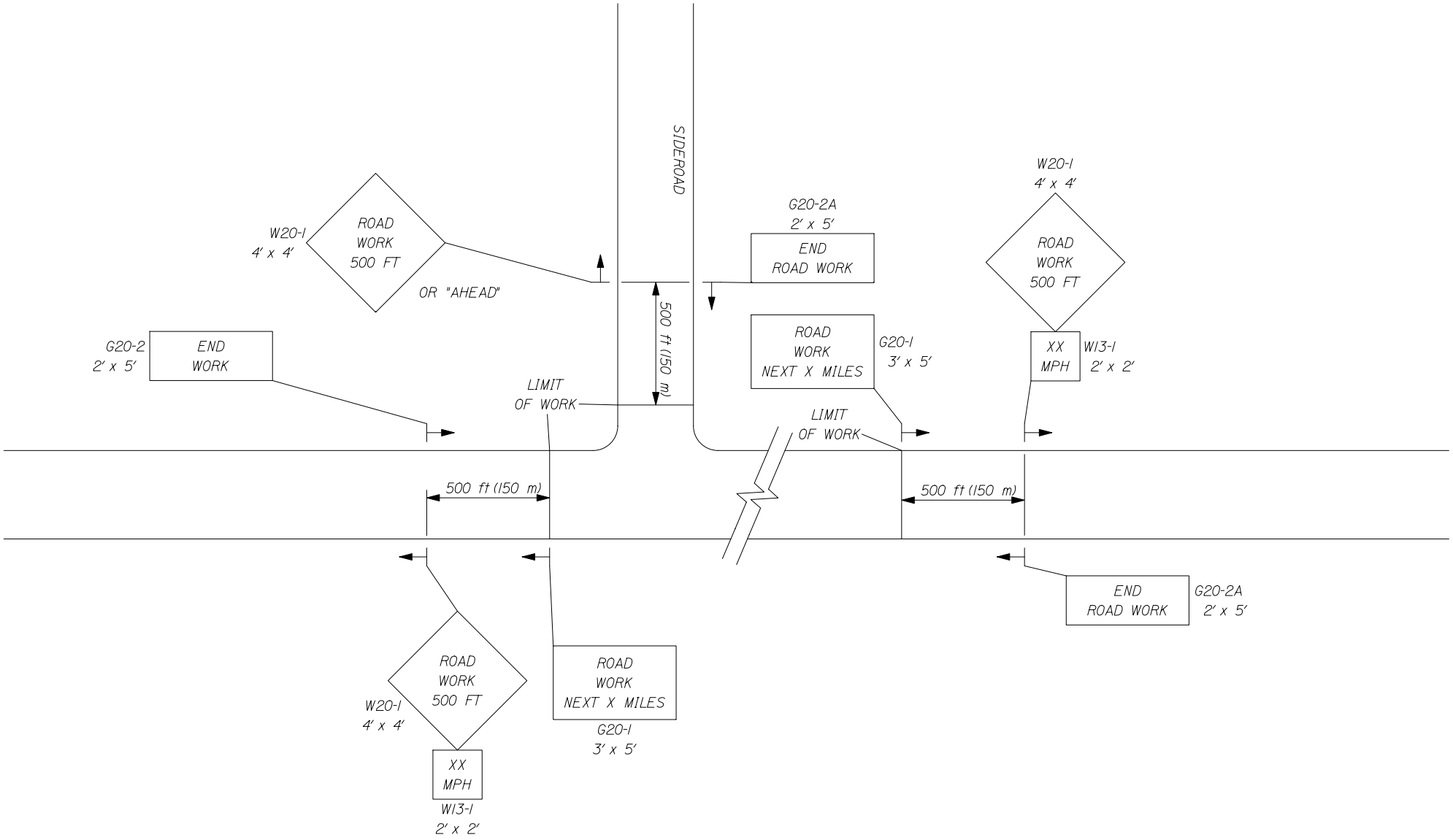
The above lists of Approach signs and Work Area signs are representative of the contract Requirements. Other sign legends may be required.

The Contractor shall conduct their operations in such a manner that the roadway will not be restricted to one lane for more than 800 m [2,500 ft] at each work area. To encourage quality paving in warm-weather conditions, the length can be extended to 4,000 ft depending on the traffic impacts. Where more than one work area restricts traffic to one lane operation, these work areas shall be separated by at least 1.6 km [1 mile] of two way operation.

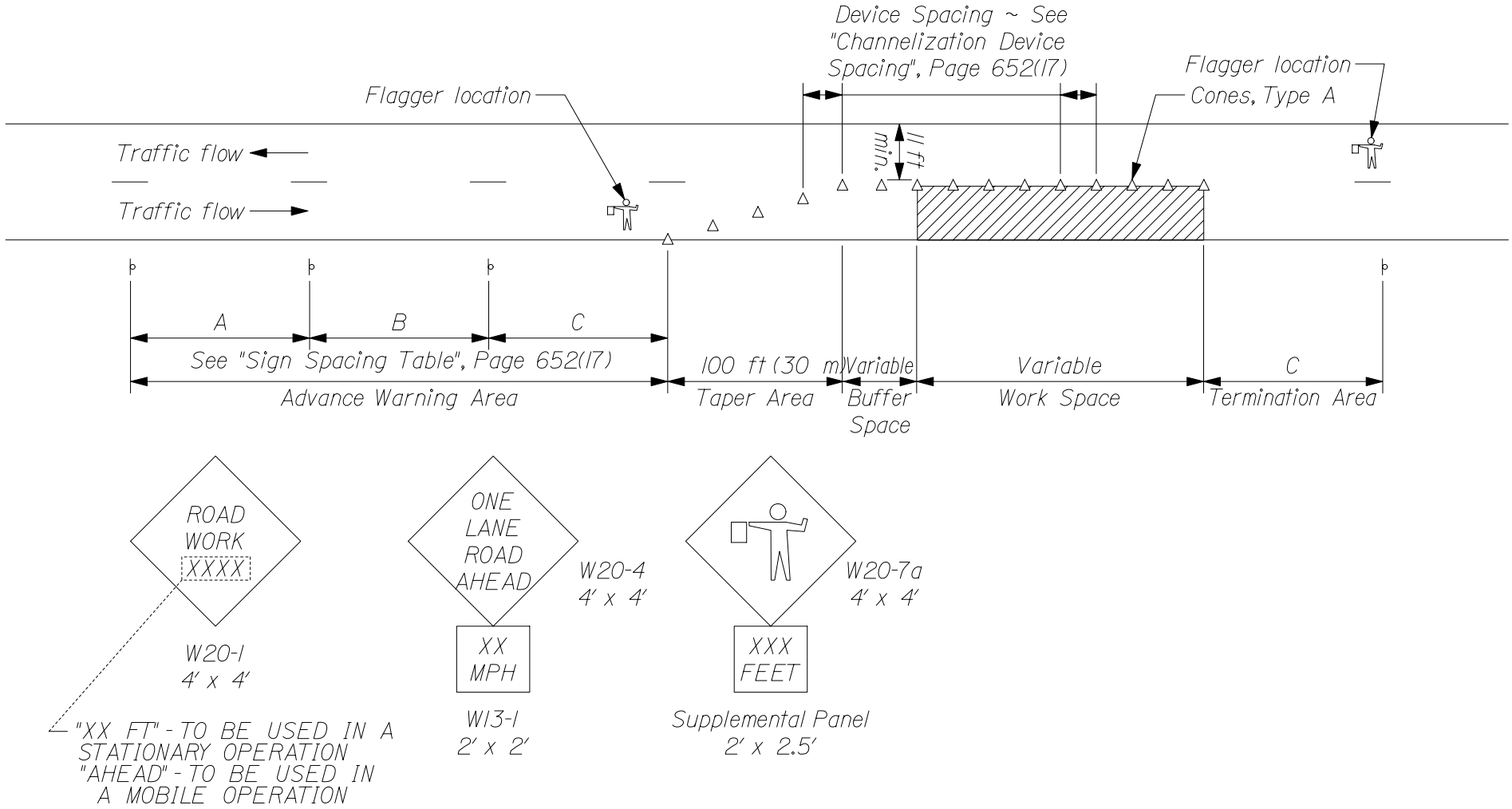
Temporary Centerline A temporary centerline shall be placed each day on all new pavement to be used by traffic. The temporary centerline, when specified of reflectorized traffic paint, shall conform to the standard marking patterns used for permanent markings.

Failure to apply a temporary centerline daily will result in a Traffic Control Violation and suspension of paving operations until temporary markers are applied to all previously placed pavement.

[1] "Road Work Ahead" to be used in mobile operations and "Road Work xx ft" to be used in stationary operations as directed by the Resident.



-- PROJECT APPROACH SIGNING --
TWO WAY TRAFFIC



TYPICAL APPLICATION: TWO - WAY, TWO LANE ROADWAY, CLOSING ONE LANE USING FLAGGERS

TYPE OF TAPER	TAPER LENGTH (L)*
Merging Taper	at least L
Shifting Taper	at least 0.5L
Shoulder Taper	at least 0.33L
One-Lane, Two-Way Traffic Taper	100 ft (30 m) maximum
Downstream Taper	100 ft (30 m) per lane

* Formulas for L are as follows:

For speed limits of 40 mph (60 km/h) or less:

$L = \frac{WS^2}{60}$ $\quad (L = \frac{WS^2}{155})$

For speed limits of 45 mph (70 km/h) or greater:

$L = WS$ $\quad (L = \frac{WS}{1.6})$

* Formulas for L are as follows:

A minimum of 5 channelization devices shall be used in the taper.

CHANNELIZATION DEVICE SPACING

The spacing of channelization devices shall not exceed a distance equal to 1.0 times the speed limit in mph when used for taper channelization, and a distance in feet of 2.0 times the speed limit in mph when used for tangent channelization.

SIGN SPACING TABLE			
Road Type	Distance Between Signs**		
	A	B	C
Urban 30 mph (50 km/h) or less	100 (30)	100 (30)	100 (30)
Urban 35 mph (55 km/h) and greater	350 (100)	350 (100)	350 (100)
Rural	500 (150)	500 (150)	500 (150)
Expressway / Urban Parkway	2,640 (800)	1,500 (450)	1000 (300)

**Distances are shown in feet (meters).

GENERAL NOTES;

1. Final placement of signs and devices may be changed to fit field conditions as approved by the Resident.

SUGGESTED BUFFER ZONE LENGTHS

Speed (mph)	Length (feet)	Speed (mph)	Length (feet)
20	115	40	325
25	155	45	360
30	200	50	425
35	250	55	495

April 17, 2007
Supersedes May 10, 2006

SPECIAL PROVISION
SECTION 652
MAINTENANCE OF TRAFFIC
Construction Sign Sheeting Material

Super high intensity fluorescent retroreflective sheeting, ASTM D 4956 - Type VII, Type VIII, or Type IX (prismatic), is required for all construction signs.

SPECIAL PROVISION
SECTION 656
TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL

The provisions of Section 656 of the Standard Specifications shall apply with the following additions and modifications:

The following is added to Section 656 regarding Project Specific Information and Requirements. All references to the Maine Department of Transportation Best Management Practices for Erosion and Sedimentation Control (a.k.a. Best Management Practices manual or BMP Manual) are a reference to the latest revision of said manual. The latest version is dated "February 2008" and is available at:

http://www.maine.gov/mdot/env/documents/pdf/bmp2008/BMP2008full.pdf

Procedures specified shall be according to the BMP Manual unless stated otherwise. Project Specific Information and Requirements

The following information and requirements apply specifically to this Project. The temporary soil erosion and water pollution control measures associated with this work shall be addressed in the Soil Erosion and Water Pollution Control Plan (SEWPCP.)

1. Newly disturbed earth shall be mulched by the end of each workday. Mulch shall be maintained on a daily basis.

2. The SEWPCP shall describe the location and method of temporary erosion and sediment control for existing and proposed catch basins, outlet areas and culvert inlets and outlets.

3. If water is flowing within the drainage system, the water shall be diverted to a stable area or conduit and work shall be conducted in the dry. The Contractor's plan shall address when and where the diversions will be necessary.

4. Dust control items other than those under Standard Specification 637, if applicable, shall be included in the plan.

5. Permanent slope stabilization measures shall be applied within one week of the last soil disturbance. Temporary slope stabilization is required on a daily basis.

6. Culvert inlet and outlet protection shall be installed within 48 hours of culvert installation, or prior to a storm event, whichever is sooner.

7. Temporary winter stabilization must be used between November 1st and April 1st or outside of that time period if the ground is frozen or snow covered. Temporary winter stabilization involves, at a minimum, covering all disturbed soils and seeded ground that is not Acceptable Work with an approved method. If temporary winter stabilization practices are used then spring procedures for permanent stabilization shall also be described in the SEWPCP. Use of these methods for over-winter temporary erosion control will be incidental to the contract.

SPECIAL PROVISION
SECTION 703
AGGREGATES

The Standard Specifications, Revision of 2002 Section 700 - Materials, Subsection 703.09 HMA Mixture Composition has been revised as follows:

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

TABLE 1: COMPOSITION OF MIXTURES - CONTROL POINTS

SIEVE SIZE	GRADING			
	TYPE 19 mm	TYPE 12.5 mm	TYPE 9.5 mm	TYPE 4.75 mm
	PERCENT BY WEIGHT PASSING - COMBINED AGGREGATE			
37.5 mm				
25 mm	100			
19 mm	90-100	100		
12.5 mm	-90	90-100	100	100
9.5 mm	-	-90	90-100	95-100
4.75 mm	-	-	-90	80-100
2.36 mm	23-49	28-58	32-67	40 - 80
1.18 mm	-	-	-	-
600 µm	-	-	-	-
300 µm	-	-	-	-
75 µm	**2-7**	**2-7**	**2-7**	**2-7**

SIEVE SIZE	RESTRICTED ZONES			
	TYPE 19 mm [¾ in]	TYPE 12.5 mm [½ in]	*TYPE 9.5 mm [⅜ in]	TYPE 4.75 mm [#40]
	PERCENT BY WEIGHT PASSING - COMBINED			AGGREGATE
37.5 mm [1½ in]	-	-	-	-
25 mm [1 in]	-	-	-	-
19 mm [¾ in]	-	-	-	-
12.5 mm [½ in]	-	-	-	-
9.5 mm [⅜ in]	-	-	-	-
4.75 mm [No. 4]	-	-	-	-
2.36 mm [No. 8]	34.6	39.1	47.2	-
1.18 mm [No. 16]	22.3-28.3	25.6-31.6	31.6-37.6	-
600 µm [No. 30]	16.7-20.7	19.1-23.1	23.5-27.5	-
300 µm [No. 50]	13.7	15.5	18.7	-
75 µm [No. 200]	-	-	-	-

* The restricted zone is presented for information and definition of “Fine” 9.5mm mixes only.

SPECIAL PROVISION
SECTION 803
SEWER MAINS AND SERVICES

The following items shall be considered additions to the Standard Specifications under Section 803.

803.01 Description

If a sewer service must be relocated due to a field determined conflict, Contractor shall provide excavation, trenching and backfill to satisfactorily relocate the service with the approval of the Engineer. The Contractor shall be responsible for locating and reconnecting existing sewer laterals to the existing sewer. All connections shall be made in conformance with the Maine State Plumbing Code. The Contractor shall install locating/warning tape over the centerline of all sanitary and storm sewer laterals as required by City ordinance. Both a green warning tape and a number 10 or 12 gauge single strand coated wire shall be installed at a maximum of 24 inches below finish surface grade for the entire length of the pipe. Magnetic warning tape may be used in place of the separate warning tape and wire.

803.02 Test Pits

Contractor shall perform test pit excavation in locations identified on the Drawings to locate underground utilities. Contractor shall excavate in a manner to allow an effective examination of the underground utility as required to collect measurements and observations to complete a test pit log. Upon completion, the test pit excavation shall be backfilled, compacted and the surface shall be repaired to match existing conditions.

For each test pit excavation, the Contractor shall submit to the City or Resident Engineer a test pit log including, but not limited to the following information:

- Test pit number
- Written description of test pit location
- Utility or utilities found in excavation
- Top of utility elevation
- Utility dimensions (height and width or diameter)
- Utility material
- Any discrepancies from the Drawings

803.02 Method of Measurement

Test pits will be measured per each, complete in place.

Sewer service relocation will be measured by the linear foot complete in place.

803.03 Basis of Payment

The accepted quantity of test pits will be paid for at the contract unit price per each. Payment shall be full compensation for furnishing all labor, materials and equipment necessary for excavation, backfilling, surface replacement, disposal of materials, and protection of utilities.

The accepted quantity of service relocation will be paid for at the contract unit price per linear foot of pipe relocated, complete in place. The amount bid for each service shall be full compensation for furnishing all labor, equipment, tools, adaptors, reducers, and materials necessary to satisfactorily connect all services. The cost of locating/warning tape including installation shall be considered incidental to the appropriate lateral. Payment for trench excavation, with the exception of structural rock excavation, pipe bedding materials, backfill material and backfilling shall be included in this item for payment.

Payment will be made under:

Pay Item		Pay Unit
803.01	Test Pit	Each
803.136	Sewer Service Relocation	Linear Foot

SPECIAL PROVISION
SECTION 812
SEWER MANHOLES

The following items shall be considered additions to the Standard Specifications under Section 812.

812.01 Description
This work shall consist of the adjusting all sewer manholes to grade.

Adjusting manholes to grade shall include removing and resetting frame and cover and fully reconstructing riser brick or precast risers to install frame at finish grade.

812.02 Construction Requirements
Adjusting manholes to grade shall include removing and resetting frame and cover and fully reconstructing riser brick or precast risers to install frame at finish grade.

812.03 Method of Measurement
Existing manholes to be adjusted or rebuilt will be measured per each unit complete in place.

812.04 Basis of Payment
The accepted quantities of manholes will be paid for at the contract unit price each of the respective types complete in place. Payment for adjusting manholes shall include furnishing all materials including new blocks, bricks, mortar, metal tops, and covers where required. There will be no payment for cleaning, adjusted, manholes.

Payment will be made under:

Pay Item		Pay Unit
812.162	Adjust Sewer Manhole to Grade	Each

SPECIAL PROVISION
SECTION 823
CURB STOPS AND GATE VALVES

The following items shall be considered additions to the Standard Specifications under Section 823.

823.01 Description

This work shall consist of the following:

- Adjusting valve boxes and curb stops to grade.

All connections shall be made in conformance with the Maine State Plumbing Code. All new service lines shall match the size of the existing lines. The Contractor shall be responsible for locating and reconnecting to the existing water main. The Contractor shall install locating/warning tape over the water service as required by City ordinance. Relocation and adjustment of valve boxes and curb stops shall be performed in accordance with Auburn Water and Sewer District requirements.

The Contractor shall coordinate and attend a Pre-Construction meeting with the Auburn Water and Sewer District, and provide all necessary notifications to the Water District and the City during construction.

823.02 Materials

All materials must comply with the current Auburn Water and Sewer District specifications, details and requirements.

823.03 Method of Measurement:

Adjustment of valve boxes and curb stops to grade shall be considered incidental to the contract and no separate measurements shall be made.

823.04 Basis of Payment

The accepted quantities of curb stop and gate valve shall be considered incidental to the contract.

SPECIAL PROVISION
SECTION 824
FIRE HYDRANTS

The following items shall be considered additions to the Standard Specifications under Section 824.

824.01 Description
This work shall consist of the following:

- Installing hydrant relocations, including removal, relocation, installation, new pipe and connection to water main;

The Contractor shall coordinate and attend a Pre-Construction meeting with the Auburn Water and Sewer District, and provide all necessary notifications to the Water District and the City during construction.

824.02 Materials
All materials must comply with the current Auburn Water and Sewer District specifications, details and requirements.

824.03 Method of Measurement:
Hydrants shall be measured by each unit relocated.

824.04 Basis of Payment
The accepted quantities of hydrant relocation shall be paid for at the contract unit price each complete in place. The amount bid shall be full compensation for furnishing all labor, equipment, tools, adaptors, and materials necessary to satisfactorily relocate the water services impacted by the construction. The cost of coordination with the Auburn Water and Sewer District and the City of Auburn is included in this pay item. Trench excavation, providing bedding materials, and all other effort necessary to satisfactorily complete the work shall be included. The cost of insulation shall be incidental to the associated pay items. Pipe bedding and backfilling shall also be incidental to each pay item. The cost of locating/warning tape including installation shall be considered incidental. The cost for disinfection and testing shall be considered incidental to the pay item. The Auburn Water and Sewer District will provide shutdown and reactivation of the water main.

Payment will be made under:

Pay Item		Pay Unit
824.321	Removing and Relocating Hydrant	Each

SPECIAL PROVISION
SECTION 830
WATER MAIN AND SERVICES

The following items shall be considered additions to the Standard Specifications under Section 830.

830.01 Description
This work shall consist of the following:

- Replacing water service lines due to a field determined utility conflict and as directed by the Engineer

All connections shall be made in conformance with the Maine State Plumbing Code. All new service lines shall match the size of the existing lines. The Contractor shall be responsible for locating and reconnecting to the existing water main. The Contractor shall install locating/warning tape over the water service as required by City ordinance. The Contractor shall provide all necessary labor, equipment, tools, and materials necessary to complete the water service replacements as directed by the Auburn Water and Sewer District upon test pit results.

The Contractor shall coordinate and attend a Pre-Construction meeting with the Auburn Water and Sewer District, and provide all necessary notifications to the Water District and the City during construction.

830.02 Materials
All materials must comply with the current Auburn Water and Sewer District specifications, details and requirements.

830.03 Method of Measurement:
The water service replacements will be measured per linear foot of replacement as directed by the Engineer.

The adjustment of water shut-off valves to grade shall be considered incidental to the Contract and shall not require measurement.

830.04 Basis of Payment
The accepted quantities of water service replacement will be paid for at the contract unit price per linear foot complete and in place. The bid unit price for service replacement shall be full compensation for furnishing all labor, equipment, tools, adaptors, reducers, and materials necessary to satisfactorily replace and reconnect services. The cost of locating/warning tape including installation shall be considered incidental to the appropriate lateral. Payment for trench excavation, with the exception of structural rock excavation, pipe bedding materials, backfill materials and backfilling shall be included in this item for payment.

The adjustment of water shut-off valves to grade shall be considered incidental to the Contract and shall not require payment.

Payment will be made under:

Pay Item		**Pay Unit**
830.102	Water Service Replacement	Linear Foot

APPENDIX A TO DIVISION 100

SECTION 1 - BIDDING PROVISIONS

A. Federally Required Certifications By signing and delivering a Bid, the Bidder certifies as provided in all certifications set forth in this Appendix A - Federal Contract Provisions Supplement including:

- Certification Regarding No Kickbacks to Procure Contract as provided on this page 1 below.
- Certification Regarding Non-collusion as provided on page 1 below.
- Certification Regarding Non-segregated Facilities as provided by FHWA Form 1273, section III set forth on page 21 below.
- "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion" as provided by FHWA Form 1273, section XI set forth on page 32 below.
- "Certification Regarding Use of Contract Funds for Lobbying" as provided by FHWA Form 1273, section XII set forth on page 35 below.

Unless otherwise provided below, the term "Bidder", for the purposes of these certifications, includes the Bidder, its principals, and the person(s) signing the Bid. Upon execution of the Contract, the Bidder (then called the Contractor) will again make all the certifications indicated in this paragraph above.

CERTIFICATION REGARDING NO KICKBACKS TO PROCURE CONTRACT Except expressly stated by the Bidder on sheets submitted with the Bid (if any), the Bidder hereby certifies, to the best of its knowledge and belief, that it has not:

(A) employed or retained for a commission, percentage, brokerage, contingent fee, or other consideration, any firm or person (other then a bona fide employee working solely for me) to solicit or secure this contract;

(B) agreed, as an express or implied condition for obtaining this contract, to employ or retain the services of any firm or person in connection with carrying out the contract, or;

C) paid, or agreed to pay, to any firm, organization, or person (other than a bona fide employee working solely for me) any fee, contribution, donation, or consideration of any kind for, or in connection with, procuring or carrying out the contract;

By signing and submitting a Bid, the Bidder acknowledges that this certification is to be furnished to the Maine Department of Transportation and the Federal Highway Administration, U.S. Department of Transportation in connection with this contract in anticipation of federal aid highway funds and is subject to applicable state and federal laws, both criminal and civil.

CERTIFICATION REGARDING NONCOLLUSION Under penalty of perjury as provided by federal law (28 U.S.C. §1746), 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 the Contract.

For a related provisions, see Section 102.7.2 (C) of the Standard Specifications - "Effects of Signing and Delivery of Bids" - "Certifications", Section 3 of this Appendix A entitled "Other Federal Requirements" including section XI - "Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion" and section XII. - "Certification Regarding Use of Contract Funds for Lobbying."

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B. Bid Rigging Hotline To report bid rigging activities call: **1-800-424-9071**

The U.S. Department of Transportation (DOT) operates the above toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m., eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

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SECTION 2 - FEDERAL EEO AND CIVIL RIGHTS REQUIREMENTS

Unless expressly otherwise provided in the Bid Documents, the provisions contained in this Section 2 of this "Federal Contract Provisions Supplement" are hereby incorporated into the Bid Documents and Contract.

A. Nondiscrimination & Civil Rights - Title VI The Contractor and its subcontractors shall not discriminate on the basis of race, color, national origin, or sex in the performance of this Contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the Department deems appropriate. The Contractor and subcontractors shall comply with Title VI of the Civil Rights Act of 1964, as amended, and with all State of Maine and other Federal Civil Rights laws.

For related provisions, see Subsection B - "Nondiscrimination and Affirmative Action - Executive Order 11246" of this Section 2 and Section 3 - Other Federal Requirements of this "Federal Contract Provisions Supplement" including section II - "Nondiscrimination" of the "Required Contract Provisions, Federal Aid Construction Contracts", FHWA-1273.

B. Nondiscrimination and Affirmative Action - Executive Order 11246 Pursuant to Executive Order 11246, which was issued by President Johnson in 1965 and amended in 1967 and 1978, this Contract provides as follows.

The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its efforts to achieve maximum results from its actions. The Contractor shall

document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

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

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

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

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

Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under B above.

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

Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions including specific review

of these items with on-site supervisory personnel such as Superintendents, General Forepersons, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

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

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

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

Validate all tests and other selection requirements.

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

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

Ensure that all facilities and company activities are non segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction Contractor's and suppliers, including circulation of solicitations to minority and female Contractor associations and other business associations.

Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

C. Goals for Employment of Women and Minorities Per Executive Order 11246, craft tradesperson goals are 6.9% women and .5% minorities employed. However, goals may be

adjusted upward at the mutual agreement of the Contractor and the Department. Calculation of these percentages shall not include On-the-Job Training Program trainees, and shall not include clerical or field clerk position employees.

For a more complete presentation of requirements for such Goals, see the federally required document "Goals for Employment of Females and Minorities" set forth in the next 6 pages below.

****

Start of GOALS FOR EMPLOYMENT OF FEMALES AND MINORITIES
Federally Required Contract Document

§60-4.2 Solicitations

(d) The following notice shall be included in, and shall be part of, all solicitations for offers and bids on all Federal and federally assisted construction contracts or subcontracts in excess of $10,000 to be performed in geographical areas designated by the Director pursuant to §60-4.6 of this part (see 41 CFR 60-4.2(a)):

Notice of Requirement for Affirmative Action to Ensure Equal Opportunity (Executive Order 11246)

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

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

Goals for female participation in each trade 6.9%

Goals for minority participation for each trade
Maine
001 Bangor, ME 0.8%
Non-SMSA Counties (Aroostook, Hancock, Penobscot, Piscataquis, Waldo, Washington)

002 Portland-Lewiston, ME
SMSA Counties: 4243 Lewiston-Auburn, ME 0.5%
(Androscoggin)

6403 Portland, ME 0.6%
(Cumberland, Sagadahoc)

Non-SMSA Counties: 0.5%
(Franklin, Kennebec, Knox, Lincoln, Oxford, Somerset, York)

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the contractor performs

construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non federally involved construction.

The contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be in violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

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

4. As used in this Notice, and in the Contract resulting from this solicitation, the "covered area" is (insert description of the geographical areas where the contract is to be performed giving the state, county and city, if any).

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)

1. As used in these specifications:

   a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;

   b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;

   c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department form 941;

   d. "Minority" includes:
      (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
      (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);

(iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

(iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of the North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

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

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

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7 a. through p. of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical areas where the work is being performed. Goals are published periodically in the Federal Register in notice form and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specific.

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

6. In order for the non working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of

employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

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

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

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

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

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

   e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources complied under 7b above.

   f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female

employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

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

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

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

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

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

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

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

n. Ensure that all facilities and company activities are non segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of

solicitation to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisor's adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

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

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

10. The Contractor shall not use the goals and timetables or affirmative action even through the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if standards to discriminate against any person because of race, color, religion, sex, or national origin.

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

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

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

requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.6.

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

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

End of GOALS FOR EMPLOYMENT OF FEMALES AND MINORITIES
Federally Required Contract Document

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D. Disadvantaged Business Enterprise (DBE) Requirements The Department has established an annual Disadvantaged Business Enterprise goal to be achieved through race neutral means. This goal will be adjusted periodically and will be provided by Supplemental Provision. The Contractor shall comply with all provisions of this section regarding DBE participation and the Department's latest version of the Disadvantaged Business Enterprise Program Manual, said Manual being incorporated herein by reference. In the case of conflict between this Contract and said Manual, this Contract shall control. The Department reserves the right to adjust DBE goals on a project-by-project basis by addendum.

Policy. It is the Department's policy that DBEs as defined in 23 CFR Part 26 and referenced in the Transportation Equity Act for 21st Century of 1998, as amended from the Surface Transportation Uniform Relocation Assistance Act of 1987, and the Intermodal Surface Transportation Efficiency Act of 1991. The intent hereto remains to provide the maximum opportunity for DBEs to participate in the performance of contracts financed in whole or in part with federal funds.

The Department and its Contractors shall not discriminate on the basis of race, color, national origin, ancestry, sex, age, or disability in the award and performance of DOT assisted contracts.

Disadvantaged Business Enterprises are those so certified by the Maine Department of Transportation Civil Rights Office prior to bid opening date.

The Department has determined that elements of a good faith effort to meet the contract goal include but are not limited to the following:

1. Whether the Contractor advertised in general circulation, trade association, and minority/women's-focus media concerning the subcontracting opportunities;

2. Whether the Contractor provided written notice to a reasonable number of specific DBEs that their interest in the contract is being solicited;

3. Whether the Contractor followed up on initial solicitations of interest by contacting DBEs to determine with certainty whether the DBEs were interested;

4. Whether the Contractor selected portions of the work to be performed by DBEs in order to increase the likelihood of meeting the DBE goals;

5. Whether the Contractor provided interested DBEs with adequate information about the plans, specification and requirements of the contract;

6. Whether the Contractor negotiated in good faith with interested DBEs, not rejecting the DBE as unqualified without sound reasons based on a thorough investigation of their capabilities;

7. Whether the Contractor made efforts to assist interested DBEs with other appropriate technical/financial assistance required by the Department or Contractor;

8. Whether the Contractor effectively used the services of available minority/women's community organizations, minority/women's business assistance offices; and other organizations that provide assistance in the recruitment and placement of DBEs.

Substitutions of DBEs. The following may be acceptable reasons for Civil Rights Office approval of such a change order:

- The DBE defaults, voluntarily removes itself or is over-extended;
- The Department deletes portions of the work to by performed by the DBE.

It is not intended that the ability to negotiate a more advantageous contract with another certified DBE be considered a valid basis for such a change in DBE utilization once the DBE Bid Submission review has been passed. Any requests to alter the DBE commitment must be in writing and included with the change order.

Failure to carry out terms of this Standard Specification shall be treated as a violation of this contract and will result in contract sanctions which may include withholding of partial payments totaling the creditable dollars amount which would have been paid for said DBE participation, termination of this contract or other measures which may affect the ability of the Contractor to obtain Department contracts.

Copies of the Maine Department of Transportation's DBE Program may be obtained from:
Maine Department of Transportation
Civil Rights Office
#16 State House Station
Augusta, Maine 04333-0016
tel. (207) 624-3519

Quarterly Reporting Requirement. The Contractor must submit Semi-annual reports of actual dollars paid to Disadvantaged Business Enterprises (DBE's) on this Project to the MaineDOT Civil Rights Office by the end of the third week of April and October for the period covering the preceding six months considered Federal Fiscal Year periods. The reports will be submitted directly to the Civil Rights Office on the form provided in the latest version of the DBE Program Manual. Failure to submit the report by the deadline may result in a withholding of approval of partial payment estimates by the Department.

SECTION 3 - OTHER FEDERAL REQUIREMENTS

Unless expressly otherwise provided in the Bid Documents, the provisions contained in this Section 3 of this "Federal Contract Provisions Supplement" are hereby incorporated into the Bid Documents and Contract.

A. Buy America

If the cost of products purchased for permanent use in this project which are manufactured of steel, iron or the application of any coating to products of these materials exceeds 0.1 percent of the contract amount, or $2,500.00, whichever is greater, the products shall have been manufactured and the coating applied in the United States. The coating materials are not subject to this clause, only the application of the coating. In computing that amount, only the cost of the product and coating application cost will be included.

Ore, for the manufacture of steel or iron, may be from outside the United States; however, all other manufacturing processes of steel or iron must be in the United States to qualify as having been manufactured in the United States.

United States includes the 50 United States and any place subject to the jurisdiction thereof.

Products of steel include, but are not limited to, such products as structural steel, piles, guardrail, steel culverts, reinforcing steel, structural plate and steel supports for signs, luminaries and signals.

Products of iron include, but are not limited to, such products as cast iron grates.

Application of coatings include, but are not limited to, such applications as epoxy, galvanized and paint.

To assure compliance with this section, the Contractor shall submit a certification letter on its letterhead to the Department stating the following:

> "This is to certify that products made of steel, iron or the application of any coating to products of these materials whose costs are in excess of $2,500.00 or 0.1 percent of the original contract amount, whichever is greater, were manufactured and the coating, if one was required, was applied in the United States."

B. Materials

a. Convict Produced Materials References: 23 U.S.C. 114(b)(2), 23 CFR 635.417

Applicability: FHWA's prohibition against the use of convict material only applies to Federal-aid highways. Materials produced after July 1, 1991, by convict labor may only be incorporated in a Federal-aid highway construction project if: 1) such materials have been produced by convicts who are on parole, supervised release, or probation from a prison; or 2) such material has been produced in a qualified prison facility, e.g., prison industry, with the amount produced during any 12-month period, for use in Federal-aid projects, not exceeding the amount produced, for such use, during the 12-month period ending July 1, 1987.

Materials obtained from prison facilities (e.g., prison industries) are subject to the same requirements for Federal-aid participation that are imposed upon materials acquired from other sources. Materials manufactured or produced by convict labor will be given no preferential treatment.

The preferred method of obtaining materials for a project is through normal contracting procedures which require the contractor to furnish all materials to be incorporated in the work. The contractor selects the source, public or private, from which the materials are to be obtained (23 CFR 635.407). Prison industries are prohibited from bidding on projects directly (23 CFR 635.112e), but may act as material supplier to construction contractors.

Prison materials may also be approved as State-furnished material. However, since public agencies may not bid in competition with private firms, direct acquisition of materials from a prison industry for use as State-furnished material is subject to a public interest finding with the Division Administrator's concurrence (23 CFR 635.407d). Selection of materials produced by convict labor as State-furnished materials for mandatory use should be cleared prior to the submittal of the Plans Specifications & Estimates (PS&E).

b. Patented/Proprietary Products References: 23 U.S.C. 112, 23 CFR 635.411

FHWA will not participate, directly or indirectly, in payment for any premium or royalty on any patented or proprietary material, specification, or process specifically set forth in the plans and specifications for a project, unless:

- the item is purchased or obtained through competitive bidding with equally suitable unpatented items,
- the STA certifies either that the proprietary or patented item is essential for synchronization with the existing highway facilities or that no equally suitable alternative exists, or
- the item is used for research or for a special type of construction on relatively short sections of road for experimental purposes. States should follow FHWA's procedures for "Construction Projects Incorporating Experimental Features" (expermnt.htm) for the submittal of work plans and evaluations.

The primary purpose of the policy is to have competition in selection of materials and allow for development of new materials and products. The policy further permits materials and products that are judged equal may be bid under generic specifications. If only patented or proprietary products are acceptable, they shall be bid as alternatives with all, or at least a

reasonable number of, acceptable materials or products listed; and the Division Administrator may approve a single source if it can be found that its utilization is in the public interest.

Trade names are generally the key to identifying patented or proprietary materials. Trade name examples include 3M, Corten, etc. Generally, products identified by their brand or trade name are not to be specified without an "or equal" phrase, and, if trade names are used, all, or at least a reasonable number of acceptable "equal" materials or products should be listed. The licensing of several suppliers to produce a product does not change the fact that it is a single product and should not be specified to the exclusion of other equally suitable products.

c. State Preference References: 23 U.S.C. 112, 23 CFR 635.409

Materials produced within Maine shall not be favored to the exclusion of comparable materials produced outside of Maine. State preference clauses give particular advantage to the designated source and thus restrict competition. Therefore, State preference provisions shall not be used on any Federal-aid construction projects.

This policy also applies to State preference actions against materials of foreign origin, except as otherwise permitted by Federal law. Thus, States cannot give preference to in-State material sources over foreign material sources. Under the Buy America provisions, the States are permitted to expand the Buy America restrictions provided that the STA is legally authorized under State law to impose more stringent requirements.

d. State Owned/Furnished/Designated Materials References: 23 U.S.C. 112, 23 CFR 635.407

Current FHWA policy requires that the contractor must furnish all materials to be incorporated in the work, and the contractor shall be permitted to select the sources from which the materials are to be obtained. Exceptions to this requirement may be made when there is a definite finding, by MaineDOT and concurred in by Federal Highway Administration’s (FHWA) Division Administrator, that it is in the public interest to require the contractor to use materials furnished by the MaineDOT or from sources designated by MaineDOT. The exception policy can best be understood by separating State-furnished materials into the categories of manufactured materials and local natural materials.

Manufactured Materials When the use of State-furnished manufactured materials is approved based on a public interest finding, such use must be made mandatory. The optional use of State-furnished manufactured materials is in violation of our policy prohibiting public agencies from competing with private firms. Manufactured materials to be furnished by MaineDOT must be acquired through competitive bidding, unless there is a public interest finding for another method, and concurred in by FHWA’s Division Administrator.

Local Natural Materials When MaineDOT owns or controls a local natural materials source such as a borrow pit or a stockpile of salvaged pavement material, etc., the materials may be designated for either optional or mandatory use; however, mandatory use will require a public interest finding (PIF) and FHWA’s Division Administrator's concurrence.

In order to permit prospective bidders to properly prepare their bids, the location, cost, and any conditions to be met for obtaining materials that are made available to the contractor shall be stated in the bidding documents.

Mandatory Disposal Sites Normally, the disposal site for surplus excavated materials is to be of the contractor's choosing; although, an optional site(s) may be shown in the contract provisions. A mandatory site shall be specified when there is a finding by MaineDOT, with the concurrence of the Division Administrator, that such placement is the most economical or that the environment would be substantially enhanced without excessive cost. Discussion of the mandatory use of a disposal site in the environmental document may serve as the basis for the public interest finding.

Summarizing FHWA policy for the mandatory use of borrow or disposal sites:

- mandatory use of either requires a public interest finding and FHWA's Division Administrator's concurrence,
- mandatory use of either may be based on environmental consideration where the environment will be substantially enhanced without excessive additional cost, and
- where the use is based on environmental considerations, the discussion in the environmental document may be used as the basis for the public interest finding.

Factors to justify a public interest finding should include such items as cost effectiveness, system integrity, and local shortages of material.

C. Standard FHWA Contract Provisions - FHWA 1273

Unless expressly otherwise provided in the Bid Documents, the following "Required Contract Provisions, Federal Aid Construction Contracts", FHWA-1273, are hereby incorporated into the Bid Documents and Contract.

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Start of FHWA 1273 REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS (As revised through May 1, 2012)

FHWA-1273 -- Revised May 1, 2012

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. General
II. Nondiscrimination

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield

qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with

Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-

minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to

such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

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

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

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

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

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the

classification under this contract from the first day on which work is performed in the classification.

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

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

2. Withholding

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

3. Payrolls and basic records

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

registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

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

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

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

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

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the

contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

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

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

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

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

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

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages.

Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;

(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not

permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1**. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

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

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

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

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

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

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

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

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

End of FHWA 1273

May 10, 2012
Supersedes March 27, 2012

STANDARD DETAIL UPDATES

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

Detail #	Description	Revision Date
203(03)	Backslope Rounding	1/29/08
502(03)	Concrete Curb - Bituminous Wearing Surface	8/08/11
502(03)A	Concrete Curb - Concrete Wearing Surface	2/2/09
502(07)	Precast Concrete Deck Panels - Layout Plan	2/2/09
502(07)A	Precast Concrete Deck Panels - Layout Plan	2/2/09
502(08)	Precast Concrete Deck Panels - Panel Plan	2/2/09
502(09)	Precast Concrete Deck Panels - Blocking Detail	2/2/09
502(10)	Precast Concrete Deck Panels	2/2/09
502(11)	Precast Concrete Deck Panels	2/2/09
502(12)	Precast Concrete Deck Panels - Notes	10/28/09
502(12)A	Precast Concrete Deck Panels - Notes	2/2/09
504(15)	Diaphragms	5/19/11
504(22)	Diaphragm & Crossframe Notes	10/28/09
504(23)	Hand-Hold Details	12/08/05
507(04)	Steel Bridge Railing	2/05/03
507(09)	Steel Bridge Railing	5/19/11
507(09)A	Steel Bridge Railing	5/19/11
526(06)	Permanent Concrete Barrier	2/2/09
526(08)	Permanent Concrete Barrier – Type IIIA	10/07/10

526(08)A	Permanent Concrete Barrier – Type IIIA	12/07/10
526(13)	Permanent Concrete Barrier – Type IIIB	2/2/09
526(14)	Permanent Concrete Barrier – Type IIIB	2/2/09
526(21)	Concrete Transition Barrier	2/2/09
526(33)	Concrete Transition Barrier	8/18/03
526(39)	Texas Classic Rail – Between Window	2/2/09
526(40)	Texas Classic Rail – Through Window	2/2/09
526(41)	Texas Classic Rail – Through Post	2/2/09
526(42)	Texas Classic Rail – Through Nose	2/2/09
535(01)	Precast Superstructure - Shear Key	10/12/06
535(02)	Precast Superstructure - Curb Key & Drip Notch	5/20/08
535(03)	Precast Superstructure - Shear Key	12/5/07
535(04)	Precast Superstructure - Shear Key	12/05/07
535(05)	Precast Superstructure - Post Tensioning	5/20/08
535(06)	Precast Superstructure - Sections	10/12/06
535(07)	Precast Superstructure - Precast Slab & Box	10/12/06
535(08)	Precast Superstructure - Sections	10/12/06
535(09)	Precast Superstructure - Sections	10/12/06
535(10)	Precast Superstructure - Sections	10/12/06
535(11)	Precast Superstructure - Sections	10/12/06
535(12)	Precast Superstructure - Sections	10/12/06
535(13)	Precast Superstructure - Sections	10/12/06
535(14)	Precast Superstructure - Stirrups	10/12/06

535(15)	Precast Superstructure - Plan	10/12/06
535(16)	Precast Superstructure - Reinforcing	10/12/06
535(17)	Precast Superstructure - Notes	12/05/07
604(01)	Catch Basins	11/16/05
604(05)	Type “A” & “B” Catch Basin Tops	11/16/05
604(06)	Type “C” Catch Basin Tops	11/16/05
604(07)	Manhole Top “D”	11/16/05
604(09)	Catch Basin Type “E”	11/16/05
606(02)	Multiple Mailbox Support	11/16/05
606(03)	Guardrail Standard Detail	5/10/12
606(07)	Reflectorized Beam Guardrail Delineator Details	11/16/05
606(20)	Guardrail - Type 3 - Single Rail - Bridge Mounted	2/2/09
606(21)	Guardrail - Type 3 - Single Rail - Bridge Mounted	2/2/09
606(22)	Guardrail - Type 3 - Single Rail - Bridge Mounted	2/2/09
606(23)	Guardrail - Type 3 - Single Rail - Bridge Mounted	2/2/09
609(03)	Curb Type 3	6/27/06
609(06)	Vertical Bridge Curb	2/12/09
609(07)	Curb Type 1	6/27/06
609(08)	Precast Concrete Transition Curb	2/2/09
610(02)	Stone Scour Protection	8/9/11
610(03)	Stone Scour Protection	5/19/11
610(04)	Stone Scour Protection	5/19/11

620(05)	Geotextile Placement for Protection of Slopes Adjactent to Stream & Tidal Areas	5/19/11
626(09)	Electrical Junction Box for Traffic Signals and Lighting	8/27/10
645(06)	H-Beam Posts – Highway Signing	7/21/04
645(09)	Installation of Type II Signs	7/21/04
801(01)	Drives on Sidewalk Sections	12/13/07
801(02)	Drives on Non-Sidewalk Sections	12/13/07

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

SECTION 101
CONTRACT INTERPRETATION

101.2 Definitions

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

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

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

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

SECTION 102
DELIVERY OF BIDS

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

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

SECTION 103
AWARD AND CONTRACTING

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

SECTION 104
GENERAL RIGHTS AND RESPONSIBILITIES

104.3.14 Interpretation and Interpolation In the first sentence, change "…and Geotechnical Information." to "…Environmental Information, and Geotechnical Information."

SECTION 105
GENERAL SCOPE OF WORK

Delete the entire Section 105.6 and replace with the following:

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

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

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

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

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

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

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

SECTION 106
QUALITY

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

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

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

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

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

SECTION 107
TIME

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

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

From	Up to and	Amount of Liquidated

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

SECTION 108
PAYMENT

Remove Section 108.4 and replace with the following:

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

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

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

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

SECTION 109
CHANGES

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

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

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

109.5.1 Definitions - Types of Delays

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

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

109.7.3 Compensable Items Delete this Section entirely.

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

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

109.7.5 Force Account Work

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

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

Add the following section;

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

SECTION 110
INDEMNIFICATION, BONDING, AND INSURANCE

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

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

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

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

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

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

110 - Indemnification, Bonding and Insurance
Add the following to the end of Section 110, Indemnification, Bonding and Insurance:

Nothing in these Standard Specifications constitutes a waiver of any defense, immunity or limitation of liability that may be available to the Department, or its officers, agents or employees under the Maine Tort Claims Act (Title 14 M.R.S.A. 8101 et seq.), and shall not constitute a waiver of other privileges or immunities that may be available to the Department.

SECTION 202
REMOVING STRUCTURES AND OBSTRUCTIONS

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

SECTION 203
EXCAVATION AND EMBANKMENT

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

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

Methods of utilization may be any of the following:

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

2. Used as the top 3" of gravel. Recycled Asphalt Pavement (RAP) shall be process to 1½" minus and blending will not be allowed. When this method is utilized, a surcharge will not be required

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

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

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

SECTION 502

STRUCTURAL CONCRETE

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

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

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

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

502.10 Forms and False work

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

502.11 Placing Concrete

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

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

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

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

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

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

SECTION 503

REINFORCING STEEL

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

SECTION 504
STRUCTURAL STEEL

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

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

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

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

SECTION 535
PRECAST, PRESTRESSED CONCRETE SUPERSTRUCTURE

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

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

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

SECTION 603
PIPE CULVERTS AND STORM DRAINS

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

Nominal Size US Customary (in)	Minimum Mandrel Diameter (in)	Nominal Size Metric (mm)	Minimum Mandrel Diameter (mm)

12	11.23	300	280.73
15	14.04	375	350.91
18	16.84	450	421.09
24	22.46	600	561.45
30	28.07	750	701.81
36	33.69	900	842.18
42	39.30	1050	982.54
48	44.92	1200	1122.90

SECTION 604
MANHOLES, INLETS, AND CATCH BASINS

604.02 Materials Add the following:

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

SECTION 605
UNDERDRAINS

605.05 Underdrain Outlets Make the following change:

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

SECTION 606
GUARDRAIL

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

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

SECTION 609
CURB

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

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

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

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

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

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

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

SECTION 615
LOAM

615.02 Materials Make the following change:

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

SECTION 618
SEEDING

618.01 Description Change the first sentence to read as follows: "This work shall consist of furnishing and applying seed ….." Also remove ",and cellulose fiber mulch" from 618.01(a).

618.03 Rates of Application In 618.03(a), remove the last sentence and replace with the following: "These rates shall apply to Seeding Method 2, 3, and Crown Vetch."

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

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

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

SECTION 620
GEOTEXTILES

620.03 Placement Section (c)

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

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

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

620.09 Basis of Payment

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

SECTION 621
LANDSCAPING

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

SECTION 626
HIGHWAY SIGNING

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

SECTION 627
PAVEMENT MARKINGS

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

SECTION 637
DUST CONTROL

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

SECTION 639
ENGINEERING FACILITIES

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

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

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

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

SECTION 652
MAINTENANCE OF TRAFFIC

652.2.3 Flashing Arrow Board Delete the existing 5 paragraphs and replace with the following:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

652.3.3 Submittal of Traffic Control Plan In item e. change "A list of all certified flaggers…" to "A list of all the Contractor's certified flaggers…"

Change a. in the list of requirements to: "a. The name, telephone number, and other contact numbers (cellular phone, pager, if any) of the Contractor's Traffic Control Supervisor (the person with overall responsibility for following the TCP), who has received Work Zone Traffic Control Training commensurate with the level of responsibility shown in the requirements of

the Contract, and who is empowered to immediately resolve any work zone traffic control deficiencies or issues. Provide documentation that the Traffic Control Supervisor has completed a Work Zone Traffic Control Training Course (AGC, ATSSA, or other industry-recognized training), and a Supervisory refresher training every 5 years thereafter. Submit the course name, training entity, and date of training.

Traffic Control Training Course curriculum must be based on the standards and guidelines of the MUTCD and must include, at a minimum, the following:

1. Parts of Temporary Traffic Control Zone
2. Appropriate use and spacing of signs
3. Use and spacing of channelizing devices
4. Flagging basics
5. Typical examples and applications

The Traffic Control Supervisor, or designee directly overseeing physical installation, adjustment, and dismantling of work zone traffic control, will ensure all personnel performing those activities are trained to execute the work in a safe and proper manner, in accordance with their level of decision-making and responsibility."

Add the follow to the list of requirements: "k. The plan for unexpected nighttime work along with a list of emergency nighttime equipment available on-site."

In the last paragraph add the following as the second sentence: "The Department will review and provide comments to the Contractor within 14 days of receipt of the TCP." Add the following as the last sentence: "The creation and modification of the TCP will be considered incidental to the related 652 items."

652.3.5 Installation of Traffic Control Devices In the first paragraph, first sentence; change "Signs shall be erected…" to "Portable signs shall be erected.." In the third sentence; change "Signs must be erected so that the sign face…" to "Post-mounted signs must also be erected so that the sign face…"

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

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

Fourth paragraph, delete and replace with "Flaggers shall be provided as a minimum, a 10 minute break, every 2 hours and a 30 minute or longer lunch period away from the work

station. Flaggers may only receive 1 unpaid break per day; all other breaks must be paid. Sufficient certified flaggers shall be available onsite to provide for continuous flagging operations during break periods. If the flaggers are receiving the appropriate breaks, breaker flagger(s) shall be paid starting 2 hours after the work begins and ending 2 hours before the work ends. A maximum of 1 breaker per 6 flaggers will be paid. (1 breaker flagger for 2 to 6 flaggers, 2 breaker flaggers for 7 to 12 flaggers, etc)"

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

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

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

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

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

The Contractor shall have available portable floodlights for special areas.

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

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

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

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

Night Work lighting requirements:

Mobile Operations: For mobile-type operations, each piece of equipment (paver, roller, milling machine, etc) will carry indirect (i.e. balloon type) lights capable of producing at least 10 foot-candles of lighting around the work area of the equipment.

Fixed Operations: For fixed-type operations (flaggers, curb, bridge, pipes, etc.), direct (i.e. tower) lighting will be utilized capable of illuminating the work area with at least 10 foot-candles of light.

Hybrid Operations: For hybrid-type operations (guardrail, sweeping, Inslope excavation, etc.), either direct or indirect lighting may be utilized. The chosen lights must be capable of producing at least 10 foot-candles of light around the work area of the equipment
Inspection Operations: Areas required to be inspected by the Department will require a minimum of 5 foot-candles of lighting. This may be accomplished through direct or indirect means.

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

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

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

The Resident or any other representative of the Department reserves the right to suspend the work at any time and request a meeting to discuss violations and remedies. The Department shall not be held responsible for any delay in the work due to any suspension under this item. Failure to follow the approved Lighting Plan will result in a Traffic Control violation.

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

652.8.2 Other Items Replace the first paragraph with the following: "The accepted quantities of flagger hours will be paid for at the contract unit price per hour for each flagging station occupied excluding lunch breaks, and for each approved breaker flagger. Overtime hours, as reported on the certified payrolls, will be paid an additional 30% of the bid price for 652.38. The computation and additional payment for overtime hours will occur during the project close-out process and will be paid as additional hours of 652.38 to the nearest ¼ hour. The contract unit price shall be full compensation for hiring, transporting, equipping, supervising, and the payment of flaggers and all overhead and incidentals necessary to complete the work." Replace the last paragraph with the following: "There will be no payment made under any 652 pay items after the expiration of the adjusted total contract time."

SECTION 653
POLYSTYRENE PLASTIC INSULATION

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

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

SECTION 656
TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL

656.5.1 If Pay Item 656.75 Provided Replace the second paragraph with the following: "Failure by the Contractor to follow Standard Specification or Special Provision - Section 656 and/or the Contractor's own Soil Erosion and Water Pollution Control Plan (SEWPCP) will result in a violation letter and a reduction in payment as shown in the schedule below. The Department's Resident or any other representative of The Department reserves the right to suspend the work at any time and request a meeting to discuss violations and remedies. The Department shall not be held responsible for any delay in the work due to any suspension under this item.

ORIGINAL CONTRACT AMOUNT

From	Up to and	Amount of Penalty Damages per Violation		
More Than	Including	1st	2nd	3rd & Subsequent
$0	$1,000,000	$250	$500	$1,250
$1,000,000	$2,000,000	$500	$1,000	$2,500
$2,000,000	$4,000,000	$1,000	$2,000	$5,000
$4,000,000	and more	$2,000	$4,000	$10,000"

SECTION 701
STRUCTURAL CONCRETE RELATED MATERIALS

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

SECTION 703
AGGREGATES

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

703.06 Aggregate for Base and Subbase Delete the first paragraph: "The material shall have…" and replace with "The material shall have a minimum degradation value of 15 as determined by Washington State DOT Test Method T113, Method of Test for Determination of Degradation Value (January 2009 version), except that the reported degradation value will be the result of testing a single specimen from that portion of a sample that passes the 12.5 mm [½ in] sieve and is retained on the 2.00 mm [No. 10] sieve, minus any reclaimed asphalt pavement used."

703.18 Common Borrow Replace the first paragraph with the following: "Common borrow shall consist of earth, suitable for embankment construction. It shall be free from frozen material, perishable rubbish, peat, and other unsuitable material including material currently or previously contaminated by chemical, radiological, or biological agents unless the material is from a DOT project and authorized by DEP for use."

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

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

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

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

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

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

SECTION 706
NON-METALLIC PIPE

706.06 Corrugated Polyethylene Pipe for Underdrain, Option I and Option III Culvert Pipe Change the first sentence from "…300 mm diameters to 900 mm" to "…300 mm diameters to 1200 mm" Delete, in its' entirety, the last sentence which begins "This pipe and resins…" and replace with the following; "Manufacturers of corrugated polyethylene pipe must participate in, and maintain compliance with, AASHTO's National Transportation Product Evaluation Program (www.ntpep.org) which audits producers of plastic pipe. A certificate of compliance must be provided with each shipment."

SECTION 708
PAINTS AND PERSERVATIVES

708.03 Pavement Marking Paint Change the first sentence from "…AASHTO M248" to "…the Maine DOT Maintenance Fast-Dry Water-Based Traffic Paint on file at the Traffic Section in Augusta". Delete, in its' entirety, the last sentence.

SECTION 709
REINFORCING STEEL AND WELDED STEEL WIRE FABIC

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

SECTION 710
FENCE AND GUARDRAIL

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

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

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

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

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

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

SECTION 712
MISCELLANEOUS HIGHWAY MATERIALS

712.04 Stone Curbing and Edging Delete the existing and replace with the following: "Stone for curbing and edging shall be approved granite from acceptable sources. The stone shall be hard and durable, predominantly gray in color, free from seams that would be likely to impair its structural integrity, and of a smooth splitting character. Natural grain size and color variations characteristic of the source deposit will be permitted. Such natural variations may include bands or clusters of mineral crystallization provided they do not impair the structural integrity of the curb stone. The Contractor shall submit for approval the name of the quarry that is the proposed source of the granite for curb materials along with full scale color photos of the granite. Such submission shall be made sufficiently in advance of ordering so that the Resident may have an opportunity to judge the stone, both as to quality and appearance. Samples of curbing shall be submitted for approval only when requested by the Resident. The dimensions, shape, and other details shall be as shown on the plans."
712.06 Precast Concrete Units In the first paragraph, change "…ASTM C478M…" to "…AASHTO M199…" Delete the second paragraph and replace with the following; "Approved structural fibers may be used as a replacement of 6 x 6 #10 gauge welded wire fabric when used at an approved dosage rate for the construction of manhole and catch basin units. The material used shall be one of the products listed on the Maine Department of Transportation's Approved Product List of Structural Fiber Reinforcement." Delete the fifth

paragraph and replace with the following; "The concrete mix design shall be approved by the Department. Concrete shall contain 6% air content, plus or minus 1½% tolerance when tested according to AASHTO T152. All concrete shall develop a minimum compressive strength of 28 MPa [4000 psi] in 28 days when tested according to AASHTO T22. The absorption of a specimen, when tested according to AASHTO T280, Test Method "A", shall not exceed nine percent of the dry mass."

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

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

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

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

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

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

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

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

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

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

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

The lens shall consist of a round one-piece convex amber material which, when mounted, shall have a visible diameter of approximately 200 mm [8 in]. They shall distribute light

and not diffuse it. The distribution of the light shall be asymmetrical in a downward direction. The light distribution of the lens shall not be uniform, but shall consist of a small high intensity portion with narrow distribution for long distance throw and a larger low intensity portion with wide distribution for short distance throw. Lenses shall be marked to indicate the top and bottom of the lens.

(b) Battery operated flashing lights shall be self- illuminated by an electric lamp behind the lens. These lights shall also be externally illuminated by reflex-reflective elements built into the lens to enable it to be seen by reflex-reflection of the light from the headlights of oncoming traffic. The batteries must be entirely enclosed in a case. A locking device must secure the case. The light shall have a flash rate of not less than 50 nor more than 60 flashes per minute from minus 30 °C [minus 20 °F] to plus 65 °C [plus 150 °F]. The light shall have an on time of not less than 10 percent of the flash cycle. The light beam projected upon a surface perpendicular to the axis of the light beam shall produce a lighted rectangular projection whose minimum horizontal dimension shall be 5 degrees each side of the horizontal axis. The effective intensity shall not have an initial value greater than 15.0 candelas or drop below 4.0 candelas during the first 336 hours of continuous flashing. The illuminated lens shall appear to be uniformly bright over its entire illuminated surface when viewed from any point within an angle of 9 degrees each side of the vertical axis and 5 degrees each side of the horizontal axis. The lens shall not be less than 175 mm [7 in] in diameter including a reflex-reflector ring of 13 mm [½ in] minimum width around the periphery. The lens shall be yellow in color and have a minimum relative luminous transmittance of 0.440 with a luminance of 2854° Kelvin. The lens shall be one-piece construction. The lens material shall be plastic and meet the luminous transmission requirements of this specification. The case containing the batteries and circuitry shall be constructed of a material capable of withstanding abuse equal to or greater than 1.21 mm thick steel [No. 18 U.S. Standard Gage Steel]. The housing and the lens frame, if of metal shall be properly cleaned, degreased and pretreated to promote adhesion. It shall be given one or more coats of enamel which, when dry shall completely obscure the metal. The enamel coating shall be of such quality that when the coated case is struck a light blow with a sharp tool, the paint will not chip or crack and if scratched with a knife will not powder. The case shall be so constructed and closed as to exclude moisture that would affect the proper operation of light. The case shall have a weep hole to allow the escape of moisture from condensation. Photoelectric controls, if provided, shall keep the light operating whenever the ambient light falls below 215 lx [20 foot candles]. Each light shall be plainly marked as to the manufacturer's name and model number.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

SECTION 717
ROADSIDE IMPROVEMENT MATERIAL

717.03 C. Method #3 - Roadside Mixture #3 Change the seed proportions to the following:

Crown Vetch	25%
Perennial Lupine	25%
Red Clover	12.5%
Annual Rye	37.5%

717.05 Mulch Binder Change the third sentence to read as follows:

"Paper fiber mulch may be used as a binder at the rate of 2.3 kg/unit [5 lb/unit]."

SECTION 720
STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS

720.08 U-Channel Posts Change the first sentence from "…, U-Channel posts…" to "…, Rib Back U-Channel posts…"

SECTION 722
GEOTEXTILES

722.01 Stabilization/Reinforcement Geotextile Add the following to note #3; "The strengths specified in the columns labeled"<50%" and "≥ 50%" refer to the elongation at which the geotextile material was tested. For example; if a fabric is tested at 15% elongation then it must meet or exceed the minimum strength shown in the "<50%" column. Submittals must include the percent elongation at which the material was tested."

722.02 Drainage Geotextile Add the following to note #3; "The strengths specified in the columns labeled"<50%" and "≥ 50%" refer to the elongation at which the geotextile material was tested. For example; if a fabric is tested at 15% elongation then it must meet or exceed the minimum strength shown in the "<50%" column. Submittals must include the percent elongation at which the material was tested."

722.01 Erosion Control Geotextile Add the following note to Elongation in the Mechanical Property Table; "The strengths specified in the columns labeled"<50%" and "≥ 50%" refer to the elongation at which the geotextile material was tested. For example; if a fabric is tested at 15% elongation then it must meet or exceed the minimum strength shown in the "<50%" column. Submittals must include the percent elongation at which the material was tested."

LAP Environmental Summary Sheet

WIN: 14787.20 **Date Submitted: 7/7/14**
Town: Auburn
CPD Team Leader: Kristen Chamberlain

NEPA Complete: 6/30/14
Individual CE

☒ **Section 106**
SHPO Concurrence No Effect
Special Conditions:

☒ **Section 4(f) and 6(f)**
Section 4(f)
Review Complete No use
Section 6(f)
Not Applicable

☒ **Section 7**
No Effect if no clearing or in-water work
Species of Concern: NLE Bat-If clearing and NLE Bat is Listed 4/15
Consultation with USFWS Required
Comments/References:

☒ **Hazardous Waste Review**
Applicable **General Note (If applicable, must be included in contract documents).**

☒ **State and Federal Permits**
Letter 12 submitted - 6/23/14
Copies of approvals submitted - 6/23/14

NOTE: Local Town/Municipality is responsible for obtaining and providing copies of Maine Department of Environmental Protection and Army Corps of Engineers Permits.

General Notes and/or Comments:

**All approvals based on plans/scope as of:*

AUBURN
SOUTH MAIN STREET
HIGHWAY IMPROVEMENTS
PIN 14787.20

GENERAL NOTE

The Maine Department of Environmental Protection (MDEP) has found evidence of petroleum-related soil contamination along the proposed project. The City of Auburn performed environmental borings at numerous locations along the project and did not detect obvious indications of subsurface contamination in the right-of-way. However, in light of MDEP's and the City of Auburn's findings, the contractor shall employ appropriate health and safety measures to protect its workers against hazards associated with working near petroleum-impacted soils. Furthermore, the Contractor shall remain alert for any additionally evidence of contamination. If the Contractor encounters evidence of soil or groundwater contamination, the Contractor shall secure the excavation, stop work in the contaminated area, and immediately notify the Resident/City of Auburn representative. The Resident/City of Auburn representative shall contact the Maine Department of Environmental Protection at 800-482-0777. Work may only continue with authorization from the Resident/City of Auburn representative.

SOUTH MAIN STREET ROADWAY RECONSTRUCTION: PHASE II

CITY OF AUBURN, MAINE

WIN 014787.20

APPENDIX A - GEOTECHNICAL REPORT

SUMMIT
GEOENGINEERING SERVICES

Geotechnical Report

Roadway Reconstruction
South Main Street
Auburn, Maine

Prepared for:

Woodard & Curran

Prepared by:

Summit Geoengineering Services
Project #10132
June 2011

640 Main Street, Lewiston, Maine 04240, (207) 576-3313
434 Cony Road, Augusta, Maine 04330, (207) 318-7761

June 7, 2011
Summit #10132

Barry Sheff, P.E.
Woodard & Curran
41 Hutchins Drive
Portland, Maine 04102

Reference: Geotechnical Support Services
Roadway Reconstruction – South Main Street Auburn, Maine

Dear Mr. Sheff,

This report summarizes our geotechnical investigation for the proposed roadway reconstruction along South Main Street in Auburn, Maine. Our work included performing 20 test borings and 60 probes at the site, performing laboratory testing, and preparing this report summarizing our findings and geotechnical recommendations.

1.0 Project and Site

We understand that the city of Auburn is planning to reconstruct South Main Street from the Broad Street intersection to the Vickery Road intersection. The project consists of reconstruction of approximately 8,000 linear feet of roadway, including new storm water structures as part of the renovation.

2.0 Explorations & Laboratory Testing

Northern Test Boring performed a total of 20 borings and 60 ledge probes under contract to Summit. Summit was onsite to coordinate and observe the explorations performed on May 18th, 19th, and 20th 2011. The borings and probes were spaced at approximate 100-foot intervals and were advanced using 2-¼ inch solid stem augers drilled to a depth of 10 feet. Standard 24-inch long split spoon samples were obtained from the surface to a depth of 4 feet and at a depth of 5 to 7 feet. The explorations were located by Summit prior to drilling by taping from existing site features. Location of the explorations are shown on Figures 2A to 2C, attached in Appendix A, along with a site overview. A summary table and logs of the explorations are attached in Appendix B.

Due to some uncertainty of exact locations for underground utilities, Dig Smart of Maine was subcontracted to verify that exploration locations were free from subsurface obstructions. Traffic control services were also subcontracted by SGS for explorations performed along South Main Street.

Six samples were tested for grain size analyses in accordance with ASTM D422 and three samples were tested for Atterberg Limits in accordance with ASTM D4318. Nine samples were tested for moisture content in accordance with ASTM D2216. Summary of the gradation results, Atterberg Limits, and moisture contents are presented on the following table:

LABORATORY SUMMARY TABLE – GLACIAL MARINE DEPOSITS							
Location	**USCS**	**%Gravel**	**%Sand**	**%Fines**	**LL**	**PI**	**WC**
B-12, 5 to 7 ft	SM	0.0%	68.0%	32.0%	--	--	15.4
B-16, 5 to 7 ft	CL	--	--	--	30	14	33.7
B-20, 2.5 to 4.5 ft	ML	0.0%	33.4%	66.6%	--	--	19.7
B-24, 10 to 12 ft	CL	--	--	--	26	9	29.1
B-32, 5 to 7 ft	CL	--	--	--	31	12	24.8
B-48, 2.5 to 4.5 ft	SM	13.7%	50.1%	36.2%	--	--	15.3
B-52, 0.5 to 2.5 ft	SM	16.7%	68.2%	15.1%	--	--	5.9
B-56, 0.5 to 2.5 ft	SP-SM	33.4%	58.2%	8.4%	--	--	3.8
B-60, 2.5 to 4.5 ft	SM	3.0%	68.3%	28.7%	--	--	15.0

Note: Based on ASTM D422 test and Unified Soil Classification System particle distribution.

3.0 Subsurface Conditions

In general, the soils encountered within the explorations consisted of bituminous ***pavement***, overlying ***roadway fill***, overlying ***glacial marine deposits*** and/or ***glacial till***, overlying ***bedrock*** where encountered. A subsurface conditions summary table is provided in Appendix B.

Bituminous ***pavement*** encountered along South Main Street ranged from 2 to 12 inches in thickness, generally averaging 8 inches.

Roadway fill underlying the pavement ranged from 7 to 50 inches in thickness and consists of brown gravelly sand with some to little silt and is classified as SM or SP-SM in accordance with the Unified Soil Classification System (USCS). SPT-N values for the roadway fill ranged from 8 to 78 blows per foot (bpf) and averaged 24 bpf, indicating compact conditions. The roadway fill was generally damp.

Glacial marine deposits, where encountered, consists of brown silty sand, olive brown sandy silt, and olive to gray silty clay. The glacial marine deposits are classified as SM, ML, and CL, respectively, in accordance with the USCS. SPT-N values for the roadway fill ranged from 4 to 24 bpf and averaged 13 bpf indicating compact conditions in sand and stiff conditions in silt and clay. The glacial marine deposits were generally damp to moist.

Glacial till, where encountered, generally consisted of sandy silt with some clay and is classified as ML in accordance with the USCS. SPT-N values for the glacial till ranged from 14 to 50 blows per foot (bpf) and averaged 30 bpf indicating very stiff to hard conditions. The glacial till was generally damp to moist.

Bedrock was encountered in 5 of the 20 borings and 14 of the 60 probes. Refusal depth fluctuated along South Main Street due to possible boulders or undulated bedrock. Refusal was encountered in explorations B-8 to B-10, and sporadically between B-40 and B-60. Concentration of shallow bedrock was encountered in explorations B-70 through B-80 and outcropping was visible on the sides of the road. Mapping by the Maine Geological Survey indicate the bedrock is part of the Sangerville Formation, specifically a Patch Mountain member (Ssp) and a Taylor Pond member (Sstp). The majority of the bedrock can be classified as inter-bedded pelite and limestone and/or dolostone with thin-bedded calc-silicate granofels and dark gray quartz-biotite granofels.

Groundwater was encountered within 15 of the 80 explorations performed at the site. Groundwater was generally present at a depth of 8 to 10 feet or along surface of bedrock, when encountered. We expect groundwater to be present in low-lying wet areas and seasonally along bedrock surface.

4.0 Pavement Section Recommendations

We anticipate finished grade will be at or near the existing roadway grade. Based on this, the subgrade will consist of existing roadway fill, glacial marine deposits, and/or glacial till, and is considered to be slightly to moderately frost susceptible. The pavement section design recommendations are based on the type of roadway, frost susceptibility of the subgrade soil, and the mean annual freezing index.

The mean annual freezing index for the Auburn area is estimated at 950 degree days. Based on the subgrade and mean annual freezing index, the anticipated mean annual frost penetration depth is 42 inches.

For the conditions discussed above, we recommend a minimum total pavement section thickness of 60% of the mean annual frost penetration depth, or 25 inches. We further recommend that the pavement section consist of the following materials.

MATERIAL	THICKNESS (in)	SPECIFICATION
Asphalt Surface Course	1.5	MDOT Superpave
Asphalt Binder Course	2.5	MDOT Superpave
Base Soil	3	MDOT 703.06 Type A
Subbase Soil	18	MDOT 703.06 Type D

We recommend the following gradation requirements be used for subbase and base gravel:

Sieve Designation	Percent Passing a 3-inch Sieve	
	MDOT Type A (Base)	MDOT Type D (Subbase)
3 Inch	100	100
2 Inch	100	--
½ Inch	45 – 70	--
¼ Inch	30 – 55	25 – 70
No. 40	0 – 20	0 – 30
No. 200	0 – 5	0 - 7

The material specifications are referenced to the 1995 Maine Department of Transportation Standard Specifications for Highways and Bridges and Maine Department of Transportation Standard Specifications, Revision of 2002.

The maximum particle size should be limited to 2 inches for MDOT Type A base and 6 inches for MDOT Type D subbase. All base and subbase soil should be placed in 3 to 12 inch lifts and be compacted to a minimum of 95 percent of its maximum dry density, determined in accordance with ASTM D1557, Modified Proctor Density.

We recommend the subgrade be proof-rolled prior to placing subbase or base. Proof rolling should consist of a minimum of three passes in a north-south direction and then three passes in an east-west direction using a large (10 ton operating weight) vibratory roller. If excessive soil moisture is present, we recommend proof rolling be performed in the static mode to prevent softening of localized subgrade silt and clay.

5.0 Earthwork Considerations

Grain size analyses were performed for 2 samples of the existing roadway fill. Based on the gradation results, the existing roadway fill beneath the pavement does not meet MDOT Type A or Type D due to the high fines content.

Excavations within the glacial marine deposits and glacial till may be susceptible to subgrade softening, particularly during wet periods or where excavations are near groundwater. If subgrade softening occurs during construction, we recommend the base of the subgrade be over-excavated and replaced with a minimum of 12 inches of crushed stone overlying geotextile filter fabric such as Mirafi Polypropylene 500X or equivalent. Crushed stone should be tamped to lock the stone structure together. Crushed Stone should have a maximum particle size limited to 3 inches and meet the following gradation specifications:

CRUSHED STONE	
Sieve Size	**Percent finer**
3 inch	100
¾ inch	60 to 90
½ inch	10 to 35
3/8 inch	2 to 15
No. 4	0 to 5

Reference: MDOT Specification 703.12, Crushed Stone

The base of excavations for new storm water structures in sandy glacial marine deposits have the potential to loosen during excavation. We recommend loosened granular soil be proof-rolled prior to placing new storm water structures or placing fill. Proof rolling should consist of a minimum of three passes in a north-south direction and then three passes in an east-west direction using a vibratory roller or vibratory plate compactor.

Depending on depth and location of excavations dewatering may be required. We believe that shallow sumps and conventional submersible pumps will be sufficient to control groundwater during construction for minimal onsite cuts. We recommend that surface water during wet periods be diverted away from the excavations.

Excavations below 4 feet and above the groundwater table should be sloped no greater than 1H to 1V for cohesive soils and 1.5H to 1V for granular soils. The slope should be reduced to 1.5H to 1V where excavations occur below the groundwater table. These slopes are based on the current OSHA Excavation Guidelines.

We recommend that a qualified geotechnical consultant be retained to monitor and test soil materials used during construction and confirm that soil conditions and construction methods are consistence with this report.

6.0 Closure

This report has been prepared for the exclusive use of Woodard and Curran for the above referenced roadway reconstruction in Auburn, Maine. Our recommendations are based on professional judgment and generally accepted principles of geotechnical engineering. No other warranty is expressed or implied.

Analyses, evaluations, and recommendations are based on widely spaced explorations and project information provided by others. Some changes in subsurface conditions from those presented in this report may occur and would not be evident until construction. Should subsurface conditions or project construction information differ materially from those described in this report, Summit should be notified so that we can re-evaluate our recommendations.

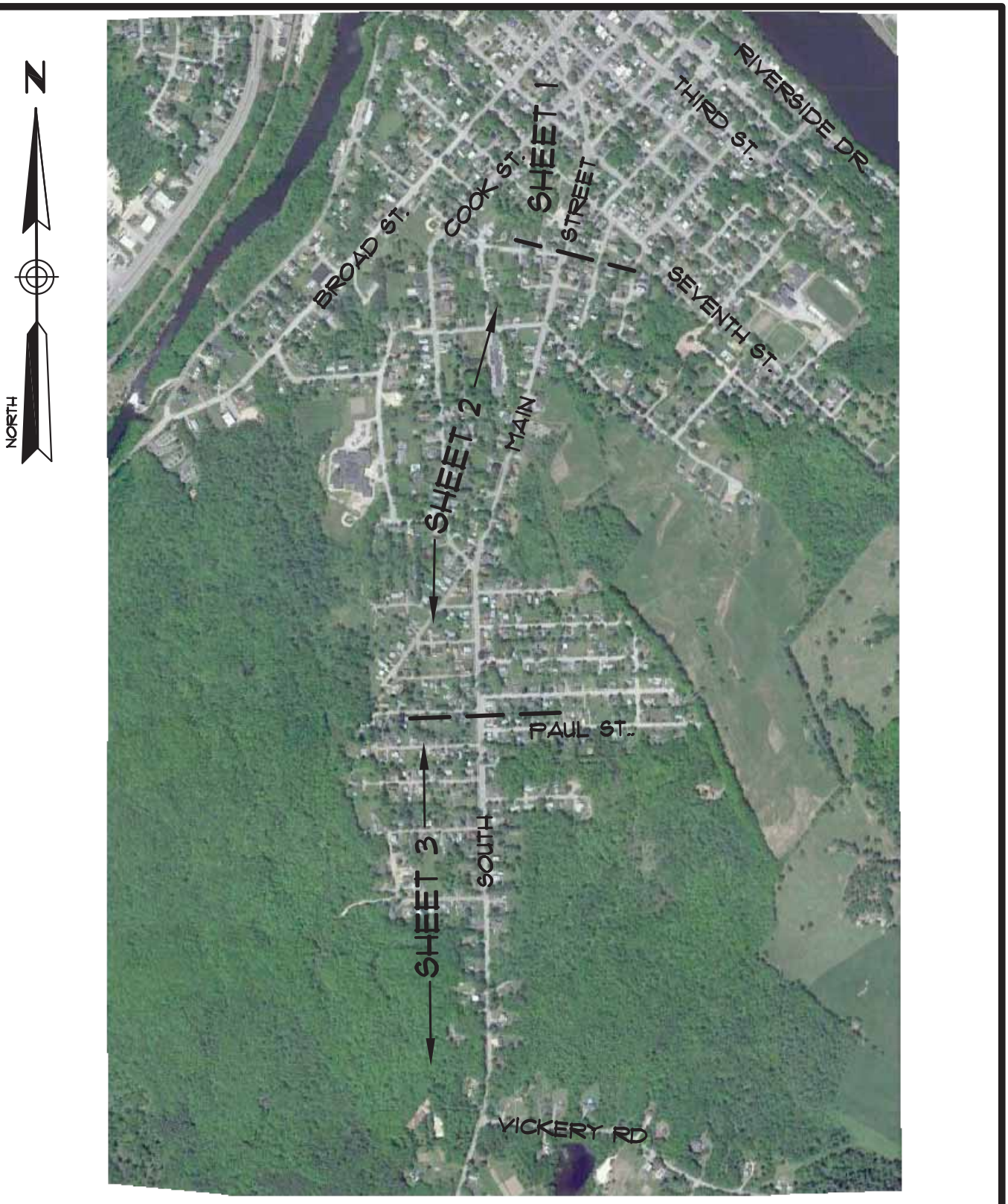
It is recommended that this report be made available in its entirety to contractors for informational purposes and be incorporated in the construction Contract Documents.

We 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
Senior Geotechnical Engineer

APPENDIX A
SITE OVERVIEW
EXPLORATION LOCATION FIGURES



SITE OVERVIEW
ROADWAY REHABILITATION

SOUTH MAIN STREET - AUBURN, MAINE

PREPARED FOR

WOODARD & CURRAN

DATE: JUNE 2011	DRAWN BY: KRF	CHECKED BY: CC
JOB: 10132	SCALE: 1"= 1000'	FILE: 101321 MAP

434 CONY ROAD
AUGUSTA, MAINE 04330

Tel.: (207) 318-7761
Fax: (207) 629-9094
www.summitgeoeng.com

SUMMIT
GEOENGINEERING SERVICES

NOTE

THIS PLAN WAS PREPARED TO SERVE AS A VISUAL AID TO SHOW THE LOCATION OF GEOTECHNICAL TEST BORINGS PERFORMED BY SUMMIT GEOENGINEERING SERVICES IN MAY 2011. THIS WAS PREPARED FROM INFORMATION PROVIDED BY THE AUBURN WATER & SEWER DISTRICT.

LEGEND

- B-10 — SUMMIT TEST BORING AND NUMBER
- WATER LINE (PER A.W.S.D.)
- SEWER LINE
- STORM DRAIN LINE
- SEWER MANHOLE
- HYDRANT
- CATCH BASIN

SCALE : 1" = 50'

0 25 50 100 150 200

NO.	REVISION	DATE

SHEET TITLE: **UTILITY WORKSHEET**

SCALE: 1" = 50'
DATE: MAY 2011

DRAWN BY: KRF
CHECKED BY: WMP

PROJECT: **ROADWAY REHABILITATION SOUTH MAIN STREET**
AUBURN, MAINE

CLIENT: WOODARD & CURRAN

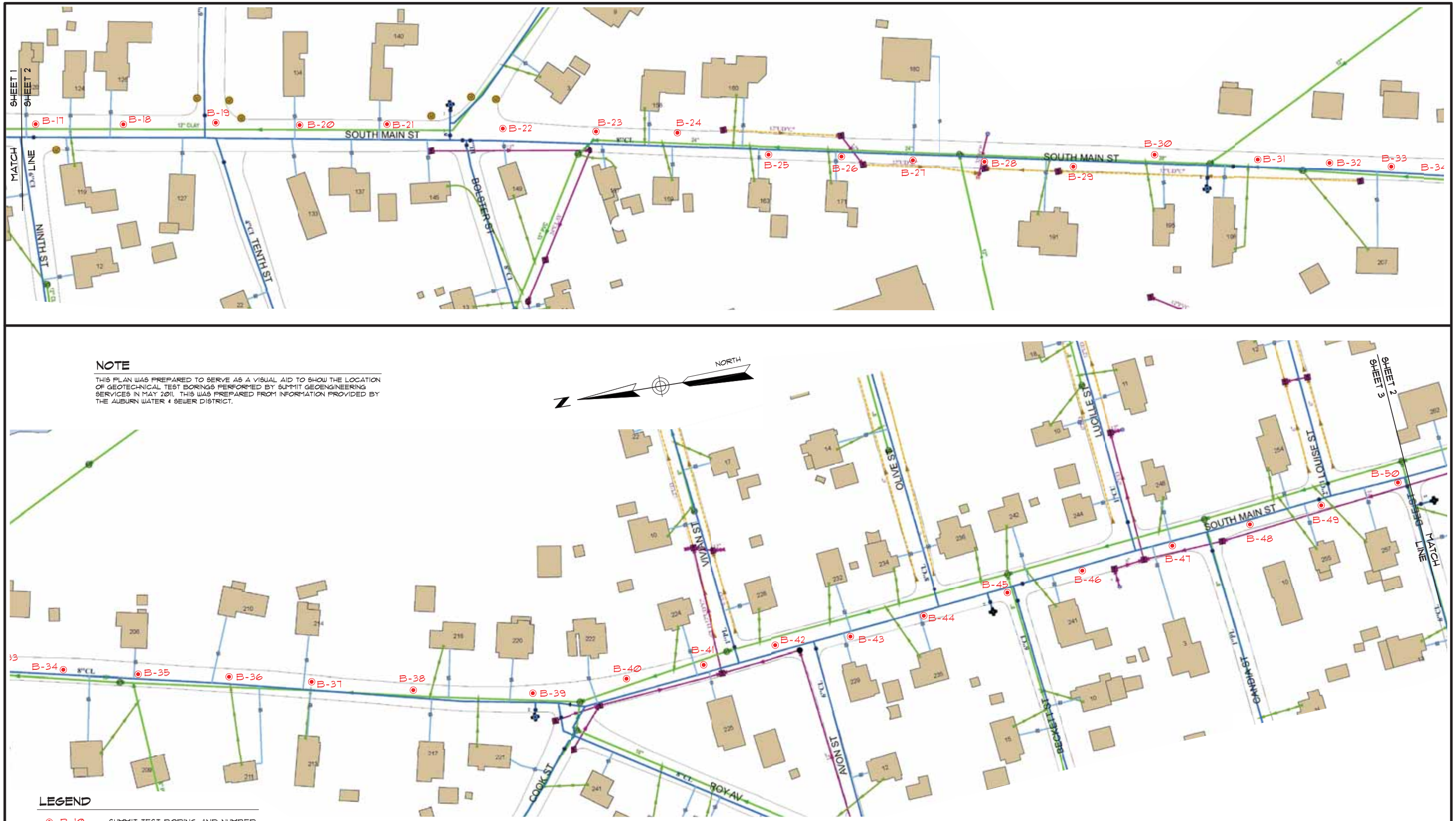
SUMMIT GEOENGINEERING SERVICES
640 MAIN ST.
LEWISTON, MAINE 04240
Tel.: (207) 576-3313
Fax: (207) 795-6128
www.summitgeoeng.com

JOB NO. - 10132

SHEET NUMBER 1

NOTE

THIS PLAN WAS PREPARED TO SERVE AS A VISUAL AID TO SHOW THE LOCATION OF GEOTECHNICAL TEST BORINGS PERFORMED BY SUMMIT GEOENGINEERING SERVICES IN MAY 2011. THIS WAS PREPARED FROM INFORMATION PROVIDED BY THE AUBURN WATER & SEWER DISTRICT.



LEGEND

- B-10 — SUMMIT TEST BORING AND NUMBER
- WATER LINE (PER A.W.S.D.)
- SEWER LINE
- STORM DRAIN LINE
- SEWER MANHOLE
- HYDRANT
- CATCH BASIN

SCALE : 1" = 50'

0 25 50 100 150 200

NO.	REVISION	DATE

SHEET TITLE: UTILITY WORKSHEET

SCALE: 1" = 50'
DATE: MAY 2011
DRAWN BY: KRF
CHECKED BY: WMP

PROJECT: ROADWAY REHABILITATION SOUTH MAIN STREET
AUBURN, MAINE

CLIENT: WOODARD & CURRAN

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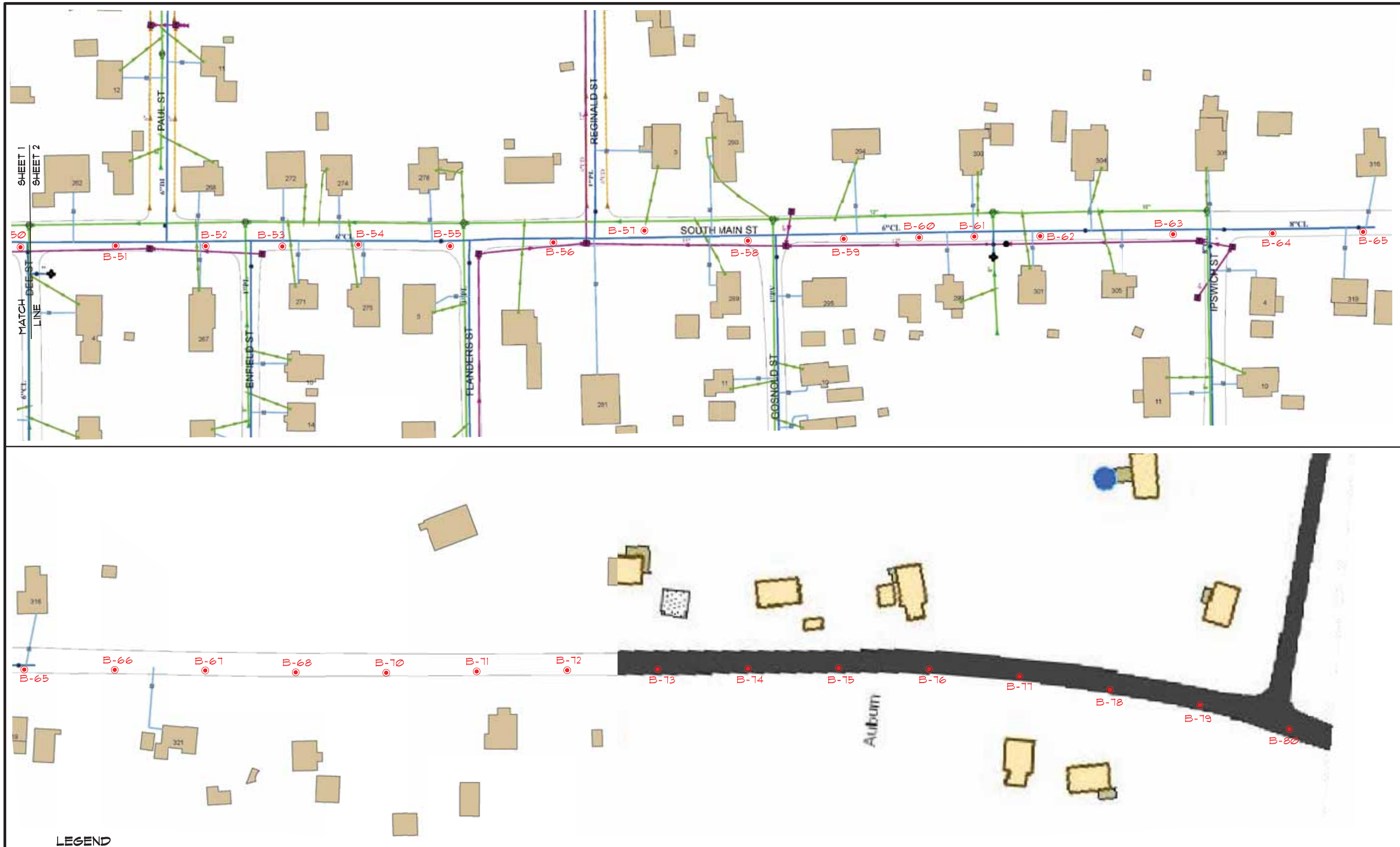
JOB NO. - 1032

SHEET NUMBER 2



LEGEND

- B-10 — SUMMIT TEST BORING AND NUMBER
- WATER LINE (PER A.W.S.D.)
- SEWER LINE
- STORM DRAIN LINE
- SEWER MANHOLE
- HYDRANT
- CATCH BASIN

NORTH

SCALE : 1" = 50'

0 25 50 100 150 200

NOTE

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NO.	REVISION	DATE

SHEET TITLE:
UTILITY WORKSHEET

SCALE: 1" = 50'
DATE: MAY 2011

DRAWN BY: KRF
CHECKED BY: WMP

PROJECT:
ROADWAY REHABILITATION SOUTH MAIN STREET
AUBURN, MAINE

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JOB NO. - 10132

SHEET NUMBER
3

APPENDIX B
SUBSURFACE CONDITIONS SUMMARY
PHOTO LOGS
EXPLORATION LOGS

SUBSURFACE CONDITIONS SUMMARY

Project Name: Roadway Evaluation
Location: South Main Street
Project Number: 10132
Exploration Dates: May 18 - 20, 2011

Exploration No.	Pavement	Fill	Glacial Marine	Glacial Till	Bedrock	Water	Naphthalene Odor
B-1	0' - 0.5' (6")	0.5' - 2.5' (24")	2.5' - 10' (90")	N/E	N/E	N/E	--
B-2	0' - 0.5' (6")	0.5' - 3' (30")	3' - 10' (84")	N/E	N/E	N/E	--
B-3	0' - 0.6' (7")	0.6' - 3' (29")	3' - 10' (84")	N/E	N/E	N/E	--
B-4	0' - 0.6' (7.5")	0.6' - 2.5' (23")	2.5' - 12' (114")	N/E	N/E	9'	--
B-5	0' - 0.7' (8")	0.7' - 2' (16")	2' - 10' (96")	N/E	N/E	N/E	--
B-6	0' - 0.9' (10.5")	0.9' - 2' (13")	2' - 10' (96")	N/E	N/E	N/E	Yes
B-7	0' - 0.8' (10")	0.8' - 5' (50")	5' - 10' (60")	N/E	N/E	N/E	Yes
B-8	0' - 0.8' (10")	0.8' - 2.5' (20")	2.5' - 7.7' (62")	N/E	7.7'	N/E	--
B-9	0' - 0.8' (9")	0.8' - 3' (27")	3' - 4.5' (18")	N/E	4.5'	N/E	--
B-10	0' - 0.9' (10.5")	0.9' - 3' (25")	3' - 4.5' (18")	N/E	4.5'	N/E	Yes
B-11	0' - 0.8' (9.5")	0.8' - 3' (27")	3' - 10' (84")	N/E	N/E	N/E	--
B-12	0' - 0.5' (6")	0.5' - 1.5' (12")	1.5' - 12' (126")	N/E	N/E	9'	Yes
B-13	0' - 0.5' (6")	0.5' - 1.5' (12")	1.5' - 10' (102")	N/E	N/E	N/E	--
B-14	0' - 0.8' (10")	0.8' - 3' (26")	3' - 10' (84")	N/E	N/E	N/E	--
B-15	0' - 0.5' (6")	0.5' - 2.5' (24")	2.5' - 10' (90")	N/E	N/E	N/E	Yes
B-16	0' - 0.7' (8")	0.7' - 2' (16")	2' - 12' (120")	N/E	N/E	8.9'	--
B-17	0' - 0.8' (10")	0.8' - 2' (14")	2' - 10' (96")	N/E	N/E	N/E	--
B-18	0' - 0.8' (9")	0.8' - 2' (15")	2' - 10' (96")	N/E	N/E	N/E	--
B-19	0' - 0.8' (9")	0.8' - 2.5' (20")	2.5' - 10' (90")	N/E	N/E	9'	--
B-20	0' - 0.7' (8")	0.7' - 2.5' (22")	2.5' - 12' (114")	N/E	N/E	10'	--
B-21	0' - 0.7' (8")	0.7' - 2' (16")	2' - 10' (96")	N/E	N/E	N/E	--
B-22	0' - 0.2' (2")	0.2' - 1.5' (16")	1.5' - 10' (102")	N/E	N/E	N/E	--
B-23	0' - 0.3' (3")	0.3' - 2' (21")	2' - 10' (96")	N/E	N/E	8.5'	--
B-24	0' - 0.8' (9.5")	0.8' - 2.5' (20")	2.5' - 12' (114")	N/E	N/E	N/E	--
B-25	0' - 0.7' (8")	0.7' - 2' (16")	2' - 10' (96")	N/E	N/E	N/E	--
B-26	0' - 0.8' (10")	0.8' - 2' (14")	2' - 10' (96")	N/E	N/E	N/E	--
B-27	0' - 0.8' (10")	0.8' - 2.5' (20")	2.5' - 10' (90")	N/E	N/E	N/E	--
B-28	0' - 0.7' (8")	0.7' - 4.5' (46")	4.5' - 12' (90")	N/E	N/E	12'	--
B-29	0' - 0.4' (5")	0.4' - 1' (7")	1' - 10' (108")	N/E	N/E	N/E	--
B-30	0' - 0.5' (6")	0.5' - 2' (18")	2' - 10' (96")	N/E	N/E	N/E	--
B-31	0' - 0.7' (8")	0.7' - 2' (16")	2' - 10' (96")	N/E	N/E	N/E	--
B-32	0' - 0.8' (10")	0.8' - 3.5' (32")	3.5' - 9' (66")	9' - 12'	N/E	9'	--
B-33	0' - 0.8' (9")	0.8' - 2' (15")	2' - 8.5' (78")	8.5' - 10'	N/E	N/E	--
B-34	0' - 0.8' (9")	0.8' - 2' (15")	2' - 8' (72")	8' - 10'	N/E	N/E	--
B-35	0' - 0.8' (10")	0.8' - 2' (14")	2' - 10' (96")	N/E	N/E	N/E	--
B-36	0' - 0.8' (10")	0.8' - 2' (14")	2' - 9' (84")	9' - 12'	N/E	N/E	--
B-37	0' - 0.9' (11")	0.9' - 2.5' (19")	2.5' - 9' (78")	9' - 10'	N/E	N/E	--
B-38	0' - 1' (12")	1' - 2' (12")	2' - 10' (96")	N/E	N/E	N/E	--
B-39	0' - 0.8' (10")	0.8' - 2' (14")	2' - 10' (96")	N/E	N/E	N/E	Yes
B-40	0' - 0.8' (10")	0.8' - 2.5' (20")	2.5' - 10' (90")	10' - 12'	N/E	N/E	--

Exploration No.	Pavement	Fill	Glacial Marine	Glacial Till	Bedrock	Water	Naphthalene Odor
B-41	0' - 0.8' (9")	0.8' - 2' (15")	2' - 4.5' (30")	N/E	4.5'	N/E	--
B-42	0' - 0.8' (10")	0.8' - 2' (14")	2' - 10' (96")	N/E	N/E	N/E	--
B-43	0' - 0.7' (8")	0.7' - 2' (16")	2' - 5' (36")	N/E	5'	N/E	--
B-44	0' - 0.8' (9")	0.8' - 2.5' (21")	2.5' - 5' (30")	5' - 12'	N/E	N/E	--
B-45	0' - 0.8' (9")	0.8' - 2' (15")	2' - 10' (96")	N/E	N/E	N/E	--
B-46	0' - 0.7' (8")	0.7' - 2' (16")	N/E	N/E	2'	N/E	--
B-47	0' - 0.8' (9")	0.8' - 2' (15")	2' - 10' (96")	N/E	N/E	N/E	--
B-48	0' - 0.8' (9")	0.8' - 2.5' (21")	2.5' - 8' (66")	8' - 12'	N/E	N/E	--
B-49	0' - 0.8' (10")	0.8' - 3' (26")	3' - 10' (84")	N/E	N/E	N/E	--
B-50	0' - 0.8' (10")	0.8' - 3' (26")	3' - 10' (84")	N/E	N/E	N/E	Yes
B-51	0' - 0.8' (9")	0.8' - 2.5' (21")	2.5' - 10' (90")	N/E	N/E	N/E	--
B-52	0' - 0.8' (9")	0.8' - 2.5' (21")	2.5' - 8' (66")	8' - 12'	N/E	10'	--
B-53	0' - 0.4' (5")	0.4' - 2.5' (25")	2.5' - 8' (66")	8' - 10'	N/E	N/E	--
B-54	0' - 0.5' (6")	0.5' - 2.5' (24")	2.5' - 10' (90")	N/E	N/E	N/E	--
B-55	0' - 0.5' (6")	0.5' - 2.5' (24")	2.5' - 10' (90")	N/E	N/E	N/E	Yes
B-56	0' - 0.6' (7")	0.6' - 2.5' (23")	2.5' - 8' (66")	8' - 12'	N/E	N/E	--
B-57	0' - 0.5' (6")	0.5' - 2' (18")	2.5' - 9' (78")	9' - 10'	N/E	N/E	Yes
B-58	0' - 0.5' (6")	0.5' - 3' (30")	3' - 9' (72")	9' - 10'	N/E	N/E	--
B-59	0' - 0.6' (7")	0.6' - 2' (17")	2' - 7.5' (66")	7.5' - 10'	N/E	N/E	--
B-60	0' - 0.8' (9")	0.8' - 2.5' (21")	2.5' - 5' (30")	5' - 7.5'	7.5'	N/E	--
B-61	0' - 0.5' (5.5")	0.5' - 3.2' (32")	N/E	N/E	3.2'	N/E	--
B-62	0' - 0.5' (6")	0.5' - 2.5' (24")	2.5' - 5' (30")	5' - 10'	N/E	N/E	--
B-63	0' - 0.5' (6")	0.5' - 2.5' (24")	2.5' - 6' (42")	6' - 10'	N/E	N/E	--
B-64	0' - 0.6' (7")	0.6' - 2.5' (23")	2.5' - 5' (30")	5' - 12'	N/E	6.3'	--
B-65	0' - 0.6' (7")	0.6' - 2' (17")	2' - 8' (72")	8' - 10'	N/E	2'	--
B-66	0' - 0.6' (7")	0.6' - 3' (29")	3' - 7' (48")	7' - 10'	N/E	N/E	--
B-67	0' - 0.8' (10")	0.8' - 2' (14")	2' - 9' (84")	9' - 10'	N/E	N/E	--
B-68	0' - 0.7' (8")	0.7' - 2.5' (22")	2.5' - 7' (54")	7' - 12'	N/E	9.5'	--
B-69	0' - 0.8' (9")	0.8' - 2.5' (21")	2.5' - 8' (66")	8' - 10'	N/E	N/E	--
B-70	0' - 0.7' (8")	0.7' - 1.5' (10")	N/E	1.5' - 3.1'	3.1'	N/E	--
B-71	0' - 0.8' (10")	0.8' - 2' (14")	N/E	2' - 4.8'	4.8'	N/E	--
B-72	0' - 0.7' (8")	0.7' - 2.5' (22")	N/E	2.5' - 4.7'	4.7'	N/E	--
B-73	0' - 0.7' (8")	0.7' - 1.5' (10")	N/E	1.5' - 2.6'	2.6'	N/E	--
B-74	0' - 0.8' (10")	0.8' - 2' (14")	N/E	2' - 4.9'	4.9'	N/E	--
B-75	0' - 0.8' (10")	0.8' - 2' (14")	N/E	2' - 5.1'	5.1'	4.5'	--
B-76	0' - 0.6' (7")	0.6' - 2' (17")	N/E	2' - 3.1'	3.1'	2.5'	--
B-77	0' - 0.8' (10")	0.8' - 2' (14")	N/E	2' - 5.6'	5.6'	3.9'	--
B-78	0' - 0.9' (11")	0.9' - 2.5' (19")	N/E	2.5' - 5.9'	5.9'	N/E	--
B-79	0' - 0.8' (9")	0.8' - 2' (14")	N/E	2' - 6.4'	6.4'	N/E	--
B-80	0' - 0.8' (9")	0.8' - 2.5' (21")	N/E	2.5' - 4.8'	4.8'	N/E	--

Borings performed north to south on S. Main Street from Broad St. to Vickery Rd. at approximately 100 ft spacings.
Subgrade generally consisted of bituminous pavement overlying fill overlying glacial marine deposits overlying glacial till overlying bedrock.
Groundwater was occasionally encountered during the boring/probe explorations.
Naphthalene odor was generally detected in upper 3 to 4 feet of soil.
N/E = Not Encountered
(#) = thickness in inches

SUMMIT
GEOENGINEERING SERVICES

PHOTOGRAPHIC LOG

Client Name:	**Project No.**
Woodard & Curran	10132

Photo No. 1

Date: 5-18-2011

Site Location:

South Main Street
Auburn, Maine

Description:

Photograph of starting point on South Main Street near Broad Street intersection facing southeast.

Photo No. 2

Date: 5-18-2011

Site Location:

South Main Street
Auburn, Maine

Description:

Photograph of boring B-19 facing south.

Photo No. 3 **Date:** 5-18-2011 **Site Location:** South Main Street Auburn, Maine **Description:** Photograph of boring B-29 facing south.	

Photo No. 4 **Date:** 5-19-2011 **Site Location:** South Main Street Auburn, Maine **Description:** Photograph of low-lying stretch of South Main Street between boring B-24 and B-32, facing north.	

Photo No. 5 **Date:** 5-19-2011 **Site Location:** South Main Street Auburn, Maine **Description:** Photograph of boring B-37 facing south.	

Photo No. 6 **Date:** 5-20-2011 **Site Location:** South Main Street Auburn, Maine **Description:** Photograph of rock outcrops along South Main Street near boring B-80.	

EXPLORATION REPORT COVER SHEET

The exploration report has been prepared by the geotechnical engineer from both field and laboratory data. Differences between field logs and exploration reports may exist.

It is common practice in the soil and foundation engineering profession that field logs and laboratory data sheets not be included in engineering reports, because they do no represent the engineer's final opinion as to appropriate descriptions for conditions encountered in the exploration and testing work. The field logs will be retained in our office for review. Results of laboratory tests are generally shown on the borings logs or are described in the text of the report as appropriate.

Drilling and Sampling Symbols:

SS = Split Spoon
ST = Shelby Tube – 2" OD, disturbed
UT = Shelby Tube – 3" OD, undisturbed
HSA = Hollow Stem Auger
CS = Casing – size as noted
Sv = Vane Shear
PP = Pocket Penetrometer
RX = Rock Core – size as noted
Hyd = Hydraulic advance of probes
WOH = Weight of Hammer
WOR = Weight of Rod
GS = Grain Size Data
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; additional evidence of groundwater elevations via observation or monitoring wells must be sought.

Gradation Description and Terminology:

Boulders:	Over 8 inches	Trace:	Less than 5%
Cobbles:	8 inches to 3 inches	Little:	5% to 15%
Gravel:	3 inches to No.4 sieve	Some:	15% to 25%
Sand:	No.4 to No. 200 sieve	Silty, Sandy, etc.:	Greater than 25%
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 3	Very Loose
3 to 4	Soft	4 to 9	Loose
5 to 8	Firm	10 to 29	Compact
9 to 16	Stiff	30 to 49	Dense
17 to 32	Very Stiff	50 to 80	Very Dense
>32	Hard		

SUMMIT
GEOENGINEERING SERVICES

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-1**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 6"		PAVEMENT
1					Brown Sandy GRAVEL, little Silt, dense, damp, SP-SM		0.5' FILL
2							
3					Brown Silty CLAY, trace Sand, firm to stiff, damp to moist, CL		2.5' GLACIAL MARINE DEPOSITS
4							
5							
6							
7							
8							
9							
10							
					End of exploration, no refusal		10'
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-2
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 6"		PAVEMENT
1					Brown Sandy GRAVEL, little Silt, dense, damp, SP-SM		0.5' FILL
2							
3							
4					Brown Silty CLAY, trace Sand, firm to stiff, damp to moist, CL		3' GLACIAL MARINE DEPOSITS
5							
6							
7							
8							
9							
10							
11					End of exploration, no refusal		10'
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Boring #: **B-3**

Project:	Roadway Evaluation	Project #:	10132
Location:	South Main Street	Sheet:	1 of 1
	Auburn, Maine	Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 7"		PAVEMENT
1					Brown Sandy GRAVEL, little Silt, dense, damp, SP-SM		0.6' FILL
2							
3							
4					Light brown medium-fine SAND, loose, damp, SM		3' GLACIAL MARINE DEPOSITS
5							
6							
7							
8							
9							
10							
11					End of exploration, no refusal		10'
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-4
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	9'	N/E	Observed moisture change in spoon

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 7.5"		PAVEMENT
1	S-1	18/14	0.5 - 2	74	2" Coal Ash layer		0.6'
				50	Dark brown SAND, some Silt and Gravel, very dense		FILL
2				28	humid, SM		
	S-2	24/16	2 - 4	14			
3				10	Light brown and mottled medium-fine SAND, compact,		2.5' +/-
				8	humid to damp, SM		GLACIAL MARINE
4				7	Becoming Silty at Spoon tip		DEPOSITS
5							
	S-3	24/18	5 - 7	1			
6				2			
				2			
7				3			
	S-4	24/18	7 - 9	3	Light brown to tan fine SAND, some Silt, loose, damp, SM		7'
8				4	Wet at Spoon tip		
				3			
9				5			
					Moist at 9'	Water at 9'	
10							
	S-5	24/18	10 - 12	7	Light brown well graded course SAND, little to trace		
11				8	Silt,compact, moist, SW		
				7			
12				9			
					End of exploration, no refusal		12'
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition		NOTES: Location:	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency				Dry: S = 0%
0-4	V. Loose	<2	V. soft			Bedrock Joints	Humid: S = 1 to 25%
4-10	Loose	2-4	Soft	<5%	trace	Shallow = 0 to 35 degrees	Damp: S = 26 to 50%
10-30	Compact	4-8	Firm	5-15	little	Dipping = 35 to 55 degrees	Moist: S = 51 to 75%
30-50	Dense	8-15	Stiff	15-25	some	Steep = 55 to 90 degrees	Wet: S = 76 to 99%
>50	V. Dense	15-30	V. Stiff	>25	and		Saturated: S = 100%
		>30	Hard			Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches	

SUMMIT
GEOENGINEERING SERVICES

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-5
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 8"		PAVEMENT
1					Dark brown SAND, some Silt and Gravel, dense, humid, SM		0.7' FILL
2							
3					Light brown and mottled medium-fine SAND, little Silt, compact, humid to damp, SM		2' +/- GLACIAL MARINE DEPOSITS
4							
5							
6							
7							
8					Light brown fine SAND, some Silt, compact, damp, SM		7' +/-
9							
10							
11					End of exploration, no refusal		10'
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-6**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =10.5"		PAVEMENT
2					Brown SAND, some Silt and Gravel, dense, humid, SM Small Cobble at 1'		0.9' FILL
3					Dark Brown Silty SAND, trace Clay, compact, damp, SM		2' +/- GLACIAL MARINE DEPOSITS
10					End of exploration, no refusal		10'

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-7
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =10"		PAVEMENT
2					Brown Sandy GRAVEL, little Silt, dense, damp, SP-SM		0.8' FILL
3							
4							
5							
6					Light brown medium-fine SAND, loose, damp, SM		5' GLACIAL MARINE DEPOSITS
7							
8							
9							
10							
11					End of exploration, no refusal		10'
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-8**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement =10"		PAVEMENT
1	S-1	24/12	0.5 - 2.5	10			
				15	3" Coal Ash layer		0.8'
2				17	Brown Gravelly SAND, little Silt, dense, damp, SP-SM		FILL
				12			
3	S-2	24/18	2.5 - 4.5	8	Olive brown Sandy SILT, trace Clay, loose, moist, ML		2.5'
				5	Slighty Mottled		GLACIAL MARINE
4				4			DEPOSITS
				4			
5							
	S-3	24/18	5 - 7	6	Olive CLAY, some Silt, stiff, damp to moist, CL	PP=3500 psf	5'
6				6			
				8	Mottled weathered Silty SAND (Residual Soil), SM		6'
7				8			
					Weathered rock at 7.4'		
8					Auger Refusal at 7.7'		7.7'
							BEDROCK
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-9**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =9"		PAVEMENT
2					Brown Gravelly SAND, little Silt, dense, damp, SP-SM		0.8' FILL
3							
4					Olive brown Sandy SILT, trace Clay, loose, moist, ML Slighty Mottled		3' GLACIAL MARINE DEPOSITS
5					Auger Refusal at 4.5'		4.5' BEDROCK
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-10**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =10.5"		PAVEMENT
2					Brown Gravelly SAND, little Silt, dense, damp, SP-SM		0.9' FILL
3							
4					Olive Silty CLAY, trace Sand, dense, damp, CL		3' GLACIAL MARINE DEPOSITS
5					Auger Refusal at 4.5'		4.5' BEDROCK
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-11**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =9.5"		PAVEMENT
2					Brown Gravelly SAND, little Silt, dense, damp, SP-SM		0.8' FILL
3							
4					Brown Silty SAND, loose, damp, SM		3' GLACIAL MARINE DEPOSITS
5							
6					Olilve Silty CLAY, trace SAND, dense, moist, CL		5'
7							
8							
9							
10							
11					End of exploration, no refusal		10'
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-12**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	9'	Not Available	Measured in open borehole

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 6"		PAVEMENT
1	S-1	24/12	0.5 - 2.5	5	Thin Coal Ash layer		0.5'
				6	Olive brown Sandy SILT, compact, damp, ML		FILL
2				6			1.5'
				6			GLACIAL MARINE
3	S-2	24/6	2.5 - 4.5	4	Brown Silty SAND, loose, damp, SM		DEPOSITS
				4			
4				4			
				4			
5							
	S-3	24/12	5 - 7	4	Light brown Silty SAND, compact, damp, SM	Gravel = 0%	
6				6		Sand = 68%	
				11		Fines = 32%	
7				12		MC = 15.4%	
8							
9							
						Water at 9'	
10							
	S-4	24/18	10 - 12	11	Brown and mottled Sandy SILT, compact, moist to wet,		10'
11				12	ML		
				12			
12				12			
					End of exploration, no refusal		12'
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-13**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 6"		PAVEMENT
1					Coal Ash layer		0.5'
					Brown silty SAND, some Gravel, humid, SM		FILL
2							1.5' +/-
					Brown Sandy SILT, some Clay, damp, ML		GLACIAL MARINE
3							DEPOSITS
4							
5							
6							
7							
8							
9							
10							
					End of exploration, no refusal		10'
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-14**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =10"		PAVEMENT
2					Brown Silty SAND, some Gravel, damp, SM		0.8' FILL
3							
4					Olive Silty CLAY, some Silt, firm to stiff, moist, CL		3' GLACIAL MARINE DEPOSITS
5							
6							
7							
8							
9							
10							
11					End of exploration, no refusal		10'
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-15
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 6"		PAVEMENT
1					Brown Silty SAND, some Gravel, damp, SM		0.5' FILL
2							
3					Olive Silty CLAY, some Sand, firm to stiff, moist, CL		2.5' GLACIAL MARINE DEPOSITS
4							
5							
6							
7							
8							
9							
10							
					End of exploration, no refusal		10'
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-16
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	8.9'	Not Available	Measured in open borehole

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 8"		PAVEMENT
1	S-1	24/6	0.5 - 2.5	9	3" Coal Ash layer		0.7'
				6	Olive brown Silty CLAY, damp, stiff, CL		FILL
2				5			
				4			2' +/-
3	S-2	24/18	2.5 - 4.5	4	Olive brown and mottled Silty CLAY, trace Sand, stiff		GLACIAL MARINE
				5	damp, CL		DEPOSITS
4				6			
				6			
5							
	S-3	24/24	5 - 7	4	Same as above,firm to stiff, damp, occasional sand layer,	LL = 30	
6				4	CL	PI = 14	
				4		MC = 33.7%	
7				4			
8							
9							
						Water at 8.9'	
10							
	S-4	24/24	10 - 12	2	Same as above, soft to firm, moist, CL		
11				2			
				2			
12				2			
					End of exploration, no refusal		12'
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-17
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =10"		PAVEMENT
2					Brown Gravelly SAND, little Silt, dense, damp, SP-SM		0.8' FILL
3					Brown Sandy SILT, trace clay, loose, damp, SM		2' +/- GLACIAL MARINE DEPOSITS
7					Olive Silty CLAY, some Sand, firm to stiff, moist, CL		7'
10					End of exploration, no refusal		10'

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-18**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =9"		PAVEMENT
2					Brown Silty SAND, little Gravel, dense, damp, SM		0.8' FILL
3					Brown Sandy SILT, trace Clay, loose, damp, ML		2' +/- GLACIAL MARINE DEPOSITS
4							
5					Olilve Silty CLAY, some SAND, firm, moist, CL		4' +/-
6							
7							
8					Brown Sandy SILT, trace Clay, loose, moist, ML		7' +/-
9							
10							
11					End of exploration, no refusal		10'
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-19**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	9'	Not Available	Observed moisture change

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =9"		PAVEMENT
2					Brown Sandy GRAVEL, little Silt, dense, damp, SP-SM		0.8' FILL
3					Olive brown SILT-CLAY, firm, damp, ML-CL		2.5' +/- GLACIAL MARINE DEPOSITS
9					Moist at bottom of exploration	Water at 9'	
11					End of exploration, no refusal		10'

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Boring #: **B-20**

Project:	Roadway Evaluation	Project #:	10132
Location:	South Main Street	Sheet:	1 of 1
	Auburn, Maine	Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	10'	Not Available	Observed moisture change in spoon

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 8"		PAVEMENT
1	S-1	24/6	0.5 - 2.5	7	3" Coal Ash layer		0.7'
				7	Light brown Sandy SILT, stiff, damp, some mica, ML		FILL
2				8			
				9			
3	S-2	24/24	2.5 - 4.5	6	Light brown Sandy SILT, stiff, damp, ML	Gravel = 0%	2.5' +/-
				6		Sand = 33.4%	GLACIAL MARINE
4				5		Fines = 66.6%	DEPOSITS
				5		MC = 19.7%	
5							
	S-3	24/24	5 - 7	5	Light brown Clayey SILT, stiff, damp, ML-CL	PP=3000 psf	
6				6			
				7			
7				7			
8							
9							
10					Wet at Spoon Tip		
	S-4	24/12	10 - 12	7		Water at 10'	
11				7	Olive brown Clayey SILT, stiff, moist, ML-CL		
				8			
12				8			
					End of exploration, no refusal		12'
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-21
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement =8"		PAVEMENT
1					Brown silty SAND, some Gravel, cmpact, humid, SM		0.7' FILL
2							
3					Dark brown Sandy SILT, trace Clay, loose, damp, ML		2'+/- GLACIAL MARINE DEPOSITS
4							
5					Light brown SILT-CLAY, firm, damp to moist, ML-CL		4'+/-
6							
7							
8							
9							
10							
11					End of exploration, no refusal		10'
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-22
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 2"		PAVEMENT
1					Coal Ash layer		0.2'
					Brown silty SAND, some Gravel, dense, humid, SM		FILL
2					Brown Sandy SILT, some Clay, compact, damp, ML		1.5' +/-
							GLACIAL MARINE
3							DEPOSITS
4							
5							
6							
7							
8							
9							
10							
					End of exploration, no refusal		10'
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-23
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	8.5'	Not Available	Observed moisture change

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 3"		PAVEMENT
1					Brown silty SAND, some Gravel, dense, damp, SM		0.3' FILL
2							
3					Olive Silty CLAY, some Sand, compact, damp to moist, CL		2' +/- GLACIAL MARINE DEPOSITS
4							
5							
6							
7							
8						Water at 8.5'	
9					Gray Sandy SILT, little Clay, soft, wet, ML		8.5'
10							
11					End of exploration, no refusal		10'
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Boring #: **B-24**

Project: Roadway Evaluation
Location: South Main Street, Auburn, Maine

Project #: 10132
Sheet: 1 of 1
Chkd by: CWC

Drilling Co: Northern Test Boring
Personnel: Nick
Summit Staff: Craig Coolidge / Erika Hawksley

Boring Location: South Main Street
Elevation: Not Available
Date started: 5/18/2011 Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement =9.5"		PAVEMENT
1	S-1	24/6	0.5 - 2.5	7			
				8	3" Coal Ash layer		0.8'
2				8	Dark brown SAND, some Gravel, little Silt, compact,		FILL
				7	damp, SM		
3	S-2	24/12	2.5 - 4.5	6	Brown SILT, some Clay, stiff, damp, ML	PP=5000 psf	2.5' +/-
				8			GLACIAL MARINE
4				6			DEPOSITS
				7			
5							
	S-3	24/18	5 - 7	4	Olive brown Silty CLAY, trace Sand, stiff, damp to	PP=5000 psf	5' +/-
6				5	moist, CL		
				5			
7				5			
8							
9							
10							
	S-4	24/24	10 - 12	2	Olive and gray Silty CLAY, trace Sand, soft, moist, CL	PP=2000 psf	
11				1		LL = 26	
				2		PI = 9	
12				1		MC = 29.1%	
					End of exploration, no refusal		12'
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-25
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 8"		PAVEMENT
1					Brown silty SAND, some Gravel, compact, damp, SM		0.7' FILL
2							
3					Dark brown medium-fine SAND, trace Clay, compact, humid, SM		2' +/- GLACIAL MARINE DEPOSITS
4							
5							
6							
7							
8							
9							
10							
11					End of exploration, no refusal		10'
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-26
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =10"		PAVEMENT
2					Brown silty SAND, some Gravel, dense, damp, SM		0.8' FILL
3					Dark brown medium-fine SAND, little Silt, compact, damp, SM		2' +/- GLACIAL MARINE DEPOSITS
4							
5							
6					Brown Silty CLAY, some Sand, firm, damp, CL		5' +/-
7							
8							
9							
10							
11					End of exploration, no refusal		10'
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-27
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =10"		PAVEMENT
2					Brown silty SAND, some Gravel, dense, damp, SM		0.8' FILL
3					Brown medium-fine SAND, little Silt, compact, damp, SM		2.5' +/- GLACIAL MARINE DEPOSITS
6					Dark brown medium-fine SAND, little Silt, compact, damp, SM		5' +/-
11					End of exploration, no refusal		10'

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Boring #: **B-28**

Project: Roadway Evaluation
Location: South Main Street, Auburn, Maine

Project #: 10132
Sheet: 1 of 1
Chkd by: CWC

Drilling Co: Northern Test Boring
Personnel: Nick
Summit Staff: Craig Coolidge / Erika Hawksley

Boring Location: South Main Street
Elevation: Not Available
Date started: 5/18/2011 Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	12'	Not Available	Measured in open borehole

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 8"		PAVEMENT
1	S-1	24/10	0.5 - 2.5	11	Brown Sandy GRAVEL, compact, humid, SP-SM		0.7'
				12	3" Coal Ash layer		FILL
2				26	Light brown Gravelly SAND, little Silt, dense, damp, SM		
				16			
3	S-2	24/18	2.5 - 4.5	6	Reworked soil		
				8	Brown Gravelly SAND, little Silt, compact, damp, SM		
4				12			
				20			
5							4.5' +/-
	S-3	24/12	5 - 7	3	Dark brown Silty CLAY, firm, damp, CL	PP=2000 psf	GLACIAL MARINE
6				3			DEPOSITS
				3			
7				3			
8							
					Gray at 8', moist		8'
9							
10							
	S-4	24/24	10 - 12	3	Gray Silty CLAY, trace Sand, firm, moist, CL	PP=4500 psf	10'
11				3			
				4			
12				5		Water at 12'	
					End of exploration, no refusal		12'
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Boring #: **B-29**

Project:	Roadway Evaluation
Location:	South Main Street, Auburn, Maine
Project #:	10132
Sheet:	1 of 1
Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 5"		PAVEMENT
1					Brown Gravelly SAND, little Silt, damp, SM		0.4' FILL
					Dark brown medium-fine SAND, little Silt, damp, SM		1' +/-
2							GLACIAL MARINE DEPOSITS
3							
4					Gray Silty CLAY, trace Sand, firm, damp, CL		5' +/-
5							
6							
7							
8							
9							
					Olive and gray Silty CLAY, trace Sand, firm, moist, CL		9' +/-
10							
					End of exploration, no refusal		10'
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-30**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 6"		PAVEMENT
1					Brown silty SAND, some Gravel, dense, humid, SM		0.5' FILL
2							
3					Light brown medium-fine SAND, little Silt, compact, humid, SM		2' +/- GLACIAL MARINE DEPOSITS
4							
5							
6							
7							
8							
9					Brown Sandy SILT, trace Clay, firm, damp, ML		8' +/-
10							
11					End of exploration, no refusal		10'
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-31
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/18/2011	Date Completed: 5/18/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/18/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 8"		PAVEMENT
1					Brown Silty SAND, some Gravel, dense, humid, SM		0.7' FILL
2							
3					Dark brown medium-fine SAND, little Silt, compact, humid, SM		2' +/- GLACIAL MARINE DEPOSITS
4							
5							
6							
7							
8							
9							
10					Olive brown Silty CLAY, trace Sand, firm, damp, CL		9' +/-
11					End of exploration, no refusal		10'
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Boring #: **B-32**

Project: Roadway Evaluation
Location: South Main Street, Auburn, Maine

Project #: 10132
Sheet: 1 of 1
Chkd by: CWC

Drilling Co: Northern Test Boring
Personnel: Nick
Summit Staff: Craig Coolidge / Erika Hawksley

Boring Location: South Main Street
Elevation: Not Available
Date started: 5/19/2011 Date Completed: 5/19/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/19/2011	9'	Not Available	Measured in open borehole

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement =10"		PAVEMENT
1	S-1	18/10	0.5 - 2	23			
				33	3" Coal Ash layer		0.8'
2				32	Brown Gravelly SAND, little Silt, dense, damp, SM		FILL
	S-2	24/12	2 - 4	9	Olive brown SAND, little Silt, compact, damp, SM		
3				12			
				16			
4				10	Gray Silty CLAY, trace Sand, stiff, damp, CL		3.5' +/-
							GLACIAL MARINE
5							DEPOSITS
	S-3	24/18	5 - 7	4	Olive Silty CLAY, trace Sand, firm, damp to moist, CL	PP=3000 psf	5' +/-
6				4		LL = 31	
				3		PI = 12	
7				4		MC = 24.8%	
					Moist at 7'		
8							
9							
					Slightly stiffer at 9'	Water at 9'	9'
10							GLACIAL TILL
	S-4	24/24	10 - 12	7	Gray mottled SILT, some Sand and Clay, trace Gravel,		
11				8	very stiff, moist, ML		
				8			
12				7			
					End of exploration, no refusal		12'
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-33**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/19/2011	Date Completed: 5/19/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/19/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 9"		PAVEMENT
1					Brown medium-fine SAND, little Silt, dense, damp, SM		0.8' FILL
2							
3					Dark brown medium-fine SAND, little Silt, compact, damp, SM		2' +/- GLACIAL MARINE DEPOSITS
4							
5							
6					Gray SILT-CLAY, trace Sand, firm, damp, ML-CL		5' +/-
7							
8							
9					Denser at 8.5'		8.5'+/- GLACIAL TILL
10							
11					End of exploration, no refusal		10'
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-34
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/19/2011	Date Completed: 5/19/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/19/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 9"		PAVEMENT
1					Brown medium-fine SAND, little Silt, dense, damp, SM		0.8' FILL
2							
3					Dark brown medium-fine SAND, little Silt, compact, damp, SM		2' +/- GLACIAL MARINE DEPOSITS
4							
5							
6					Brown Silty CLAY, trace Sand, firm, damp, CL		5' +/-
7							
8							
9					Denser at 8'		8' +/- GLACIAL TILL
10							
11					End of exploration, no refusal		10'
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-35**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/19/2011	Date Completed: 5/19/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/19/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =10"		PAVEMENT
2					Brown medium-fine SAND, little Silt, dense, damp, SM		0.8' FILL
3					Brown Silty SAND, trace Clay, compact, damp, SM		2' +/- GLACIAL MARINE DEPOSITS
4					Brown Sandy SILT, trace Clay, firm, damp, ML		3.5' +/-
5					Olive brown Silty CLAY, trace Sand, firm, damp, CL		4' +/-
10					End of exploration, no refusal		10'

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-36**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/19/2011	Date Completed: 5/19/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/19/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement =10"		PAVEMENT
1	S-1	24/12	0.5 - 2.5	11			
				16	3" Coal Ash layer		0.8'
2				18	Brown Gravelly SAND, little Silt, dense, damp, SM		FILL
				18	Olive brown SILT, some Clay, little Sand, stiff, damp, ML		2' +/-
3	S-2	24/18	2.5 - 4.5	8			GLACIAL MARINE
				6			DEPOSITS
4				7			
				7			
5							
	S-3	24/24	5 - 7	6	Olive brown Sandy SILT, little Clay, very stiff, damp, ML		5' +/-
6				9			
				12			
7				14			
8							
9							
							9' +/-
10							GLACIAL TILL
	S-4	24/24	10 - 12	17	Olive to gray Silty CLAY, some Sand and Gravel, hard,		
11				19	damp, CL		
				26			
12				25			
					End of exploration, no refusal		12'
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-37
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/19/2011	Date Completed: 5/19/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/19/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =11"		PAVEMENT
2					Brown silty SAND, some Gravel, dense, damp, SM Cobble at 1'		0.9' FILL
3					Brown medium-fine SAND, little Silt, damp, SM		2.5' +/- GLACIAL MARINE DEPOSITS
4							
5					Olive Silty CLAY, trace Sand, damp, CL		4'+/-
6							
7							
8							
9							
10					Gray CLAY, some Silt, stiff, damp, CL		9' +/- GLACIAL TILL
11					End of exploration, no refusal		10'
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-38
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/19/2011	Date Completed: 5/19/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/19/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =12"		PAVEMENT
2					Brown Silty SAND, dense, damp, SM Cobble at 1'		1' FILL
3					Dark brown medium-fine SAND, little Silt, compact, damp, SM		2' +/- GLACIAL MARINE DEPOSITS
5					Brown Silty CLAY, trace Sand, firm, damp, CL		5' +/-
10					End of exploration, no refusal		10'

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-39**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/19/2011	Date Completed: 5/19/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/19/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =10"		PAVEMENT
2					Brown Silty SAND, dense, damp, SM		0.8' FILL
3					Dark brown medium-fine SAND, little Silt, compact, damp, SM Cobble at 3'		2' +/- GLACIAL MARINE DEPOSITS
4					Olive brown Silty CLAY, firm, damp, CL		3.5' +/-
10					End of exploration, no refusal		10'

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Boring #: **B-40**

Project: Roadway Evaluation
Location: South Main Street, Auburn, Maine

Project #: 10132
Sheet: 1 of 1
Chkd by: CWC

Drilling Co: Northern Test Boring
Personnel: Nick
Summit Staff: Craig Coolidge / Erika Hawksley

Boring Location: South Main Street
Elevation: Not Available
Date started: 5/19/2011 Date Completed: 5/19/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/19/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement =10"		PAVEMENT
1	S-1	24/12	0.5 - 2.5	8			
				8	Brown Sandy GRAVEL, compact, damp, SP-SM		0.8'
2				9			FILL
				11			
3	S-2	24/12	2.5 - 4.5	5	Olive brown Sandy SILT, trace Clay, stiff, damp, ML		2.5' +/-
				5			GLACIAL MARINE
4				6			DEPOSITS
				6			
5							
	S-3	24/18	5 - 7	2	Brown Sandy SILT, trace Clay, stiff, moist, ML		
6				9			
				8			
7				9			
8							
9							
10							
	S-4	24/18	10 - 12	22	Gray Clayey SILT, some Sand, little Gravel, hard, damp,		10'
11				24	ML		GLACIAL TILL
				26			
12				26	Brown Gravely SAND, dense, damp, SM		11.8'
					End of exploration, no refusal		12'
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-41**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/19/2011	Date Completed: 5/19/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/19/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =9"		PAVEMENT
2					Brown Gravelly SAND, little Silt, dense, damp, SP-SM		0.8' FILL
3					Brown Silty SAND, trace Clay, compact, damp, SM		2' +/- GLACIAL MARINE DEPOSITS
4							
5					Auger Refusal at 4.5', Possible Boulder or Bedrock		4.5' POSSIBLE BEDROCK
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-42
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/19/2011	Date Completed: 5/19/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/19/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =10"		PAVEMENT
2					Brown SAND, some Silt and Gravel, compact, humid, SM		0.8' FILL
3					Olive brown Sandy SILT, firm, humid, ML		2' +/- GLACIAL MARINE DEPOSITS
10					End of exploration, no refusal		10'

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-43**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/19/2011	Date Completed: 5/19/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/19/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 8"		PAVEMENT
1					Brown Silty SAND, some Gravel, dense, humid, SM		0.7' FILL
2							
					Brown Sandy SILT, firm, damp, ML		2' +/- GLACIAL MARINE DEPOSITS
3							
4							
5					Cobble or Boulder at 4.5'		
					Auger Refusal at 5', Possible Boulder or Bedrock		5' POSSIBLE BEDROCK
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-44
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/19/2011	Date Completed: 5/19/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/19/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement =9"		PAVEMENT
1	S-1	24/6	0.5 - 2.5	18			
				12	Brown Gravelly SAND, little Silt, compact, damp, SP-SM		0.8'
2				6			FILL
				6			
3	S-2	24/12	2.5 - 4.5	3	Olive brown SILT, some Sand and Clay, stiff, damp, ML	PP=1,000 psf	2.5' +/-
				4			GLACIAL MARINE
4				5			DEPOSITS
				5			
5							
	S-3	24/18	5 - 7	8	Brown Sandy SILT, some Gravel, hard, damp, ML		5' +/-
6				26			GLACIAL TILL
				25			
7				25			
8							
9							
10							
	S-4	24/24	10 - 12	12	Gray Sandy SILT, some Clay, little Gravel, very stiff,		
11				14	damp, ML		
				16			
12				17			
					End of exploration, no refusal		12'
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition		NOTES: Location:	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency				Dry: S = 0%
0-4	V. Loose	<2	V. soft			Bedrock Joints	Humid: S = 1 to 25%
4-10	Loose	2-4	Soft	<5%	trace	Shallow = 0 to 35 degrees	Damp: S = 26 to 50%
10-30	Compact	4-8	Firm	5-15	little	Dipping = 35 to 55 degrees	Moist: S = 51 to 75%
30-50	Dense	8-15	Stiff	15-25	some	Steep = 55 to 90 degrees	Wet: S = 76 to 99%
>50	V. Dense	15-30	V. Stiff	>25	and		Saturated: S = 100%
		>30	Hard			Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches	

SUMMIT
GEOENGINEERING SERVICES

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-45
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/19/2011	Date Completed: 5/19/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/19/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =9"		PAVEMENT
2					Brown Silty SAND, some Gravel, dense, humid, SM Cobble at 2'		0.8' FILL
3					Brown Silty CLAY, stiff, damp, CL		2' +/- GLACIAL MARINE DEPOSITS
4							
5							
6							
7							
8					Cobble at 7'		
9							
10							
11					End of exploration, no refusal		10'
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-46
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/19/2011	Date Completed: 5/19/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/19/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 8"		PAVEMENT
1					Brown Silty SAND, some Gravel, dense, humid, SM		0.7' FILL
2							
					Auger Refusal at 2', Possible Boulder or Bedrock		2' POSSIBLE BEDROCK
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-47
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/19/2011	Date Completed: 5/19/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/19/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =9"		PAVEMENT
2					Brown Silty SAND, some Gravel, dense, humid, SM Cobble at 2'		0.8' FILL
3					Olive brown Sandy SILT, some Clay, firm, damp, ML		2' +/- GLACIAL MARINE DEPOSITS
11					End of exploration, no refusal		10'

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-48**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/19/2011	Date Completed: 5/19/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/19/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement =9"		PAVEMENT
1	S-1	24/12	0.5 - 2.5	6			
				7	Brown and mottled Sandy GRAVEL, compact, humid		0.8'
2				7	to damp, SP-SM		FILL
				12			
3	S-2	24/18	2.5 - 4.5	10	Olive brown Silty SAND, little Gravel, stiff, damp, SM	Gravel = 13.7%	2.5' +/-
				8		Sand = 50.1 %	GLACIAL MARINE
4				8		Fines = 36.2%	DEPOSITS
				7		MC=15.3%	
5							
	S-3	24/24	5 - 7	10	Same as above, stiff, damp, ML		
6				8			
				8			
7				7			
8							
							8' +/-
9							GLACIAL TILL
10							
	S-4	24/18	10 - 12	10	Gray Sandy SILT, some Clay, little Gravel, hard,		
11				20	damp, ML		
				20			
12				22			
					End of exploration, no refusal		12'
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition		NOTES: Location:	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency				Dry: S = 0%
0-4	V. Loose	<2	V. soft			Bedrock Joints	Humid: S = 1 to 25%
4-10	Loose	2-4	Soft	<5%	trace	Shallow = 0 to 35 degrees	Damp: S = 26 to 50%
10-30	Compact	4-8	Firm	5-15	little	Dipping = 35 to 55 degrees	Moist: S = 51 to 75%
30-50	Dense	8-15	Stiff	15-25	some	Steep = 55 to 90 degrees	Wet: S = 76 to 99%
>50	V. Dense	15-30	V. Stiff	>25	and		Saturated: S = 100%
		>30	Hard			Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches	

SUMMIT
GEOENGINEERING SERVICES

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-49
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/19/2011	Date Completed: 5/19/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/19/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =10"		PAVEMENT
2					Brown Silty SAND, some Gravel, dense, humid, SM		0.8' FILL
3							
4					Olive to gray Silty CLAY, firm, damp, CL		3' +/- GLACIAL MARINE DEPOSITS
5					Cobble at 4'		
6							
7							
8							
9							
10							
11					End of exploration, no refusal		10'
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-50**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/19/2011	Date Completed: 5/19/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/19/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =10"		PAVEMENT
2					Brown Silty SAND, some Gravel, dense, humid, SM		0.8' FILL
3							
4					Olive to gray Silty CLAY, firm, damp, CL		3' +/- GLACIAL MARINE DEPOSITS
5							
6							
7							
8							
9							
10							
11					End of exploration, no refusal		10'
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-51**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/19/2011	Date Completed: 5/19/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/19/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =9"		PAVEMENT
2					Brown Silty SAND, some Gravel, dense, humid, SM		0.8' FILL
3					Olive to gray Silty CLAY, firm, damp, CL		2.5' +/- GLACIAL MARINE DEPOSITS
10					End of exploration, no refusal		10'

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-52**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/19/2011	Date Completed: 5/19/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/19/2011	10'	Not Available	Observed moisture change in spoon

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement =9"		PAVEMENT
1	S-1	24/12	0.5 - 2.5	6			
				8	3" Coal Ash layer	Gravel = 16.7%	0.8'
2				10	Brown to orange SAND, some Gravel and Silt, compact,	Sand = 68.2 %	FILL
				11	damp, SM	Fines = 15.1%	
3	S-2	24/6	2.5 - 4.5	26	Olive brown Sandy SILT, some Clay, stiff, damp, ML	MC=5.9%	2.5' +/-
				11			GLACIAL MARINE
4				7			DEPOSITS
				7			
5							
	S-3	24/18	5 - 7	8	Olive brown Sandy SILT, some Clay, little Gravel, stiff,		
6				8	damp to moist, ML		
				14			
7				16			
8							
							8' +/-
9							GLACIAL TILL
10						Water at 10'	
	S-4	24/24	10 - 12	17	Gray Sandy SILT, little Clay and Gravel, hard, moist, ML		
11				20			
				22			
12				26			
					End of exploration, no refusal		12'
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition		NOTES: Location:	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency				Dry: S = 0%
0-4	V. Loose	<2	V. soft			Bedrock Joints	Humid: S = 1 to 25%
4-10	Loose	2-4	Soft	<5%	trace	Shallow = 0 to 35 degrees	Damp: S = 26 to 50%
10-30	Compact	4-8	Firm	5-15	little	Dipping = 35 to 55 degrees	Moist: S = 51 to 75%
30-50	Dense	8-15	Stiff	15-25	some	Steep = 55 to 90 degrees	Wet: S = 76 to 99%
>50	V. Dense	15-30	V. Stiff	>25	and		Saturated: S = 100%
		>30	Hard			Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches	

SUMMIT
GEOENGINEERING SERVICES

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-53
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/19/2011	Date Completed: 5/19/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/19/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 5"		PAVEMENT
1					Brown Silty SAND, some Gravel, compact, humid, SM		0.4' FILL
2							
3					Olive brown Silty CLAY, some Sand, firm, damp, CL		2.5' +/- GLACIAL MARINE DEPOSITS
4							
5							
6							
7							
8							
9					Dense at 8'		8' GLACIAL TILL
10							
11					End of exploration, no refusal		10'
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Boring #: **B-54**

Project:	Roadway Evaluation
Location:	South Main Street, Auburn, Maine
Project #:	10132
Sheet:	1 of 1
Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/19/2011	Date Completed: 5/19/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/19/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 6"		PAVEMENT
1					Brown to orange Silty SAND, little Gravel, compact, humid, SM		0.5' FILL
2							
3					Brown Sandy SILT, some Clay, firm, damp, ML		2.5' +/- GLACIAL MARINE DEPOSITS
4							
5							
6							
7							
8							
9							
10							
11					End of exploration, no refusal		10'
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-55
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/19/2011	Date Completed: 5/19/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/19/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 6"		PAVEMENT
1					Light brown Silty SAND, little Gravel, dense, humid, SM		0.5'
					Cobble at 1'		FILL
2							
3					Brown Silty SAND, compact, damp, SM		2.5' +/-
							GLACIAL MARINE
4							DEPOSITS
5							
6							
7							
					Brown Silty CLAY, trace Sand, firm, damp, CL		7'
8							
9							
					Moist at 9'		
10							
					End of exploration, no refusal		10'
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-56
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/19/2011	Date Completed: 5/19/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/19/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 7"		PAVEMENT
1	S-1	24/12	0.5 - 2.5	6	Brown Gravelly SAND, little Silt, compact, humid, SM-SP	Gravel = 33.4%	0.6'
				7		Sand = 58.2 %	FILL
2				7		Fines = 8.4%	
				6		MC=3.8%	
3	S-2	24/12	2.5 - 4.5	5	Gray and mottled Silty SAND, compact, moist, SM		2.5' +/-
				6			GLACIAL MARINE
4				8			DEPOSITS
				8			
5							
	S-3	24/24	5 - 7	7	Brown Silty SAND, some Clay and Gravel, compact		5'
6				8	moist, SM		
				7			
7				8			
8							
							8' +/-
9							GLACIAL TILL
10							
	S-4	24/24	10 - 12	9	Gray Sandy SILT, some Clay and Gravel, very stiff,		
11				11	moist, ML		
				12			
12				11			
					End of exploration, no refusal		12'
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-57
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/19/2011	Date Completed: 5/19/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/19/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 6"		PAVEMENT
1					Brown Gravelly SAND, little Silt, dense, damp, SP-SM		0.5' FILL
2							
3					Brown medium-fine SAND, some Silt, compact, damp, SM		2' +/- GLACIAL MARINE DEPOSITS
4							
5							
6							
7							
8							
9							
10					Dense at 9'		9' GLACIAL TILL
11					End of exploration, no refusal		10'
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-58
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/19/2011	Date Completed: 5/19/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/19/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 6"		PAVEMENT
1					Brown Silty SAND, some Gravel, compact, humid, SM		0.5' FILL
2							
3							
4					Gray Silty CLAY, firm, damp, CL		3' +/- GLACIAL MARINE DEPOSITS
5							
6							
7							
8							
9							
10					Dense at 9'		9' GLACIAL TILL
11					End of exploration, no refusal		10'
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-59
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/19/2011	Date Completed: 5/19/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/19/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 7"		PAVEMENT
1					Brown Gravelly SAND, little Silt, dense, damp, SP-SM		0.6' FILL
2							
3					Brown Silty SAND, trace Clay, compact, damp, SM		2' +/- GLACIAL MARINE DEPOSITS
4							
5							
6							
7							
8					Dense at 7.5'		7.5' GLACIAL TILL
9							
10							
11					End of exploration, no refusal		10'
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-60**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/20/2011	Date Completed: 5/20/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/20/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1	S-1	24/6	0.5 - 2.5		Bituminous Pavement =9"		PAVEMENT
2					Brown SAND, some Gravel, little Silt, dense, damp, SM		0.8' FILL
3	S-2	24/24	2.5 - 4.5	5	Olive brown SAND, some Silt, trace Gravel, firm, damp, ML	Gravel = 3.0% Sand = 68.3 % Fines = 28.7% MC=15.0%	2.5' +/- GLACIAL MARINE DEPOSITS
4				3			
5				4			
6	S-3	24/24	5 - 7	7			
7				5	Gray and mottled Sandy SILT, some Clay, stiff, damp, ML	PP=7,000 psf	5' +/- GLACIAL TILL
8				6			
9				8			
10				9			
11					Auger Refusal at 7.5', Probable Bedrock		7.5' BEDROCK
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-61**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/20/2011	Date Completed: 5/20/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/20/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 5.5"		PAVEMENT
1					Brown SAND, some Silt and Gravel, dense, humid, SM		0.5' FILL
2							
3							
					Auger Refusal at 3.2', Probable Bedrock		3.2' BEDROCK
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-62
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/20/2011	Date Completed: 5/20/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/20/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 6"		PAVEMENT
1					Brown SAND, some Silt, dense, damp, SM		0.5' FILL
2					Cobble at 2'		
3					Brown Sandy SILT, trace Clay, firm, damp, ML		2.5' +/- GLACIAL MARINE DEPOSITS
4							
5							
6					Dense at 5'		5' +/- GLACIAL TILL
7							
8							
9							
10							
11					End of exploration, no refusal		10'
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-63
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/20/2011	Date Completed: 5/20/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/20/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 6"		PAVEMENT
1					Brown SAND, some Silt, compact, damp, SM		0.5' FILL
2							
3					Brown Sandy SILT, trace Clay, firm, damp, ML		2.5' +/- GLACIAL MARINE DEPOSITS
4							
5							
6							
					Dense at 6'		6' +/- GLACIAL TILL
7							
8							
9							
10							
					End of exploration, no refusal		10'
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-64
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/20/2011	Date Completed: 5/20/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/20/2011	6.3'	Not Available	Measured in open borehole

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 7"		PAVEMENT
1	S-1	24/12	0.5 - 2.5	4	Brown Gravelly SAND, loose, damp, SM		0.6'
				5			FILL
2				6			
				8			
3	S-2	24/18	2.5 - 4.5	4	Olive brown Sandy SILT, trace Clay, firm, damp, ML		2.5'
				4			GLACIAL MARINE
4				4			DEPOSITS
				4			
5							
	S-3	24/24	5 - 7	4	Olive brown to gray Sandy SILT, little Clay, trace Gravel,		5'
6				5	stiff, damp to moist, ML		GLACIAL TILL
				6		Water at 6.3'	
7				8			
8							
9							
10							
	S-4	24/24	10 - 12	11	Olive to gray Sandy SILT, little Clay, trace Gravel, dense		
11				14	moist, ML		
				17			
12				18			
					End of exploration, no refusal		12'
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition		NOTES: Location:	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency				Dry: S = 0%
0-4	V. Loose	<2	V. soft			Bedrock Joints	Humid: S = 1 to 25%
4-10	Loose	2-4	Soft	<5%	trace	Shallow = 0 to 35 degrees	Damp: S = 26 to 50%
10-30	Compact	4-8	Firm	5-15	little	Dipping = 35 to 55 degrees	Moist: S = 51 to 75%
30-50	Dense	8-15	Stiff	15-25	some	Steep = 55 to 90 degrees	Wet: S = 76 to 99%
>50	V. Dense	15-30	V. Stiff	>25	and		Saturated: S = 100%
		>30	Hard			Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches	

SUMMIT
GEOENGINEERING SERVICES

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-65
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/20/2011	Date Completed: 5/20/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/20/2011	2'	Not Available	Measured in open borehole

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 7"		PAVEMENT
1					Brown SAND, some Silt, compact, damp, SM		0.6' FILL
2							
					Olive to gray Silty CLAY, trace Sand, soft, wet, CL	Water at 2'	2' +/- GLACIAL MARINE DEPOSITS
3							
4							
5							
6							
7							
8							
					Dense at 8'		8' GLACIAL TILL
9							
10							
					End of exploration, no refusal		10'
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-66
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/20/2011	Date Completed: 5/20/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/20/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 7"		PAVEMENT
1					Brown SAND, some Silt, compact, damp, SM		0.6' FILL
2							
3							
4					Olive to gray CLAY, some Silt, little Sand, firm, moist, CL		3' +/- GLACIAL MARINE DEPOSITS
5							
6							
7							
8					Dense at 7'		7' GLACIAL TILL
9							
10							
11					End of exploration, no refusal		10'
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-67
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/20/2011	Date Completed: 5/20/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/20/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =10"		PAVEMENT
2					Dark brown SAND, dense, damp, SM		0.8' FILL
3					Gray CLAY, some Silt, soft, wet, CL		2' +/- GLACIAL MARINE DEPOSITS
9					Dense at 9'		9' GLACIAL TILL
10					End of exploration, no refusal		10'

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-68
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/20/2011	Date Completed: 5/20/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/20/2011	9.5'	Not Available	Measured in open borehole

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 8"		PAVEMENT
1	S-1	24/6	0.5 - 2.5	3	Dark brown SAND, some Silt and Gravel, loose, damp, SM		0.7' FILL
				4			
2				4			
				4			
3	S-2	24/6	2.5 - 4.5	8	Brown SAND, little Gravel, loose to compact, damp, SM		2.5' +/- GLACIAL MARINE DEPOSITS
				5			
4				5			
				4			
5							4.5' +/-
	S-3	24/18	5 - 7	5	Olive brown Sandy SILT, some Clay, stiff, moist, ML		
6				8			
				8			
7				9			
							7' GLACIAL TILL
8							
9							
10						Water at 9.5'	
	S-4	24/24	10 - 12	15	Gray Sandy SILT, some Gravel, trace Clay, dense		
11				18	moist, ML		
				21			
12				21			
					End of exploration, no refusal		12'
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-69**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/20/2011	Date Completed: 5/20/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/20/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =9"		PAVEMENT
2					Brown Silty SAND, compact, damp, SM		0.8' FILL
3					Gray Sandy SILT-CLAY, firm, wet, ML-CL		2.5' +/- GLACIAL MARINE DEPOSITS
7					Cobble at 7'		
8					Dense at 8'		8' GLACIAL TILL
10					End of exploration, no refusal		10'

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-70**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/20/2011	Date Completed: 5/20/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/20/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 8"		PAVEMENT
1					Brown Silty SAND, compact, humid, SM		0.7' FILL
2					Brown Sandy SILT, some Clay, stiff, damp, ML		1.5' +/- GLACIAL TILL
3							
					Auger Refusal at 3.1', Bedrock		3.1'
4							BEDROCK
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-71**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/20/2011	Date Completed: 5/20/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/20/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =10"		PAVEMENT
2					Brown Silty SAND, compact, humid, SM		0.8' FILL
3					Brown Sandy SILT, some Clay, stiff, damp to moist, ML		2' +/- GLACIAL TILL
4							
5					Auger Refusal at 4.8', Bedrock		4.8' BEDROCK
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-72
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/20/2011	Date Completed: 5/20/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/20/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 8"		PAVEMENT
1	S-1	24/6	0.5 - 2.5	7	Brown SAND, some Silt and Gravel, compact, humid, SM		0.7' FILL
				7			
2				8			
				9			
3	S-2	24/6	2.5 - 4.5	8	Olive brown Sandy SILT, some Clay, stiff, damp, ML		2.5' +/- GLACIAL TILL
				8			
4				7			
				6			
5					Auger Refusal at 4.7', Bedrock		4.7' BEDROCK
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition		NOTES: Location:	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency				Dry: S = 0%
0-4	V. Loose	<2	V. soft			Bedrock Joints	Humid: S = 1 to 25%
4-10	Loose	2-4	Soft	<5%	trace	Shallow = 0 to 35 degrees	Damp: S = 26 to 50%
10-30	Compact	4-8	Firm	5-15	little	Dipping = 35 to 55 degrees	Moist: S = 51 to 75%
30-50	Dense	8-15	Stiff	15-25	some	Steep = 55 to 90 degrees	Wet: S = 76 to 99%
>50	V. Dense	15-30	V. Stiff	>25	and		Saturated: S = 100%
		>30	Hard			Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches	

SUMMIT
GEOENGINEERING SERVICES

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-73
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/20/2011	Date Completed: 5/20/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/20/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 8"		PAVEMENT
1					Brown Silty SAND, compact, humid, SM		0.7' FILL
2					Brown Sandy SILT, some Clay, stiff, damp, ML		1.5' +/- GLACIAL TILL
3					Auger Refusal at 2.6', Bedrock		2.6' BEDROCK
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-74
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/20/2011	Date Completed: 5/20/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/20/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =10"		PAVEMENT
2					Brown Silty SAND, compact, humid, SM		0.8' FILL
3					Olive Sandy SILT, some Clay, stiff, moist, ML		2' +/- GLACIAL TILL
4							
5							
6					Auger Refusal at 4.9', Bedrock		4.9' BEDROCK
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-75**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/20/2011	Date Completed: 5/20/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/20/2011	4.5'	Not Available	Measured in open borehole

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =10"		PAVEMENT
2					Brown Silty SAND, compact, moist, SM		0.8' FILL
3					Olive brown Sandy SILT, some Clay, stiff, moist to wet, ML		2' +/- GLACIAL TILL
4					Very dense at 3.5'		
5						Water at 4.5'	
6					Auger Refusal at 5.1', Bedrock		5.1' BEDROCK
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-76
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/20/2011	Date Completed: 5/20/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/20/2011	2.5'	Not Available	Measured in open borehole

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
					Bituminous Pavement = 7"		PAVEMENT
1	S-1	24/2	0.5 - 2.5	8	Dark brown Gravelly SAND, compact, damp, SM		0.6'
				10	Coal Ash layer		FILL
2				12			
				7	Brown Sandy SILT, some Clay, stiff, moist, ML		2' +/-
3	S-2	24/0	2.5 - 3.1	12	Rock fragments at spoon tip	Water at 2.5'	GLACIAL TILL
				50/1"			
4					Auger Refusal at 3.1', Bedrock		3.1'
							BEDROCK
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	B-77
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/20/2011	Date Completed: 5/20/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/20/2011	3.9'	Not Available	Measured in open borehole

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =10"		PAVEMENT
2					Brown Silty SAND, compact, damp, SM		0.8' FILL
3					Brown Sandy SILT, some Clay, stiff, moist, ML		2' +/- GLACIAL TILL
4						Water at 3.9'	
5							
					Dark brown weathered rock w/ mica flakes, humid		5'
6					Auger Refusal at 5.6', Bedrock		5.6' BEDROCK
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-78**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/20/2011	Date Completed: 5/20/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/20/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =11"		PAVEMENT
2					Brown Silty SAND, compact, damp, SM		0.9' FILL
3					Brown Silty CLAY, some Sand, stiff, moist, CL		2.5' +/- GLACIAL TILL
4							
5							
6							
7					Auger Refusal at 5.9', Bedrock		5.9' BEDROCK
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-79**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/20/2011	Date Completed: 5/20/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/20/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =9"		PAVEMENT
2					Brown Silty SAND, compact, damp, SM		0.8' FILL
3					Brown Silty CLAY, some Sand, stiff, moist, CL		2' +/- GLACIAL TILL
4							
5							
6							
7					Auger Refusal at 6.4', Bedrock		6.4' BEDROCK
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils	
Blows/ft.	Density	Blows/ft.	Consistency
0-4	V. Loose	<2	V. soft
4-10	Loose	2-4	Soft
10-30	Compact	4-8	Firm
30-50	Dense	8-15	Stiff
>50	V. Dense	15-30	V. Stiff
		>30	Hard

% Composition	
<5%	trace
5-15	little
15-25	some
>25	and

NOTES: Location:

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

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

SOIL BORING LOG

Project:	Roadway Evaluation	Boring #:	**B-80**
Location:	South Main Street	Project #:	10132
	Auburn, Maine	Sheet:	1 of 1
		Chkd by:	CWC

Drilling Co:	Northern Test Boring	Boring Location:	South Main Street
Personnel:	Nick	Elevation:	Not Available
Summit Staff:	Craig Coolidge / Erika Hawksley	Date started: 5/20/2011	Date Completed: 5/20/2011

DRILLING METHOD		SAMPLER	
Vehicle:	Trailer	Type:	24" SS
Model:	Diedrich D-50	Hammer:	140 lb
Method:	2 1/4" SSA	Fall:	30"

ESTIMATED GROUND WATER DEPTH

Date	Depth	Elevation	Reference
5/20/2011	N/E	N/E	None Encountered

Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum
1					Bituminous Pavement =9"		PAVEMENT
2					Boney Gravel		0.8' FILL
3							2.5' +/-
4	S-1	24/12	3 - 4.8	12	Light brown Silty SAND, some Gravel, trace Clay,		GLACIAL TILL
				16	dense, SP-SM		
				15	Muttled-orange weathered rock at 4.5'		
5				50/3"			
6					Auger Refusal at 4.8', Bedrock		4.8' BEDROCK
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

Granular Soils		Cohesive Soils		% Composition	
Blows/ft.	Density	Blows/ft.	Consistency		
0-4	V. Loose	<2	V. soft		
4-10	Loose	2-4	Soft	<5%	trace
10-30	Compact	4-8	Firm	5-15	little
30-50	Dense	8-15	Stiff	15-25	some
>50	V. Dense	15-30	V. Stiff	>25	and
		>30	Hard		

NOTES: Location:

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

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%

APPENDIX C
LABORATORY RESULTS

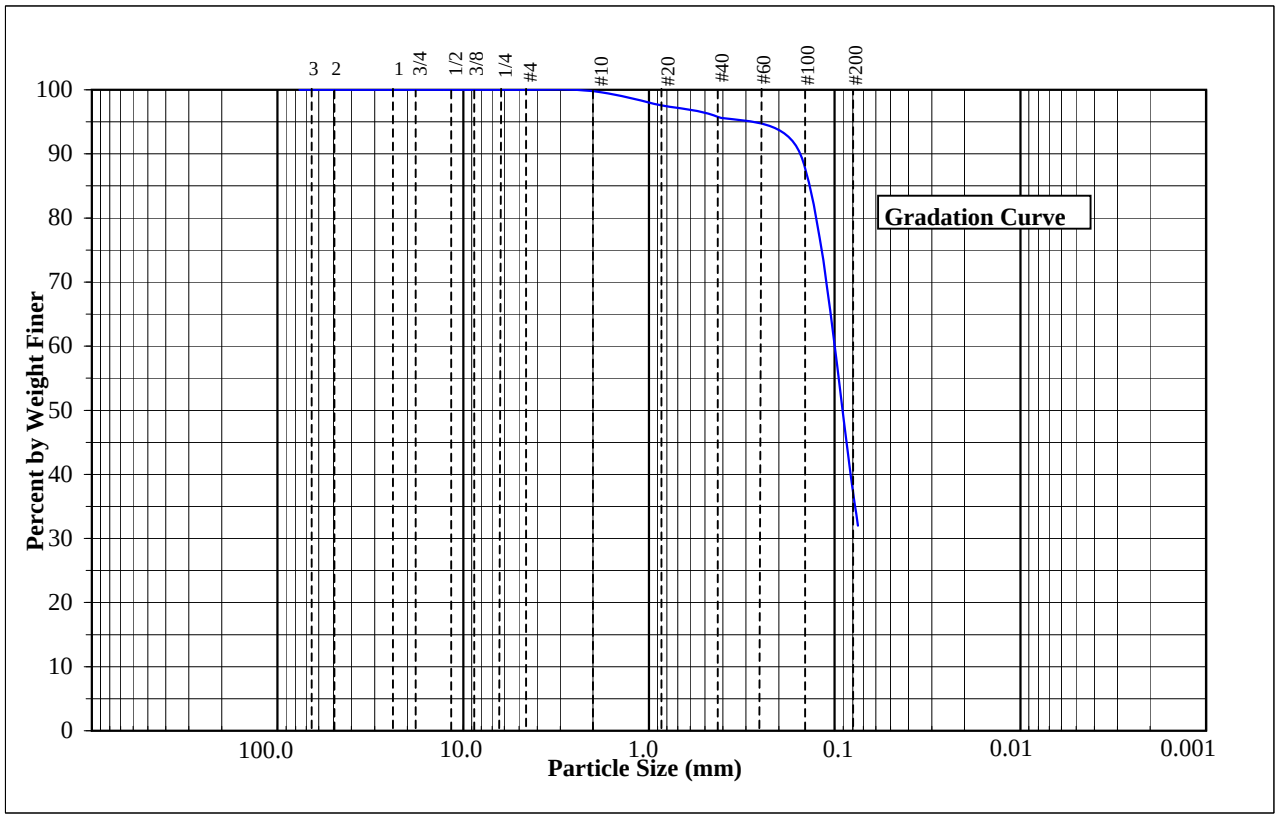
SUMMIT ENVIRONMENTAL CONSULTANTS, INC.
434 Cony Road, Augusta, Maine 04330
Phone:(207) 621-8334 Fax:(207) 626-9094

GRAIN SIZE ANALYSIS - ASTM D422

PROJECT NAME:	South Main Street	PROJECT #:	14381 / 10132
CLIENT:	Summit Geoengineering Services	SUMMIT SAMPLE:	S3
CLIENT SOIL DES:	Lean Clay (CL)	INTENDED USE:	Investigation
SOURCE:	B-12, 5' to 7'	SPECIFICATION:	
DATE:	5-23-11	TECHNICIAN:	T. Daniels

DATA

PARTICLE SIZE mm		% BY WT FINER
76.20	(3 in)	100.0
50.80	(2 in)	100.0
38.10	(1-1/2 in)	100.0
25.40	(1 in)	100.0
19.05	(3/4 in)	100.0
12.70	(1/2 in)	100.0
9.53	(3/8 in)	100.0
6.35	(1/4 in)	100.0
4.75	(No. 4)	100.0
2.00	(No. 10)	99.8
0.85	(No. 20)	97.6
0.43	(No. 40)	95.8
0.15	(No. 100)	89.3
0.08	(No. 200)	32.0



REMARKS: Moisture Content: 15.4%

Reviewed: Darrell A. Gilman, CMT Manager
Date: 5/24/11

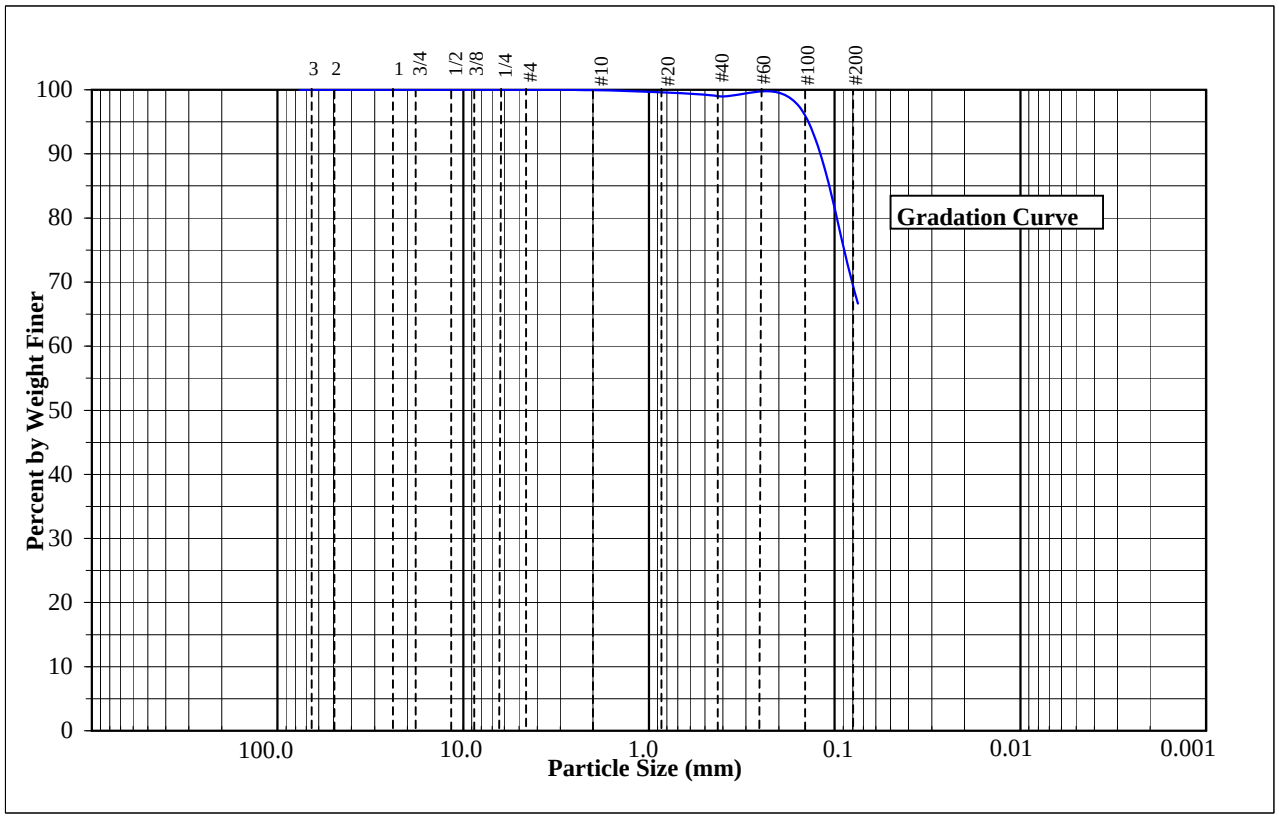
SUMMIT ENVIRONMENTAL CONSULTANTS, INC.
434 Cony Road, Augusta, Maine 04330
Phone:(207) 621-8334 Fax:(207) 626-9094

GRAIN SIZE ANALYSIS - ASTM D422

PROJECT NAME:	South Main Street	PROJECT #:	14381 / 10132
CLIENT:	Summit Geoengineering Services	SUMMIT SAMPLE:	S2
CLIENT SOIL DES:		INTENDED USE:	Investigation
SOURCE:	B-20, 2.5' - 4.5'	SPECIFICATION:	
DATE:	5-23-11	TECHNICIAN:	T. Daniels

DATA

PARTICLE SIZE mm		% BY WT FINER
76.20	(3 in)	100.0
50.80	(2 in)	100.0
38.10	(1-1/2 in)	100.0
25.40	(1 in)	100.0
19.05	(3/4 in)	100.0
12.70	(1/2 in)	100.0
9.53	(3/8 in)	100.0
6.35	(1/4 in)	100.0
4.75	(No. 4)	100.0
2.00	(No. 10)	100.0
0.85	(No. 20)	99.6
0.43	(No. 40)	99.0
0.15	(No. 100)	96.8
0.08	(No. 200)	66.6



REMARKS: Moisture Content: 19.7%

Reviewed: Darrell A. Gilman, CMT Manager
Date: 5/24/11

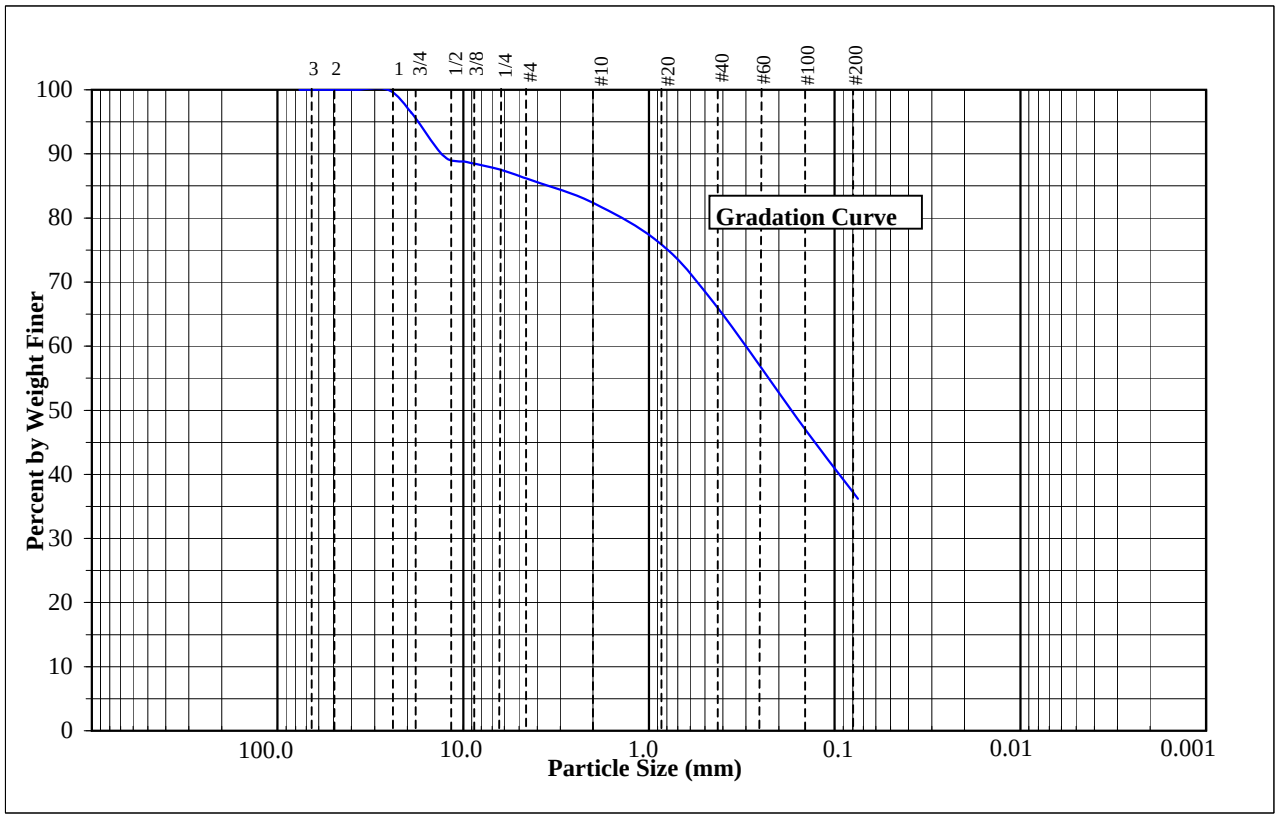
SUMMIT ENVIRONMENTAL CONSULTANTS, INC.
434 Cony Road, Augusta, Maine 04330
Phone:(207) 621-8334 Fax:(207) 626-9094

GRAIN SIZE ANALYSIS - ASTM D422

PROJECT NAME:	South Main Street	PROJECT #:	14381 / 10132
CLIENT:	Summit Geoengineering Services	SUMMIT SAMPLE:	S2
CLIENT SOIL DES:		INTENDED USE:	Investigation
SOURCE:	B-48 2.5' to 4.5'	SPECIFICATION:	
DATE:	5-23-11	TECHNICIAN:	T. Daniels

DATA

PARTICLE SIZE mm		% BY WT FINER
76.20	(3 in)	100.0
50.80	(2 in)	100.0
38.10	(1-1/2 in)	100.0
25.40	(1 in)	100.0
19.05	(3/4 in)	96.5
12.70	(1/2 in)	89.7
9.53	(3/8 in)	88.7
6.35	(1/4 in)	87.6
4.75	(No. 4)	86.3
2.00	(No. 10)	82.4
0.85	(No. 20)	75.8
0.43	(No. 40)	65.9
0.15	(No. 100)	47.7
0.08	(No. 200)	36.2



REMARKS: Moisture Content: 15.3%

Reviewed: Darrell A. Gilman, CMT Manager
Date: 5/24/11

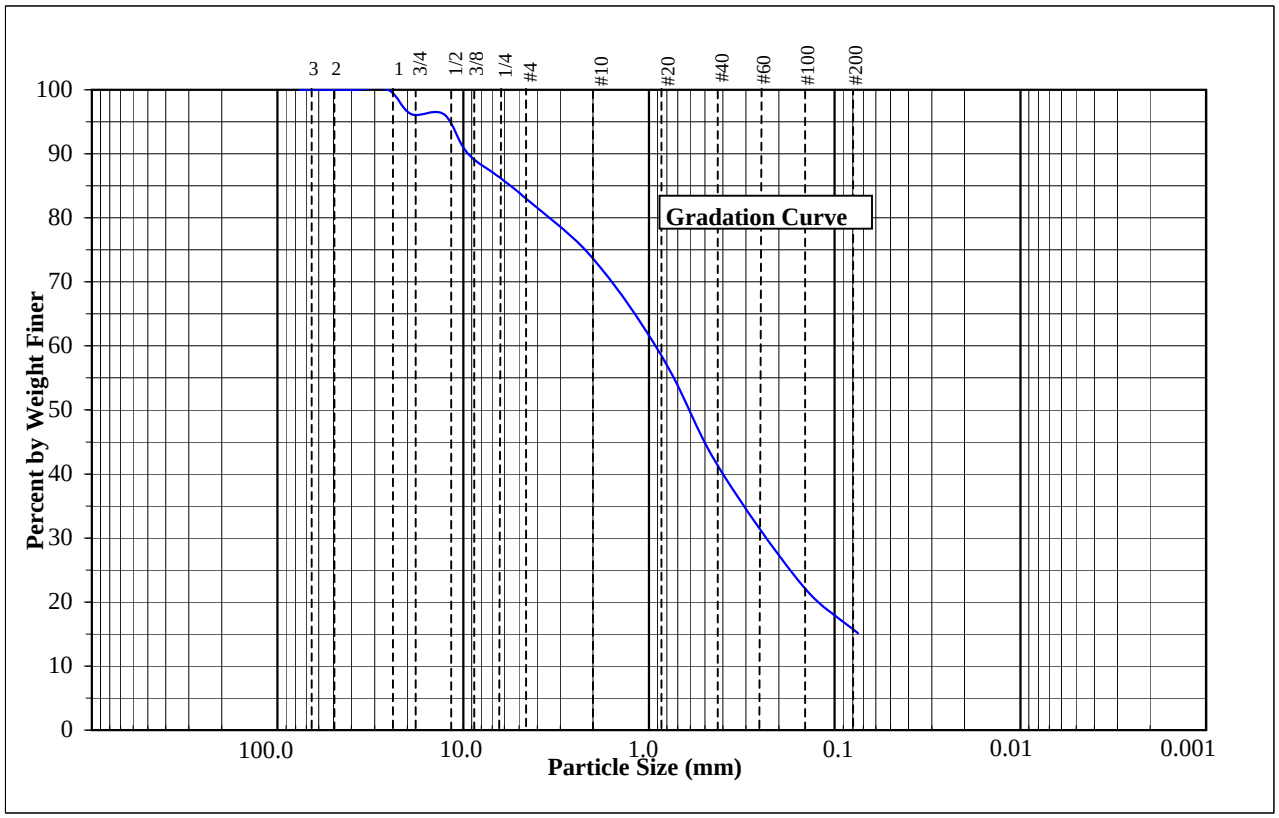
SUMMIT ENVIRONMENTAL CONSULTANTS, INC.
434 Cony Road, Augusta, Maine 04330
Phone:(207) 621-8334 Fax:(207) 626-9094

GRAIN SIZE ANALYSIS - ASTM D422

PROJECT NAME:	South Main Street	PROJECT #:	14381 / 10132
CLIENT:	Summit Geoengineering Services	SUMMIT SAMPLE:	S1
CLIENT SOIL DES:		INTENDED USE:	Investigation
SOURCE:	B-52, 0.5' - 2.5'	SPECIFICATION:	
DATE:	5-23-11	TECHNICIAN:	T. Daniels

DATA

PARTICLE SIZE mm		% BY WT FINER
76.20	(3 in)	100.0
50.80	(2 in)	100.0
38.10	(1-1/2 in)	100.0
25.40	(1 in)	100.0
19.05	(3/4 in)	96.2
12.70	(1/2 in)	96.2
9.53	(3/8 in)	90.1
6.35	(1/4 in)	86.3
4.75	(No. 4)	83.3
2.00	(No. 10)	73.7
0.85	(No. 20)	58.3
0.43	(No. 40)	41.2
0.15	(No. 100)	22.7
0.08	(No. 200)	15.1



REMARKS: Moisture Content: 5.9%

Reviewed: Darrell A. Gilman, CMT Manager
Date: 5/24/11

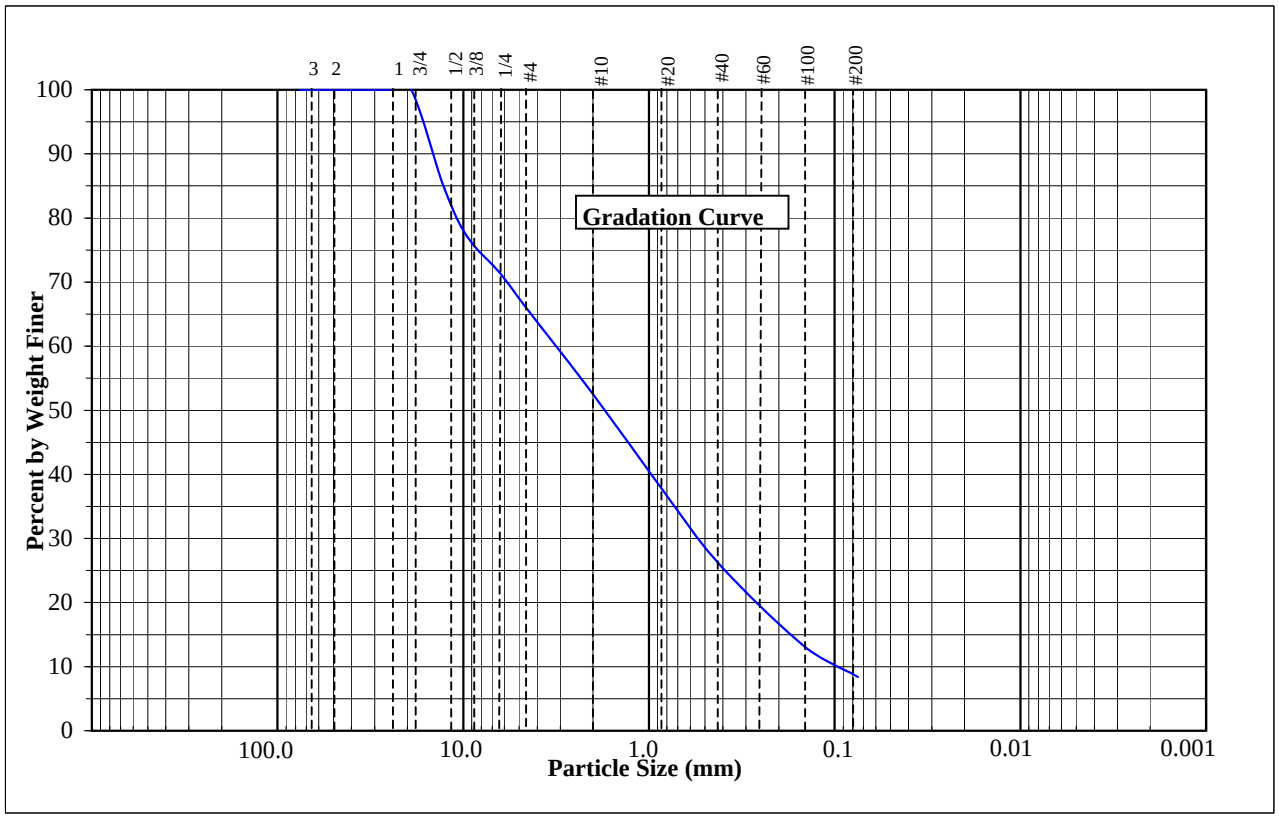
SUMMIT ENVIRONMENTAL CONSULTANTS, INC.
434 Cony Road, Augusta, Maine 04330
Phone:(207) 621-8334 Fax:(207) 626-9094

GRAIN SIZE ANALYSIS - ASTM D422

PROJECT NAME:	South Main Street	PROJECT #:	14381 / 10132
CLIENT:	Summit Geoengineering Services	SUMMIT SAMPLE:	S-1
CLIENT SOIL DES:		INTENDED USE:	Investigation
SOURCE:	B-56, 0.5' - 2.5'	SPECIFICATION:	
DATE:	5-23-11	TECHNICIAN:	T. Daniels

DATA

PARTICLE SIZE mm		% BY WT FINER
76.20	(3 in)	100.0
50.80	(2 in)	100.0
38.10	(1-1/2 in)	100.0
25.40	(1 in)	100.0
19.05	(3/4 in)	100.0
12.70	(1/2 in)	84.9
9.53	(3/8 in)	77.1
6.35	(1/4 in)	71.5
4.75	(No. 4)	66.6
2.00	(No. 10)	52.5
0.85	(No. 20)	37.7
0.43	(No. 40)	26.2
0.15	(No. 100)	13.5
0.08	(No. 200)	8.4



REMARKS: Moisture Content: 3.8

Reviewed: Darrell A. Gilman, CMT Manager
Date: 5/24/11

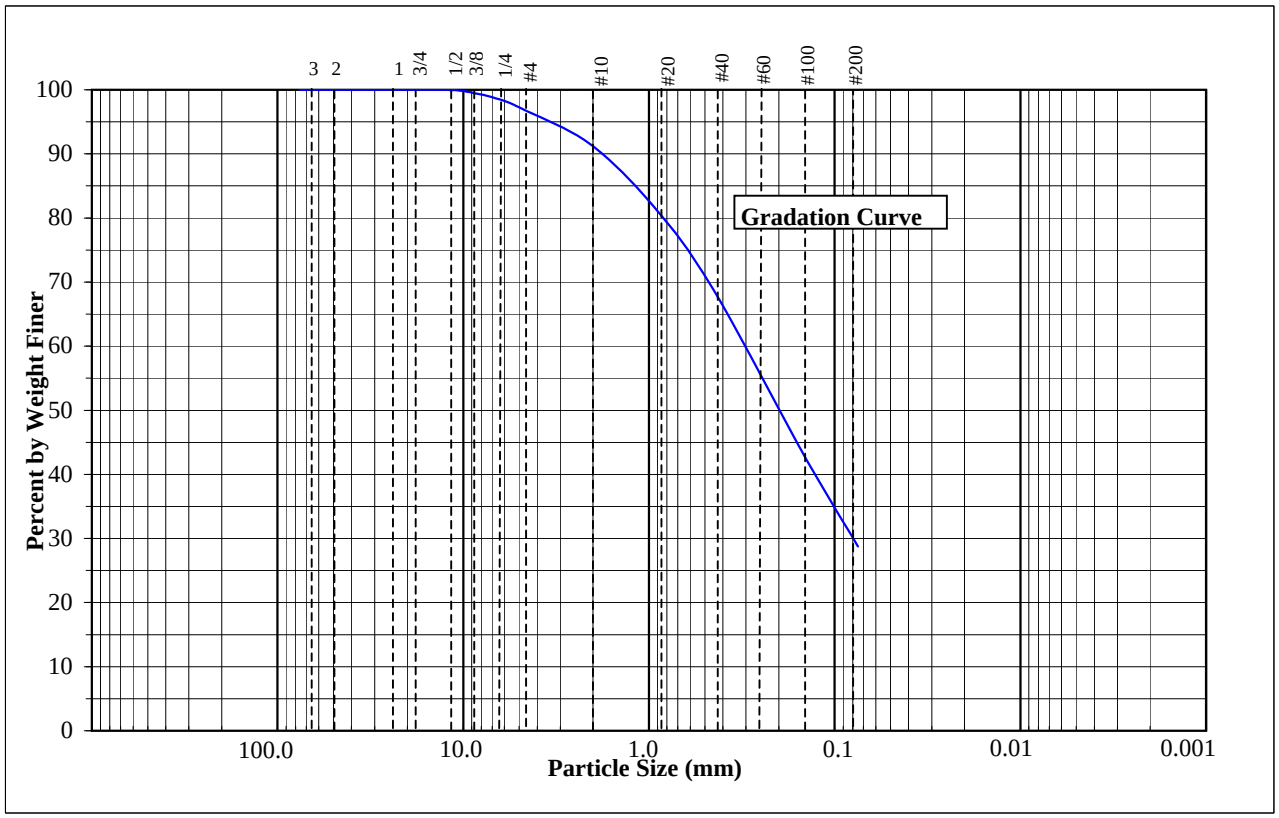
SUMMIT ENVIRONMENTAL CONSULTANTS, INC.
434 Cony Road, Augusta, Maine 04330
Phone:(207) 621-8334 Fax:(207) 626-9094

GRAIN SIZE ANALYSIS - ASTM D422

PROJECT NAME:	South Main Street	PROJECT #:	14381 / 10132
CLIENT:	Summit Geoengineering Services	SUMMIT SAMPLE:	S2
CLIENT SOIL DES:		INTENDED USE:	Investigation
SOURCE:	B-60, 2.5' - 4.5'	SPECIFICATION:	
DATE:	5-23-11	TECHNICIAN:	T. Daniels

DATA

PARTICLE SIZE mm		% BY WT FINER
76.20	(3 in)	100.0
50.80	(2 in)	100.0
38.10	(1-1/2 in)	100.0
25.40	(1 in)	100.0
19.05	(3/4 in)	100.0
12.70	(1/2 in)	100.0
9.53	(3/8 in)	99.7
6.35	(1/4 in)	98.5
4.75	(No. 4)	97.0
2.00	(No. 10)	91.2
0.85	(No. 20)	80.2
0.43	(No. 40)	67.6
0.15	(No. 100)	43.6
0.08	(No. 200)	28.7



REMARKS: Moisture Content: 15.0%

Reviewed: Darrell A. Gilman, CMT Manager
Date: 5/24/11

SUMMIT ENVIRONMENTAL CONSULTANTS, INC.
434 Cony Road, Augusta, Maine 04330
Phone: (207) 621-8334 Fax: (207) 626-9094

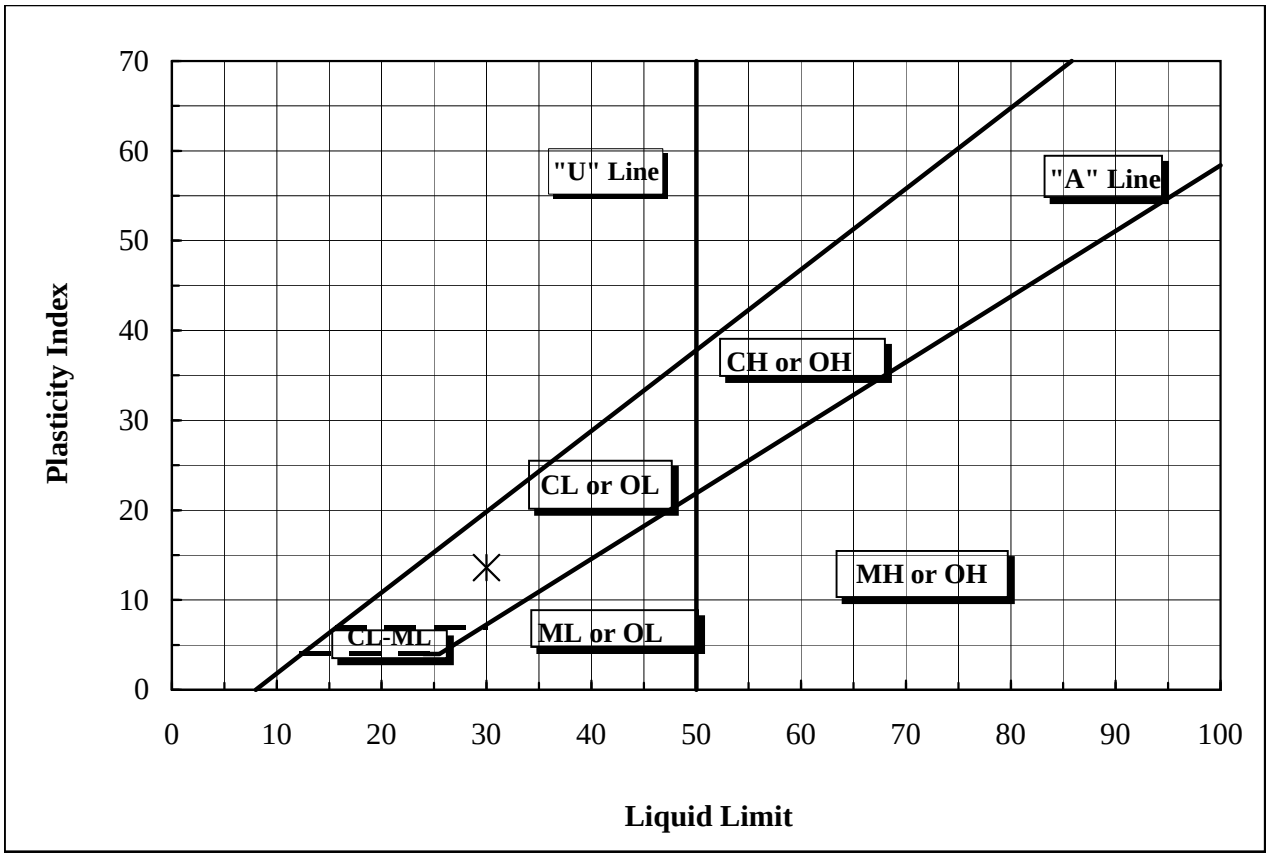
ATTERBERG LIMIT TEST - ASTM D4318

Method "A" (Multi-point)

PROJECT NAME:	South Main Street	PROJECT #:	14381 / 10132
CLIENT:	Summit Geoengineering Services	SAMPLE #:	S-3
PROCEDURE:	A	DEPTH:	5' to 7'
INTENDED USE:	Investigation	DATE:	5/23/11
SAMPLE SOURCE:	B-16	TECHNICIAN:	T. Daniels

DATA

Source	Depth	LL	PL	PI	Classification
B-16	5' to 7'	30	16	14	Lean Clay (CL)



Notes:

Reviewed: Darrell A. Gilman, CMT Manager
Date: 5/24/2011

SUMMIT ENVIRONMENTAL CONSULTANTS, INC.
434 Cony Road, Augusta, Maine 04330
Phone: (207) 621-8334 Fax: (207) 626-9094

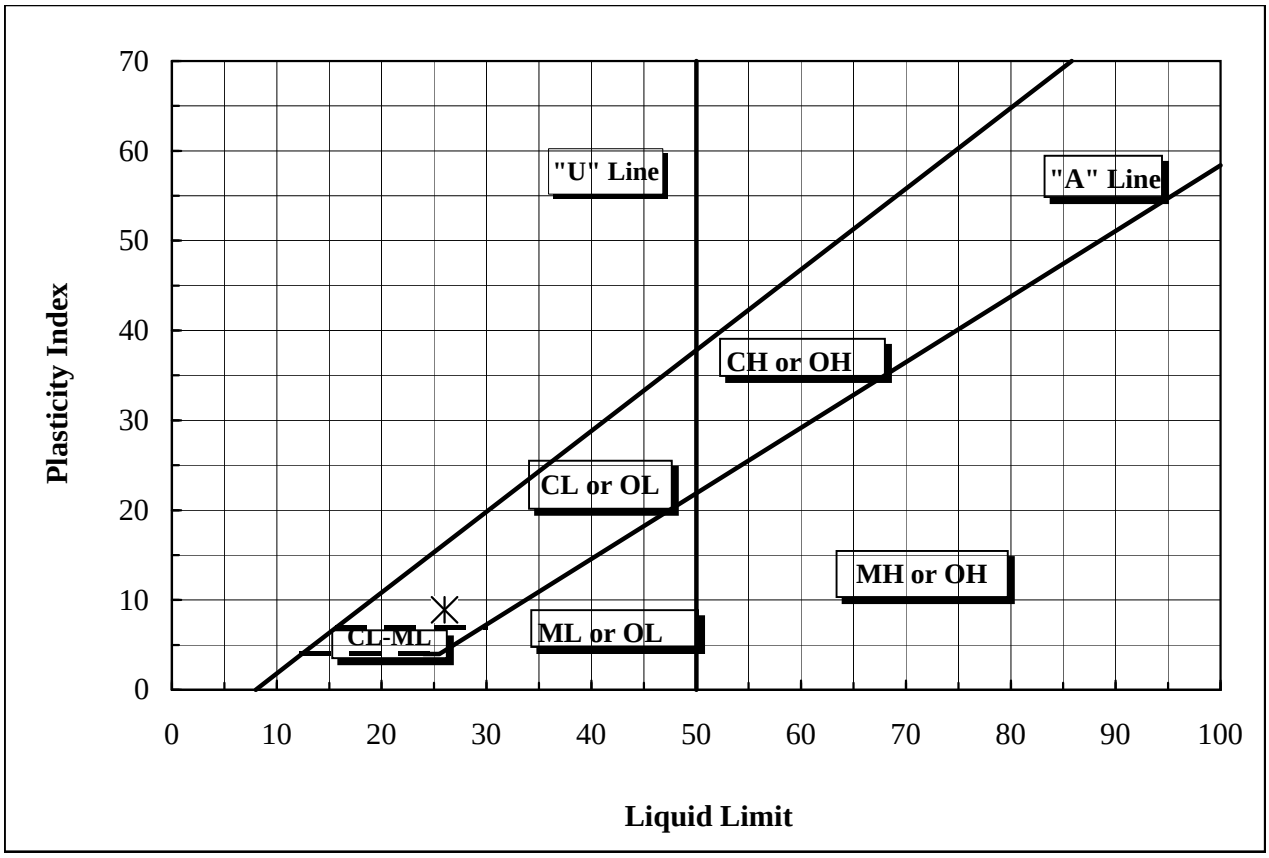
ATTERBERG LIMIT TEST - ASTM D4318

Method "A" (Multi-point)

PROJECT NAME:	South Main Street	PROJECT #:	14381 / 10132
CLIENT:	Summit Geoenginerring Services	SAMPLE #:	S4
PROCEDURE:	A	DEPTH:	10' to 12'
INTENDED USE:	Investigation	DATE:	5/23/11
SAMPLE SOURCE:	B-24	TECHNICIAN:	T. Daniels

DATA

Source	Depth	LL	PL	PI	Classification
B-24	10' to 12'	26	17	9	Lean Clay (CL)



Notes:

Reviewed: Darrell A. Gilman, CMT Manager
Date: 5/24/2011

SUMMIT ENVIRONMENTAL CONSULTANTS, INC.
434 Cony Road, Augusta, Maine 04330
Phone: (207) 621-8334 Fax: (207) 626-9094

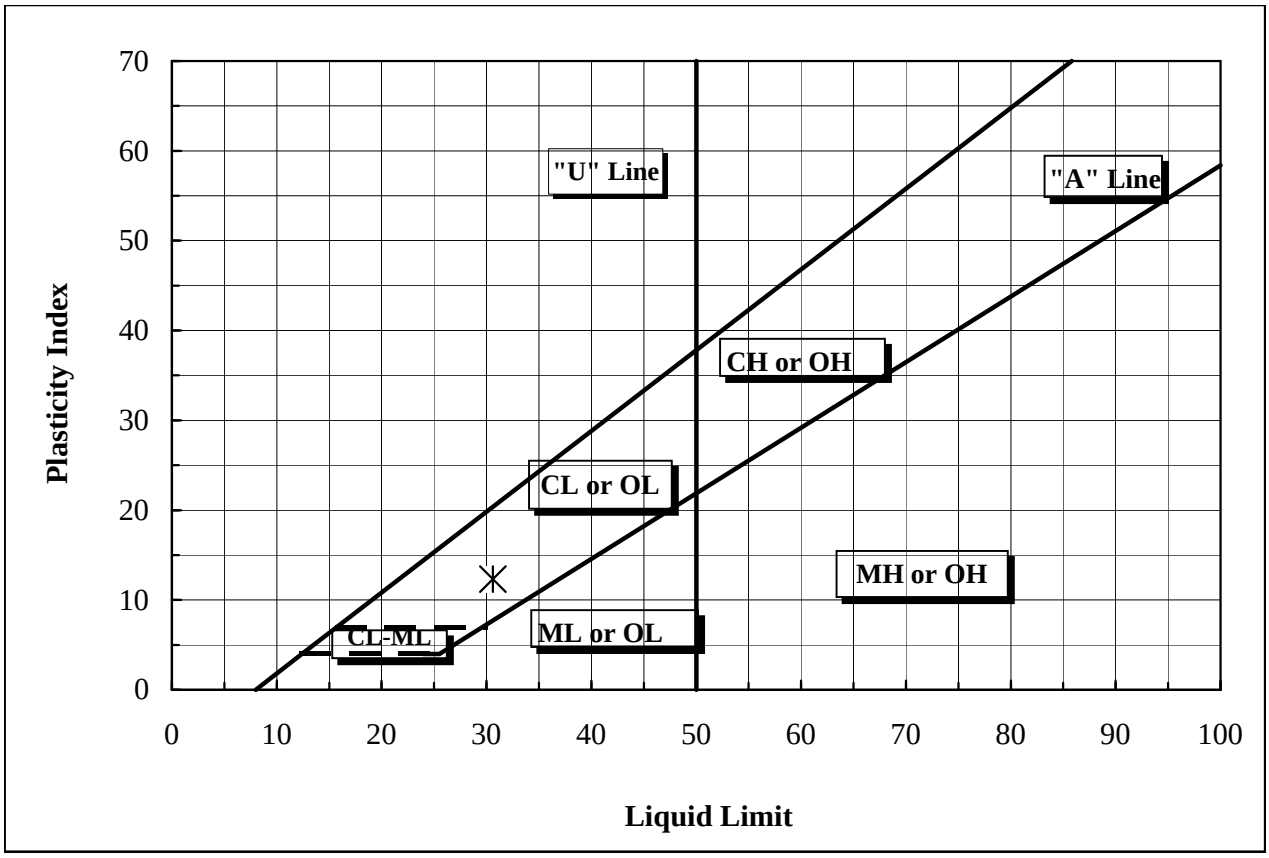
ATTERBERG LIMIT TEST - ASTM D4318

Method "A" (Multi-point)

PROJECT NAME:	South Main Street	PROJECT #:	14381 / 10132
CLIENT:	Summit Geoenginerring Services	SAMPLE #:	S3
PROCEDURE:	A	DEPTH:	5'-7'
INTENDED USE:	Investigation	DATE:	5/23/11
SAMPLE SOURCE:	B-32	TECHNICIAN:	T. Daniels

DATA

Source	Depth	LL	PL	PI	Classification
B-32	5'-7'	31	18	12	Lean Clay (CL)



Notes:

Reviewed: Darrell A. Gilman, CMT Manager
Date: 5/24/2011

SUMMIT ENVIRONMENTAL CONSULTANTS, INC.
434 Cony Road, Augusta, Maine
04330
Phone: (207) 621-8334 Fax: (207) 626-9094

Laboratory Determination of Water (Moisture) Content of Soil ASTM D2216

PROJECT NAME:	South Main Street	PROJECT #:	14381 / 10132
CLIENT:	Summit Geoengineering Services	SAMPLE #:	S3 - S4
SOIL DESCRIP:		DATE:	5/23/11
INTENDED USE:	Investigation	SOURCE:	Various
		TECH:	T. Daniels

Sample Number	Sample Source	Percent Moisture
S3	B16	33.7
S3	B32	24.8
S4	B24	29.1

REMARKS:

Reviewed: Darrell Gilman, CMT Manager
Date: 5-24-11

SOUTH MAIN STREET ROADWAY RECONSTRUCTION: PHASE II

CITY OF AUBURN, MAINE

WIN 014787.20

APPENDIX B - SUMMARY OF LIMITED SUBSURFACE INVESTIGATION MEMORANDUM

COMMITMENT & INTEGRITY
DRIVE RESULTS

41 Hutchins Drive
Portland, Maine 04102
www.woodardcurran.com

T 800.426.4262
T 207.774.2112
F 207.774.6635

MEMORANDUM TO FILE

TO: **Barry Sheff**
FROM: **Karl Kasper and Karen Lambek**
DATE: **April 19, 2012**
RE: **Summary of Limited Subsurface Investigation for South Main Street Reconstruction Project (PIN 014787.00)**

Woodard & Curran (W&C) conducted a limited subsurface investigation along South Main Street on January 25 and 26, 2012.

Project Goals. The project goals for this subsurface investigation include the following:

- Confirm and quantify the presence of contaminants within the study area;
- Develop volume estimates of contaminated soil for soil management and disposal;
- Develop a Soil Management Plan, which will address worker safety as it relates to the excavation and disposal of contaminated soil that may be encountered during the reconstruction project; and
- Develop the basis of information for Maine Department of Transportation (MDOT) to prepare Environmental Special Provision.

Subsurface Investigation. On January 25 and 26, 2012, a total of 20 Geoprobe® borings were completed by Environmental Projects, Inc. (EPI) to assess the potential presence of contamination. Locations were selected based on results of our file review; properties of interest were identified based on past or current property use, spill reports, underground storage tank (UST) removals, and locations with naphthalene odors encountered during the geotechnical investigation conducted for W&C by Summit Geoengineering Services in May 2011.

Borings were completed to a maximum depth of 4 feet (6 feet at two locations of storm drain installation) below ground surface (bgs). One soil sample was collected per location generally between 0 and 2 ft bgs; the depth selected for sampling was based on odors encountered or where photoionization detector (PID) readings were highest. The sample was screened with a PID for gasoline contaminants and an oleophilic dye shake test was performed at each location to determine the presence of fuel oil in subsurface soil. Soil that did not show visual or olfactory signs of contamination, had no to low PID levels, and had negative oleophilic dye shake test results were not submitted for analysis. Samples that indicated contamination were submitted to Katahdin Analytical Laboratory for analysis of hazardous waste parameters required to characterize the contaminated material for off-site disposal (Extractable Petroleum Hydrocarbons [EPH] and Volatile Petroleum Hydrocarbons [VPH]), volatile organic compounds [VOCs], and total lead).

Results. Seven samples were <u>not</u> submitted for laboratory analysis for the previously stated reasons; the rationale for sampling at each location is noted:

- SMS-1 (American Legion Hall; underground storage tank [UST] removal)
- SMS-5 (Sixth Street Congregational Church; UST removal)
- SMS-8 (Fire Station – Engine 2; UST removal)
- SMS-9 (Residence; UST removal)
- SMS-12 (Poisson & Sons Citgo; spill report, UST removals, current use as a gas station)
- SMS-13 (Poisson & Sons Citgo; spill report, UST removals, current use as a gas station)
- SMS-20 (Multi-unit residence; spill report, UST removals, former service station)

Of the 13 samples submitted for analysis (see table on following page), three samples (SMS-15, SMS-18, and SMS-19) did not contain concentrations in exceedance of Maine Remedial Action Guidelines (RAGs). These three samples were submitted for laboratory analysis based on elevated PID readings; naphthalene odors were not encountered at these locations. Ten samples had concentrations of at least one constituent in exceedance of Maine RAGs. The table below summarizes the Maine RAG exceedances. Polycyclic aromatic hydrocarbon (PAH) compounds (2-methylnaphthalene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene) and naphthalene exceeded the RAGs for the 'Excavation or Construction Worker' scenario. In general, PAH compounds and naphthalene exceeded RAGs at locations where naphthalene odors were encountered.

The RAGs for 'Residential' exposure were also evaluated to determine acceptable disposal practices, and whether excavated soil could be utilized off-site in residential applications. The following compounds exceeded the 'Residential' RAGs: naphthalene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, C11-C22 aromatics, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene.

The following table summarizes the RAG exceedances that were encountered during the subsurface investigation by boring location. The locations are presented on the attached figures.

Boring Location	Station #	Figure # (attached)	Sample Depth (in.)	Compounds Exceeding 'Excavation or Construction Worker' RAG			Compounds Exceeding 'Residential' RAG		
				EPH	VPH*	VOC*	EPH	VPH*	VOC*
SMS-2	5+81	1	6-8	X	X		X	X	
SMS-3	6+82	1	5-10	X	X	X	X	X	
SMS-4	9+82	1	5-8		X	X	X		
SMS-6	12+22	2	5-7		X	X			X
SMS-7	14+96	2	8-12	X	X	X	X	X	X
SMS-10	36+90	3	10-12	X			X		
SMS-11	47+71	4	12	X			X		
SMS-14	49+54	4	16				X		
SMS-15	52+77	4	26-27						
SMS-16	54+93	5	12	X	X		X		
SMS-17	60+06	6	14	X			X		
SMS-18	60+76	6	18						
SMS-19	61+28	6	22						

* Naphthalene only

As shown on the above table and summarized in the text above, EPH compounds (PAHs) were detected above Maine RAGs. In addition, naphthalene (VOC, EPH, and VPH) exceeded Maine RAGs. Total lead concentrations were not detected above Maine RAGs. The attached figures show these exceedances spatially, and include the individual PAH compounds that were detected above Maine RAGs for the Excavation or Construction Worker. A summary of the results (exceedances only) is also attached, along with a full data package provided by Katahdin Analytical Laboratory.

According to the guidance entitled 'Maine Remedial Action Guidelines for Soil Contaminated with Hazardous Substances' (January 13, 2010), the RAGs for PAHs are low relative to background concentrations often found in Maine. Elevated background PAHs may be due to runoff or deposition from heavily traveled roadways, degraded asphalt, or deposition of Polycyclic Organic Matter (POM) from most combustion sources, particularly residential or industrial wood combustion. PAHs are also common site-

related contaminants, particularly at sites where petroleum, coal, coal ash, or wood ash were spilled or disposed. It is anticipated that PAHs will be encountered along South Main Street during reconstruction activities, and not necessarily limited to the areas investigated by W&C during the subsurface investigation.

Recommendations. W&C recommends meeting with the City of Auburn, MDOT, and Maine Department of Environmental Protection to develop Special Provision for the project that will outline worker safety and field screening and stockpiling requirements for excavated soils. In addition, we recommend discussing any restrictions to off-site reuse or disposal of excavated soils, and the potential of entering the site into the State's Voluntary Response Action Program (VRAP).

No additional sampling is recommended to further characterize or quantify the magnitude or extent of contamination along Riverside Drive; W&C has collected sufficient data to prepare the Soil Management Plan.

11X17 SHEET
1:2

LEWISTON
AUBURN
ANDROSCOGGIN RIVER

PHASE 2
PHASE 1

SOUTH MAIN STREET
FULTON STREET
COOK STREET
BROAD STREET
MILL STREET
RIVERSIDE DRIVE
ROUTE 136
BOONE AVENUE
CARROLL STREET
BARTON AVENUE
FOSTER AVENUE
DORE AVENUE
JORDAN AVENUE
RONALD STREET
NURSERY STREET
BOLSTER STREET
BRIDGE STREET
CANON STREET
DUFFY STREET
LANDERS STREET
LYON STREET
WEBB STREET
WILSON STREET

SAMPLING INDEX

- ANALYZED BY LAB & CONCENTRATIONS EXCEEDED MAINE RAGS (EXCAVATION OR CONSTRUCTION WORKER SCENARIO)
- ANALYZED BY LAB BUT CONCENTRATIONS DO NOT EXCEED MAINE RAGS (EXCAVATION OR CONSTRUCTION WORKER SCENARIO)
- SAMPLE NOT SUBMITTED TO LAB SINCE FIELD ANALYSES AND OBSERVATIONS DID NOT INDICATE CONTAMINATION

1500' 0 1500' 3000'

BAR SCALE
1" = 1500'

CHECK GRAPHIC SCALE BEFORE USING

PRELIMINARY - NOT FOR CONSTRUCTION

41 Hutchins Drive
Portland, Maine 04102
800.426.4262 | www.woodardcurran.com

WOODARD & CURRAN

COMMITMENT & INTEGRITY DRIVE RESULTS

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REV	DESCRIPTION	DATE
DESIGNED BY: N/A	CHECKED BY: KL	
DRAWN BY: BCM	203970.25-SOIL TIGS INDEX.DWG	

SOIL SAMPLING INDEX

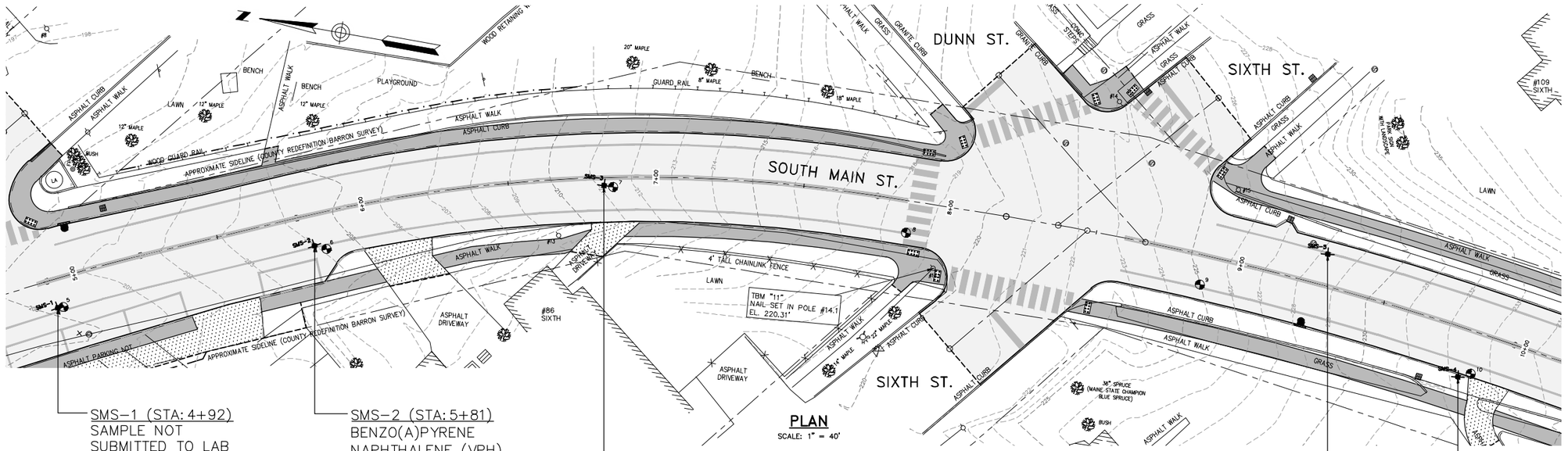
CITY OF AUBURN
60 COURT STREET
AUBURN, ME 04210

SOUTH MAIN STREET RECONSTRUCTION

JOB NO.: 203970.25
DATE: APRIL 2012
SCALE: 1"=1500'
SHEET: 1 OF 7

INDEX

G:\203970 City of Auburn-General Consulting Services\wip\25 South Main St Reclon\Drawings\design drawings\203970.25-Soil Figs Index.dwg, Apr 09, 2012 - 1:58pm



PLAN
SCALE: 1" = 40'

SMS–1 (STA: 4+92)
SAMPLE NOT SUBMITTED TO LAB BASED ON FIELD ANALYSIS/ OBSERVATIONS

SMS–2 (STA: 5+81)
BENZO(A)PYRENE
NAPHTHALENE (VPH)

SMS–3 (STA: 6+82)
2–METHYLNAPHTHALENE
BENZO(A)PYRENE
NAPHTHALENE (VOC)
NAPHTHALENE (EPH)
NAPHTHALENE (VPH)

SMS–5 (STA: 9+27)
SAMPLE NOT SUBMITTED TO LAB BASED ON FIELD ANALYSIS/ OBSERVATIONS

SMS–4 (STA: 9+82)
NAPHTHALENE (VOC)
NAPHTHALENE (VPH)

LEGEND

BORINGS PERFORMED FOR SUMMIT GEOENGINEERINGS SERVICES AS PART OF THE GEOTECHNICAL INVESTIGATION IN MAY 2011

BORINGS PERFORMED FOR WOODARD & CURRAN AS PART OF THE ENVIRONMENTAL INVESTIGATION CONDUCTED IN JANUARY 2012

NOTE: RESULTS WERE COMPARED TO THE MAINE REMEDIAL ACTION GUIDELINES (RAGS) FOR THE EXCAVATION OR CONSTRUCTION WORKER SCENARIO. COMPOUNDS LISTED EXCEED THE RAG.

40' 0 40' 80'
BAR SCALE
1" = 40'
CHECK GRAPHIC SCALE BEFORE USING

PRELIMINARY - NOT FOR CONSTRUCTION

41 Hutchins Drive
Portland, Maine 04102
800.426.4262 | www.woodardcurran.com

WOODARD & CURRAN

COMMITMENT & INTEGRITY DRIVE RESULTS

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REV.	DESCRIPTION	DATE
DESIGNED BY: N/A	CHECKED BY: KML	
DRAWN BY: BCM	20397025–SML FIGS.DWG	

FIGURE 1
SOIL SAMPLING RESULTS

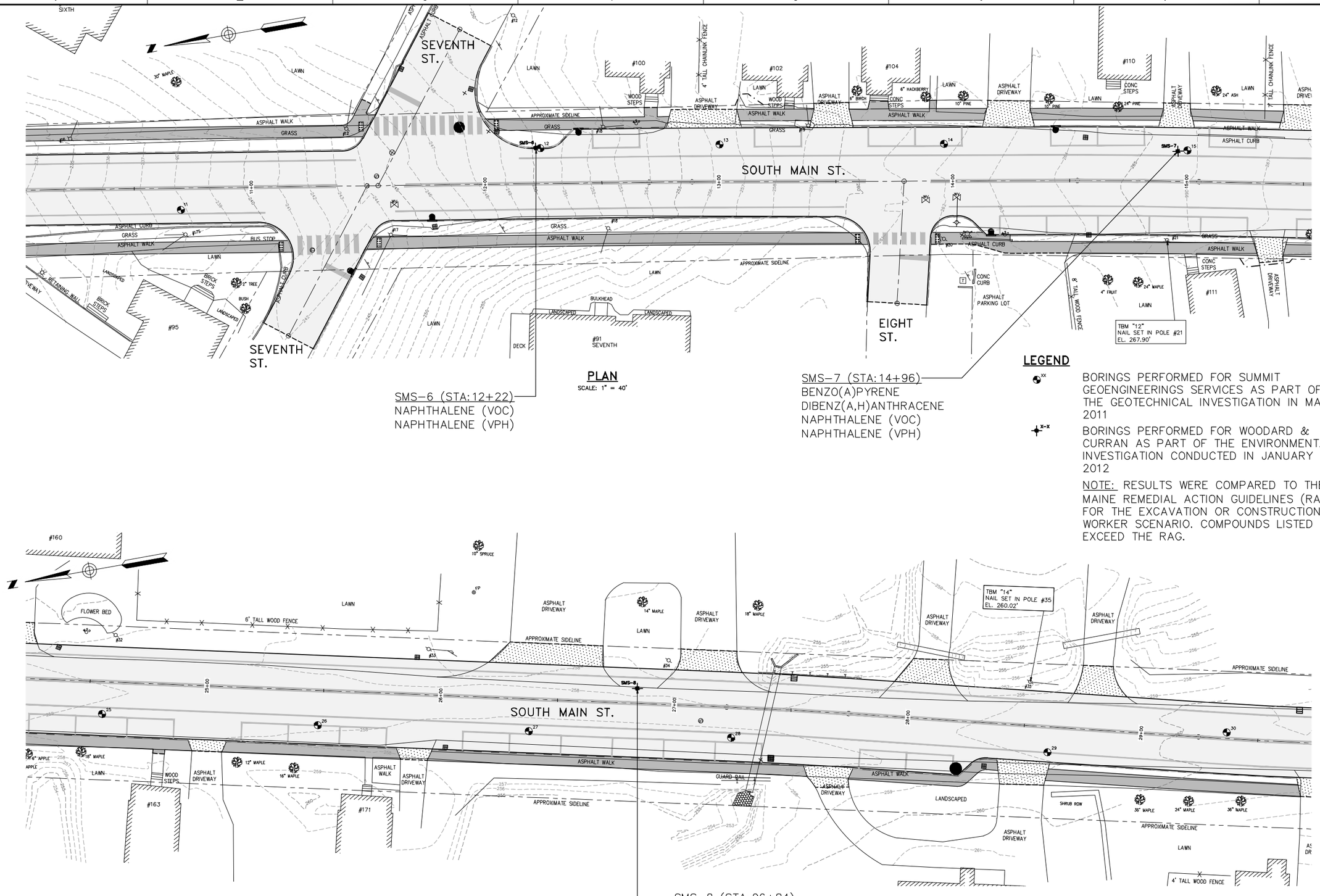
CITY OF AUBURN
60 COURT STREET
AUBURN, ME 04210

SOUTH MAIN STREET RECONSTRUCTION
PHASE II

JOB NO.: 203970.25
DATE: APRIL 2012
SCALE: 1"=40'
SHEET: 2 OF 7

Fig. 1

O:\203970 City of Auburn–General Consulting Services\wip\25 South Main St Reloc\Drawings\design drawings\203970.25–Soil Figs.dwg, Apr 09, 2012 – 1:59pm



PLAN
SCALE: 1" = 40'

SMS-6 (STA: 12+22)
NAPHTHALENE (VOC)
NAPHTHALENE (VPH)

SMS-7 (STA: 14+96)
BENZO(A)PYRENE
DIBENZ(A,H)ANTHRACENE
NAPHTHALENE (VOC)
NAPHTHALENE (VPH)

SMS-8 (STA: 26+84)
SAMPLE NOT SUBMITTED TO LAB BASED ON FIELD ANALYSIS/ OBSERVATIONS

LEGEND

- BORINGS PERFORMED FOR SUMMIT GEOENGINEERINGS SERVICES AS PART OF THE GEOTECHNICAL INVESTIGATION IN MAY 2011
- BORINGS PERFORMED FOR WOODARD & CURRAN AS PART OF THE ENVIRONMENTAL INVESTIGATION CONDUCTED IN JANUARY 2012

NOTE: RESULTS WERE COMPARED TO THE MAINE REMEDIAL ACTION GUIDELINES (RAGS) FOR THE EXCAVATION OR CONSTRUCTION WORKER SCENARIO. COMPOUNDS LISTED EXCEED THE RAG.

40' 0 40' 80'

BAR SCALE
1" = 40'
CHECK GRAPHIC SCALE BEFORE USING

PRELIMINARY - NOT FOR CONSTRUCTION

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Portland, Maine 04102
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FIGURE 2
SOIL SAMPLING RESULTS

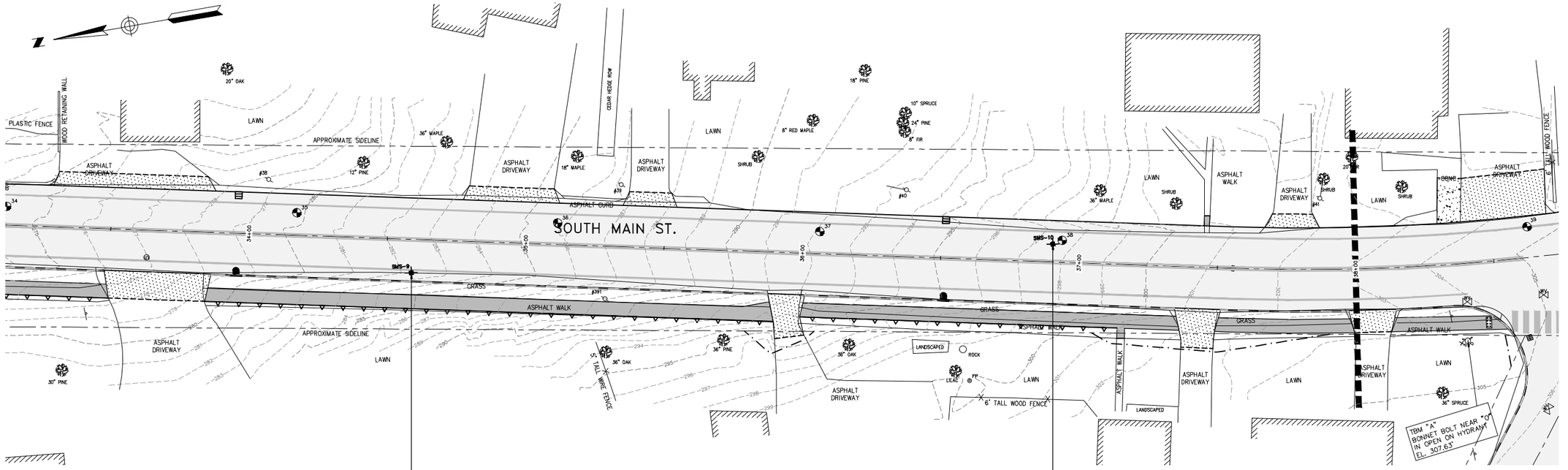
CITY OF AUBURN
60 COURT STREET
AUBURN, ME 04210

SOUTH MAIN STREET RECONSTRUCTION
PHASE II

JOB NO.: 203970.25
DATE: APRIL 2012
SCALE: 1"=40'
SHEET: 3 OF 7

Fig. 2

Q:\203970 City of Auburn-General Consulting Services\Task 25 South Main St Reclon\Drawings\design drawings\203970.25-Soil Figs.dwg, Apr 09, 2012 - 2:04pm



PLAN
SCALE: 1" = 40'

SMS-9 (STA: 34+59)
SAMPLE NOT SUBMITTED TO LAB BASED ON FIELD ANALYSIS/ OBSERVATIONS

SMS-10 (STA: 36+90)
BENZO(A)ANTHRACENE
BENZO(A)PYRENE
BENZO(B)FLUORANTHENE
DIBENZ(A,H)ANTHRACENE
INDENO(1,2,3-CD)PYRENE

40' 0 40' 80'
BAR SCALE
1" = 40'
CHECK GRAPHIC SCALE BEFORE USING

LEGEND

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DRAWN BY: BCM	203970.25-SOIL FIGS.DWG	

FIGURE 3
SOIL SAMPLING RESULTS

CITY OF AUBURN
60 COURT STREET
AUBURN, ME 04210

SOUTH MAIN STREET RECONSTRUCTION
PHASE II

JOB NO.: 203970.25
DATE: APRIL 2012
SCALE: 1"=40'
SHEET: 4 OF 7

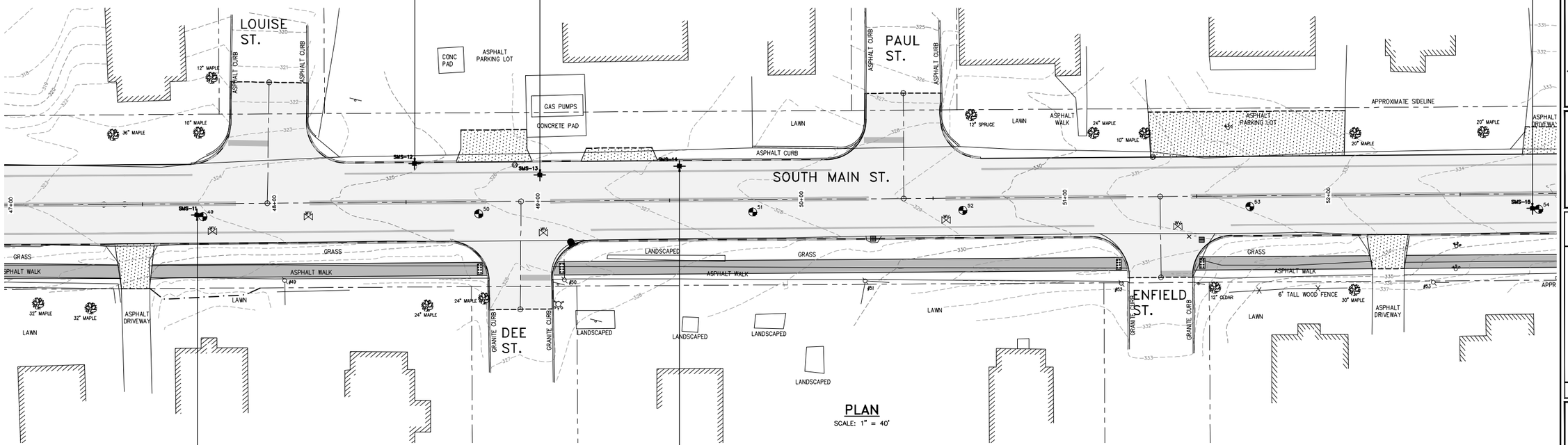
Fig. 3

C:\203970 City of Auburn-General Consulting Services\wip\25 South Main St Reconstruction\Drawings\design drawings\203970.25-Soil Figs.dwg, Apr 09, 2012 - 2:04pm

SMS-12 (STA: 48+53)
SAMPLE NOT SUBMITTED TO LAB BASED ON FIELD ANALYSIS/ OBSERVATIONS

SMS-13 (STA: 49+01)
SAMPLE NOT SUBMITTED TO LAB BASED ON FIELD ANALYSIS/ OBSERVATIONS

SMS-15 (STA: 52+77)
NO MAINE RAG EXCEEDANCES



PLAN
SCALE: 1" = 40'

SMS-11 (STA: 47+71)
BENZO(A)ANTHRACENE
BENZO(A)PYRENE

SMS-14 (STA: 49+54)
NO MAINE RAG EXCEEDANCES

LEGEND

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40' 0 40' 80'
BAR SCALE
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FIGURE 4
SOIL SAMPLING RESULTS

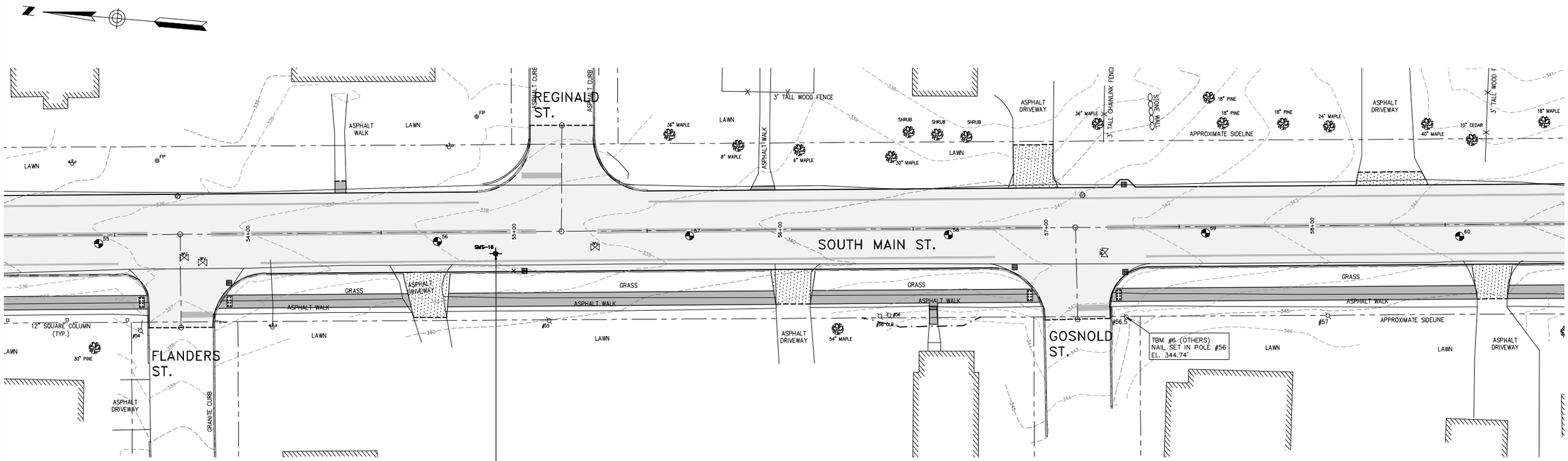
CITY OF AUBURN
60 COURT STREET
AUBURN, ME 04210

SOUTH MAIN STREET RECONSTRUCTION
PHASE I

JOB NO.: 203970.25
DATE: APRIL 2012
SCALE: 1"=40'
SHEET: 5 OF 7

Fig. 4

O:\203970 City of Auburn-General Consulting Services\wip\25 South Main St Recon\Drawings\design drawings\203970.25-Soil Figs.dwg, Apr 09, 2012 - 2:06pm



PLAN
SCALE: 1" = 40'

LEGEND

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40' 0 40' 80'
BAR SCALE
1" = 40'
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FIGURE 5
SOIL SAMPLING RESULTS

CITY OF AUBURN
60 COURT STREET
AUBURN, ME 04210

SOUTH MAIN STREET RECONSTRUCTION
PHASE I

JOB NO.: 203970.25
DATE: APRIL 2012
SCALE: 1"=40'
SHEET: 6 OF 7

Fig. 5

G:\203970 City of Auburn-General Consulting Services\wip\25 South Main St Reloc\Drawings\design drawings\203970.25-Soil Figs.dwg, Apr 09, 2012 - 2:07pm

SMS–17 (STA: 60+06)
BENZO(A)PYRENE

SMS–20 (STA: 61+58)
SAMPLE NOT SUBMITTED TO LAB BASED ON FIELD ANALYSIS/ OBSERVATIONS

SMS–19 (STA: 61+28)
NO MAINE RAG EXCEEDANCES

SMS–18 (STA: 60+76)
NO MAINE RAG EXCEEDANCES

SOUTH MAIN ST.

GOSNOLD ST.

TBM #6 (OTHERS)
NAIL, SET IN POLE #56
EL. 344.74'

TBM #5 (OTHERS)
NAIL SET IN POLE #60
EL. 347.28'

APPROXIMATE SIDELINE

ASPHALT DRIVEWAY

ASPHALT PARKING LOT

ASPHALT WALK

GRASS

LAWN

3' TALL CHAINLINK FENCE

3' TALL WOOD FENCE

6' TALL WOOD FENCE

3' TALL WOODEN FENCE

STONE WALL

LANDSCAPE BOX

WELL HOUSE

SHRUBS

36" MAPLE
18" PINE
18" PINE
18" PINE
24" MAPLE
40" MAPLE
10" CEDAR
18" MAPLE
15" MAPLE
48" MAPLE
10" CRAB APPLE
60" PINE
2" PINE GROUP
24" SPRUCE
6" CRAB APP
36" PINE

#56.5 #57 #58 #59 #60 #61

6" TALL WOO

56+00 57+00 58+00 59+00 60+00 61+00 62+00

SMS–17 SMS–18 SMS–19 SMS–20

PLAN
SCALE: 1" = 40'

40' 0 40' 80'

BAR SCALE
1" = 40'
CHECK GRAPHIC SCALE BEFORE USING

LEGEND

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	203970.25-SOIL FIGS.DWG	

FIGURE 6
SOIL SAMPLING RESULTS

CITY OF AUBURN
60 COURT STREET
AUBURN, ME 04210

SOUTH MAIN STREET RECONSTRUCTION
PHASE I

JOB NO.: 203970.25
DATE: APRIL 2012
SCALE: 1"=40'
SHEET: 7 OF 7

Fig. 6

G:\203970 City of Auburn-General Consulting Services\wip\25 South Main St Reban\Drawings\design drawings\203970.25-Soil Figs.dwg, Apr 09, 2012 - 2:07pm

Constituents Exceeding Maine RAGs - South Main Street

	Maine RAGs - Excavation Worker Multiple Contaminant	SMS-2	SMS-3	SMS-4	SMS-6	SMS-7	SMS-10	SMS-11	SMS-14	SMS-15	SMS-16	SMS-17	SMS-18	SMS-19
2-methylnaphthalene	35	7.9	46	0.44	<RL	12	13	19	<RL	<RL	44	3.1	<RL	<RL
Benzo(a)anthracene	43	2.2	34	2.9	<RL	34	220	50	1.8	<RL	43	34	<RL	<RL
Benzo(a)pyrene	4.3	6.7	17	2.1	<RL	33	100	33	2.1	<RL	24	25	<RL	<RL
Benzo(b)fluoranthene	43	1.2	16	2	<RL	35	110	29	2.1	<RL	19	20	<RL	<RL
Dibenz(a,h)anthracene	4.3	<RL	2	0.27	<RL	5	15	3.9	0.46	<RL	2.8	4	<RL	<RL
Indeno(1,2,3-cd)pyrene	43	<RL	9.2	1.4	<RL	28	59	21	1.5	<RL	12	15	<RL	<RL
Naphthalene (VOC)	32	31	34	40	750	410	3.7	5.2	0.056	5.9	11	<RL	<RL	<RL
Naphthalene (EPH)	32	14	57	0.88	0.44	25	9.5	18	<RL	<RL	61	5.4	<RL	0.22
Naphthalene (VPH)	32	200	240	36	100	1300	2.2	16	<RL	<RL	95	<RL	<RL	<RL

	Maine RAGs - Residential Multiple Contaminant	SMS-2	SMS-3	SMS-4	SMS-6	SMS-7	SMS-10	SMS-11	SMS-14	SMS-15	SMS-16	SMS-17	SMS-18	SMS-19
Benzo(a)anthracene	0.26	2.2	34	2.9	<RL	34	220	50	1.8	<RL	43	34	<RL	<RL
Benzo(a)pyrene	0.026	6.7	17	2.1	<RL	33	100	33	2.1	<RL	24	25	<RL	<RL
Benzo(b)fluoranthene	0.26	1.2	16	2	<RL	35	110	29	2.1	<RL	19	20	<RL	<RL
Benzo(k)fluoranthene	2.6	1.3	17	2	<RL	26	120	31	2.1	<RL	20	20	<RL	<RL
C11-C22 Aromatics	730	820	1900	<RL	<RL	1200	3800	1900	<RL	<RL	2400	1900	<RL	<RL
Chrysene	26	<RL	28	<RL	<RL	<RL	150	39	<RL	<RL	36	30	<RL	<RL
Dibenz(a,h)anthracene	0.026	<RL	2	0.27	<RL	5	15	3.9	0.46	<RL	2.8	4	<RL	<RL
Indeno(1,2,3-cd)pyrene	0.26	<RL	9.2	1.4	<RL	28	59	21	1.5	<RL	12	15	<RL	<RL
Naphthalene (VOC)	200	31	34	40	750	410	3.7	5.2	0.056	5.9	11	<RL	<RL	<RL
Naphthalene (VPH)	197	200	240	36	100	1300	2.2	16	<RL	<RL	95	<RL	<RL	<RL

Notes:

RL = reporting limit

Results with gray shading exceed Multiple Contaminant RAG

Samples SMS-1, SMS-5, SMS-8, SMS-9, SMS-12, SMS-13, and SMS-20 were not sumbitted for laboratory analysis since there was no indication of contamination during field tests/observations.