Local Project Administration

Certification Course Manual
&
Reference Guide

February 2005

Construction Testing

PREPAVING CONFERENCE REPORT

CONTRACT INFORMATION

PIN: **008818.00** Town: **LEWISTON** Date: **9/14/2004**

Resident: **COWAN,H.** Paving Contr. **PIKE INDUSTRIES** Proj. Phone: **784-5753 X**

Prime Contractor: **PRATT & SONS INC.** Proj. Fax: **784-5647**

Specification Date: **10/21/02** Systems of Units: **SI Units** Paving Start Date: **9/22/2004**

PIN: **010253.00** Town: **LEWISTON**

MEETING INFORMATION

MDOT Personnel	Contractor Personnel	Other Personnel
LYCETTE, DAVID G MCCLAY, WADE L	PRATT, JOHN WARD, DAN HANLEY, JIM SAWYER, TODD	Mike LePage, Wes Enman, Al Richard - City of Lewiston. John Parker - Summit

Plant/Location: **PIKE INDUSTRIES—POLAND**

Plant/Location: **PIKE INDUSTRIES—LEWISTON**

PCT: QCT:

Plan Administrator: **HANLEY, JIM**

Phone Number: **8782-6241**

Plant Inspector: **WEISNER, DANA L**

Item	Job Mix No.	Sample Type	
403.207	PII-LE-2-19	ACCEPT (METHOD B)	1550
403.208	PII-LE-2-12A	ACCEPT (METHOD B)	880
403.209	PII-LE-D	ACCEPT (METHOD C)	438
403.210	PII-LE-2-95C	ACCEPT (METHOD B)	660
403.211	PII-LE-2-95F	ACCEPT (METHOD C)	34

Name	Function
FOWLER, JOE	PAVING INSP.

Paving Equipment:
B/K 5510 Paver, Hypac 778 Knockdown, Dynapac CP271 Pneumatic intermediate, Hypac 766 finish.

Special Provisions: **PMRAP deleted by C/O**

Utilities: **Adjustments by City, co-ordinated by Mike LePage**

Tack Comments: **MDOT to pay between layers**

Bridge Comments: **Mill and fill with no membrane.**

Traffic Control: **Extra flaggers while paving. TCD's by Prime.**

Special Request:
Will call for any needed supplies

General Comments:
Item 403.307 will be done in one lot for 2004 and a second lot in 2005, as this will be Wintering over there might be a substitution of 12.5 mm, this will be decided based on weather and other considerations. First section will be paved on Wednesday, 9-22-04 and the second will be done near the seasonal cutoff date. QC Randoms are done and turned in. QA Pending and will be CC'd to Heath Cowan.

HOT MIX ASPHALT PAY FACTOR REPORT
ACCEPT (METHOD A)

PIN: **009720.00** Job Mix No. **LAN-BK4-75-12** Description: **HMA MIX-12.5MM** Item No.: **403.213**

Town: **CASTINE, PENOBSCOT** Lot No.: **1**

Ref. No.	Sublot	Size	12.5	2.36, %	0.600, %	0.300, %	0.075, %	PGAB, %	Voids, %	VMA, %	VFB, %	F/Be	In-Place Density			Comp., %
		USL	97	38	20	13	7	5.4	5.5		82	1.4	Ref. No.	Sublot	Size	97.5
		Target	90	34	17	11	5	5	4							
		LSL	83	30	14	9	3	4.6	2.5	14	65	0.6				92.5
156750	1	1000	88	33	16	10	4.6	4.7	5.2	14.9	65	1.1	156753	1	500	94.4
156755	2	1000	91	33	17	11	5.1	5.0	3.7	14.4	74	1.1	156756	2	500	93.1
													156757	3	500	93.5
156758	3	1000	90	34	16	10	4.9	5.2	3.9	14.8	74	1				
156771	4	1000	93	38	17	11	5.3	5.5	3.2	14.7	78	1.1	156772	4	500	92.6
													156773	5	500	95.6
156774	5	1000	84	25	12	8	3.7	4.3	4.6	15.3	58	0.9	156775	6	500	94.7
													156776	7	500	92.2
156777	6	1000	86	34	16	11	5.0	5.0	3.7	14.3	74	1.1	156778	8	500	93
													156779	9	500	92.6
													156762	10	500	96.1
													156763	11	500	97.5
		Count	6	6	6	6	6	6	6	6	6	6				11
		Arithmetic Mean	88.6667	32.8333	15.6667	10.1667	4.76667	4.95	4.05	14.7333	70.5	1.05				94.1182
		Standard Deviation	3.32666	4.26224	1.8619	1.16905	0.57155	0.41352	0.72319	0.36148	7.47663	0.08367				1.70107
		Percent Within Limits	98	64	81	84	100	67	100	100	72	100				82
		Pay Factor	1.04	0.87	0.96	0.97	1.05	0.88	1.05	1.05	0.91	1.05				0.96
							Adjusted Payfactor	N/A								

Gradation Composite Pay Factor

Shim/Shoulders Information	
Payfactor:	1.008
Quantity:	1243.74
Price:	$38.50
Pay Adjustment:	$383.07

Mainline Information	
Payfactor:	0.988
Quantity:	4756.26
Price:	$38.50
Pay Adjustment:	($2,197.39)

Highlighted Values Indicate Outliers

HOT MIX ASPHALT PAY FACTOR REPORT
ACCEPT (METHOD B)

PIN: **008818.00** Job Mix No. **PII-LE-2-19** Description: **HMA MIX-19.0MM** Item No.: **403.207**

Town: **LEWISTON** Lot No.: **1**

Ref. No.	Sublot	Size	19.0	2.36, %	0.600, %	0.300, %	0.075, %	PGAB, %	Voids, %	VMA, %	VFB, %	F/Be	In-Place Density			Comp., %
		USL	105	35	19	13	6.2	5.7	6		82	1.4	Ref. No.	Sublot	Size	98
		Target	98	30	15	10	3.2	5.2	4							
		LSL	91	25	11	7	0.2	4.7	2	13	65	0.6				92
175757	1	500	99	26	14	8	2.7	4.8	3.4	14.6	77	0.6	175762	1	500	96.2
175758	2	500	97	24	13	8	2.4	4.9	3.4	14.7	77	0.5	175760	2	500	95.2
													175763	3	500	93.1
175759	3	500	98	27	14	9	3.1	5.2	3.7	15.0	75	0.6				
		Count	3	3	3	3	3	3	3	3	3	3				3
		Arithmetic Mean	98	25.6667	13.6667	8.33333	2.73333	4.96667	3.5	14.7667	76.3333	0.56667				94.8333
		Standard Deviation	1	1.52753	0.57735	0.57735	0.35119	0.20817	0.17321	0.20817	1.15470	0.05774				1.58219
		Percent Within Limits	100	63	100	100	100	100	100	100	100	33				100
		Pay Factor	1.03	0.91	1.03	1.03	1.03	1.03	1.03	1.03	1.03	0.81				1.03
								Adjusted Payfactor	N/A							

Cease: F/Be

Gradation Composite Pay Factor

Shim/Shoulders Information	
Payfactor:	
Quantity:	
Price:	
Pay Adjustment:	

Mainline Information	
Payfactor:	1
Quantity:	1648.82
Price:	$44.75
Pay Adjustment:	$0.00

Highlighted Values Indicate Outliers

2005 QC Plan Review Guidelines (Superpave)

Project:_____ **Contractor:**_____

Project #: _____ **Plant:**_____

Pin # : _____ **Date Rec'vd :**_____

Date Reviewed : _____ **Date Returned:**_____

☐ **<u>401.19 Quality Control Method A & B.</u>**

The Contractor shall operate in accordance with a Quality Control Plan, hereinafter referred to as the "Plan", sufficient to assure a product meeting the contract requirements. The plan shall meet the requirements of 106.4.1 and 106.4.2 and the special provisions. No work shall occur until this plan is approved in writing by the Resident.

On ALL Federal Oversight Projects the QC Plan MUST be approved by FHWA PRIOR to any work covered by the Plan being done.

Review of QC Plan should NEVER exclude the Resident

2005 QC Plan Review Guidelines (Superpave)

The Plan shall address all elements which affect the quality of the Plant Mix Pavement including, but *not* limited to, the following:

☐ **(a) Job mix formula(s)** ***(We don't require the JMF to be in the original QC Plan, but it should be addressed.)***

☐ **(b) Hot asphalt mix plant details.** ***(Should detail the plant the Contractor will utilize (Drum/Batch, Make/Model, Capacity Etc.))***

☐ **(c) Stockpile Management.** ***(Should specify procedures to ensure isolation of contamination, prevent intermingling etc... Construction Methods, Control Testing)***

☐ **(d) Make & type of paver(s)** ***(Should mention Make - Barber - Greene / Blaw Knox / Caterpiller and model #)***

☐ **(e) Make & type of rollers** ***including weight, weight per inch of steel wheels, and average ground contact pressure for pneumatic tired rollers. (Should be flexible but sufficient to ensure that Contractor has adequate equipment to satisfactorily carry out the work. More in the Const. Managers purview. How will compaction be ensured where densities are waived.)***

☐ **(f) Name of QCP Administrator, and certification number.** ***(Must be a qualified individual, and a full-time employee of or a consultant engaged by the Contractor. Shall have full authority to institute any and all actions necessary for the successful operation of the Plan. Shall be certified as a Plant Technician or Paving Technician certified by the New England Transportation Technician Certification Program. Check for Cert. Numbers!)***

☐ **(g) Name of Process Control Technician(s)** ***(The PCT shall be certified as a Plant Technician by the New England Transportation Technician Certification Program. Check for Cert. Numbers!)***

☐ **(h) Name of Quality Control Technicians(s)** ***(The QCT shall be certified as a Paving Technician by the New England Transportation Technician Certification Program. Check for Cert. Numbers!)***

☐ **(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.** ***(Should indicate that trucks will have thermometer hole, adequate covers, free of leaks etc. Thorough coating, minimum segregation.)***

☐ **(j) Testing Plan.** ***(Should AT LEAST meet the frequencies in Table 9. (See Page 6)***

(k) Laydown operations including longitudinal joint construction, procedures for avoiding paving in inclement weather, tacking of all joints, methods to ensure that segregation is minimized, procedures to determine the maximum rolling and paving speeds based on best engineering practices as well as past experience in achieving the best possible smoothness of the pavement.
(Should include rain policy and joint compaction method)

(l) Examples of Quality Control forms including a daily plant report and a daily paving report. ***(Must show either within/outside Spec. limits)***

(m) Silo Management and details

(n) Provisions for varying mix temperature due to extraordinary conditions ***(If not addressed, then none is allowable)***

(o) Name and Responsibilities of the Responsible Onsite Paving Supervisor

(p) Method for calibration/verification of Density Gauge

(q) Note that all testing will be in accordance AASHTO and ACM/MDOT procedures.

(r) A note detailing conditions under which the % of RAP will vary from that specified on the JMF

Compaction method for any HMA not subject to incentives/disincentives

Plan for delivery of samples to the MDOT laboratory including delivery time *(Should be no more than 48 hours unless a remote location)*

Name of the Company Official ultimately responsible for the work.

Must also note any variation from behind the paving train density testing where applicable. ***(Otherwise all testing to be as per Specs.)***

The Plan shall include the following technicians with these minimum requirements and qualifications:

(a) <u>QCP Administrator</u> - 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 Plant Technician or Paving Inspector certified by the New England Transportation Technician Certification Program.

(b) <u>Process Control Technician(s) (PCT)</u> 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 New England Transportation Technician Certification Program.

The level of authority of the PCT MUST be described.

(c) <u>Quality Control Technician(s) (QCT)</u> 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 New England Transportation Technician Certification Program.

The level of authority of the QCT MUST be described.

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

Asphalt pavement shall be sampled, tested, and evaluated by the Contractor in accordance with the following minimum quality control Frequencies:

Table 4: MINIMUM QUALITY CONTROL GUIDELINES

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 [135 tons] (As noted in QC Plan)	ASTM D-2950
%TMD (Base)	1 per 250 Mg [275 tons] (As noted in QC Plan)	AASHTO T-269
Fines / Effective Binder	1 per 500 Mg [550 tons]	AASHTO TP-4
Gradation	1 per 500 Mg [550 tons]	AASHTO T-30
PGAB content	1 per 500 Mg [550 tons]	AASHTO T-164, T-287 or T-308
Voids at N_{design}	1 per 500 Mg [550 tons]	AASHTO TP-4
Voids in Mineral Aggregate at N_{design}	1 per 500 Mg [550 tons]	AASHTO TP-4
Rice Specific Gravity	1 per 500 Mg [550 tons]	AASHTO T-209
Coarse Aggregate Angularity	1 per 6000 Mg [6660 tons]	ASTM D 5821
Flat and Elongated Particles	1 Per 6000 Mg [6660 tons]	ASTM D-4791
Fine Aggregate Angularity	1 Per 6000 Mg [6660 tons]	AASHTO T-304

☐ **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 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 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 4. The Contractor shall locate an approved SHRP Gyratory Compactor at the plant testing lab or within 30 minutes of the plant site.

The Contractor has submitted example control charts with the limits shown below.

TABLE 5

Property	UCL and LCL
Passing 4.75 mm and Nominal Maximum sieves	Target ± 4.0
Passing 2.36 mm sieve	Target ± 2.5
Passing .075 mm sieve	Target ± 1.2
PGAB Content*	Target ± 0.2
Voids in the Mineral Aggregate	JMF Target ± 0.9
% Voids at N_{design}	JMF Target ± 0.9

***Based on AASHTO T 308**

2004 QC Plan Review Guidelines for Structural Concrete

June,2004

Maine Dept of Transportation
Bureau of Planning
State House Sta. # 16
Child St. Augusta Me. 04333
Attn: Michael Redmond
Tel. 207-624-3271
Cell 207-592-2403

Project: Coplin Plt **Contractor:** Reed & Reed

Project #: BR- 1017(700)X **Plant:** Mattingly Products

Pin # : 10177.00 **Date Received :** 6-23-04

Date Reviewed : 7/7/04 **Date Returned:** _____

Reviewed By : Mike Redmond

502.0501 Quality Control Method A & B.

The Contractor shall operate in accordance with a Quality Control Plan, hereinafter referred to as the "Plan", sufficient to assure a product meeting the contract requirements. The plan shall meet the applicable requirements of Section 502 Structural Concrete, Section 106 Quality, and the special provisions.

No work under this item shall proceed until the QC Plan is submitted and approved by the Department.

On Federal Oversight Projects the QC Plan must be approved by FHWA prior to any work covered by the Plan being done.

The Plan shall address all elements which affect the quality of Structural Concrete including, but *not* limited to, the following:

(1.) Concrete Mix Designs are required to be in the original submittal of the QC Plan and must contain the following information.

a. **Description and source of individual coarse aggregate stockpiles.**
b. **Coarse aggregate specific gravity, absorption, elongation, alkali silica reactivity, blended gradation.**
c. **Description and source of fine aggregate stockpiles.**
d. **Fine aggregate specific gravity, absorption, colormetric, fineness modulus, gradation, and percent of total aggregate.**
e. **Target water cement ratio**
f. **Maximum water cement ratio**
g. **Target water content by volume**
h. **Target Compressive Strength**
i. **Target Chloride Permeability**
j. **Target Air Content, Slump, Mix Temperature**
k. **Target Unit Weight**
l. **Type and dosage of chemical admixtures.**
m. **Type and amount of cement.**
n. **Type and amount of pozzolan.**
o. **Name of person submitting design.**

Comments: ***Items above in Red are missing or unacceptable.***

(2.) **Concrete batch plant details.** ***(Should detail the plant the Contractor will utilize (Batching System, Mixer Make/Model, Capacity Etc.)***

Comments: ***Additional info requested.***

(3.) **Stockpile Management.** ***(Should specify procedures to ensure isolation of contamination, prevent intermingling etc... Construction Methods, Control Testing***

Comments: ***Additional info requested.***

(4.) **Make & Type of Mixers**

Comments: ***Additional info requested.***

(5.) **Name of QCP Administrator, and certification number.** ***(Must be a qualified individual, and a full-time employee of or a consultant engaged by the Contractor. Shall have full authority to institute any and all actions necessary for the successful operation of the Plan. QCP Plan Administrator shall meet one of the nine requirements listed in Section 502.0501***

Comments: ***Acceptable***

(6.) **Name of Process Control Technician(s)** ***(The PCT shall be a NETTCP Certified Concrete Field Technician or an MCTCB Concrete Plant Technician. A primary PCT shall be listed in addition to a list of alternate PCT'S. Shall also include criteria utilized by the PCT to reject questionable materials.***

Comments: ***Additional info requested. Qualifications of non certified PCT are requested.***

(7.) **Name of Quality Control Technicians(s)** ***(The QCT shall be a NETTCP Certified Concrete Technician or an MCTCB Concrete Field Technician. A primary QCT shall be listed in addition to a list of alternate QCT'S. Shall also include criteria used by the QCT to reject loads delivered to the jobsite.***

Comments: ***Acceptable***

(8.) **Mixing & transportation including time from batching to completion of delivery.** ***Should indicate that trucks will have current State of Maine Mixer Inspection certificate or decal.***

Comments: ***Provide statement on inspection status of mixers.***

(9.) **Testing Plan. The QCP shall detail the coordination of the activities of the Plan Administrator, the PCT and the QCT. The project Superintendent shall be named in the QCP, and his responsibilities for successful implementation of the QCP shall be outlined.**

Comments: ***The plan mentions this but provides no detail. Expand on duties and responsibilities of these people.***

(10.) **Concrete Placement Methods. Should include description of equipment used for all concrete placements, precautions for protection of concrete in inclement weather, and personnel required to complete placement.**

Comments: ***Additional info requested.***

(11.) **Examples of Quality Control forms including an aggregate gradation report, sample control charts, and a sample concrete delivery record.**

Comments: ***Provide requested information. None of the above was received.***

(12.)

Finishing and Curing. Describe methods intended for finishing operations. Curing details should address duration of curing and materials to be used.

Comments: ***Curing section needs more info.***

(13.) **Hot and Cold Weather Concrete. Provisions for control of concrete mix temperature and placement precautions due to extraordinary conditions.**

Comments: ***Additional info requested.***

(14.) **Name and Responsibilities of other personnel involved in decision making process other than QCT and Plan Administrator.**

Comments: ***Acceptable***

(15.) **Method for calibration/verification of Air Meter.**

Comments: ***Additional info requested.***

(16.) **Note that all testing will be in accordance AASHTO and ACM/MDOT procedures.**

Comments: ***Acceptable***

(17.) **Non traditional methods. Provide a description of 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.**

Comments: ***Acceptable***

(18.) **Remove references to performing work as per various specifications with an actual description of the intended methods.**

Section 3.8 Line # 4 ..Replace all 502 Items with All Cast in place concrete items.

Sect 3.9 Replace 502.11 and 502.11c with detailed axplanations of intended methods.

No sample control charts were received in QC Plan

Current aggregate gradations are required with Mix Designs.

Maine Department of Transportation

QC Plan Requirements

YES	NO	
		Aggregate Production Information Provided
		Quality of Components
		Stockpile Management
		Proportioning (added water)
		Mix and Transportation
		Initial Mix Properties
		Process Quality Control Testing
		Placement and Consolidation
		Permeability
		Compressive Strength
		Finishing
		Hot and Cold Weather Procedures
		Curing
		Form Removal
		Sample Delivery Slip

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT
MINIMUM TESTING REQUIREMENTS

MASTER

Project No.: **Date:**

Pin No.:

Town: **Length:** **miles**

Location:

Item No.	Description	Quantity	Unit	Est # of Passing Accept. Tests	Type of Tests
NOTE: FILL OUT PRODUCT EVALUATION REPORT AT COMPLETION OF PROJECT. SEND TO ADDRESS ON FORM					
	"Buy America Clause"				Certified Statement On Contractor's Letterhead
203	Embankment (Control Density Fill Only)		CY	0	Number of 1000 LF sections
	Total linear foot of Control Density Fill(s)			0	Number of Layers
	Total Elev. Depth of Control Density Fill(s)		LF	0	Number of Compactions
	Embankments (layer method)	**As Nec**		1	Compaction to Doc. Layer Method
	Embankments (bridge approaches and structural plate pipes & box culverts)			0	Total Depth in feet of Granular Backfill abutting each structure Compaction (one every other layer each side of structures)
	Common Borrow		CY	0	Moisture contents or one each 15,000 CY - Not required if granular material used
	Dirty Borrow			0	Gradation (backslope) 1 / 5,000 CY
	Gravel Borrow		CY	0	Gradation 1/ 5,000 CY
	Granular Borrow		CY	0	Gradation 1/ 5,000 CY
	Selected Granular Borrow		CY	0	Gradation 1/ 5,000 CY
				0	Compaction 1/ 2,000 LF
204	Rehabilitate Existing Shoulder		SY	0	Gradation 1/ 7,500 SY
	Add Shoulder Aggregate		SY	0	Gradation 1/ 7,500 SY
304	Aggregate Sub base-Gravel		CY	0	Gradation 1/ 2,500 CY
	Total length in feet of A.S.G. (lower)		LF	0	Compaction (lower)
	Total length in feet of A.S.G. (upper)		LF	0	Compaction (upper)
					Compactions are based on 1 test

					per 2000 LF per lane per layer
				0	Degradation
					(one / source / project)
					If initial value is > 24 test
					at rate of 1/10,000 CY
					initial value <25, test at
					rate of 1/5,000 CY
	Aggregate Base		CY	0	Gradation 1/ 1 2,500 CY
	Total length in feet of Agg. Base		LF	0	Compaction 1/ 2,000 LF
	Aggregate Sub base-Sand		CY	0	Gradation 1/ 2,500 CY
	Total length in meter of Agg. Sub. Sand		LF	0	Compaction 1/ 2,000 CY
307	Full Depth Recycled Pavement, Untreated		SY	0	Compaction 1/ 2,000 LF per lane
	Total length in feet of C.I.R.P.		LF		
308	Full Depth Reclamation w/Stabilizing Additives		SY	0	Compaction 1/ 2,000 LF per lane
	Total length in feet of C.I.R.P.		LF		
309	Full-Depth Recycled w/Foamed Asphalt		SY	0	Compaction 1/ 2,000 LF per lane
	Total length in feet of C.I.R.P.		LF		
					Reclaiming more than 2" Deeper
					Than Foaming Depth Will Require
					Additional Tests as per Std Spec 307
310	CIRP or Plant Mixed RAP		SY	0	Compaction 1/ 2,000 LF per lane
	Total length in feet of C.I.R.P.		LF		(Use Thin Lift Gauge)
	QUALITY ASSURANCE ITEM				
	QC PLAN BY CONTRACTOR REQUIRED WITHIN 21 DAYS OF CONTRACT EXECUTION OR 30 DAYS BEFORE ANY				
	RELATED WORK				
	If remaining Tons at the end of an item are 1/2 of a sublot or more, add another sublot; if less than half, add Tons to last sublot.				
	Two Plant Checks by Testing Section Required for Each Five Days of Operation				
403	Hot Bituminous Pavement			1	Job Mix Formula per mix
	METHOD A				
					METHOD "A"
	403.206		Ton	0	Gradation 1 / 1,100 T sublot
	"25.0 mm"			0	Asphalt Cont. 1 / 1,100 T sublot
				0	Air Voids Analysis
					1 / 1,100 T sublot
	Mainline			0	Core Densities 1 / 550 T sublot
	Shoulder			0	Core Densities (Method A)
				1	Core Densities at Opt of Resident
					METHOD "A"
	403.207		Ton	0	Gradation 1 / 1,100 T sublot
	"19.0 mm"			0	Asphalt Cont. 1 / 1,100 T sublot
				0	Air Voids Analysis
					1 / 1,100 T sublot
	Mainline		Ton	0	Core Densities 1 / 550 T sublot
	Shoulder			0	Core Densities (Method A)
				1	Core Densities at Opt of Resident
					METHOD "A"
	403.213		Ton	0	Gradation 1 / 1,100 T sublot
	"12.5 mm Binder"			0	Asphalt Cont. 1 / 1,100 T sublot
				0	Air Voids Analysis
					1 / 1,100 T sublot
	Mainline		Ton	0	Core Densities 1 / 550 T sublot

Shoulder			0	Core Densities (Method A)
			1	Core Densities at Opt of Resident
				METHOD "A"
403.208		Ton	0	Gradation 1 / 1,100 T sublot
"12.5 mm Surface"			0	Asphalt Cont. 1 / 1,100 T sublot
			0	Air Voids Analysis
				1 / 1,100 T sublot
Mainline		Ton	0	Core Densities 1 / 275 T sublot
		LF	0	Pavement Smoothness Lots
				1/ 3,000 LF Per Lane
Shoulder			0	Core Densities (Method A)
			1	Core Densities at Opt of Resident
				METHOD "A"
403.210		Ton	0	Gradation 1 / 1,100 T sublot
"9.5 mm Surface"			0	Asphalt Cont. 1 / 1,100 T sublot
			0	Air Voids Analysis
				1 / 1,100 T sublot
Mainline		Ton	0	Core Densities 1 / 275 T sublot
		LF	0	Pavement Smoothness Lots
				1/ 3,000 LFt Per Lane
Shoulder			0	Core Densities (Method A)
			1	Core Densities at Opt of Resident
				METHOD "A"
403.211		Ton	0	Gradation 1 / 1,100 T sublot
"9.5 mm Shim"			0	Asphalt Cont. 1 / 1,100 T sublot
			0	Air Voids Analysis
				1 / 1,100 T sublot
				METHOD "A"
403.212		Ton	0	Gradation 1 / 1,100 T sublot
"4.5 mm Shim"			0	Asphalt Cont. 1 / 1,100 T sublot
			0	Air Voids Analysis
				1 / 1,100 T sublot

METHOD "B"

DIVIDE THE QUANTITY OF EACH METHOD B HMA ITEM INTO THREE SUBLOTS
RANDOMLY SAMPLE AND TEST ALL THREE SUBLOTS
CALCULATE PAY FACTORS USING METHOD B PAY FACTOR PROGRAM. PAY ACCORDINGLY.
SEE SUPPLEMENTAL SPECIFICATION 401, METHOD B

				METHOD "B"
403.207		Ton	3	Gradation
"19 mm Binder"			3	Asphalt Cont.
			3	Air Voids Analysis
			3	Core Densities
				METHOD "B"
403.213		Ton	3	Gradation
"12.5 mm Binder"			3	Asphalt Cont.
			3	Air Voids Analysis
			3	Core Densities
				METHOD "B"
403.208		Ton	3	Gradation
"12.5 mm Surface"			3	Asphalt Cont.
			3	Air Voids Analysis
			3	Core Densities

					METHOD "B"
	403.210		Ton	3	Gradation
	"9.5 mm Surface"			3	Asphalt Cont.
				3	Air Voids Analysis
				3	Core Densities
					METHOD "B"
	403.211		Ton	3	Gradation
	"9.5 mm Shim"			3	Asphalt Cont.
				3	Air Voids Analysis
					METHOD "B"
	403.212		Ton	3	Gradation
	"4.5 mm Shim"			3	Asphalt Cont.
				3	Air Voids Analysis
		METHOD C			
	Quantity of Method C Mixes		Ton	0	Gradations
	Number of Method C Mixes		mixes	0	Asphalt Contents
				0	Core Densities
	List Mixes:				Method "C" Requires
	-				Gradation and Asphalt Contents
	-				Densities as per Spec Prov 403
	-				Pay according to Special Provision
					401 Method "C"
	Bituminous Material			1	Loading Invoice with each shipment of material from supplier
	TESTING BASED ON TONS PRODUCED				
409	Bituminous Tack Coat Applied		G	1	Loading Invoice with each shipment of material and statement of certification (See Division 700 of Standard Specifications.)
410	Bituminous Surface Treatment		SY	0	Gradation 1 / 500 SY
	Cover Coat-Sand		CY	0	Gradation 1 / 500 CY
	Cover Coat (Stone Chips)		CY	0	Gradation 1 / 500 CY
					Deleterious & Stripping Test
	Bituminous Materials--Asphalts		G	1	Loading Invoice, Certificate Number and Statement with each shipment of material from supplier (See Division 700 of the Standard Specifications)
411	Untreated Aggregate Surface Course		CY	0	Gradation 1 / 500 CY
	Bituminous Material for Mulch Surface		G	1	Loading Invoice with each shipment of material from supplier
	Aggregate for Mulch Surface		CY	0	Gradation 1 / 500 CY
501	Steel H-Beam Piles		LF	1	Certification
				1	Certified Mill Test report per heat
	Timber Treated Piles		LF		Concrete Testing as per Standard Specification 502
	Cast-in-place concrete piles		LF		and Special Provision 502
	Calculate total yd³ for concrete piles		CY		See Section 502 of This Doccument
	Reinforcing Steel			1	Certification

	Pile Protective Coating		LUMP	1	Notarized copies of test results and natural certificates (Special Provision Section 501)
502	Annular Space Grouting		CY	1	Quality of Fine Aggregate
				1	Mix Design by Contractor
				1	Air Test
				1	Set of 2 Cylinders
	Cement			1	Certified Mill Test
	Fly Ash			1	Certification
	Test Section			1	Each Type of Grout Used See Special Provision 502
	QUALITY ASSURANCE ITEM				
	QC PLAN BY CONTRACTOR REQUIRED WITHIN 21 DAYS OF CONTRACT EXECUTION OR 30 DAYS BEFORE ANY RELATED WORK				
	One Plant Check by Testing Section Required for Each Five Sublots				
	NOTE: If CY is more than half the sublot size, add another sublot; however, if less than half the sublot size, add to previous sublot.				
502	Structural Concrete			1	Quality of Coarse Aggregate
				1	Quality of Fine Aggregate
				1	Set of Verification Gradations Per five sublots
				1	PCC Mix Design Per Class of Conc
					METHOD "A"
	Class "A"		CY	3	Set(s) of 2 cylinders / lot
				3	Air test / lot
				3	Set(s) of 2 Cyl. for Rapid Chloride Permeability / lot
					Measure Surface Tolerance, Alignment and Trueness, Plumb and Batter and Finish as per Special Prov. 502 Sec 502.0502
					METHOD "B"
	Class "S"		CY	0	Set(s) of 2 cylinders / lot
				0	Air test / lot
					METHOD "B"
	Class "LP"		CY	0	Set(s) of 2 cylinders / lot
				0	Air test / lot
				0	Set(s) of 2 Cyl. for Rapid Chloride Permeability / lot
					Measure Surface Tolerance, Alignment and Trueness, Plumb and Batter and Finish as per Special Prov. 502 Sec 502.0502
	METHOD "B"		CY	0	Set(s) of 2 Cylinders
	Total Number of Small Quantity Mixes			0	Air test
	List Mixes By Item Number:			0	Set(s) of 2 Cyl. for Rapid Chloride Permeability
	-				
	-				
	-				
	-				
	METHOD "C"		CY	0	Set(s) of 2 Cylinders

	Total Number of Small Quantity Mixes			0	Air test
	List Mixes By Item Number: - - - -			0	Set(s) of 2 Cyl. for Rapid Chloride Permeability
	Cement			1	Certified Mill test
	Pozzolan			1	Certified Test Report
	Polyvincylchloride Water stops			1	Certification
	Joint Sealant (if used)			1	Certification
					Test Rpt. (if not on approved list)
	Bridge Drains		EA	1	Certification
503	Reinforcing Steel		LB	1	Certification
	Steel Wire Mesh			1	Certification
	Epoxy Coated Reinforcing Steel		LB	1	Certification - Coating and Bars meet requirements of ASTM-A 775 (See Section 503.051)
504	Structural Steel		LUMP	1	Certification
				1	Certified Mill Test Report covering major carrying members. Welding-Welder's Certification must be verified prior to field welding by Const. Manger. or Inspector. Test Report each type of Welding Electrode,if not on MDOT approved list Letter of Compliance-Shop Welders
505	Shear Connectors		LUMP	1	Certification
506	Painting Structural Steel		LUMP	1	Certification (each color) Statement from D. Dubois approving each batch
	Disposal of Hazardous Materials		LUMP	1	Signed Truck Manifests Stating Location and License of Disposal Facility
507	Bridge Railing		LF	1	Certification Sample 4 Washers, 4 Nuts 4 Anchor bolts to Central Lab (each manufacturer, each size) 3 weeks prior to use
	Aluminum Rail Bar Splice Retrofit		EA	1	Certification
	Steel Pipe Hand Railing		LF	1	Certification
508	Membrane Waterproofing		LUMP	1	Certification (100% covered) Complete and Send Attached Product Evaluation Sheet to Augusta
509	Structural Plate Pipe-Pipe Arch & Arches		LUMP	1	Certification
512	French Drains		LF	1	Gradation @ Const. Mangr's Option
513	Slope Protection		SY	0	Concrete Testing as per Standard Specification 502 and Special Provision 502 See Section 502 of This Doccument
	Calculate total yd³ of slope protection		CY	0	

	Steel Wire Mesh Bituminous Material			1 1	Certification Loading Invoice with each shipment of material from supplier
515	Epoxy Resin Surface Sealant Protective Coating for Concrete Surfaces		SY LUMP	1 1	Certification Certification
517	Shotcrete Reinforcing Steel		SY	 1	Cores Certification See Spec. Provision Sec. 517
518	Rehab Structural Concrete Slab Rehab. Structural Concrete Substructure Granite Curb Bedding Mortar		SY CY LF	 1	Concrete Testing as per Standard Specification 502 and Special Provision 502 See Section 502 of This Doccument Or Commercial Patching from Approved List Complete and Send Attached Product Evaluation Sheet to Address on Form Certification
520	Bridge Joint Modification Structural Concrete Expansion Device		EA LUMP	1 1	Certification Concrete Testing as per Standard Specification 502 and Special Provision 502 See Section 502 of This Doccument Certification
521	Fabric Trough for Finger Joint		EA	1	Certification (each lot, 1 meter sample required) See Special Provision 521
522	Modular Expansion Device		LF	1	Certification
523	Elastometric Bridge Bearing - Laminated		EA	1	Certification and Test Reports and 1 Bearing for elastructive testing See Special Provision 523
527	Portable Crash Barrels		EA	1	Certification
535	Precast Pre stressed Concrete Superstructure		EA	1 1 1 1 1	Quality Coarse Aggregate Quality Fine Aggregate Set of gradations by MDOT Set of 2 Cylinder by MDOT Set(s) of 8 Cylinders by Contractor, per placement Certification(100% complete)
601	Gabions		CY	1	Certification by Manuf./shipment
603	Culvert Pipe Inlet Grate Units		LF EA	1 1 1	Certification (100% covered pipe) Certification (gaskets) Certification
604	Catch Basins & Manholes Mortar Sand		EA EA EA EA LUMP	1 1 1 1 1 1	Certification (precast, Type F, B, A) Certification (blocks, rebuild) Certification (metal, Type E) Certification (castings, grates) Gradation Colormetric

	Traps		EA	1	Certification
605	Underdrain, Type "B"		LF	0	Grad(sand) / 1000 lf (Type B+Type C)
	Underdrain, Type "C"		LF	0	Gradation (stone) / 2000 lf (Type C)
606	Guard Rail		LF	1	Certification (beams, posts, Brackets, & hdware)
	Delineator Post		EA	1	Certification
	Modified Eccentric Loader Terminal		EA	1	Certification
	Breakaway Cable Terminal		EA	1	Certification
	Terminal End		EA	1	Certification
	Single Wood Post		EA	1	Certification
	Guardrail Post		EA	1	Certification
	Multi-Mailbox Support		EA	1	Certification
	Transition Section		EA	1	Certification
	Transition Section Thrie Beam		EA	1	Certification
	Thrie Beam		LF	1	Certification
	Terminal Connector		EA	1	Certification
	350 Flared Terminal		EA	1	Certification
	Low Volume End		EA	1	Certification
	Modify Twisted End Section		EA	1	Certification
	Bridge Connector		EA	1	Certification
	End Post (Calculate total CY)		CY		Concrete Testing as per Standard Specification 502 and Special Provision 502 See Section 502 of This Doccument
	Reinforcing Steel			1	Certification
	Silica Fume			1	Certification
607	Fencing		LF	1	Certification (gates, wire fabric, posts & braces)
608	Concrete Sidewalk		SY		Concrete Testing as per Standard Specification 502 and Special Provision 502 See Section 502 of This Doccument
	Calculate total CY for sidewalk		CY		
610	Portland Cement for Riprap Grout		BBLS	1	Certification
611	Slab for Backslope Protection		SY		Concrete Testing as per Standard Specification 502 and Special Provision 502 See Section 502 of This Doccument
	OR				
	Precast Slab				Set of 8 Cylinders by Contractor, per placement See Standard Specification 712 and Special Provisions
	Reinforcing Steel			1	Certification
613	Erosion Control Blanket		SY	1	Certification
614	Fertilizer		LB	1	Certification (Formulation data to be imprinted on bag or on a tag securely attached to the bag.)
617	Erosion Control Mesh		SY	1	Certification
618 &657	Seeding		UN	1	Certification & Sample (> 1 pound) to Bangor Lab
	Crown Vetch Seed		LB	1	Certification

	Annual Rye Grass		LB	1	Certification
619	Mulch		UN	1	Certification
620	Geotextile		SY	1	Manufacturers product sheet for each type of geotextile or on approved list
621	Planting Trees (add all trees)		each	1	Inspection Statement (from Landscape Section)
625	Water Service Supply Line		LF	1	Certification
626	Foundations		EA		Concrete Testing as per Standard Specification 502 and Special Provision 502 See Section 502 of This Doccument
	Calculate total CY for all foundations		CY		
	Anchor Bolts			1	Certification
	Reinforcing Steel			1	Certification
627	Pavement Markings		LF	1	Certification
			SY	1	Certification
636	MSE Retaining Wall		SY	1	Certification
	Footing				Concrete Testing as per Standard Specification 502 and Special Provision 502 See Section 502 of This Doccument
	Crushed Stone			1	Gradation
	Precast Panels			1	Class "P" Mix Design by Contractor
				1	Quality Coarse Aggregate
				1	Quality Fine Aggregate
				1	Set of gradations by MDOT
				1	Set of 2 Cylinder by MDOT
				1	Set(s) of 6 Cylinders by Contractor, per placement
	Reinforcing Steel			1	Certification
	Cement			1	Certified Mill Test
					See Special Provision 636
642	Precast Concrete Steps		EA	1	Certification
643	Traffic Signals		LUMP	1	Certification 100% covered
645	Demountable Reflect. Delineator		EA	1	Certification
	Overhead Guide Sign		LUMP	1	Certification
656	Temp. Soil Erosion & Water P. C. P.		LUMP	1	Approved Plan See Spec Prov 656
658	Acrylic Latex, Green		SY	1	Certification

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT
MINIMUM TESTING REQUIREMENTS

EXAMPLE

Project No.: BR-7965(550)X, BR-7965(560) **Date:** 12/10/04

Pin No.: 7965.55, 7965.56

Town: Prospect, Verona **Length:** _____ **miles**

Location: In Waldo and Hancock County, towns of Prospect and Verona; the bridge over the Penobscot River.

Item No.	Description	Quantity	Unit	Est # of Passing Accept. Tests	Type of Tests
NOTE: FILL OUT PRODUCT EVALUATION REPORT AT COMPLETION OF PROJECT. SEND TO ADDRESS ON FORM					
	"Buy America Clause"				Certified Statement On Contractor's Letterhead
203	Bridge Abutments	2		37	Total Depth in feet of Granular Backfill abutting each structure
	please note if rock fill is used for backfill compactions figured for granular backfill and document reason for lacking compactions			37	Compaction (one every other layer each side of structures)
	Common Borrow	14200	CY	1	Moisture contents or one each 15,000 CY - Not required if granular material used
	Granular Borrow	500	CY	1	Gradation 1/ 5,000 CY
304	Aggregate Sub base-Gravel	7600	CY	4	Gradation 1/ 2,500 CY
	Total length in feet of A.S.G. (lower)	900	LF	1	Compaction (lower)
	Total length in feet of A.S.G. (upper)	900	LF	1	Compaction (upper)
					Compactions are based on 1 test per 2000 LF per lane per layer
				1	Degradation (one / source / project) If initial value is > 24 test at rate of 1/10,000 CY initial value <25, test at rate of 1/5,000 CY
	Aggregate Base	180	CY	1	Gradation 1/ 1 2,500 CY
	Total length in feet of Agg. Base		LF	0	Compaction 1/ 2,000 LF
QUALITY ASSURANCE ITEM					
QC PLAN BY CONTRACTOR REQUIRED WITHIN 21 DAYS OF CONTRACT EXECUTION OR 30 DAYS BEFORE ANY RELATED WORK					
If remaining Tons at the end of an item are 1/2 of a sublot or more, add another sublot; if less than half, add Tons to last sublot.					
Two Plant Checks by Testing Section Required for Each Five Days of Operation					
403	Hot Bituminous Pavement			1	Job Mix Formula per mix
	METHOD A				
					METHOD "A"
	403.207	1280	Ton	4	Gradation 1 / 1,100 T sublot
	"19.0 mm"			4	Asphalt Cont. 1 / 1,100 T sublot
				4	Air Voids Analysis

					1 / 1,100 T sublot
	Mainline	730	Ton	5	Core Densities 1 / 550 T sublot
	Shoulder			0	Core Densities (Method A)
		550		1	Core Densities at Opt of Resident
					METHOD "A"
	403.208	1150	Ton	4	Gradation 1 / 1,100 T sublot
	"12.5 mm Surface"			4	Asphalt Cont. 1 / 1,100 T sublot
				4	Air Voids Analysis 1 / 1,100 T sublot
	Mainline	660	Ton	5	Core Densities 1 / 275 T sublot
			LF	0	Pavement Smoothness Lots 1/ 3,000 LF Per Lane
	Shoulder			0	Core Densities (Method A)
		490		1	Core Densities at Opt of Resident
					METHOD "A"
	403.210	1625	Ton	4	Gradation 1 / 1,100 T sublot
	"9.5 mm Surface"			4	Asphalt Cont. 1 / 1,100 T sublot
				4	Air Voids Analysis 1 / 1,100 T sublot
	Mainline	935	Ton	5	Core Densities 1 / 275 T sublot
			LF	0	Pavement Smoothness Lots 1/ 3,000 LFt Per Lane
	Shoulder			0	Core Densities (Method A)
		690		1	Core Densities at Opt of Resident
		METHOD C			
	Quantity of Method C Mixes	790	Ton	3	Gradations
	Number of Method C Mixes	3	mixes	3	Asphalt Contents
				0	Core Densities
	List Mixes:				Method "C" Requires
	403.209				Gradation and Asphalt Contents
	-				Densities as per Spec Prov 403
	-				Pay according to Special Provision 401 Method "C"
	Bituminous Material			1	Loading Invoice with each shipment of material from supplier
	TESTING BASED ON TONS PRODUCED				
409	Bituminous Tack Coat Applied	610	G	1	Loading Invoice with each shipment of material and statement of certification (See Division 700 of Standard Specifications.)
410	Bituminous Surface Treatment	630	SY	1	Gradation 1 / 500 SY
411	Untreated Aggregate Surface Course	80	CY	1	Gradation 1 / 500 CY
	QUALITY ASSURANCE ITEM				
	QC PLAN BY CONTRACTOR REQUIRED WITHIN 21 DAYS OF CONTRACT EXECUTION OR 30 DAYS BEFORE ANY				
	RELATED WORK				
	One Plant Check by Testing Section Required for Each Five Sublots				
	NOTE: If CY is more than half the sublot size, add another sublot; however, if less than half the sublot size, add to previous sublot.				
502	Structural Concrete			1	Quality of Coarse Aggregate

				1	Quality of Fine Aggregate
				1	Set of Verification Gradations
					Per five sublots
				1	PCC Mix Design Per Class of Conc
					METHOD "A"
	Class "A2"		c.y.	28	Set(s) of 2 cylinders / lot
	502.202 Struct Conc Pylon Diaphragm	**1490**		28	Air test / lot
	502.203 Struct Conc Pylon Above Deck	**527**		28	Set(s) of 2Cyl. for Rapid Chloride
	502.204 Struct Conc Pylon Above Deck	**4979**			Permeability / lot
	6000 PSI				Measure Surface Tolerance, Alignment and Trueness, Plumb and Batter and Finish as per Special Prov. 502 Sec 502.0502
					METHOD "B"
	Class "A"		c.y.	10	Set(s) of 2 cylinders / lot
				10	Air test / sublot
	502.211 Struct Conc Abuts. & Footing	**671**		10	Set(s) of 2Cyl. for Rapid Chloride
	502.3422 Struct Conc. Median Cap	**249**			Permeability / sublot
	4500 PSI				Measure Surface Tolerance, Alignment and Trueness, Plumb and Batter and Finish as per Special Prov. 502 Sec 502.0502
					METHOD "B"
	Class "LP"		c.y.	9	Set(s) of 2 cylinders / lot
				9	Air test / lot
				9	Set(s) of 2Cyl. for Rapid Chloride
	502.48 Struct Conc. Curb & Barrier	**657**			Permeability / lot
					Measure Surface Tolerance, Alignment and Trueness, Plumb and Batter and Finish as per Special Prov. 502 Sec 502.0502
	METHOD "C"		c.y.	1	Set(s) of 2 Cylinders
	Class A			1	Air test
				1	Set(s) of 2Cyl. for Rapid Chloride
	502.35 Struct Conc Approach slab	**38**			Permeability
	-				
	-				One Set of Tests / Class / 100 m³
503	Reinforcing Steel	approx 5,000,000	LB	1	Certification
507	Bridge Railing	4227	LF	1	Certification
					Sample 4 Washers, 4 Nuts 4 Anchor bolts to Central Lab (each manufacturer, each size) 3 weeks prior to use
508	Membrane Waterproofing	lump	LUMP	1	Certification (100% covered) Complete and Send Attached Product Evaluation Sheet to Augusta
515	Epoxy Resin Surface Sealant	6200	SY	1	Certification
	Protective Coating for Concrete Surfaces		LUMP	1	Certification
521	Expansion Device Finger Joint	96	LF	1	Certification
523	Bearing Installation	4	EA	1	Certification and Test Reports and 1 Bearing

					for elastructive testing See Special Provision 523
527	REACT-350	2	EA	1	Certification
535	**Class A2** **6000 PSI** **535.251 CIP Segmental Box** **4 Lots of 13 sublots each +/-**	 **12,202**	c.y.	13 13 13 13 1	Quality Coarse Aggregate Quality Fine Aggregate Set of gradations by MDOT Set of 2 Cylinder by MDOT Set(s) of 8 Cylinders by Contractor, per placement Certification(100% complete)
603	Culvert Pipe Inlet Grate Units	492 	LF EA	1 1 1	Certification (100% covered pipe) Certification (gaskets) Certification
604	Catch Basins & Manholes	9	EA	1	Certification (precast, Type F, B, A)
605	Underdrain, Type "B" Underdrain, Type "C"	50 275	LF LF	1 1	Grad(sand) / 1000 lf (Type B+Type C) Gradation (stone) / 2000 lf (Type C)
606	Guard Rail Delineator Post Terminal End Guardrail Post 350 Flared Terminal Bridge Transition	1580.00 12 2 20 2 4	LF EA EA EA EA EA	1 1 1 1 1 1	Certification (beams, posts, Brackets, & hdware) Certification Certification Certification Certification Certification
608	Concrete Sidewalk Calculate total m³ for sidewalk Reinforced Concrete Sidewalk	 186	m² m³	1 1 1 5 5	Quality of Coarse Aggregate Quality of Fine Aggregate Set(s) of Field Gradation 1/ 100 m³ Set(s) of 2 Cylinder Set(s) of 2Cyl. for Rapid Chloride Permeability / sublot
617	Erosion Control Mix	1600	CY	1	Certification
618 &657	Seeding Crown Vetch Seed Annual Rye Grass	140 	UN LB LB	1 1 1	Certification & Sample (> 1 pound) to Bangor Lab Certification Certification
619	Mulch	160	UN	1	Certification
620	Geotextile	160	SY	1	Manufacturers product sheet for each type of geotextile or on approved list
627	Pavement Markings	19500 590	LF SF	1 1	Certification Certification
656	Temp. Soil Erosion & Water P. C. P.	lump	LUMP	1	Approved Plan See Spec Prov 656