



Paul R. LePage
GOVERNOR

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0016

David Bernhardt
COMMISSIONER

March 10, 2011
Subject: **Freeport Brunswick**
Federal Project No: IM-1677(200)E
& IM-1677(300)E
State PIN: 016772.00 & 016773.00
Amendment No. 1

Dear Sir/Ms:

Make the following changes to the Bid Documents:

In the Bid Book (pages 4 thru 10) **REMOVE** the "SCHEDULE OF ITEMS", 7 pages dated 110224 and **REPLACE** with the attached new "SCHEDULE OF ITEMS", 7 pages dated 110310.

In the Bid Book after page 61 **ADD** the attached **TWO** "SPECIAL PROVISION, PROTECTION OF RAILROAD TRAFFIC AND STRUCTURES" 9 pages each (18 pages total) and each dated 3/2/11. Add in the following order

Freeport – Brunswick 16772.00 I-295NB

Freeport – Brunswick 16773.00 I-295SB

In the Bid Book (pages 87 and 88) **REMOVE** "SPECIAL PROVISION, SECTION 108, PAYMENT, (Asphalt Escalator)" 2 pages dated January 24, 2011 and **REPLACE** with the attached new "SPECIAL PROVISION, SECTION 108, PAYMENT, (Asphalt Escalator)" 2 pages dated March 1, 2011.

In the Bid Book after page 142 **ADD** the attached "SPECIAL PROVISION, SECTION – 627, GROOVING FOR PAVEMENT MARKING", 1 page dated March 8, 2011.

In the Bid Book after page 142 **ADD** the attached "SPECIAL PROVISION, SECTION – 627, HIGH BUILD ACRYLIC WATERBORNE PAVEMENT MARKING PAINT", 1 page.

In the Bid Book after page 142 **ADD** the attached "SPECIAL PROVISION, SECTION – 627, HIGH BUILD WET REFLECTIVE PAVEMENT MARKINGS", 2 pages dated March 8, 2011.



PRINTED ON RECYCLED PAPER

Consider these changes and information prior to submitting your bid on March 23, 2011.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Bickford", followed by the letters "TOR" in a stylized, possibly stamped or typed, font.

Scott Bickford
Contracts & Specifications Engineer

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SCHEDULE OF ITEMS

REVISED:

CONTRACT ID: 016772.00

PROJECT(S): IM-1677(200)E

IM-1677(300)E

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
SECTION 0001 PROJECT ITEMS						
0010	201.11 CLEARING	3.500 AC				
0020	202.202 REMOVING PAVEMENT SURFACE	371000.000 SY				
0030	202.205 RUMBLE STRIPS - SHOULDER	167300.000 LF				
0040	203.24 COMMON BORROW	1400.000 CY				
0050	205.412 RECONSTRUCTION OF EXISTING SHOULDER	1800.000 SY				
0060	205.512 WIDENING OF EXISTING SHOULDER	3050.000 SY				
0070	304.10 AGGREGATE SUBBASE COURSE - GRAVEL	1800.000 CY				
0080	403.208 HOT MIX ASPHALT 12.5 MM HMA SURFACE	7900.000 T				
0090	403.2081 12.5 MM POLYMER MODIFIED HOT MIX ASPHALT	33500.000 T				
0100	403.211 HOT MIX ASPHALT (SHIMMING)	800.000 T				

SCHEDULE OF ITEMS

REVISED:

CONTRACT ID: 016772.00

PROJECT(S): IM-1677(200)E

IM-1677(300)E

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0110	403.213 HOT MIX ASPHALT 12.5 MM BASE	1050.000 T				
0120	409.15 BITUMINOUS TACK COAT - APPLIED	18500.000 G				
0130	410.151 EMULSIFIED ASPHALT SEALCOAT, APPLIED	13100.000 SY				
0140	424.3331 ASPHALT LOW MODULUS CRACK SEALER, APPLIED	2100.000 LB				
0150	424.3333 LOW MODULUS JOINT SEALER, APPLIED	89500.000 LF				
0160	424.37 CRACK REPAIR	600.000 LF				
0170	504.07 CONCRETE PIPE TIES	46.000 GP				
0180	518.50 REPAIR OF UPWARD FACING SURFACES - TO REINFORCING STEEL < 7.9 IN. CONCRETE SLAB REPAIR	500.000 SF				
0190	518.51 REPAIR OF UPWARD FACING SURFACES - BELOW REINFORCING STEEL < 7.9 IN. CONCRETE SLAB REPAIR	150.000 SF				
0200	527.301 ENERGY ABSORBING SYSTEM (C-A-T)	1.000 EA				

SCHEDULE OF ITEMS

REVISED:

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CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0210	603.175 18 INCH REINFORCED CONCRETE PIPE CLASS III	48.000 LF				
0220	603.195 24 INCH REINFORCED CONCRETE PIPE CLASS III	64.000 LF				
0230	603.7412 REMOVE & RELAY 12 INCH CONCRETE PIPE	24.000 LF				
0240	603.7418 REMOVE & RELAY 18 INCH CONCRETE PIPE	72.000 LF				
0250	603.7424 REMOVE & RELAY 24 INCH CONCRETE PIPE	148.000 LF				
0260	603.743 REMOVE & RELAY 30 INCH CONCRETE PIPE	40.000 LF				
0270	604.164 REBUILDING CATCH BASIN	4.000 EA				
0280	604.245 CATCH BASIN TYPE F4-C	1.000 EA				
0290	605.11 12 INCH UNDERDRAIN TYPE C	500.000 LF				
0300	606.1721 BRIDGE TRANSITION - TYPE 1	2.000 EA				
0310	606.178 GUARDRAIL BEAM	300.000 LF				

SCHEDULE OF ITEMS

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0320	606.24 GUARDRAIL TYPE 3D - SINGLE RAIL	3100.000 LF				
0330	606.265 TERMINAL END - SINGLE RAIL - GALVANIZED STEEL	6.000 EA				
0340	606.352 REFLECTORIZED BEAM GUARDRAIL DELINEATORS	830.000 EA				
0350	606.353 REFLECTORIZED FLEXIBLE GUARDRAIL MARKER	69.000 EA				
0360	606.356 UNDERDRAIN DELINEATOR POST	145.000 EA				
0370	606.79 GUARDRAIL 350 FLARED TERMINAL	7.000 EA				
0380	609.31 CURB TYPE 3	900.000 LF				
0390	609.40 RESET CURB TYPE 5	325.000 LF				
0400	610.08 PLAIN RIPRAP	120.000 CY				
0410	613.319 EROSION CONTROL BLANKET	800.000 SY				
0420	615.07 LOAM	200.000 CY				

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LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0430	618.1401 SEEDING METHOD NUMBER 2 - PLAN QUANTITY	670.000 UN				
0440	619.1201 MULCH - PLAN QUANTITY	670.000 UN				
0450	619.1401 EROSION CONTROL MIX	125.000 CY				
0460	620.58 EROSION CONTROL GEOTEXTILE	250.000 SY				
0470	627.18 12 " SOLID WHITE PAVEMENT MARKING	6420.000 LF				
0480	627.30 GROOVING FOR PAVEMENT MARKING	38000.000 SF				
0490	627.306 6" WHITE OR YELLOW HIGH-BUILD WET REFLECTIVE PAVEMENT MARKINGS	33000.000 LF				
0500	627.744 6" WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE	285000.000 LF				
0510	627.75 WHITE OR YELLOW PAVEMENT & CURB MARKING	475.000 SF				
0520	627.781 TEMPORARY 6 INCH PAINTED PAVEMENT MARKING LINE, WHITE OR YELLOW	600000.000 LF				

SCHEDULE OF ITEMS

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CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0530	629.05 HAND LABOR, STRAIGHT TIME	55.000 HR				
0540	631.12 ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	325.000 HR				
0550	631.122 MINI ALL-PURPOSE EXCAVATOR (INCLUDING OPERATOR)	75.000 HR				
0560	631.133 SKID STEER (INCLUDING OPERATOR)	30.000 HR				
0570	631.14 GRADER (INCLUDING OPERATOR)	90.000 HR				
0580	631.172 TRUCK - LARGE (INCLUDING OPERATOR)	450.000 HR				
0590	631.18 CHAIN SAW RENTAL (INCLUDING OPERATOR)	25.000 HR				
0600	631.22 FRONT END LOADER (INCLUDING OPERATOR)	25.000 HR				
0610	631.29 ROTOTILLER (INCLUDING OPERATOR)	150.000 HR				
0620	631.32 CULVERT CLEANER (INCLUDING OPERATOR)	40.000 HR				
0630	639.18 FIELD OFFICE TYPE A	1.000 EA				

SCHEDULE OF ITEMS

REVISED:

CONTRACT ID: 016772.00

PROJECT(S): IM-1677(200)E

IM-1677(300)E

CONTRACTOR : _____

LINE NO	ITEM DESCRIPTION	APPROX. QUANTITY AND UNITS	UNIT PRICE		BID AMOUNT	
			DOLLARS	CTS	DOLLARS	CTS
0640	645.306 FLEXIBLE REFLECTORIZED DELINEATOR	200.000 EA				
0650	652.30 FLASHING ARROW BOARD	6.000 EA				
0660	652.33 DRUM	400.000 EA				
0670	652.34 CONE	1000.000 EA				
0680	652.35 CONSTRUCTION SIGNS	4400.000 SF				
0690	652.36 MAINTENANCE OF TRAFFIC CONTROL DEVICES	159.000 CD				
0700	652.38 FLAGGER	50.000 HR				
0710	652.41 PORTABLE CHANGEABLE MESSAGE SIGN	6.000 EA				
0720	656.75 TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL	LUMP	LUMP			
0730	659.10 MOBILIZATION	LUMP	LUMP			
	SECTION 0001 TOTAL					
	TOTAL BID					

**SPECIAL PROVISION
PROTECTION OF RAILROAD TRAFFIC AND STRUCTURES**

1. GENERAL REQUIREMENTS

Part of the work required by the Contract will be performed within a railroad right of way and/or adjacent to the tracks, telephone, telegraph, signal and electric supply lines of a railroad or railroads. The Contractor agrees to perform all such work in compliance with all of the terms of this Special Provision and all safety rules, regulations, or standards applicable to the Railroad. The Contractor shall be fully responsible for all damages arising from its failure to comply with the requirements of this Special Provision. The Contractor shall be deemed to have included all costs in the unit prices of the Schedule of Prices and the Proposal.

2. AMOUNT OF RAILROAD WORK

The estimated amount of work to be done within 15.24 Meters (50 feet) of the track of the **Pan Am Railways** is <1% of the contract.

3. NUMBER OF TRAINS AND TRAIN SPEED

The Contractor is notified that a maximum speed of 25 mph will be considered as prevailing for the operation of trains of the Railroad at this project and that the approximate number of trains per day at this project is <1 (2-4 Trains/Week).

4. PRIORITY OF RAILROAD OPERATIONS

The train movements of the Railroad, and its lessees, and licensees shall have absolute priority over the performance of the Construction Project within the railroad right of way. The Contractor hereby agrees that the hours and times of work within the Railroad right of way must be coordinated through the Railroad and that such hours and times are subject to change without prior notice to the Contractor, unless other prior arrangements have been made through the Railroad.

5. AUTHORITY OF RAILROAD TO STOP WORK

If the Contractor fails to comply with the safety terms of this Special Provision, or if the Chief Engineer of the Railroad determines that the Contractor is using unsafe practices that threaten the safety of rail traffic, rail workers, or the general public, the Railroad shall have the right to immediately order the Contractor to cease work and vacate the Railroad's property. The Railroad agrees to confirm any cessation of work in writing by delivering to the Department's Construction Manager a completed Stop Work Order form attached as Exhibit A within 24 hours of giving any such order.

6. ENTRY UPON RAILROAD PROPERTY

The Railroad hereby agrees to permit the Contractor, together with their subcontractors, suppliers, consultants and engineers (the "Contractor"), to enter upon the Railroad property for the purpose of performing the Construction Project, PROVIDED THAT the Contractor complies with all of the terms of this Special Provision and all safety requirements and directions of the Chief Engineer of the Railroad, or his authorized representative (the "Railroad's Chief Engineer").

7. NOTICE REQUIRED BEFORE ENTRY

The Contractor shall give written notice to the Railroad's Chief Engineer at least 7 calendar day(s) in advance of the time it proposes to do work within the limits of the Railroad right-of-way or perform operations that may create a Hazard as specified by this Special Provision. The Contractor shall give such notice regardless of whether the work may also be within the limits of a public highway.

8. HAZARDS

The Contractor shall assess to its own satisfaction hazards which may be caused by its operations. At a minimum, the Contractor agrees that the following shall constitute Hazards.

An operating track shall be considered fouled and subject to hazard when any object is brought nearer than 15 feet to the gauge line of the near rail of the track.

A signal line or communication line shall be considered fouled and subject to hazard when any object is brought nearer than 10 feet to any wire or cable.

An electric supply line shall be considered fouled and subject to hazard when any object is brought nearer than 10 feet to any wire of the line.

Cranes, trucks, power shovels or any other equipment shall be considered as fouling and subjecting to hazard a track, signal line, communication or electric supply line when working in such position that failure of equipment, with or without load, could foul the track, signal line, communication or electric supply line.

Railroad operation will be considered subject to hazard when explosives are used in the vicinity of railroad premises, or during the driving or pulling of sheeting for any footing adjacent to a track, or when erecting structural steel adjacent to a track, or when performing work under, across or adjacent to a track, or when operations involve, swinging booms or chutes that could in any way come nearer than 15 feet to the gauge line of the near rail of the track, or when erection or removal of staging, false work or forms fouls a track or wire line.

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None of the operations specified as a Hazard above shall be carried on during the approach or passing of a train or without permission from the Railroad's Chief Engineer and the presence of a railroad inspector/flagman, unless other prior arrangements have been made through the Railroad.

9. MINIMUM CLEARANCES

During the construction of staging, false work or forms, the Contractor shall at all times maintain a minimum vertical clearance of 22.5 feet above the top of high rail and a minimum side clearance of 10 feet from the gauge line of the near rail where track is tangent. Additional side clearance must be maintained where track is on a curve.

10. WORK PLAN SUBMITTAL AND APPROVAL

The Contractor shall submit in writing to the Railroad's Chief Engineer or duly authorized representative, and the Department's Railroad Property Manager or his appointed representative, at least 14 calendar day(s) in advance of the start of the project, an outline of his plan for work within the Railroad right of way including contemplated method(s) of construction. This plan must meet with the approval of the Railroad's Chief Engineer and the Department's Railroad Property Manager in every respect. If the Contractor contemplates the use of "on the track equipment", it should so state and obtain from the Railroad the conditions pertaining to such operations. All Railroad costs included in this operation will be borne by the Contractor. In a like manner, any of the Contractor's equipment or material on cars for this project shall be handled in conformance with existing traffic rules with all costs borne by the Contractor.

Prior to submitting its Proposal, the Contractor shall have ascertained from the Railroad and from the Department's Railroad Property Manager or his appointed representative, all information relating to its requirements and regulations and all costs in connection with compliance thereto.

11. EXCAVATIONS

Before excavation for footings adjacent to tracks and/or within the Railroad's right-of-way may commence, whether or not also within the limits of a public highway, plans and calculations for such excavations, prepared by a Professional Engineer authorized to practice in Maine, shall be submitted to the Railroad's Chief Engineer for review and approval. Unless other prior arrangements have been made, the Railroad's Chief Engineer shall have 2 week(s) to perform such review and approval and issue a written permission to proceed with the excavation. No excavation shall proceed without such permission.

At a minimum, excavations must utilize proper bracing, shoring, sheeting or other support as determined by the Railroad's Chief Engineer, to support the tracks with railroad traffic. Open excavation shall be suitably planked over when construction operations are not in progress. No excavation work shall be performed by the Contractor within the limits of the Railroad right of way, whether or not also within the limits of a public highway, until the Contractor has ascertained from the Chief Engineer of the railroad the location of any wires, conduits, pipes, cables or other railroad facilities below the surface of the ground. Damage to any such facilities caused by the failure of the Contractor to ascertain the location of such facilities or by failure to use due care to avoid injury to such facilities shall be at the expense of the Contractor.

12. EQUIPMENT

Equipment of the Contractor shall be in such condition so as to prevent failure that would cause delay in the operation of trains or damage to railroad facilities. Equipment shall not be placed or put in operation adjacent to a track without first obtaining permission of the Railroad. The Railroad agrees that such permission shall not be unreasonably withheld.

13. RAILROAD SERVICES - GENERALLY

When work is to be performed within the Railroad's right-of-way, the Railroad shall provide the services, equipment and materials provided in this Special Provision including, but not limited to, engineering, flagging, inspection, signal protection and/or relocation, and restoration or replacement of the Railroad's track structure of ballast. Further, if the Railroad's Chief Engineer determines that the Contractor's operations do not comply with all of the safety requirements of this Special Provision and all safety requirements and directions of said Chief Engineer, the Railroad will employ the necessary qualified employees to protect its trains and other facilities. The Contractor shall pay to the Railroad the cost for performing all Railroad Services unless said costs are to be paid by the Department as specified in this Special Provision.

14. INSPECTION / FLAGGING

The Railroad shall furnish and assign all inspectors / flaggers for general inspection purposes of general protection of railroad property and operations during construction as the Railroad's Chief Engineer determines are necessary to preserve safety.

(a) Responsibility for Cost. The Department will bear the cost of flagging or inspection (including travel time) or any combination thereof up to 0 man days of said flagging or inspection. If, in the opinion of the Railroad's Chief Engineer, further services of a flagger or inspector will be required due to the operations of the Contractor, the services will be furnished and the cost thereof (salary, expenses, insurance, taxes and vacation allowance, etc.) shall be paid to the Railroad by the Department, and will be recovered by the Department from the Contractor.

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(b) Terms. The minimum hours per day for the Railroad employees engaged in inspection flagging services shall be eight (8) hours. Time at rates for straight time, overtime or for deadheading starts in accordance with established practices in effect in the territory in which the project is located. Information as to these practices should be obtained from the Railroad's Chief Engineer.

The Contractor shall notify the Railroad's Chief Engineer and the Chief Engineer of the Department in writing 7 calendar day(s) before beginning, resuming or suspending work within 25 feet of the track, so that an inspector may be provided or removed in accordance with the requirements of this Special Provision. An inspector may be removed upon 3 calendar day(s) notice. Failure to give notice of intent to suspend work shall be cause of charge to the Contractor the cost of inspection during the period when work is suspended.

(c) Estimated Cost. The following is an estimate of the cost per day of inspection/flagging necessary for this project. The rates shown include all overhead charges, travel time, deadheading and personal expenses.

Date of estimate 3/2/2011.

Estimated daily rate for four (4) consecutive hours Monday-Friday (straight time): \$183.60

Estimated daily rate for four (4) consecutive hours Saturday, Sunday, Holiday (overtime):
\$367.20

Estimated rate for hours worked in excess of eight (8) hours in any one day: \$91.80

Rates charged will be those in effect at the time of the performing the inspection/ flagging which may be different than the rates used at the date of the Estimate. The Railroad agrees to notify the Department if rates used to calculate the above estimates change before the date of bids are received for this Contract.

(d) Definitions.

Man day (M.D.) - eight (8) consecutive hours or any portion thereof.

Overtime - Each additional hour or fraction thereof consecutive to and beyond the standard man day will count as 3/16 of a man day.

Standard Man day - Eight (8) consecutive hour, Monday - Friday between the hours of 07:00 a.m. to 15:30 p.m. unless otherwise noted and agreed to by all parties. *(Note: Does not include lunch period from 12:00 pm to 12:30 pm)*

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Travel Time - Time required by flagger and/or inspector to commute between his or her point of headquarters to the project site. This time shall not be charged used in determining available man days.

15. OTHER CONTRACTOR RESPONSIBILITIES

The restoring and resurfacing of tracks, if disturbed due to Contractor's operations, shall be at the expense of the Contractor.

Any other changes made or services furnished by the Railroad as a result of the Contractor will be at the Contractor's expense.

16. EXTRA-CONTRACT SERVICES

Temporary and permanent changes of tracks and telephone, signal and electric supply lines made necessary by or to clear the permanent work of the Contractor as shown on the construction plans and included in the Railroad force account as collectable from the State will be made or caused to be made by the Railroad without expense to the Contractor.

17. INDEMNIFICATION

Where work is being performed over, under, across or adjacent to Railroad premises, the Contractor shall defend, indemnify and save harmless the Railroad and the Maine Department of Transportation from and against any and all loss, cost, damage, claims, suits, demands, or liability for damages for personal injury including death and for damage to property, which may arise from or out of the operations conducted under his contract, occurring by reason of any act or omission of the Contractor, his agents, servants or employees, or by reason of any act or omission of any subcontractor, his agents, servants or employees.

18. INSURANCE

In addition to any other forms of insurance or bonds required under the terms of the Contract, the Contractor will be required to procure and maintain, at its sole cost and expense, the following insurance coverages naming the Railroad as an insured.

(a) Railroad Protective Liability Insurance with limits not less than **\$2M** per single occurrence and **\$6M** per aggregate total occurrences.

(b) Comprehensive General Liability Insurance protecting against liability from bodily injury or property damage arising out of the Construction Project with limits of not less than **\$2M** per single occurrence and **\$6M** per aggregate total occurrences.

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(c) Workers Compensation and Occupational Disease Insurance, as required by law.

(d) Automobile Liability Insurance covering all motor vehicles used about or in connection with the Construction Project.

If any part of the work is sublet, these insurance coverages shall be provided by or on behalf of the subcontractors to cover their operations

Each policy shall carry an endorsement covering the “save harmless” clause in favor of the Railroad and the Maine Department of Transportation, as set forth in the paragraph, “Responsibility for Damage Claims”.

If blasting is to be done in the vicinity of the Railroad, the insurance policies shall include such coverage.

The policies shall be in force before any work is done on the project and shall remain in effect until all work required to be performed under the terms of the contract is satisfactorily completed as evidenced by the formal acceptance by the State and the Railroad.

Before any work is done on the project, the Department of Transportation and the Railroad's Chief Engineer shall be furnished certificates of each policy. Further, the original policy of the Comprehensive General Liability Insurance and the Railroad Protective Liability Insurance shall be furnished to the Railroad's Chief Engineer and a duplicate shall be furnished to the Department of Transportation.

The policy or policies of the Railroad's protective public liability and property damage liability shall be written by a Company authorized to do business in the State of Maine, and shall be signed by the President and Secretary of the Insurance Company and shall be countersigned by an authorized representative of the Company.

19. ROADWAY WORKER SAFETY REGULATION

Notice to all Contractors/Subcontractors and individuals must be aware of the Federal Roadway Worker Safety Regulation, CFR 49, Part 214(c). They may be required to comply with this regulation. Any requirements for them to comply will be discussed at the pre-construction utility meeting.

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EXHIBIT A
ORIGINAL TO CONTRACTOR

MDOT/RAILROAD STOP WORK ORDER

[illegible]

cc: MDOT - R.E. or Inspector
MDOT - Utility Section
MDOT - Construction Division
Railroad - Chief Engineer

1. Risk Assessment. Each identified/validated hazard shall be assigned a Risk Assessment Code (RAC) by the Safety Office. The RAC represents the degree of risk associated with the deficiency and combines the elements of hazard severity and mishap probability. The RAC is derived as follows:

a. Hazard Severity. The hazard severity is an assessment of the worst potential consequence: Defined by degree of injury, occupational illness, or property damage, which is likely to occur as a result of a deficiency. Hazard severity categories shall be assigned by roman numeral according to the following criteria.

(1) Category I - Catastrophic: The hazard may cause death or loss of a facility.

(2) Category II - Critical: May cause severe injury, severe occupational illness, or major property damage.

(3) Category III - Marginal: May cause minor injury, minor occupational illness, or minor property damage.

(4) Category IV - Negligible: Probably would not affect personnel safety or health, but is nevertheless in violation of a NAVOSH standard.

b. Mishap Probability. The mishap probability is the probability that a hazard will result in a mishap, based on an assessment of such factors as location, exposure in terms of cycles or hours of operation, and affected population. Mishap probability shall be assigned an Arabic letter according to the following criteria:

(1) Sub-category A - Likely to occur immediately or within a short period of time.

(2) Sub-category B - Probably will occur in time.

(3) Sub-category C - May occur in time.

(4) Sub-category D - Unlikely to occur.

c. Risk Assessment Code. The RAC is an expression of risk which combines the elements of hazard severity and mishap probability. Using the matrix shown below, the RAC is expressed as a single Arabic number that can be used to help determine hazard abatement priorities.

	Mishap Probability					RAC
		A	B	C	D	
Hazard Severity	I	1	1	2	3	1 - Critical
	II	1	2	3	4	2 - Serious
	III	2	3	4	5	3 - Moderate
	IV	3	4	5	5	4 - Minor
						5 - Negligible

**SPECIAL PROVISION
PROTECTION OF RAILROAD TRAFFIC AND STRUCTURES**

1. GENERAL REQUIREMENTS

Part of the work required by the Contract will be performed within a railroad right of way and/or adjacent to the tracks, telephone, telegraph, signal and electric supply lines of a railroad or railroads. The Contractor agrees to perform all such work in compliance with all of the terms of this Special Provision and all safety rules, regulations, or standards applicable to the Railroad. The Contractor shall be fully responsible for all damages arising from its failure to comply with the requirements of this Special Provision. The Contractor shall be deemed to have included all costs in the unit prices of the Schedule of Prices and the Proposal.

2. AMOUNT OF RAILROAD WORK

The estimated amount of work to be done within 15.24 Meters (50 feet) of the track of the Pan Am Railways is <1% of the contract.

3. NUMBER OF TRAINS AND TRAIN SPEED

The Contractor is notified that a maximum speed of 25 mph will be considered as prevailing for the operation of trains of the Railroad at this project and that the approximate number of trains per day at this project is <1 (2-4 Trains/Week).

4. PRIORITY OF RAILROAD OPERATIONS

The train movements of the Railroad, and its lessees, and licensees shall have absolute priority over the performance of the Construction Project within the railroad right of way. The Contractor hereby agrees that the hours and times of work within the Railroad right of way must be coordinated through the Railroad and that such hours and times are subject to change without prior notice to the Contractor, unless other prior arrangements have been made through the Railroad.

5. AUTHORITY OF RAILROAD TO STOP WORK

If the Contractor fails to comply with the safety terms of this Special Provision, or if the Chief Engineer of the Railroad determines that the Contractor is using unsafe practices that threaten the safety of rail traffic, rail workers, or the general public, the Railroad shall have the right to immediately order the Contractor to cease work and vacate the Railroad's property. The Railroad agrees to confirm any cessation of work in writing by delivering to the Department's Construction Manager a completed Stop Work Order form attached as Exhibit A within 24 hours of giving any such order.

6. ENTRY UPON RAILROAD PROPERTY

The Railroad hereby agrees to permit the Contractor, together with their subcontractors, suppliers, consultants and engineers (the "Contractor"), to enter upon the Railroad property for the purpose of performing the Construction Project, PROVIDED THAT the Contractor complies with all of the terms of this Special Provision and all safety requirements and directions of the Chief Engineer of the Railroad, or his authorized representative (the "Railroad's Chief Engineer").

7. NOTICE REQUIRED BEFORE ENTRY

The Contractor shall give written notice to the Railroad's Chief Engineer at least 7 calendar day(s) in advance of the time it proposes to do work within the limits of the Railroad right-of-way or perform operations that may create a Hazard as specified by this Special Provision. The Contractor shall give such notice regardless of whether the work may also be within the limits of a public highway.

8. HAZARDS

The Contractor shall assess to its own satisfaction hazards which may be caused by its operations. At a minimum, the Contractor agrees that the following shall constitute Hazards.

An operating track shall be considered fouled and subject to hazard when any object is brought nearer than 15 feet to the gauge line of the near rail of the track.

A signal line or communication line shall be considered fouled and subject to hazard when any object is brought nearer than 10 feet to any wire or cable.

An electric supply line shall be considered fouled and subject to hazard when any object is brought nearer than 10 feet to any wire of the line.

Cranes, trucks, power shovels or any other equipment shall be considered as fouling and subjecting to hazard a track, signal line, communication or electric supply line when working in such position that failure of equipment, with or without load, could foul the track, signal line, communication or electric supply line.

Railroad operation will be considered subject to hazard when explosives are used in the vicinity of railroad premises, or during the driving or pulling of sheeting for any footing adjacent to a track, or when erecting structural steel adjacent to a track, or when performing work under, across or adjacent to a track, or when operations involve, swinging booms or chutes that could in any way come nearer than 15 feet to the gauge line of the near rail of the track, or when erection or removal of staging, false work or forms fouls a track or wire line.

None of the operations specified as a Hazard above shall be carried on during the approach or passing of a train or without permission from the Railroad's Chief Engineer and the presence of a railroad inspector/flagman, unless other prior arrangements have been made through the Railroad.

9. MINIMUM CLEARANCES

During the construction of staging, false work or forms, the Contractor shall at all times maintain a minimum vertical clearance of 22.5 feet above the top of high rail and a minimum side clearance of 10 feet from the gauge line of the near rail where track is tangent. Additional side clearance must be maintained where track is on a curve.

10. WORK PLAN SUBMITTAL AND APPROVAL

The Contractor shall submit in writing to the Railroad's Chief Engineer or duly authorized representative, and the Department's Railroad Property Manager or his appointed representative, at least 14 calendar day(s) in advance of the start of the project, an outline of his plan for work within the Railroad right of way including contemplated method(s) of construction. This plan must meet with the approval of the Railroad's Chief Engineer and the Department's Railroad Property Manager in every respect. If the Contractor contemplates the use of "on the track equipment", it should so state and obtain from the Railroad the conditions pertaining to such operations. All Railroad costs included in this operation will be borne by the Contractor. In a like manner, any of the Contractor's equipment or material on cars for this project shall be handled in conformance with existing traffic rules with all costs borne by the Contractor.

Prior to submitting its Proposal, the Contractor shall have ascertained from the Railroad and from the Department's Railroad Property Manager or his appointed representative, all information relating to its requirements and regulations and all costs in connection with compliance thereto.

11. EXCAVATIONS

Before excavation for footings adjacent to tracks and/or within the Railroad's right-of-way may commence, whether or not also within the limits of a public highway, plans and calculations for such excavations, prepared by a Professional Engineer authorized to practice in Maine, shall be submitted to the Railroad's Chief Engineer for review and approval. Unless other prior arrangements have been made, the Railroad's Chief Engineer shall have 2 week(s) to perform such review and approval and issue a written permission to proceed with the excavation. No excavation shall proceed without such permission.

At a minimum, excavations must utilize proper bracing, shoring, sheeting or other support as determined by the Railroad's Chief Engineer, to support the tracks with railroad traffic. Open excavation shall be suitably planked over when construction operations are not in progress. No excavation work shall be performed by the Contractor within the limits of the Railroad right of way, whether or not also within the limits of a public highway, until the Contractor has ascertained from the Chief Engineer of the railroad the location of any wires, conduits, pipes, cables or other railroad facilities below the surface of the ground. Damage to any such facilities caused by the failure of the Contractor to ascertain the location of such facilities or by failure to use due care to avoid injury to such facilities shall be at the expense of the Contractor.

12. EQUIPMENT

Equipment of the Contractor shall be in such condition so as to prevent failure that would cause delay in the operation of trains or damage to railroad facilities. Equipment shall not be placed or put in operation adjacent to a track without first obtaining permission of the Railroad. The Railroad agrees that such permission shall not be unreasonably withheld.

13. RAILROAD SERVICES - GENERALLY

When work is to be performed within the Railroad's right-of-way, the Railroad shall provide the services, equipment and materials provided in this Special Provision including, but not limited to, engineering, flagging, inspection, signal protection and/or relocation, and restoration or replacement of the Railroad's track structure of ballast. Further, if the Railroad's Chief Engineer determines that the Contractor's operations do not comply with all of the safety requirements of this Special Provision and all safety requirements and directions of said Chief Engineer, the Railroad will employ the necessary qualified employees to protect its trains and other facilities. The Contractor shall pay to the Railroad the cost for performing all Railroad Services unless said costs are to be paid by the Department as specified in this Special Provision.

14. INSPECTION / FLAGGING

The Railroad shall furnish and assign all inspectors / flaggers for general inspection purposes of general protection of railroad property and operations during construction as the Railroad's Chief Engineer determines are necessary to preserve safety.

(a) Responsibility for Cost. The Department will bear the cost of flagging or inspection (including travel time) or any combination thereof up to 0 man days of said flagging or inspection. If, in the opinion of the Railroad's Chief Engineer, further services of a flagger or inspector will be required due to the operations of the Contractor, the services will be furnished and the cost thereof (salary, expenses, insurance, taxes and vacation allowance, etc.) shall be paid to the Railroad by the Department, and will be recovered by the Department from the Contractor.

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(b) Terms. The minimum hours per day for the Railroad employees engaged in inspection flagging services shall be eight (8) hours. Time at rates for straight time, overtime or for deadheading starts in accordance with established practices in effect in the territory in which the project is located. Information as to these practices should be obtained from the Railroad's Chief Engineer.

The Contractor shall notify the Railroad's Chief Engineer and the Chief Engineer of the Department in writing 7 calendar day(s) before beginning, resuming or suspending work within 25 feet of the track, so that an inspector may be provided or removed in accordance with the requirements of this Special Provision. An inspector may be removed upon 3 calendar day(s) notice. Failure to give notice of intent to suspend work shall be cause of charge to the Contractor the cost of inspection during the period when work is suspended.

(c) Estimated Cost. The following is an estimate of the cost per day of inspection/flagging necessary for this project. The rates shown include all overhead charges, travel time, deadheading and personal expenses.

Date of estimate 3/2/2011.

Estimated daily rate for four (4) consecutive hours Monday-Friday (straight time): \$183.60

Estimated daily rate for four (4) consecutive hours Saturday, Sunday, Holiday (overtime):
\$367.20

Estimated rate for hours worked in excess of eight (8) hours in any one day: \$91.80

Rates charged will be those in effect at the time of the performing the inspection/ flagging which may be different than the rates used at the date of the Estimate. The Railroad agrees to notify the Department if rates used to calculate the above estimates change before the date of bids are received for this Contract.

(d) Definitions.

Man day (M.D.) - eight (8) consecutive hours or any portion thereof.

Overtime - Each additional hour or fraction thereof consecutive to and beyond the standard man day will count as 3/16 of a man day.

Standard Man day - Eight (8) consecutive hour, Monday - Friday between the hours of 07:00 a.m. to 15:30 p.m. unless otherwise noted and agreed to by all parties. *(Note: Does not include lunch period from 12:00 pm to 12:30 pm)*

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Travel Time - Time required by flagger and/or inspector to commute between his or her point of headquarters to the project site. This time shall not be charged used in determining available man days.

15. OTHER CONTRACTOR RESPONSIBILITIES

The restoring and resurfacing of tracks, if disturbed due to Contractor's operations, shall be at the expense of the Contractor.

Any other changes made or services furnished by the Railroad as a result of the Contractor will be at the Contractor's expense.

16. EXTRA-CONTRACT SERVICES

Temporary and permanent changes of tracks and telephone, signal and electric supply lines made necessary by or to clear the permanent work of the Contractor as shown on the construction plans and included in the Railroad force account as collectable from the State will be made or caused to be made by the Railroad without expense to the Contractor.

17. INDEMNIFICATION

Where work is being performed over, under, across or adjacent to Railroad premises, the Contractor shall defend, indemnify and save harmless the Railroad and the Maine Department of Transportation from and against any and all loss, cost, damage, claims, suits, demands, or liability for damages for personal injury including death and for damage to property, which may arise from or out of the operations conducted under his contract, occurring by reason of any act or omission of the Contractor, his agents, servants or employees, or by reason of any act or omission of any subcontractor, his agents, servants or employees.

18. INSURANCE

In addition to any other forms of insurance or bonds required under the terms of the Contract, the Contractor will be required to procure and maintain, at its sole cost and expense, the following insurance coverages naming the Railroad as an insured.

(a) Railroad Protective Liability Insurance with limits not less than **\$2M** per single occurrence and **\$6M** per aggregate total occurrences.

(b) Comprehensive General Liability Insurance protecting against liability from bodily injury or property damage arising out of the Construction Project with limits of not less than **\$2M** per single occurrence and **\$6M** per aggregate total occurrences.

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(c) Workers Compensation and Occupational Disease Insurance, as required by law.

(d) Automobile Liability Insurance covering all motor vehicles used about or in connection with the Construction Project.

If any part of the work is sublet, these insurance coverages shall be provided by or on behalf of the subcontractors to cover their operations

Each policy shall carry an endorsement covering the "save harmless" clause in favor of the Railroad and the Maine Department of Transportation, as set forth in the paragraph, "Responsibility for Damage Claims".

If blasting is to be done in the vicinity of the Railroad, the insurance policies shall include such coverage.

The policies shall be in force before any work is done on the project and shall remain in effect until all work required to be performed under the terms of the contract is satisfactorily completed as evidenced by the formal acceptance by the State and the Railroad.

Before any work is done on the project, the Department of Transportation and the Railroad's Chief Engineer shall be furnished certificates of each policy. Further, the original policy of the Comprehensive General Liability Insurance and the Railroad Protective Liability Insurance shall be furnished to the Railroad's Chief Engineer and a duplicate shall be furnished to the Department of Transportation.

The policy or policies of the Railroad's protective public liability and property damage liability shall be written by a Company authorized to do business in the State of Maine, and shall be signed by the President and Secretary of the Insurance Company and shall be countersigned by an authorized representative of the Company.

19. ROADWAY WORKER SAFETY REGULATION

Notice to all Contractors/Subcontractors and individuals must be aware of the Federal Roadway Worker Safety Regulation, CFR 49, Part 214(c). They may be required to comply with this regulation. Any requirements for them to comply will be discussed at the pre-construction utility meeting.

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EXHIBIT A
ORIGINAL TO CONTRACTOR

MDOT/RAILROAD STOP WORK ORDER

Section A - Contractor	Town
	DOT Railroad Project #
Railroad Name	Location
	Notice #
DESCRIPTION OF SAFETY HAZARD/REASON FOR ORDER	
Standard Violated	RAC (Risk Assessment Code)
	N/R
Railroad Official (Flagger/Inspector) Name	Date
Signature	
SECTION B - ACTION TAKEN:	

cc: MDOT - R.E. or Inspector
MDOT - Utility Section
MDOT - Construction Division
Railroad - Chief Engineer

1. Risk Assessment. Each identified/validated hazard shall be assigned a Risk Assessment Code (RAC) by the Safety Office. The RAC represents the degree of risk associated with the deficiency and combines the elements of hazard severity and mishap probability. The RAC is derived as follows:

a. Hazard Severity. The hazard severity is an assessment of the worst potential consequence: Defined by degree of injury, occupational illness, or property damage, which is likely to occur as a result of a deficiency. Hazard severity categories shall be assigned by roman numeral according to the following criteria.

(1) Category I - Catastrophic: The hazard may cause death or loss of a facility.

(2) Category II - Critical: May cause severe injury, severe occupational illness, or major property damage.

(3) Category III - Marginal: May cause minor injury, minor occupational illness, or minor property damage.

(4) Category IV - Negligible: Probably would not affect personnel safety or health, but is nevertheless in violation of a NAVOSH standard.

b. Mishap Probability. The mishap probability is the probability that a hazard will result in a mishap, based on an assessment of such factors as location, exposure in terms of cycles or hours of operation, and affected population. Mishap probability shall be assigned an Arabic letter according to the following criteria:

(1) Sub-category A - Likely to occur immediately or within a short period of time.

(2) Sub-category B - Probably will occur in time.

(3) Sub-category C - May occur in time.

(4) Sub-category D - Unlikely to occur.

c. Risk Assessment Code. The RAC is an expression of risk which combines the elements of hazard severity and mishap probability. Using the matrix shown below, the RAC is expressed as a single Arabic number that can be used to help determine hazard abatement priorities.

	Mishap Probability					RAC
		A	B	C	D	
Hazard Severity	I	1	1	2	3	1 - Critical
	II	1	2	3	4	2 - Serious
	III	2	3	4	5	3 - Moderate
	IV	3	4	5	5	4 - Minor
						5 - Negligible

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 403.206 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 403.2083 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 403.211 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 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 403.206: 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 403.2083–5.6%
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 403.211-6.2%	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 403.214-6.8%		Item 403.2133-5.6%
Item 461.13-6.4%		Item 403.2143-6.8%

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 - 627
GROOVING FOR PAVEMENT MARKING

Description.

This work shall consist of furnishing and installing a groove in the pavement for placement of pavement markings as shown on the plans or as directed by the engineer.

Construction Requirements.

The grooves shall be cut such that the surface of the groove is uniform with minimal variation in height.

The grooves shall be located where the final pavement marking will be placed according to the plans or as directed by the engineer.

On bituminous pavements the width of the groove shall be 1 inch wider than the width of the painted lines indicated on the plans or as directed by the Resident. Lengths of grooves shall be determined from contract documents.

The final depth of the groove on bituminous pavements shall be 50 mils, plus or minus 5 mils.

The groove shall be clean and dry before the installation of the pavement marking can begin.

All debris resulting from the installation of the grooves shall be removed and disposed of by the contractor.

Method of Measurement.

Final measurement will not be made except for authorized changes during construction or where significant errors are found in the contract quantity. Where required, grooves will be measured separately and made to the nearest square foot. The revision or correction will be computed and added to or deducted from the contract quantity. When used for sections of broken lines that include the gaps for acceleration/deceleration, auxiliary lanes, and passing zones the length measured for payment shall include only the grooved areas. Breaks will not be included in the length measured for payment.

Basis of Payment.

The accepted quantity of grooves will be paid for at the contract unit price per each of the pay items included in the contract. Payment will be considered full compensation for all labor, equipment, and material necessary to complete the described work, including loading, hauling, stockpiling and disposal of material; and any other incidental items.

Pay Item

Pay Unit

627.30 Grooving for Pavement Marking

Square Foot (ft²)

SPECIAL PROVISION
SECTION - 627
HIGH BUILD ACRYLIC WATERBORNE PAVEMENT MARKING PAINT

Description

High build acrylic waterborne pavement marking paint shall be capable of receiving and holding glass beads for producing wet-reflective pavement markings.

Material

The paint shall contain no more than 3200 ppm lead or more than 800 ppm chromium, based on dry weight.

General

The finished paint shall be formulated and manufactured from quality material and shall be a fast-drying, water-based, acrylic resin-type paint capable of withstanding air and roadway temperatures without bleeding, staining, discoloring or deforming. The dried paint film shall be capable of maintaining original dimensions and placement without chipping, spalling or cracking. The dry paint film shall not deteriorate from contact with normal roadway chemicals or materials.

Waterborne traffic marking paints shall not be applied at temperatures below 50°F or within 8 hours of any anticipated precipitation.

Mixed Paint

The paint shall be strained before filling using a screen or a sieving device no coarser than 40 mesh or equivalent.

The volatile content of the finished paint shall contain less than 100 grams of volatile organic matter per liter in accordance with ASTM D 3960.

The paint shall have the following physical properties:

Acrylic Waterborne Pavement Marking Paint Physical Properties	
Property	Requirement
Viscosity, KU	80-98
Percent Solids (min.)	77.5
Percent Pigment (min.)	60.0
Density, Lbs./Gal. (min.)	13.5
Volatile Organic Content (g/l)	< 100

SPECIAL PROVISION
SECTION - 627
HIGH-BUILD WET REFLECTIVE PAVEMENT MARKINGS

Description

This work shall consist of furnishing and installing wet reflective pavement markings as shown on the plans or as directed by the engineer. The pavement markings shall consist of a high-build acrylic waterborne pavement marking paint, AASHTO M 247, Type I glass beads, and wet reflective pavement marking beads/elements. The beads shall be placed as a double drop system to provide wet night retro reflectivity. This work shall be in accordance with Section 627 and accompanying provisions except as modified herein.

Material

All material shall be in accordance with Section 708 - Paint and Preservatives, and specifically as follows.

Item	Section
Type I Drop-On Glass Beads	708.03
High Build Acrylic Waterborne Pavement Marking Paint	627.SP

Wet Reflective Beads

The wet reflective beads used shall be from the following approved products list:

Manufacturer	Product
3M Inc.	All Weather Elements
Potters Industries, Inc.	Visimax
Swarco	plus9spots [®]

Construction Requirements

Application of the wet reflective marking shall consist of placement of the waterborne paint, followed by the application of Type I glass beads immediately followed by the wet reflective beads. The color of the wet reflective beads shall match the color of the line being applied.

The width of the line shall be as shown on the plans.

The waterborne paint shall be applied at a minimum thickness of 16 mils. The thickness may be increased depending upon the manufacturer's recommendations to properly hold the bead system.

Type I glass beads and the wet reflective beads shall be mechanically applied to the wet paint directly behind the paint spray guns. The order of application and the application rates of the Type I beads and the wet reflective beads shall be based on the manufacturer's recommendations to provide wet night retro reflectivity.

The completed pavement marking system shall meet the initial retro reflectivity requirements of 450 mcd/m²/lux.

The manufacturer of the wet reflective bead shall have a factory representative on site before the contractor begins striping operations. The factory representative shall assure the engineer that the wet reflective system has been calibrated for proper application before the contractor begins. The factory representative shall remain available to periodically assure the engineer the system is being applied according to manufacturer's recommendations.

Method of Measurement

Final measurement will not be made except for authorized changes during construction or where appreciable errors are found in the contract quantity. The revision or correction will be computed and added to or deducted from the contract quantity.

Where required, measurement of 4 inch, 6 inch, 12 inch, or 24 inch pavement marking will be made to nearest linear foot. Where broken lines are specified, no deductions will be made for the gaps in pavement marking.

Basis of Payment

The accepted quantity of wet reflective pavement markings will be paid at the contract unit price for each of the pay items included in the contract.

<u>Pay Item</u>			<u>Pay Unit</u>
627.304	White or Yellow High-Build Wet Reflective Pavement Markings	4 Inch	Linear Foot
627.306	White or Yellow High-Build Wet Reflective Pavement Markings	6 Inch	Linear Foot
627.312	White or Yellow High-Build Wet Reflective Pavement Markings	12 Inch	Linear Foot
627.324	White or Yellow High-Build Wet Reflective Pavement Markings	24 Inch	Linear Foot