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

Paul R. LePage
GOVERNOR

David Bernhardt
COMMISSIONER

August 11, 2014
Subject: **Portland IMT**
State WIN: 022809.20
Amendment No. 3

Dear Sir/Ms:

Make the following changes to the Bid documents:

In the Bid Book (Amendment No.2) **REMOVE** the "Proposal Schedule of Items" 18 pages dated 8/6/2014 and **REPLACE** with the attached new "Proposal Schedule of Items" 18 pages dated 8/11/2014.

Add the attached Special Provision Section 203 Excavation and Embankment (Dredge Pile) one page, dated August 11, 2014.

Add the attached "Dredge Pile Storage Sketch", one page total.

Add the attached "Special Provision Section 648 Railroad Track Construction (115 RE Timber & Ballasted Track Construction) (Remove and Dispose of Existing Track – At Grade) (Remove and Dispose of Existing Turnouts) (Bumping Post), eleven pages total, dated August 11, 2014.

The following questions have been received:

Question: Since Addendum No. 2 has been issued we have been in Contact with 4 manufacturers of palisade fence including Ameristar. All of these Manufacturers provide a product with a post spacing of 96 inches. They all state that a post spacing of 120 inches is not possible because the spacing affects the structural stability of their finish product. We have run out of contacts and would appreciate assistance from the State or HNTB as to a product that will be acceptable.

Response: Due to the limited available options currently associated with the width of the fence panels, an alternative option will be to use 8-ft wide palisade fence panels. Therefore, the Ameristar Impasse II product (or an approved equal) will be acceptable in the 8-ft lengths commonly produced. The design team will coordinate with the City and

the contractor prior to the onset of construction to discuss slight adjustments to the other components of the concrete safety barrier; namely the light pole spacing and the width of the aesthetic panels.

Question: Regarding Item 643.94 Dual Purpose Pole W/55' Hinged Mast Arm.

As we've stated in our last question about the availability of a 55' hinged arm. From both, Valmont and Union Metal Manufacturing their response was as follows:

Valmont – The design under 2013 AASHTO was not possible without having a couple of months to engineer and test a proto-type prior to fabrication. They have indicated that a cost to produce such a pole to be in the vicinity of $80.000 to $90.000 for one pole.

Union Metal – stated that the largest hinged pole they've fabricated was a 40' arm with light loading and was designed under the old AASHTO standards and that they have no interest in quoting this size pole with a hinged arm under the new AASHTO standards.

Response: Union Metal has indicated that they have fabricated a 60' hinged mast arm and stated: "Union Metal should be able to design and fabricate something that will fit the needs of your project." Please contact Vince Whorten at Union Metal (330) 458-5235. Also, Valmont Industries is capable of fabricating the 55' mast arm.

Question: Addendum # 1 somebody questioned if there should be a pay item underwater granular borrow and the response was "no", drawing SO1 on the left side indicates we are to remove yielding subgrade soil and replace with granular borrow for underwater backfill – can you clarify how this will be handled?

Response: The excavation of unsuitable materials will be paid for under Item 203.20, Common Excavation. Backfilling, if needed, will be achieved with Granular Borrow and will be paid for under the MaineDOT Standard pay item, 203.25, Granular Borrow. The Schedule of Items has been updated to include the 203.25 pay item with a quantity of 100 cubic yards.

Question: Drawing S03 shows a curb detail requiring an armor plating along curb and wheel stop. There would be approximately 1,500 linear feet required, is this incidental to concrete or should there be a pay item?

Response: The armor plating of the curb shall be incidental to the concrete.

Question: Under section 648, page 246, Pay Item 648.54 says Remove and Dispose of Existing Turnouts. Item 648.54 of the bid sheets say Remove Existing Track Bridges 4TF. Please clarify; should this item read Remove and Dispose of Existing Turnouts 4 each?

Response: Yes. The pay item shall reflect 4 turnouts to be removed. Please note that this pay item has been renumbered and retitled to read as follows: "648.408, Remove and

Dispose of Existing Turnouts - Retained by Dept., EA." The 4 turnouts are to be stored and stacked within the project site for collection and hauling by Pan Am Railways.

Question: There are several locations in the Specifications that mention the requirement to excavate and subsequently backfill areas of unsuitable soil below subgrade. How will the Department be paying for the excavation and backfill of unsuitable soils below subgrade?

Response: The excavation of unsuitable materials will be paid for under Item 203.20, Common Excavation. Backfilling, if needed, will be achieved with Granular Borrow and will be paid for under the MaineDOT Standard pay item, 203.25, Granular Borrow. The Schedule of Items has been updated to include the 203.25 pay item with a quantity of 100 cubic yards.

Question: Will a longitudinal construction joint be allowed in the loadout slab? We have concern finishing the surface due to the volatility of the concrete based on the required admixtures.

Response: Yes. A standard longitudinal construction joint will be allowed in the concrete loading slab. A sketch will be provided prior to the commencement of construction.

Consider these changes and information prior to submitting your bid on August 13, 2014.

Sincerely,

George M. A. Macdougall P.E.
Contracts & Specifications Engineer

Maine Department of Transportation

Proposal Schedule of Items

Proposal ID: 022809.20 **Project(s):** 022809.20

SECTION: 1 SECTION 1

Alt Set ID: **Alt Mbr ID:**

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price Dollars	 Cents	Bid Amount Dollars	 Cents
0010	201.11 CLEARING	3.000 AC				
0020	201.23 REMOVING SINGLE TREE TOP ONLY	1.000 EA				
0030	201.24 REMOVING STUMP	1.000 EA				
0040	202.15 REMOVING MANHOLE OR CATCH BASIN	1.000 EA				
0050	202.202 REMOVING PAVEMENT SURFACE	3,900.000 SY				
0060	202.203 PAVEMENT BUTT JOINTS	180.000 SY				
0070	203.20 COMMON EXCAVATION	14,900.000 CY				
0080	203.2312 HEALTH AND SAFETY PLAN	 LUMP SUM	LUMP SUM			
0090	203.25 GRANULAR BORROW	100.000 CY				
0100	206.0612 STRUCTURAL EARTH EXCAVATION, SLAB SLAB	7,750.000 CY				
0110	304.09 AGGREGATE BASE COURSE - CRUSHED TYPE B	2,150.000 CY				
0120	304.104 AGGREGATE SUBBASE COURSE (PLAN QUANTITY) TYPE D	24,150.000 CY				

Maine Department of Transportation

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Proposal Line Number	Item ID / Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0130	304.14 THERMAL SAND	54.000 CY				
0140	403.208 HOT MIX ASPHALT 12.5 MM HMA SURFACE	710.000 T				
0150	403.209 HOT MIX ASPHALT 9.5 MM (SIDEWALKS, DRIVES, INCIDENTALS)	190.000 T				
0160	403.2104 HOT MIX ASPHALT 9.5 MM - THIN LIFT SURFACE TREATMENT	210.000 T				
0170	403.211 HOT MIX ASPHALT (SHIMMING)	50.000 T				
0180	403.213 HOT MIX ASPHALT 12.5 MM BASE	640.000 T				
0190	409.15 BITUMINOUS TACK COAT - APPLIED	4,170.000 G				
0200	411.12 CRUSHED STONE SURFACE	3,950.000 T				
0210	419.30 SAW CUTTING BITUMINOUS PAVEMENT	3,000.000 LF				
0220	502.496 STRUCTURAL CONCRETE, LOADING SLAB	2,200.000 CY				
0230	502.497 STRUCTURAL CONCRETE, LOADING SLAB BARRIER	440.000 CY				

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price Dollars	 Cents	Bid Amount Dollars	 Cents
0240	502.601 STRUCTURAL CONCRETE, TRANSFORMER	LUMP SUM	LUMP SUM		_____	.____
0250	502.606 STRUCTURAL CONCRETE, SECURITY BUILDING SLAB	LUMP SUM	LUMP SUM		_____	.____
0260	502.76 CONCRETE SLAB SCUPPERS	41.000 EA	_____	.____	_____	.____
0270	503.14 EPOXY-COATED REINFORCING STEEL, FABRICATED AND DELIVERED	667,000.000 LB	_____	.____	_____	.____
0280	503.15 EPOXY-COATED REINFORCING STEEL, PLACING	667,000.000 LB	_____	.____	_____	.____
0290	504.623 REMOVE AND DISPOSE EXISTING FENDER PANEL	6.000 EA	_____	.____	_____	.____
0300	504.631 REMOVE AND REINSTALL UHMW WEARING SURFACE 1 FOOT PIECE	18.000 EA	_____	.____	_____	.____
0310	504.632 REMOVE AND REINSTALL UHMW WEARING SURFACE 11 FOOT PIECE	16.000 EA	_____	.____	_____	.____
0320	504.633 REMOVE AND DISPOSE BENT STEEL FENDER HP 10 X 42	20.000 LF	_____	.____	_____	.____
0330	504.641 REPLACE SHEAR CHAIN UPPER	32.000 EA	_____	.____	_____	.____
0340	504.641 REPLACE SHEAR CHAIN LOWER	32.000 EA	_____	.____	_____	.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price Dollars	 Cents	Bid Amount Dollars	 Cents
0350	504.642 SUPPORT CHAIN	6.000 EA				
0360	504.643 UHMW WEARING SURFACE 1 FOOT PIECE	100.000 EA				
0370	504.644 UHMW WEARING SURFACE 11 FOOT PIECE	50.000 EA				
0380	504.65 STEEL FENDER PANEL, CLOSED BOX, WITH UHMW WEARING SURFACE	6.000 EA				
0390	515.20 PROTECTIVE COATING FOR CONCRETE SURFACES SPECIAL	8,200.000 SY				
0400	525.74 INTERPRETIVE SIGN BASE	3.000 EA				
0410	526.35 PERMANENT CONCRETE JERSEY BARRIER	550.000 LF				
0420	603.155 12 INCH REINFORCED CONCRETE PIPE CLASS III	26.000 LF				
0430	603.165 15 INCH REINFORCED CONCRETE PIPE CLASS III	456.000 LF				
0440	603.175 18 INCH REINFORCED CONCRETE PIPE CLASS III	16.000 LF				
0450	603.1952 24 INCH REINFORCED CONCRETE PIPE CLASS V	120.000 LF				

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0460	603.4105 CONCRETE PIPE COLLAR	4.000 EA				
0470	603.98 STORM OVERFLOW SLIPLINE	LUMP SUM	LUMP SUM			
0480	603.99 STORM OVERFLOW LINING	LUMP SUM	LUMP SUM			
0490	604.11 CATCH BASIN TYPE C1 48"	8.000 EA				
0500	604.152 48 INCH MANHOLE	1.000 EA				
0510	604.158 UTILITY VAULT 4FT X 8 FT	1.000 EA				
0520	604.161 ALTERING CATCH BASIN	1.000 EA				
0530	604.166 REBUILDING MANHOLE	2.000 EA				
0540	604.17 ALTERING MANHOLES TO CATCH BASINS	3.000 EA				
0550	604.18 ADJUSTING MANHOLE OR CATCH BASIN TO GRADE	8.000 EA				
0560	604.249 CATCH BASIN TYPE F6-C	3.000 EA				
0570	604.252 CATCH BASIN TYPE A5-C 48"	1.000 EA				
0580	605.09 6 INCH UNDERDRAIN TYPE B	1,100.000 LF				

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0590	605.11 12 INCH UNDERDRAIN TYPE C	2,450.000 LF				
0600	605.13 18 INCH UNDERDRAIN TYPE C	1,150.000 LF				
0610	607.1701 TEMPORARY CHAIN LINK FENCE - 6' MOVEABLE MOVEABLE	1,000.000 LF				
0620	607.181 CHAIN LINK FENCE - 8 FOOT HIGH SECURITY	2,500.000 LF				
0630	607.231 CHAIN LINK FENCE GATE, 4 FOOT CRASH GATE	1.000 EA				
0640	607.232 CHAIN LINK FENCE GATE, 3 FOOT	1.000 EA				
0650	607.243 REMOVE CHAIN LINK FENCE	1,150.000 LF				
0660	607.244 REPAIR CHAIN LINK FENCE	110.000 LF				
0670	607.25 REMOVE AND RESET CHAIN LINK FENCE	200.000 LF				
0680	607.251 REMOVE AND RESET CHAIN LINK FENCE AND GATE	100.000 LF				
0690	607.34 BRACING ASSEMBLY CHAIN LINK FENCE	44.000 EA				
0700	607.490 CHAIN LINK GATE - 16 FT. SWING	1.000 EA				

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0710	607.4902 CHAIN LINK GATE, 24 FOOT DOUBLE LEAF SWING GATE	1.000 EA	_____.____		_____.____	
0720	607.4903 CHAIN LINK GATE, 32 FOOT DOUBLE LEAF SWING GATE	1.000 EA	_____.____		_____.____	
0730	607.4911 MOTORIZED SLIDE GATE - 24 FT.	6.000 EA	_____.____		_____.____	
0740	607.4922 REMOVE 4 FOOT SWING GATE	1.000 EA	_____.____		_____.____	
0750	607.4923 REMOVE 24 FOOT SWING GATE	2.000 EA	_____.____		_____.____	
0760	607.4924 REMOVE 16 FOOT SLIDING GATE	1.000 EA	_____.____		_____.____	
0770	607.4925 REMOVE & RESET MOTORIZED SLIDING GATE, 20 FOOT CHAIN LINK	1.000 EA	_____.____		_____.____	
0780	607.92 HEAVY STEEL HIGH SECURITY PALISADE FENCE, 6 FOOT	750.000 LF	_____.____		_____.____	
0790	607.94 HEAVY STEEL HIGH SECURITY PALISADE FENCE, 8 FOOT	870.000 LF	_____.____		_____.____	
0800	608.08 REINFORCED CONCRETE SIDEWALK	16.000 SY	_____.____		_____.____	
0810	608.15 BRICK SIDEWALK WITH BITUMINOUS BASE	531.000 SY	_____.____		_____.____	

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			Dollars	Cents	Dollars	Cents
0820	608.16 BRICK DRIVEWAY WITH BITUMINOUS BASE	251.000 SY				
0830	608.26 CURB RAMP DETECTABLE WARNING FIELD	216.000 SF				
0840	608.28 GRANITE PAVERS WITH SAND BASE & CEMENT	5.000 SY				
0850	608.282 GRANITE PAVERS WITH CONCRETE BASE	42.000 SY				
0860	608.292 PERVIOUS PRECAST CONCRETE PAVER	320.000 SY				
0870	609.11 VERTICAL CURB TYPE 1	1,950.000 LF				
0880	609.12 VERTICAL CURB TYPE 1 - CIRCULAR	305.000 LF				
0890	609.234 TERMINAL CURB TYPE 1 - 4 FOOT	4.000 EA				
0900	609.237 TERMINAL CURB TYPE 1 - 7 FOOT	8.000 EA				
0910	609.2371 TERMINAL CURB TYPE 1- 7 FT - CIRCULAR	10.000 EA				
0920	609.26 CURB TRANSITION SECTION B TYPE 1	4.000 EA				

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price Dollars	 Cents	Bid Amount Dollars	 Cents
0930	609.31 CURB TYPE 3	39.000 LF				
0940	609.34 CURB TYPE 5	175.000 LF				
0950	609.35 CURB TYPE 5 - CIRCULAR	24.000 LF				
0960	613.319 EROSION CONTROL BLANKET	400.000 SY				
0970	615.07 LOAM	280.000 CY				
0980	618.1301 SEEDING METHOD NUMBER 1 - PLAN QUANTITY	8.000 UN				
0990	619.1201 MULCH - PLAN QUANTITY	8.000 UN				
1000	619.1301 BARK MULCH	18.000 CY				
1010	620.6011 SEPARATION GEOTEXTILE, SPECIAL	42,100.000 SY				
1020	620.73 STRIP DRAIN	2,050.000 LF				
1030	621.043 EVERGREEN TREES (6 FOOT - 8 FOOT) GROUP A	9.000 EA				
1040	621.046 EVERGREEN TR (8' - 10') GP A	5.000 EA				

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1050	621.261 LARGE DECIDUOUS TREES (10 FOOT - 12 FOOT) GROUP A	3.000 EA				
1060	621.285 LARGE DECIDUOUS TREE (3 INCH - 3.50 INCH CALIPER) GROUP A	19.000 EA				
1070	621.401 DWARF EVERGREENS (2 FOOT - 2.50 FOOT) GROUP A	3.000 EA				
1080	621.525 BAYBERRY (2 FOOT - 3 FOOT)	5.000 EA				
1090	621.546 DECIDUOUS SHRUBS (2 FOOT - 3 FOOT) GROUP A	6.000 EA				
1100	621.552 DECIDUOUS SHRUBS (3 FOOT - 4 FOOT) GROUP A	36.000 EA				
1110	621.71 HERBACEOUS PERENNIALS GROUP A	16.000 EA				
1120	621.80 ESTABLISHMENT PERIOD TWO YEAR	 LUMP SUM	 LUMP SUM			
1130	626.11 PRECAST CONCRETE JUNCTION BOX EXTERIOR	2.000 EA				
1140	626.213 METALLIC CONDUIT	 LUMP SUM	 LUMP SUM			
1150	626.214 SUPPORTING DEVICES	 LUMP SUM	 LUMP SUM			

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price Dollars	 Cents	Bid Amount Dollars	 Cents
1160	626.226 NON-METALLIC CONDUIT	LUMP SUM	LUMP SUM		_____	.____
1170	626.233 SECONDARY WIRING	LUMP SUM	LUMP SUM		_____	.____
1180	626.32 24 INCH FOUNDATION CARD READER AND PEDESTAL POLE, 5 FT	15.000 EA	_____	.____	_____	.____
1190	626.32 24 INCH FOUNDATION LIGHT STD, 11 FT	12.000 EA	_____	.____	_____	.____
1200	626.323 PEDESTAL REEFER OUTLET FOUNDATION	3.000 EA	_____	.____	_____	.____
1210	626.324 PEDESTAL REEFER OUTLET ASSEMBLY	3.000 EA	_____	.____	_____	.____
1220	626.332 30 INCH DIAMATER GREATER THAN 8 FEET LONG & 36 INCH DIAMETER, 42 INCH DIAMETER FOUNDATION	11.000 CY	_____	.____	_____	.____
1230	626.333 48 INCH DIAMETER, 54 INCH DIAMETER, & 60 INCH DIAMETER FOUNDATIONS	15.000 CY	_____	.____	_____	.____
1240	626.386 SERVICE METERING	LUMP SUM	LUMP SUM		_____	.____
1250	626.42 GROUNDING	LUMP SUM	LUMP SUM		_____	.____
1260	626.50 NETWORK BOXES	LUMP SUM	LUMP SUM		_____	.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price Dollars . Cents	Bid Amount Dollars . Cents
1270	626.74 PANELBOARD	LUMP SUM	LUMP SUM	_____.____
1280	626.742 FIRE ALARM PULL STATIONS	LUMP SUM	LUMP SUM	_____.____
1290	627.30 GROOVING FOR PAVEMENT MARKING	12,200.000 SF	_____.____	_____.____
1300	627.4072 PREFORMED PAVEMENT MARKING TAPE LINE, GROOVED INSTALLATION	2,400.000 SF	_____.____	_____.____
1310	627.4073 PREFORMED PAVEMENT MARKING TAPE LINE, HOT INLAY INSTALLATION	1,350.000 SF	_____.____	_____.____
1320	627.4074 PREFORMED PAVEMENT MARKING TAPE SYMBOLS, HOT INLAY INSTALLATION	490.000 SF	_____.____	_____.____
1330	627.75 WHITE OR YELLOW PAVEMENT & CURB MARKING	130.000 SF	_____.____	_____.____
1340	627.943 COLORED GLASS PAVEMENT MARKING SYSTEM SYMBOLS	6,310.000 SF	_____.____	_____.____
1350	629.05 HAND LABOR, STRAIGHT TIME	60.000 HR	_____.____	_____.____
1360	631.12 ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	20.000 HR	_____.____	_____.____
1370	631.13 BULLDOZER (INCLUDING OPERATOR)	20.000 HR	_____.____	_____.____

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price Dollars	 Cents	Bid Amount Dollars	 Cents
1380	631.172 TRUCK - LARGE (INCLUDING OPERATOR)	20.000 HR				
1390	631.18 CHAIN SAW RENTAL (INCLUDING OPERATOR)	20.000 HR				
1400	631.20 STUMP CHIPPER (INCLUDING OPERATOR)	20.000 HR				
1410	631.22 FRONT END LOADER (INCLUDING OPERATOR)	20.000 HR				
1420	631.32 CULVERT CLEANER (INCLUDING OPERATOR)	20.000 HR				
1430	631.36 FOREPERSON	20.000 HR				
1440	634.2041 LUMINAIRES	60.000 EA				
1450	634.210 CONVENTIONAL LIGHT STANDARD TYPE 2	1.000 EA				
1460	634.210 CONVENTIONAL LIGHT STANDARD TYPE 3	11.000 EA				
1470	634.210 CONVENTIONAL LIGHT STANDARD TYPE 1	15.000 EA				
1480	639.18 FIELD OFFICE TYPE A	1.000 EA				

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price Dollars	 Cents	Bid Amount Dollars	 Cents
1490	641.13 FLAT BENCH	2.000 EA				
1500	643.80 TRAFFIC SIGNALS AT COMMERCIAL & BEACH ST	LUMP SUM	LUMP SUM			
1510	643.83 VIDEO DETECTION SYSTEM THERMAL	LUMP SUM	LUMP SUM			
1520	643.88 TRAFFIC SIGNAL BLANKOUT SIGN	2.000 EA				
1530	643.92 PEDESTAL POLE 8 FT	1.000 EA				
1540	643.92 PEDESTAL POLE 12 FT	1.000 EA				
1550	643.92 PEDESTAL POLE 10 FT	1.000 EA				
1560	643.94 DUAL PURPOSE POLE W/ 35FT MAST ARM	2.000 EA				
1570	643.94 DUAL PURPOSE POLE W/ 55FT HINGED MAST ARM	1.000 EA				
1580	645.103 DEMOUNT GUIDE SIGN	2.000 EA				
1590	645.106 DEMOUNT REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER ASSEMBLY SIGN	14.000 EA				
1600	645.108 DEMOUNT POLE	11.000 EA				

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price Dollars	 Cents	Bid Amount Dollars	 Cents
1610	645.116 REINSTALL REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER ASSEMBLY SIGN	4.000 EA				
1620	645.118 REINSTALL POLE	3.000 EA				
1630	645.291 ROADSIDE GUIDE SIGNS TYPE II	54.000 SF				
1640	645.292 REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER ASSEMBLY SIGNS TYPE II	230.000 SF				
1650	645.308 RETROREFLECTIVE HORIZONTAL DELINEATOR	1.000 EA				
1660	648.103 INSTALL 115 LB JOINTED RAIL AT GRADE	4,440.000 TF				
1670	648.313 SUBBALLAST	2,600.000 T				
1680	648.408 REMOVE AND DISPOSE EXISTING TURNOUT RETAINED BY DEPT.	4.000 EA				
1690	648.53 REMOVE EXISTING TRACK - AT GRADE	4,480.000 TF				
1700	648.57 TIMBER GRADE CROSSING	 LUMP SUM	 LUMP SUM			
1710	648.61 BUMPING POST	1.000 EA				

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1720	651.01 NEW 115 RE NUMBER 10 TURNOUT	3.000 EA				
1730	652.33 DRUM	50.000 EA				
1740	652.34 CONE	50.000 EA				
1750	652.35 CONSTRUCTION SIGNS	400.000 SF				
1760	652.36 MAINTENANCE OF TRAFFIC CONTROL DEVICES	400.000 CD				
1770	652.38 FLAGGER	3,780.000 HR				
1780	652.41 PORTABLE CHANGEABLE MESSAGE SIGN	3.000 EA				
1790	655.501 CATHODIC PROTECTION BY SACRIFICIAL ANODE	6.000 EA				
1800	656.75 TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL	LUMP SUM	LUMP SUM			
1810	659.10 MOBILIZATION	LUMP SUM	LUMP SUM			
1820	801.011 BYPASS PUMPING SYSTEM SANITARY SEWER	LUMP SUM	LUMP SUM			
1830	801.162 6 INCH DIAMETER PVC SCUPPER CONNECTION	250.000 LF				

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1840	802.211 RELINE EXISTING SEWER	1,110.000 LF				
1850	803.01 TEST PITS	5.000 EA				
1860	815.28 CONTRACTOR ALLOWANCE UNITIL	LUMP SUM	LUMP SUM		$5,000	00
1870	815.28 CONTRACTOR ALLOWANCE FAIRPOINT	LUMP SUM	LUMP SUM		$5,000	00
1880	815.28 CONTRACTOR ALLOWANCE PORTLAND WATER DIST	LUMP SUM	LUMP SUM		$10,000	00
1890	815.28 CONTRACTOR ALLOWANCE CMP	LUMP SUM	LUMP SUM		$80,000	00
1900	815.32 MODULAR BUILDING SECURITY	LUMP SUM	LUMP SUM			
1910	822.315 TAPPING SLEEVE W/ VALVE AND SERVICE BOX	3.000 EA				
1920	822.320 6" PVC WATERMAIN	840.000 LF				
1930	822.3212 4" PVC WATERMAIN	780.000 LF				
1940	822.3406 8 INCH REDUCER	1.000 EA				
1950	823.335 4 INCH GATE VALVE W/ SERVICE BOX	1.000 EA				

Maine Department of Transportation

Proposal Schedule of Items

Proposal ID: 022809.20 **Project(s):** 022809.20

SECTION: 1 SECTION 1

Alt Set ID: **Alt Mbr ID:**

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price Dollars	 Cents	Bid Amount Dollars	 Cents
1960	823.338 6 INCH GATE VALVE W/ SERVICE BOX	1.000 EA				
1970	823.343 POST INDICATOR VALVE	1.000 EA				
1980	824.30 FIRE HYDRANT	3.000 EA				
1990	824.40 STANDPIPE	3.000 EA				
2000	825.35 4 INCH COMPOUND METER	1.000 EA				
2010	825.433 GAS LINE RELOCATION	180.000 LF				
2020	830.22 DIRECTIONAL DRILLING, 4 INCH CONDUIT	510.000 LF				
2030	841.4712 STEEL BOLLARD, 6 INCH	11.000 EA				
2040	841.4713 STEEL BOLLARD, 12 INCH	23.000 EA				
2050	841.4714 STEEL BOLLARD, 12 INCH, INSTALL ONLY	16.000 EA				
2060	890.07 BIKE RACKS	2.000 EA				

Section: 1 **Total:** _____.____

Total Bid: _____.____

WIN 22809.20
August 11, 2014

Special Provision
Section 203
EXCAVATION AND EMBANKMENT
(Dredge Pile)

Description of Work and Payment

- **Due to the uncertainty of final disposal of the existing dredge pile, and in order that the pile is moved to a designated area allowing development of the IMT site, the Contractor shall be responsible for moving the dredge pile en masse to the location and in compliance with the Dredge Pile Storage Sketch and Special Provision 203 Excavation and Embankment (Soil Management). Payment for excavation shall be made under Item 203.20 Common Excavation and shall include handling, moving, covering, and stabilization, of the dredge pile as shown in the plans and specifications. The Contractor shall account for relocation of the dredge pile in the project schedule and keep record to determine the amount of material excavated. Payment for separation and disposal of any timber waste shall be incidental to contract items and no additional compensation or payment shall be made.**

- **In the event that a changed location or disposal method is identified requiring the Contractor to conduct work in a manner other than stated above, all work including testing to relocate and/or dispose of the dredge pile in an approved manner and location, will be subject to and paid for on a Force Account basis as put forth in Maine Standard Specification, Section 109.7.5 Payment for separation and disposal of any timber waste shall be incidental to contract items and no additional compensation or payment shall be made.**

Date:7/11/2014

Username:

Division:

Filename: 011_SitePlan3.dgn

CONSTRUCTION BASELINE COORDINATES		
	NORTHING	EASTING
STA. 205+00.00	2959II.7266	2926733.1119
PC STA. 213+91.88	296172.1435	2927586.1293
PT STA. 216+39.41	296318.8266	2927779.1151
POE STA. 218+90.84	296530.8706	2927914.2121

PROPOSED WATER LINE AND CONNECTIONS (BY OTHERS)

PROPOSED CLEARING LIMIT LINE (TYP.)

FOR COMMERCIAL STREET STRIPING AND SIGNAL, SEE HIGHWAY PLANS.

SECONDARY IMT TRUCK ENTRANCE

22'-8 1/4" ENTRANCE (REF.)

20' EXISTING EASEMENT (CMP)

CONCRETE LOADING SLAB

CONSTRUCTION BASELINE

65'-0" ENTRANCE (REF.)

50'-0" ENTRANCE (REF.)

205+00

207+00

209+00

211+00

213+00

215+00

217+00

WEST COMMERCIAL STREET
US ROUTE 1A

N73°11'23.3"E

N32°30'7"E

BEACH STREET

PC = STA. 213+91.88

PT = STA. 216+39.41

POE = STA. 218+90.84

6'-5" ISLAND (REF.)

70'-8"± ENTRANCE (REF.)

30'-6"± ENTRANCE (REF.)

96'-2" ENTRANCE (REF.)

39'-8"± ENTRANCE (REF.)

101'-5"± ENTRANCE (REF.)

R=350'

HEAVY STEEL PALISADE FENCE (TYP.)

REMOVE 24' SWING GATE

CONNECT TO EXISTING FENCE

CHAIN LINK FENCE (TYP.)

REMOVE FENCE

30' EXISTING EASEMENT (CMP)

24' MOTORIZED SLIDING GATE WITH CARD READER

HYDRANT W/ BOLLARDS (TYP.)

LOADING TRACK

3' PERSONNEL GATE WITH KNOX BOXES

PROPOSED UGE (BY OTHERS)

SECURITY FENCE

24' DOUBLE SWING GATE (SWING IN)

PROPOSED WATER (BY OTHERS)

REMOVE EXISTING OHW AND UTILITY POLE. SEE SECTIONS 107 AND 626 OF SPECIAL PROVISIONS.

PROTECT NGL RAIL TRACKS

32' DOUBLE-LEAF SWING GATE

REMOVE AND RESET EXISTING MOTORIZED 20 FT SLIDING GATE AND CARD READER

4' PERSONNEL CRASH GATE

EXISTING PERSONNEL CRASH GATE TO REMAIN

24' MOTORIZED SLIDING GATE WITH CARD READER

PROPOSED NEW YARD BUILDING (BY OTHERS)

EXISTING NEW YARD BUILDING

NOW OR FORMERLY NEW YARD, LLC (5.03 AC ±)

PROPOSED TEMPORARY 30' ACCESSWAY FOR NEW YARD, LLC

Proposed Location for Dredge Pile (2 ft high)

Redefined Contractor Staging Area

250 ft

150 ft

REMOVE TRACK

CURBED ISLAND

CONTRACTOR STAGING AREA (SEE NOTE 3)

MODULAR SECURITY BUILDING SLAB (SEE SITE DETAILS)

GRAVEL CHASSIS STORAGE LOT

SITE LIGHTING (TYP.)

SWING GATE

EXISTING FENCE AROUND UNITIL PARCEL TO REMAIN

REMOVE LIGHT POLE

REMOVE 24' SWING GATE

REMOVE 4' PED GATE AND CARD READER

REMOVE 16' MANUAL SLIDING GATE

REMOVE FENCE

REPAIR FENCE

30' EXISTING EASEMENT (24" CSO #027)

CASCO BAY BRIDGE

RELOCATE 1 1/2" GAS MAIN

REEFER PLUG IN (TYP.)

RELOCATE EXISTING FENCE AND GATE

REMOVE AND RESET 100 FT FENCE

75' SHORELAND SETBACK

25' SHORELAND SETBACK

REMOVE BROKEN FIRE HYDRANT AND UNDERGROUND CONNECTIONS FOR 5 FT. IN EACH DIRECTION. CAP BOTH ENDS. SEE SECTIONS 107 AND 822 OF SPECIAL PROVISIONS.

SPRING HIGH TIDE EL 7.4

APPROXIMATE EXTENT OF EXISTING WASTE AREA TO BE REMEDIATED AS PART OF UNITIL VRAP (BY OTHERS)

APPROXIMATE LIMIT OF GRAVEL SURFACE IMPROVEMENTS

FORMER HARBOR COMMISSIONERS LINE OF 1929

105' USACOE SETBACK LINE

50' HARBOR COMMISSION SETBACK

FEDERAL CHANNEL LINE

FORE RIVER

EBB

FLOOD

PLAN

60 0 60 120

Scale of Feet

WORK TO INCLUDE

- PREPARE SELECTED SITE AREA FOR CONSTRUCTION INCLUDING SELECT CLEARING OF EXISTING VEGETATION
- GENERAL SITE CLEANUP
- PLACEMENT OF FENCE, LIGHTING, HYDRANTS, GATES
- RAIL IMPROVEMENTS AND LOADING SLAB.
- COMMERCIAL STREET IMPROVEMENTS INCLUDING BEACH STREET SIGNAL
- GRAVEL YARD IMPROVEMENTS INCLUDING DRAINAGE
- GAS MAIN RELOCATION

NOTES:

1. SEE ELECTRICAL PLANS FOR ALL ELECTRICAL ITEMS.
2. FOR LOCATIONS OF BOLLARDS AT LIGHT POLES, HYDRANTS, AND OTHER FEATURES, SEE SHEETS C18 AND C19.
3. ADDITIONAL CONTRACTOR STAGING AREAS MAY BE AVAILABLE. SEE SECTION 104 OF SPECIFICATIONS.
4. SEE COMMERCIAL STREET PLANS FOR DIMENSIONS OF ALL DRIVEWAYS.
5. FOR LIMITS OF TRACK, ROADWAY AND SITE WORK SEE DETAILS BY DISCIPLINE.
6. ALL GATES WITHIN UNITIL/NGL FENCE LINES SHALL BE AUTOMATIC-OUT WITH LOOP DETECTION IN THE ASPHALT.
7. CARD READERS FOR UNITIL/NGL FENCE AREAS SHALL BE INDEPENDENT OF TERMINAL SECURITY SYSTEM.
8. CONTRACTOR SHALL COORDINATE WITH RESIDENT, UNITIL, AND NGL TO DETERMINE OPTIMAL LOCATION OF GATES WITHIN THOSE YARDS.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NUMBER 022809.20

WIN 022809.20

	BY	DATE
PROJ. MANAGER	J. KITTREDGE	
DESIGN-DETAILED	MPC	06/14
CHECKED-REVIEWED	HME	CRM 06/14
DESIGN2-DETAILED2	-	-
DESIGN3-DETAILED3	-	-
REVISIONS 1	-	-
REVISIONS 2	-	-
REVISIONS 3	-	-
REVISIONS 4	-	-
FIELD CHANGES	-	-

SIGNATURE

P.E. NUMBER

DATE

DREDGE PILE STORAGE SKETCH

SPECIAL PROVISION
SECTION 648
RAILROAD TRACK CONSTRUCTION
(115 RE Timber & Ballasted Track Construction)
(Remove and Dispose of Existing Track - At Grade)
(Remove and Dispose of Existing Turnouts)
(Bumping Post)

648.01 Description. This work shall consist of the construction of new timber cross tie and ballasted track using rail, ballast, ties and OTM in accordance with these specifications and referenced sections of the current "Manual for Railway Engineering" of the American Railway Engineering and Maintenance Association, hereinafter referred to as AREMA.

Related work is specified in other Sections as follows:

Special Track Work Construction is specified in Section 651.
Workers & Equipment is specified in SP 104.3.4

New timber cross tie and ballasted track construction for the proposed track shall consist of 115 RE rail (new or No. 1 relay) in 80 foot lengths, bolted with six hole joint bars, laid on tie plates, cut spike fastened to new 6" x 8" x 8' – 6" pressure treated ties restrained with rail anchors. A minimum of 12 inches of new ballast shall be placed under the ties on top of 8 inches of sub-ballast material as shown on the Contract Drawings. For new track connections to existing tracks adjacent to the NGL Supply, LLC facility, 5 inches of ballast shall be placed under the ties on top of compacted subgrade as shown on the contract drawings. The Contractor will perform all track surfacing operations to bring track to required horizontal and vertical tolerances.

Required Submittals:

1. Submit manufacturer's catalogue cut sheets and product data for review. Submit manufacturer's certification that material furnished meets the requirements of the current AREMA manual and these specifications.

All submittals will be reviewed for general conformance with the intent of the contract documents. This review will not relieve the Contractor of final responsibility for the means, methods, procedures and sequences to be utilized. Above submittals shall be made available to the Resident at least four weeks before the work is to begin.

648.013 New 115 RE Ballasted Track Construction. A general description of proposed track components is as follows:

(a) New or No.1 Relay 115 RE standard, control cooled rail in lengths of 80 feet, with (3) bolt holes present at each end.

(b) New or Relay Tie Plate Assemblies consisting of 14 inch double shoulder steel tie plates with at least six spike holes per plate.

(c) New or Relay six hole, 36 inch joint bars with six complete bolt assemblies per joint.

(d) New or relay rail anchors for 115 RE rail sufficient for anchor pattern shown on the Contract Drawings.

(e) New, crushed stone ballast sufficient to provide a minimum depth of new ballast under the

ties and to form shoulders and walkways as indicated on the Contract Drawings.

(f) New, pressure treated, hardwood timber cross ties, 6" x 8" x 8'- 6", end plated on each end.

(g) New compromise joint bars between 115 RE rail and 85 lb rail with allowances for head wear.

(h) New or Relay, Western Cullen Hayes WG type, Bumping Post, with middle rails and shock free head.

(i) New or Relay, hinged type derails.

Also included are removal and disposition of existing track material replaced or damaged during track re-alignment and surfacing and aligning the new track. Contractor will surface and align track to the section, profile and alignment indicated on the plans.

MATERIALS

648.02 Materials. Materials shall meet the requirements specified in this section as follows:

648.021 Geotextile Fabric. Geotextile fabric to be used under track bed (if required by the Geotechnical Engineer due to soft subgrade soils) shall conform to the requirements of Special Separation Geotextile as specified in Section 620 of the Special Provisions.

648.022 Stone Ballast. Ballast within track bed, at ballasted walkways, and between track bed sections shall conform to MaineDOT Division 700, Section 703.33.

648.023 Joint Bars and Associated Hardware.

A. Standard joint bar assembly to consist of two short toe, headfree bars of the rail section and length indicated, track bolts, nuts and washers in quantity as dictated by the specified joint bar length. All material and processes shall be in accordance with the current AREMA manual for Railway Engineering, Chapter 4, Part 3 – Specifications for Quenched Carbon Steel Joint Bars.

B. Track bolts and nuts material and manufacture shall be in accordance with the current AREMA Manual, Chapter 4, Part 3 – Specifications for Heat-Treated Carbon Steel Track Bolts and Carbon Steel Nuts.

   a. Prior to shipment, entire bolt thread shall be coated with an appropriate oil or grease to protect the threads during shipment and storage.

   b. Bolt and nut shall be assembled for shipment by turning the nut onto the bolt at least two threads.

C. Lockwasher material and manufacturer shall be in accordance with the current AREMA Manual, Chapter 4, Part 3 – Specifications for Spring Washers. Lock washer diameter shall be appropriately sized for rail bolts and washer configuration shall conform to requirements of ANSI, B27.1, for Extra Heavy Duty Helical Spring Lock Washers.

D. Compromise joint bars shall be of the size, shape, and punching pattern to fit the rail sections being joined. All material and processes shall be in accordance with the current

AREMA Manual Chapter 4, Part 3 – Specifications for Quenched Carbon-Steel Joint Bars and Forged Compromise Joint Bars.

E. Track bolts shall be rolled, button-head, elliptic neck bolts with wrench fit thread and shall be provided with standard square nuts all per the current AREMA Manual Chapter 4, Part 3. Bolt diameter and length shall be sized to fit joint bars and rail bolt holes.

648.024 Cut Spikes. Cut spikes used for the track fastening system shall be 5 ½" length, 5/8" reinforced throat design in accordance with the current AREMA Manual Chapter 5, Part 2 – Specifications for Soft-Steel Track Spikes and Design of Cut Track Spikes.

648.025 Rail Anchors. Rail anchors shall be one piece, heavy duty spring type anchors in accordance with the current AREMA Manual Chapter 5, Part 7 – Rail Anchors.

648.026 Tie Plates. Tie plates shall be in accordance with the AREMA Manual Chapter 5, Part 1 – Specification for Low-Carbon Steel Tie Plates for 5 ½" rail base. Tie Plate punching shall be AREMA B-6.

648.027 Tie Plugs. Tie plugs shall be in accordance with the AREMA Manual Chapter 30, Article 3.1.5 – Specification for Tie Plugs.

648.028 Rail.

A. Rail shall be 115RE, control cooled, and shall be in accordance with the AREMA Manual Chapter 4, Part 1 – Design and Part 2 – Specifications.

B. Holes for joining rail shall conform to dimensions for standard 36 inch six hole joint bars.

648.029 Treated Timber Cross Ties

A. W ood Species

Crossties shall be new, creosote treated with a minimum of 80% oak and the balance shall be hardwoods of the following species:

Ashes	Hickories
Beech	Locusts
Birches	Hard Maples
Cherries	Mulberries
Elms	Sassafras
Gums	Walnuts
Hackberries	

B. Anti Splitting End Plates

Anti-Splitting End Plates shall be manufactured from a minimum of 18 gage galvanized steel plate, hot dipped. End plates shall have nail teeth not less than 3/8 inch in length and of sufficient sharpness to fully penetrate oak ties. Plate shall be fabricated so that teeth twist vertically to provide better grip in tie. Plates shall be 5 inches by 6 inches and shall be machine applied so that nail teeth side of plate is flush with each end surface of tie.

C. General Quality:

Ties shall be manufactured from sound, live timber and must be free from any defects that may impair their strength or durability as cross ties as further described in this section. Every effort should be made to get the felled timber to mill and milled timber to treatment facility for seasoning as quickly as possible, to avoid wood fiber infection.

All ties shall be straight, well sawn on four sides, cut square at the ends, have top and bottom parallel and have bark completely removed. A tie will be considered straight when a straight line along the top, from the middle of one end to the middle of the other end, is entirely within the tie and when a straight line along a side, from the middle of one end to the middle of the other end, is everywhere more than 2 inches from the top and bottom of the tie. The top and bottom will be considered parallel when any difference in the thickness at the sides and ends is less than or equal to 1/2 inch. Ties shall be free from the following defects:

1. Decay - Ties that show decay of any nature and ties that show strain from being left in the log too long will be rejected. "Blue stain" is not decay and is permissible in any wood.

2. Holes - Ties will be rejected if a large hole, or numerous holes with the net effect of a large hole, is present. A large hole is one exceeding 1/2 inch in diameter and 3 inches deep within the Rail Bearing Area (RBA)*, or more than one-fourth the width of the surface on which it appears and 3 inches deep outside the RBA.

3. Knots - Ties with a large knot, or numerous knots with the net effect of a large knot within the RBA will be rejected. A large knot is one whose average diameter is greater than one-fourth the width of the surface on which it appears.

4. Shake - Shake greater than one-third the width of the tie will be cause for rejection of the tie.

5. Split - A tie will be rejected if a split exceeds 5 inches long or 1/2 inch wide.

6. Slanting Grain - A tie will be rejected if a slant in grain in excess of 1:15 is present, except in the case of woods with interlocking grain.

7. Wane - Excessive wane will be cause for rejection of the tie.

*RBA - Rail Bearing Area - the area of the tie between 20 inches and 40 inches from its middle.

Anti-Splitting End Plates shall be applied to both ends of the ties prior to seasoning.

End plates shall be applied by mechanical device capable of squeezing the splits together, bringing the cross tie back to its original dimensions, prior to application.

D. Dimensions

Crossties shall be AREMA Grade 6 and shall be 6 inches by 8 inches in cross section with a maximum of 1 inch of wane in the RBA. A maximum of 20 percent of the order may be 6 inches by 7 inches in cross section with no wane in the RBA.

The lengths and thickness specified are minimum dimensions. Ties over one inch wider or thicker or over three inches longer, at any point, than the specified dimensions will be rejected.

E. Inspection, Seasoning, and Treatment:

Inspection

1. Green ties will be inspected at the time of delivery to seasoning area. Dry ties will be subject to inspection after seasoning and before treatment.

2. Inspector will make a close examination of the top, bottom, sides and ends of each tie. Each tie will be graded independently without regard for the grading of the others in the same lot. Ties covered with ice, or too muddied for ready examination, will be rejected. The responsibility and expense for the inspection described above will be borne by the manufacturer.

3. Ties are subject to inspection at delivery.

4. Anti-splitting plates that are found to be loose or not firmly against the end of the tie will be cause for rejection of the tie.

Seasoning

1. Cross ties shall be air seasoned prior to treatment. Ties shall be stacked for seasoning in accordance with AREMA Manual, Chapter 30. Seasoning shall continue for at least 12 months and no more than 18 months.

2. In the absence of air seasoned cross ties, the Boulton drying process may be used. If the Boulton process is used, conditioning should continue until moisture removal rate indicates a percent moisture retained equal to a 12 month air dried cross tie, but not less than 45 percent by weight.

3. A minimum of 20 borer cores per treatment charge shall be taken of seasoned ties to determined that adequate drying has taken place.

4. The borer cores shall be taken mid-way between the ends and mid-way between the top and bottom faces of the tie. Three 3-inch borer cores shall be taken to determined moisture content.

Treatment

1. Prior to treatment, anti-splitting plates must be checked by the treating facility to ensure that plates are firmly imbedded in the tie. If plates are found to be loose or not flush against the end of the tie, plate shall be firmly pressed against the tie before treatment begins.

2. Cross tie treatment shall be to retention of seven pounds or to refusal of 60/40 creosote coal tar solution per cubic foot of timber in accordance with the AREMA Manual, Chapter 3.

3. A minimum of 20 borings shall be taken per charge after treatment to determined proper penetration.

F. Delivery

1. Handle ties during all phases of processing and loading so as not to cause damage to the material.

2. Load crossties either loose or banded in bundles in standard, low side rail gondolas parallel to ends of the gondola if transported by rail or banded in secure bundles if transported by flatbed truck.

CONSTRUCTION REQUIREMENTS

648.03 General. The Contractor shall be required to conduct and phase all track construction within existing track in a manner that will allow operation of freight rail service as required by the Railroad and its customers. Anticipated work windows and other conditions relating to this requirement are indicated in Special Provisions 104.4.8.

648.04 Track Removal. Contractor shall dismantle and remove only those sections of track required to construct proposed facilities in sequences approved by the Railroad or otherwise noted on the plans. No track shall be removed without prior permission of the Railroad or MaineDOT, contingent on confirming that track is out of service as defined in the Special Provisions 104.4.8 and that sufficient time is available to return track to service when required by the Railroad.

648.041 Designation of Removed Track Material. Track materials removed shall become the property of Pan Am Railways. The contractor shall coordinate with Pan Am Railways to determine an acceptable location on Pan Am's property where removed track materials shall be stockpiled.

648.05 Placement of Initial Ballast Layer. Ballast will be placed on compacted subballast layer or compacted subgrade as noted on the contract drawings. Prior to placement of ballast, Contractor shall confirm that sub-ballast or subgrade layer has been thoroughly compacted and accepted by MaineDOT. In addition, Contractor shall survey surface of sub-ballast or subgrade to determine that it is within 1 inch of design profile minus the depth of rail, tie plate, tie and designated ballast depth. Contractor shall re-grade and compact subballast or subgrade where necessary to meet this requirement.

Prior to distributing ties, Contractor shall place and compact an initial four inch layer of ballast on prepared subballast. Deliver ballast at a rate no faster than can be satisfactorily incorporated into the work, maintaining a proper interval of operations, and at such times as to permit proper inspection by MaineDOT. To the extent possible, unload ballast in position for use with a minimum of redistribution and dressing.

Thoroughly compact each ballast lift until stones are firmly interlocked and surface is true and unyielding. Compact each lift with not less than four passes of a roller or a vibratory compactor subject to the following requirements:

(a) Compact by rolling using either a self-propelled, three wheel, two axle roller of such weight that will provide compression under the rear wheels of not less than 350 pounds per linear inch of tread: or using a two or three-wheel tandem roller having a weight per inch of drive roll of not less than 350 pounds, and every part of the surface receiving compression from the drive wheels.

(b) Compact by vibration using vibration compactors of either the roller or pad type. Dynamic force for either type shall be not less than 20,000 pounds and the frequency range shall be 1100 to 1500 vpm. Use machines equipped with a governor which can be set and locked to control rate of impulse. Provide a tachometer or other suitable device for accurately checking the frequency of vibration during compaction operation.

Contractor shall distribute ties, construct track, place and compact additional ballast as necessary to bring track to finished grade.

648.06 Cross Tie Installation. Carefully place and distribute ties on compacted ballast section. Place timber ties so that heartwood is down. Handle ties in a manner to avoid breaking and bruising. Do not throw ties from cars or trucks onto rails or rocks. Place ties normal to center line of track. In placing or spacing treated

ties, handle only with tongs or suitable devices. Do not use bars, chisels, forks, mauls, picks, punches, shovels, or sledges for moving ties or placing them in position beneath the rails. Avoid unnecessary handling, redistribution, and reloading of ties. To extent practical, distribute ties in proper position for use without further handling. Remove ties damaged as a result of improper handling by the Contractor and rejected by the Resident and replace with undamaged ties at no additional cost to MaineDOT.

The ends of standard 8 foot 6 inch cross ties shall be brought to a uniform line, 18 1/2 inches from the edge of base of rail on the line side. The line side shall be the northerly side unless otherwise directed by the Resident.

Ties shall be spaced at 20 inches on center, unless otherwise noted.

648.061 Machining Crossties:

Boring:

1. Boring for spike holes shall conform in size and location to plans for the rail fasteners with plus or minus 1/16 inch permitted in each distance between holes. The spike holes shall be centered across the width of the tie in such a way that the fasteners will center on the tie when the spikes are driven. A tolerance 1/8 inch in the centering of the holes across the width of the tie is permissible.

2. Spike holes shall be bored no deeper than the embedded length of the spike.

3. When the head diameter of the drill bits has been reduced 1/16 inch by wear, bits shall be replaced. Cutting heads of bits shall be sharpened at regular intervals to insure clean boring.

4. Any unused holes will be completely filled with treated plugs.

648.07 Tie Plates. All ties installed shall be plated. Tie plates shall be applied and placed so the shoulder is in contact with the rail base or a joint bar for the full length of the shoulder. The tie plate shall be centered on the tie and the shoulder shall not be under the rail base. Canted tie plates must be placed to cant the rail inward toward centerline of track

648.071 Cut Spike Fastening. Ties shall be pre-bored 9/16 inch diameter to a depth equal to the embedded length prior to spiking. The only exception will be if an automatic, hydraulic type spiker is used. Number of spikes per plate to be as indicated on the plans. Track spikes shall be started and driven vertically and square with the rail and must not be bent against the rail. Spikes shall have full bearing against the rail base and driven so as to allow 1/8 inch to 3/16 inch gap between the under side of the spike head and the top of the rail base. Spikes shall not be over-driven or driven against the end of a joint bars or in a joint bar slot. The removal of spikes once driven, shall be avoided whenever possible. If spikes are pulled, the holes shall be plugged with new creosote-treated tie plugs.

648.08 Jointed Rail Installation. Jointed rail, either new or relay shall be installed following the proper spacing of new cross ties, on tie plates, properly secured with cut spikes. Rail shall be laid one at a time, the rail ends brought squarely together against expansion shims and bolted. Rail joints in track shall be staggered. The joints of one line of rails shall be opposite the middle of the rails in the other line, with a permissible variance of 18 inches either side of center. No rails less than 19 and 1/2 feet long shall be laid in track without the permission of MaineDOT, except in between the points of switch of the back to back turnouts connecting the loading track to the runaround track.

Rails shall be cut squarely and cleanly by means of a rail saw. Cutting rails or burning holes in rails by means of a heat dependent device is prohibited. Holes for bolting cut rails shall be drilled by an approved

type of rail drill and with use of a template. Under no circumstances shall new holes be drilled between two existing holes.

648.081 Expansion Shims. Standard expansion shims must be provided and care used in placing them so that the proper opening will be left between the rails. A standard rail thermometer shall be used to determine the temperature of the rail. Determine temperature of rail by placing rail thermometer on shaded side of rail base next to web and leaving it there for not less than five minutes and until no change in its reading is detected. For the temperature then shown, the thickness of shim required for the proper expansion opening between the rails shall be used, as provided in the following table:

80 Foot Rail

Rail Temperature (Deg. F)	Rail End Gap (inches)
Below 6	5/8
6 to 25	1/2
26 to 45	3/8
46 to 65	1/4
66 to 85	1/8
over 85	None

648.082 Joint Bar Installation. Prior to joint bar application, the Contractor shall clean and coat the rail ends within the joint bar area, including webs, fishing surfaces, bolt holes and inside surfaces with an approved oil or grease as specified in AREMA Specification, Chapter 5, Part 5. The joint bars shall be positioned on the rail, bolts inserted and washers and nuts applied by hand. The bars shall be in a vertical (uncocked) position as one of the center bolts is tightened. All bolts shall be completely tightened when the rail is laid to a tension range of 20,000 to 25,000 pounds per bolt and in the proper sequence to properly seat the rail joint, beginning at the center and working in both directions toward the end. To assure that the joint bars maintain their vertical position, the toes of the bars should be tapped with a maul as the bolts are tightened. After the rail has been laid all bolts shall be tightened again.

648.083 Allowable Compromise Joints and Installation. No rail compromise joints in excess of 30 lbs per yard shall be allowed. Where two rail sections in excess of that difference meet, a transition rail of not less than 19 and 1/2 feet of intermediate weight shall be required with a second set of compromise joints at the opposite end. Compromise joint locations shall be staggered at least 20 inches. Contractor shall be responsible for placing joint bars based on relay rail section and existing rail sections being joined with allowance for head wear in the relay rail section.

648.084 Rail Anchor Installation. Track shall be fully anchored to the pattern indicated on the Contract Plans. Place anchors to achieve full bearing against the ties and fully drive or attach anchors following manufacturer's instructions.

648.09 Initial Surface and Alignment. The Contractor shall surface and line all track and turnouts constructed sufficiently to provide a running surface for on-track maintenance equipment and within 1 inch of final elevation and horizontal alignment. Also included will be making proper runoffs into existing side tracks and at the ends of track construction.

648.091 Final Track Surfacing and Alignment Tolerances. Final track alignment and surfacing will be accomplished by the Contractor only after all track work has been completed up to and including Initial Surface and Alignment as noted above. The tolerances for completed track work shall be as follows:

TRACK SURFACE & ALIGNMENT	TOLERANCES
Deviation from uniform profile on either rail at the mid-ordinate of a 62-foot chord may not exceed --	1/2 inch
Deviation from zero cross level at any point on tangent or designated elevation on curves may not exceed --	1/4 inch
The difference in cross level between any two points less than 62 feet apart on tangents or curves may not exceed --	1/4 inch
Deviation from uniform alignment between any two points less than 62 feet apart on tangent and curved track may not exceed --	1/2 inch

Negative superelevation will not be allowed.

648.092 Allowable Track Raises/Runoff. Any track raise in excess of 5 inches in one surfacing pass will not be allowed. Track shall be fully tamped after each track raise prior to performing additional raises. The final surfacing and lining operation to place the track to the tolerances indicated above will be limited to 1 inch. The runoff at the end of an incomplete raise, into existing sidings, or at the ends of the project track work, shall not exceed 1/2 inch in 31 feet of track unless otherwise approved by the Resident.

648.093 Tamping. Tamping operations during track construction shall be performed with an approved 16 tool power tamper of the vibratory squeeze type. The power tamper shall have tamping tools with a tamping end of sufficient area to tamp each tie to the satisfaction of MaineDOT. Tamping ends shall be repaired or replaced after 30% wear of the working surface. Final surfacing shall be accomplished with a fully automatic model as specified in Subsection 648.094.

Cross ties and switch timber shall be tamped from a point approximately 15 inches but not less than 13 inches inside each rail on both sides of the tie to the tie end. Tamping shall not be permitted at the center of tie between these limits. The center area shall be filled with ballast. Both ends of the tie shall be tamped simultaneously and tamping inside and outside of the rail shall be done at the same time.

All cross ties and switch timber shall be tamped tightly to provide good bearing against the base of rail after the track and turnout is raised to true surface. All "down" ties and switch timber shall be brought up to the base of rail and machine tamped by the Contractor. The resultant surface and alignment shall be of uniform and smooth quality. Surfacing of turnouts shall include all four rails.

Tamping of track in snow and frozen ballast conditions will not be permitted.

648.094 Final Surfacing and Alignment. Track raise during final surfacing and alignment will be limited to one inch or less. All track work constructed shall be final surfaced and lined using a 16 tool minimum, fully automatic machine. This machine shall be supported by a ballast regulator with a mechanical broom capable of removing all ballast from the surface of the ties and forming a smooth ballast shoulder and slope as indicated on the plans.

Upon completion of surfacing and lining operation, the track shall have been fully tamped, lined,

ballasted and dressed to adequately support and restrain the track under load. The Contractor shall ensure that all rail anchors are properly seated so as to exert anti-rail creepage force against the edge of the tie. Rail anchors not meeting this requirement shall be adjusted into the proper position or replaced as necessary.

648.095 Handling Ballast During Surfacing. Ballast shall be unloaded only in the amount required for the track raise and for ballast section restoration which shall include shoulder restoration.

The Contractor shall use a ballast regulator machine to distribute the stone ballast in sufficient quantity for tamping the track and turnouts and for restoring the ballast section which shall conform to the typical sections.

Ballast shall be unloaded from railroad cars or hi-rail equipped vehicles. Tractor or rubber tired vehicles are not permitted to operate over the track structure.

The Contractor shall avoid pulling sod, vegetation and other foreign matter onto the track structure or shoulders for the purpose of tamping or dressing the ballast section.

648.096 Walkway Ballast Where indicated on the Contract Drawings, place, shape and grade ballast on shoulders and around turnout operating mechanisms and between new siding and existing Main track.

METHOD OF MEASUREMENT

648.10 Method of Measurement. Track construction will be measured by the linear foot along the centerline of track complete in place and accepted. Where different track construction meets with staggered joints, the linear measurement will be to mid point of the stagger. Where track construction meets a special trackwork unit, the linear measurement will be to the centerline of the first long timber of the special trackwork unit.

Ballast, both within track construction and walkway ballast will not be separately measured, but considered incidental to track and turnout items.

Compromise joint bars shall not be separately measured but shall be considered incidental to the various items of trackwork construction.

Surfacing and lining of track as required during track construction will not be separately measured, but will be considered incidental to the various items of track construction including turnouts. All surfacing and aligning passes as defined herein, will be by the Contractor.

Existing track removed and stockpiled will be measured by the linear foot along the centerline of track removed. Where end of rails removed are staggered, the linear measurement will be to the mid-point of the stagger.

BASIS OF PAYMENT

648.11 Basis of Payment. The accepted quantities of track will be paid for at the contract unit price per track foot for each kind and type of track construction specified, complete in place. Included in each type of construction are the following:

Payment for new Timber and Ballasted Track Construction shall include material and complete installation of track structure indicated on the Contract Drawings from the subballast up. Also included are installing compromise joints and all labor and equipment to surface and line track with specified equipment. All surfacing to achieve the profile and alignment on the plans and to shape the ballast shoulder to the typical cross sections is also included. Placing and setting rail anchors and placement, grading and shaping of

walkway ballast shall be by Contractor and be considered incidental to track and turnout construction. Placing and setting of derails shall be by contractor and considered incidental to track construction. All timber and ballasted track construction will be paid for at the contract unit price per track foot. 115 RE Track Construction will be paid under Item 648.103.

Payment for Remove and Dispose of Existing Track – At grade will be paid for at the contract unit price per track foot. Payment includes saw cutting rails, and carefully loading, transporting, unloading rails and OTM at the designated storage area and neatly stacking rail and OTM. This will be paid under Item 648.53.

Payment for Remove and Dispose of Existing Turnouts will be paid for at the contract unit price per turnout unit. Payment includes saw cutting rails, and carefully loading, transporting, unloading rails, frogs, switch stands, and OTM at the designated storage area and neatly stacking all components. This will be paid under Item 648.408.

Payment for Bumping Post will be paid at the contract unit price per each bumping post installed. Included is the complete installation of the track structure associated with the bumping post as indicated on the Contract Drawings from the subballast up. Also include purchase and delivery of bumping post unit. This will be paid for under Item 648.63.

Payment will be made under:

Pay Item		Pay Unit
648.103	115 RE Timber & Ballasted Track Construction	Track Foot
648.53	Remove and Dispose of Existing Track – At Grade	Track Foot
648.408	Remove and Dispose Existing Turnouts - Retained by Dept	Each
648.61	Bumping Post	Each