APPENDIX K

Lackawanna Cut-Off Restoration – Passenger Rail Study

CONCEPTUAL COST ESTIMATE
**CONCEPTUAL COST ESTIMATE**

**WATER GAP TO SLATEFORD PASSENGER RAIL STUDY**

### WATER GAP RAIL STATION ALTERNATIVE 2

<table>
<thead>
<tr>
<th>CATEGORIES</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>UNIT PRICE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STRUCTURES (INCLUDES MECHANICAL, ELECTRICAL AND PLUMBING)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parking Garage</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$18,000,000.00</td>
<td>$18,000,000</td>
</tr>
<tr>
<td>High Level Railway Platform w/ Canopy</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$2,115,000.00</td>
<td>$2,115,000</td>
</tr>
<tr>
<td><strong>GARAGE ENTRANCE/EXIT ROADWAYS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Superpave WMA Wearing Course 1 1/2&quot; Depth</td>
<td>5359</td>
<td>SY</td>
<td>$13.00</td>
<td>$69,667</td>
</tr>
<tr>
<td>Superpave WMA Binder Course 2 1/2&quot; Depth</td>
<td>5359</td>
<td>SY</td>
<td>$18.00</td>
<td>$96,462</td>
</tr>
<tr>
<td>Superpave WMA Base Course 4&quot; Depth</td>
<td>5359</td>
<td>SY</td>
<td>$41.00</td>
<td>$219,719</td>
</tr>
<tr>
<td>Subbase 6&quot; Depth (No. 2A)</td>
<td>5359</td>
<td>SY</td>
<td>$14.00</td>
<td>$75,026</td>
</tr>
<tr>
<td>Bituminous Tack Coat</td>
<td>10718</td>
<td>SY</td>
<td>$1.75</td>
<td>$18,757</td>
</tr>
<tr>
<td>Excavation for Pavement</td>
<td>1861</td>
<td>CY</td>
<td>$45.00</td>
<td>$83,745</td>
</tr>
<tr>
<td><strong>DRAINAGE (INCLUDING EXCAVATION)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drainage</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$120,000.00</td>
<td>$120,000</td>
</tr>
<tr>
<td><strong>ROADSIDE FEATURES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plain Cement Concrete Curb</td>
<td>450</td>
<td>LF</td>
<td>$55.00</td>
<td>$24,750</td>
</tr>
<tr>
<td>Cement Concrete Sidewalk</td>
<td>443</td>
<td>SY</td>
<td>$138.00</td>
<td>$61,200</td>
</tr>
<tr>
<td><strong>E&amp;S (INCLUDING SEEDING AND TOPSOIL)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Erosion and Sediment Control BMP</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$20,000.00</td>
<td>$20,000</td>
</tr>
<tr>
<td><strong>SIGNING AND PAVEMENT MARKINGS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signing and Pavement Markings</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$10,000.00</td>
<td>$10,000</td>
</tr>
<tr>
<td><strong>MPT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintenance &amp; Protection of Traffic</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$80,000.00</td>
<td>$80,000</td>
</tr>
<tr>
<td><strong>MISCELLANEOUS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stormwater Management BMP</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$220,000.00</td>
<td>$220,000</td>
</tr>
<tr>
<td>Mobilization</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$1,152,000.00</td>
<td>$1,152,000</td>
</tr>
<tr>
<td>Excavation/Foreign Borrow</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$500,000.00</td>
<td>$500,000</td>
</tr>
<tr>
<td>Unforeseen Water Pollution Control</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$5,000.00</td>
<td>$5,000</td>
</tr>
<tr>
<td>Clearing and Grubbing</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$60,000.00</td>
<td>$60,000</td>
</tr>
<tr>
<td>Construction Surveying</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$20,000.00</td>
<td>$20,000</td>
</tr>
<tr>
<td>Utility Services and Appurtenances</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$310,000.00</td>
<td>$310,000</td>
</tr>
<tr>
<td>Field Office</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$30,000.00</td>
<td>$30,000</td>
</tr>
<tr>
<td>Landscaping</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$15,000.00</td>
<td>$15,000</td>
</tr>
<tr>
<td><strong>SUBTOTAL 1:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>$23,306,326</strong></td>
<td></td>
</tr>
<tr>
<td><strong>CONTINGENCIES (25% OF SUBTOTAL, EXCLUDING STRUCTURE ITEMS):</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>$5,826,582</strong></td>
</tr>
<tr>
<td><strong>SUBTOTAL 2:</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>$29,132,908</strong></td>
</tr>
<tr>
<td><strong>CONSTRUCTION MANAGEMENT/INSPECTION (12% OF SUBTOTAL 2):</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>$3,495,949</strong></td>
</tr>
<tr>
<td><strong>PRESENT YEAR CONSTRUCTION COST (2019):</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>$32,630,000</strong></td>
</tr>
</tbody>
</table>

*This cost estimate does not include costs associated with Engineering, Permitting or Property Acquisitions.*
## CONCEPTUAL TRACK ESTIMATE ALTERNATIVE 1

### (UPGRADE MAIN TO FRA CLASS 2)

<table>
<thead>
<tr>
<th>CATEGORIES</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>UNIT PRICE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CONTRACT WORK</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paving</td>
<td>80</td>
<td>SY</td>
<td>$30.00</td>
<td>$2,400</td>
</tr>
<tr>
<td>Railroad Subballast</td>
<td>3097</td>
<td>CY</td>
<td>$65.00</td>
<td>$201,305</td>
</tr>
<tr>
<td>Traffic Control</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$10,000.00</td>
<td>$10,000</td>
</tr>
<tr>
<td>Utilities</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$10,000.00</td>
<td>$10,000</td>
</tr>
<tr>
<td>Ditching</td>
<td>1000</td>
<td>CY</td>
<td>$21.00</td>
<td>$21,000</td>
</tr>
<tr>
<td>Other Drainage</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$50,000.00</td>
<td>$50,000</td>
</tr>
<tr>
<td>Construct New Welded Track 136 RE</td>
<td>6889</td>
<td>TF</td>
<td>$396.00</td>
<td>$2,728,044</td>
</tr>
<tr>
<td>Construct New Welded TO No. 15</td>
<td>1</td>
<td>EACH</td>
<td>$471,300.00</td>
<td>$471,300</td>
</tr>
<tr>
<td>Remove Track</td>
<td>220</td>
<td>TF</td>
<td>$19.00</td>
<td>$4,180</td>
</tr>
<tr>
<td>Salvage</td>
<td>1</td>
<td>LUMP SUM</td>
<td>-$1,452.00</td>
<td>-$1,452</td>
</tr>
<tr>
<td>Additional Ballast</td>
<td>2323</td>
<td>CY</td>
<td>$20.00</td>
<td>$46,460</td>
</tr>
<tr>
<td>Line and Surface Track</td>
<td>20991</td>
<td>TF</td>
<td>$28.00</td>
<td>$587,748</td>
</tr>
<tr>
<td>Saw Cuts</td>
<td>8</td>
<td>EACH</td>
<td>$125.00</td>
<td>$1,000</td>
</tr>
<tr>
<td>Install Bonded Insulated Joints</td>
<td>2</td>
<td>EACH</td>
<td>$5,624.00</td>
<td>$11,248</td>
</tr>
<tr>
<td>Additional Field Welds</td>
<td>26</td>
<td>EACH</td>
<td>$798.00</td>
<td>$20,748</td>
</tr>
<tr>
<td>Additional Ties</td>
<td>4200</td>
<td>EACH</td>
<td>$62.00</td>
<td>$260,400</td>
</tr>
<tr>
<td>Additional OTM (Bars, Bolts, Plates)</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$30,000.00</td>
<td>$30,000</td>
</tr>
<tr>
<td>Replace Grade Crossing</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$30,000.00</td>
<td>$30,000</td>
</tr>
<tr>
<td>RR Construction Management (5%)</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$224,219.00</td>
<td>$224,219</td>
</tr>
<tr>
<td><strong>MISCELLANEOUS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insurance (5%)</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$235,430.00</td>
<td>$235,430</td>
</tr>
<tr>
<td>Performance Bond (1.5%)</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$74,160.00</td>
<td>$74,160</td>
</tr>
<tr>
<td>Payment Bond (1.5%)</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$74,160.00</td>
<td>$74,160</td>
</tr>
<tr>
<td>Mobilization (5%)</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$235,430.00</td>
<td>$235,430</td>
</tr>
<tr>
<td>Contingencies (25%)</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$1,065,556.00</td>
<td>$1,065,556</td>
</tr>
</tbody>
</table>

*PRESENT YEAR CONSTRUCTION COST (2019): $6,400,000*

* This estimate does not include Environmental and Permitting Costs, Highway, Structures and foundations, or Railroad C&S Works.
** This estimate assumes that private contractors will perform all trackwork
*** This estimate is conceptual and has been developed without benefit of field survey, field inspection or detailed design.
## CONCEPTUAL TRACK ESTIMATE ALTERNATIVE 2

### CONCEPTUAL SIGNAL ESTIMATE - SIGNAL & PTC SYSTEM UPGRADE

<table>
<thead>
<tr>
<th>CATEGORIES</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>UNIT PRICE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slateford Interlocking Signal Equipment</td>
<td>1</td>
<td>EACH</td>
<td>$1,650,000.00</td>
<td>$1,650,000</td>
</tr>
<tr>
<td>Water Gap CP Signal Equipment</td>
<td>1</td>
<td>EACH</td>
<td>$550,000.00</td>
<td>$550,000</td>
</tr>
<tr>
<td>River Road Grade Crossing Complete</td>
<td>1</td>
<td>EACH</td>
<td>$400,000.00</td>
<td>$400,000</td>
</tr>
<tr>
<td>PTC ACSES</td>
<td></td>
<td>8’ X 8’ Radio Instrument House Complete</td>
<td>2</td>
<td>EACH</td>
</tr>
<tr>
<td>ACSES Transponders</td>
<td>12</td>
<td>EACH</td>
<td>$2,500.00</td>
<td>$30,000</td>
</tr>
<tr>
<td>Armored Fiber optic Cable, 48 Strand, Multimode</td>
<td>30000</td>
<td>EACH</td>
<td>$0.90</td>
<td>$27,000</td>
</tr>
<tr>
<td>Misc. NJT Spec Signal Cable (Control House to Field Apparatus)</td>
<td>1</td>
<td>EACH</td>
<td>$80,000.00</td>
<td>$80,000</td>
</tr>
<tr>
<td>Interoperability to IETMS (PTC) System</td>
<td>1</td>
<td>EACH</td>
<td>$350,000.00</td>
<td>$350,000</td>
</tr>
<tr>
<td>Radio coverage analysis</td>
<td>1</td>
<td>EACH</td>
<td>$125,000.00</td>
<td>$125,000</td>
</tr>
<tr>
<td>Construction Management (5%)</td>
<td>1</td>
<td>EACH</td>
<td>$175,600.00</td>
<td>$175,600</td>
</tr>
</tbody>
</table>

### MISCELLANEOUS

<table>
<thead>
<tr>
<th>CATEGORIES</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>UNIT PRICE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Force Account Field Labor</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$2,396,940.00</td>
<td>$2,396,940</td>
</tr>
<tr>
<td>Commissioning (Force Account)</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$553,140.00</td>
<td>$553,140</td>
</tr>
<tr>
<td>Mobilization (5%)</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$184,380.00</td>
<td>$184,380</td>
</tr>
<tr>
<td>Contingencies (25%)</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$1,364,412.00</td>
<td>$1,364,412</td>
</tr>
</tbody>
</table>

**PRESENT YEAR CONSTRUCTION COST (2019): $8,190,000**

(1) All signal locations pre-wired houses with VPI Processors, Micro-WEU, Genercode II Track circuits, AC Power supply, rectifiers, DC batteries, Local Control Panel(LCP), lightning protection (surge protectors), fiber optic modems for communication (control & indication) from NJT ROCC, including PTC Safety Server.

(2) RIH to include modems for communication to CIL WEU, & ROCC PTC Safety Server, PTC 218 MH radio transmitter, radio filter, rectifier, batteries, and antenna.

(3) Switch layout to be Alstom SH dual operation switch.

(4) Construction to be performed by NJT signal force account personnel.

(5) Interoperability with PTC freight operations - IETMS - WSRS connection to PTC safety Server.

(6) Signal design to include block layout, safe braking analysis, interlocking circuit design, transponder layout design, and factory breakdown testing.
**WATER GAP TO DELAWARE RIVER CORRIDOR DRAINAGE MAINTENANCE/ UPGRADES**

<table>
<thead>
<tr>
<th>CATEGORIES</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>UNIT PRICE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation of Pipes 18&quot;-48&quot;</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$120,000.00</td>
<td>$120,000</td>
</tr>
<tr>
<td>Standard Inlet Box</td>
<td>4</td>
<td>EACH</td>
<td>$2,300.00</td>
<td>$9,200</td>
</tr>
<tr>
<td>Earthwork for Pipe Trench</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$15,000.00</td>
<td>$15,000</td>
</tr>
</tbody>
</table>

*PRESENT YEAR CONSTRUCTION COST (2019): $150,000

**SLATEFORD CREEK CULVERT REPAIRS**

<table>
<thead>
<tr>
<th>CATEGORIES</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>UNIT PRICE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repair Deteriorated Concrete</td>
<td>18</td>
<td>SF</td>
<td>$260.00</td>
<td>$4,680</td>
</tr>
<tr>
<td>Underpin Footing</td>
<td>10</td>
<td>CY</td>
<td>$600.00</td>
<td>$6,000</td>
</tr>
<tr>
<td>Class A Cement Concrete</td>
<td>4</td>
<td>CY</td>
<td>$2,300.00</td>
<td>$9,200</td>
</tr>
<tr>
<td>Repair Deteriorated Concrete</td>
<td>225</td>
<td>SF</td>
<td>$260.00</td>
<td>$58,500</td>
</tr>
<tr>
<td>Cement Concrete Paving for Stream Beds</td>
<td>42</td>
<td>CY</td>
<td>$550.00</td>
<td>$23,100</td>
</tr>
</tbody>
</table>

**PRESENT YEAR CONSTRUCTION COST (2019):**

*This cost estimate does not include costs associated with Engineering, Permitting or Right-of-Way Acquisitions.*
### SLATEFORD BRIDGE

<table>
<thead>
<tr>
<th>CATEGORIES</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>UNIT PRICE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EXCAVATION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class 1 Excavation</td>
<td>2242</td>
<td>CY</td>
<td>$29.00</td>
<td>$65,018</td>
</tr>
<tr>
<td>Class 1B Excavation</td>
<td>851</td>
<td>CY</td>
<td>$33.00</td>
<td>$28,083</td>
</tr>
<tr>
<td><strong>PAVEMENT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Superpave WMA Wearing Course 1 1/2&quot; Depth</td>
<td>2773</td>
<td>SY</td>
<td>$12.50</td>
<td>$34,663</td>
</tr>
<tr>
<td>Superpave WMA Binder Course 2 1/2&quot; Depth</td>
<td>2773</td>
<td>SY</td>
<td>$14.00</td>
<td>$38,822</td>
</tr>
<tr>
<td>Superpave WMA Wearing Course 4&quot; Depth</td>
<td>2773</td>
<td>SY</td>
<td>$18.00</td>
<td>$49,914</td>
</tr>
<tr>
<td>Subbase 6&quot; Depth (No. 2A)</td>
<td>2773</td>
<td>SY</td>
<td>$13.00</td>
<td>$36,049</td>
</tr>
<tr>
<td>Bituminous Tack Coat</td>
<td>5546</td>
<td>SY</td>
<td>$0.75</td>
<td>$4,160</td>
</tr>
<tr>
<td><strong>BRIDGE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class 3 Excavation</td>
<td>1760</td>
<td>CY</td>
<td>$30.00</td>
<td>$52,800</td>
</tr>
<tr>
<td>Class AA Cement Concrete</td>
<td>66</td>
<td>CY</td>
<td>$1,100.00</td>
<td>$72,600</td>
</tr>
<tr>
<td>Class A Concrete</td>
<td>83</td>
<td>CY</td>
<td>$800.00</td>
<td>$66,400</td>
</tr>
<tr>
<td>Prestressed Concrete Adjacent Box Beams 48&quot;x21&quot;</td>
<td>443</td>
<td>LF</td>
<td>$321.00</td>
<td>$142,203</td>
</tr>
<tr>
<td>Selected Borrow Excavation, Structure Backfill</td>
<td>5705</td>
<td>CY</td>
<td>$45.00</td>
<td>$256,725</td>
</tr>
<tr>
<td>Removal of Existing Bridge Structure</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$20,000.00</td>
<td>$20,000</td>
</tr>
<tr>
<td>Membrane Waterproofing</td>
<td>89</td>
<td>SY</td>
<td>$65.00</td>
<td>$5,785</td>
</tr>
<tr>
<td>No. 57 Coarse Aggregate</td>
<td>10</td>
<td>CY</td>
<td>$90.00</td>
<td>$900</td>
</tr>
<tr>
<td>Reinforcement Bars, Epoxy Coated</td>
<td>97750</td>
<td>LBS</td>
<td>$1.75</td>
<td>$171,063</td>
</tr>
<tr>
<td>Protective Coating for Reinforced Concrete Surfaces</td>
<td>254</td>
<td>SY</td>
<td>$7.00</td>
<td>$1,778</td>
</tr>
<tr>
<td>Temporary Excavation Support System</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$236,250.00</td>
<td>$236,250</td>
</tr>
<tr>
<td><strong>DRAINAGE (INCLUDING EXCAVATION)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drainage</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$12,000.00</td>
<td>$12,000</td>
</tr>
<tr>
<td><strong>ROADSIDE FEATURES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guide Rail and Attenuators</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$32,000.00</td>
<td>$32,000</td>
</tr>
<tr>
<td><strong>E&amp;S (INCLUDING SEEDING AND TOPSOIL)</strong></td>
<td>1</td>
<td>LUMP SUM</td>
<td>$20,000.00</td>
<td>$20,000</td>
</tr>
<tr>
<td>Erosion and Sediment Control BMP</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$20,000.00</td>
<td>$20,000</td>
</tr>
<tr>
<td>Signing and Pavement Markings</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$10,000.00</td>
<td>$10,000</td>
</tr>
<tr>
<td>Maintenance &amp; Protection of Traffic</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$123,000.00</td>
<td>$123,000</td>
</tr>
<tr>
<td><strong>MISCELLANEOUS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mobilization</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$181,000.00</td>
<td>$181,000</td>
</tr>
<tr>
<td>Unforeseen Water Pollution Control</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$5,000.00</td>
<td>$5,000</td>
</tr>
<tr>
<td>Clearing and Grubbing</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$20,213.81</td>
<td>$20,214</td>
</tr>
<tr>
<td>Construction Surveying</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$20,000.00</td>
<td>$20,000</td>
</tr>
<tr>
<td>Field Office</td>
<td>1</td>
<td>LUMP SUM</td>
<td>$30,000.00</td>
<td>$30,000</td>
</tr>
<tr>
<td><strong>SUBTOTAL 1:</strong></td>
<td></td>
<td></td>
<td>$2,275,176</td>
<td></td>
</tr>
<tr>
<td><strong>CONTINGENCIES (25% OF SUBTOTAL 1, EXCLUDING STRUCTURE ITEMS):</strong></td>
<td></td>
<td></td>
<td>$568,794</td>
<td></td>
</tr>
<tr>
<td><strong>CONSTRUCTION MANAGEMENT/INSPECTION (12% OF SUBTOTAL 2):</strong></td>
<td></td>
<td></td>
<td>$341,277</td>
<td></td>
</tr>
<tr>
<td><strong>PRESENT YEAR CONSTRUCTION COST (2019):</strong></td>
<td></td>
<td></td>
<td>$3,190,000</td>
<td></td>
</tr>
</tbody>
</table>

* This cost estimate does not include costs associated with Engineering, Permitting or Right-of-Way Acquisitions.
# Paulinskill Viaduct Rehabilitation

<table>
<thead>
<tr>
<th>CATEGORIES</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>UNIT PRICE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>SITE WORK</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remove Vegetation &amp; Debris</td>
<td>1.0</td>
<td>ACRE</td>
<td>$25,000.00</td>
<td>$25,000</td>
</tr>
<tr>
<td>Remove Ballast</td>
<td>5704.0</td>
<td>CY</td>
<td>$50.00</td>
<td>$285,200</td>
</tr>
<tr>
<td>Place Selective Fill over Structure</td>
<td>3422.0</td>
<td>CY</td>
<td>$50.00</td>
<td>$171,100</td>
</tr>
<tr>
<td>Ballast Rails and Ties over Structure</td>
<td>1300.0</td>
<td>CY</td>
<td>$1,000.00</td>
<td>$1,300,000</td>
</tr>
<tr>
<td>Construct Open JT. Drainage</td>
<td>1100.0</td>
<td>LF/TRACK</td>
<td>$100.00</td>
<td>$110,000</td>
</tr>
<tr>
<td>Rip Rap at Piers</td>
<td>900.0</td>
<td>CY LF</td>
<td>$160.00</td>
<td>$144,000</td>
</tr>
<tr>
<td>Embankment Excavation</td>
<td>5000.0</td>
<td>CY</td>
<td>$100.00</td>
<td>$500,000</td>
</tr>
<tr>
<td>Restore Embankment</td>
<td>5000.0</td>
<td>CY</td>
<td>$100.00</td>
<td>$500,000</td>
</tr>
<tr>
<td>DEMOLITION</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demo Riling Pillars</td>
<td>65.0</td>
<td>CY</td>
<td>$100.00</td>
<td>$6,500</td>
</tr>
<tr>
<td>Demo refuge</td>
<td>400.0</td>
<td>CY</td>
<td>$100.00</td>
<td>$40,000</td>
</tr>
<tr>
<td>Demo End Spans (2)</td>
<td>0.0</td>
<td>CY</td>
<td>$100.00</td>
<td>$0</td>
</tr>
<tr>
<td>Demo Ballast Trough</td>
<td>0.0</td>
<td>CY</td>
<td>$100.00</td>
<td>$0</td>
</tr>
<tr>
<td>Selectively Demo Spandrel Walls</td>
<td>0.0</td>
<td>CY</td>
<td>$100.00</td>
<td>$0</td>
</tr>
<tr>
<td>SPALL REPAIRS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arch Barrel Spall Repairs</td>
<td>8400.0</td>
<td>SF</td>
<td>$200.00</td>
<td>$1,680,000</td>
</tr>
<tr>
<td>Ballast Trough Spall Repairs</td>
<td>9350.0</td>
<td>SF</td>
<td>$200.00</td>
<td>$1,870,000</td>
</tr>
<tr>
<td>Pier Spall Repairs</td>
<td>3000.0</td>
<td>SF</td>
<td>$200.00</td>
<td>$600,000</td>
</tr>
<tr>
<td>Spandrel Wall Spall Repairs</td>
<td>5405.0</td>
<td>SF</td>
<td>$200.00</td>
<td>$1,081,000</td>
</tr>
<tr>
<td>RECONSTRUCTION</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partially Reconstruct Spandrel Walls</td>
<td>0.0</td>
<td>CY</td>
<td>$2,000.00</td>
<td>$0</td>
</tr>
<tr>
<td>Reconstruct Ballast Trough</td>
<td>0.0</td>
<td>CY</td>
<td>$2,000.00</td>
<td>$0</td>
</tr>
<tr>
<td>Reconstruct Drainage Outlets</td>
<td>16.0</td>
<td>EA</td>
<td>$5,000.00</td>
<td>$80,000</td>
</tr>
<tr>
<td>Reconstruct Refuge</td>
<td>400.0</td>
<td>CY</td>
<td>$2,000.00</td>
<td>$800,000</td>
</tr>
<tr>
<td>Reconstruct Pillars</td>
<td>65.0</td>
<td>CY</td>
<td>$2,000.00</td>
<td>$130,000</td>
</tr>
<tr>
<td>Reconstruct End Spans</td>
<td>0.0</td>
<td>CY</td>
<td>$2,000.00</td>
<td>$0</td>
</tr>
<tr>
<td>Install Railing</td>
<td>2200.0</td>
<td>LF/TRACK</td>
<td>$425.00</td>
<td>$935,000</td>
</tr>
<tr>
<td>Waterproof Tub</td>
<td>4644.0</td>
<td>SY</td>
<td>$80.00</td>
<td>$371,520</td>
</tr>
<tr>
<td>Anti-Graffiti Coating</td>
<td>14933.3</td>
<td>SY</td>
<td>$5.00</td>
<td>$74,667</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$10,703,987</td>
</tr>
<tr>
<td>CONTINGENCIES (20% OF SUBTOTAL 1, EXCLUDING STRUCTURE ITEMS):</td>
<td></td>
<td></td>
<td></td>
<td>$2,140,798</td>
</tr>
<tr>
<td>CONSTRUCTION MANAGEMENT/INSPECTION (12% OF SUBTOTAL 2):</td>
<td></td>
<td></td>
<td></td>
<td>$3,211,196</td>
</tr>
<tr>
<td>*PRESENT YEAR CONSTRUCTION COST (2019):</td>
<td></td>
<td></td>
<td></td>
<td>$16,000,000</td>
</tr>
<tr>
<td>Categories</td>
<td>Quantity</td>
<td>Unit</td>
<td>Unit Price</td>
<td>Total</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>----------</td>
<td>----------</td>
<td>-------------</td>
<td>----------</td>
</tr>
<tr>
<td><strong>SITE WORK</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remove Vegetation &amp; Debris</td>
<td>2.0</td>
<td>ACRE</td>
<td>$25,000.00</td>
<td>$50,000</td>
</tr>
<tr>
<td>Remove Ballast</td>
<td>7518.5</td>
<td>CY</td>
<td>$50.00</td>
<td>$375,926</td>
</tr>
<tr>
<td>Place Selective Fill over Structure</td>
<td>4511.1</td>
<td>CY</td>
<td>$50.00</td>
<td>$225,556</td>
</tr>
<tr>
<td>Ballast Rails and Ties over Structure</td>
<td>1650.0</td>
<td>CY</td>
<td>$1,000.00</td>
<td>$1,650,000</td>
</tr>
<tr>
<td>Construct Open JT. Drainage</td>
<td>1450.0</td>
<td>LT/TRACK</td>
<td>$100.00</td>
<td>$145,000</td>
</tr>
<tr>
<td>Rip Rap at Piers</td>
<td>4500.0</td>
<td>CY LF</td>
<td>$160.00</td>
<td>$720,000</td>
</tr>
<tr>
<td>Embankment Excavation</td>
<td>5000.0</td>
<td>CY</td>
<td>$100.00</td>
<td>$500,000</td>
</tr>
<tr>
<td>Restore Embankment</td>
<td>5000.0</td>
<td>CY</td>
<td>$100.00</td>
<td>$500,000</td>
</tr>
<tr>
<td><strong>DEMOLITION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demo Riling Pillars</td>
<td>90.7</td>
<td>CY</td>
<td>$100.00</td>
<td>$9,067</td>
</tr>
<tr>
<td>Demo refuge</td>
<td>360.0</td>
<td>CY</td>
<td>$100.00</td>
<td>$36,000</td>
</tr>
<tr>
<td>Demo End Spans (2)</td>
<td>3000.0</td>
<td>CY</td>
<td>$100.00</td>
<td>$300,000</td>
</tr>
<tr>
<td>Demo Ballast Trough</td>
<td>5800.0</td>
<td>CY</td>
<td>$100.00</td>
<td>$580,000</td>
</tr>
<tr>
<td>Selectively Demo Spandrel Walls</td>
<td>336.0</td>
<td>CY</td>
<td>$100.00</td>
<td>$33,600</td>
</tr>
<tr>
<td><strong>SPALL REPAIRS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arch Barrel Spall Repairs</td>
<td>28560.0</td>
<td>SF</td>
<td>$200.00</td>
<td>$5,712,000</td>
</tr>
<tr>
<td>Pier Spall Repairs</td>
<td>4800.0</td>
<td>SF</td>
<td>$200.00</td>
<td>$960,000</td>
</tr>
<tr>
<td>Spandrel Wall Spall Repairs</td>
<td>14280.0</td>
<td>SF</td>
<td>$200.00</td>
<td>$2,856,000</td>
</tr>
<tr>
<td><strong>RECONSTRUCTION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partially Reconstruct Spandrel Walls</td>
<td>336.0</td>
<td>CY</td>
<td>$2,000.00</td>
<td>$672,000</td>
</tr>
<tr>
<td>Reconstruct Ballast Trough</td>
<td>5800.0</td>
<td>CY</td>
<td>$2,000.00</td>
<td>$11,600,000</td>
</tr>
<tr>
<td>Reconstruct Drainage Outlets</td>
<td>22.0</td>
<td>EA</td>
<td>$5,000.00</td>
<td>$110,000</td>
</tr>
<tr>
<td>Reconstruct Refuge</td>
<td>360.0</td>
<td>CY</td>
<td>$2,000.00</td>
<td>$720,000</td>
</tr>
<tr>
<td>Reconstruct Pillars</td>
<td>90.7</td>
<td>CY</td>
<td>$2,000.00</td>
<td>$181,334</td>
</tr>
<tr>
<td>Reconstruct End Spans</td>
<td>3000.0</td>
<td>CY</td>
<td>$2,000.00</td>
<td>$6,000,000</td>
</tr>
<tr>
<td>Install Railing</td>
<td>2900.0</td>
<td>LF/TRACK</td>
<td>$425.00</td>
<td>$1,232,500</td>
</tr>
<tr>
<td>Waterproof Tube</td>
<td>6122.2</td>
<td>SY</td>
<td>$80.00</td>
<td>$489,778</td>
</tr>
<tr>
<td>Anti-Graffiti Coating</td>
<td>14933.3</td>
<td>SY</td>
<td>$5.00</td>
<td>$74,667</td>
</tr>
</tbody>
</table>

**SUBTOTAL 1:** $35,733,427  
**CONTINGENCIES (20% OF SUBTOTAL 1, EXCLUDING STRUCTURE ITEMS):** $7,146,686  
**CONSTRUCTION MANAGEMENT/INSPECTION (12% OF SUBTOTAL 2):** $10,720,028  

**PRESENT YEAR CONSTRUCTION COST (2019):** $54,000,000
Notes:
(1) Construction Management/Construction Inspection included at 12% of Conceptual Construction Costs
(2) Track and Signal estimates based on desktop study. Additional field verification of existing conditions recommended to refine estimate. Estimate includes drainage and maintenance upgrades along track corridor.
(3) Estimate includes conceptual costs for restoration of the 20 mile segment in NJ from Andover to the Delaware River crossing, excluding major structure rehabilitations, based on the following:
   * A 2016 NJ Transit estimate of cost to complete the 7.3 mile segment from Port Morris to Andover, NJ was $61.6m which includes the $24m Roseville Tunnel rehabilitation
      * Inflation factor from 2016 to 2019 @ 3% per year = 9.3%
      * Conceptual track restoration cost per mile (not including major structures) = ($61.6m-$24.0m)*1.093/7.3 mile = $5.63 million/mile
   * Note that track restoration costs may vary depending on proposed operational concepts
(4) Conceptual Soft Costs estimated as follows:
   * Environmental Clearance/Public Involvement/Permitting @8% of Construction cost
   * Preliminary Design/Final Design @10% of Construction cost
(5) Conceptual Estimates in 2019 dollars

<table>
<thead>
<tr>
<th>CONSTRUCTION ITEM</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Gap Rail Station (1)</td>
<td>$32,630,000</td>
</tr>
<tr>
<td>Right of Way Acquisition, Delaware Water Gap Rail Station</td>
<td>$1,500,000</td>
</tr>
<tr>
<td>Slateford Bridge Construction and nearby Culvert Repairs (1)</td>
<td>$3,320,000</td>
</tr>
<tr>
<td>Signals and Positive Train Control (2)</td>
<td>$8,190,000</td>
</tr>
<tr>
<td>PA Track Restoration (2)</td>
<td>$16,610,000</td>
</tr>
<tr>
<td>NJ Track Restoration - Andover NJ to Delaware River Bridge (3)</td>
<td>$112,600,000</td>
</tr>
<tr>
<td>Delaware River Viaduct Rehabilitation</td>
<td>$54,000,000</td>
</tr>
<tr>
<td>Paulinskill Viaduct Rehabilitation</td>
<td>$16,000,000</td>
</tr>
<tr>
<td>Design, Environmental and Engineering Costs (4)</td>
<td>$44,080,000</td>
</tr>
</tbody>
</table>

Preliminary Total: $288,930,000