

Appendix B:  
Construction Cost Estimates

Trail Surface Cost Estimates by Segment  
Structure Cost Estimates

## Eastern Trail: Scarborough to South Portland Connector

### Trail Surface Cost Estimates by Segment

Typical Trail Surface = 12' wide, compacted gravel

#### Segment A

#### Old Eastern RR ROW: Nonesuch River to Pleasant Hill Road

| Item of Work                       | Quantity | Unit Cost    | Cost         | Comments                     |
|------------------------------------|----------|--------------|--------------|------------------------------|
| Typical Trail Surface, lf          | 1050     | \$ 75.00     | \$ 78,750.00 |                              |
| Elevated Trail/Boardwalk - Low, lf | 0        | \$ 375.00    | \$ -         |                              |
| Culvert, each                      | 0        | \$ 15,000.00 | \$ -         | Stream crossing n/o Nonesuch |
| Railing/Fence, lf                  |          |              | \$ -         |                              |
| Signs, each                        | 1        | \$ 250.00    | \$ 250.00    | At Pleasant Hill Road        |
| Clearing & Grubbing, ea            | 2        | \$ 5,000.00  | \$ 10,000.00 |                              |

|                       |     |  |               |
|-----------------------|-----|--|---------------|
| <b>Subtotal:</b>      |     |  | \$ 89,000.00  |
| <b>Contingency</b>    | 15% |  | \$ 13,350.00  |
| <b>Estimated Cost</b> |     |  | \$ 102,350.00 |

## Eastern Trail: Scarborough to South Portland Connector

### Trail Surface Cost Estimates by Segment

**Segment B1: North of Nonesuch River**

**Overland: Old Eastern RR ROW to Pleasant Hill Road**

| Item of Work                       | Quantity | Unit Cost    | Cost          | Comments                                       |
|------------------------------------|----------|--------------|---------------|--|
| Typical Trail Surface, lf          | 3000     | \$ 75.00     | \$ 225,000.00 | Assumes can avoid wetlands/floodplain          |
| Elevated Trail/Boardwalk - Low, lf | 200      | \$ 375.00    | \$ 75,000.00  | Two elevation rises/crossings/small structures |
| Culvert, each                      | 1        | \$ 15,000.00 | \$ 15,000.00  |  |
| Railing/Fence, lf                  |          |              | \$ -          |  |
| Signs, each                        |          | \$ 250.00    | \$ -          |  |
| Clearing & Grubbing, ea            | 5        | \$ 5,000.00  | \$ 25,000.00  |  |

|                |     |               |
|----------------|-----|---------------|
| Subtotal:      |     | \$ 340,000.00 |
| Contingency    | 15% | \$ 51,000.00  |
| Estimated Cost |     | \$ 391,000.00 |

**Segment B2: South of Nonesuch River**

**Overland: Old Eastern RR ROW to Pleasant Hill Road**

| Item of Work                       | Quantity | Unit Cost    | Cost          | Comments              |
|------------------------------------|----------|--------------|---------------|-----------------------|
| Typical Trail Surface, lf          | 2040     | \$ 75.00     | \$ 153,000.00 |                       |
| Elevated Trail/Boardwalk - Low, lf | 1200     | \$ 375.00    | \$ 450,000.00 | Width of wetland area |
| Culvert, each                      | 0        | \$ 15,000.00 | \$ -          |                       |
| Railing/Fence, lf                  |          |              | \$ -          |                       |
|                                    |          | \$ 250.00    | \$ -          |                       |
| Clearing & Grubbing, ea            |          | \$ 5,000.00  | \$ -          |                       |

|                |     |               |
|----------------|-----|---------------|
| Subtotal:      |     | \$ 603,000.00 |
| Contingency    | 15% | \$ 90,450.00  |
| Estimated Cost |     | \$ 693,450.00 |

## Eastern Trail: Scarborough to South Portland Connector

### Trail Surface Cost Estimates by Segment

#### Segment C

#### Old Eastern RR ROW: Pleasant Hill Road to Wainright Rec. Complex

| Item of Work                       | Quantity | Unit Cost    | Cost          |   |
|------------------------------------|----------|--------------|---------------|---|
| Typical Trail Surface, lf          | 2400     | \$ 75.00     | \$ 180,000.00 |   |
| Elevated Trail/Boardwalk - Low, lf |          | \$ 375.00    | \$ -          |   |
| Culvert, each                      | 0        | \$ 15,000.00 | \$ -          |   |
| Railing/Fence, lf                  | 3135     | \$ 25.00     | \$ 78,375.00  | Assumes railing on both sides, fill section + along rail line, one side |
| Signs, each                        | 4        | \$ 250.00    | \$ 1,000.00   |   |
| Clearing & Grubbing, ea            | 8        | \$ 5,000.00  | \$ 40,000.00  |   |
| Grade and Fill/Base, lf            | 1000     | \$ 50.00     | \$ 50,000.00  | Fill one edge of drainage swale   |

|                |     |    |                  |
|----------------|-----|----|------------------|
| Subtotal:      |     | \$ | 349,375.00       |
| Contingency    | 15% | \$ | <u>52,406.25</u> |
| Estimated Cost |     | \$ | 401,781.25       |

## Eastern Trail: Scarborough to South Portland Connector

### Trail Surface Cost Estimates by Segment

**Segment D1: Off-road sidepath adjacent to Pleasant Hill Road (either side)**
**Pleasant Hill Road: Old Eastern RR ROW to Rigby Road**

| Item of Work                       | Quantity | Unit Cost    | Cost         |             |
|------------------------------------|----------|--------------|--------------|-------------|
| Typical Trail Surface, lf          | 750      | \$ 75.00     | \$ 56,250.00 |             |
| Elevated Trail/Boardwalk - Low, lf |          | \$ 375.00    | \$ -         |             |
| Culvert, each                      | 0        | \$ 15,000.00 | \$ -         |             |
| Railing/Fence, lf                  |          |              | \$ -         |             |
| Signs, each                        | 2        | \$ 250.00    | \$ 500.00    | At driveway |
| Clearing & Grubbing, ea            | 2        | \$ 5,000.00  | \$ 10,000.00 |             |

|                |                  |                                       |
|----------------|------------------|---------------------------------------|
| Subtotal:      | \$ 66,750.00     |                                       |
| Contingency    | 15% \$ 10,012.50 |                                       |
| Estimated Cost | \$ 76,762.50     | Plus cost of structure and approaches |

**Segment D2: On-road, wide paved shoulder**
**Pleasant Hill Road: Old Eastern RR ROW to Rigby Road**

| Item of Work                       | Quantity | Unit Cost    | Cost          |   |
|------------------------------------|----------|--------------|---------------|---|
| Typical Trail Surface, lf          |          | \$ 75.00     | \$ -          |   |
| Elevated Trail/Boardwalk - Low, lf |          | \$ 375.00    | \$ -          |   |
| Culvert, each                      | 0        | \$ 15,000.00 | \$ -          |   |
| Railing/Fence, lf                  |          |              | \$ -          |   |
|                                    | 3        | \$ 250.00    | \$ 750.00     |   |
| Clearing & Grubbing, ea            | 1        | \$ 5,000.00  | \$ 5,000.00   |   |
| Add 6' paved shoulder, lf          | 1000     | \$ 100.00    | \$ 100,000.00 | Road only, both sides; Bridge has 5' shoulders on the structure |
| Signing/Striping                   | 1        | \$ 750.00    | \$ 750.00     |   |
|                                    |          |              | \$ -          |   |
|                                    |          |              | \$ -          |   |
| Subtotal:                          |          |              | \$ 106,500.00 |   |
| Contingency                        |          | 15%          | \$ 15,975.00  |   |
| Estimated Cost                     |          |              | \$ 122,475.00 |   |

## Eastern Trail: Scarborough to South Portland Connector

### Trail Surface Cost Estimates by Segment

**Segment E1A: Off-road sidepath adjacent to Pleasant Hill Road**  
**Pleasant Hill Road: Rigby Road to CMP ROW**

| Item of Work              | Quantity | Unit Cost    | Cost                |  |
|---------------------------|----------|--------------|---------------------|--|
| Typical Trail Surface, lf | 1750     | \$ 75.00     | \$ 131,250.00       |  |
| Elevated Trail, lf        |          | \$ 775.00    | \$ -                |  |
| Culvert, each             |          | \$ 50,000.00 | \$ -                |  |
| Railing/Fence, lf         | 375      | \$ 25.00     | \$ 9,375.00         |  |
| Signs, each               |          | \$ 250.00    | \$ -                |  |
| Clearing & Grubbing, ea   | 2        | \$ 5,000.00  | \$ 10,000.00        |  |
| Landscaping/Plantings     | 1        | \$ 5,000.00  | \$ 5,000.00         |  |
| Signing/Striping          | 1        | \$ 5,000.00  | \$ 5,000.00         | Numerous driveways; signs & crosswalks |
| Small Retaining Wall, lf  | 375      | \$ 225.00    | \$ 84,375.00        |  |
| Subtotal:                 |          |              | \$ 245,000.00       |  |
| Contingency               |          | 15%          | <u>\$ 36,750.00</u> |  |
| Estimated Cost            |          |              | \$ 281,750.00       |  |

**Segment E1B: Off-road sidepath adjacent to Pleasant Hill Road (either side)**  
**Pleasant Hill Road: Rigby Road to Pond View**

| Item of Work              | Quantity | Unit Cost    | Cost                |  |
|---------------------------|----------|--------------|---------------------|--|
| Typical Trail Surface, lf | 760      | \$ 75.00     | \$ 57,000.00        |  |
| Elevated Trail, lf        |          | \$ 775.00    | \$ -                |  |
| Culvert, each             |          | \$ 50,000.00 | \$ -                |  |
| Railing/Fence, lf         | 375      | \$ 25.00     | \$ 9,375.00         |  |
|                           |          | \$ 250.00    | \$ -                |  |
| Clearing & Grubbing, ea   | 1        | \$ 5,000.00  | \$ 5,000.00         |  |
| Signing/Striping          | 1        | \$ 3,500.00  | \$ 3,500.00         | Numerous driveways; signs & crosswalks |
| Small Retaining Wall, lf  | 375      | \$ 225.00    | \$ 84,375.00        |  |
| Subtotal:                 |          |              | \$ 159,250.00       |  |
| Contingency               |          | 15%          | <u>\$ 23,887.50</u> |  |
| Estimated Cost            |          |              | \$ 183,137.50       |  |

**Segment E2A: On-road, wide paved shoulder on Pleasant Hill Road**  
**Pleasant Hill Road: Rigby Road to CMP ROW (or Pond View Road)**

| Item of Work                       | Quantity | Unit Cost    | Cost                |                    |
|------------------------------------|----------|--------------|---------------------|--------------------|
| Typical Trail Surface, lf          |          | \$ 75.00     | \$ -                |                    |
| Elevated Trail/Boardwalk - Low, lf |          | \$ 775.00    | \$ -                |                    |
| Culvert, each                      |          | \$ 50,000.00 | \$ -                |                    |
| Railing/Fence, lf                  |          | \$ -         | \$ -                |                    |
| Signs, each                        |          | \$ 250.00    | \$ -                |                    |
| Clearing & Grubbing, ea            |          | \$ 5,000.00  | \$ -                |                    |
| Add 6' paved shoulder, lf          | 1750     | \$ 100.00    | \$ 175,000.00       |                    |
| Signing/Striping                   | 1        | \$ 1,500.00  | \$ 1,500.00         | Signs & crosswalks |
| Subtotal:                          |          |              | \$ 176,500.00       |                    |
| Contingency                        |          | 15%          | <u>\$ 26,475.00</u> |                    |
| Estimated Cost                     |          |              | \$ 202,975.00       |                    |

**Segment E2B: On-road, wide paved shoulder on Pleasant Hill Road**  
**Pleasant Hill Road: Rigby Road to Pond View Road**

| Item of Work                       | Quantity | Unit Cost    | Cost                |                    |
|------------------------------------|----------|--------------|---------------------|--------------------|
| Typical Trail Surface, lf          |          | \$ 75.00     | \$ -                |                    |
| Elevated Trail/Boardwalk - Low, lf |          | \$ 375.00    | \$ -                |                    |
| Culvert, each                      | 0        | \$ 15,000.00 | \$ -                |                    |
| Railing/Fence, lf                  |          | \$ -         | \$ -                |                    |
| Signs, each                        |          | \$ 250.00    | \$ -                |                    |
| Clearing & Grubbing, ea            |          | \$ 5,000.00  | \$ -                |                    |
| Add 6' paved shoulder, lf          | 760      | \$ 100.00    | \$ 76,000.00        |                    |
| Signing/Striping                   | 1        | \$ 1,500.00  | \$ 1,500.00         | Signs & crosswalks |
| Subtotal:                          |          |              | \$ 77,500.00        |                    |
| Contingency                        |          | 15%          | <u>\$ 11,625.00</u> |                    |
| Estimated Cost                     |          |              | \$ 89,125.00        |                    |

## Eastern Trail: Scarborough to South Portland Connector

### Trail Surface Cost Estimates by Segment

#### Segment F1

##### Rigby Road: Pleasant Hill Road to Wainright Rec. Complex

| Item of Work                       | Quantity | Unit Cost    | Cost         |   |
|------------------------------------|----------|--------------|--------------|---|
| Typical Trail Surface, lf          | 1000     | \$ 75.00     | \$ 75,000.00 | On Road for 2000'                       |
| Elevated Trail/Boardwalk - Low, lf |          | \$ 375.00    | \$ -         |   |
| Culvert, each                      | 0        | \$ 15,000.00 | \$ -         |   |
| Railing/Fence, lf                  | 1000     | \$ 25.00     | \$ 25,000.00 | Fence along RR line side                |
| Signs, each                        |          | \$ 250.00    | \$ -         |   |
| Clearing & Grubbing, ea            | 2        | \$ 5,000.00  | \$ 10,000.00 |   |
| Signing/Striping                   | 1        | \$ 1,500.00  | \$ 1,500.00  | Signs & crosswalks @ Pleasant Hill Road |

|                |     |                     |
|----------------|-----|---------------------|
| Subtotal:      |     | \$ 111,500.00       |
| Contingency    | 15% | <u>\$ 16,725.00</u> |
| Estimated Cost |     | \$ 128,225.00       |

#### Segment F2

##### Rigby Road to Wainright via PWD/Rich T&D/Old Bog Road

| Item of Work                       | Quantity | Unit Cost    | Cost          |   |
|------------------------------------|----------|--------------|---------------|---|
| Typical Trail Surface, lf          | 4000     | \$ 75.00     | \$ 300,000.00 | On Road for 2000'                       |
| Elevated Trail/Boardwalk - Low, lf |          | \$ 375.00    | \$ -          |   |
| Culvert, each                      | 2        | \$ 15,000.00 | \$ 30,000.00  |   |
| Railing/Fence, lf                  | 0        | \$ 25.00     | \$ -          | Fence along RR line side                |
| Signs, each                        |          | \$ 250.00    | \$ -          |   |
| Clearing & Grubbing, ea            | 2        | \$ 5,000.00  | \$ 10,000.00  |   |
| Signing/Striping                   | 1        | \$ 1,500.00  | \$ 1,500.00   | Signs & crosswalks @ Pleasant Hill Road |

|                |     |                     |
|----------------|-----|---------------------|
| Subtotal:      |     | \$ 341,500.00       |
| Contingency    | 15% | <u>\$ 51,225.00</u> |
| Estimated Cost |     | \$ 392,725.00       |

## Eastern Trail: Scarborough to South Portland Connector

### Trail Surface Cost Estimates by Segment

#### Segment G

**Pond View Drive and Old Bog Road right-of-way: Pleasant Hill Road to Wainright Rec. Complex**

| Item of Work                       | Quantity | Unit Cost    | Cost             |   |
|------------------------------------|----------|--------------|------------------|---|
| Typical Trail Surface, lf          | 1400     | \$ 75.00     | \$ 105,000.00    | On Road for 1650'                       |
| Elevated Trail/Boardwalk - Low, lf |          | \$ 375.00    | \$ -             |   |
| Culvert, each                      | 3        | \$ 15,000.00 | \$ 45,000.00     |   |
| Railing/Fence, lf                  |          |              | \$ -             |   |
| Signs, each                        | 2        | \$ 250.00    | \$ 500.00        | At ends of Pond View Road               |
| Clearing & Grubbing, ea            |          | \$ 5,000.00  | \$ -             |   |
| Signing/Striping                   | 1        | \$ 1,500.00  | \$ 1,500.00      | Signs & crosswalks @ Pleasant Hill Road |
| Subtotal:                          |          |              | \$ 152,000.00    |   |
| Contingency                        |          |              | 15% \$ 22,800.00 |   |
| Estimated Cost                     |          |              | \$ 174,800.00    |   |



## Eastern Trail: Scarborough to South Portland Connector

### Trail Surface Cost Estimates by Segment

**Segment H**
**CMP/Utility ROW: Pleasant Hill Road to Wainright Recreation Complex**

(4000 LF)

| Item of Work                          | Quantity | Unit Cost    | Cost          |  |
|---------------------------------------|----------|--------------|---------------|--|
| Typical Trail Surface, lf             | 2500     | \$ 75.00     | \$ 187,500.00 |  |
| Enhanced (add base) Trail Surface, lf | 1300     | \$ 100.00    | \$ 130,000.00 | Assumes no NWI wetland due to existence of gravel road, 1300'; may be able to avoid. |
| Culvert, each                         | 2        | \$ 15,000.00 | \$ 30,000.00  |  |
| Railing/Fence, lf                     |          |              | \$ -          |  |
| Signs, each                           |          | \$ 250.00    | \$ -          |  |
| Clearing & Grubbing, ea               |          | \$ 5,000.00  | \$ -          |  |
| Subtotal:                             |          |              |               | \$ 347,500.00  |
| Contingency                           |          |              |               | 15% \$ <u>52,125.00</u>  |
| Estimated Cost                        |          |              |               | \$ 399,625.00  |

## Eastern Trail: Scarborough to South Portland Connector

### Structure Cost Estimates

**Location:** S1 - Nonesuch River Crossing on Abandoned RR Abutments

**Description of Work/Assumptions:**

- Existing stone masonry abutments require only minor repairs (re-pointing, grading on approach)
- Span Length = 60 feet
- Proposed Structure Width = 14 feet; Trail Width = 12 feet
- Timber Superstructure Alternate is Glulam Timber Multi-beam, w/ timber deck panels & timber railing
- Steel Truss Superstructure Alternate is Weathering Steel, w/ timber deck panels & steel rails

**Structure Costs:**

| Location       | Item of Work  | Materials                                       | Quantity                          | Unit Cost | Cost      |
|----------------|---|---|-----------------------------------|-----------|-----------|
| Substructure   | Re-point Masonry                                      |   |                                   | Est.      | \$3,000   |
|                | New bridge seat                                       | Concrete, CY                                    | 3                                 | \$900     | \$2,700   |
|                |   | Reinforcing Bar, lbs                            | 300                               | \$2       | \$600     |
| Approaches     | Clearing and Grubbing                                 |   |                                   | Est.      | \$5,000   |
|                | Grading - South Approach                              | Embankment 2' max ht. @ 30' Long, CY            | 15                                | \$35      | \$525     |
|                |   | Final Surface Material                          | 12' wide, 3" depth, 30' long, SF  | 360       | \$5       |
|                | <i>MSE Retaining Wall Alternate</i><br>North Approach | 3' Raised Trail Bed, 400' long, CY              | 870                               | \$30      | \$26,100  |
|                |   | MSE Retaining walls                             | 5400                              | \$40      | \$216,000 |
|                |   | Ramp fill, 300' long, 18' max ht., 15' wide, CY | 1500                              | \$30      | \$45,000  |
|                |   | Wall leveling pad, CY                           | 100                               | \$300     | \$30,000  |
|                |   | Fencing on walls, ft                            | 600                               | \$25      | \$15,000  |
|                |   | Final Surface Material                          | 12' wide, 3" depth, 700' long, SF | 8400      | \$5       |
|                | <i>Timber Boardwalk Alternate</i><br>North Approach   | 12' wide x 400' long raised boardwalk, ft       | 400                               | \$450     | \$180,000 |
|                |   | 12' wide x 300' long boardwalk ramp, ft         | 300                               | \$650     | \$195,000 |
| Superstructure | <i>Timber Bridge Alternate</i>                        | Glulam stringers & deck, picket rails           | 1                                 | \$61,000  | \$61,000  |
|                | <i>Steel Truss Bridge Alternate</i>                   | Steel truss, glulam deck, steel rails           | 1                                 | \$50,000  | \$50,000  |
|                | Bearings  | elastomer pads, each                            | 4                                 | \$500     | \$2,000   |
|                | Bridge Mobilization                                   | Transportation, site access, etc.               |                                   | Est.      | \$7,000   |
|                | Bridge Erection                                       | Crane, rigging, assembly labor, etc.            |                                   | Est.      | \$10,000  |
| Miscellaneous  | 6% of all items                                       | Survey, mobilization, misc. materials, etc.     |                                   | Est.      | \$49,904  |

**MSE Retaining Wall Approach Alternate - Structure Subtotal = \$374,100**

**Timber Boardwalk Approach Alternate - Structure Subtotal = \$375,000**

**Timber Bridge/Timber Boardwalk Alternate - Structure Subtotal = \$518,529**

**Steel Truss Bridge/Timber Boardwalk Alternate - Structure Subtotal = \$507,529**

**Incidental Costs:**

|   |      |          |
|---|------|----------|
| - In-depth inspection/diving inspection to confirm substructure condition | Est. | \$5,000  |
| - Survey and Structure design   | Est. | \$30,000 |
| - Construction Inspection   | Est. | \$3,000  |

**Incidental Subtotal = \$38,000**

Costs shown on Figure 3 and in Table 1 show a composite of cost items above to derive the \$500,000-\$600,000 estimates.

**Total Cost:**

**Timber Alternate = \$556,529**

**Steel Truss Alternate = \$545,529**

## Eastern Trail: Scarborough to South Portland Connector

### Structure Cost Estimates

Location: **S2 - Nonesuch River Crossing on Utility ROW**

**Description of Work/Assumptions:**

- Complete new structure required
- Estimated Span length =100 ft.
- Proposed Structure Width = 14 feet; Trail Width = 12 feet
- Structure Type is Prefabricated, Weathering Steel Truss w/ glulam deck panels and steel rails
- Substructure is timber pile bents
- Boardwalk consists of timber pile bents, w/ timber stringers, decking and railings
- 100' of boardwalk is required at each end of bridge

**Structure Costs:**

| Location       | Item of Work              | Materials                                   | Quantity | Unit Cost | Cost     |
|----------------|---------------------------|---|----------|-----------|----------|
| Substructure   | Timber Piles              | 12 piles, 50' long, ft                      | 600      | \$50      | \$30,000 |
|                | Timber Capbeams & Bracing | 2 beams, ea                                 | 2        | \$3,000   | \$6,000  |
|                | Pile Driving Mobilization | Lump sum                                    | 1        | \$40,000  | \$40,000 |
| Approaches     | Timber Boardwalk System   | ft  | 200      | \$450     | \$90,000 |
| Superstructure | Bridge Mobilization       | Transportation, site access, etc.           |          | Est.      | \$75,000 |
|                | 100' Pre-Fab. Steel Truss | Steel Truss, glulam deck, steel rails       | 1        | \$80,000  | \$80,000 |
|                | Bearings                  | elastomer pads, each                        | 4        | \$500     | \$2,000  |
|                | Bridge Erection           | Crane, rigging, assembly labor, etc.        |          | Est.      | \$50,000 |
| Miscellaneous  | 8% of all items           | Survey, mobilization, misc. materials, etc. |          | Est.      | \$29,840 |

**Structure Subtotal = \$402,840**

**Incidental Costs:**

|                                       |      |          |
|---------------------------------------|------|----------|
| - Environmental Analysis & Permitting | Est. | \$15,000 |
| - Survey and Structure design         | Est. | \$30,000 |
| - Construction Inspection             | Est. | \$3,000  |

Glulam stringers & deck, picket rails

**Incidental Subtotal = \$48,000**

**Total Cost:**

**\$450,840**

## Eastern Trail: Scarborough to South Portland Connector

### Structure Cost Estimates

**Location:** S3 - Railroad Overpass above four active RR lines, adjacent to Rigby Road

**Description of Work/Assumptions:**

- Provide minimum clearance of 22' over tracks
- Span Length = 100 feet
- Proposed Structure Width = 14 feet; Trail Width = 12 feet
- Structure Type is a prefabricated steel truss box truss, with concrete deck, and fencing on three sides
- Fencing required on truss and on MSE walls; Railing only on timber ramps

**Structure Costs:**

| Location       | Item of Work                            | Materials                                       | Quantity | Unit Cost | Cost      |
|----------------|---|---|----------|-----------|-----------|
| Substructure   | <i>MSE Approach Wall Alternate</i>      |   |          |           |           |
|                | Concrete Footing                        | 14' long, 3' wide, 2' thick, CY                 | 6        | \$600     | \$3,600   |
|                | Concrete Stem                           | 14' long, 2' wide, 2' thick, CY                 | 4        | \$900     | \$3,600   |
|                |   | Reinforcing Bar, lbs                            | 1000     | \$2       | \$2,000   |
|                | <i>Timber Boardwalk Approach Alt.</i>   |   |          |           |           |
|                | Excavation                              | 20' long, 14' wide, 6' deep, CY                 | 124      | \$25      | \$3,100   |
|                | Concrete Footing                        | 14' long, 8' wide, 2' thick, CY                 | 18       | \$600     | \$10,800  |
|                | Hammerhead Pier Stem                    | 22' height, CY                                  | 28       | \$900     | \$25,200  |
|                |   | Reinforcing Bar, lbs                            | 4600     | \$2       | \$9,200   |
|                |   | Backfill  | CY       | 104       | \$30      |
| Approaches     | Clearing and Grubbing                   |   |          |           |           |
|                |   |   |          | Est.      | \$10,000  |
|                | <i>MSE Approach Wall Alternate</i>      |   |          |           |           |
|                | Grading - West Approach                 | MSE Retaining walls, 300' long, 25' ht          | 7830     | \$40      | \$313,200 |
|                |   | Ramp fill, 300' long, 25' max ht., 15' wide, CY | 2084     | \$30      | \$62,520  |
|                |   | Wall leveling pad, CY                           | 69       | \$300     | \$20,700  |
|                |   | Fencing on walls, ft                            | 600      | \$25      | \$15,000  |
|                | Grading - North Approach                | MSE Retaining walls, 300' long, 25' ht          | 7830     | \$40      | \$313,200 |
|                |   |   | 2084     | \$30      | \$62,520  |
|                |   | Glulam stringers & deck, picket rails           | 69       | \$300     | \$20,700  |
|                |   | Fencing on walls, ft                            | 600      | \$25      | \$15,000  |
|                | Final Surface Material                  | 12' wide, 3" depth, 600' long, SF               | 7200     | \$5       | \$36,000  |
|                |   | <i>Timber Boardwalk Approach Alt.</i>           |          |           |           |
| South Approach | 12' wide x 360' long boardwalk ramp, ft | 360   | \$650    | \$234,000 |           |
|                | North Approach                          | 12' wide x 360' long boardwalk ramp, ft         | 360      | \$650     | \$234,000 |
| Superstructure | Steel Truss                             | Truss w/ metal deck pans                        | 1        | \$80,000  | \$80,000  |
|                | Concrete Deck                           | 6" x 12' deck, SF                               | 1200     | \$20      | \$24,000  |
|                | Fencing                                 | Chain link fence on both sides, ft              | 200      | \$25      | \$5,000   |
|                | Bearings                                | elastomer pads, each                            | 4        | \$500     | \$2,000   |
|                | Bridge Mobilization                     | Transportation, site accesss, etc.              |          | Est.      | \$25,000  |
|                | Bridge Erection                         | Crane, rigging, assembly labor, etc.            |          | Est.      | \$16,000  |
| Miscellaneous  | 4% of all items                         | Survey, mobilization, misc. materials, etc.     |          | Est.      | \$61,978  |

**Steel Truss Bridge/MSE Wall Alternate - Structure Subtotal =** \$1,092,018  
**Steel Truss Bridge/Timber Boardwalk Alternate - Structure Subtotal =** \$743,398

**Incidental Costs:**

|  |      |          |
|--|------|----------|
| - Survey and Structure design                                  | Est. | \$80,000 |
| - Construction Inspection                                      | Est. | \$10,000 |
| - Railroad Flagman - Est. 5 days/week for 20 weeks @ \$750/day |      | \$75,000 |

**Incidental Subtotal = \$165,000**

**Total Cost:**

**Steel Truss Bridge/MSE Wall Approach Alternate = \$1,257,018**  
**Steel Truss Bridge/Timber Boardwalk Approach Alternate = \$908,398**

## Eastern Trail: Scarborough to South Portland Connector

### Structure Cost Estimates

**Location: S4 - Railroad Crossing - Extension of existing Pleasant Hill Road Bridge**

**Description of Work/Assumptions:**

- Add 14' wide structure at side of existing bridge
- Construct GRES wall along existing roadway embankment at both approaches
- Proposed Structure Length = 75 feet; Trail Width = 12 feet
- Structure Type is prefabricated steel truss w/ concrete filled metal grating deck
- Fencing required on top of wall and on truss

**Structure Costs:**

| Location               | Item of Work                      | Materials                                   | Quantity | Unit Cost | Cost      |
|------------------------|-----------------------------------|---|----------|-----------|-----------|
| Substructure           | Excavation                        |   | 20       | \$40      | \$800     |
|                        | Backfill                          |   | 15       | \$35      | \$525     |
|                        | Footing                           | CIP Concrete, CY                            | 7        | \$600     | \$4,200   |
|                        | Stem                              | CIP Concrete, CY                            | 3        | \$900     | \$2,700   |
| Approaches             | Clearing and Grubbing             |   |          | Est.      | \$1,000   |
|                        | Grading - West Approach           | GRES Wall, 300' long, 10' avg ht, sq.ft.    | 3000     | \$35      | \$105,000 |
|                        |                                   | Fencing, 300' long, 6' C.L. fence, ft       | 300      | \$25      | \$7,500   |
|                        | Grading - East Approach           | GRES Wall, 200' long, 10' avg ht, ft        | 2000     | \$35      | \$70,000  |
|                        |                                   | Fencing, 200' long, 6' C.L. fence, ft       | 200      | \$25      | \$5,000   |
| Final Surface Material | 12' wide, 3" depth, 500' long, SF | 6000  | \$5      | \$30,000  |           |
| Superstructure         | Steel Truss                       | Truss w/ concrete deck                      | 1        | \$60,000  | \$60,000  |
|                        | Fencing                           | 6' ped fence, both sides, ft                | 150      | \$25      | \$3,750   |
|                        | Bearings                          | 4 elastomer pads, ea                        | 4        | \$750     | \$3,000   |
|                        | Railing                           | Timber railing, ft                          | 150      | \$65      | \$9,750   |
|                        | Bridge Mobilization               | Transportation, site accesss, etc.          |          | Est.      | \$4,000   |
|                        | Bridge Erection                   | Crane, rigging, assembly labor, etc.        |          | Est.      | \$10,000  |
| Miscellaneous          | 8% of all items                   | Survey, mobilization, misc. materials, etc. |          | Est.      | \$25,378  |

Glulam stringers & deck, picket rails

**Structure Subtotal = \$342,603**

**Incidental Costs:**

|  |      |          |
|--|------|----------|
| - Survey and Structure design                                  | Est. | \$35,000 |
| - Construction Inspection                                      | Est. | \$3,000  |
| - Railroad Flagman - Est. 5 days/week for 10 weeks @ \$750/day |      | \$37,500 |

**Incidental Subtotal = \$75,500**

**Total Cost:**

**\$418,103**

## Eastern Trail: Scarborough to South Portland Connector

### Structure Cost Estimates

**Location:** S5 - Railroad Tunnel below two active RR lines, behind Hannaford Complex

**Description of Work/Assumptions:**

- Tunnel is composed of 12' x 8' box culvert segments
- Tunnel is 60' long, w/ 3' of ballast on top
- Approach ramps are 1:12 pitch, w/ 150' length approach walls
- Chain link fencing required along tops of all walls and across top of culvert
- RR flagman required full time during construction

**Structure Costs:**

| Location               | Item of Work                      | Materials                                      | Quantity | Unit Cost  | Cost      |
|------------------------|-----------------------------------|--|----------|------------|-----------|
| Tunnel                 | Excavation                        | Ramp 150' long, 6' ave ht, 16' wide, CY        | 1067     | \$40       | \$42,680  |
|                        |                                   | Temp. ramp wall support system, SY             | 400      | \$75       | \$30,000  |
|                        |                                   | Tunnel 60' long, 11' ht, 16' wide, CY          | 392      | \$300      | \$117,600 |
|                        | Backfill                          | Tunnel Support System, ft                      | 60       | \$2,500    | \$150,000 |
|                        |                                   | Flowable fill, CY                              | 81       | \$250      | \$20,250  |
| Approaches             | Clearing and Grubbing             |  |          | Est.       | \$2,500   |
|                        | Grading - West Approach           | (2) Precast Conc, 150' long, 6' avg ht, sq.ft. | 1800     | \$50       | \$90,000  |
|                        |                                   | Fencing, 314' long, 6' C.L. fence, ft          | 314      | \$25       | \$7,850   |
|                        | Grading - East Approach           | (2) Precast Conc, 150' long, 6' avg ht, ft     | 1800     | \$50       | \$90,000  |
|                        |                                   | Fencing, 314' long, 6' C.L. fence, ft          | 314      | \$25       | \$7,850   |
| Final Surface Material | 12' wide, 3" depth, 360' long, SF | 4320   | \$5      | \$21,600   |           |
| Superstructure         | Precast Box Units                 | 12' wide x 8' ht concrete, ft                  | 60       | \$2,000.00 | \$120,000 |
|                        | Bridge Mobilization               | Transportation, site accesss, etc.             |          | Est.       | \$12,000  |
|                        | Bridge Erection                   | Crane, rigging, assembly labor, etc.           |          | Est.       | \$40,000  |
| Miscellaneous          | 10% of all items                  | Survey, mobilization, misc. materials, etc.    |          | Est.       | \$75,233  |

**Structure Subtotal = \$827,563**

**Incidental Costs:**

Glulam stringers & deck, picket rails

|  |      |          |
|--|------|----------|
| - Survey and Structure design                                  | Est. | \$60,000 |
| - Construction Inspection                                      | Est. | \$10,000 |
| - Railroad Flagman - Est. 5 days/week for 25 weeks @ \$750/day |      | \$93,750 |

**Incidental Subtotal = \$163,750**

**Total Cost:**

**\$991,313**

## Eastern Trail: Scarborough to South Portland Connector

### Structure Cost Estimates

**Location:** S5 - Railroad Overpass above two active RR lines, behind Hannaford Complex

**Description of Work/Assumptions:**

- Provide minimum clearance of 22' over tracks
- Span Length = 60 feet
- Proposed Structure Width = 14 feet; Trail Width = 12 feet
- Structure Type is a prefabricated steel truss, with concrete deck
- Fencing required across truss and on top of all walls

**Structure Costs:**

| Location       | Item of Work             | Materials                                       | Quantity | Unit Cost | Cost      |
|----------------|--------------------------|---|----------|-----------|-----------|
| Substructure   | Concrete Footing         | 14' long, 3' wide, 2' thick, CY                 | 6        | \$600     | \$3,600   |
|                | Concrete Stem            | 14' long, 2' wide, 2' thick, CY                 | 4        | \$900     | \$3,600   |
|                |                          | Reinforcing Bar, lbs                            | 1000     | \$2       | \$2,000   |
| Approaches     | Clearing and Grubbing    |   |          | Est.      | \$7,500   |
|                | Grading - West Approach  | MSE Retaining walls, 300' long, 25' ht          | 7830     | \$40      | \$313,200 |
|                |                          | Ramp fill, 300' long, 25' max ht., 15' wide, CY | 2084     | \$30      | \$62,520  |
|                |                          | Wall leveling pad, CY                           | 69       | \$300     | \$20,700  |
|                |                          | Fencing on walls, ft                            | 600      | \$25      | \$15,000  |
|                |                          | MSE Retaining walls, 300' long, 25' ht          | 7830     | \$40      | \$313,200 |
|                | Grading - North Approach | Ramp fill, 300' long, 25' max ht., 15' wide, CY | 2084     | \$30      | \$62,520  |
|                |                          | Wall leveling pad, CY                           | 69       | \$300     | \$20,700  |
|                |                          | Fencing on walls, ft                            | 600      | \$25      | \$15,000  |
|                | Final Surface Material   | 12' wide, 3" depth, 600' long, SF               | 7200     | \$5       | \$36,000  |
| Superstructure | Steel Truss              | Steel truss w/ metal deck pans                  | 1        | \$55,000  | \$55,000  |
|                | Concrete Deck            | 6" x 12' deck, SF                               | 720      | \$20      | \$14,400  |
|                | Fencing                  | Chain link fence on both sides, ft              | 120      | \$25      | \$3,000   |
|                | Bearings                 | elastomer pads, each                            | 4        | \$500     | \$2,000   |
|                | Bridge Mobilization      |   |          | Est.      | \$12,000  |
|                | Bridge Erection          | Glulam stringers & deck, picket rails           |          | Est.      | \$40,000  |
| Miscellaneous  | 4% of all items          | Survey, mobilization, misc. materials, etc.     |          | Est.      | \$40,078  |

**Structure Subtotal = \$1,042,018**

**Incidental Costs:**

|  |      |          |
|--|------|----------|
| - Survey and Structure design                                  | Est. | \$70,000 |
| - Construction Inspection                                      | Est. | \$10,000 |
| - Railroad Flagman - Est. 5 days/week for 25 weeks @ \$750/day |      | \$93,750 |

**Incidental Subtotal = \$173,750**

**Total Cost:**

**\$1,215,768**