

Rendering Alternates Report

**Engineering Design Services for
New Pedestrian Bridge over Rock Creek**

**Rock Creek Park Trail
Northwest, Washington DC**



Prepared for
District of Columbia
Department of Transportation
55 M Street, S.E.
Washington, DC 20003

March 18, 2013



Stantec, formerly Greenhorne & O'Mara
6110 Frost Place, Laurel, MD 20707

PROJECT DESCRIPTION:

Stantec, formerly Greenhorne & O'Mara, (Stantec) is providing preliminary engineering design services for the construction of a pedestrian bridge over Rock Creek adjacent to the Beach Drive Bridge in Northwest, Washington, DC. The proposed pedestrian bridge is desired to eliminate the need to widen the existing sidewalk on Beach Drive Bridge to meet current standards while remaining on the Rock Creek Park Trail. The width of the walkway on the bridge is too small for pedestrians and bicyclist to safely utilize the walkway with vehicles traveling close to the travel lane with no shoulder or a protective barrier. Therefore, the proposed pedestrian bridge will eliminate the need for pedestrians to utilize the existing walkway to continue on Rock Creek Park Trail.

The existing bridge was built in 1964 and has been in service for over 49 years. As-built plans are available, therefore reinforcement size and spacing along with the dimensions of the footing are known. However, the concrete strength is unknown. Concrete cores could be taken to determine the concrete strength and presence of corrosive chemicals. While the bridge has been in service for a significant period, the capacity and stability of the existing piers and abutments can be determined or verified without additional field testing such as nondestructive testing or excavation. The existing piers and abutments would be modified to accommodate the proposed superstructure. Specifically, portions of the footings, backwalls and wingwalls are removed to accommodate the proposed pedestrian bridge substructure units.

Stantec investigated four (4) alternatives for the construction of this pedestrian bridge. Within three of the four (4) alternates, two (2) horizontal alignment options were explored. The alternatives are presented as follows:

- **Alternate No. 1:** Prefabricated Through Truss Bridge (Straight Alignment Only)
- **Alternate No. 2:** Steel Box Girder Bridge with Timber Deck
- **Alternate No. 3:** Steel Box Girder Bridge with Concrete Deck
- **Alternate No. 4:** Concrete Box Girder Bridge with Concrete Overlay

For comparison purposes, a construction cost estimate and rendering were developed for each alternate and provide herewith.

BRIDGE ALTERNATE NO. 1: Prefabricated Through Truss Bridge

The first alternate is a prefabricated through truss bridge consisting of a single span weathering steel "camel back" through truss system with a timber deck on weathering steel stringers. Refer to Appendix C for rendering plans for this alternate. The overall length of the bridge will be approximately 150'-0" with a truss height of approximately 10'-0" above the top of deck at its highest point (mid-span). The overall width of the bridge is approximately 12'-0" with a clear walkway width of 10'-0" between railings.

The abutment for this option will be connected to the existing Pier 1 and Pier 2 of the existing Beach Drive Bridge and will be parallel with the existing piers. The abutment will be a cantilever type structure with wingwalls parallel to pedestrian bridge alignment. The abutment and wingwall face will match the existing substructure appearance with a stone and concrete façade.

The estimated construction cost for this alternate is \$536,000 for this option.

Advantages

- The estimated construction cost for this alternate is the lowest of the alternates.
- The truss, deck, and railing will be fabricated & assembled in the manufacturer's warehouse and delivered to the site in two to three (2 to 3) segments. Once on site, the segments will be bolt spliced together and lifted into place on the previously constructed substructure units.
- The superstructure would be above the existing bridge, thus debris during high water levels would strike the existing bridge prior to striking the pedestrian bridge.
- Minimal disruption to the public during the installation of the superstructure of the four alternates.
- Shortest construction duration of the alternates.
- Only abutments at both ends of the bridge are required for this alternate.
- Various through truss types may be utilized for this bridge such as a K-Truss, Philadelphia Truss, or Parker Truss.
- The engineering and design costs for this alternate are the least of the alternates.

Disadvantages

- The truss members will be visible above the roadway of Beach Drive Bridge.
- The truss can only be accommodated on a straight horizontal alignment. There is no curved horizontal alignment option.
- Would not be painted to match the existing bridge.
- The timber decking may become slippery when wet, if not routinely maintained.

BRIDGE ALTERNATE NO. 2: Steel Box Girder Bridge with Timber Deck

This alternate is a steel box girder bridge consisting of three (3) spans, single steel box girder with a timber deck. Refer to Appendix C for the rendering plans for this alternate. The overall length of the bridge will be approximately 150'-0" and 200'-0" for the curved and straight alignments, respectively. The overall width of the bridge is approximately 12'-2" with a clear walkway width of 10'-0" between railings. The railing system consists of timber multi-rail and timber post.

The abutments for this option will be connected to the existing abutments and the piers will be connected to the existing Pier 1 and Pier 2 of the existing Beach Drive Bridge and will be parallel with the existing abutments. The first and third spans will be hidden behind wingwalls from the piers to the abutments. Similar to the existing bridge, the structure will appear to be a single span bridge. The abutments will be a cantilever type structure with wingwalls parallel to pedestrian bridge alignment. The piers will be solid wall piers and will be parallel with the existing piers. The pier and wingwall face will match the existing substructure appearance with a stone and concrete façade.

The estimated construction cost for this alternate is \$793,000 for Option A (Straight Alignment) and \$849,000 for Option B (Curved Alignment).

Advantages

- This option allows for either curved or straight alignments.
- The superstructure follows the same arch profile as the existing bridge.
- The timber rail and timber decking coincides with the surrounding wooded environment.
- Lower maintenance costs than Alternate Nos. 3 & 4 since individual deck boards or railing can be replaced without removing the entire walking surface and protective barrier system.
- The estimated construction time for this alternate is less than the other box girder alternates.

Disadvantages

- Two (2) solid wall piers are required for this alternate unlike Alternate No. 1.
- The end spans are required to counterbalance the loads and deflection of the long mid-span.
- In-stream work is required to construct/erect the superstructure.
- The superstructure provides the same opening as the existing bridge, thus debris during high water levels would strike the pedestrian bridge prior to striking the existing bridge.
- The timber decking may become slippery when wet, if not routinely maintained.
- The timber railings are more susceptible to damage/breaking during high water level events.
- The estimated construction cost for this alternate is more than Alternate Nos. 3 & 4.
- Confined Space Inspection will be required when an inspection is warranted.
- The steel would not be painted to match the existing bridge color.

**BRIDGE ALTERNATE NO. 3:
Steel Box Girder Bridge with Concrete Deck**

This alternate is a steel box girder bridge consisting of three (3) spans, single steel box girder with a reinforced concrete deck. Refer to Appendix C for the rendering plans for this alternate. The overall length of the bridge will be approximately 150'-0" and 200'-0" for the curved and straight alignments, respectively. The overall width of the bridge is approximately 11'-6" with a clear walkway width of 10'-0" between railings. The railing system consists of steel structural tube to provide a multi-rail and post system.

The abutments for this option will be connected to the existing abutments and the piers will be connected to the existing Pier 1 and Pier 2 of the existing Beach Drive Bridge and will be parallel with the existing abutments. The first and third spans will be hidden behind wingwalls from the piers to the abutments. Similar to the existing bridge, the structure will appear to be a single span bridge. The abutments will be a cantilever type structure with wingwalls parallel to pedestrian bridge alignment. The piers will be solid wall piers and will be parallel with the existing piers. The pier and wingwall face will match the existing substructure appearance with a stone and concrete façade.

The estimated construction cost for this alternate is \$779,000 for Option A (Straight Alignment) and \$827,000 for Option B (Curved Alignment).

Advantages

- This option allows for either curved or straight alignments.
- The superstructure follows the same arch profile as the existing bridge.

- The estimated construction cost for this alternate is slightly less than Alternate No. 2.
- The estimated construction time for this alternate is less than Alternate No. 4.
- The concrete deck will provide additional dead weight on the structure to help counteract the effects of buoyancy during high water levels.

Disadvantages

- Two (2) solid wall piers are required for this alternate unlike Alternate No. 1.
- The end spans are required to counterbalance the loads and deflection of the relatively long mid-span.
- In-stream work is required to construct/erect the superstructure.
- The superstructure provides the same opening as the existing bridge, thus debris during high water levels would strike the pedestrian bridge prior to striking the existing bridge.
- The concrete deck will provide additional dead weight which will require thicker plate sizes for the steel box girder to increase its load carrying capacity over such a relatively long mid-span.
- The estimated construction cost for this alternate is slightly more than Alternate No. 4 and more than Alternate No. 1.
- The estimated construction time for this alternate is more than Alternate Nos. 1 and 2.
- Confined Space Inspection will be required when an inspection is warranted.
- The steel would not be painted to match the existing bridge color.

BRIDGE ALTERNATE NO. 4: Concrete Box Girder Bridge with Concrete Overlay Deck

This alternate is a concrete box girder bridge consisting of three (3) spans, single concrete box girder with a concrete overlay deck. Refer to Appendix C for the rendering plans for this alternate. The overall length of the bridge will be approximately 150'-0" and 200'-0" for the curved and straight alignments, respectively. The overall width of the bridge is approximately 11'-6" with a clear walkway width of 10'-0" between railings. The railing system consists of steel structural tube to provide a multi-rail and post system.

The abutments for this option will be connected to the existing abutments and the piers will be connected to the existing Pier 1 and Pier 2 of the existing Beach Drive Bridge and will be parallel with the existing abutments. The first and third spans will be hidden behind wingwalls from the piers to the abutments. Similar to the existing bridge, the structure will appear to be a single span bridge. The abutments will be a cantilever type structure with wingwalls parallel to pedestrian bridge alignment. The piers will be solid wall piers and will be parallel with the existing piers. The pier and wingwall face will match the existing substructure appearance with a stone and concrete façade.

The estimated construction cost for this alternate is \$769,000 for Option A (Straight Alignment) and \$826,000 for Option B (Curved Alignment).

Advantages

- This option allows for either curved or straight alignments.
- The superstructure follows the same arch profile as the existing bridge.
- The estimated construction cost for this alternate is slightly less than Alternate No. 3 and less than Alternate No. 2.

- The concrete box girder and deck will provide a relatively large amount of dead weight on the structure to help counteract the effects of buoyancy during high water levels.
- The superstructure color will closely resemble overall color of the existing bridge.

Disadvantages

- Two (2) solid wall piers are required for this alternate unlike Alternate No. 1.
- The end spans are required to counterbalance the loads and deflection of the relatively long mid-span.
- In-stream work is required to construct/erect the superstructure.
- The estimated construction time for this alternate is longer than any other alternate.
- The superstructure provides the same opening as the existing bridge, thus debris during high water levels would strike the pedestrian bridge prior to striking the existing bridge.
- The concrete box girder and deck will provide a relatively large amount dead weight which will require thicker member sizes for the concrete box girder to increase its load carrying capacity over such a relatively long mid-span.
- Confined Space Inspection will be required when an inspection is warranted.

CONCLUSIONS & RECOMMENDATIONS:

Based on the alternatives detailed in this report, Stantec is providing the following recommendations:

Straight Horizontal Alignment Recommendation:

Construct Alternative No. 1 "Steel Through Truss" which requires the least amount of design/construction costs and provides the least amount of construction time. This alternate will allow for the least amount of disruption to traveling public utilizing the Rock Creek Trail as well as the vehicular traffic on Beach Drive. Also, if NPS/DDOT does not agree with the "Camel Back" type truss; other truss types can be constructed while remaining the least expensive alternative and least construction time to build. The truss, deck, and railing will be fabricated & assembled at the manufacturer's warehouse and delivered to the site in two to three (2 to 3) segments. Once on site, the segments will be bolt spliced together and lifted into place on the previously constructed substructure units within one work day or night. Also, this alternate requires the least amount of stream impacts during construction which is desirable. The estimated construction cost for this alternate is \$536,000 and the estimated construction time for this alternate is four (4) months.

Curved Horizontal Alignment Recommendation:

Construct Alternative No. 3 "Steel Box Girder Bridge with Concrete Deck" which has a slightly larger construction costs than Alternate No. 4, but provides less construction time than Alternate No. 4. The superstructure follows the same arch profile as the existing bridge. The concrete deck will provide additional dead weight on the structure to help counteract the effects of buoyancy during high water levels. The estimated construction cost for this alternate is \$827,000 and the estimated construction time for this alternate is seven and a half (7.5) months.

APPENDIX A

CONSTRUCTION COST ESTIMATES



**District Department of Transportation
Policy Planning and Sustainability Administration**

Date: 01/17/13

Rock Creek Trail Pedestrian Bridge over Rock Creek Preliminary Construction Cost Estimate Summary (Bridge Only)	
DESCRIPTION	ESTIMATED CONSTRUCTION COST
ALTERNATE NO. 1: THROUGH TRUSS	
OPTION: STRAIGHT ALIGNMENT	\$ 536,000
ALTERNATE NO. 2: STEEL BOX GIRDER WITH TIMBER DECK	
OPTION A: STRAIGHT ALIGNMENT	\$ 793,000
OPTION B: CURVED ALIGNMENT	\$ 849,000
ALTERNATE NO. 3: STEEL BOX GIRDER WITH CONCRETE DECK	
OPTION A: STRAIGHT ALIGNMENT	\$ 779,000
OPTION B: CURVED ALIGNMENT	\$ 827,000
ALTERNATE NO. 4: PRECAST CONCRETE BOX GIRDER	
OPTION A: STRAIGHT ALIGNMENT	\$ 769,000
OPTION B: CURVED ALIGNMENT	\$ 826,000

Notes: 1. This Preliminary Construction Cost Estimate does not include the costs of Grading, Drainage, Sediment & Erosion Control, MOT, Roadway, Landscaping, Utilities, or Associated Design Costs.

2. This Estimate is based on a 10'-0" clear width between railings.



**District Department of Transportation
Policy Planning and Sustainability Administration**

Date: 01/17/13

Rock Creek Trail Pedestrian Bridge over Rock Creek Alternate No. 1, Through Truss Bridge on Straight Alignment				
ITEM DESCRIPTION	UNIT	QTY.	UNIT PRICE	AMOUNT
PRELIMINARY, GRADING AND DRAINAGE				
MOBILIZATION	LS	1	\$ 100,000.00	\$ 100,000
PRELIMINARY, GRADING AND DRAINAGE SUBTOTAL				\$ 100,000
MAINTENANCE OF TRAFFIC				
				\$ -
MAINTENANCE OF TRAFFIC SUBTOTAL				\$ -
STRUCTURE				
CLASS III EXCAVATION	CY	312	\$ 50.00	\$ 15,600
TEMPORARY SHEET PILING	SF	140	\$ 100.00	\$ 14,000
SUBSTRUCTURE CONCRETE FOR BRIDGE	CY	34	\$ 850.00	\$ 28,900
DESIGN AND FABRICATION OF PREFABRICATED SUPERSTRUCTURE UNITS	LS	1	\$ 172,500.00	\$ 172,500
DELIVERY AND ERECTION OF PREFABRICATED SUPERSTRUCTURE UNITS	LS	1	\$ 67,500.00	\$ 67,500
SELECT BACKFILL	CY	223	\$ 50.00	\$ 11,150
CLASS II RIPRAP	SY	25	\$ 75.00	\$ 1,875
STRUCTURE SUBTOTAL				\$ 311,525
ROADWAY				
				\$ -
ROADWAY SUBTOTAL				\$ -
LANDSCAPING				
				\$ -
LANDSCAPING SUBTOTAL				\$ -
UTILITIES				
				\$ -
UTILITIES SUBTOTAL				\$ -
TOTAL COSTS				\$ 411,525
CONTINGENCY (30%)				\$ 124,000
TOTAL W/CONTINGENCY				\$ 535,525
USE				\$ 536,000



**District Department of Transportation
Policy Planning and Sustainability Administration**

Date: 01/17/13

Rock Creek Trail Pedestrian Bridge over Rock Creek				
Alternate No. 2A, Steel Box Girder Bridge w/ Timber Deck on Straight Alignment				
ITEM DESCRIPTION	UNIT	QTY.	UNIT PRICE	AMOUNT
PRELIMINARY, GRADING AND DRAINAGE				
MOBILIZATION	LS	1	\$ 100,000.00	\$ 100,000
PRELIMINARY, GRADING AND DRAINAGE SUBTOTAL				\$ 100,000
MAINTENANCE OF TRAFFIC				
				\$ -
MAINTENANCE OF TRAFFIC SUBTOTAL				\$ -
STRUCTURE				
CLASS III EXCAVATION	CY	203	\$ 50.00	\$ 10,150
TEMPORARY SHEET PILING	SF	300	\$ 100.00	\$ 30,000
SUBSTRUCTURE CONCRETE FOR BRIDGE	CY	36	\$ 850.00	\$ 30,600
STEEL BOX BEAM (ARCH 90" TO 30")	LS	1	\$ 315,000.00	\$ 315,000
TIMBER DECKING AND STRINGER (Ipe DECK SYSTEM)	SF	3,927	\$ 19.00	\$ 74,607
TIMBER 54" HIGH BRIDGE RAIL	LF	380	\$ 95.00	\$ 36,100
SELECT BACKFILL	CY	223	\$ 50.00	\$ 11,150
CLASS II RIPRAP	SY	25	\$ 75.00	\$ 1,875
STRUCTURE SUBTOTAL				\$ 509,482
ROADWAY				
				\$ -
ROADWAY SUBTOTAL				\$ -
LANDSCAPING				
				\$ -
LANDSCAPING SUBTOTAL				\$ -
UTILITIES				
				\$ -
UTILITIES SUBTOTAL				\$ -
TOTAL COSTS				\$ 609,482
CONTINGENCY (30%)				\$ 183,000
TOTAL W/CONTINGENCY				\$ 792,482
USE				\$ 793,000



**District Department of Transportation
Policy Planning and Sustainability Administration**

Date: 01/17/13

Rock Creek Trail Pedestrian Bridge over Rock Creek				
Alternate No. 2B, Steel Box Girder Bridge w/ Timber Deck on Curved Alignment				
ITEM DESCRIPTION	UNIT	QTY.	UNIT PRICE	AMOUNT
PRELIMINARY, GRADING AND DRAINAGE				
MOBILIZATION	LS	1	\$ 100,000.00	\$ 100,000
PRELIMINARY, GRADING AND DRAINAGE SUBTOTAL				\$ 100,000
MAINTENANCE OF TRAFFIC				
				\$ -
MAINTENANCE OF TRAFFIC SUBTOTAL				\$ -
STRUCTURE				
CLASS III EXCAVATION	CY	203	\$ 50.00	\$ 10,150
TEMPORARY SHEET PILING	SF	300	\$ 100.00	\$ 30,000
SUBSTRUCTURE CONCRETE FOR BRIDGE	CY	36	\$ 850.00	\$ 30,600
STEEL BOX BEAM (ARCH 90" TO 30")	LS	1	\$ 362,000.00	\$ 362,000
TIMBER DECKING AND STRINGER (Ipe DECK SYSTEM)	SF	3,847	\$ 20.00	\$ 76,933
TIMBER 54" HIGH BRIDGE RAIL	LF	300	\$ 100.00	\$ 30,000
SELECT BACKFILL	CY	223	\$ 50.00	\$ 11,150
CLASS II RIPRAP	SY	25	\$ 75.00	\$ 1,875
STRUCTURE SUBTOTAL				\$ 552,708
ROADWAY				
				\$ -
ROADWAY SUBTOTAL				\$ -
LANDSCAPING				
				\$ -
LANDSCAPING SUBTOTAL				\$ -
UTILITIES				
				\$ -
UTILITIES SUBTOTAL				\$ -
TOTAL COSTS				
TOTAL COSTS				\$ 652,708
CONTINGENCY (30%)				
CONTINGENCY (30%)				\$ 196,000
TOTAL W/CONTINGENCY				
TOTAL W/CONTINGENCY				\$ 848,708
USE				\$ 849,000



**District Department of Transportation
Policy Planning and Sustainability Administration**

Date: 01/17/13

Rock Creek Trail Pedestrian Bridge over Rock Creek				
Alternate No. 3A, Steel Box Girder Bridge w/ Concrete Deck on Straight Alignment				
ITEM DESCRIPTION	UNIT	QTY.	UNIT PRICE	AMOUNT
PRELIMINARY, GRADING AND DRAINAGE				
MOBILIZATION	LS	1	\$ 100,000.00	\$ 100,000
PRELIMINARY, GRADING AND DRAINAGE SUBTOTAL				\$ 100,000
MAINTENANCE OF TRAFFIC				
				\$ -
MAINTENANCE OF TRAFFIC SUBTOTAL				\$ -
STRUCTURE				
CLASS III EXCAVATION	CY	203	\$ 50.00	\$ 10,150
TEMPORARY SHEET PILING	SF	300	\$ 100.00	\$ 30,000
SUBSTRUCTURE CONCRETE FOR BRIDGE	CY	36	\$ 850.00	\$ 30,600
STEEL CURVED BOX BEAM (ARCH 90" TO 30")	LS	1	\$ 249,000.00	\$ 249,000
CONCRETE DECK	CY	198	\$ 550.00	\$ 108,900
STEEL TUBE 54" HIGH BRIDGE RAIL	LF	380	\$ 150.00	\$ 57,000
SELECT BACKFILL	CY	223	\$ 50.00	\$ 11,150
CLASS II RIPRAP	SY	25	\$ 75.00	\$ 1,875
STRUCTURE SUBTOTAL				\$ 498,675
ROADWAY				
				\$ -
ROADWAY SUBTOTAL				\$ -
LANDSCAPING				
				\$ -
LANDSCAPING SUBTOTAL				\$ -
UTILITIES				
				\$ -
UTILITIES SUBTOTAL				\$ -
TOTAL COSTS				\$ 598,675
CONTINGENCY (30%)				\$ 180,000
TOTAL W/CONTINGENCY				\$ 778,675
USE				\$ 779,000



**District Department of Transportation
Policy Planning and Sustainability Administration**

Date: 01/17/13

Rock Creek Trail Pedestrian Bridge over Rock Creek				
Alternate No. 3B, Steel Box Girder Bridge w/ Concrete Deck on Curved Alignment				
ITEM DESCRIPTION	UNIT	QTY.	UNIT PRICE	AMOUNT
PRELIMINARY, GRADING AND DRAINAGE				
MOBILIZATION	LS	1	\$ 100,000.00	\$ 100,000
PRELIMINARY, GRADING AND DRAINAGE SUBTOTAL				\$ 100,000
MAINTENANCE OF TRAFFIC				
				\$ -
MAINTENANCE OF TRAFFIC SUBTOTAL				\$ -
STRUCTURE				
CLASS III EXCAVATION	CY	203	\$ 50.00	\$ 10,150
TEMPORARY SHEET PILING	SF	300	\$ 100.00	\$ 30,000
SUBSTRUCTURE CONCRETE FOR BRIDGE	CY	36	\$ 850.00	\$ 30,600
STEEL CURVED BOX BEAM (ARCH 90" TO 30")	LS	1	\$ 310,000.00	\$ 310,000
CONCRETE DECK	CY	157	\$ 575.00	\$ 90,275
STEEL TUBE 54" HIGH BRIDGE RAIL	LF	300	\$ 170.00	\$ 51,000
SELECT BACKFILL	CY	223	\$ 50.00	\$ 11,150
CLASS II RIPRAP	SY	25	\$ 75.00	\$ 1,875
STRUCTURE SUBTOTAL				\$ 535,050
ROADWAY				
				\$ -
ROADWAY SUBTOTAL				\$ -
LANDSCAPING				
				\$ -
LANDSCAPING SUBTOTAL				\$ -
UTILITIES				
				\$ -
UTILITIES SUBTOTAL				\$ -
TOTAL COSTS				\$ 635,050
CONTINGENCY (30%)				\$ 191,000
TOTAL W/CONTINGENCY				\$ 826,050
USE				\$ 827,000



**District Department of Transportation
Policy Planning and Sustainability Administration**

Date: 01/17/13

Rock Creek Trail Pedestrian Bridge over Rock Creek Alternate No. 4A, Precast Concrete Box Girder Bridge on Straight Alignment				
ITEM DESCRIPTION	UNIT	QTY.	UNIT PRICE	AMOUNT
PRELIMINARY, GRADING AND DRAINAGE				
MOBILIZATION	LS	1	\$ 200,000.00	\$ 200,000
PRELIMINARY, GRADING AND DRAINAGE SUBTOTAL				\$ 200,000
MAINTENANCE OF TRAFFIC				
				\$ -
MAINTENANCE OF TRAFFIC SUBTOTAL				\$ -
STRUCTURE				
CLASS III EXCAVATION	CY	203	\$ 50.00	\$ 10,150
TEMPORARY SHEET PILING	SF	300	\$ 100.00	\$ 30,000
TEMPORARY INTERMEDIATE SUPPORT SYSTEM	LS	1	\$ 40,000.00	\$ 40,000
SUBSTRUCTURE CONCRETE FOR BRIDGE	CY	36	\$ 850.00	\$ 30,600
PRECAST CONCRETE CURVED BOX GIRDER (ARCH 90" TO 30")	LS	1	\$ 178,000.00	\$ 178,000
LATEX MODIFIED CONCRETE OVERLAY	CY	25	\$ 1,250.00	\$ 31,250
STEEL TUBE 54" HIGH BRIDGE RAIL	LF	380	\$ 150.00	\$ 57,000
SELECT BACKFILL	CY	223	\$ 50.00	\$ 11,150
CLASS II RIPRAP	SY	25	\$ 75.00	\$ 1,875
STRUCTURE SUBTOTAL				\$ 390,025
ROADWAY				
				\$ -
ROADWAY SUBTOTAL				\$ -
LANDSCAPING				
				\$ -
LANDSCAPING SUBTOTAL				\$ -
UTILITIES				
				\$ -
UTILITIES SUBTOTAL				\$ -
TOTAL COSTS				\$ 590,025
CONTINGENCY (30%)				\$ 178,000
TOTAL W/CONTINGENCY				\$ 768,025
USE				\$ 769,000



**District Department of Transportation
Policy Planning and Sustainability Administration**

Date: 01/17/13

Rock Creek Trail Pedestrian Bridge over Rock Creek Alternate No. 4B, Precast Concrete Box Girder Bridge on Curved Alignment				
ITEM DESCRIPTION	UNIT	QTY.	UNIT PRICE	AMOUNT
PRELIMINARY, GRADING AND DRAINAGE				
MOBILIZATION	LS	1	\$ 200,000.00	\$ 200,000
PRELIMINARY, GRADING AND DRAINAGE SUBTOTAL				\$ 200,000
MAINTENANCE OF TRAFFIC				
				\$ -
MAINTENANCE OF TRAFFIC SUBTOTAL				\$ -
STRUCTURE				
CLASS III EXCAVATION	CY	203	\$ 50.00	\$ 10,150
TEMPORARY SHEET PILING	SF	300	\$ 100.00	\$ 30,000
TEMPORARY INTERMEDIATE SUPPORT SYSTEM	LS	1	\$ 40,000.00	\$ 40,000
SUBSTRUCTURE CONCRETE FOR BRIDGE	CY	36	\$ 850.00	\$ 30,600
PRECAST CONCRETE CURVED BOX GIRDER (ARCH 90" TO 30")	LS	1	\$ 210,000.00	\$ 210,000
LATEX MODIFIED CONCRETE OVERLAY	CY	40	\$ 1,250.00	\$ 50,000
STEEL TUBE 54" HIGH BRIDGE RAIL	LF	300	\$ 170.00	\$ 51,000
SELECT BACKFILL	CY	223	\$ 50.00	\$ 11,150
CLASS II RIPRAP	SY	25	\$ 75.00	\$ 1,875
STRUCTURE SUBTOTAL				\$ 434,775
ROADWAY				
				\$ -
ROADWAY SUBTOTAL				\$ -
LANDSCAPING				
				\$ -
LANDSCAPING SUBTOTAL				\$ -
UTILITIES				
				\$ -
UTILITIES SUBTOTAL				\$ -
TOTAL COSTS				\$ 634,775
CONTINGENCY (30%)				\$ 191,000
TOTAL W/CONTINGENCY				\$ 825,775
USE				\$ 826,000

APPENDIX B

CONSTRUCTION TIME ESTIMATES



**District Department of Transportation
Policy Planning and Sustainability Administration**

Date: 02/19/13

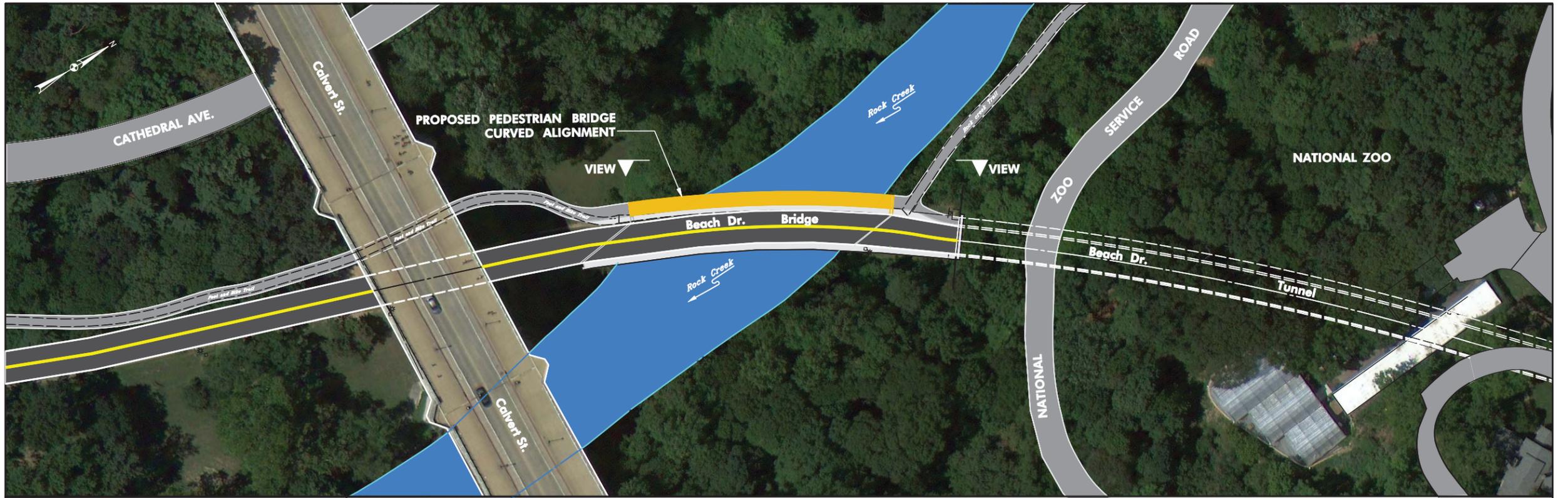
Rock Creek Trail Pedestrian Bridge over Rock Creek Preliminary Construction Time Estimate Summary (Bridge Only)	
DESCRIPTION	ESTIMATED CONSTRUCTION TIME
ALTERNATE NO. 1: THROUGH TRUSS	
SUBSTRUCTURE UNITS (ON-SITE)	1.0 MONTH
SUPERSTRUCTURE FABRICATION (IN SHOP)	2.5 MONTH
SUPERSTRUCTURE ERECTION (ON-SITE)	0.5 MONTH
TOTAL CONSTRUCTION TIME	4.0 MONTHS
ALTERNATE NO. 2: STEEL BOX GIRDER WITH TIMBER DECK	
SUBSTRUCTURE UNITS (ON-SITE)	1.5 MONTH
SUPERSTRUCTURE FABRICATION (IN SHOP)	3.0 MONTH
SUPERSTRUCTURE ERECTION (ON-SITE)	2.0 MONTH
TOTAL CONSTRUCTION TIME	6.5 MONTHS
ALTERNATE NO. 3: STEEL BOX GIRDER WITH CONCRETE DECK	
SUBSTRUCTURE UNITS (ON-SITE)	1.5 MONTH
SUPERSTRUCTURE FABRICATION (IN SHOP)	3.0 MONTH
SUPERSTRUCTURE ERECTION (ON-SITE)	3.0 MONTH
TOTAL CONSTRUCTION TIME	7.5 MONTHS
ALTERNATE NO. 4: PRECAST CONCRETE BOX GIRDER	
SUBSTRUCTURE UNITS (ON-SITE)	1.5 MONTH
SUPERSTRUCTURE FABRICATION (IN SHOP)	4.0 MONTH
SUPERSTRUCTURE ERECTION (ON-SITE)	4.5 MONTH
TOTAL CONSTRUCTION TIME	10.0 MONTHS

Notes: 1. This Preliminary Construction Time Estimate is based on a moderately aggressive construction schedule and the Contractor has extensive experience with the particular construction depicted in each alternate.

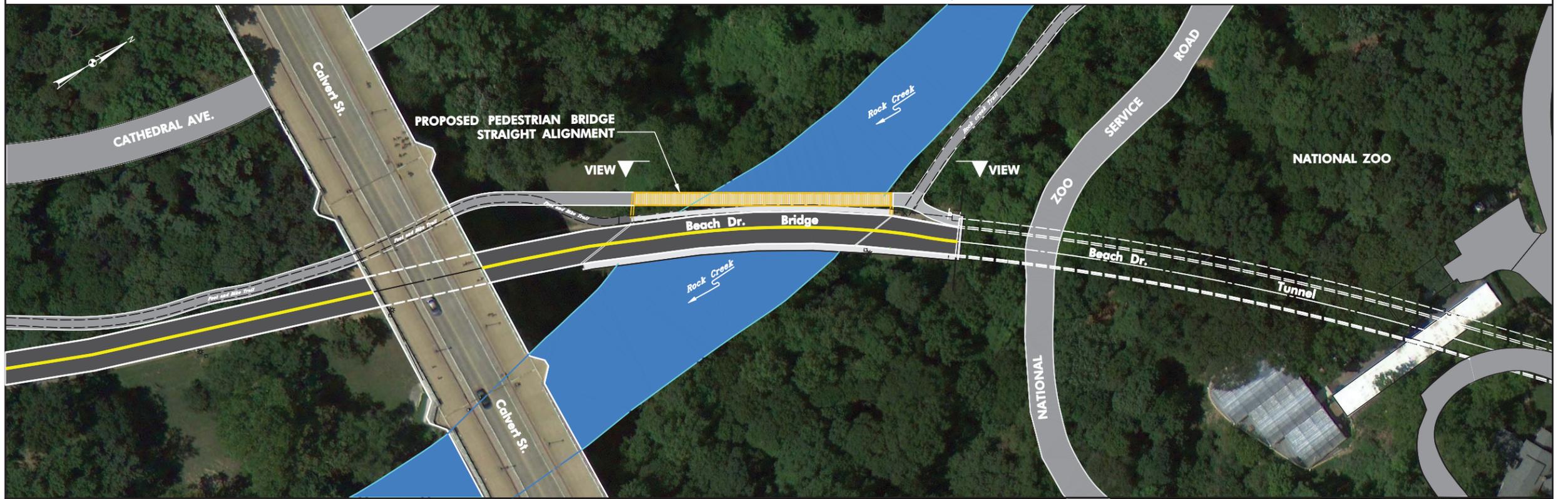
2. This Estimate assumes that the straight and curved alignment options can be completed within weeks of each other.

APPENDIX C

RENDERING ALTERNATES

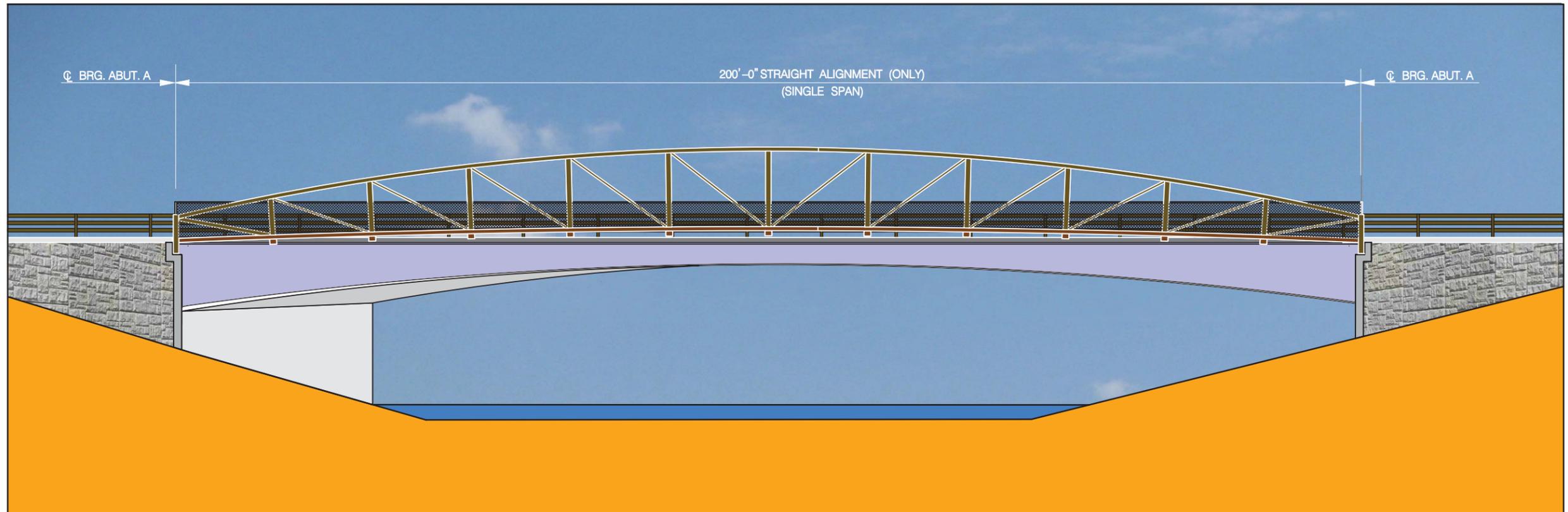


PLAN - CURVED ALIGNMENT OPTION



PLAN - STRAIGHT ALIGNMENT OPTION

ROCK CREEK TRAIL PEDESTRIAN BRIDGE PLAN



BRIDGE OPTION 1 – STEEL THROUGH TRUSS



BRIDGE OPTION 2 – STEEL BOX GIRDER WITH TIMBER FLOOR AND TIMBER RAIL

ROCK CREEK TRAIL PEDESTRIAN BRIDGE ELEVATIONS

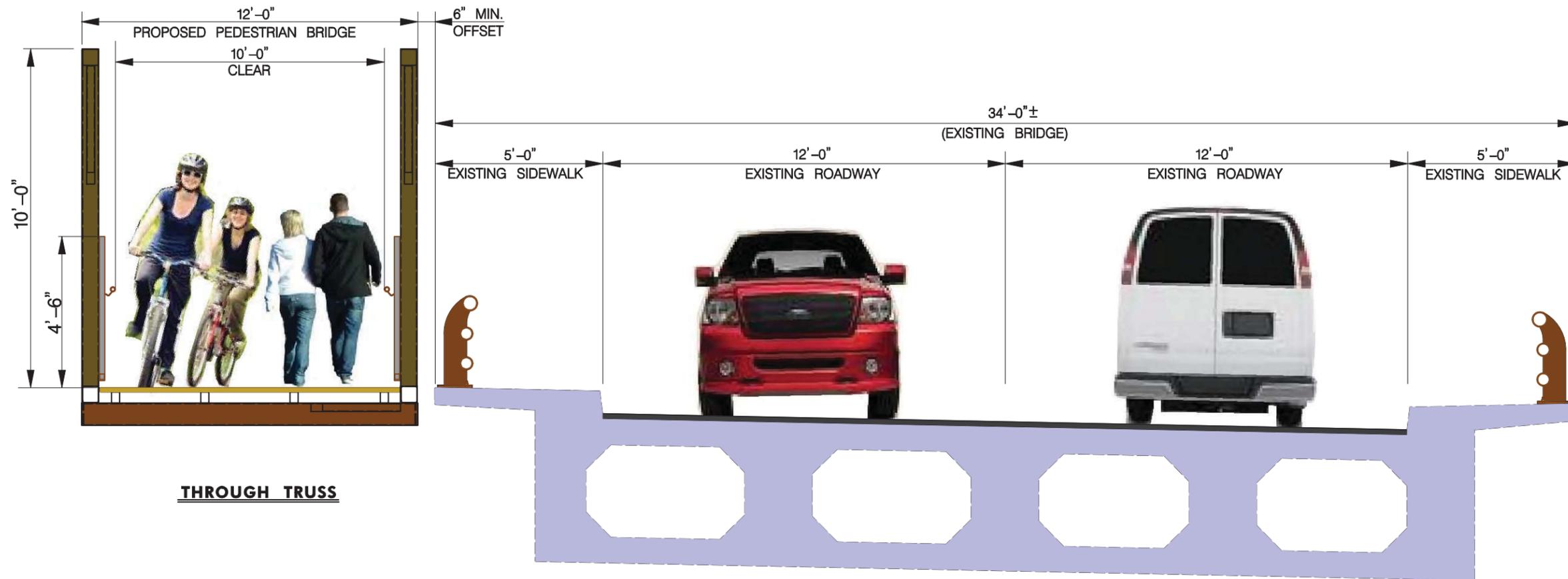


BRIDGE OPTION 3 – STEEL BOX GIRDER WITH CONCRETE FLOOR AND STEEL RAIL

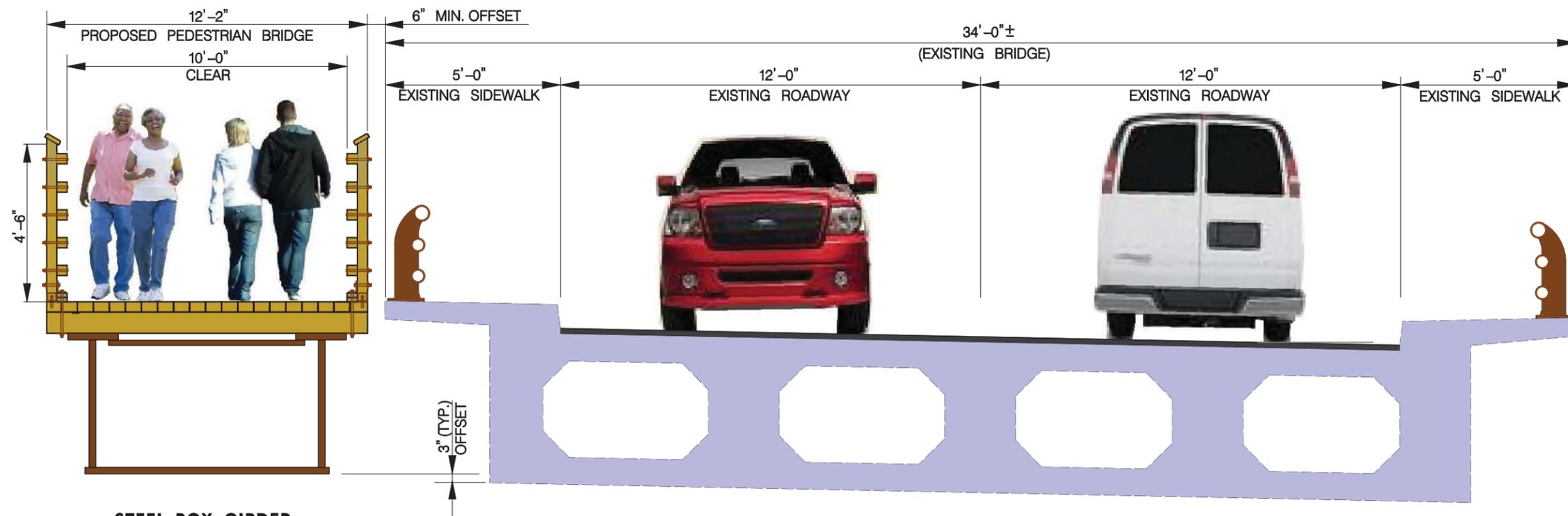


BRIDGE OPTION 4 – CONCRETE BOX GIRDER WITH CONCRETE FLOOR AND STEEL RAIL

ROCK CREEK TRAIL PEDESTRIAN BRIDGE ELEVATIONS

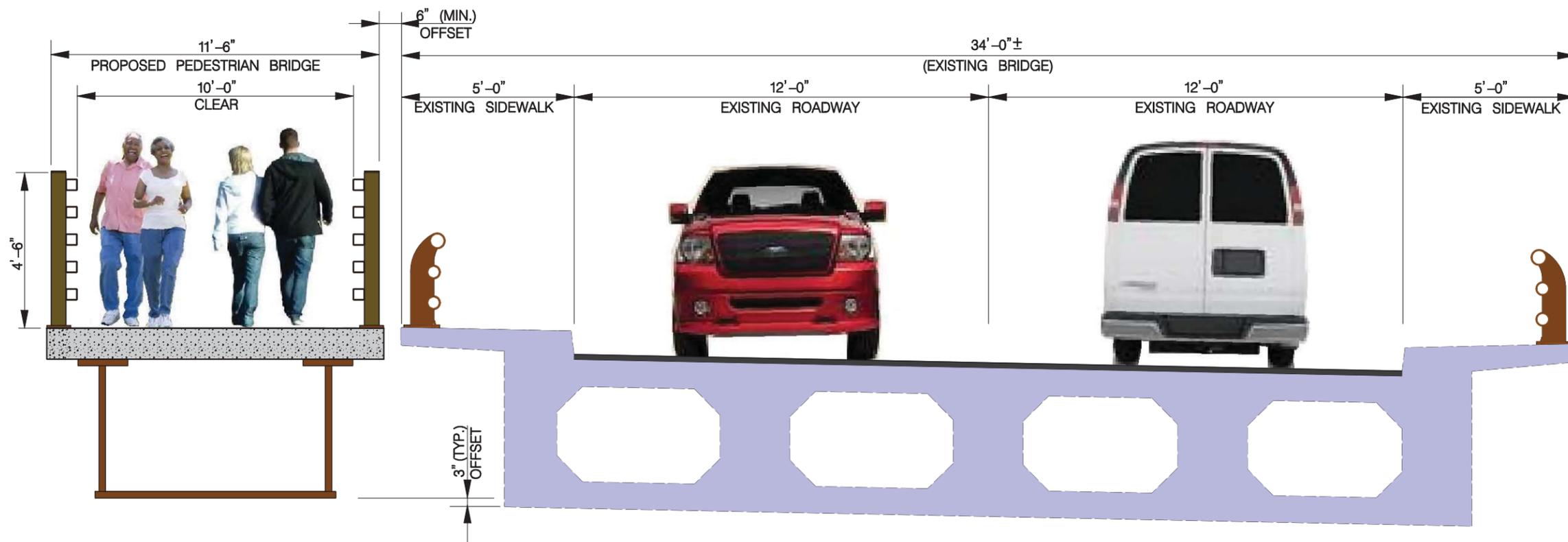


BRIDGE OPTION 1



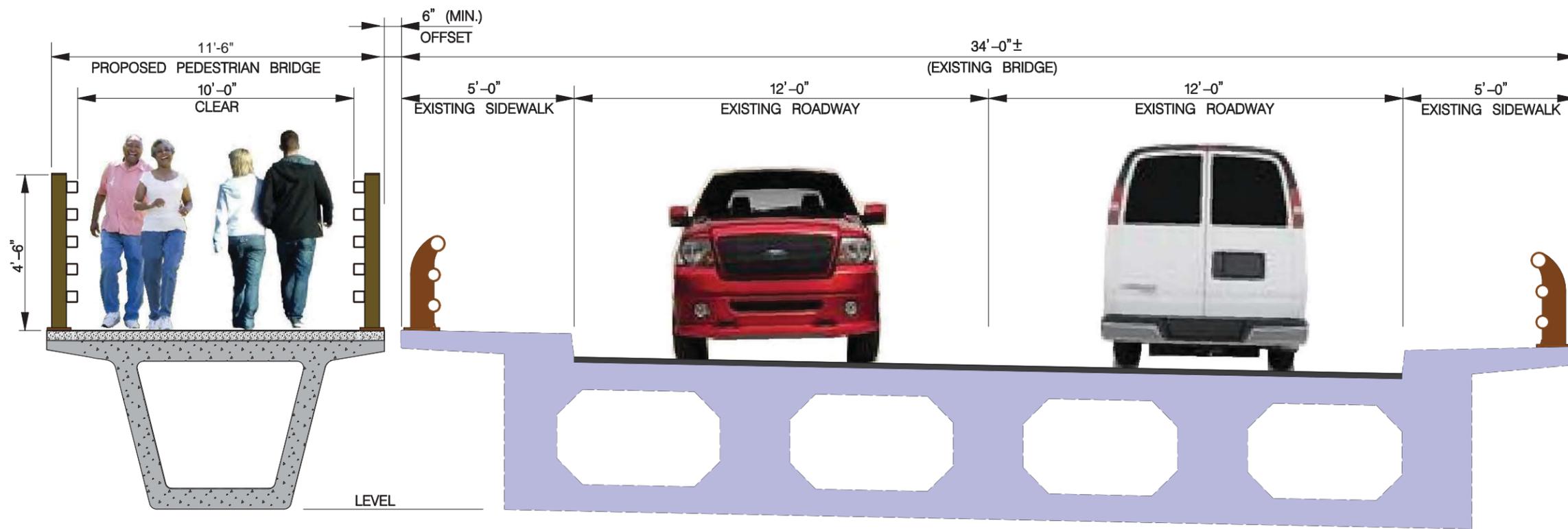
BRIDGE OPTION 2

**ROCK CREEK TRAIL PEDESTRIAN BRIDGE
TYPICAL SECTIONS**



**STEEL BOX GIRDER
WITH CONCRETE FLOOR
AND STEEL RAIL**

BRIDGE OPTION 3



**CONCRETE BOX GIRDER
WITH CONCRETE FLOOR
AND STEEL RAIL**

BRIDGE OPTION 4

**ROCK CREEK TRAIL PEDESTRIAN BRIDGE
TYPICAL SECTIONS**