

Appendix B
NCDOT November 2011 Construction Cost Estimate

NC-DOT
 Contract Standards and Development Unit
 Preliminary Estimate Section

November 9, 2011

Updated Prices

Memo To: Victor Barbour, PE
 Administrator of the Technical Services Division

From: Doug Lane
 Preliminary Estimate Engineer

Subject: B-2500 (Long Bridge) Alternative Functional Design Construction Estimates, Dare County.

LONG BRIDGE

| Description | Alternate A (18.5 Miles) | Alternate C (18.1 Miles) |
|--------------------------------------|-----------------------------|-----------------------------|
| Segment A | \$2,800,000 | |
| Segment C | | \$1,900,000 |
| Strs & Dredging | \$515,000,000 | \$513,000,000 |
| Segment F | \$1,400,000 | \$1,400,000 |
| B-2500 Long Bridge (Conventional) | \$519,200,000 | \$516,300,000 |
| B-2500 Long Bridge (Design Build) | \$601,000,000 | \$597,000,000 |

Note: Design Build Cost shown is an Average of the High and Low Range.

North Carolina Department of Transportation
Preliminary Estimate

TIP No. **B-2500** **Seg A** County: **DARE**
 Route NC 12
 From Oregon Inlet to Rodanthe - Curved Rodanthe Terminus (Segment A) **CONSTR. COST**
 Approach Road **\$2,800,000**
 Typical Section 2 Lane Shoulder

Priced By: Doug Lane 10/31/11 Updated Prices Only
 Quantities By: Casey Woodall 10/8/03
 Requested By: Victor Barbour, PE 10/28/11

| Line Item | Des | Sec No. | Description | Quantity | Unit | Price | Amount |
|-----------|-----|---------|---------------------------------|----------|-------|---------------|---------------|
| | | | Clearing and Grubbing | 1.5 | Acre | \$ 30,000.00 | \$ 45,000.00 |
| | | | Earthwork | 20,000 | CY | \$ 15.00 | \$ 300,000.00 |
| | | | Pavement Removal | 650 | SY | \$ 5.00 | \$ 3,250.00 |
| | | | Drainage New Location | 0.7 | Miles | \$ 150,000.00 | \$ 105,000.00 |
| | | | Fine Grading | 12,600 | SY | \$ 3.00 | \$ 37,800.00 |
| | | | Pavement Widening | 0 | SY | | \$ - |
| | | | New Pavement | 11,000 | SY | \$ 80.00 | \$ 880,000.00 |
| | | | Pavement Resurfacing | 0 | SY | | \$ - |
| | | | 5.0" Average Asphalt Wedging | 3,600 | SY | \$ 30.00 | \$ 108,000.00 |
| | | | Subgrade Stabilization | 11,300 | SY | \$ 7.00 | \$ 79,100.00 |
| | | | 1'-6" Concrete Curb and Gutter | 0 | LF | | \$ - |
| | | | 2'-6" Concrete Curb and Gutter | 0 | LF | | \$ - |
| | | | 4" Concrete Sidewalk both sides | 0 | SY | | \$ - |
| | | | 7" Monolithic Islands | 0 | SY | | \$ - |
| | | | Erosion Control | 7 | Acres | \$ 15,000.00 | \$ 105,000.00 |
| | | | New RR Signal with Gates | 0 | Each | | \$ - |
| | | | Rubber Railroad Crossing | 0 | Each | | \$ - |
| | | | Upgrade Traffic Signal | 0 | Each | | \$ - |
| | | | Traffic Control | 0.7 | Miles | \$ 25,000.00 | \$ 17,500.00 |
| | | | Thermo and Markers | 0.7 | Miles | \$ 20,000.00 | \$ 14,000.00 |
| | | | Utility Construction | | | | |
| | | | Relocate Existing Water Line | 0 | LF | | \$ - |
| | | | Relocate Existing Sewer Line | 0 | LF | | \$ - |
| | | | Misc. & Mob (15% Strs&Util) | | | | |
| | | | Misc. & Mob (45% Functional) | | | | \$ 762,350.00 |

Lgth 0.7 Miles

| | |
|--------------------------------|------------------------|
| Contract Cost | \$ 2,457,000.00 |
| E. & C. 15% | \$ 343,000.00 |
| Construction Cost | \$ 2,800,000.00 |

North Carolina Department of Transportation
Preliminary Estimate

TIP No. **B-2500** **Seg C** County: **Dare**
 Route NC 12
 From Oregon Inlet to Rodanthe - Intersection Rodanthe Terminus (Segment C) **CONSTR. COST**
\$1,900,000
 Typical Section 2 Lane Shoulder

Priced By: Doug Lane 10/31/11 **Updated Unit Prices Only**
 Quantities By: Casey Woodall 10/8/03
 Requested By: Victor Barbour, PE 10/28/11

| Line Item | Des | Sec No. | Description | Quantity | Unit | Price | Amount |
|-----------|-----|---------|--------------------------------------|----------|-------|---------------|---------------|
| | | | Clearing and Grubbing | 0.5 | Acre | \$ 30,000.00 | \$ 15,000.00 |
| | | | | | | | \$ - |
| | | | Earthwork | 6,000 | CY | \$ 20.00 | \$ 120,000.00 |
| | | | Pavement Removal | 0 | SY | | \$ - |
| | | | Drainage New Location | 0.40 | Miles | \$ 150,000.00 | \$ 60,000.00 |
| | | | Fine Grading | 8,600 | SY | \$ 3.00 | \$ 25,800.00 |
| | | | Pavement Widening | 4,500 | SY | \$ 90.00 | \$ 405,000.00 |
| | | | New Pavement | 2,900 | SY | \$ 80.00 | \$ 232,000.00 |
| | | | Pavement Resurfacing | 3,200 | SY | \$ 15.00 | \$ 48,000.00 |
| | | | "Average Asphalt Wedging | 0 | SY | | \$ - |
| | | | Subgrade Stabilization | 8,100 | SY | \$ 7.00 | \$ 56,700.00 |
| | | | 1'-6" Concrete Curb and Gutter | 0 | LF | | \$ - |
| | | | 2'-6" Concrete Curb and Gutter | 0 | LF | | \$ - |
| | | | 4" Concrete Sidewalk both sides | 0 | SY | | \$ - |
| | | | 7" Monolithic Islands | 0 | SY | | \$ - |
| | | | Erosion Control | 4.2 | Acres | \$ 15,000.00 | \$ 63,000.00 |
| | | | New RR Signal with Gates | 0 | Each | | \$ - |
| | | | Rubber Railroad Crossing | 0 | Each | | \$ - |
| | | | New Traffic Signal (NC12 & Old NC12) | 1 | Each | \$ 90,000.00 | \$ 90,000.00 |
| | | | Traffic Control | 0.4 | Miles | \$ 35,000.00 | \$ 14,000.00 |
| | | | Thermo and Markers | 0.4 | Miles | \$ 20,000.00 | \$ 8,000.00 |
| | | | Utility Construction | | | | |
| | | | Relocate Existing Water Line | 0 | LF | | \$ - |
| | | | Relocate Existing Sewer Line | 0 | LF | | \$ - |
| | | | Misc. & Mob (15% Strs&Util) | | | | |
| | | | Misc. & Mob (45% Functional) | | | | \$ 511,500.00 |

Lgth 0.4 Miles **Contract Cost** \$ 1,649,000.00
E. & C. 15% \$ 251,000.00
Construction Cost **\$ 1,900,000.00**

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TIP No. **B-2500** **Seg F** County: Dare
 Route NC 12
 From Oregon Inlet to Rodanthe - Bodie Island Terminus (Segment F) **CONSTR. COST**
 Typical Section 2 Lane Shoulder **\$1,400,000**

Priced By: Doug Lane 10/31/11 **Updated Unit Prices Only**
 Quantities By: Casey Woodall 10/8/03
 Requested By: Victor Barbour, PE 10/28/11

| Line Item | Des | Sec No. | Description | Quantity | Unit | Price | Amount |
|-----------|-----|---------|---------------------------------|----------|-------|---------------|---------------|
| | | | Clearing and Grubbing | 0.7 | Acre | \$ 30,000.00 | \$ 21,000.00 |
| | | | Earthwork | 17,000 | CY | \$ 15.00 | \$ 255,000.00 |
| | | | Pavement Removal | 2,000 | SY | \$ 5.00 | \$ 10,000.00 |
| | | | Drainage New Location | 0.30 | Miles | \$ 150,000.00 | \$ 45,000.00 |
| | | | Fine Grading | 5,300 | SY | \$ 3.00 | \$ 15,900.00 |
| | | | Pavement Widening | 0 | SY | | \$ - |
| | | | New Pavement | 4,300 | SY | \$ 80.00 | \$ 344,000.00 |
| | | | Pavement Resurfacing | 3,000 | SY | \$ 12.00 | \$ 36,000.00 |
| | | | "Average Asphalt Wedging | 0 | SY | | \$ - |
| | | | Subgrade Stabilization | 4,600 | SY | \$ 7.00 | \$ 32,200.00 |
| | | | 1'-6" Concrete Curb and Gutter | 0 | LF | | \$ - |
| | | | 2'-6" Concrete Curb and Gutter | 0 | LF | | \$ - |
| | | | 4" Concrete Sidewalk both sides | 0 | SY | | \$ - |
| | | | 7" Monolithic Islands | 0 | SY | | \$ - |
| | | | Erosion Control | 3.7 | Acres | \$ 15,000.00 | \$ 55,500.00 |
| | | | New RR Signal with Gates | 0 | Each | | \$ - |
| | | | Rubber Railroad Crossing | 0 | Each | | \$ - |
| | | | Upgrade Traffic Signal | 0 | Each | | \$ - |
| | | | Traffic Control | 0.3 | Miles | \$ 30,000.00 | \$ 9,000.00 |
| | | | Thermo and Markers | 0.3 | Miles | \$ 20,000.00 | \$ 6,000.00 |
| | | | Utility Construction | | | | |
| | | | Relocate Existing Water Line | 0 | LF | | \$ - |
| | | | Relocate Existing Sewer Line | 0 | LF | | \$ - |
| | | | Misc. & Mob (15% Strs&Util) | | | | |
| | | | Misc. & Mob (45% Functional) | | | | \$ 373,400.00 |

Lgth 0.3 Miles **Contract Cost** \$ 1,203,000.00
E. & C. 15% \$ 197,000.00
Construction Cost **\$ 1,400,000.00**

North Carolina Department of Transportation
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TIP No. **B-2500 Long Deep Water Alternative** **Alt A Strs** County: **Dare**
 Route **NC 12**
 From **Replacement of Bridge #11 (Herbert C. Bonner Bridge) with Curved Rodanthe Terminus (Segment A)**
 Typical Section **Long Deep Water Alternative**

| |
|----------------------|
| CONSTR. COST |
| \$515,000,000 |

Priced By: Doug Lane / Harry Lucas 10/31/11 **Updated Unit Prices**
 Quantities By: Casey Woodall 10/14/03
 Requested By: Victor Barbour, PE 10/28/11

| Line Item | Des | Sec No. | Description | Quantity | Unit | Price | Amount |
|-----------|----------|---------|--|---------------|-------|------------------|------------------------|
| | | | Thermo and Markers | 17.5 | Miles | \$ 12,000.00 | \$ 210,000.00 |
| | 1.3 Mi. | | Southern Approach 40' x 6,575' (Const. From Work Bridge) | 263,000 | SF | \$ 95.00 | \$ 24,985,000.00 |
| | 14.1 Mi. | | Southern Approach 40' x 74,637' (Constr. From Barge) | 2,985,480 | SF | \$ 100.00 | \$ 298,548,000.00 |
| | 0.3 Mi. | | High Level & Channel 40' x 1,584' | 63,360 | SF | \$ 180.00 | \$ 11,404,800.00 |
| | | | Bump Outs (6Ea x 12,000SF) | 72,000 | SF | \$ 120.00 | \$ 8,640,000.00 |
| | 1.8 Mi. | | Northern Approach 40' x 9,475' (Constr. From Work Bridge) | 379,000 | SF | \$ 95.00 | \$ 36,005,000.00 |
| | 3.0 Mi. | | Work Bridge 45' x 16,050' | 722,250 | SF | \$ 25.00 | \$ 18,056,250.00 |
| | | | Dredging (39,875'x 100'x 3'AvDepth) | 443,100 | CY | \$ 20.00 | \$ 8,862,000.00 |
| | | | Misc. & Mob (10% Structure) | 1 | LS | | \$ 40,671,950.00 |

Lgth 17.5 Miles

| | |
|--------------------------------|--------------------------|
| Contract Cost | \$ 447,383,000.00 |
| E. & C. 15% | \$ 67,617,000.00 |
| Construction Cost | \$ 515,000,000.00 |

North Carolina Department of Transportation
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TIP No. **B-2500 Long Deep Water Alternative** **Alt C Strs**
 Route **NC 12**
 From Replacement of Bridge #11 (Herbert C. Bonner Bridge)
 with Intersection Rodanthe Terminus (Segment C)
 Typical Section Long Deep Water Alternative

County:

Dare

| |
|----------------------|
| CONSTR. COST |
| \$513,000,000 |

Priced By: Doug Lane / Harry Lucas 10/31/11 **Updated Unit Prices**
 Prepared By: Casey Woodall 10/14/03
 Requested By: Victor Barbour, PE 10/28/11

| Line Item | Des | Sec No. | Description | Quantity | Unit | Price | Amount |
|-----------|----------|---------|--|---------------|-----------|------------------|------------------------|
| | | | Thermo and Markers | 17.5 | Miles | \$ 12,000.00 | \$ 210,000.00 |
| | 1.2 Mi. | | Southern Approach 40' x 6,300' (Const. From Work Bridge) | 252,000 | SF | \$ 95.00 | \$ 23,940,000.00 |
| | 14.1 Mi. | | Southern Approach 40' x 74,589' (Constr. From Barge) | 2,983,560 | SF | \$ 100.00 | \$ 298,356,000.00 |
| | 0.3 Mi. | | High Level & Channel 40' x 1,584' | 63,360 | SF | \$ 180.00 | \$ 11,404,800.00 |
| | | | Bump Outs (6 Ea x 12,000 SF) | 72,000 | SF | \$ 120.00 | \$ 8,640,000.00 |
| | 1.8 Mi. | | Northern Approach 40' x 9,475' (Constr. From Work Bridge) | 379,000 | SF | \$ 95.00 | \$ 36,005,000.00 |
| | 3.0 Mi. | | Work Bridge 45' x 15,775' | 709,875 | SF | \$ 25.00 | \$ 17,746,875.00 |
| | | | Dredging (39,875'x 100'x 3'AvDepth) | 443,100 | CY | \$ 20.00 | \$ 8,862,000.00 |
| | | | Misc. & Mob (10% Structure) | 1 | LS | | \$ 40,516,325.00 |

Lgth 17.4 Miles

| | |
|--------------------------------|--------------------------|
| Contract Cost | \$ 445,681,000.00 |
| E. & C. 15% | \$ 67,319,000.00 |
| Construction Cost | \$ 513,000,000.00 |

**B-2500 Herbert C. Bonner Bridge Replacement
Dare County, North Carolina
Dredging Requirements**

| Dredging - (All Alternatives) | | | |
|--------------------------------------|--------------------|-----------------------|---|
| Begin Station | End Station | Length in feet | Comments |
| 121+75.00 | 134+00.00 | 1225 | Areas in Sound with depth less than 6' below MLLW |
| 137+50.00 | 138+25.00 | 75 | |
| 138+75.00 | 186+00.00 | 4725 | |
| 186+50.00 | 187+25.00 | 75 | |
| 478+25.00 | 480+25.00 | 200 | |
| 480+75.00 | 492+25.00 | 1150 | |
| 493+00.00 | 742+50.00 | 24950 | |
| 760+00.00 | 773+75.00 | 1375 | |
| 782+50.00 | 789+50.00 | 700 | |
| 805+50.00 | 850+50.00 | 4500 | |
| 854+00.00 | 863+00.00 | 900 | |

* Assumes no dredging in Submerged Aquatic Vegetation (SAV) areas. SAV work completed from workbridge

| | |
|--|--------------|
| Total with Curved Rodanthe Terminus (Segment A) | 39875 |
| Total with Intersection Rodanthe Terminus (Segment C) | 39875 |

**B-2500 Herbert C. Bonner Bridge Replacement
Dare County, North Carolina
Workbridge Requirements**

| Workbridge - Curved Rodanthe Terminus (Segment A) | | | |
|---|--------------------|---------------|--|
| Begin Station | End Station | Length | Comments |
| 29+75.00 | 95+50.00 | 6575 | Begin workbridge at shoreline, end at SAV limits |

| Workbridge - Intersection Rodanthe Terminus (Segment C) | | | |
|---|--------------------|---------------|--|
| Begin Station | End Station | Length | Comments |
| 22+25.00 | 85+25.00 | 6300 | Begin workbridge at shoreline, end at SAV limits |

| Workbridge - Bodie Island Terminus (Segment F -- Applies to All Alternatives) | | | |
|--|--------------------|---------------|--|
| Begin Station | End Station | Length | Comments |
| 789+50.00 | 805+50.00 | 1600 | Begin workbridge at SAV limits end at SAV limits |
| 863+00.00 | 941+75.00 | 7875 | Begin workbridge at SAV limits end at shoreline |

* Workbridge assumed to be needed only over Submerged Aquatic Vegetation (SAV)

| | |
|--|--------------|
| Total with Curved Rodanthe Terminus (Segment A) | 16050 |
| Total with Intersection Rodanthe Terminus (Segment C) | 15775 |