

Connecticut Department of Transportation
Preliminary Cost Estimating Guidelines - ENGLISH
January 2009

NOTE: WHEN PRELIMINARY COST ESTIMATES ARE PREPARED, THE ENGINEER MUST TAKE INTO ACCOUNT THE TYPE OF PROJECT, ITS COMPLEXITY, GEOGRAPHICAL LOCATION, AND OTHER SPECIAL CONSIDERATIONS THAT MAY APPLY. QUESTIONS ABOUT THESE GUIDELINES SHOULD BE DIRECTED TO THE DEPARTMENT'S COST ESTIMATING UNIT, ATTENTION MR. ROBERT NEVILLE, 860-594-3245

I. ESTIMATE UPDATES

All construction cost estimates should be updated according to the following:

- o Semi-annually
- o At major milestones in design (PD, SF, FD)
- o When the scope of the project changes significantly

II. COST ADJUSTMENT CRITERIA

Construction cost estimates should be adjusted **to the midpoint of construction** using the criteria listed below:

- Before calendar year 2009: 10% annually
- Calendar year 2009 and beyond: 6% annually

III. CONTRACT ITEMS

A. Roadway Items

<u>Earth Exc</u> <500 C.Y.	\$35 - \$60 / C.Y.
500- 2,500 C.Y.	\$25 - \$40 / C.Y.
2,500 - 5,000 C.Y.	\$20 - \$30 / C.Y.
>5,000 C.Y.	\$15 - \$25 / C.Y.
<u>Rock Exc.</u> <500 C.Y.	\$75 - \$200 / C.Y.
500- 2,500 C.Y.	\$65 - \$150 / C.Y.
2,500 - 5,000 C.Y.	\$55 - \$110 / C.Y.
>5,000 C.Y.	\$40 - \$75 / C.Y.
<u>Trench Exc.</u>	
0 - 4' Deep	\$18 - \$25 / C.Y.
0 - 10' Deep	\$20 - \$30 / C.Y.
0 - 15' Deep	\$40 / C.Y.
0 - 20' Deep	\$45 / C.Y.

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Rock in Trench Exc. \$75 - \$200 / C.Y.

Borrow

< 500 C.Y. \$25 - \$50 / C.Y.
500-5,000 C.Y. \$15 - \$30 / C.Y.
> 5,000 C.Y. \$10 - \$18 / C.Y.

Subbase

< 500 C.Y. \$45 / C.Y.
500 - 2,000 C.Y. \$38 / C.Y.
> 2,000 C.Y. \$34 / C.Y.

Sedimentation Control System \$4.00/L.F.

Processed Agregate Base

< 500 C.Y. \$50 / C.Y.
500 – 2,000 C.Y. \$42 / C.Y.
> 2,000 C.Y. \$38 / C.Y.

Milling of Bituminous Concrete 0 - 4" \$7.50/S.Y.

Superpave (.5" + 1.5")

< 100 Ton \$250 / Ton
100 - 1,000 Ton \$150 - \$180 / Ton
1,000 - 5,000 Ton \$125 - \$150 / Ton
> 5,000 Ton \$95 - \$125 / Ton

Bedding Material

< 100 C.Y. \$40 / C.Y.
500-1,000 C.Y. \$30 - \$40 / C.Y.
> 1,000 C.Y. \$30 / C.Y.

Drainage

12" R.C.Pipe \$55 / L.F.
15" R.C.Pipe \$65 / L.F.
24" R.C.Pipe \$80 / L.F.
48" R.C.Pipe \$210 / L.F.

Simple Catch Basins \$2,500 Ea.
Double Catch Basins \$3,500 Ea.
Complex Basins ("CM-2") \$4,500 - \$6,000 Ea.

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Sedimentation Chambers: (Vortechs, etc.)	
10' x 4'	\$30,000 Ea.
13' x 7'	\$35,000 Ea.
18' x 12'	\$50,000 Ea.

Rip Rap

Standard	\$65 / C.Y.
Intermediate	\$80 / C.Y.
Modified	\$105 / C.Y.

Curbing

Temporary P.C.B.C.	\$35 - \$75 / L.F.
B.C.L.C.	\$4 - \$10 / L.F.
Concrete Curbing	\$30 - \$40 / L.F.
F-Shape P.C.B. Curb (20" x 45")	\$84 / L.F.
F-Shape P.C.B. Curb (30" x 45")	\$105 / L.F.

Guide Railing

Metal Beam Rail (Type R-B 350)	\$30 /L.F. (Add \$1.50/L.F.for 10 Ga.)
R-B End Anchorage Type 1	\$1,200 Ea.
R-B 350 Bridge Attachment - Jersey Shaped Parapet	\$2,500 Ea.
Merritt Parkway Guiderail	
<500 L.F.	\$65 / L.F.
500 L.F. – 5,000 L.F.	\$60 / L.F.
>5,000 L.F.	\$55 / L.F.

<u>Concrete Sidewalk</u>	\$14 / S.F.
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Bituminous Concrete Driveway

Residential	\$40 / S.Y.
Commercial	\$50 / S.Y.

Furnishing & Placing Topsoil

<1,000 S.Y.	\$15.00 / S.Y.
1,000 - 5,000 S.Y.	\$8.00 / S.Y.
>5,000 S.Y.	\$6.00 / S.Y.

Turf Establishment

<1,000 S.Y.	\$5.00 / S.Y.
1,000 – 5,000 S.Y.	\$3.00 / S.Y.
>5,000 S.Y.	\$2.00 / S.Y.

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Sodding \$12.50 / S.Y.

Noise Barrier Walls - Timber

Roadway	\$17.50 / S.F.
Structure	\$20 / S.F.

Noise Barrier Wall - Durisol (Concrete Panel, Steel Columns)

Good Site Conditions - \$20 / S.F.
"Hard" Site Conditions - \$25 / S.F.

Roadway Lighting

Expressway	\$55 / L.F.
Ramps	\$40 / L.F.

Railroad Protection

Station Reconstruction:

Protection and Inspection: \$1,500 per day

Metro North & Amtrak:

Flagman: \$750 per day

Night work (Flagman & Groundman): \$2,000 per night

All other Railroads:

Flagman: \$500 - \$750 per day

B. Structure Items

Bridges

Deck	\$100 - \$150 / S.F.
Superstructure	\$150 - \$200 / S.F.
New Structure	\$375 / S.F. of Deck Area

Structure Exc.

<100 C.M.	\$75 / C.Y.
100 - 1,000 C.M.	\$40 / C.Y.
>1,000 C.M.	\$35 / C.Y.

Structural Steel - Installation

Favorable site conditions	\$2.50 / lb.
Less than favorable conditions	Up to \$7.50 / lb.

(Limited access, height restrictions, etc.)

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Deformed Steel Bars

<10,000 LBS.	\$2.50 / LBS.
10,000 – 50,000 LBS.	\$1.75 / LBS.
>50,000 LBS	\$1.40 / LBS.
Epoxy Coated	Add \$0.25 / LB. to above costs

Removal of Existing Masonry \$350 / C.Y.

Temporary Sheet Piling Reasonable Range \$25 - \$40 / S.F.

Cofferdam and Dewatering \$180 - \$375 / L.F.

Deck Patching

Partial Depth Patch	\$2,500 / C.Y.
Full Depth Patch	\$3,000 / C.Y.

Cast-in-Place Concrete Piles \$55 / L.F.

Steel Piles

Furnishing	\$1.00 / lb.
Driving	\$25 / L.F.
Splicing	\$500 Ea.
Point Reinforcement	\$200 Ea.

Prestressed Deck Units

4' x 3' 3"	\$375 / L.F.
4' x 2' 3"	\$350 / L.F.

Lead Health and Protection

<u>Value of Structure Items</u>	<u>Lead Health & Safety Estimated Cost</u>
<\$1,000,000	\$25,000
\$1,000,000 - \$5,000,000	\$35,000
\$5,000,000 - \$10,000,000	\$60,000
>\$10,000,000	\$100,000

C. Environmental Compliance Items

Obtain a construction cost estimate from the Environmental Compliance Division.

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D. Traffic Items: (Consultation with Traffic Engineering recommended)

Trafficmen	
State Police Officer	\$ 75 / hour
Town (City) Police Officer	\$ 75 / hour
Uniformed Flagger	\$ 55 / hour
New Signal	\$80,000 - \$120,000 per intersection
Minor Modification	\$30,000 per intersection
Major Modification	\$60,000 per intersection
Temporary Signalization	\$2,500 per intersection

E. Minor Items / Contingency Costs

- < 30% design completion - Add 25% of (A) Roadway, and (B) Structure Items
Note: If Structure Items are determined on a square foot basis, the 20% is applied only to Roadway Items.
- 30 - 65% design completion - Add 15% of (A) Roadway + (B) Structure + (C) Environmental + (D) Traffic Items
- >65% design completion – No additive required since the estimate is based on actual quantity take-offs

F. Lump Sum Items (Percentage to be applied at design completion.)

Clearing & Grubbing	2.0% (Item #0201001)
M & P of Traffic	4.0% (Item #0971001)
Mobilization	7.5% (Item #0975002)
Construction Staking	1.0% (Item # 0980001)
Percentages are applied to the sum of (A) Roadway Items + (B) Structure Items + (C) Environmental Items + (D) Traffic Items	

IV. ENGINEERING PERCENTAGES (Incidentals and Contingencies)

<u>Project Value</u>	<u>Incidentals</u>	<u>Contingencies</u>
Less than \$1 million	25%	10%
\$1 - 5 million	21%	10%
\$5 - 50 million	15%	10%
Over \$50 million	12%	7%

Percentages are applied to the sum of (A) Roadway Items + (B) Structure Items + (C) Environmental Items + (D) Traffic Items + (F) Lump Sum Items

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V. UTILITIES

Prior to a project's initiation, and at any time thereafter, members of the Department's Utility Section will assist in establishing or updating the preliminary cost estimate for any anticipated utility impacts.

VI. CONSTRUCTION COST

Total Construction Cost is the sum of the following: (Upon design completion)

- ROADWAY ITEMS
- STRUCTURE ITEMS
- ENVIRONMENTAL ITEMS
- TRAFFIC ITEMS
- LUMP SUM ITEMS
- ENGINEERING PERCENTAGES
- UTILITIES

VII. UNDERESTIMATED ITEMS

The following is a list of contract items whose final quantities or values often show large increases by project completion. Designers need to be aware of these items.

<u>Item #</u>	<u>Description</u>	<u>Unit</u>
0970004	Trafficperson	Est.
0101117	Controlled Material Handling	C.Y.
0202315	Disposal of Controlled Material	Ton
0202103	Rock Excavation	C.Y.
0950005	Turf Establishment	S.Y.
12091XX	Pavement Markings	L.F. or S.Y.
Various	Temporary Traffic Control Items	

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