

Connecticut DOT

2013 Cost Estimating Guidelines

I. PURPOSE

These guidelines provide basic cost estimating information for Department construction projects and recent cost information for several common construction items. The guidelines work in conjunction with the [Transport Estimator Procedures Guide](#), which provides detailed procedures for the application of “Estimator”, the WebTrnsPort cost estimating software used by the Department.

II. GENERAL

Total project cost includes pre-construction and construction phase expenditures. The following is a general framework of project costs:

- **PRECONSTRUCTION**
 - Project planning,
 - Design (State or consultant),
 - Design management, liaison and review/support (Department units),
 - Permit application preparation,
 - Engineering by utilities and municipalities, and
 - Right of Way appraisal, acquisition and relocations.

- **CONSTRUCTION**
 - Contract,
 - Non-contract,
 - Construction inspection and contract administration (materials testing, design support),
 - Work and inspection by utilities and municipalities,
 - Work and inspection by railroads, and
 - State Police.
 - Contingency (generally added separately to Contract and Non-contract costs)

In addition to the above, other project-related costs (e.g., adjustment of traffic signals by state forces) are sometimes incurred.

An example estimate covering various phases and cost categories is provided (Attachment 1). These guidelines provide no detailed information on preparing estimates of Preconstruction costs. An explanation of construction cost elements follows.

CONTRACT ITEMS are the individual “pay items” performed by the Department’s contractor. During the bidding process, bidders submit prices for lump sum and unit-based items. Some contracts also include one or more Estimated amount (EST) items. For these items, the Department designates the contract amount, generally because the required work is not sufficiently defined to solicit binding bids. The established amount is included on the bid proposal form and part of each bidder’s bid amount. The actual amount paid is determined during construction based on actual requirements.

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Estimator is the principal tool used to estimate contract items. It cannot be used for lump sum or Estimated (EST) item prices. See the [Transport Estimator Procedures Guide](#) for detailed guidance.

NON-CONTRACT ITEMS represent Department expenses for work required to complete the project but not included in the contract. Specific elements comprising this category are discussed below.

Incidentals – the cost of Construction Engineering (CENG), which consists of the various activities required to administer the construction contract, including inspection, materials testing, construction phase design support and other functions. It includes state and consultant forces, when applicable. This cost is estimated using a sliding scale percentage of the contract item total, in accordance with a Chief Engineer’s memorandum (dated June 10, 2009). Include the estimated amount in the Estimator file.

Utility Agreements and Railroad Relocation and Protection – costs incurred by public utilities and railroads required by the project, such as for relocation of public utilities or interference with railroads (by physical alteration or occupation of their property). During project development, written agreements between the Department and each affected utility and railroad are developed and executed to cover the estimated cost of relocation and protection. Identify all agreements and the associated amount(s) from the Utilities Section of the Division of Design Services and include them in the Estimator file.

State Police – the cost of dedicated patrol and traffic control for selected projects as determined by the Division of Traffic Engineering. This cost is attributable to the project but is not a contract item or cost. The cost is paid by the Department through an interagency Memorandum of Understanding. The estimated amount is included in the Estimator file.

Estimator (software) provides no assistance in estimating the three cost categories noted above. The estimated costs for these items should be developed ‘offline’ and entered into Estimator.

CONTINGENCY is the estimated cost associated with risk and uncertainty. It is usually estimated as a percentage of known costs. Uncertainty and risk diminish as development progresses toward design completion, so contingency also decreases as design development advances. Contingencies are applicable to both contract and non-contract costs. However, these guidelines only provide specific guidance on establishing contingency values for contract costs. See the next section “Cost Estimates During Project Development” for specific guidance.

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III. COST ESTIMATES DURING PROJECT DEVELOPMENT

This section addresses estimating the construction contract cost at various points during project development.

All construction cost estimates should be updated twice per year, at major design milestones (Preliminary Design, Semi-Final Design, Final Design for Review and Final Design Plans) and when the scope is changed significantly.

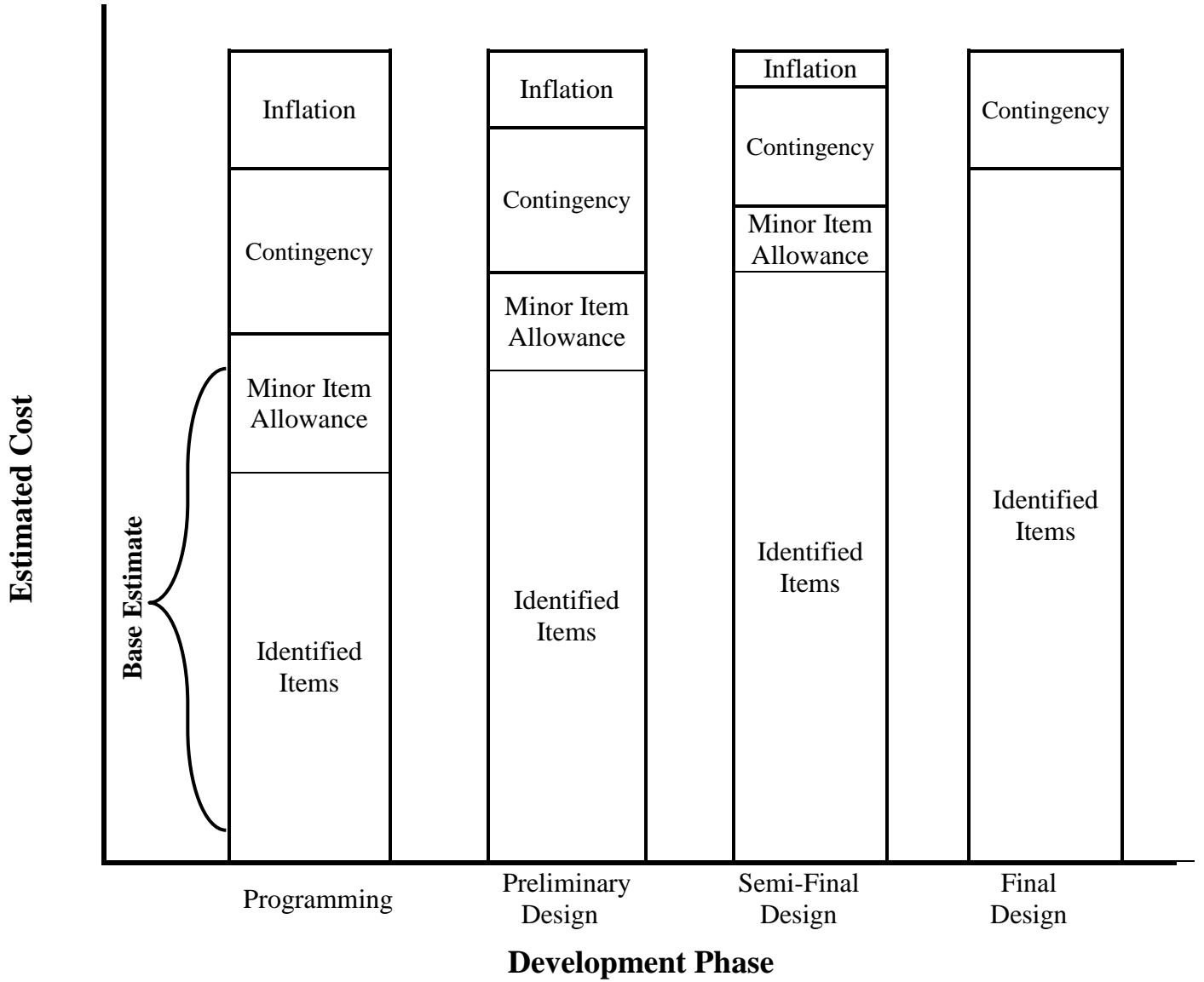
The various elements of the estimated contract cost are shown in the figure below. The **base estimate** is composed of what can be reasonably ‘known’ about the cost of construction when the estimate is prepared. This base estimate includes the cost of individual work items at the current/recent prices that have been identified. Additionally, in early phases of development, a **minor item** allowance is used to account for items that are known to be required but are too small to account for individually. This allowance is part of the base estimate. As previously noted, **contingency** is the cost associated with risk and uncertainty. An amount is computed and included in the estimate to cover the probable cost of work that cannot be reasonably known – but will probably be needed.

Construction cost estimates are intended to represent Department disbursements (amounts paid out) to construct a project. As labor and material costs change over time, the cost of construction also changes. All estimates should identify a corresponding reference time (month and year). For fiscal management and capital planning purposes, anticipated disbursements (dollars paid out) should be shown in the “year of expenditure”. **Inflation** refers to the general trend of cost increasing with time and an inflation adjustment is generally needed to account for current cost (used to compute the estimate) and future (year of expenditure) disbursements.

The various elements of a construction contract cost estimate, in relation to major project development milestones, are shown in the figure below. The minor item allowance, contingency and inflation adjustment decrease as project definition is completed, all payment items are identified and costs reflect current prices. Further guidance on estimating individual elements of the construction contract cost follows.

The **base estimate** is the estimated cost of anticipated contract work, as contemplated at the time of the estimate and in the current price environment. The estimator may use individual “catalog pay items” found in the Department’s bid history (available through Estimator), aggregate cost factors (e.g., cost/unit of area) or other methods (e.g., cost basis). Aggregate cost factors are discussed in a subsequent section. Additionally, a **minor item allowance** should be included using the factors indicated in the table. The estimator needs to make a judgment in selecting a value from within the noted range. The selected percent value is multiplied by the cost of identified items (as noted in the table). No minor item allowance is included in the final estimate, since all work should be covered by individual catalog items and quantities.

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Phase	Minor Item Allowance		Contingency	
	Factor (%)	Multiply by	Factor (%)	Multiply by
Programming	15 - 30	Roadway & Structure items	20 - 30	Base
Preliminary Design	10 - 20	Roadway, Structure, Envir Compl & Traffic items	15 - 25	Base
Semi-Final Design	5 - 10	All identified items	10 - 20	Base
Final Design	0	Not applicable	10	Base

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The **contingency** element of contract cost is computed by applying the selected contingency percentage to the base estimate. The table above indicates a range of recommended contingency factors. The ranges shown are associated with project complexity. The lower end of the range is appropriate for low-complexity projects and vice versa. Typical risk factors include uncertain scope, subsurface work and mitigation measures. At final design, a contingency factor of 10 percent is used in accordance with a Chief Engineer's memorandum (June 10, 2009), and included in the Estimator file.

Estimates are usually based on recent bid prices. Unless inflation is rampant (more than 10 percent annually), prices based on the most-recent three years are generally adequate for contracts with an imminent letting (bid opening). However, when the letting is more than a year from when the estimate is prepared, an **inflation** adjustment should be included.

There are basically two methods that can be used to adjust cost based on timing. One is through Estimator. This software is most useful when all of the contract items and quantities are defined. When this information and the scheduled letting date are available and entered in Estimator, the estimated costs generated by Estimator will automatically factor time into estimated cost (i.e., account for inflation). Estimator computes price trends for individual items and projects costs up to the specified "base date". This adjustment is made automatically only for the unit-based items estimated by Estimator. This approach is generally *not* workable for preliminary estimates.

The second method, and the one recommended for preliminary estimates, is to adjust for **inflation** by direct calculation. Except for contracts with durations of three years or more, the inflation adjustment factor is computed by determining the number of years between the base date (when estimate is prepared) and scheduled bid opening and multiplying this number by the annual inflation factor. For contracts with durations of three years or longer, compute the number of years from the base date to the mid-point of construction. For 2013, an annual inflation rate of 4 percent per year (simple, not compounded) should be used. Example computations follow.

Inflation Example 1 (construction duration less than 3 years)

Estimate base date: January 15, 2013

Scheduled bid opening (letting) date: July 23, 2014

Duration of construction contract: 1 year

Estimated cost: \$1,500,000

Inflation: 4 percent

Estimated future/inflated cost = \$1,500,000 x (1.0 + 1.52 x 0.04) = **\$1,591,200**

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Inflation Example 2 (construction duration more than 3 years)

Estimate base date: January 15, 2013

Scheduled bid opening (letting) date: July 23, 2014

Duration of construction contract: 4 years (midpoint: October 2016)

Estimated cost: \$15,000,000

Inflation: 4 percent

Estimated future/inflated cost = \$15,000,000 x (1.0 + 3.75 x 0.04) = **\$17,250,000**

It should also be noted that inflation affects various project cost categories (rights of way, construction) differently since they are incurred at different points in time and have their own unique economic conditions. The guidance and examples in this section apply only to construction contracts.

IV. AGGREGATE COSTS FOR PRELIMINARY ESTIMATES.

This section provides guidance for the preliminary estimation of several common construction features that are comprised of many individual contract items. The cost of these construction features cannot be obtained directly from bid history or Estimator.

The advantage of using these aggregate average costs is that they capture many individual contract items without the benefit of a detailed design and the specific items and quantities that will be required. However, it should be recognized that costs vary significantly by project. Some costs are far higher than the average and some are significantly less. These average costs are most appropriate for scoping estimates.

Bridges

The average unit costs (\$/square foot) reported are the total cost of bridge structures divided by the nominal deck area (length multiplied by curb-to-curb width). The aggregate average costs (\$/square foot) do *not* include non-structure costs such as the cost of constructing approaches, traffic control and other general contract cost (e.g., mobilization, construction staking).

New and replacement bridges on a Federal-aid highway: \$560/square foot of deck

New and replacement bridges not on a Federal-aid highway: \$380/square foot of deck

Federal-aid routes are all roads except those functionally classified as a local road or rural minor collector (use functional classification maps, not state/municipal ownership).

Superstructure replacement: average \$300/square foot of deck

Unit cost decreases as deck area increases,

below 3,000 square feet of deck: \$360/square foot

above 3,000 square feet of deck: \$150/square foot

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Retaining Walls

The average unit costs are based on lump sum costs for wall divided by the area (length times height, measured from the top of footing to the top of wall).

Average: \$140/square foot

Unit cost decreases as area increases,
below 2,000 square feet: \$220/square foot
above 2,000 square feet: \$120/square foot

Embankment Walls

Average: \$60/square foot

Expected range: \$30 – \$80/square foot

Roadway Lighting

Expressway: \$55/linear foot

Ramps: \$40/linear foot

Individual Highway Pole & Light: \$9,500

Signalization

Permanent Signal Systems

State Highway \$100,000 - \$120,000/intersection

Locally-owned Signal System \$225,000 - \$250,000/intersection

Minor Modification \$30,000/intersection

Major Modification \$80,000/intersection

Temporary Signalization

M&PT Bridge Projects \$30,000/intersection

Existing Signal \$3,500/intersection

Utility Relocation for Signalization Projects \$7,000/intersection

V. LUMP SUM CONTRACT ITEMS

This section provides guidance for several common construction features that are typically bid as lump sum items.

Removal of Superstructure

Bridge over roadway: \$55/square foot of deck

Bridge over water or rail: \$75/square foot of deck

Bridge Painting

(Cost per square foot of structural steel to be painted)

Class 1 Containment and Collection \$20-\$30/square foot

Blast Cleaning and Field Painting \$15-\$30/square foot

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Structural Steel

Structural steel is bid as a lump sum item [Structural Steel (Site No. _)]. For most contracts, the item includes both the material and its installation. However, under certain conditions (larger quantities extended over several years), the Department will assume the risk for material price fluctuations by creating an additional cost-plus item (Materials for Structural Steel). When this occurs, the contract bid item does not include the material and the actual cost of the in-place steel is divided into two items (rather than one). The estimated cost values shown below are for the total cost of structural steel, whether bid as a single item or as two.

For preliminary estimates use a single cost to estimate material and installation. The following cost includes material and installation.

Average: \$2.20/lb

Above 10,000 lbs and favorable site conditions: \$2.00/lb

Below 10,000 lbs or less-than favorable site conditions: \$3.00 - \$10.00/lb

For final design, determine if the material will be paid for as cost-plus item. Consult with the Cost Estimating section to obtain a current amount and then estimate the bid item for Structural Steel.

Recurring Lump Sum Items

The four items addressed in this section are included in many projects. For a specific contract, individual bids for these items often vary widely. Given the variability in bidding strategies along with the requirements for specific projects, average dollar values for these items are not a useful method for estimating projects. Instead, the cost of these items should be estimated as a percentage of total project cost. The table below indicates a summary of recent bid history for these items.

Item		Percent of total bid	
Number	Description	Range	Average
0201001	Clearing and Grubbing	0.1 – 10	3.0
0971001	Maintenance and Protection of Traffic	0.2 – 25	4.0
0975002	Mobilization	0.3 - 20	7.0
0980001	Construction Staking	0.1 – 3.7	1.0

Accurate estimation of these items is difficult since bidders' prices often reflect factors not directly related to the work entailed by the item. Consequently, average values are often appropriate. However, prices should also consider certain historical trends and practical considerations as discussed below.

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The estimated cost of **Clearing and Grubbing** should reflect the extent of the effort. Some projects (e.g., realignment) inherently involve more clearing effort than others, while others (e.g., IMS) require less. Some project types (bridge rehabilitation) vary widely within the same category. The estimator should select a percentage that is representative of the clearing and grubbing effort, generally within a range of 1 to 6 percent.

Bid prices for **Maintenance and Protection of Traffic** tend to be high (more than 10 percent of total bid) for multi-location bridge repair contracts (e.g., expansion joint, plug joints, beam end). Traffic signal, pavement preservation, intersection improvement and single-location bridge rehabilitation contracts tend to be on the lower end of the range (2 percent or less of the total bid).

Bids for **Mobilization** (as a percent of total bid) are relatively stable because of the payment provisions. The only category of projects observed with very high percentages (above 10 percent) are multi-location bridge repair (beam ends, bearings, joints) contracts. Mobilization for these contracts should be estimated at 10 percent of the total contract and the average value (7 percent) is recommended for all other contracts.

Bids for **Construction Staking** tend to be fairly logical, generally related to the level of effort. This item is generally 2 percent or more of the total bid for realignment and widening of existing facilities and bridge replacement contracts. For pavement preservation, bridge rehabilitation and traffic signal contracts, this item is generally around 0.5 percent of the contract. For all other contracts, the average (1 percent) is recommended.

VI. OTHER COSTS

Railroad Protection

Flagging:

Metro North and Amtrak: \$1,000/man/shift

Other railroads: \$800/man/shift

De-energizing: \$5,000/Flagman and groundman/shift

On-site Traffic Control Personnel

State Police Officer: \$80/hour (not a contract item)

Town (City) Police Officer: \$75/hour (contract item, Estimated amount)

Uniformed Flagger: \$ 55/hour (contract item, bid unit price)

For preliminary estimating guidance on other construction costs, consult with relevant functional divisions and units (Traffic Engineer, Utilities, Environmental Compliance).

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VII. FINAL ESTIMATES

Final Estimates serve as the basis for detailed fiscal actions (e.g., obligating federal and matching funds) and for analyzing contractor bid proposals. Final Design Plan (FDP) estimates should identify contract costs, non-contract costs and a contingency as shown under the “Construction” heading in the General section (p. 1).

The [Digital Project Development Manual](#) and [Transport Estimator Procedures Guide](#) provide detailed information related to the submission of FDP estimates. The [Transport Estimator Procedures Guide](#) also includes guidance on how a “lead” unit (e.g., Highway, Structures) can assemble a project-level estimate by adding together discipline subsets (i.e., roadway, bridge, traffic) and electronic processing options (Estimator direct entry, uploading Excel files).

VIII. RECENT BID PRICES FOR COMMON CONTRACT ITEMS

Transport Estimator is the best source of estimated unit prices. If a unit-based item is included in a sufficient number of recent contracts (3 or 5 years), the software will develop a unit price based on the quantity, project location and schedule (letting date). Consequently, when this information is known, Estimator should be used to estimate unit costs. However, as a quick reference the following pages provide ‘ball park’ unit price ranges for common items are included (Attachment 3), primarily for use with preliminary estimates. Typically, unit prices decline as quantities increase. Factors such as site constraints, schedule and location play a role in bid prices and should be considered in selecting an estimated unit cost. It should also be noted that unit prices outside the ranges shown in the table do occur. This information in the table should never be used as the primary basis for developing final estimates.

For additional information on construction cost estimating for Department-administered projects, contact the Mr. Robert Neville (594-3245) or Mr. Mark Stopper (594-3248) in the Cost Estimating section, Division of Design Services.

Attachments

1. Example Estimate
2. Chief Engineer Memorandum, June 10, 2009
3. General Price Ranges of Common Items

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Attachment 1, Example Estimate

PROJECT NO. 123-456

Phase of Development: **Preliminary Design**

TOTAL COST SUMMARY

ACTIVITY	ESTIMATED COST	STATE SHARE	COST TO STATE PROJECT	YEAR OF EXPENDITURE
PRELIMINARY DESIGN	110,000	100 %	110,000	2012
RIGHT OF WAY (PRE-ACQUISITION)	25,000	100 %	25,000	2012
UTILITIES (ENGINEERING)	18,000	100 %	18,000	2013
RAILROAD (ENGINEERING)	23,000	100 %	23,000	2013
FINAL DESIGN	325,000	100 %	325,000	2014
RIGHT OF WAY (ACQUISITION)	150,000	100 %	150,000	2014
CONSTRUCTION CONTRACT	4,901,009	100 %	4,901,009	2016
UTILITIES (CONSTRUCTION)	600,000	50 %	300,000	2016
RAILROAD (CONSTRUCTION)	125,000	100 %	125,000	2016
INCIDENTALS (CENG)	1,225,252	100 %	1,225,252	2016
STATE POLICE	187,000	100 %	187,000	2016

All costs include contingencies and inflation to year of expenditure

CONTRACT COST SUMMARY

Scheduled Bid Letting 3/23/2016 Inflation (%) 4
Estimate Date 1/2013
Construction duration 2 Years

ROADWAY (See breakout, separate sheet)		1,569,253
STRUCTURES (See breakout, separate sheet)		761,480
ENVIRONMENTAL COMPLIANCE (See breakout, separate sheet)		20,000
TRAFFIC (See breakout, separate sheet)		107,000
CLEARING & GRUBBING (as % of total contract items)	3 %	108,429
M & P OF TRAFFIC (as % of total contract items)	5 %	180,716
CONSTRUCTION STAKING (as % of total contract items)	2 %	72,286
MOBILIZATION (as % of total contract items)	7 %	253,002
MINOR ITEM ALLOWANCE (as % of total contract items)	15 %	542,147
	Base Estimate	3,614,313
CONTRACT COST, INCLUDING CONTINGENCY (at designated %)	20 %	4,337,176
CONTRACT COST WITH CONTINGENCY & INFLATION		\$4,901,009

ESTIMATED BY: Tom Smith

REVIEWED BY: John Brown

Connecticut DOT
 2013 Cost Estimating Guidelines
 Attachment 1, Example Estimate

PROJECT NO. 123-456						
STRUCTURE						
ITEM		BASIS FOR ESTIMATE			COST	
NUMBER	DESCRIPTION	LENGTH	WIDTH	# OF UNITS	UNIT COST	COST
	REPLACE BRIDGE 1234 (Estimate SF)	42	28	1,176	380	446,880
	RETAINING WALL (Estimate SF)			1,430	220	314,600
STRUCTURE SUBTOTAL						761,480
TRAFFIC						
ITEM		BASIS FOR ESTIMATE			COST	
NUMBER	DESCRIPTION	DAYS	HOURS/DAY	# OF UNITS	UNIT COST	COST
0970007	UNIFORMED FLAGGER	175	8	1,400	55	77,000
1118051	TEMPORARY SIGNALIZATION (LS)			1	30,000	30,000
TRAFFIC SUBTOTAL						107,000
ENVIRONMENTAL COMPLIANCE						
ITEM		BASIS FOR ESTIMATE			COST	
NUMBER	DESCRIPTION	UNITS		# OF UNITS	UNIT COST	COST
0101168	RSA/WSA EQUIPMENT OPERATOR	HOUR		120	70	8,400
0202315	DISPOSAL OF CONTROLLED MATERIALS	TON		200	52	10,400
0101117	CONTROLLED MATERIALS HANDLING	CY		100	12	1,200
ENVIRONMENTAL COMPLIANCE SUBTOTAL						20,000

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Attachment 1, Example Estimate

PROJECT NO. 123-456					
ROADWAY					
ITEM		BASIS FOR ESTIMATE		COST	
NUMBER	DESCRIPTION	UNITS	# OF UNITS	UNIT COST	COST
0202000	EARTH EXCAVATION	CY	5,089	14	71,246
0202200	CHANNEL EXCAVATION	CY	345	14	4,830
0202100	ROCK EXCAVATION	CY	312	55	17,160
0209001	FORMATION OF SUBGRADE	SY	8,976	3	26,928
0212000	SUBBASE	CY	2,620	34	89,080
0406171	HMA S0.5	TON	4,890	105	513,450
0811001	CONCRETE CURBING	LF	1,635	35	57,225
0601020	STAMPED CONCRETE (TRUCK APRON)	SF	3,430	30	102,900
0921019	TEXTURED CONCRETE MEDIAN	SF	4,305	15	64,575
0921001	CONCRETE SIDEWALK	SF	2,680	11	29,480
0910029	METAL BEAM RAIL (TYPE R-B 350)	LF	300	20	6,000
0914007	WOOD PLANK RAIL	LF	200	15	3,000
0922501	BITUMINOUS CONCRETE DRIVEWAY	SY	2,959	45	133,155
0944000	FURNISHING AND PLACING TOP SOIL	SY	7,221	6	43,326
0406267	MILLING OF HMA (0" TO 4")	SY	1,223	6	7,338
0202502	REMOVAL OF CONCRETE PAVEMENT	SY	2,934	15	44,010
	CATCH BASINS	EA	16	2,500	40,000
0651011	12" RCP	LF	520	55	28,600
0651012	15" RCP	LF	340	65	22,100
0651013	18" RCP	LF	420	75	31,500
0652011	18" RCCE	EA	2	1,300	2,600
0703011	RIPRAP	CY	150	105	15,750
0969062	FIELD OFFICE, MEDIUM	MO	16	2,500	40,000
	LANDSCAPING	PROJECT	1	100,000	100,000
	BUILDING DEMO	PROJECT	1		
	ILLUMINATION	PROJECT	1	15,000	15,000
	WETLAND MITIGATION	PROJECT	1	100,000	60,000
ROADWAY SUBTOTAL					1,569,253

RECEIVED
 J. O'R.
 JUN 16 '09
 RSE
 CD/EST
 EC

subject: Incidental Cost Estimates and Project Contingencies

memorandum

date: June 10, 2009

to: Mr. James H. Norman
 Acting Engineering Administrator

from: Thomas A. Harley, P.E.
 Chief Engineer
 Bureau of Engineering and Construction

Mr. Lewis S. Cannon
 Construction Administrator

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 Attachment 2, Chief Engineer's Memorandum

Thomas A. Harley

Following a review of incidental costs and final construction costs for various sizes and types of projects, it has been determined that the initial estimated amount for construction incidentals should be based upon a percentage of the estimated construction cost (contract items). The incidental percentages to be applied for the respective categories of projects shall be as follows:

Project Size/Type	Incidental Percentage
Less than \$1 Million	30%
\$1 Million to \$5 Million	25%
\$5 Million to \$20 Million	23%
\$20 Million to \$50 Million	18%
> \$50 Million	15%
Various Location Projects (e.g. Traffic Signals, Signing, etc.)	30%

The incidental percentages shown above should be used for budgeting purposes, as well as all PS&E's and project initiation documents. The Construction Districts will continue to prepare the incidental budget for the units involved in construction support. The incidental establishment memo will be produced after the low bid and consultant fees, if any, are known and will be incorporated into the project budget with the first Project Modification. Please note that the above incidental percentages include an allowance for the change to a 40 hour work week for Department employees.

In addition, since the implementation of CORE-CT, contingencies are no longer dedicated to contract items and are available to all units charging to the construction phase. Therefore, effective immediately, the contingency amount for construction contracts should be uniformly set at 10% of the contract cost (contract items) at PS&E. Estimating guidance for contingencies during the planning and design phases is unaffected.

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Attachment 3, General Price Ranges of Common Items

Item No.	Item Description	Units	Unit Price Range	
0101117	CONTROLLED MATERIALS HANDLING	c.y.	5.00	20.00
0101168	RSA/WSA EQUIPMENT OPERATOR	hour	65.00	75.00
0104057	POLE FOUNDATIONS, TYPE A	ea.	675.00	850.00
0202000	EARTH EXCAVATION	c.y.	8.00	15.00
0202100	ROCK EXCAVATION	c.y.	30.00	60.00
0202315	DISPOSAL OF CONTROLLED MATERIALS	ton	40.00	55.00
0202502	REMOVAL OF CONCRETE PAVEMENT	s.y.	8.00	14.00
0203000	STRUCTURE EXCAVATION EARTH (COMPLETE)	c.y.	18.00	40.00
0203100	STRUCTURE EXCAVATION ROCK (COMPLETE)	c.y.	75.00	100.00
0204001	COFFERDAM AND DEWATERING	l.f.	90.00	140.00
0207000	BORROW	c.y.	4.00	12.00
0207150	LIGHTWEIGHT FILL	c.y.	50.00	75.00
0209001	FORMATION OF SUBGRADE	s.y.	2.00	4.00
0212000	SUBBASE	c.y.	25.00	40.00
0213100	GRANULAR FILL	c.y.	25.00	35.00
0216000	PERVIOUS STRUCTURE BACKFILL	c.y.	35.00	50.00
0216009	EXPANDED POLYSTYRENE FILL	c.y.	85.00	125.00
0219001	SEDIMENTATION CONTROL SYSTEM	l.f.	3.00	4.00
0304002	PROCESSED AGGREGATE BASE	c.y.	30.00	45.00
0401159	DIAMOND GRINDING	s.y.	3.50	4.50
0406165	WMA S0.5	ton	65.00	85.00
0406170	HMA S1	ton	80.00	115.00
0406171	HMA S0.5	ton	70.00	120.00
0406173	HMA S0.25	ton	80.00	125.00
0406236	MATERIAL FOR TACK COAT	gal.	4.00	8.00
0406267	MILLING OF HMA (0" TO 4")	s.y.	3.00	8.00
0406285	FINE MILLING OF H.M.A. (0" - 4")	s.y.	2.00	15.00
0507001	TYPE "C" CATCH BASIN	ea.	2,200.00	2,600.00
0507201	TYPE "C-L" CATCH BASIN	ea.	2,200.00	2,800.00
0520036	ASPHALTIC PLUG EXPANSION JOINT SYSTEM	c.f.	200.00	400.00
0601000	CLASS "A" CONCRETE	c.y.	500.00	800.00
0601070	CLASS "S" CONCRETE	c.y.	9,500.00	10,500.00
0601201	CLASS "F" CONCRETE	c.y.	800.00	1,200.00
0601318	PARTIAL DEPTH PATCH	c.f.	150.00	250.00
0601604	ASPHALTIC PLUG EXPANSION JOINT SYSTEM	l.f.	115.00	140.00
0602000	DEFORMED STEEL BARS	lb.	1.00	2.00
0602006	DEFORMED STEEL BARS - EPOXY COATED	lb.	1.40	2.20
0603142	FIELD TOUCH-UP PAINTING	s.f.	40.00	100.00
0603858	REHABILITATION OF EXISTING STRUCTURAL STEEL	cwt.	2,500.00	4,000.00

Connecticut DOT
2013 Cost Estimating Guidelines
Attachment 3, General Price Ranges of Common Items

Item No.	Item Description	Units	Unit Price Range	
0651012	15" R.C. PIPE	l.f.	40.00	60.00
0651013	18" R.C. PIPE	l.f.	50.00	70.00
0651015	24" R.C. PIPE	l.f.	55.00	75.00
0651017	30" R.C. PIPE	l.f.	60.00	80.00
0702101	FURNISHING STEEL PILES	lb.	0.50	0.65
0702111	DRIVING STEEL PILES	l.f.	12.00	24.00
0707001	MEMBRANE WATERPROOFING (WOVEN GLASS FABRIC)	s.y.	23.00	40.00
0714050	TEMPORARY EARTH RETAINING SYSTEM	s.f.	8.00	30.00
0728020	STONE BALLAST	ton	30.00	50.00
0811001	CONCRETE CURBING	l.f.	20.00	35.00
0813001	5" GRANITE STONE CURBING	l.f.	25.00	30.00
0813031	6" GRANITE STONE CURBING	l.f.	40.00	60.00
0815001	BITUMINOUS CONCRETE LIP CURBING	l.f.	4.00	7.00
0822001	TEMPORARY PRECAST CONCRETE BARRIER CURB	l.f.	20.00	50.00
0822002	RELOCATED TEMPORARY PRECAST CONCRETE BAR	l.f.	8.00	15.00
0910170	METAL BEAM RAIL (TYPE R-B 350)	l.f.	20.00	25.00
0910194	METAL BEAM RAIL (TYPE R-B 350 10GA)	l.f.	20.00	23.00
0916126	NOISE BARRIER WALL	s.f.	40.00	50.00
0921001	CONCRETE SIDEWALK	s.f.	8.00	12.00
0922500	BITUMINOUS CONCRETE DRIVEWAY (COMMERCIAL)	s.y.	35.00	50.00
0922501	BITUMINOUS CONCRETE DRIVEWAY	s.y.	30.00	40.00
0939001	SWEEPING FOR DUST CONTROL	hr.	10.00	25.00
0944000	FURNISHING AND PLACING TOPSOIL	s.y.	5.00	10.00
0969060	CONSTRUCTION FIELD OFFICE, SMALL	month	1,800.00	3,200.00
0969062	CONSTRUCTION FIELD OFFICE, MEDIUM	month	1,800.00	3,500.00
0969064	CONSTRUCTION FIELD OFFICE, LARGE	month	2,100.00	4,000.00
0970007	TRAFFICPERSON (UNIFORMED FLAGGER)	hr.	30.00	60.00
0974001	REMOVAL OF EXISTING MASONRY	c.y.	150.00	600.00
0978002	TRAFFIC DRUM	ea.	60.00	80.00
1001001	TRENCHING AND BACKFILLING	l.f.	10.00	15.00
1008115	2" RIGID METAL CONDUIT IN TRENCH	l.f.	8.00	12.00
1008720	4" RIGID METAL MULTI DUCT CONDUIT - UNDER ROADWAY	l.f.	50.00	70.00
1111451	LOOP DETECTOR SAW CUT	l.f.	10.00	15.00
1131002	REMOTE CONTROL CHANGEABLE MESSAGE SIGN	day	30.00	50.00
1806200	FURNISHING AND USE OF PORTABLE IMPACT ATTENUATION	hr.	35.00	55.00