

**APPENDIX D: SAMPLE ENGINEER COST ESTIMATE
AND BOND QUANTITY WORKSHEET**



INSTRUCTIONS FOR ENGINEER COST ESTIMATE & BOND QUANTITY WORKSHEET

- 1) Based on permit type requested (Grade & Fill, Civil Construction, etc.), complete the form as follows:
 - For Grade & Fill permits, complete the Erosion Control section
 - For Civil Construction permits, complete the Erosion Control and General sections
- 2) Complete the 'Quantity' columns for the appropriate section(s). If you are completing the 'General' section, you will be asked to identify those quantities and costs that apply to Existing Right-of-Way, Future Public Improvements and Private Improvements.
- 3) The 'Quantity Remaining' column is only to be used when a project is under construction. The City allows one (1) bond reduction during the life of the project with the exception of the maintenance period reduction.
- 4) Excel will auto-calculate the relevant fields and subtotals throughout the document. Only the 'Quantity' columns should need completing.
- 5) Complete the preparer's information and project information on the Information and Summary Sheet. The professional engineer preparing the cost estimate must sign where indicated.
- 6) Submit the Information and Summary Sheet, City Review and Approval Sheet and all engineers cost estimate sheets to the City for review and approval (11 total sheets).



Bond Quantity Worksheet - Information and Summary Sheet

Date: _____

Prepared by:	Project Information
Name: _____	Project Name: _____
PE Registration No: _____	Project No: _____
PE Signature: _____	Project Address: _____
Firm Name: _____	_____
Firm Address: _____	_____
Phone No. _____	_____
Email Address: _____	_____

BOND WORKSHEET	CONSTRUCTION BOND AMOUNT (prior to permit issuance)	PLAT BOND AMOUNT (prior to plat recording)	MAINTENANCE BOND (after final acceptance of construction)
Site Restoration/Erosion Sediment Control Subtotal	(A) \$ -	(A) \$ -	(A) \$ -
Existing Right-of-Way Improvements Subtotal	(B) \$ -	(B) \$ -	(B) \$ -
Future Public Improvements Subtotal	(C) \$ -	(C) \$ -	(C) \$ -
Private Improvements Subtotal	(D) \$ -	(D) \$ -	(D) \$ -
Site Restoration Bond (Grade & Fill permits only)	(A) x 125% \$ -	(A) \$ -	(A) \$ -
**Civil Construction Bond	(A) + (B) x 125% \$ -	(B) \$ -	(B) \$ -
Plat Bond ¹	(A)+(B)+(C)+(D)x150% \$ -	(C) \$ -	(C) \$ -
Maintenance Bond	[(A)+(B)+(C)+(D)]*20%: \$ -	(D) \$ -	(D) \$ -
		(E) \$ -	(E) \$ -
TOTAL PROJECT COST²	\$ -		

¹ TBD - May involve multiple and variable components, which will be established on an individual basis by Development Engineering. Default calculation is [(A)+(B)+(C)+(D)]*150%.

² Total Project Cost - Use this amount for valuation on permit application form. (Calculated at A+B+C+D)

*City allows for one bond reduction prior to being reduced to a maintenance bond

**Civil Construction Bond amount shall not be less than Maintenance Bond Amount

Note: Minimum bond amount is \$5,000.



Bond Quantity Worksheet - City Reviewed Approval

Staff Use Only

Staff Use Only

Reviewed by:	Project Information
Development Engineer: _____	Project Name: _____
Phone Number: _____	Project No: _____
Email: _____	Project Address: _____

CITY OF KENT - ENGINEER WORKSHEET

Amount	Engineer's Notes
Applicant's Estimated Bond Subtotal _____	_____
<i>Adjustments:</i> _____	_____
_____	_____
_____	_____
<i>Subtotal - Adjustments:</i> _____	_____
_____	_____
Revised Bond Estimate: _____	_____
x 125% or 150% _____	_____
APPLICANT'S BOND AMOUNT _____	_____

SAMPLE

Approved by: _____

Date Approved: _____

**City of Kent
Engineer's Cost Estimate**

(A)	Reference #	Unit Price	Unit	Quantity	Cost
<u>EROSION/SEDIMENT CONTROL</u>					
Backfill & compaction-embankment		\$6.50	CY		
Check dams, 4" minus rock	SWDM 5.4.6.3	\$78.00	Each		
Catch Basin Protection		\$35.50	Each		
Crushed surfacing 1 1/4" minus	WSDOT 9-03.9(3)	\$98.00	CY		
Ditching		\$8.00	CY		
Excavation-bulk		\$3.00	CY		
Fence, silt	SWDM 5.4.3.1	\$2.00	LF		
Fence, Temporary (NGPE)		\$2.00	LF		
Geotextile Fabric		\$2.50	SY		
Hay Bale Silt Trap		\$0.50	Each		
Hydroseeding	SWDM 5.4.2.4	\$1.00	SY		
Interceptor Swale / Dike		\$1.00	LF		
Jute Mesh	SWDM 5.4.2.2	\$2.00	SY		
Level Spreader		\$1.75	LF		
Mulch, by hand, straw, 3" deep	SWDM 5.4.2.1	\$3.00	SY		
Mulch, by machine, straw, 2" deep	SWDM 5.4.2.1	\$1.00	SY		
Piping, temporary, CPP, 6"		\$12.50	LF		
Piping, temporary, CPP, 8"		\$19.00	LF		
Piping, temporary, CPP, 12"		\$24.00	LF		
Plastic covering, 6mm thick, sandbagged	SWDM 5.4.2.3	\$3.00	SY		
Rip Rap, machine placed; slopes	WSDOT 9-13.1(2)	\$50.00	CY		
Rock Construction Entrance, 50'x15'x1'	SWDM 5.4.4.1	\$1,800.00	Each		
Rock Construction Entrance, 100'x15'x1'	SWDM 5.4.4.1	\$3,600.00	Each		
Sediment pond riser assembly	SWDM 5.4.5.2	\$3,050.00	Each		
Sediment trap, 5' high berm	SWDM 5.4.5.1	\$21.00	LF		
Sed. trap, 5' high, riprapped spillway berm section	SWDM 5.4.5.1	\$79.00	LF		
Seeding, by hand	SWDM 5.4.2.4	\$1.00	SY		
Sodding, 1" deep, level ground	SWDM 5.4.2.5	\$8.00	SY		
Sodding, 1" deep, sloped ground	SWDM 5.4.2.5	\$9.50	SY		
TESC Supervisor		\$84.00	HR		
Water truck, dust control	SWDM 5.4.7	\$130.00	HR		
<u>WRITE-IN-ITEMS</u>					

EROSION/SEDIMENT SUBTOTAL:	\$ -
30% CONTINGENCY & MOBILIZATION:	\$ -
SALES TAX @ 9%	\$ -
EROSION/SEDIMENT TOTAL:	\$ -
	(A)

City of Kent Engineer's Cost Estimate

			Existing Right-of-Way (B)		Future Public Improvements (C)		Private Improvements (D)		Quantity Remaining (Bond Reduction) (E)	
	Unit Price	Unit	Quant.	Cost	Quant.	Cost	Quant.	Cost	Quant.	Cost
GENERAL ITEMS										
Backfill & Compaction- embankment	\$ 8.00	CY								
Backfill & Compaction- trench	\$ 11.00	CY								
Clear/Remove Brush, by hand (acre)	\$ 2,363.00	Acre								
Bollards - fixed	\$ 325.00	Each								
Bollards - removable	\$ 600.00	Each								
Clearing/Grubbing/Tree Removal	\$ 13,000.00	Acre								
Excavation - bulk	\$ 2.50	CY								
Excavation - Trench	\$ 5.00	CY								
Fencing, cedar, 6' high	\$ 25.00	LF								
Fencing, chain link, 4'	\$ 19.50	LF								
Fencing, chain link, vinyl coated, 6' high	\$ 18.00	LF								
Fencing, chain link, gate, vinyl coated, 20'	\$ 1,563.00	Each								
Fencing, split rail, 3' high	\$ 14.00	LF								
Fill & compact - common barrow	\$ 27.00	CY								
Fill & compact - gravel base	\$ 30.00	CY								
Fill & compact - screened topsoil	\$ 45.00	CY								
Gabion, 12" deep, stone filled mesh	\$ 62.00	SY								
Gabion, 18" deep, stone filled mesh	\$ 86.00	SY								
Gabion, 36" deep, stone filled mesh	\$ 152.00	SY								
Grading, fine, by hand	\$ 2.00	SY								
Grading, fine, with grader	\$ 1.25	SY								
Guard Post	\$ 90.00	Each								
Monuments	\$ 104.00	Each								
Sensitive Areas Sign	\$ 20.00	Each								
Sodding, 1" deep, sloped ground	\$ 10.00	SY								
Topsoil Type A (imported)	\$ 30.00	CY								
Traffic control crew (2 flaggers)	\$ 98.00	HR								
Trail, 4" chipped wood	\$ 9.00	SY								
Trail, 4" crushed cinder	\$ 10.00	SY								
Trail, 4" top course	\$ 9.50	SY								
Wall, retaining, concrete	\$ 66.00	SF								
Wall, rockery	\$ 13.00	SF								

SUBTOTAL

(B)

(C)

(D)

(E)

City of Kent Engineer's Cost Estimate

	Unit Price	Unit	Existing Right-of-way (B)		Future Public Improvements (C)		Private Improvements (D)		Quantity Remaining (Bond Reduction) (E)	
			Quant.	Cost	Quant.	Cost	Quant.	Cost	Quant.	Cost
STREET IMPROVEMENT										
AC Grinding, 4' wide machine < 1000sy	\$ 35.00	SY								
AC Grinding, 4' wide machine 1000-2000sy	\$ 8.50	SY								
AC Grinding, 4' wide machine > 2000sy	\$ 2.50	SY								
AC Removal/Disposal/Repair	\$ 60.00	SY								
Barricade, Type I	\$ 36.00	LF								
Barricade Type II	\$ 25.00	LF								
Barricade, Type III (Permanent)	\$ 55.00	LF								
Conduit, 2"	\$ 5.00	LF								
Curb & Gutter, rolled	\$ 20.00	LF								
Curb & Gutter, vertical	\$ 15.00	LF								
Curb and Gutter, demolition and disposal	\$ 20.00	LF								
Curb, extruded asphalt	\$ 5.00	LF								
Curb, extruded concrete	\$ 4.50	LF								
Guard Rail	\$ 30.00	LF								
Sawcut, asphalt, 3" depth	\$ 3.50	LF								
Sawcut, concrete, per 1" depth	\$ 3.00	LF								
Sealant, asphalt	\$ 2.00	LF								
Shoulder, gravel, 4" thick	\$ 11.00	SY								
Sidewalk, 4" thick	\$ 40.00	SY								
Sidewalk, 4" thick, demolition and disposal	\$ 36.00	SY								
Sidewalk, 5" thick	\$ 45.00	SY								
Sidewalk, 5" thick, demolition and disposal	\$ 45.00	SY								
Signs		LS								
Sign, Handicap	\$ 100.00	Each								
Striping, per stall	\$ 7.50	Each								
Street Light System		LS								
Traffic Signal		LS								
Traffic Signal Modification		LS								
Striping, thermoplastic, (for crosswalk)	\$ 3.50	SF								
Striping, 4" reflectorized line	\$ 0.40	LF								

SUBTOTAL

(B)

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City of Kent Engineer's Cost Estimate

	Unit Price	Unit	Existing Right-of-way (B)		Future Public Improvements (C)		Private Improvements (D)		Quantity Remaining (Bond Reduction) (E)	
			Quant.	Cost	Quant.	Cost	Quant.	Cost	Quant.	Cost
STREET SURFACING/PAVEMENT										
For KCRS '93, (additional 2.5" base) add:	\$ 6.00	SY								
AC Overlay, 1.5" AC	\$ 12.00	SY								
AC Overlay, 2" AC	\$ 15.00	SY								
AC Road, 2", 4" rock, First 2500 SY	\$ 25.00	SY								
AC Road, 2", 4" rock, Qty. over 2500SY	\$ 20.00	SY								
AC Road, 3", 4" rock, First 2500 SY	\$ 30.00	SY								
AC Road, 3", 4" rock, Qty. over 2500 SY	\$ 24.00	SY								
AC Road, 5", First 2500 SY	\$ 22.00	SY								
AC Road, 5", Qty. Over 2500 SY	\$ 22.00	SY								
AC Road, 6", First 2500 SY	\$ 25.00	SY								
AC Road, 6", Qty. Over 2500 SY	\$ 24.00	SY								
Asphalt Treated Base, 4" thick	\$ 14.00	SY								
Gravel Road, 4" rock, First 2500 SY	\$ 15.00	SY								
Gravel Road, 4" rock, Qty. over 2500 SY	\$ 11.00	SY								
PCC Road, 5", no base, over 2500 SY	\$ 22.00	SY								
PCC Road, 6", no base, over 2500 SY	\$ 32.00	SY								
Thickened Edge	\$ 11.00	LF								

SUBTOTAL

(B)

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**City of Kent
Engineer's Cost Estimate**

			Existing Right-of-way (B)		Future Public Improvements (C)		Private Improvements (D)		Quantity Remaining (Bond Reduction) (E)	
	Unit Price	Unit	Quant.	Cost	Quant.	Cost	Quant.	Cost	Quant.	Cost
<u>DRAINAGE</u>										
Access Road, R/D	\$ 26.00	SY								
* (CBs include frame and lid)										
Beehive	\$ 90.00	Each								
CB Type I	\$ 1,650.00	Each								
CB Type IL	\$ 1,850.00	Each								
CB Type II, 48" diameter	\$ 2,550.00	Each								
for additional depth over 4'	\$ 650.00	FT								
CB Type II, 54" diameter	\$ 2,700.00	Each								
for additional depth over 4'	\$ 600.00	FT								
CB Type II, 60" diameter	\$ 2,900.00	Each								
for additional depth over 4'	\$ 750.00	FT								
CB Type II, 72" diameter	\$ 4,000.00	Each								
for additional depth over 4'	\$ 900.00	FT								
Through-curb Inlet Framework (Add)	\$ 550.00	Each								
Cleanout, PVC, 4"	\$ 200.00	Each								
Cleanout, PVC, 6"	\$ 250.00	Each								
Cleanout, PVC, 8"	\$ 300.00	Each								
Culvert, Box ___ ft x ___ ft		LS								
Culvert, PVC, 4"	\$ 12.00	LF								
Culvert, PVC, 6"	\$ 17.00	LF								
Culvert, PVC, 8"	\$ 19.00	LF								
Culvert, PVC, 12"	\$ 30.00	LF								
Culvert, CMP, 8"	\$ 23.00	LF								
Culvert, CMP, 12"	\$ 35.00	LF								
Culvert, CMP, 15"	\$ 42.00	LF								
Culvert, CMP, 18"	\$ 47.00	LF								
Culvert, CMP, 24"	\$ 69.00	LF								
Culvert, CMP, 30"	\$ 100.00	LF								
Culvert, CMP, 36"	\$ 150.00	LF								
Culvert, CMP, 48"	\$ 194.00	LF								
Culvert, CMP, 60"	\$ 310.00	LF								
Culvert, CMP, 72"	\$ 400.00	LF								
Culvert, Concrete, 8"	36.00	LF								

SUBTOTAL

(B)

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**City of Kent
Engineer's Cost Estimate**

	Unit Price	Unit	Existing Right-of-way (B)		Future Public Improvements (C)		Private Improvements (D)		Quantity Remaining (Bond Reduction) (E)	
			Quant.	Cost	Quant.	Cost	Quant.	Cost	Quant.	Cost
DRAINAGE (CONTINUED)										
Culvert, Concrete, 12"	\$ 43.00	LF								
Culvert, Concrete, 15"	\$ 52.00	LF								
Culvert, Concrete, 18"	\$ 55.00	LF								
Culvert, Concrete, 24"	\$ 85.00	LF								
Culvert, Concrete, 30"	\$ 136.00	LF								
Culvert, Concrete, 36"	\$ 165.00	LF								
Culvert, Concrete, 42"	\$ 196.00	LF								
Culvert, Concrete, 48"	\$ 210.00	LF								
Culvert, CPP, 6"	\$ 16.00	LF								
Culvert, CPP, 8"	\$ 22.00	LF								
Culvert, CPP, 12"	\$ 28.00	LF								
Culvert, CPP, 15"	\$ 34.00	LF								
Culvert, CPP, 18"	\$ 39.00	LF								
Culvert, CPP, 24"	\$ 49.00	LF								
Culvert, CPP, 30"	\$ 62.00	LF								
Culvert, CPP, 36"	\$ 69.00	LF								
Ditching	\$ 12.00	CY								
Flow Dispersal Trench (1,436 base+)	\$ 40.00	LF								
French Drain (3' depth)	\$ 39.00	LF								
Geotextile, laid in trench, polypropylene	\$ 5.00	SY								
Infiltration pond testing	\$ 125.00	HR								
Mid-tank Access Riser, 48" dia, 6' deep	\$ 2,025.00	Each								
Pipe, High Density Water Pipe (HDWP)	\$ 160.00	LF								
Pipe, C900	\$ 90.00	LF								
Pond Overflow Spillway	\$ 18.00	SY								
Restrictor/Oil Separator, 12"	\$ 1,500.00	Each								
Restrictor/Oil Separator, 15"	\$ 1,550.00	Each								
Restrictor/Oil Separator, 18"	\$ 1,680.00	Each								
Riprap, placed	\$ 52.00	CY								
Tank End Reducer (36" diameter)	\$ 1,280.00	Each								
Thru-Inlet at CB	\$ 150.00	Each								
Trash Rack, 12"	\$ 320.00	Each								
Trash Rack, 15"	\$ 325.00	Each								
Trash Rack, 18"	\$ 350.00	Each								
Trash Rack, 21"	\$ 375.00	Each								

SUBTOTAL

(B)

(C)

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**City of Kent
Engineer's Cost Estimate**

	Unit Price	Unit	Existing Right-of-way (B)		Future Public Improvements (C)		Private Improvements (D)		Quantity Remaining (Bond Reduction) (E)	
			Quant.	Cost	Quant.	Cost	Quant.	Cost	Quant.	Cost
WATER SYSTEM										
Blowoff	\$ 1,800.00	Each								
Connection to Concrete Cylinder Main	\$ 2,000.00	Each								
Ductile Iron Watermain, CL 52, 6 Inch Diameter	\$ 65.00	LF								
Ductile Iron Watermain, CL 52, 8 Inch Diameter	\$ 85.00	LF								
Ductile Iron Watermain, CL 52, 10 Inch Diameter	\$ 103.00	LF								
Ductile Iron Watermain, CL 52, 12 Inch Diameter	\$ 125.00	LF								
Gate Valve, 6 inch Diameter	\$ 250.00	Each								
Gate Valve, 8 Inch Diameter	\$ 380.00	Each								
Gate Valve, 10 Inch Diameter	\$ 425.00	Each								
Gate Valve, 12 Inch Diameter	\$ 500.00	Each								
Fire Hydrant Assembly, with Guard Posts	\$ 3,000.00	Each								
Fire Hydrant Assembly, without Guard Posts	\$ 2,500.00	Each								
Air-Vac, 8 Inch Diameter	\$ 6,000.00	Each								
Air-Vac, 10 Inch Diameter	\$ 7,500.00	Each								
Air-Vac, 12 Inch Diameter	\$ 12,000.00	Each								
Pressure Reducing Valve Assembly, 8 In. Diam.	\$ 3,800.00	Each								
Pressure Reducing Valve Assembly, 10 In. Diam.	\$ 4,200.00	Each								
Pressure Reducing Valve Assembly, 12 In. Diam.	\$ 5,000.00	Each								
Valve Marker Post	\$ 350.00	Each								

SUBTOTAL

(B)

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**City of Kent
Engineer's Cost Estimate**

	Unit Price	Unit	Existing Right-of-way (B)		Future Public Improvements (C)		Private Improvements (D)		Quantity Remaining (Bond Reduction) (E)	
			Quant.	Cost	Quant.	Cost	Quant.	Cost	Quant.	Cost
SANITARY SEWER										
Clean Outs	\$ 500.00	Each								
Grease Interceptor, 500 gallon	\$ 6,000.00	Each								
Grease Interceptor, 1000 gallon	\$ 10,000.00	Each								
Grease Interceptor, 1500 gallon	\$ 15,000.00	Each								
Side Sewer Pipe, PVC, 4 Inch Diameter	\$ 8.00	LF								
Side Sewer Pipe, PVC, 6 Inch Diameter	\$ 12.00	LF								
Sewer Pipe, PVC, 8 inch Diameter	\$ 33.00	LF								
Sewer Pipe, PVC, 12 Inch Diameter	\$ 41.00	LF								
Sewer Pipe, PVC, ____ Inch Diameter		LF								
Lift Station (Entire System)		LS								
Manhole, 48 Inch Diameter	\$ 3,000.00	Each								
for additional depth over 4 feet/per foot	\$ 532.00	FEET								
Manhole, 54 Inch Diameter	\$ 3,500.00	Each								
for additional depth over 4 feet/per foot	\$ 532.00	FEET								
Manhole, 60 Inch Diameter	\$ 3,700.00	Each								
for additional depth over 4 feet/per foot	\$ 532.00	FEET								
Manhole, 72 Inch Diameter	\$ 4,000.00	Each								
for additional depth over 4 feet/per foot	\$ 625.00	FEET								
Manhole, 96 Inch Diameter	\$ 5,000.00	Each								
for additional depth over 4 feet/per foot	\$ 625.00	FEET								
Outside Drop		LS								
Inside Drop		LS								
Pipe, C-900	\$ 90.00	LF								
Pipe, High Density Water Pipe (HDWP)	\$ 160.00	LF								

SUBTOTAL

(B)

(C)

(D)

(E)

**City of Kent
Engineer's Cost Estimate**

			Existing Right-of-way (B)		Future Public Improvements (C)		Private Improvements (D)		Quantity Remaining (Bond Reduction) (E)	
	Unit Price	Unit	Quant.	Cost	Quant.	Cost	Quant.	Cost	Quant.	Cost
PARKING LOT SURFACING										
2" AC, 2" top course rock & 4" borrow	\$ 28.00	SY								
2" AC, 1.5" top course & 2.5" base course	\$ 26.00	SY								
4" select borrow	\$ 7.00	SY								
1.5" top course rock & 2.5" base course	\$ 20.00	SY								
LANDSCAPING & VEGETATION - ROADWAY										
Street Trees	\$ 500.00	Each								
Median Landscaping		LS								
Right-of-Way Landscaping		LS								
REC SPACE & PERIMETER LANDSCAPING										
Landscaping (Rec space)		LS								
Land Scaping (Perimeter Tract)		LS								
Play Structures		LS								
Park Furniture & Appurtenances		LS								
Irrigation		LS								
Other										
WRITE-IN-ITEMS										
(Such as detention/water quality vaults.)										

SAMPLE

SUBTOTAL				
SUBTOTAL (SUM ALL PAGES):				
30% CONTINGENCY & MOBILIZATION:				
SALES TAX @ 9%	N/A	N/A		
GRANDTOTAL:				