



Engineering Services Inc.

4073 Highway #3,
Chester, NS, B0J 1J0

1-902-273-3050

**5209 St. Margaret's Bay Road,
Upper Tantallon, NS, B3Z 1E3**

1-902-820-3141

4 Chalkin Drive,
Kentville, NS, B4N 3V7

1-902-678-6990

March 11, 2019

Municipality of the District of Argyle
27 Courthouse Road / PO Box 10
Tusket, Nova Scotia B0W 3M0

Attention: Hans Pfeil, B.Sc., APALA, CSLA
Director of Public Works
hpfeil@munargyle.com

Dear Mr. Pfeil:

RE: New Administration building road extension, Engineering Services

Pursuant to your request for an estimate of engineering fees to provide engineering services in support of the Municipality's efforts to extend the new administration access road and develop some lands to the east, here is our response.

Our proposed scope of work is as follows.

1. Plan review and topo survey analysis - we will work with your surveyor to acquire and input their work into our road and services design software, adding to the same file used for the administration building access road, and review the file as to its being adequate on which to base the subsequent design work. We will then produce a base plan for subsequent work.
2. Review feasibility of phasing out the construction in two phases, make recommendations of phase 1 and 2 boundary - We will review the Municipality's desires and available budget and advise on how much of the road extents, as shown on the provided sketch, can be constructed for the available budget. We will also consider the commensurate level of stormwater management impact and other engineering issues, and assist you in determining whether the project will have to be phased, and if so, at what point a phasing boundary will exist. This will be done as a part of the design work.
3. Detailed road alignment design and specifications ready for tender, and
4. Detailed sewer extension design and specifications ready for tender. This is the main body of work, and involves integrating the new road into the existing design in Civil 3D Design software, ensuring that the resulting road is a smooth drive from the intersection



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back to the newly developed properties. We believe that the roads and services can be described in a form suitable for tender on 4 drawings.

5. Stormwater management plan development for road extension. Part of our normal work for a residential development is creating a stormwater management plan. For this project, we believe it will be feasible to shoot for a “zero runoff change” development. Installing induced infiltration trenches and/or ponds as service stubs are introduced to the future lots. The trick is to estimate a future runoff coefficient or curve number of a developed lot, and provide subsurface storage for the 2 year storm, usually an approximately 25 mm storm. This can be better done as the road is being built and driveways are being identified.

At this time, we would have our design done. Design drawings would be ready for tender, with an engineering specification suited for the work. In this case we estimate the project construction cost to be about \$200,000. The total fee we propose works out to just under 7.5% which is below industry standards, but achievable if services during construction can be kept to a minimum required.

The remaining work is essentially a summary of tasks that will have to be done, but can be completed by Municipal staff, or by other specialist consultants, and can be done at different levels of scrutiny.

6. Prepare call for tender – this is something we can help with and a time budget is shown as option in the fee quote table.
7. Tender and construction administration – The cost of providing services during construction is only related to the time we have to be there, and that is related to who the contractor is and how anxious they are to finish.
8. Sewer and road inspection services - some of this has to be done by an independent third party company. We suggest that the cost of the testing consultant be included in a contractor’s bid.

Table 1, below shows an estimate of engineering fees for a full level of inspection, including some testing of the compaction of the road. The design fee for the roads and services is **\$11,600**. We have allowed for time to prepare a tender call to work with your front end, and to undertake some random site inspections. You may wish to hire a geotechnical consultant to visit the site and, by their presence, remind the contractor how important good compaction is. We assumed a three week duration with full time inspection, That can, of course, change.

A schedule showing critical milestones is attached.

TABLE 1 - Estimate of Fee

Description	Amount	Expenses	Total
Plan review and topo survey analysis - base plan	\$600.00		\$600.00
Detailed road alignment design and specifications ready for tender Detailed sewer extension design and specifications ready for tender	\$10,000.00		\$10,000.00
Stormwater management plan development for road extension	\$1,000.00		\$1,000.00
Prepare call for tender	\$500.00		\$500.00
Tender and construction administration, basic - with occasional site visits	\$2,800.00		\$2,800.00
			\$14,900.00

\$17,135 with HST

We look forward to working with you on this, and look forward to being a part of creating something good for the Municipality.

Regards,



Jeffrey Pinhey, MASc., P.Eng.
Vice President

902-221-2368

Project Schedule

WEEK	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
1				Startup notification	
2	Previous design review, expand			New survey information received	Create new base plan, create 3D model
3		Review phasing options, report to client		Receive client direction	
4	Design, drawings production	Design, drawings production	Design, drawings production	Design, drawings production	Design, drawings production
5	Design, drawings production	Design, drawings production	Design, drawings production	Design, drawings production	Design, drawings production
6	Deliver design for client review			Make changes as per review	Issue
7	Tender advice		Assume invited tenders (1 week)		Award
Wait until construction starts					
1	On site meeting with contractor	Contractor mobilization	Construction	Construction	Construction
2	Construction	Construction	Construction	Construction	Construction
3	Construction	Construction	Construction	Construction	Construction
4	Construction	Construction	Construction	Construction	Substantial completion
Deficiencies and follow ups					Complete when deficiencies addressed