



TOWNSHIP OF CHISHOLM

CONTRACT FOR

ROAD RECONSTRUCTION

ALDERDALE ROAD

CONTRACT NO. CH 2021-01

MARCH 2021

THE CORPORATION OF THE TOWNSHIP OF CHISHOLM

2847 Chiswick Line RR#4

POWASSAN, ONTARIO P0H 1Z0

THE CORPORATION OF THE CHISHOLM TOWNSHIP

2847 Chiswick Line, RR 4

POWASSAN, ONTARIO P0H 1Z0

TENDER NUMBER: CH 2021-01

Sealed Tenders will be received by: Jenny Leblond, CAO Clerk-Treasurer
Township of Chisholm
2847 Chiswick Line
Powassan, ON
P0H 1Z0

Tender Closing Date: March 25th, 2021

Tender Closing Time: 3:00 p.m.

Tender Opening Time: March 25th, 2020, 3:15 pm

Tender for: Reconstruction of 8.0km of Alderdale Road including pulverization, supply and application of granulars and reinforced Surface Treatment within the Chisholm Township.

(Lowest or any tender not necessarily accepted.)

TOWNSHIP OF CHISHOLM

**CONTRACT FOR
ALDERDALE ROAD RECONSTRUCTION**

CONTENTS

- A. Attention Sheet
- B. Information to Tenderer
- C. Form of Tender
- D. Contract Agreement
- E. OPS General Conditions
- F. Special Provisions and Supplement to OPSS Standard for Underground Construction
- G. Special Provisions and Supplement to OPSS Standard for Roadway Construction

Check the following points before submitting your Tender. Failure to comply with any of these directions may result in your tender being declared informal.

- 1. Sealed tenders are requested for the execution of the works described herein. Tenders are to be addressed and delivered to: **TOWNSHIP OF CHISHOLM, 2847 Chiswick Line Powassan, ON P0H 1Z0** and endorsed:

TENDER FOR: Alderdale Road Reconstruction

Tenders will be received until:

Thursday, March 25th 2021 – 3:00 PM (EST)

(day of week)

(month -day - year -time)

There will be a public opening for this contract. The successful bidder will be advised when the chosen bidder is approved by the owner. The corporation does not bind itself to accept the lowest or any tender.

- 2. Scope of Work

Approximately	<u>8.0 km</u>	of pulverization
Approximately	<u>8.0 km</u>	of granular lift, grading, compaction and shaping
Approximately	<u>8.0 km</u>	of surface treatment with geotextile reinforcement
Approximately	<u>1</u>	Provisional Base Stabilization

- 3. Schedule and time of completion for

Road Reconstruction; shall be all completed by:
August 25th, 2021

- Notes:**
- 1) **The contractor will have to make use of sufficient crews for the full duration of the scheduled work.**
 - 2) **The work may start at the latest on July 15th, 2021 unless the Contractor is able to provide a construction schedule confirming that the end date can be achieved**

- 4. The Tender shall be signed by an authorized officer of the company submitting the Tender, witnessed and sealed with the company seal, including the "Information for Tenderers".
- 5. The schedule of prices shall be completed.
- 6. The addenda shall be indicated in the Form of Tender and included in the Tender price.
- 7. The Subcontractors shall all be listed in the Form of Tender
- 8. The contract plan "Proposed Work" is attached for bidding reference.

9. The contractor shall maintain and keep clean all streets utilized during the performance of this contract, at no extra cost to this contract.
10. Any work that is deemed to be extra to the contract must be approved by the owner prior to starting.
11. The contractor shall be responsible for redirecting any surface water that may cause problem in the installation of the underground services.
12. The contractor is responsible to obtain the most current standard detail drawings from the governing municipality and/or Ontario Provincial Standard Specifications and Drawings.
13. There will be no mandatory site visit for this tender.
14. This contract is prepared by the Municipality.

For further information regarding specifications, questions should be submitted in writing by email (antoine.boucher@eastferris.ca), at least two (2) working days before the tender closing date. For general information, bidders may contact Antoine Boucher, at the East Ferris Municipal Office at 705-752-2740 or on his cell at 705-471-7729.

15. Works, undertaking or activities with this project may impact fish and fish habitat, in order to avoid arms, the following measures will protect fish and fish habitat: The construction of the road should be done in consideration of the Walleye spawning window. Construction should take place at least three weeks after the ice-off of Lake Nipissing. Such time should ensure a successful spawn and larval emergence, free from any harmful effects proposed by construction.

DIVISION "B"

INFORMATION TO TENDERERS

INFORMATION FOR TENDERERS

Index

B. Information to Tenderers

1. Tender Form.
2. Tender Deposit.
3. Informal or Unbalanced Tenders.
4. Examination of Site.
5. Omissions and Discrepancies.
6. Interpretation and Addenda.
7. Acceptance or rejection of Tender.
8. Bond and Agreement.
9. Guaranteed Maintenance Period.
10. Sub-contractors.
11. Approvals and Permits.
12. Current Standards.
13. Harmonized Sales Tax.
14. Insurance.
15. Use of Water.
16. Pre-construction survey.
17. Connections to Existing Sewers and Watermains.
18. Setting Out and As-Built Information.
19. Legal Survey Bars, Line and Grades Stakes.
20. Maintenance of Traffic.
21. Protection of Water Pipes.

INFORMATION FOR TENDERERS

- 22. Soils.
- 23. Products.
- 24. Miscellaneous Items.
- 25. Parking.
- 26. Limits of Site.
- 27. Tests.
- 28. Holdback Release.
- 29. Certified Blasters.
- 30. Conflict and Omissions.
- 31. Schedule of Quantities.
- 32. Commencement of the Works.
- 33. Provisional Items.
- 34. Contingency Item.
- 35. Acceptance of Tender.
- 36. Private Lands.
- 37. Schedule of Work.
- 38. Cooperation.
- 39. Cleaning of Roads.
- 40. Liquidated Damage.

1. TENDER FORM

Tenders must be submitted before the closing time in sealed envelopes, with the contract number and the Tenderer's name and address clearly marked on the outside. Bids received after closing time will not be considered. The Tender must be legible, written in ink or be typed and ALL ITEMS MUST BE BID. The bid must not be restricted by a statement or alterations to the Tender Form or will be rejected as informal.

Adjustments by telegram or letter to a Tender already submitted will not be considered. A Tenderer desiring to make adjustments to a Tender must withdraw the Tender and/or supersede it with a later Tender submission on or before the Tender closing date and time.

The Tender Form must be signed and witnessed in the spaces provided on the form with the signature of the Tenderer or of a responsible official of the organization bidding. If a joint bid is submitted, it must be signed and witnessed on behalf of each of the Tenderers, and if the signing authority for each Tenderer is vested in one individual, he shall sign separately on behalf of each Tenderer. In the case of an incorporated company, the corporate seal must be affixed to the Tender Form.

Erasures, overwriting or strike-outs must be initialled by the person signing on behalf of the organization bidding.

2. TENDER DEPOSIT

At the time of tendering, the Tenderer shall submit, with its Tender, a deposit in the form of a certified cheque or a bid bond in favour of the Corporation of the TOWNSHIP OF CHISHOLM. The Tender deposit shall equal at least ten percent (10%) of the total Tender price. The 10% deposit must include all applicable taxes.

The Owner shall not pay interest on the Tender deposits.

The Owner shall retain the Tender deposit of the successful Tenderer until:

- (a) the successful Tenderer has executed the Form of Agreement in accordance with Section 35 of the tender.
- (b) the successful Tenderer has provided all bonding and other documents in accordance with Sections 8 and 14 of the Tender.

The Owner shall return the deposits of unsuccessful Tenderers within 30 days of the Tender closing date.

3. INFORMAL OR UNBALANCED TENDERS

Tenders which are incomplete, conditional or obscure, or which contain additions not called for, erasures, reservations, alterations or irregularities of any kind may be rejected.

Tenders that contain prices, which appear to be so unbalanced as likely to affect adversely the interests of the Owner, may be rejected. Each item in the Tender Form shall be a reasonable unit price for such item. The Engineer shall be the sole judge of such matters and should any Tender be considered to be unbalanced, then it may be rejected by the Owner.

Wherever in a Tender the amount tendered for an item does not agree with the extension of the estimated quantity and the tendered unit price, the unit price shall govern and the amount shall be corrected accordingly. The Owner reserves the right to waive informalities at his discretion.

Tenderers who have submitted Tenders, which have been rejected by the Owner because of informalities, will be notified of the reasons for the rejection within ten (10) days after the closing date for Tenders.

Tenders, which are based upon an unreasonable period of time for the completion of the work, may be rejected.

4. EXAMINATION OF SITE

The Tenderer is not to claim at any time after submission of his Tender that there was any misunderstanding of the terms and conditions of the Contract relating to site conditions.

5. OMISSIONS AND DISCREPANCIES

Should a Tenderer find discrepancies in, or omissions from, the Proposed Work Drawing or Contract Documents, or should he be in doubt as to their meaning, he should notify the Consulting Engineers who may send a written instruction to all Tenderers

6. INTERPRETATIONS AND ADDENDA

No oral interpretation shall be made to a Tenderer as to the meaning of any of the Contract Documents, or be effective to modify any of the provisions of the Contract documents. Every request for an interpretation shall be made in writing, addressed and forwarded to the consulting Engineers.

7. ACCEPTANCE OR REJECTION OF TENDERS.

Subject to the General Conditions, neither the Consulting Engineers nor any officer or employee of the Owner has authority to make or accept an offer or to enter into a Contract on behalf of the Owner or to create any right against or to impose any obligations on the Owner. Recommendation of a Tender to the Owner for acceptance does not constitute acceptance of the Tender by the Owner.

A Tender is accepted by the Owner and a Contract is made thereby between the Owner and a Tenderer only when an Agreement is executed by the Owner and by the Tenderer, and the acceptance of a Tender and the execution of an Agreement by the owner within seven (7) days after notification of the execution of the Agreement by the owner has been mailed to the Tenderer whose Tender has been accepted as aforesaid.

The Owner shall not be responsible for any liabilities, costs, expenses, loss or damage incurred, sustained or suffered by any Tenderer prior or subsequent to or by reason of the acceptance or the non-acceptance by the Owner of any Tender or by reason of any delay in the acceptance of a Tender save as provided in the Contract. Tenders are subject to a formal Contract being prepared and executed. The owner reserves the right to reject any or all Tenders and to waive formalities as the interests of the Owner, may require without stating reasons therefore and the lowest or any Tender will not necessarily be accepted.

8. BOND AND AGREEMENT

There will be no bonding for this Contract. However, the Warranty period will require some moneys to be retained as specified in the section below.

9. GUARANTEED MAINTENANCE PERIOD

The Guaranteed Maintenance Period shall be a period of one (1) year from the date of issue of a Certificate of Substantial Performance for all works, or if completion falls in the winter months, the guaranteed maintenance period shall be extended to June following the one (1) year maintenance period. During this period, the Contractor shall maintain all work and carry out such repairs as directed by the Engineer. Repairs, as requested by the Engineer, shall be undertaken within 5 working days of notice being given; otherwise, the Owner shall have such repairs carried out by others and charged against the Contractor.

The successful Tenderer may reduce the quantum of the performance bonds to twenty percent (20%) of the total Tender price at the start of the Guaranteed Maintenance period described in the General Conditions.

In addition to the Basic Work Holdback a Maintenance Security (as per table below) will be retained until the Final Certificate is issued.

The value of the Maintenance Security shall be determined from the following sliding scale:

CONTRACT PRICE		VALUE OF MAINTENANCE SECURITY
FROM \$	TO \$	
0	500,000	5% of Contract Price
500,001	1,000,000	\$25,000 + 2% of Contract Price
1,000,001	1,500,000	\$45,000 + 1-1/2% of Contract Price

This Maintenance Security, which at no time a part of the Basic Work Holdback, shall be retained by the Owner in increments from monies that would otherwise be payable to the Contractor, commencing during the latter part of the period of construction, so that by the date of Substantial Performance of the contract the full value of the required Maintenance Security has been retained.

If at anytime prior to one year after the actual delivery date or completion of the work (or specified warranty/guarantee period if longer than one year) any part of the work becomes defective or is deficient or fails due to defect in design, material or workmanship, or otherwise fails to meet the requirements of the Contract, the Company, upon request, shall make good every such defect, deficiency or failure without cost to the Municipality. The Company shall pay all transportation costs for work both ways between the Company's factory or repair depot and the point of use.

10. SUBCONTRACTORS

The Tenderer shall give in the Form of Tender the name and address of each proposed Subcontractor stating the portion of work allocated to each and the cost thereof; any changes of a Subcontractor require approval of the Owner. The owner shall reserve the right to reject any subcontractor.

11. APPROVALS AND PERMIT

The construction of the Work and all operations connected therewith are subject to the approval, inspection, by-laws and regulations of all municipal, provincial and federal and other authorities having jurisdiction with respect to any matter arising out of this Contract.

The Owner will obtain and pay the fees, if any, for basic approvals and permits relating to the design and location of the permanent Work required from the Departments or Ministries of Transportation, Energy and Environment, Labour, Public Works or Transport, from railway or pipeline companies or from hydro-electric, canal or seaway authorities.

Unless otherwise specifically stated in the tender documents, the Contractor shall obtain and pay the fees for all other approvals and permits required for or in respect of the Work.

12. CURRENT STANDARDS

All material and work on this Contract shall be in accordance with current Municipal, O.P.S. and M.E.C.P. Standards and Specifications. No work shall commence without on-site inspection by the engineer.

13. HARMONIZE SALES TAX

The amount of the Harmonized Sales Tax is to be entered as a line item in the space provided in the schedule of prices in the Form of Tender.

14. INSURANCE

"The Contractor shall indemnify and hold harmless the Owner, the Consultants and the Construction Manager, their agents and employees and the TOWNSHIP OF CHISHOLM from and against all claims, demands, losses, costs, expenses (including, but not limited to legal fees and disbursements) damages, actions, suits or proceedings by third parties that arise out of or result from or are attributable to the Contractor's performance of the Contract (hereinafter called "Claims") provided such Claims are caused by negligent or wilful acts or omission of the Contractor, any Subcontractor and anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable."

"Without restricting the generality of GC 6.02 - INDEMNIFICATION, the Contractor shall provide, maintain and pay for the insurance coverage specified in GC 6.03 - INSURANCE. Unless otherwise stipulated, the duration of each insurance policy shall be from the date of commencement of the Work until the date of the final certificate for payment. Prior to the commencement of the work and upon the placement, renewal, amendment, or extension of all or any part of the insurance, the Contractor shall promptly provide the Owner with confirmation of coverage and if required, a certified true copy of the policies certified by an officer of the insurer together with copies of any amending endorsements.

a) General Liability Insurance

"General liability insurance shall be in the joint names of the Contractor, **The Corporation of the TOWNSHIP OF CHISHOLM, Her Majesty the Queen in Right of Canada, Her Majesty the Queen in right of Ontario, Her Ministers, directors, officers, agents, appointees and employees** and any other person, firm or corporation the Owner may from time to time require with limits of not less than \$5,000,000 per occurrence and with a property damage deductible not exceeding \$1,000. The insurance coverage shall not be less than the insurance required by IBC Form 2100, or its equivalent replacement, including coverage for the blasting, pile driving, caisson and collapse hazards. To achieve the desired limit, umbrella or excess liability insurance may be used. All liability coverage shall be maintained with annual aggregate limits dedicated to the "Work" for products and completed operations hazards from the date of Substantial Performance of the Work, as set out in the certificate of Substantial Performance of the Work, on an on-going basis for a period of 6 years following Substantial Performance of the Work. Where the Contractor maintains a single, blanket policy, the addition of the Owner and the Consultant is limited to liability arising out of the Project and all operations necessary or incidental thereto. The policy shall be endorsed to provide the Owner with not less than 30 days notice in writing by registered mail in advance of any cancellation, and of change or amendment restricting coverage. All such policies shall be primary non-contributing with, and not excess of any other insurance available to the Owner."

b) Automobile Liability Insurance, Aircraft and Watercraft Liability Insurance, Property and Boiler Insurance, Contractor's Equipment Insurance and Insurance Requirements and Duration shall be as per GC 6.03.03, GC 6.03.04, GC 6.03.05, GC 6.03.06 and GC 6.03.07, respectively.

15. SETTING OUT AND AS-BUILT INFORMATION

The Contractor will be responsible for ALL layout from information supplied on the Drawings and **SIB's** in the field. He will set his own batter boards or sight lines from bench marks supplied by the Engineer.

It is emphasized that the Contractor must exercise extreme care in setting grades. The Contractor shall work to sufficient precision to ensure that material distribution is in accordance with the tender requirements.

Should inspection by the Engineer or Inspector reveal an error greater than the said tolerance, the Contractor shall, at his own expense, rectify such error to the satisfaction of the Engineer. It is further understood that some sections of the road will require some grade raise in the order of 100mm to 250mm, and that an overall 150mm average application lift will be required before the wear course is applied. Furthermore, the overall lift shall be averaging the said thickness throughout the crown to ensure structural integrity from the centerline to the road shoulder.

The owner will survey the road centerline and produce an **as-built information** in order for the engineer to release the final holdback.

16. LEGAL SURVEY BARS, LINE AND GRADE STAKES

The Contractor is hereby informed that he will be responsible for replacing and damaged S.I.B due to the construction work at his own cost.

17. MAINTENANCE OF TRAFFIC

Tenderers are advised that it will be essential that local traffic flow be maintained on this road during the entire construction period. Traffic Control shall be in accordance with the new Book 7 regulations. The Contractor shall provide their traffic plan to the Municipal Engineer for approval prior to starting construction. Maintenance of road cuts and provision of flag persons, detours as necessary, barricades and signs to the full satisfaction of the Engineer, Municipality and the Owner shall be the Contractor's responsibility and at his expense. Restoration of the trenches in the existing roads will be made as soon as possible.

Until acceptance of the entire project, the Contractor shall be responsible for maintenance and upkeep to the Owner's satisfaction.

The Municipality has erected Construction Signs in advance of the site including intersecting street. The intent is that the Contractor will start construction while these signs remain in place. However the Contractor will be responsible to provide proper traffic controls signs on site including and not limited to man at work, flagger ahead, escort vehicles. Upon completion of the project the Municipality will bag and/or remove their Construction Signs.

18. MISCELLANEOUS ITEMS

Tenderers shall note that although the main items of work are listed in the Schedule of Items and Prices in the Form of Tender, it shall be required that the Contractor complete all the work required by the Plans or the Specifications even though every item may not be specifically listed in the Form of Tender. The cost of such miscellaneous items shall be deemed to be included in the unit prices for the main items of work listed in the Form of Tender. Miscellaneous work shall include but not be limited to such items as the cost of permits, access roads, cleanup and all other things necessary for the proper carrying out and completion of the work.

19. PARKING

The Contractor shall allow suitable off street parking for construction vehicles and for the cars of his employees and those of his subcontractors and visitors to the satisfaction of the owner.

20. LIMITS OF SITE

The Contractor is to contain his operation to the street right-of-way, except for trailer locations, parking area and stockpile sites which must be agreed upon by the Engineer.

21. TESTS

- (a) Emulsion materials, aggregate sieve analysis of original material from the source i.e. plant, quarry, pit, shall be provided at the Contractor's cost for this project. Proof of compatibility tests shall also be provided for the emulsion, so as to application rates for surface treatment.
- (b) Costs for tests on all materials, sieve analysis or compaction tests ordered by the Engineer will be paid by the Municipality.
- (b) Notwithstanding the above, all other testing programs, or tests of failed specimens, or excessive amounts of testing which in the Engineer's opinion results from inefficiency or lack of normal care and workmanship, will be at the Contractor's expense.

22. HOLDBACK RELEASE

Subject to the Provisions of the Construction Lien Act, Holdbacks shall become payable after 45 days from the date of advertisement of the substantial completion and the submission by the contractor of the following documents:

1. Statutory Declaration Re: Payment of Accounts.
2. Workers' Compensation Board Clearance Certificate.
3. Maintenance Bond for duration of the guaranteed period in the amount of 20% of the constructed value of the works.
4. Completed Form 5 of the Construction Lien Act 1993.
5. Copy of the publication of the Substantial Performance Certificate in the Daily Commercial News.

23. CONFLICTS AND OMISSIONS

In any case of conflict between the requirements of the contract documents, the order of precedence shall be as per the Contract Agreement.

Notwithstanding the above, neither party to the contract shall take advantage of any apparent error or omission in the plans or specifications, but the Engineer shall be permitted to make such corrections and interpretations as may be necessary for fulfilment of the intent of the plans and specifications. Any work or material not herein specified but may be fairly implied as included in this contract, of which the Engineer shall be the judge, shall be done or furnished by the Contractor as if such work or material has been specified.

24. SCHEDULE OF QUANTITIES

The schedule of quantities for the items of work, furnished herewith, is for the sole purpose of indicating to the Tenderer the general magnitude of the work. If the quantity of work to be done and material to be furnished exceeds, or is less than, the estimated quantity, the Contractor shall proceed with the work and payment will be made for the actual amount of work done and material furnished at the unit prices set out in the Tender. The Contractor shall not be entitled to any claim for lost profit, overhead or any other reason due to variations between the Tender quantity and the actual quantity measured for payment. Furthermore the Contractor shall notify the Engineer of any discrepancies as

soon as becoming aware in order to adjust the Construction work accordingly where applicable.

25. COMMENCEMENT OF THE WORK

Tenderers are advised that the actual work of this contract will commence no later than July 15th 2021 unless the Contractor is able to satisfy the Municipality that their proposed project schedule completion will meet the Project Completion date. This project is time sensitive as Surface Treatment is being applied as the finish product and the Municipality requires that curing time be provided during favorable weather. Furthermore, in the event that the Contractor would express their intent to start earlier than the said date, they are asked to submit their request in writing upon being awarded the project in order for all parties to work together towards the proposed change. The Contractor is hereby informed that this project underwent ditching work, culvert replacement and frost heaves repair last year where the majority of the work was completed, however the Municipality is considering repairing another few sections of roadway starting May 15th, and will continue to do some ditching work thereafter. The proposed Municipal schedule is structure to be completed at the end of June therefore there is some flexibility in the starting date if it can benefit the project.

26. PROVISIONAL ITEMS

Items of work that may be required during the course of construction, but the exact requirements of which will depend on ground conditions or other uncertain factors encountered, are shown as "Provisional Items". These quantities are anticipated to vary significantly, or may not be used at all. The Contractor shall price these items accordingly and shall not claim any anticipated loss of profit or increased overhead if any or all of these items is deleted altogether.

The main item under provisional will be the application of a stabilizer within the granular course. This item is to be calculated on a distribution rate of 3 l/m² using products such as Calcium, Magnesium or Entac (or equivalent). The Contractors in using equivalent products shall provide technical information to the Municipality as to the equivalency rate to support their proposal. This item is further discussed in the supplemental provision.

27. CONTINGENCY ITEM

An amount has been placed in the Tender to cover extra work that may be ordered by the Engineer. This Contingency Allowance will be drawn upon only as directed and as authorized in writing by the Engineer and approval by the Owner

28. ACCEPTANCE OF TENDER

If this Tender is accepted, the Tenderer agrees to furnish an approved surety and Workers' Compensation Clearance every 45 days for the proper fulfilment of the contract as required and to execute the agreement and bond, in triplicate, within seven (7) days, not including Sundays or a legal holiday, after being notified to do so by the Engineer.

29. PRIVATE LANDS

The Contractor shall not enter upon or occupy any lands outside of the public road allowance and the right-of-way shown on the plans except after consent has been received from the proper parties, a certified copy of which consent shall have been furnished to the Engineer.

When work has to proceed on private property, the Contractor will take every precaution to minimize the damage and inconvenience to property owners. The unit prices will be deemed to cover any restoration work necessary and all remedial work will be done to the satisfaction of the Engineer and the property owner.

30. SURPLUS EXCAVATION MATERIAL

The Contractor is hereby advised that all excavated materials shall be disposed of in accordance to OPSS 180. Although it is not anticipated that this will apply to this tender, the Municipality will provide a site within 1km to 2km of the site if the scope of work requires surplus material to be removed.

31. SCHEDULE OF WORK

The Contractor is advised that the contract will not be awarded until a proposed schedule of work is submitted and approved by the Engineer. The schedule, when approved, will form part of the contract and shall be binding on the Contractor.

During the operation of the contract, if any change arises which, in the opinion of the Contractor, prevents him from functioning at the progress scheduled, he shall immediately apply to the Engineer, in writing, requesting such an alteration.

The Tenderer is advised that work shall commence immediately upon being awarded the contract and to continue in an expeditious manner, and to complete the contract within the contract period

32. COOPERATION

The Contractor shall cooperate fully with any utility agencies (in ground and above ground) in protecting their plant or in shifting, removing, or new installation of same.

33. CLEANING OF ROADS

The contractor will be responsible to keep all roads affected by his operation clean . Daily scraping and weekly flushing will be required as part of his contract. This item is more intended for the good driving condition of the road once pulverized and during the granular application. The Contractor is therefore required to keep the road in a safe driving condition, and provide dust control when necessary.

34. LIQUIDATED DAMAGE

Persuant to section GC 8.02.09 of the General Conditions, the liquidated damages shall be in the amount of:

One Thousand Dollars (\$ 1,000.00) per calendar days beyond each milestone indicated in item 3 of the "Attention Sheet".

DIVISION "C"

FORM OF TENDER

TOWNSHIP OF CHISHOLM

DESCRIPTION

ALDERDALE ROAD RECONSTRUCTION

Tender CH-2021-01

A. Tender by: _____

A corporation having its office at: _____

(or in case of partnership)

B. Tender by: _____

Place of residence or business: _____

And: _____

Place of residence or business: _____

Carrying on business under the firm name of: _____

(or in case of unincorporated and non-partnership Tenderer)

C. Tender by: _____

Place of residence or business: _____
hereinafter referred to as the Tenderer

NOTE: in the case of partnership the name and place of residence or business of each partner must be inserted.

1. **DECLARATION OF TENDERER**

The Tenderer declares that:

- (a) No persons, other than the Tenderer, has any interest in this Tender or in the Contract proposed to be entered into.
- (b) This Tender is made without any connection, knowledge, comparison of figures, or arrangement with any other person or persons making a Tender for the same work, and is in all respects fair and without collusion or fraud.
- (c) The several matters stated in the said Tender are in all respects true.
- (d) The Tenderer has carefully examined the locality and site of the proposed works, as well as all the Contract documents, and hereby accepts the same as part and parcel of this Contract, and do as hereby tender and offer to enter into a Contract to do all the work, provide the labour and to provide, furnish, deliver, place and erect all materials mentioned and described or implied therein, including in every case freight, duty, exchange, and all other charges on the terms and conditions, and under the provisions therein set forth, and to accept in full payment therefore in accordance with the schedule of prices hereto annexed, and the Tenderer also agrees that this offer is to remain open to acceptance until the formal Contract is executed by the successful Tenderer for said work, and that the Owner may at any time without notice accept this Tender whether any other Tender has been previously accepted or not.
- (e) The prices offered in this schedule take into account in all respects for the cost of execution of work under all weather conditions.
- (f) The submission of this Tender is based on the terms and conditions of the draft form of agreement furnished to us, and any addenda identified herein. It is agreed that in the event of conflict between the unit prices and definitions of this Tender Form, and those contained in the specifications, then this Tender Form shall govern.
- (g) The work is to commence a maximum of seven days after notice to commence work has been issued by the Engineer.
- (h) In tendering for the work and in entering into the Contract, he has investigated for himself the character of the work to be done and all local conditions that might affect his Tender of his acceptance of the work.

He also declares that in tendering for the work and in entering into the Contract, he did not and does not rely upon verbal information furnished by the Owner or the engineer.

2. **ADDENDA**

The Tenderer will acknowledge receipt of all addendum and list them as follows:

Number _____ Dated _____ Initial _____

Number _____ Dated _____ Initial _____

Number _____ Dated _____ Initial _____

Number _____ Dated _____ Initial _____

Number _____ Dated _____ Initial _____

Number _____ Dated _____ Initial _____

ALDERDALE ROAD RECONSTRUCTION

FORM OF TENDER

ITEM NO.	ITEM	OPSS NO.*	EST QTY.	UNIT	UNIT PRICE	TOTAL AMOUNT
	Part 'A' - ROAD					
1	Pulverization i) On existing surface treatment to mix with existing granular A	SP	1	L.S.		
2	Supply, Place and Compact Granular 'A' type I i) 100 to 250mm thick Granular 'A' for grade raise (avg 8.0m) ii) 150mm thick - average lift - Granular 'A' (avg 8.0m)	902	13,000 25,000	Tonne Tonne		
3	Supply and Place Geo-textile Reinforced Surface Treatment i) Geotextile Reinforced Single Seal Coat ii) H.F. 150S and Class 2 aggregate for double application	308, 310 1151	65,000 65,000	m ² m ²		
	<u>PROVISIONAL ITEMS</u>					
4	Base Stabilization i) Granular Base Stabilization to be completed with pulverization at a base rate of 3.0 l/m ² with calcium or equivalent.	410 SP	65,000	L.S.		
5	Supply and Place Single Surface Treatment - 3rd coat i) H.F. 150S and Class 2 aggregate for single 3rd coat	308, 310	65,000	m ²		
6	Contingencies		1	L.S.	\$75,000	

SUB-TOTAL PART 'A' _____

TENDERER'S INITIALS _____

SUMMARY SHEET

PART 'A' – ROAD

\$ _____

SUB-TOTAL

\$ _____

PLUS 13% HST

\$ _____

TOTAL TENDER PRICE

\$ _____

Repeat total Tender price in writing _____

H.S.T. Registration # _____

The Contractor by this Tender, offers to complete this Contract in accordance with the terms contained herein.

DATED AT _____ THIS _____ DAY OF _____ 2021.

WITNESS: _____

NAME OF COMPANY

Signature of Authorized Person
Signing for Contractor (SEAL)

(Tenderer's Initials)

(POSITION)

DIVISION "D"

CONTRACT AGREEMENT

PROJECT

Alderdale Road Reconstruction

THIS AGREEMENT made in Triplicate this _____ day of _____

in the year Two Thousand Seventeen.

BETWEEN:

(hereinafter called
the "CONTRACTOR")
of the first part

and

The Corporation of the TOWNSHIP OF CHISHOLM
(hereinafter called
the "Owner") of the
second part.

WITNESSETH that the Contractor and the Owner, for the considerations hereinafter indicated, undertake and agree as follows:

ARTICLE 1

The following documents, which have been signed or initialled in triplicate for identification by both parties, are to be read herewith and form part of this present agreement for each contract as fully and completely to all intents and purposes as though all the stipulations thereof have been embodied herein.

In the event of any inconsistency or conflict in the contents of the following documents, such documents shall take precedence and govern as per section GC 2.02 in the following descending order:

- a) Agreement
- b) Addenda No. to No. Inclusive
- c) Special Provisions
- d) Contract Drawings
- e) Standard Specifications
- f) Standard Drawings
- g) Instructions to Tenderers
- h) Tender
- i) Supplemental General Conditions
- j) General Conditions
- k) Working Drawings

Later dates shall govern within each of the above categories of documents.

ARTICLE II

The Contractor undertakes and agrees as follows:

- (a) To provide, at his own expense, all and every kind of labour, machinery, plant, structures, roads, ways, materials, appliances, articles and things necessary for the due execution and completion of all the work set out elsewhere in this contract and shall forthwith according to the instructions of the Engineer commence the works and diligently execute the respective portions thereof, and deliver the works complete in every particular to the Owner within the time specified in the contract.
- (b) To grant the Owner the right to use completed portions of all contract construction prior to completion of the contract without any additional compensation.

ARTICLE III

The Owner undertakes and agrees as follows:

- (a) To pay the Contractor in lawful money of Canada for the performance of the work of each contract (subject to additions and deductions as provided in the General Conditions of the contract) at the unit prices set out in the schedule of unit prices, as described in the Form of Tender, annexed to this Agreement. It is estimated (without limiting the foregoing) that the aggregate payable under this Agreement will be in the approximate amount of based on the unit prices bid and applied to the measurements of the work.
- (b) To make payments on account thereof upon the certificate of the Engineer (when the Engineer is satisfied that payments due to Subcontractors have been made) as follows:
 - (i) On the 25th day of each calendar month, the Contractor shall prepare and deliver to the Engineer, for checking, a written estimate of the value of the labour and material incorporated in the work of the contract up to the 25th day of that month. The Engineer shall, by the first day of the following month, issue in favour of the Contractor a certificate for ninety percent (90%) of the value of labour and materials incorporated in the work up to the first day of that month as estimated by the Contractor and approved by the Engineer, less the aggregate of previous payments. Within thirty (30) days after delivery by the Engineer to the Owner of each certificate, the Owner shall pay to the Contractor the amount of such certificate.
 - (ii) Payment by the Owner of the ten percent (10%) holdback shall be in accordance with the Construction Lien Act, and provision of the following:
 1. Maintenance Bond as described in the Information for Tenderers.
 2. A satisfactory certificate of clearance from the Workers' Compensation Board.
 3. A statutory declaration completed by a signing officer of the company in a form satisfactory to the Engineer that all liabilities incurred by the Contractor and his Subcontractors in carrying out the contract have been paid and that there are no liens, garnishes, attachments of claims relating to the work.
 4. Copy of the Publication of the Substantial Performance Certificate.
 5. Completed Form 5 of the construction Lien Act 1993

ARTICLE IV

In the event that the Tender provides for and contains a contingency allowance, it is understood and agreed that such contingency allowance is merely for the convenience of accounting by the Owner, and the Contractor is not entitled to payment thereof except for extra or additional work carried out by him in accordance with the contract and only to the extent of such extra or additional work as approved in writing by the Owner.

ARTICLE V

No implied contract of any kind whatsoever by or on behalf of the Owner shall arise or be implied from anything in this contract contained, nor from any position or situation of the parties at any time, it being clearly understood that the express covenants and agreements herein contained made by the Owner shall be the only covenants and agreements upon which any rights against the Owner may be founded.

ARTICLE VI

The Contractor declares that in tendering for the works and in entering into this contract, he has either investigated for himself the character of the work and all local conditions that might affect his Tender or his acceptance of the work, or that not having so investigated, he is willing to assume and does hereby assume all risk of conditions arising or developing in the course of the work which might or could make the work, or any items thereof, more expensive in character, or more onerous to fulfil, than was contemplated or known when the Tender was made or the contract signed. The Contractor also declares that he did not and does not rely upon information furnished by any methods whatsoever by the Owner or Engineer, being aware that any information from such sources was not in any manner warranted or guaranteed by the Owner.

ARTICLE VII

The Contractor and the Owner for themselves, their successors and assigns, hereby undertake and agree to the full performance of the covenants contained herein and in the contract documents as listed in Article 1 herein.

ARTICLE VIII

If and whenever either party hereto desires to give notice to the other party under or in connection with this Agreement, such notice will be effectively given if sent by registered mail

to the Contractor at:

to the Owner at:

TOWNSHIP OF CHISHOLM
2847 Chiswick Line
Powassan, ON
POH 1Z0

and to the Engineers at:

390 Hwy 94
Corbeil ,Ontario
POH 1K0

and will be considered as having been so given at the time of the deposit hereof in the post office.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement the day and year first above written.

SIGNED, SEALED AND DELIVERED

in the presence of

)
)
)
)
) _____
)
)
) _____
) (SEAL) (Contractor)
)
)
)
)
) _____
)
) _____
) (SEAL) (Owner)
)
)
)
)
)

DIVISION "E"

OPS GENERAL CONDITIONS

CONTRACTOR must refer to the most current OPS General Conditions

DIVISION "F"

SPECIAL PROVISIONS AND SUPPLEMENT
TO OPSS STANDARD FOR UNDERGROUND CONSTRUCTION

**DIVISION F- SPECIAL PROVISIONS
UNDERGROUND CONSTRUCTION
(SUPPLEMENT TO OPSS 400 SERIES)**

1. SUBEXCAVATION PRIOR TO GRANULARS (Provisional)

If, in the Engineer's opinion, some areas of the roadway subgrade have to be replaced prior to the application of granular base, the Contractor shall, for the unit price bid per cubic metre, excavate, haul any excess off-site, supply, place and compact to 95% SPD Granular "B" Type I material.

2. SUBEXCAVATION FOR SOFT SPOTS (Provisional)

In areas where soft spots develop, for the unit price per cubic metre, the Contractor shall excavate to a depth to be determined by the Engineer, dispose of the excavated material within the contract limits, supply, place and compact to 95% SPD Granular "B" Type I material to final Granular "B" grade.

DIVISION "G"

SPECIAL PROVISIONS AND SUPPLEMENT
TO OPSS STANDARD FOR ROADWAY CONSTRUCTION

1. PULVERIZING

This item shall include the initial pulverization of existing surface treated road with underlying granular material to a maximum depth of 150 mm. The pulverization shall be carried out with an approved mechanical pulverizer with adequate power to complete the work.

The existing condition of the road is that the surface wear is a double surface treatment over approximately 50mm of granular 'A'. The Contractor will not be able to pulverize this depth without contaminating the surface with granular 'B'. It is therefore recommended that the Contractor applies a lift of granular 'A' in the order of approximately 100mm thick in order to proceed with a proper pulverization depth.

Base stabilization is discussed under the provisional item. In the event that the Municipality is able to proceed with this application, the intent is that it would be applied during the pulverization process.

The Contractor is advised that the existing road includes gravel patches where road reconstruction was performed last year. The entire road is 8,125 km long. Presently 16 sections are in gavel representing approximately 1/3 or the total distance. The line item is shown as a Lump Sum where the Contractor will have to Pulverize what is deemed necessary if no base stabilization, and 100% if base stabilization. The minimal width shall be 7m, although the typical finished surface treatment width is to be based on 8m wide.

The Contractor is also made aware that the intersection of Chiswich Line and that both intersection on Memorial Park are already paved in asphalt and that they have been deemed in good condition. Therefore, **these intersections will not require pulverization** unless a change order is in place during construction.

SHOULDERS – Presently the shoulders are acting like a berm and are higher than the road. In some cases the paved edge has settled, in some other cases the shoulders are a buildup and lack of maintenance. It is understood that at least 50% of the road has good shoulders, however approximately 50% will have to be worked in advance of the construction. The shoulders may be graded onto the hard surface where necessary in advance of the pulverization where deemed necessary so that the finish granular lift blends in better with the rounding.

2. GRANULARS "A"

For the 1st item, the unit price bid for this item, the Contractor shall supply all equipment, labour and material necessary to supply and place Granular "A" Type II (quarry) compacted to 95% standard proctor density for additional granular grade raise and road reinforcement will be required in various sections starting at Chiswick Line (Station 10+000) increasing going Southerly as follows:

10+240 to 10+540 – Approximately 200mm lift
10+880 to 11+100 – Approximately 200mm lift
11+200 to 11+320 – Approximately 200mm lift
14+720 to 14+860 – Approximately 200mm lift
15+350 to 15+600 – Approximately 300mm lift
16+000 to 16+400 – Approximately 200mm lift
16+720 to 17+020 – Approximately 200mm lift
17+100 to 17+520 – Approximately 200mm lift
17+680 to 18+160 – Approximately 250mm lift

This represents approximately 2.6 km in total, for an average width of 9m.

For the 2nd item, the unit price bid for this item, the Contractor shall supply all equipment, labour and

material necessary to supply and place Granular "A" Type II (quarry) compacted to 95% standard proctor density. The depth of granular placed shall be a maximum of 150mm thick on Alderdale Road or as directed by the Engineer.

The overall width for this project will remain approximately 9.0m width platform for the granular lift and shall maintain a **4.0% crossfall**.

Under this item, the Contractor will be required to match all existing driveway to a point not passed the ROW. Therefore the matching limit shall be at the very most within 10 metres from centerline, based on a 20m road allowance. At the very least, entrances shall be matched to a point at least 2.0m from the road shoulder.

The Crown **shall be 4.0% for the finish grade** and shall not deviate more than 15mm at any place on a 3m template.

DUST CONTROL

The cost for the supply and application of water and calcium chloride (if required) for compaction and/or dust control shall be included in the unit prices bid for the granular items in this contract and applied as directed by the Engineer. This item is not expected to be a concern for this project since there will be no traffic and no houses nearby.

It is not expected that dust suppressant other than water will be required for this project.

The Contractor is hereby advised that the Landfill site is open during summer hours on Saturday and that the average traffic will increase on such days. It will be the Contractor's responsibility to provide dust control if and when necessary even during Saturdays.

3. Geo-textile Reinforced – Single Surface Seal Coat

This item will be provided for all roads selected for Double Surface Treatment.

This item shall include the application of a non-woven geo-textile polypropylene fabric seal coat.

The Contractor shall apply a non-woven geo-textile fabric seal coat to the existing pavement surface complete with tack material and stone chip. The geotextile paving fabric shall be a non woven polypropylene fabric heat bonded on one side and shall meet the physical requirements in the following table:

	Test Method	Units	Requirements
Grab strength	ASTM D 4632	N	450
Ultimate Elongation	ASTM D 4632	%	≥50
Mass per unit area	ASTM D 5261	g/m ²	140
Melting Point	ASTM D 276	°C	150

The Contractor shall provide a seal coating design that specifies the tack material, stone chip and respective application rates to be used.

The Contractor shall also provide the geo-textile manufacturer's installation manual to the Contract Administrator, a minimum of ten (10) business days prior to commencement of the operations.

The Contractor shall supply all resources and equipment required to prepare the surface on which the geo-textile fabric is to be placed so that no damage to the geo-textile fabric will occur; thoroughly clean and dry the old pavement including removing all dirt, water, oil and foreign materials; place the tack material; lay the geo-textile fabric smoothly; apply tack material to the top of the geo-textile and apply and compact the stone chip.

The emulsion distributor shall be fitted with a paving fabric applicator capable of placing rolls 4.5 meters wide. The applicator must be equipped with a tensioning mechanism to ensure the roll is placed smoothly on the desired surface. The fabric applicator must be mounted to the distributor so that paving fabric is placed immediately onto the sprayed binder. The applicator shall be fitted with a series of brushes to push the paving fabric evenly across the width of the binder application.

The application of this Geo-textile Reinforced Single Surface Seal Coat is to be completed in accordance with this Special Provision.

In order to minimize the potential of public complaints and damage to property, public traffic shall only be permitted to travel on this application after the Contractor has placed appropriate signs to warn traffic and to reduce speed.

Measurement of Geo-textile Reinforced Single Surface Seal Coat shall be in square meters (m²). Basis of payment at the contract price for this item shall be full compensation for all labour, equipment, fuel and material required to produce the required product.

Item 3- ii) DOUBLE SURFACE TREATMENT

This item shall include the application of Double Surface Treatment after Restoring of Roadway. This item shall include the supply of HF 150P emulsion (OPSS 1103) and Class 6 Aggregate (OPSS 1001). The contractor shall be responsible for determining application rates of both aggregate and emulsion, and must provide the rates to the Owner in writing prior to the start of work.

The item shall be placed in accordance with OPSS 304. Measurement of Double Surface Treatment shall be in square meters (m²). Basis of payment at the contract price for this item shall be full compensation for all labour, equipment, fuel and material required to produce the required product.

METHOD OF MEASUREMENT

The unit of measurement will be in square meters.

4. Provisional Items – Base Stabilization

The Contractor will have a complete understanding of the preferred methodology for providing base stabilization. The preferred methodology for this project shall be the bid price under the Provisional Items.

The Municipality in order to save money is proposing that the work be performed in one (1) operation, where it will necessitate the placement of granular materials on the roadways in advance at an average thickness of 100mm thick. This is being proposed given the limitation of existing materials on the road in average. Approximately 30% to 50% of the road is presently granular base and has a minimum of 150mm thick as a surface layer. The later was done as part of excavation work reconstructed in 2020.

The remainder of the road is very limited in good aggregate consisting in a double surface treatment ovetop of approximately 50mm of granular 'A'. Therefore it is anticipated that beyond 75mm, there is a layer of granular 'B'. Pulverizing must remain above this depth in order to avoid contaminating the surface layer with the base.

For this reason, the proposed methodology that the Municipality is suggesting is placing approximately 100mm of granular 'A' on Alderdale Road. Applying stabilization at a minimum application rate of 3.0 l/m², followed by the full pulverization, shaping and compaction of the stabilized layer.

It is further understood that once the stabilization has been completed, the Contractor will be authorized to complete the construction work with the placement of the remainder of Granular 'A' and that surface treatment can be performed without waiting the minimum 14 requirements.

Stabilization chemicals shall be applied by means of a calibrated distributor.

The Contractor shall evaluate the better reconstruction methodology for this project and may vary from the proposed approach. Therefore, he may warrant the need for a secondary pulverization process after the initial pulverization. The Contractor shall therefore include his preferred methodology to achieve what will be better for this project and shall include all include all associated costs in his bid price. Further to this, the Contractor shall provide details of his methodology with the project schedule.

5. Provisional – 3rd Coat single surface treatment

The Contractor is to provide a cost to supply and apply a final 3rd coat on this project as a provisional item. The Municipality reserves the right to cancel that item in its entirety in the event that the overall tender cost is received over budget. However, the Municipality is considering the option to apply a third coat on this road as a provisional item upon completion of the other items within this Tender document.

**NON STANDARD CONSTRUCTION SPECIFICATION FOR STRESS ABSORBING MEMBRANES UTILIZING
GEO-TEXTILE PAVING FABRICS**

304.01 SCOPE

This specification is applicable to the use of paving fabrics, saturated in an emulsified asphalt binder to be used in conjunction with a double seal coat, applied over an existing bound surface. The membrane can be utilized as an overlay to an existing roadway or as an interlayer where Hot Mix Asphalt is placed on the finished membrane.

The Contractor shall provide a double application of binder and aggregate in accordance with this specification.

The function of the paving fabric is to act as a waterproofing and stress relieving membrane within the pavement structure.

Paving fabrics are not suitable for cul de sacs, intersections, sharp corners or roadways with maintenance structures.

304.02 REFERENCES

This specification refers to the following standards, specifications, or publications

- OPSS 1103 Emulsified Asphalt
- ASTM D 4632 Grab strength
- ASTM D 4632 Ultimate elongation
- ASTM D 5261 Mass per unit area
- ASTM D 276 Melting Point
- Ontario Traffic Manual (OTM): Boo7 Temporary Conditions

304.03 DESIGN REQUIREMENTS

The Contractor shall design the type of asphalt binder and aggregate, and their application rates to ensure satisfactory performance on the roadway. The Contractor shall follow a recognized seal coat design methodology, and submit this information to the Contract Administrator, a minimum of one week prior to the start of the seal coat operations. The design shall carry the stamp of approval by a registered practicing Professional Engineer qualified to practice in the Province of Ontario. The material shall be placed only after the Contract Administrator reviews the design information.

Upon completion of the work the Contractor shall submit a Certificate of Conformance stating compliance with the design and application rates for binder and aggregate. In addition to the Certificate, supporting documentation shall be provided as necessary to demonstrate conformance. The Certificate shall carry the stamp of approval by a registered practicing Professional Engineer qualified to practice in the Province of Ontario.

The following traffic, pavement and geometric data is provided for the purpose of the Contract only, on Highway ____.

- the available traffic data for ____ indicates AADT as ____ and % Commercial as ____.
- the existing pavement type is _____ completed in _____.

304.04 MATERIAL REQUIREMENTS

304.04.01 Geotextile

The geotextile shall be a non woven polypropylene fabric heat bonded on one side and shall meet the physical requirements in Table 1.

Table 1

	Test Method	Units	Requirements
Grab strength	ASTM D 4632	N	450
Ultimate Elongation	ASTM D 4632	%	≥50
Mass per unit area	ASTM D 5261	g/m ²	140
Melting Point	ASTM D 276	°C	150

304.04.02 Emulsified Asphalt Binder

The emulsified asphalt binder shall be rapid setting polymer modified.

Prior to the commencement of the work, the Contractors shall issue a Certificate of Conformance that the material complies with OPSS 1103, as determined by an accredited laboratory in Ontario's inter-laboratory correlation programme. An accredited laboratory shall be one that maintains a satisfactory rating from the Ministry emulsion correlation program.

304.04.03 Aggregates

Aggregates for both applications shall be of the same geological parent material produced from the same source.

The physical requirements of the aggregates for the first application shall be equivalent to those of Class 1 aggregate as indicated in Table 2. The aggregates shall also come from a source listed in the Designated Source of Materials #3.05.25, as acceptable for use as coarse aggregate in HL1 or Superpave 12.5 FC1 hot mix.

The aggregate gradation for the first application (bottom) shall be determined by the seal coat design with the following requirements:

1. The aggregates shall be single sized.
2. The aggregate shall be no finer than the gradation of a Class 1 aggregate as shown in Table 3.
3. The maximum median size shall be 13.6 mm.

The aggregate used for the second application (top) shall be determined by the seal coat design and its median size shall be 30-50% of the median size of the aggregates used in the first application.

Table 2

MTO LAB TEST	*MTO TEST NUMBER	Class 1 (1)	Class 2 (1)	Class 3 (1)	Class 4	Class 5 (1)	Class 5 (1)
Loss by Washing, Pass 75 µm Sieve, % Maximum	LS-601	1.3	--	1.3	--	1.3	1.3
Absorption, % Max. (2)	LS-604	1.75	--	2.00	--	1.75	1.75
Magnesium Sulphate Soundness, 5 Cycles, % Loss, Maximum (Note 2)	LS-606	12	15	12	--	12	12
Percent Crushed, %, Minimum	LS-607	60	60	60	--	60	60
Flat and Elongated Particles, % Max.	LS-608	20	20	20	--	20	20
Petrographic No, Max.	LS-609	135	160 (Note 3)	160	--	135	145
Micro-Deval Abrasion Coarse Aggregate % Loss, Maximum	LS-618	17	25	17	--	17	17
Micro-Deval Abrasion Fine Aggregate % Loss, Maximum	LS-619	--	30	--	25	--	--
Plasticity Index Maximum	LS-704	--	0	--	0	--	--
ALTERNATIVE REQUIREMENTS TO MAGNESIUM SULPHATE SOUNDNESS – LS-606							
Unconfined Freeze-Thaw Loss, % Maximum	LS-614	6	15	6	--	6	6

NOTES :

(1) Class 1, 2, 3, and 5 physical requirements noted above are for the material retained on the 4.75 mm sieve, except for lab test LS-619.

(2) The requirements will be waived by the Owner when the aggregate meets the alternative unconfined freeze-thaw requirements of LS-614.

(3) The weighted petrographic numbers shall be the hot-mi and concrete petrographic number.

Table 3

MTO Sieve Designation	Percent Passing by Mass					
	Class 1 (Note 1)	Class 2	Class 3 (Note 2)	Class 4	Class 5 (Note 1)	Class 6 (Note 3)
19.0 mm	---	100	100	-	-	-
16.0 mm	-	98-100	96-100	-	-	100
13.2 mm	100	75-95	67-86	-	-	96-100
9.5 mm	75-100	50-80	29-52	-	-	50-73
6.7 mm	0-40	-	-	-	40-85	-
4.75 mm	0-10	25-50	0-10	70-100	5-25	0-10
2.36 mm	-	-	-	10-100	0-10	-
1.18 mm	-	10-40	-	5-90	0-5	-
600 µm	-	-	-	3-70	-	-
300 µm	-	2-20	-	2-40	-	-
150 µm	-	2-13	-	0-15	-	-
75 µm	0-1	2-7	0-2	0-7	0-1	0-2

Note 1: Class 1 and 5 aggregates shall be washed according to OPSS 1001.

Note 2: Class 3 aggregate has the same gradation requirements as HL4 coarse aggregate.

Note 3: Class 6 aggregate has the same gradation requirements as HL3 coarse aggregate.

Prior to the commencement of the work, the Contractor shall issue a Certificate of Compliance that the material conforms to Table 2, as determined by an accredited laboratory. An accredited laboratory conducting tests for LS-601 shall be one that holds a valid certificate from the Canadian Council of Independent Laboratories (CCIL) as Type C. Testing for LS-601 shall be conducted by qualified laboratory staff who hold a valid certificate from CCIL in aggregate testing. An acceptable laboratory conducting tests for physical properties or consensus properties shall be one that holds a certificate from CCIL as type D for the applicable test methods and also participates in the annual MTO Proficiency Sample Testing Program.

Aggregates containing slags are not permitted for use in a Double Seal Coat application.

304.04.04 Binder / Aggregate Compatibility Testing

The Contractor shall perform the European Standard test EN 12272-3 entitled "Determination of binder aggregate adhesivity by Vialit plate shock test method", and provide the results to the Ministry. The Contractor shall provide a written report of the test method and results, and include a photographic record, all under the signature of an accredited laboratory. An accredited laboratory shall maintain a Type A Certification form the Canadian Council of Independent Laboratories, or alternatively shall be a laboratory that maintain a satisfactory rating from the Ministry emulsion correlation program.

304.04.05 Submission Requirements

Representative samples of the materials to be used in the work shall be provided to the Contract Administrator at the same time as the Certificates of Compliance are submitted.

The samples shall be labeled with the contract number, material type, material source and date of sampling.

Each material sample shall be packaged separately and the samples shall be in containers which are clean, closed and will not rupture when lifted and handled. Each filled sample container shall have a maximum mass of 30 kg.

The minimum sample quantities are: Emulsified Asphalt 4 liters evenly split between two containers, each aggregate 25 kg, and any other material samples to be used in the job-mix-formula in a quantity large enough to allow confirmation of the design.

304.05 EQUIPMENT

304.05.01 Pressure Distributor/Paving Fabric Applicator

The pressure distributor shall be designed and manufactured to spray binder on the road surface. The pressure distributor shall be capable of applying binder at the specified rates and in a continuous and uniform manner both longitudinally and transversely for a full lane width.

The emulsion distributor shall be fitted with a paving fabric applicator capable of placing rolls 4.5 meters wide. The applicator must be equipped with a tensioning mechanism to ensure the roll is placed smoothly on the desired surface. The fabric applicator must be mounted to the distributor so that paving fabric is placed immediately onto the sprayed binder.

The applicator shall be fitted with a series of brushes to push the paving fabric evenly across the width of the binder application.

The pressure distributor shall be computerized and capable of applying the emulsion within $\pm 5\%$ of the rate designed by the contractor in a continuous and uniform manner in both longitudinal and transverse directions.

The asphalt distributor will be equipped with a rear mounted camera to enable the operator to see the rear of the truck as it is placing the paving fabric.

304.06 CONSTRUCTION

304.06.01 Calibration of Equipment

Prior to the commencement of the work, the Contractor shall submit to the Contract Administrator written confirmation that the Distributor has been calibrated as per ASTM 2995, and Aggregate Spreader as per ASTM D5624. The confirmation shall be signed off by the Manager who is responsible for the operation of the Distributor and of the Aggregate Spreader. The calibration shall have been carried out within a time frame not exceeding 7 calendar days prior to the commencement of work.

304.06.02 Binder

The Contract Administrator reserves the right to require the Contractor to provide additional field binder samples for testing purposes.

304.06.03 Aggregates

The Contract Administrator reserves the right to require the Contractor to provide additional field samples of aggregates for testing purposes.

306.06.04 Process Control

The Contractor shall conduct such process control procedures, including sampling and testing, as is necessary to ensure that all aggregates and all asphalt binder to be used in the work conform to the requirements of the Contract. The Contractor shall determine the type and amount of process control and sampling and testing to be completed.

The contractor shall be responsible for the interpretation of the test results and the determination of any action to be taken to ensure that all materials and work conform to the requirements of the Contract.

The Contractor shall supply copies of any or all process control test result to the contract Administrator.

304.06.05 Traffic Convoy

The Contractor shall convoy traffic.

The Contractor shall supply one pilot vehicle and operator to guide one-way traffic through or around construction. The maximum speed of convoy shall be 30 km/h and the convoy shall be maintained for a duration deemed sufficient

by the Contractor to 1) protect public traffic from loose and/or flying stone and 2) protect the finished mat from possible damage inflicted by public traffic, or longer if directed by the Contract Administrator.

The pilot vehicle shall be equipped with rotating amber light and a mounted sign that prohibits passing of the pilot vehicle. The vehicle and sign shall be in accordance with Ontario Traffic Manual Book 7.

A single lane closure not exceeding 2.0 km in length is allowable at any one time. The maximum queue or waiting times for this closure shall not exceed a 10 minute time period.

304.06.06 Damage to Vehicles Caused by Loose Aggregate

Public traffic shall be permitted to travel only on the final compacted surface of the double application.

All claims of damage to vehicles caused by loose aggregate while traveling through the project at the time of construction shall be dealt with directly by the contractor.

The Contractor shall expedite the sweeping of any remaining aggregate from the surface of the seal coat.

304.07 WARRANTY REQUIREMENTS

304.07.01 Warranty Period

The warranty shall be for twenty four (24) months from the actual last working day of the contact. Any repair work shall be completed prior to the end of the warranty period.

304.07.02 Completion of Warranty Period

The Final Acceptance Document for this contract will not be issued until all of the performance requirements and any repairs under the twenty four (24) month warranty are satisfied.

304.08 PERFORMANCE REQUIREMENTS

The completed surface course shall be free of flushing, streaking or loss of cover aggregate, including delamination, as described by the Ministry of Transportation of Ontario's Manual for Condition Rating of the Surfaced Treated Pavement (SP-021).

Any materials used in the repair or replacement areas shall be consistent with those originally specified in the contract. The use of alternate aggregate meeting the requirements of Tables 2 and 3 may be used in the repair or replacement areas pending the approval of the Contract Administrator.

Shearing of the seal Coat surface during snow-plough operations (snow-plough damage) is exempt from the Performance Requirements and Warranty Requirements.

A distress survey shall be completed by the Owner at the end of the twelve months and at forty five calendar days prior to the end of the twenty four month warranty period. The results of both surveys will be sent to the Contractor. The Owner will determine the types of distress, their severity, their extent and the exact dimensions of the warranty repairs or replacements.

All repair or replacements areas shall not have transverse or longitudinal ripples of six millimeters or more as measured with a three meter straight edge.

The following table indicates the performance requirements by the end of the warranty period and the necessary repair or replacement methods where required.

The descriptions of the surface defects and severity are in accordance with the Ministry of Transportation, Ontario, Manual for Condition Rating of Surface Treated Pavement (SP-021).

SURFACE DEFECTS	SEVERITY	DENSITY OR EXTENT (per 100 m of Lane Length)	REPAIR/REPLACEMENT METHOD
Loss of Cover Aggregate	slight	intermittent, frequent, or extensive	none
	moderate/severe	intermittent or frequent	patching and then a double seal coat of the affected area manually or by machine
	moderate/severe	extensive **	patching and then a double seal coat of the affected area
Flushing	slight	intermittent, frequent, or extensive	none
	moderate	intermittent***, frequent**, or extensive**	lean double seal coat of the affected area
	severe	intermittent***	Application of double seal coat to the affected areas for full pavement width
		frequent** or extensive**	Application of double seal coat to the affected areas for full pavement width
Streaking	slight	Intermittent, frequent, or extensive	none
	moderate	intermittent***, frequent** or extensive**	double seal coat the affected area
	severe	intermittent***	compacted aggregate curtain or sand seal followed by double seal coat of the affected area
		frequent** or extensive**	compacted aggregate curtain or sand seal followed by double seal coat of the affected area

304.09 MEASUREMENT FOR PAYMENT

304.09.01 STRESS ABSORBING MEMBRANE

The Geo-textile reinforced pavement layer will be paid in m² of pavement treated.

304.09.02 Traffic Convoy

The measurement for traffic convoy will be based on the number of hours that the pilot vehicle is in effective operation.