

Volume 1

General Specifications and General Specification Amendments

Edition 1

General

The County of Grande Prairie's Construction Specifications consist of a collection of eight distinct and separate volumes that are unique to the construction activity specified. The Construction Specifications include:

- Volume 1 – General Specifications and General Specification Amendments, Edition 1
- Volume 2 – Rural Roads, Edition 1
- Volume 3 – Concrete (not yet available)
- Volume 4 – Drainage (not yet available)
- Volume 5 – Waterworks (not yet available)
- Volume 6 – Electrical (not yet available)
- Volume 7 – Landscaping (not yet available)
- Volume 8 – Bridges, Edition 1

Although separate, each volume must be referenced and interpreted simultaneously with all other volumes that are pertinent to the works being described.

Contractors are advised that both Volume 1 – Amendments to the General Specifications and Volume 2 – Roads are generally based on the following documents:

- Alberta Transportation and Economic Corridors (TEC)
 - General Specifications Edition 16 - 2019,
 - Standard Specifications for Highway Construction, Edition 16, 2019
 - Standard Specifications for Bridge Construction, Edition 19, 2020
- Aquatera Utilities Ltd.
 - Design and Construction Manual

To meet the County's construction requirements, these Volumes contain Specifications or Specification Amendments that either amend or supersede the documents on which the Specifications are based.



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SECTION 100 - GENERAL SPECIFICATIONS AND GENERAL SPECIFICATION AMENDMENTS**PART 1 GENERAL****1.1 Relevant Specifications**

.1 Unless otherwise specified or as amended herein, all Work shall be performed in accordance with the following:

- County of Grande Prairie No. 1
 - Volume 1 – General Specifications and General Specification Amendments, Edition 1,
 - Volume 2 – Rural Roads, Edition 1
 - Volume 3 – Concrete (not yet available)
 - Volume 4 – Drainage (not yet available)
 - Volume 5 – Waterworks (not yet available)
 - Volume 6 – Electrical (not yet available)
 - Volume 7 – Landscaping (not yet available)
 - Volume 8 – Bridges, Edition 1
- Alberta Transportation and Economic Corridors
 - General Specifications Edition 16 - 2019,
 - Standard Specifications for Highway Construction Edition 16 - 2019, and
 - Standard Specifications for Bridge Construction Edition 17 - 2020.
- Aquatera
 - Engineering and Development Services – Standards and Guidelines

.2 The hierarchy of documents shall be in accordance with Section 1.5.1.1 of this document.

1.2 Name Change

.1 Due to government reorganization, Alberta Ministry of Transportation and Economic Corridor's name has changed. Some specifications, drawings, plans and other documents in this contract may continue to reference Alberta Infrastructure and Transportation, Alberta Infrastructure, Alberta Transportation and Utilities, Alberta Transportation or Ministry of Transportation and Economic Corridors. Please be advised that any references to Alberta Infrastructure and Transportation, Alberta Infrastructure, Alberta Transportation and Utilities, or Alberta Transportation shall mean Alberta Transportation and Economic Corridors.

1.3 Transition of the Crown

.1 All instances and references to Her Majesty the Queen in the Specifications are deleted and replaced with His Majesty the King.

1.4 Definitions and Interpretation of Terms

- .1 For the purposes of interpretation of the County's Design and Construction Standards the following definitions are added or amended, and shall apply throughout Volume 1 through Volume 8 inclusive of the County's Design and Construction Standards:
- .1 The **Consultant** means the individual, professional engineer or engineering consulting firm that has been retained by the County to administer the Contract or Servicing Agreement on behalf of the County.
 - .2 The **Contract** means the agreement between the County and the Contractor, or the Servicing Agreement between the County and the Developer, which specifies the Work to be completed by the Contractor or Developer.
 - .3 The **Contractor** refers to a person, partnership, company, or group of persons who, through a Contract with the County or a Servicing Agreement, undertakes all or part of the Work.
 - .4 The **CCC**, or **Construction Completion Certificate**, is a document signed and sealed by the Project Manager, within their professionally permitted scope of work, certifying that the municipal improvement has been constructed in accordance with the Drawings, Plans, and Specifications and has been accepted in accordance with the terms and conditions of the Contract or Servicing Agreement, as applicable.
 - .5 **Contract Completion** means when the Contractor has satisfactorily completed all duties and obligations under this Contract and the Final Acceptance Certificate has been issued by the County.
 - .6 The **County** refers to the County of Grande Prairie No. 1, as represented by the General Manager of Transportation and Utilities and includes all County Departments, Consultants, employees, agents, or other persons authorized by the General Manager, where applicable.
 - .7 **Defective Work**, or **Defective** or **Defect** when used in relation to Work means, Work or part thereof, for which the Contractor is responsible under the Contract, that has been performed but fails to meet or is non-compliant with the requirements of the Contract or Servicing Agreement.
 - .8 **Deficiency** means Defective or incomplete Work, or part thereof, for which the Contractor is responsible under the Contract or Servicing Agreement.
 - .9 **Deficiency Holdback** shall mean where "Defective Work", or "Defective", or "Defect", or "Deficiency" is used in relation to the Work, the County may, at their sole discretion, apply a Deficiency Holdback to the Progress Payment. Release of this Deficiency Holdback shall require correction of the noted Deficiency. This Holdback is administered separately from the Major or Minor Lien Fund(s) and/or the Holdback.
 - .10 The **Department** shall mean the County of Grande Prairie No. 1, Transportation and Utilities, as represented by the General Manager of Transportation and Utilities and includes persons authorized by the

General Manager to perform, on its behalf, any of its functions under the Contract or Servicing Agreement.

- .11 The **Engineer** refers to the General Manager of Transportation and Utilities, or other persons authorized by the General Manager, authorized to enforce the design and construction standards and specifications, review and approve design submissions, reports, proposals, and engineering drawings. In addition, when applicable, the Engineer refers to the individual authorized by the County to enforce conditions of Servicing Agreements in relation to land development servicing proposals and designs of municipal improvements under the terms of a Servicing Agreement between the County and a Developer(s).
- .12 The **FAC**, or **Final Acceptance Certificate**, means a document signed and sealed by the Project Manager, certifying that a municipal improvement has been constructed and maintained in accordance with the approved Drawings and the terms and conditions of the Contract or Servicing Agreement, and authorizes the transfer of responsibility for the municipal improvement to the County.
- .13 **Major Lien Fund** shall mean the County shall retain an amount equal to 10% of the Work actually done and materials actually furnished for a period of 60 days from the date of issue of a certificate of Substantial Performance of the Contract.
- .14 **Minor Lien Fund** shall mean once the Substantial Performance has been reached and until the Construction Completion Certificate has been issued, the Owner shall retain an amount equal to 10% of the Work actually done and materials actually furnished for a period of 60 days from the date of issue of the Construction Completion Certificate.
- .15 The **Minister** shall mean the individual holding the position of General Manager of Transportation and Utilities for the County of Grande Prairie No. 1
- .16 The **Owner** shall mean the County of Grande Prairie No. 1 as represented by the General Manager of Transportation and Utilities.
- .17 **Plans** or **Drawings** means all plans, drawings, or reproductions thereof, provided to the Contractor or Developer by the Engineer, Consultant, or Project Manager, as applicable, and pertaining to the Project.
- .18 **Project** means the County's or Developer's project for which the Work is required.
- .19 The **Project Manager (PM)** refers to the County employee responsible for the oversight and management of a project. The PM has overall accountability for the project. They are responsible for managing the design and/or construction of a County-led project in accordance with all policies, standards and specifications. Note that where PM is referenced as responsible in this document, it is understood that many of these activities may be delegated to an appropriate designated party such as an external Consultant, Developer, Contractor or some other internal resource.

- .20 The **Prime Contractor** refers to the person, partnership, company, or group of persons who, through a contract with the County, or a Servicing Agreement, undertakes all or part of the Work and holds additional obligations related to occupational health and safety.
- .21 **Quality Assurance Laboratory** is any qualified laboratory designated by the County to perform quality assurance testing and inspection to determine acceptability of the Contractor's work and materials.
- .22 **Quality Control** is a program of testing and inspection that will ensure or prove conformance of the Contractor's mix designs, products and workmanship to specified requirements. The Contractor is responsible for implementing this program. The Contractor may engage a Qualified Laboratory to perform quality control or may use their own facilities subject to acceptance by the Project Manager.
- .23 **Qualified Laboratory** shall mean any of the firms that have been pre-qualified for Quality Assurance testing by Alberta Transportation and Economic Corridors, or any other qualified laboratory designated by the County to perform quality assurance testing and inspection to determine acceptability of the Contractor's work and materials.
- .24 The **Reviewing Agencies** refer to the departments or groups within the County that review and approve Developer's Drawings and include the following:
- .1 Parks and Recreation
 - .2 Planning and Development Services
 - .3 Transportation and Utilities
 - .4 Aquatera Utilities Inc.
- .25 The **Servicing Agreement** refers to a contractual agreement between one or more Developers and the County, which specifies the contractual obligations and the terms and conditions for the construction and warranty of municipal improvements necessary to service lands approved for development.
- .26 **Specifications** means, the Special Provisions, Specification Amendments, Supplemental Specifications and all specifications, tables, directions, schedules, and requirements contained or referenced therein, pertaining to the method and manner of performing the Work, and/or to the quantities or quality of material to be provided under the Contract or Servicing Agreement.
- .27 **Substantial Performance**, for the purposes of lien fund release, Substantial Performance is defined as:
- .1 when the work under the contract is ready for use or is being used for the purpose intended, and
 - .2 when the work to be done under the contract is capable of completion or correction at a cost of not more than

- .1 3% of the first \$500,000 of the contract price
- .2 2% of the next \$500,000 of the contract price
- .3 1% of the balance of the contract
- .3 This Substantial Performance definition shall be used for lien funds and their subsequent release and shall not be tied to the Conditional Construction Completion Certificate, Construction Completion Certificate, Warranty or Deficiencies.
- .28 The **Substantial Performance Certificate** or SPC, is a document signed and sealed by the Project Manager, within their professionally permitted scope of work, certifying that the municipal improvement has been substantially completed in accordance with the Drawings, Plans, and Specifications and has been accepted in accordance with the terms and conditions of the Contract or Servicing Agreement, as applicable.
- .29 The **Work** means all of the labour, materials, equipment, tools and incidentals required to be provided by the Contractor to complete and perform its obligations in accordance with the Contract or Servicing Agreement.

1.5 Amendments to Alberta Transportation and Economic Corridors (TEC's) General Specifications, Edition 16-2019

- .1 For the purposes of interpretation of the County's Design and Construction Standards the following General Specifications are added or amended, and shall apply throughout all Volumes of the County's Design and Construction Standards:
 - .1 Hierarchy of Documents - TEC's General Specification Section 1.2.1.2 shall be replaced with the following:
 - .1 Hierarchy of Documents
 - In the event of discrepancies in the Specifications or Plans or both, the hierarchy of documents in descending order is as follows:
 - .1 The Contract between the Owner and the Contractor
 - .2 Special Provisions of the Contract
 - .3 Project specific construction Drawings
 - .4 Instructions to Bidders
 - .5 The latest edition of the County of Grande Prairie No. 1 Construction Specifications Volume 2 through Volume 8 inclusive.
 - .6 The latest edition of the County of Grande Prairie No. 1 Construction Specifications Volume 1- General Specifications and Amendments.

- .7 Standard detail drawings produced by the County of Grande Prairie No. 1 and/or Aquatera.
 - .8 The latest edition of Aquatera Utilities Inc. Standards and Guidelines.
 - .9 Standard detail drawings and construction plans produced by Alberta Transportation and Economic Corridors.
 - .10 The latest edition of Alberta Transportation and Economic Corridor's General Specifications for Highway and Bridge Construction
 - .11 The latest editions of Alberta Transportation and Economic Corridor's Standard Specifications for Highway Construction and Specifications for Bridge Construction Construction manuals.
- .2 In the event of a difference between scaled dimensions on Plans or Drawings and the figures written thereon, the figures govern. In the event that two or more Plans or Drawings show conflicting information, the information on the most recently dated governs.
- .3 Any technical and manufacturer's standard, referred to in the Tender documents is a reference to the version current at the time the Tender closes.
- .2 Insurance - TEC's General Specification Section 1.2.4 is amended as follows:
 - .1 Sub-section 1.2.4(i) is modified to read: "General Liability Insurance in an amount not less than five million dollars (\$5,000,000) inclusive per occurrence".
 - .2 Sub-section 1.2.4(i) is amended to include both the Owner and the Consultant as additional insured for this project.
- .3 Quantity Variations - TEC's General Specification Section 1.2.6.3 is amended as follows
 - .1 Delete the contents of Section 1.2.6.3 in its entirety.
- .4 Pre-Construction Meeting - TEC's General Specification Section 1.2.8.1 is amended as follows:
 - .1 Delete the contents of Section 1.2.8.1 and replace with:
 - .1 Prior to the Contractor's mobilization to the Site, the Contractor must attend a pre-construction meeting that will be conducted by the Consultant. The Contractor must notify the Consultant when he plans to commence the Work so a pre-construction meeting can be scheduled.
 - .2 The Contractor must provide a list of all planned sub-contractors for the Project and identify which ones he believes should attend the meeting. The Consultant may review the list and may require the Contractor to ensure

certain key sub-contractors attend. In addition to the sub-contractors, the Contractor must ensure that its project supervisor and its designated safety and traffic representatives are in attendance.

- .3 The Contractor shall not mobilize to Site until after the Contract is executed and the County has indicated it has received and is satisfied with all requested documents. The Contractor is responsible for ensuring requested documents are provided and understands that the County will not authorize mobilization to the Site if all requested documents have not been received by the County. The Contractor acknowledges and agrees that it cannot make a claim for any costs, delays, additional time or completion date adjustments, or damages associated with its delay or failure to submit all requested documents and not being authorized to mobilize to Site.

- .5 Contractor's Responsibility For and Control of the Work - TEC's General Specification Section 1.2.10.1 is amended as follows:

- .1 Add the following paragraph to Section 1.2.10.1 General:

- v) The Contractor shall be responsible for maintaining, on an ongoing basis, such site conditions that provide sufficient drainage of surface water and prevent water from accumulating on the grade surface. The Contractor shall be under duty of care to ensure that weather forecasts be taken into consideration when planning the work and necessary changes are made to the construction schedule depending on the weather conditions at the time of construction.

- .2 Add the following Section 1.2.10.5 Protection of Legal Survey Markers and Pins

- .1 The Contractor shall ensure that his forces and those of all subcontractors shall be under a duty to use due care to ensure legal survey pins and/or marker posts are protected from damage during the prosecution of the Work. The Contractor shall, at his own expense, make provisions as necessary to avoid any such damage, The Contractor agrees to hold harmless the County of Grande Prairie No.1, its Consultant, their employees and agents from any and all third party claims, demands or actions which may result from damages to legal survey pins and markers. The Contractor shall also be financially liable to compensate the County of Grande Prairie No.1 for all costs required to replace/reset affected survey markers and posts. The costs for this work shall be deducted from the monies due to the Contractor under this contract.

- .6 Produced Sand and Contaminated Soils - TEC's General Specification Section 1.2.16.4.4 is amended as follows
 - .1 Delete the contents of Section 1.2.16.4.4, and replace it with:
 - .1 Produced Sand and Contaminated Soils
 - .1 Produced Sand (oilfield waste sand) or any other contaminated soils as defined in Provincial Legislation are prohibited from use as a stand-alone or component material in any or all phases of construction on projects including grading, base course, paving and bridge work.
- .7 Notice of Claims Information - TEC's General Specification Section 1.2.24 is amended as follows:

Delete the entirety of Section 1.2.24 and replace with:

 - .1 Notice and Payment of Claim
 - .1 WorkThe Public Works Act does not apply. This Section replaces all references and means the same as "Public Works Act", "Section 14(2)", "Public Works Act claims" and/or any other reference to the Public Works Act Notice of Claim processes.
 - .2 The Contractor shall post, at its project field office or other conspicuous location accessible to employees, subcontractors, truckers, material suppliers, etcetera, copies of the following:
 - .1 Standard Claim Form
 - .2 Labor and Material Bond
 - .3 This Specification Amendment (Notice of Claim)
 - .4 The notice entitled "Notice to Claimants"
 - .3 Which must be protected and maintained in a legible condition for the duration of the project.
 - .4 Copies of these documents, except the Labor and Material Bond, will be provided to the successful bidder prior to execution of the Contract.
 - .2 Notice of Claim
 - .1 When:
 - .1 a person provides labour, equipment, material or services used or reasonably required for use in the performance of a contract with the County for the construction, alteration, demolition, repair or maintenance of a public work, and
 - .2 that person is not paid by the party who is legally obliged to pay that person,

- .3 that person may send a notice of that person's claim to the County, or agent of the County that is responsible for the public work at:

County of Grande Prairie No. 1
Attn: General Manager, Transportation and Utilities
10001 – 84th Avenue Clairmont, AB
T8X 5B2
(780) 532-9722

- .2 In the case of a claim arising out of the performance of a contract entered into by the County for work on a highway or road as defined in Section 16 of Division 2 of the Municipal Government Act, the notice of claim must:

- .1 be sent by registered mail not later than 60 days after the last day on which the labour, equipment, material or services were provided, and

- .2 set out the nature and amount of the claim in a form satisfactory to the Crown.

- .3 The notice of claim, other than for a claim referred to in subsection (1.3.6.2.2), must:

- .1 be sent by registered mail not later than 60 days after the last day on which the labour, equipment, material or services were provided, and

- .2 set out the nature and amount of the claim in a form satisfactory to the County.

.3 Payment of Claim

In this section, "Surety" means a person who guarantees to the County the payment of creditors.

- .1 Thirty days after giving notice in writing to the Contractor and Surety, the County may pay the claimant the amount the County considers proper and deduct the amount so paid from any money due and payable to the Contractor on any account or from the money or security, if any, deposited by the Contractor with the County.

- .2 If there is insufficient money due and payable to the Contractor to permit the deduction, the Surety, if any, shall to the extent of the security, pay to the County on demand an amount equal to the amount paid to the claimant by the County.

- .3 In paying a claim under subsection 1.3.6.3.1, the County may act on any evidence that it considers sufficient and may compromise any disputed liability, and as against the County payment is not open to dispute or question by the

contractor or the surety, if any, but is final and binding on them.

- .4 Instead of paying the claimant as provided in this section, the County may apply to the Court of King's Bench to pay the money into Court on the terms and conditions, if any, determined by the Court and, on the money being paid into Court, the Court may determine the persons who are entitled to the money and direct payment of the money in accordance with that determination.

.4 List of Creditors

- .1 The County may, in writing, require a Contractor or any of the Contractor's subcontractors to send to it by registered mail within 15 days from the date of the mailing of the demand, a list of the names of and the amounts owing to the Contractor's or subcontractor's creditors for labour, equipment, materials or services used or reasonably required for use in the performance of a Contract or the subcontract, as the case may be.

.8 Failure to Complete On-Time - TEC's General Specification Section 1.2.40 is amended as follows:

Delete the contents of Section 1.2.40 and replace with:

- .1 If any Work remains incomplete after the specified Contract completion date, there will be deducted from money due the Contractor, the cost to the Owner of any work and material reasonably expended by the Owner which has been made necessary by reason of the Contractor's failure to complete the Work by the date specified in the Contract and without in any way limiting the generality of the foregoing, shall include:

.1 Liquidated Damages

- .1 The Contractor agrees to provide to the Owner, in compensation for reputational damages arising from delay, a stipulated sum per day for each and every day beyond the specified completion date that the Work remains uncompleted, regardless of actual loss or damages, and in accordance with the following terms:

- .1 The sum of \$3,000.00 per day for each calendar day until, in the opinion of the Consultant, the project is ready for the Construction Completion Inspection. This daily rate will be reduced to \$300.00 per day in situations where the Work to be completed is only minor cleanup, in the opinion of the Consultant.

- .2 Once it has been established that the project is ready for the Construction Completion Inspection, the assessment of Liquidated Damages for delay will totally cease. The Contractor will not be assessed liquidated damages for delay for the time spent correcting any deficiencies identified during the Construction Completion Inspection.
 - .3 Regardless of the daily rate charged, for all Contracts other than bridge only, there will be no liquidated damages for delay assessed during the time period between December 1 and April 30 of the following year.
 - .4 There will be no liquidated damages for delay assessed for days lost due to inclement weather or conditions resulting from inclement weather, that occur after the specified or adjusted completion date.
 - .2 Actual Loss or Damages
 - .1 In addition to the daily stipulated sum for Liquidated Damages, as set out above, the Contractor agrees to provide to the Owner, the actual loss or damages suffered by the Owner for each and every day beyond the specified completion date that the Work remains uncompleted for the following items:
 - .1 The additional cost of maintenance and repairs necessary;
 - .2 The cost of accommodating traffic over, through or around portions of the Work.
 - .2 The Owner will deduct assessed amounts from payments due on this Contract. If there are insufficient funds to cover the assessed amounts, the Owner will invoice the Contractor. The Contractor shall promptly pay the amounts invoiced. Should any amounts remain unpaid after 60 days from the date of invoice, the Owner may recover such unpaid sum from any money due to the Contractor from the Owner on any Contract or account, rendering an accounting to the Contractor for any sums so recovered.
- .9 Payment and Holdback - TEC's General Specification Section 1.2.46 is amended as follows:

Delete the contents of Section 1.2.46.1 and Section 1.2.46.2 and replace with:

.1 Prompt Payment

- .1 The total payment made to the Contractor in accordance with the Contract is full compensation for the Work completed and in place, including the providing of all labour, materials, equipment, tools and incidentals necessary to complete the Project as well as any and all expenses incurred by reason of any cause whatsoever, except as otherwise provided herein.
- .2 The Contractor will prepare a proper invoice at least every 31 days. The Consultant and Owner will review the proper invoice within 14 days and notify the Contractor if there are any disputes. If no disputes are present, the Contractor will be paid within 28 calendar days of the proper invoice. If the Consultant or Owner dispute the proper invoice, a notice of dispute will be issued detailing all the reasons for non-payment of the proper invoice.
- .3 All dispute resolution regarding Payment shall be as per the Alberta Prompt Payment and Construction Lien Act.
- .4 The Contractor shall abide by all condition of the Alberta Prompt Payment and Construction Lien Act.

.2 Lien Fund

- .1 Lien Fund and Holdback shall mean the same thing in this Contract. The Owner shall retain Lien Funds (Major and Minor) as per the Alberta Prompt Payment and Construction Lien Act.

.10 Claims and Dispute Resolution - TEC's General Specification Section 1.2.57 is amended as follows:

Delete the contents of Section 1.2.57.1.2 and 1.2.57.2 and replace with:

.1 Resolution of Claims

- .1 Where the Owner (or their Representative) or the Contractor considers that a Claim has arisen under the Contract, the Owner (or their Representative) or the Contractor shall issue a Notice of Claim to the other party.
- .2 A Notice of Claim shall be in writing and shall state the details of the claim. A Notice of Claim issued by the Contractor to the Owner pursuant to this Contract shall be served to the Consultant.
- .3 A Notice of Claim shall be served as soon as possible after the occurrence of the circumstance giving rise to the Claim and not later than seven (7) days after the occurrence of the circumstance, or the claimant becoming aware of the circumstance. Failure to serve a Notice of Claim within the

prescribed time period will preclude the claimant from proceeding with the Claim.

- .4 The Parties shall make bona fide efforts to resolve a claim and the Work shall proceed without delay during the claims resolution process. This shall include both parties actively participating in the resolution of the claim, neither of whom may delegate the resolution of the claim to another party. Attempts to resolve claims shall sequentially follow the administrative review structure as follows:

.1 Consultant - Project Manager / Area Manager / Regional Manager

.2 The General Manager of Transportation and Utilities for the County of Grande Prairie No. 1.

- .5 If there is failure to reach agreement through this administrative review, either party may proceed to litigation either with or without the agreement of the other party.

- .11 Truck Weight Scales - TEC's General Specification Section 1.2.51 is amended as follows:

Delete the contents of paragraph 8 ("The Consultant will provide a scale person...") and replace with:

- .1 The Contractor shall provide the Consultant with unaltered digital records of the scale operation. This record must include the Date, Project Identifier, Truck Number, Tare Weight, Gross Weight, and Time of Scaling/Loading for each load. The Consultant may provide a scale person at the Contractors weigh scales at any time.

- .12 Diesel Fuel Cost Adjustment - TEC's General Specification Section 1.2.58 is amended as follows:

- .1 AMC_C230 and/or General Specification 1.2.58 shall not be applicable to this project.

End of Section

SECTION 101 – INSPECTION AND TESTING

PART 1 GENERAL

1.1 Definitions

- .1 Quality Control (QC):
 - .1 The process of checking specific product or service results to determine if they comply with relevant quality standards and identifying ways to eliminate causes of unsatisfactory product or service performance.
 - .2 Quality Control is the Contractor's responsibility.
- .2 Quality Assurance (QA):
 - .1 The process of evaluating overall product or service, by persons or companies independent of those doing the Work, on a regular basis to provide confidence that the product or service satisfies the relevant quality standards.
 - .2 The County of Grande Prairie No. 1, or its designated representative is responsible for Quality Assurance.

1.2 Description

- .1 The tests and inspections required by the Contract Documents are for the County's benefit. Acceptable test and inspection results will not relieve the Contractor of its obligations under the Contract to correct defects or deficiencies in the Work.
- .2 The County may reject Work completed prior to a failed Quality Assurance test if there are not satisfactory QC tests indicating that the Work is satisfactory.
- .3 All Quality Control test results must be made available to the Consultant within 24-hours of the sampling.
- .4 The Contractor shall, as part of the Work perform or cause to be performed, all tests; inspections and approvals of the Work as required by the Contract Documents. If a test, inspection or approval requires a representative sample of materials or workmanship the Contractor shall at the Contractor's own cost supply the labour and materials necessary to provide the sample.
- .5 If any portion of the Work is designated for special tests, inspections or approvals, either as a requirement in the Contract Documents, or by the Contract Administrator's instructions, or by the laws or regulations applicable at the place of the Work, then:
 - .1 if the Consultant is to perform or arrange for the test, inspection or approval, the Contractor shall give the Consultant timely notice requesting such test, inspection or approval; and
 - .2 if other authorities are to perform the test, inspection or approval, the Contractor shall arrange for such test, inspection or approval and shall

-
- give the Consultant timely notice of the date and time for such test, inspection or approval.
- .6 The Contractor will comply with any orders or directions given by the Consultant pursuant to Alberta Transportation and Economic Corridors General Specification 1.2.31.1 – Orders of the Consultant, for inspection or testing that was not called for in the Contract Documents, and have such inspection or testing undertaken.
- .1 If the Consultant orders that such inspection or testing, that was not called for in the Contract Documents, be carried out in advance of the Work then the order shall be treated as a Change.
- .2 If the Consultant orders that such inspection or testing, that was not called for in the Contract Documents, be carried out on Work that is completed then the following applies: if the inspection or testing determines that the Work is not in accordance with the requirements of the Contract Documents, then the Contractor shall correct such Work and pay the costs of the inspection and testing and all costs of the correction and the restoration; if the inspection or testing determines that the Work is in accordance with the requirements of the Contract Documents, then the Owner shall pay all costs of the inspection and testing and the restoration.
- .7 If the Contractor disagrees with the Consultant's determination of the Work not meeting the Specifications based on the results of inspection or testing required in the Contract Documents or ordered by the Consultant, the Contractor may elect to carry out such further inspection or testing which the Consultant agrees is acceptable for the purpose of determining whether the Work complies with the requirements of the Contract Documents.
- .1 If such further inspection or testing determines that the Work is not in accordance with the requirements of the Contract Documents, then the Contractor shall correct such Work and pay the costs of the inspection and testing including all costs of the correction and subsequent inspection and testing.
- .2 If such further inspection or testing determines that the Work is in accordance with the requirements of the Contract Documents, then the Owner shall pay all costs of the inspection and testing.
- .8 If the Contractor covers or permits to be covered Work that has been designated for tests, inspections or approvals, before such tests, inspections or approvals are made, given or completed, the Consultant may direct the Contractor to uncover such Work, in order that the inspections or tests may be satisfactorily completed, and make good such Work at the Contractor's own expense, and the Contractor shall comply with such direction.
- .9 The Contractor shall promptly provide the Consultant with two (2) copies of all certificates, inspection and testing reports required by the Contract Documents or ordered by the Consultant.
- .10 The Contractor shall not undertake any Work outside the Consultant's normal working hours, as specified in the Contract Documents (if so specified), which under the Contract Documents requires tests, inspection, or approval by the Consultant unless the Contractor obtains the Consultant's prior approval. The

Contractor may be required to reimburse the Owner for any additional costs incurred to provide tests, inspections or approvals outside such specified working hours.

1.3 Rejected Work

- .1 If for any reason, including poor workmanship, defective products or materials, and damage to completed Work, the Consultant rejects Work because it fails to conform to the Contract Documents, then the Contractor shall at the Contractor's expense promptly remove such Work from the Place of the Work and replace or re-execute it in accordance with the requirements of the Contract Documents. Such remedial work shall include any re-testing reasonably required to establish that the completed Work complies with the Contract Documents. This provision applies to all materials, products and portions of the Work whether or not incorporated into the Work as a whole.
- .2 The Contractor shall promptly make good, at the Contractor's expense, any work by others that is destroyed or damaged by the Contractor's removals or replacements.
- .3 If, in the opinion of the Consultant, it is not expedient to correct such defective work or work not performed in accordance with the Contract Documents, then the Consultant may direct that such work be left and the Owner may deduct from the monies otherwise due to the Contractor the difference in value to the Owner, considering the Owner's intended use of the Work, between the work as performed and that called for by the Contract Documents. The amount of such deduction will be determined in the first instance by the Consultant. If such amount as determined by the Consultant is not acceptable to either party then the provisions of Alberta Transportation and Economic Corridors General Specification 1.2.57 – Claims and Dispute Resolution shall apply.

1.4 Test Procedures

- .1 Specification / Standard Legend
 - .1 CSA - Canadian Standards Association
 - .2 ASTM - American Society for Testing and Materials
 - .3 ATT - Alberta Transportation Tests
 - .4 TLT - Transportation Laboratory Testing
- .2 Subgrade and Earthworks
 - .1 Standard Proctor includes:
 - .1 Sampling
 - .2 Moisture-Density Relationship (ASTM D698)
 - .3 In-situ Moisture Content
 - .4 Calculations and Reports
 - .5 Classifications of Soil (ASTM D2487)
 - .2 Embankment Densities include:

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- .1 Density by Nuclear Method (ASTM D6938)
 - .2 Moisture Content by Nuclear Method (ASTM D6938)
 - .3 Calculations and Reports
 - .3 Subgrade Densities include:
 - .1 Density by Nuclear Method (ASTM D6938)
 - .2 Moisture Content by Nuclear Method (ASTM D6938)
 - .3 Calculations and Reports
 - .4 Trench Backfill Densities include:
 - .1 Density by Nuclear Method (ASTM D6938)
 - .2 Moisture Content by Nuclear Method (ASTM D6938)
 - .3 Calculations and Reports
 - .5 Topsoil Testing includes:
 - .1 Clubroot Testing
 - .1 DNA testing for clubroot shall be done at an accredited laboratory
 - .2 Clubroot testing is required prior to construction when topsoil is being stripped or stocked-piled on site.
 - .3 Clubroot testing is required when topsoil is being imported, and prior to its arrival on site.
 - .4 Testing must be completed in accordance with the Clubroot Soil Sampling on the Prairies Protocol. Results must be submitted for review by the Consultant.
 - .3 Concrete Testing
 - .1 Concrete Tests
 - .1 Sampling Plastic Concrete (CSA A23:1:19 / CSA A23:2:19)
 - .2 Slump and Slump Flow of Concrete (CSA A23:1:19 / CSA A23:2:19)
 - .3 Air Content of Plastic Concrete by the Pressure Method (CSA A23:1:19 / CSA A23:2:19)
 - .4 Making and Curing Concrete Compression and Flexural Test Specimens (CSA A23:1:19 / CSA A23:2:19)
 - .5 Capping Concrete Test Specimens (ASTM C617)
 - .6 Compressive Strength of Cylindrical Concrete Specimens (CSA A23:1:19 / CSA A23:2:19)
 - .7 Reporting (CSA A23:1:19 / CSA A23:2:19)
 - .4 Granular Base Materials

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- .1 Supply of Granular Materials includes:
 - .1 Sampling (ASTM D75)
 - .2 Sieve Analysis on Supplied Aggregate (ASTM C136, C117)
 - .3 Moisture Content of Aggregate (ASTM C566)
 - .4 Atterberg-Limits Liquid Limit, Plastic Limit and Plasticity Index of Soils (ASTM D4318-17E1)
 - .5 Crushed Faces (ASTM D5821-13)
 - .6 Calculations and Reports
 - .2 Standard Proctor includes:
 - .1 Sampling (ASTM D75)
 - .2 Moisture-Density Relationship (ASTM D698)
 - .3 Moisture Content of Aggregate (ASTM C566)
 - .4 Calculations and Reports
 - .3 Density Testing includes:
 - .1 Density by Nuclear Method (ASTM D6938)
 - .2 Moisture Content by Nuclear Method (ASTM D6938)
 - .3 Calculations and Reports
 - .4 Density Control
 - .1 The test will be in accordance with ATT 58.
 - .5 Hot Mix Asphaltic Concrete
 - .1 Supply of Aggregate Production includes:
 - .1 Sieve Analysis (ASTM C136, C117)
 - .2 Moisture Content
 - .3 Crushed Faces (ASTM D5821-13)
 - .4 Sand Equivalency (ASTM D2419)
 - .5 Los Angeles Abrasion (CSA A23.2 16A or 17A)
 - .6 Calculations and Reports
 - .2 Supply of Mineral Filler (ASTM D546, D242)
 - .3 Supply of Asphalt Binder includes:
 - .1 Absolute Viscosity (ASTM D2171)
 - .2 Kinematics Viscosity (ASTM D2170)
 - .3 Penetration (ASTM D5)
 - .4 Flash Point (ASTM D92)
 - .5 Ductility (ASTM D113)

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- .6 Thin Film Oven Test (ASTM D1754)
 - .7 Solubility in Trichloroethylene (ASTM D2042)
 - .4 Marshall Stability Test includes:
 - .1 Sampling (ASTM D979)
 - .2 Preparation of 3 Marshall Specimens (ASTM D6926-16)
 - .3 Marshall Stability and Flow of Bituminous Mixtures (ASTM D6927) Each Mold
 - .4 Unit weight (ASTM D1188 or D2726) Each Mold
 - .5 Extraction (ASTM D2172) or Ignition Asphalt Content (ASTM D6307, ATT 74)
 - .6 Sieve Analysis Extracted Material (ASTM C136-06) (ASTM C117-17)
 - .7 Air Voids by Calculation
 - .8 Voids in mineral aggregate (VMA) calculation
 - .9 Bitumen Content
 - .10 Asphalt Film Thickness calculation (TLT 311)
 - .11 Reporting
 - .5 Superpave Gyratory Compactor (SGC) Hot Mix Asphalt Test includes:
 - .1 Sampling
 - .2 Mix bulk specific gravity, average of two SGC specimens.
 - .3 Asphalt cement content, reported to two significant digits
 - .4 Maximum theoretical density (MTD) of loose mix
 - .5 Gradation of extracted mix
 - .6 Air voids by calculation and by MTD
 - .7 Voids in mineral aggregate (VMA) calculation
 - .8 Voids filled with asphalt cement (VFA)
 - .9 Film thickness calculation
 - .10 Sample time and location
 - .11 Reporting
 - .6 Asphaltic Concrete Density includes:
 - .1 Unit weight (ASTM D2726, D1188)
 - .2 Compaction Calculation Lift
 - .3 Air Voids Calculation
 - .4 Thickness Determination (mm)

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- .5 Reporting
 - .7 Coring includes:
 - .1 Coring and sampling asphaltic concrete including technician time. Note: 1 coring unit = 100 mm of core diameter x 1 mm depth
 - .6 Supply of Cold Mix Asphaltic Concrete
 - .1 Supply of Aggregate Production includes:
 - .1 Sieve Analysis (ASTM C136, C117)
 - .2 Los Angeles Abrasion (CSA A23.2 16A or 17A)
 - .3 Crushed Faces (ASTM D5821-13)
 - .4 Atterberg Limits - Liquid Limit, Plastic Limit and Plasticity Index of Soils (ASTM D4318-17E1)
 - .5 Moisture Content
 - .2 Supply of Asphalt Binder includes:
 - .1 Flash Point (Tag open cup) (ASTM D3143)
 - .2 Viscosity, Kinematics (ASTM D2170)
 - .3 Distillation (ASTM D402)
 - .3 Marshall Stability Test includes:
 - .1 Sampling (ASTM D979)
 - .2 Preparation of 3 Marshall Specimens (ASTM D6926-16)
 - .3 Marshall Stability and Flow of Bituminous Mixtures (ASTM D6927) Each Mold
 - .4 Unit weight (ASTM D1188 or D2726) Each Mold
 - .5 Extraction (ASTM D2172) or Ignition Asphalt Content (ASTM D6307, ATT 74)
 - .6 Sieve Analysis Extracted Material (ASTM C136-06) (ASTM C117-17)
 - .7 Air Voids by Calculation
 - .8 Voids in mineral aggregate (VMA) Calculation
 - .9 Bitumen Content
 - .10 Reporting
 - .4 Asphaltic Concrete Density includes:
 - .1 Unit weight by Nuclear Method (ASTM D6938)
 - .2 Compaction Calculation
 - .3 Air Voids Calculation

- .4 Calculations and Reports
- .5 Coring includes:
 - .1 Coring and sampling asphaltic concrete including technician time. Note: 1 coring unit = 100 mm of core diameter x 1 mm depth
- .6 Mix Design
 - .1 Cold Mix Design:
 - .1 Mix design shall include all labour, testing and material required to provide the data based on the County's design criteria. All material sampling shall be conducted by the mix design consultant.
 - .2 Liquid asphalt shall be as per indicated by the County.
 - .3 The mix design shall follow the Marshall method mix design as outlined in the latest edition of procedure TLT 302 or TLT 303 as appropriate.
- .7 Density Control
 - .1 The test will be in accordance with ATT 58.

1.5 Frequency of Testing

- .1 The following specifies the minimum testing requirements. Where failures occur, additional testing may be required by the Consultant at the Contractor's expense. In the event of a conflict of the testing frequency state herein and the testing frequency specified in the technical Specifications, the more stringent testing frequency shall apply.
 - .1 Test Zone and Material
 - .1 Subgrade:
 - .1 Minimum of one density test for every 1000 m² of compacted subgrade.
 - .2 Subgrade Standard Proctor Test is to be performed as required for relationship to field densities.
 - .2 Embankment
 - .1 Minimum of one density test for every 2000 m² compacted layers of fill.
 - .2 Standard Proctor Test to be performed as required for relationship to field densities.
 - .3 Pipe Zone and Trenching
 - .1 Pipe Bedding:
 - .1 A minimum of one density test within the initial lift of pipe zone bedding for every 100 lineal meters of trench.

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- .2 Standard Proctor Tests on the pipe zone material shall be performed as required for relationship to field densities.
 - .2 Trenching:
 - .1 A minimum of one density test for every 0.5m of depth of trench per 100m in length of trench.
 - .2 Standard Proctor Tests on the trench backfill material shall be performed as required for relationship to field densities.
 - .2 Concrete Curb, Gutter, Walk, Median Crossings
 - .1 Minimum of one test each of strength, slump, and air content for not less than every 60m³ of each class of concrete placed, but not less than one each day concrete is poured.
 - .3 Granular Base Materials
 - .1 Supply
 - .1 Minimum of one test each of gradation, moisture content, crushed faces for every 1000 tonnes, but not less than one for each day's production. Plasticity index for every 15000 tonnes, but not less than one for each material source.
 - .2 Granular Base Course Proctor and Density
 - .1 Minimum of one density for every 2000m² for grid road or highway projects, or 1000m² for urban roads, country residential or hamlets of compacted 150mm lifts of gravel or sand.
 - .2 Standard Proctor Tests to be performed as required for relationship to field densities.
 - .4 Hot Mix Asphaltic Concrete
 - .1 Aggregate production will be tested for gradation and crushed faces and sand equivalency at a rate of not less than one test per 15000 tonnes of aggregate.
 - .2 Los Angeles Abrasion and coating and stripping, and sand equivalency at a rate of one per each material source.
 - .3 The asphaltic binder, for each asphalt type, shall be tested for all the requirements as specified in Alberta Transportation and Economic Corridors Standard Specifications for Highway Construction Section 5.7.3 – Sampling and Testing.
 - .4 Mineral filler shall be tested for grain size at least once for each 5000 tonnes of mix produced.
 - .5 One Marshall Stability Test, one extraction test and sieve analysis of extracted material to be carried out on the Asphaltic Plant mix for each 1000 tonnes of production, but not less than one each day of production.
 - .6 One density and thickness recorded for each 1000 m² for urban residential roads or for each 2000 m² for all other roads.

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- .5 Cold Mix Asphaltic Concrete
 - .1 Minimum of one test each of gradation, moisture content, crushed faces for every 1,000 tonnes, but not less than one for each day's production.
 - .2 Plasticity index for every 15,000 tonnes, but not less than one for each material source.
 - .3 Asphalt binder, for each asphalt type, shall be tested for all the requirements as specified in Alberta Transportation and Economic Corridors Standard Specifications for Highway Construction Section 5.7.3 – Sampling and Testing.
 - .4 Two tests for residual asphalt content, air voids, stability and flow shall be conducted for each full day of production.
 - .5 When required, one density and thickness recorded for each 2,000 m² of \
 - .6 Soil Cement
 - .1 When requested, the Contractor shall conduct testing during the production and placement of soil cement or soils with cement added.
 - .2 Test Procedures
 - .1 Maximum Density (Standard Proctor)
 - .1 Maximum density as used in this article is the dry unit mass of sample at optimum moisture content as determined in the laboratory according to ASTM D558 Method B.
 - .2 Representative Tests (Density)
 - .1 A field density test, representing not more than 1000 m² of soil cement, will be taken according to ASTM D6938/D6938 for comparison with a maximum density determined according to ASTM D558 Method B. If a tested density fails, 2 more tests will be taken from the same area and the average of the 3 tests represents that area.
 - .3 Compressive Strength
 - .1 Test Procedure:
 - .1 Samples of soil cement are taken at plant or at jobsite;
 - .2 Specimens are molded on site or in the laboratory into 101.6 mm diameter by 116.4 mm height cylinders using the comp active effort specified in ASTM D558 Method B;
 - .3 Specimens are cured for 7 days to ASTM D1632:9.1;
 - .4 After 7 days curing, specimens are tested for compressive strength to ASTM D1633 Method A.

.3 Frequency of Testing

- .1 At least once strength test will be taken per 500 tonnes of mix or one days production, whichever is less.

PART 2 MATERIALS

2.1 No modifications

PART 3 CONSTRUCTION

3.1 No Modifications

PART 4 MEASUREMENT AND PAYMENT

4.1 Measurement and Payment.

- .1 Inspection and Testing will be considered incidental to the Work and no separate or additional payment will be made.

End of Section

SECTION 105 - CONSTRUCTION TOLERANCES ON GRADING AND BASE COURSE PROJECTS**PART 1 GENERAL****1.1 Construction Tolerances**

- .1 The finished surfaces constructed under this Contract are subject to tolerances for elevation, slope and width. The tolerances shall apply to the following:
 - .1 the finished subgrade surface;
 - .2 the finished surface of granular base course, cement stabilized base course, and asphalt stabilized base course, and;
 - .3 embankment sideslope and ditches.
- .2 All surfaces shall be built true to grade, cross-section and alignment with consistent, uniformly contoured surfaces. Furthermore, the finished roadway grade, alignment and widths shall tie neatly into fixed control points such as bridge abutments, railway crossings, grade intersections, etc. to the satisfaction of the Consultant.

1.2 Tolerances for Grading, and Base Course Work

- .1 The Contractor shall produce all finished surfaces to achieve or exceed the grade, slope and width tolerance limits as follows:
 - .1 Surface Tolerance at Base Line Stations
 - .1 The deviation of the finished surface from the corresponding design elevation will be determined by the Consultant at each station. The maximum allowable deviation from the design elevation at any point will be ± 30 mm for subgrade surfaces and ± 20 mm for base course surfaces.
 - .2 Furthermore, the maximum difference in deviation between consecutive stations at the same offset, shall not be more than 30 mm for subgrade surfaces and 20 mm for any type of base course surface.
 - .2 Slope Tolerance Limits
 - .1 The Consultant will determine the roadway slope using the elevations at centerline and edge of shoulder at any location on the finished surface that he determines necessary. These measured slopes shall be considered slope reference lines.
 - .2 For projects consisting of combined grading/granular base course Work, base course Work only, the slope reference line at any location on a finished surface shall not deviate from the design slope by more than 0.25%.
 - .3 For projects consisting of grading Work only, the slope reference line at any location on a finished surface shall not deviate from the design slope by more than 0.5%.

- .4 Furthermore, for all types of Work, no point on the surface shall deviate in elevation by more than 15 mm from the slope reference line as determined.
- .3 Surface Width Tolerance Limits
 - .1 The finished surface, as measured from shoulder edge to shoulder edge, shall not be wider by more than 0.1 m or narrower by more than 0.05 m from the design width as determined by the Consultant.
- .4 Road Sideslope Tolerance Limits
 - .1 At any location, no part of any finished side slope shall deviate from the design side slope by more than ± 0.2 m/m.
- .5 Road Ditch Width Tolerance Limits
 - .1 At any location, the ditch width shall not deviate by more than 0.2 m from the design or as approved by the Consultant.
 - .2 The tolerance limits for road sideslope and road ditch width only apply when the Contract calls for grading Work.

PART 2 MATERIALS

2.1 No modifications

PART 3 CONSTRUCTION

3.1 No Modifications

PART 4 MEASUREMENT AND PAYMENT

4.1 Measurement and Payment

- .1 The Consultant will take as many measurements as he thinks necessary to establish compliance with this specification and may vary the general interval, particularly where the finished surface is evidently not plane between stations or across the travel lanes. The County will make no charge for initial measurements.
- .2 Where compliance with surface tolerance requirements is not initially achieved, reworking will be required. After the surfaces are reworked, the Consultant will determine if re-measuring to confirm compliance is required. If the Consultant performs re-measure and the surfaces are not in compliance, the Contractor will be charged an amount of \$500.00 per occurrence and further reworking shall be required. An "occurrence" will be considered a day or portion of a day in which re-measuring to verify compliance is performed. If the Consultant performs re-measure and the reworked surfaces are compliant, no charge will be made for the re-measure.

- .3 For granular base course Work, no payment will be made for any granular material placed outside the specified tolerance limits for surface width and road sideslope, with the exception that for grade widening projects where there is a need to initially construct the granular base course to a width that will accommodate construction equipment, the Consultant and Contractor shall agree on the allowable tolerances for construction and payment purposes.
- .4 In any cases where granular base course material is placed outside the specified or allowable tolerances, such quantity will be determined by the Consultant.

End of Section