City of Kamloops

AMENDMENTS TO THE MASTER MUNICIPAL CONSTRUCTION DOCUMENTS (MMDC) - 2009

Revision Date: March 17, 2014

City of Kamloops Amendments

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*Indicates as approved by MMCDA Board.

IT* 4S** (2011-08-04)** **Delete** portion of clause: "Additional…" **Replace** with: "Supplemental…".

IT 5.3.2S **Delete** clause

IT 10.1.4S **Add** new clause:

Any note included on the drawings which are not included in this schedule of quantities and prices shall be incidental to the work.

IT 15.2S **Delete** and **Replace** with:

Tenderers will not be permitted to alter or amend the tendered prices included in a tender after the *Tender Closing Time*.

Prior to issuance of a *Notice of Award*, if the lowest compliant bid exceeds the *Owner's* budget for the Work, the *Owner* reserves the right to follow the following course of action:

(a) Where the amount by which the *Tender Price* exceeds the Owner's budget for the work by up to 15% of the lowest compliant bid, the *Owner* may negotiate with the lowest compliant bidder (only) to identify changes in the scope or quality of the *Work* that would result in a *Tender Price* reduction to the satisfaction of the Owner.

(b) Where the *Owner* and lowest compliant bidder can agree on acceptable changes and a corresponding *Tender Price* reduction, such changes will be documented in the *Contract*.

(c) Where the *Owner* and the lowest compliant bidder cannot agree on changes that would result in a *Tender Price* reduction to the satisfaction of the *Owner*, then the *Owner* may proceed under Paragraph 15.1 of the Instructions to Tenderers – Part II.

IT* 17.1S** (2011-08-04)** **Delete** portion of clause: "…GC 1.41…" **Replace** with: "…GC 1.48…".

CITY OF KAMLOOPS AMENDMENTS
Amendments to General Conditions:

B. SUPPLEMENTARY GENERAL CONDITIONS TO THE MMCD VOLUME II (2009 EDITION) specific to the City of Kamloops, including those approved by MMCDA Board as of March 17, 2014.

*Indicates as approved by MMCDA Board.

Concordance and Index (2010-03-25)*

Add:

Gold Edition Specification 02100 is now in the User Guide at Section 2 – 4.2.4.4

***GC* 1.30S** (2011-08-04)*

Delete clause

***GC* 1.76.1S**

Delete portion of clause: "…15%…". **Replace** with: "…20%…".

***GC* 1.79S**

"List of Approved Products and Materials" means the list of products prepared by the City of Kamloops Engineering Division and published on the City's website (http://www.kamloops.ca/development/mmcd.shtml) or the same as may be amended from time to time; plus those products that have the specific written approval of the Engineering Manager.

***GC* 2.2.4(i)S** (2010-03-25)*

Delete and **Replace** with:

(i) Standard Detail Drawings

GC 2.2.4.(5)S

Add new clause:

Where the City of Kamloops has listed a standard detail drawing as either a "supplemental" or "deleted", as noted on the City of Kamloops standard detail drawing list published on the City's website (http://www.kamloops.ca/development/mmcd.shtml), it is the replacement or deletion of the standard MMCD detail drawing. Any reference in the standard specifications to a detail drawing shall therefore reference the applicable supplementary or deleted detail drawing, without the explicit revision of each specification.

***GC* 3.4.5S** (2009-11-19)*

Delete portion of clause: "… in GC 4.12.3.". **Replace** with: "… in GC 4.12.6."

GC 4.2.2S

Add new clause:

The *Contractor* must ensure that the site is left/maintained in a state of condition that is deemed safe by the *Contract Administrator/Site Inspector* during and after working hours. This includes delineation of pathways/*Work* zone by fencing, signage, etc.

GC 4.2.3S

Add new clause:

The safety and security of the public is at the utmost importance to the City of

Kamloops. As such, the *Contractor* must employ the necessary staff and provide the necessary equipment to ensure that no person, animal or vehicle is at risk of injury.

GC 4.3.1.1S **Add** new clause:

The *Contractor* must ensure that they protect all existing infrastructure including existing trees, irrigation, staging areas, overhead wires and third party infrastructure etc. from equipment and will be responsible for any costs associated with repairs and/or replacement.

GC 4.3.1.2S **Add** new clause:

The *Contractor* will be responsible for ensuring that there is no damage caused to existing buildings, including but not limited to concrete foundations, as a result of their compactive efforts. There will be no relaxation of specifications to accommodate this. In addition, the *Contractor*, at their cost*,* is responsible to employ the necessary personnel, provide equipment, take photographs/video etc to ensure that they are prepared to settle any claims.

GC 4.3.1.3S **Add** new clause:

The *Contractor* must maintain safe pedestrian access on all streets within the *Place of the Work* for the duration of the *Work*.

GC 4.3.1.4S **Add** new clause:

At *Total Completion* of the *Work,* the *Contractor* must leave the *Place of the Work* in a safe condition which includes protection to the public from possible open landscape excavations and/or tripping hazards, and must be acceptable to the *Site Inspector*.

***GC* 4.3.4S** **Delete** and **Replace** with:

Before commencing any *Work* at the *Place of the Work*, the *Contractor* shall be responsible to locate in three dimensions all underground utilities and structures indicated on the *Contract Documents* as being at the *Place of the Work*. The *Contractor* shall also be responsible to consult with all utility corporations that provide electricity, communication, gas or other utility services in the area of the *Place of the Work*, to locate in three dimensions all underground utilities for which they have records. The *Contractor* shall also locate in three dimensions any other utilities or underground structures that are reasonably apparent in an inspection of the *Place of the Work*.

***GC* 4.6.1S** **Append** to clause:

The *Baseline Construction Schedule* shall identify the Activities, and time-line portion of the relevant Activities, that lie on the Critical Path for construction. The Critical Path Activities are the sequential Activities that define the minimum schedule length.

GC* 4.6.2S** (2010-03-25)** **Delete** portion of clause: "…without limitation a if the… "

Replace with: "…without limitation if the… "

GC* 4.6.6S** (2010-03-25)** **Delete**: "…14 days". **Replace** with: "…10 days"

GC* 4.7.1S** (2013-06-13)** **Delete** and **Replace** with:

The *Contractor* shall employ a competent senior representative at the *Place of the Work* (the "*Superintendent*") who shall have the responsibility to ensure that the *Work* is performed in compliance with the *Contract Documents.* Unless otherwise permitted in writing by the *Owner,* the *Superintendent* shall be the person whose experience was submitted in Appendix 3 of the *Tender.* The *Contractor* shall also employ necessary assistants for the *Superintendent* and the *Superintendent* and assistants shall be in attendance at the *Place of the Work* while *Work* is being performed.

***GC* 4.7.4S** **Add** sub-section:

Demonstration of Gold Seal Certification (or internship) will be required by the Prime *Contractor* for *Superintendents* on all City of Kamloops construction projects exceeding $1 million Engineer's estimated values, or where the degree of difficulty warrants the need.

***GC* 4.9.3S** **Add** sub-section:

The *Contractor* will be required to provide documentation to the *Contract Administrator* (prior to installation), that verifies that all materials and products purchased for this *Contract* comply with the City of Kamloops' List of Approved Products and Materials.

GC* 7.1.3S** (2011-08-04)** (2009-11-19)***** **Delete** portion of clause: "… (a) and **(**c**)** of GC 7.1.1 is extra *Work*"

Replace with: "… (a) and **(**b**)** of GC 7.1.1(1) is extra *Work*"

***GC* 7.3.3S** **Delete** and **Replace** with:

The *Contractor* shall not be entitled to receive payment for any *Work* the *Contractor* claims as a *Change* if the *Work* was done, in part or in whole, without a prior approved *Change Order* or *Field Memo* identifying any adjustments to the *Contract Price* or *Contract Time*, except as allowed under GEN 7.3.5.

***GC* 9.2.4S** **Delete** portion of clause,

"...unless at the time of the agreement the *Contractor* expressly reserved in writing the right to claim for additional payment or *Contract Time* adjustment."

***GC* 9.4.1S** **Delete** portion of clause: "…under *GC* 7.1.1.a) or *GC* 7.1.1.b)"

Replace with: "…under *GC* 7.1.1.1) or *GC* 7.1.1.2)"

***GC* 9.4.2(2)S** **Delete** portion of clause: "…quantity GC 9.4.3 b)"

Replace with: "…quantity GC 9.4.3 (2)"

***GC*10.1.1(4)S** (2012-08-07)* **Delete** portion of clause: "subparagraphs (a), (b) and (c) of this GC,"

Replace with: "subparagraphs (1), (2) and (3) of this GC,"

GC* 12.2.2S** (2010-03-25)** **Delete** portion of clause: "…*GC* 12.2.1.(a).". **Replace** with: "…*GC* 12.2.1.1."

***GC*13.9.1(1)S** (2012-05-30)* **Delete** portion of clause: "$500.00". **Replace** with: "$1000.00".

***GC* 13.9.1S** **Delete** portion of clause: "(a) and (b)". **Replace** with: "(1) and (2)".

***GC*17.5.2(2)S** (2012-08-07)* **Delete** portion of clause: "by GC 17.5.2.a),". **Replace** with: "by GC 17.5.2.1,"

***GC* 18.1.1S** **Change** clause to read:

At the end of each calendar month, the *Contractor* shall submit a written request for payment to the *Contract Administrator*. The application shall include a digital copy of the schedule of quantities indicating completed *Work* and any documentation required to support the claimed quantities.

Within 10 *Days* of receipt of the required information, the *Contract Administrator* shall prepare and issue a certificate (the "*Payment Certificate*") for the period ending the last calendar day of the month.

***GC* 18.2.2S** (2013-06-18)* **Change** clause to read:

If requested in writing by the *Contract Administrator* the *Contractor* shall as a precondition to the issuance of the *Payment Certificate* provide a sworn declaration in a form set out in Schedule 18.2.2 to these GC's or such other form as the *Contractor* may request and the *Contract Administrator* may accept, that as of the date set out in the sworn declaration all amounts which have been incurred directly by the *Contractor* relating to the *Work* that are due and owing to third parties have been paid.

***GC* 18.4.2S** **Delete** and **Replace** with:

Defects and Deficiencies: In addition to other holdbacks as provided by the *Contract Documents*, when considering *Substantial Performance*, the *Owner*

may hold back from payments otherwise due to the *Contractor* 300% of a reasonable estimate, as determined by the *Contract Administrator*, on account of deficient or defective *Work*, regardless if such *Work* has been already paid for or not. This holdback may be held, without interest, until issuance of a *Total Performance* Certificate. The items of defect or deficiency and the amounts of related holdback shall be listed separately on the *Payment Certificate*.

***GC* 18.4.3S** **Delete** and **Replace** with:
Incomplete *Work*: In addition to other holdbacks as provided by the *Contract Documents*, when considering *Substantial Performance*, for incomplete *Work*:

(1) the *Contractor* is unable to complete because of conditions beyond the *Contractor*'s reasonable control, as determined by the *Contract Administrator*, then the *Owner* may hold back from payments otherwise due to the *Contractor* the cost as estimated by the *Contract Administrator* to have others complete such *Work*.

(2) the *Contractor* is able to complete, as determined by the *Contract Administrator*, then the *Owner* may hold back from payments otherwise due to the *Contractor* 300% of a reasonable estimate, as determined by the *Contract Administrator*, on account of incomplete *Work*.

This holdback may be held until issuance of a *Total Performance* Certificate. The items of incomplete *Work* and the amounts of related holdback shall be listed separately on the *Payment Certificate*.

***GC* 18.5.1S** **Change** clause to read:

The net amount shown for payment on a *Payment Certificate* shall be due and payable to the *Contractor* within 21 *Days* after receipt of the *Payment Certificate* from the *Contract Administrator*.

***GC* 18.6.3(1)S** **Change** clause to read:
(2013-06-18)*

a sworn declaration in a form in accordance with GC 18.2.2; and;

***GC* 22.1.2 S** **Add** subsection:

For the purpose of this paragraph "claim" or "claims" shall mean those claims for damages or loss resulting from the performance of the *Work* under the *Contract* and made against the City and/or the *Contractor* by persons not involved in the performance of the *Work*, e.g. property *Owner*s, pedestrians, and motorists.

The *Contractor* shall, upon receiving notice of a claim, respond promptly in a respectful manner to the claimant and notify the City of Kamloops of the particulars of the claim. Within thirty (30) days after receiving notice of a claim the *Contractor* will make its best efforts to settle the claim and, if unsuccessful, the City of Kamloops may then appoint an independent adjuster to investigate the claim.

The City of Kamloops will make its best efforts to settle any claims not settled within thirty (30) days by the *Contractor* based on the independent adjuster's report. All costs of the settlement and the adjuster are to be paid by the *Contractor* and may be taken by the City of Kamloops from monies due the *Contractor*.

Prior to the release of holdback monies, the *Contractor* and the *Contract Administrator* will confirm to the City of Kamloops that there are no unresolved claims remaining and, if they are unable to do so, then the City of Kamloops will be entitled to retain monies it deems sufficient to pay for claims and any associated costs, including legal costs on a solicitor client basis, from the holdback amount.

This section does not apply to a claim for which the *Contractor* has insurance, provided the defence of such claims has been undertaken by the *Contractor*'s insurer for both the *Contractor* and the City of Kamloops in a manner which will result in no costs to the City of Kamloops.

***GC* 24.1S** **Delete** and **Replace** with:

24.1.1. Liability Insurance

.1 This policy shall cover the risks of liability for Bodily Injury, Death or Property damage arising from the activities at the *Site*. It shall be written in the name of the *Owner*, *Contractor*, *Subcontractors*, Architects, Engineers, *Contract Administrator*, Consultants, and Subconsultants engaged on the *Work*. It shall provide a limit of liability in the amount of not less than five million dollars ($5,000,000).

The policy deductible is the responsibility of the *Contractor*.

The *Contractor* shall **indemnify** and **save harmless** the *Owner* from any and all third party claims that may arise from the *Contractor*s operations under the *Contract* resulting in bodily injury, death, or property damage.

.2 To comply with these specifications the *Contractor* has two options:

Option 1 Commercial General Liability Insurance:

The *Contractor* must supply the *Owner* with a Certificate of Insurance in the amount of not less than five million dollars ($5,000,000) as per 24.1.1. (above).

The *Contractor* must also ensure that the Commercial General Liability Insurance policies, the *Contractor* and his *Subcontractor* provides, includes the *Owner* as an Additional Insured.

The *Contractor* will be responsible to the *Owner* to guarantee to the *Owner* that each *Subcontractor* hired by the *Contractor* carries Commercial General Liability Insurance subject to inclusive limits of not less than two

million dollars ($2,000,000) for bodily injury, death, or property damage. The *Contractor* will obtain for the benefit of the *Owner*, certificates of insurance from each *Subcontractor's* Broker or Insurer.

The *Contractor* must include the *Owner* as an Additional Insured under the Commercial General Liability insurance policy they provide and must also ensure the *Owner* is included as an additional insured under each of the *Subcontractor* Commercial General Liability Insurance policies.

Option 2 Wrap Up Liability Insurance:

The insurance shall be issued in the name of the *Owner* and the *Contractor*. The insurance shall also insure as Unnamed Insureds, the *Owner*, the Engineering Consultants of the *Owner*, and their *Subcontractors* who perform a part or parts of the *Work*, but excluding suppliers whose only function is to supply and/or transport products to the project *Site*.

.3 The insurance shall preclude subrogation claims by the insurer against anyone insured by the liability policy(ies).

The Commercial General Liability or Wrap Up Liability Insurance shall include coverage for:

a) Premises and operations liability.
b) Broad form products and/or completed operations liability extending for a two (2) year period after completion and acceptance by the City.
c) Blanket *Contract*ual liability.
d) Cross liability.
e) Occurrence property damage.
f) Hoist liability, if applicable to the *Work*.
g) Contingent employer's liability.
h) Personal injury liability arising out of false arrest, detention, or imprisonment or malicious prosecution, libel, slander, defamation of character, invasion of privacy, wrongful eviction, wrongful entry, or discrimination.
i) Shoring, blasting, excavating, underpinning, demolition pile driving and caisson *Work*, *Work* below ground surface, tunnelling, and grading, where such *Work* is required.
j) Liability with respect to non-owned licensed vehicles.
k) Contingent *Contractor*s Protective Liability.
l) Broad form loss of use.
m) Loss of use without property damage.
n) Employees as additional insureds.
o) Sudden and accidental pollution – 240 hour reporting.
p) Medical payments.
q) Fire fighting expenses.

24.1.2 All Risk Builders Risk Insurance

The policy deductible is the responsibility of the *Contractor*.

If agreed to by the *Owner* and the *Contractor* this coverage may not be required for underground *Work* such as the installation of water mains, sanitary sewer mains, storm sewer mains, installation of road works and sidewalks. Whether the *Contractor* purchases this insurance or not the *Contractor* will still be responsible for any loss or damage to materials or supplies.
Unless otherwise agreed to by the *Owner*, the *Contractor* will provide and maintain "All Risks" property insurance insuring the full replacement value of the *Work*. The full replacement value of the property to be provided by the *Contractor* for incorporation into the *Work*. The insurance shall be issued in the name of the *Contractor* and the *Owner*, and as unnamed insureds *Subcontractor*, and all others having an insurable interest in the *Work*.

Insurance provided is to insure against "All Risks" of physical loss or damage and be issued on a broad form "All Risks" builders risk policy to apply to:

a) All products and supplies of any nature whatsoever, the property of the Insureds or of others for which the Insureds may have assumed responsibility, to be used in or pertaining to the *Site* preparation and demolition or existing structures, erections, and/or fabrication, and/or reconstruction, and/or repair of the *Work*, while on *Site* or in transit, subject to exclusions to be agreed to by the *Owner*.

b) The installation, testing, and any subsequent use of machinery and equipment including boilers, pressure vessels, or vessels under vacuum.

c) Damage to the *Work* caused by an accident to and/or the explosion of any boiler(s) or pressure vessel(s) or electrical equipment forming part of the *Work*

Such coverage shall exclude construction machinery, equipment, temporary structural and other temporary facilities, tools, and supplies used in the construction of the *Work* and which are not expendable under the *Contract*.

The insurance shall preclude subrogation claims by the insurer against anyone insured by the property insurance policy(s).
All such insurance shall be maintained continuously until ten (10) *Day*s after the date the *Contract Administrator* issues a *Certificate of Total Performance*. All such insurance will provide for the *Owner* to take occupancy of the *Work* or any part thereof during the term of the insurance.

The policies will provide that, in the event of a loss, payment for damages to the *Work* shall be made to the *Owner* and the *Contractor* as their respective interests may appear. The *Owner* will act on behalf of the *Contractor* and himself for the purpose of adjusting the amount of such loss with the Insurers. On determination of the extent of the loss, the *Contractor* shall immediately

proceed to restore the *Work* and shall be entitled to receive from the *Owner* (in addition to any sum due under the *Contract*), the amount for which the *Contractor*s interest in the restoration *Work* has been appraised, such amount to be paid as the *Work* of the restoration proceeds and in accordance with the *Contract Administrator*'s certificates for payment. Damage shall not affect the rights and obligations of either party under the *Contract* except that the *Contractor* shall be entitled to such reasonable extensions of time for Substantial and *Total Performance* of the *Work* as the *Contract Administrator* may decide.

24.1.3. Other Insurance

The *Contractor* shall provide Commercial General Liability Insurance for any *Work* relating to correction of defects or deficiencies which occur during the warranty period for a limit of no less than $5,000,000.

24.1.3.1. *Contractor*'s Equipment Insurance

This policy shall cover all *Contractor*s' tools and equipment used at the *Site* against "All Risks" of direct physical loss or damage including the perils of earthquake and flood subject to customary exclusions.

The *Contractor* shall require all *Subcontractor* engaged in the *Work* to purchase and maintain similar *Contractor*s' equipment insurance covering their tools and equipment used at the project *Site*.

All such *Contractor*s' Equipment Insurance policies shall contain a waiver of subrogation against the *Owner* and the *Contractor*, *Subcontractor*, Architect, Engineers, Consultants, and Sub-consultants engaged in the *Work*. Thirty (30) days prior written notice of cancellation or material *Change* adversely affecting this insurance to be given by the Insurers to the *Owner*.

24.1.3.2. Aircraft and/or Watercraft Liability Insurance, if used in the performance of the *Contract*.

The *Contractor* shall provide and maintain Public Liability and Property Damage insurance with respect to owned and non-owned aircraft and watercraft, as may be required, subject to inclusive limits of not less than two million dollars ($2,000,000). Said insurance shall be issued in the joint names of the *Contractor* and the *Owner* and as unnamed Insureds *Subcontractor*, the Engineering Consultants and any others required by the *Owner* to be added as additional unnamed Insureds.

24.1.3.3. Automobile Liability Insurance

The *Contractor*, *Subcontractor*, his agents, and employees shall provide and maintain Public Liability Property Damage Insurance in respect of owned licensed vehicles subject to inclusive limits of not less than two million dollars ($2,000,000).

24.1.4. Insurance Certificate and Insurance Questions

24.1.4.1 Construction Certificate of Insurance

Applicable to all policies except automobile liability insurance issued by the Insurance Corporation of British Columbia.

The *Contractor* shall promptly forward a Construction Certificate of Insurance containing insuring agreements acceptable to the City. Should the insurance policies under which the certificate is drawn expire during the term of this *Contract* or any extension or renewal thereof, the *Contractor* shall forward a renewal insurance certificate to the City thirty (30) days prior to the expiry of said insurance policies on a form satisfactory to the City.

The most current Construction Certificate of Insurance can be obtained from: (http://www.kamloops.ca/business/insurancecertificates.html)

24.1.4.2. Insurance Questions

Any questions regarding insurance requirements should be made to the City of Kamloops Risk Management/Insurance Section at 250-828-3417, 250-828-3315, fax 250-828-0845, or riskmanagement@kamloops.ca.

***GC* 25.1.1S**

Change sub-section to read:

The *Contractor* shall, at the *Contractor*'s own expense, promptly correct defects or deficiencies in the *Work* that appear prior to and during the period of two years from the date of the *Certificate of Substantial Performance*, or such longer periods as may be specified in the *Contract Documents* for certain products or *Work* (the "*Maintenance Period*").

Schedule 17.5.3S Letter Agreement with Referee

Add new schedule:

Added to General Conditions. Available for download at www.MMCD.net of Schedule 17.5.3.

Schedule 18.2.2S Form 15 – Statutory Declaration

Add new schedule:

Added to General Conditions. Available for download at www.MMCD.net of Schedule 18.2.2

CITY OF KAMLOOPS AMENDMENTS
Amendments to
Specifications:

C. City of Kamloops - New Supplementary Specifications

D. City of Kamloops - Specification Revisions and Supplementary Specifications

C. City of Kamloops New Supplementary Specifications

	TRAFFIC CONTROL DEVICES	SECTION 34 41 15S PAGE 1 2011

1.0 GENERAL

.1 Sign colour, shape, designation, size, installation, vertical and lateral placement shall conform to the most recent edition of the TAC Manual of Uniform Traffic Control Devices for Canada.

.2 Where the TAC manual is deficient the most recent edition of the BC MOT Manual of Standard Traffic Signs and Pavement Markings and other applicable BC MOT manuals may apply unless otherwise specified.

.3 Sign substrate and sheeting shall comply with the most recent BC MOT Catalogue of Standard Traffic Signs unless otherwise specified.

.4 Sign and support structure installation as well as related materials and fasteners shall comply with the most recent applicable BC MOT manual unless otherwise specified.

1.1 Measurement and Payment

.1 Supply and installation of traffic control devices will be paid as each unless shown otherwise in the *Schedule of Quantities and Prices.*

2.0 PRODUCTS

2.1 Sign Materials

.1 Pre-Cast Concrete Base for standard size traffic sign
300 mm diameter by 500 mm high cw insert 57mm OD by 610 mm long installed plumb with holes covered before inserting in wet concrete. Insert shall be installed at the bottom of the form with a 75 mm projection above the top of the pour.

.2 Standard Sign Pole
50 mm OD, 12 gauge, hot rolled steel, hot dipped galvanized square Telespar to comply with BC MOT specifications.

.3 Sign Sheeting
- .1 Construction signs - approved Type I
- .2 Pedestrian Signs – approved Type III

.4 Fasteners & Washers
1. Stainless steel banding and clips to be used in place of drilling and tapping vertical and horizontal pole structures.
2. Plated bolts and washers of appropriate diameter to fit snug for all metal to metal contact surfaces.
3. Non metal approved washers to be used between sheeting surfaces and fasteners.
4. Non corrosive vandal-proof rivets to be used within reach of pedestrians.

END OF SECTION

STORM DRAINAGE WATER RETENTION STRUCTURES (2011-08-08)*****	**SECTION 33 49 23S PAGE 1 2011**

1.0 GENERAL

.1 Section 33 49 23 refers to those portions of the work that are unique to the supply and installation of underground storm water infiltration / detention systems. Related appurtenances are included in other sections. This section must be referenced to and interpreted simultaneously with all other sections pertinent to the works described herein.

.2 All details of storm sewer facilities not specifically covered in this section to comply with CSA, ASTM and CGSB standards and/or manuals of practice as specified in Contract Documents.

1.1 RELATED WORK

.1	Temporary Facilities	Section 01 53 01
.2	Aggregates and Granular Materials	Section 31 05 17
.3	Excavating, Trenching and Backfilling	Section 31 23 01
.4	CCTV Inspection of Pipelines	Section 33 01 30.1
.5	Cleaning of Sewers	Section 33 01 30.2
.6	Pipe Culverts	Section 33 42 13
.7	Manholes and Catchbasins	Section 33 44 01

1.2 REFERENCES

.1 The abbreviated standard specifications for testing, materials, fabrication and supply, referred to herein, are fully described in Section 01 42 00 –Reference Specifications – Site Infrastructure.

1.3 SAMPLES

.1 Samples may be required.

1.4 MATERIAL CERTIFICATION

.1 Aggregate surrounding infiltration systems shall have a minimum void ratio of 40%.

.2 At least 14 days prior to commencing work, submit to Contract Administrator the material manufacturer's recent test data and certification that materials to be incorporated into works are representative and meet requirements of this Section. Include manufacturer's drawings where pertinent.

.3 Project specific shop drawings of the system components shall be sealed by a Professional Engineer registered in the Province of British Columbia. Shop drawing shall show general layout of the system and its structural design parameters such as assumed allowable bearing capacity and loadings.

1.5 SCHEDULING OF WORK

.1 Schedule work to minimize interruptions to existing services.

.2 Submit schedule of expected interruptions to Contract Administrator for approval and adhere to approved schedule.

1.6 MEASUREMENT AND PAYMENT

.1 Payment for underground storm water infiltration / detention system will be made separately for various sections of the system consistent with pipe materials and models, depths and backfill requirements shown on Contract Drawings and described under individual payment items in Schedule of Quantities and Prices. Measurement for the system will be made based on specified design storage volume installed or as specified in Contract Document.

.2 Payment for underground storm water infiltration / detention system includes saw cutting pavement, excavation, disposal of surplus excavated material, supply and installation of the system, fittings and related materials, bedding, surrounding aggregates, system access including connection to the distribution header, geotextile and if required impermeable liner, imported or native backfill as shown on Contract Drawings, cleaning, all surface restoration as specified under Excavating, Trenching and Backfilling Section 31 23 01 – Sub-section 3.6, except permanent pavement restoration, and all other work and materials necessary to complete installation as shown on Contract Drawings and specified under this Section.

.3 Payment for Inspection and Testing of underground storm water infiltration / detention systems shall be lump sum.

.4 Payment for flushing of underground storm water infiltration / detention systems shall be lump sum.

2.0 PRODUCTS

.1 Pipe culverts used for infiltration and detention purposes shall be referred to Section 33 42 13 – Pipe Culverts.

.2 All products shall withstand H-20 loading.

2.1 CONCRETE BOX CULVERT

.1 Concrete Box Culvert: to ASTM C1433-08

.2 End caps/walls: to ASTM C1433-08

.3 Box culverts to be manufactured in accordance to depth of fill tables specified in ASTM C1443-08 to suit site conditions.

.4 Box culvert lay lengths: Up to 2.44m, or as specified on Contract Drawings.

.5 Geotextile fabric to be used at joints.

.6 All concrete box culvert system shall incorporate at least one manhole access point to allow for inspection and maintenance.

.7 Manholes access tees and/or flow control structures including bases and lids: manufactured to CSA A257.4 and/or ASTM C478.

2.2 POLYPOPYLENE ARCHED CHAMBER, CORRUGATED WALL

.1 Raw materials and processes used in the manufacture of storm water chambers shall meet the requirements of ASTM F 2418 and CSA B184.

2.3 POLYETHYLENE ARCHED CHAMBER, CORRUGATED WALL

.1 Raw materials and processes used in the manufacture of storm water chambers shall meet the requirements of CSA B184.

2.4 CORRUGATED STEEL PIPE SYSTEM, CORRUGATED WALL

.1 Corrugated steel pipe to Section 33 42 13. Pipe material to be Galvanized Steel, Aluminized Type 2 Steel or Polymer Laminated Steel to CSA G401.

.2 Couplers shall be Hugger Band type couplers complete with o-ring gaskets to Section 33 40 01.

.3 Integral CSP manholes shall be detailed as per shop drawings. Pre-cast concrete manhole tops shall be designed such that the top bears on the surrounding backfill so that all live load is transmitted to the backfill zone adjacent to the CSP manhole riser.

.4 Steel plate bulkheads shall be fabricated from steel plate with continuously welded reinforcing steel members. Bulkheads shall be factory coated with 2 coats of zinc-rich paint as per CSA G401. Bulkheads shall be attached to the CSP pipe barrel with a continuous fillet weld.

2.5 POLYMERIC CUBIC STRUCTURE

.1 Cubic structure materials to be polypropylene copolymer (CPP) to ASTM D4101 and supporting columns to be poly vinyl chloride (PVC) to ASTM D1784.

.2 Module interactions: adjacent modules must be capable of transferring the applied side and vertical loads to adjacent modules through an assembly of modules.

2.6 GEOTEXTILE AND LINER

.1 Geotextile fabric used for separating bedding and surrounding aggregate from native soils and backfill shall be AASHTO M288 Class 2 non-woven geotextile.

.2 Impermeable liner used in detention system for separating bedding and surrounding aggregate from native soils and backfill shall be minimum 30 mil thick PVC or LLDPE liner.

2.7 GRANULAR CHAMBRE BEDDING AND SURROUND MATERIAL

.1 As shown on Contract Drawings.

.2 Refer to Section 31 05 17 - Aggregates and Granular Materials for material specifications.

.3 Approved Bedding and Surround Materials: 19mm or 40mm clear crushed gravels with a minimum porosity of 40% after installation.

2.8 BACKFILL MATERIAL

.1 As shown on Contract Drawings.

.2 Refer to Section 31 05 17 - Aggregates and Granular Materials for material specifications.

3.0 EXECUTION

3.1 GENERAL

.1 System bedding details, including granular surround and material specifications to be as shown on Contract Drawings, including Standard Detail Drawing G4.

.2 The component supplier’s representative shall beavailable to provide project start-up assistance and provide technical support. Should site conditions deviate from the sealed shop drawings during construction, the Contract Administrator shall be notified.

3.2 PREPARATION

.1 Carefully inspect materials for defects before installing. Remove defective materials from site. Clean system components of debris and water before installation.

3.3 EXCAVATION

.1 Excavate in accordance with Section 31 23 01 - Excavating, Trenching and Backfilling.

.2 System alignment and depth as shown on Contract Drawings.

3.4 GRANULAR BEDDING

.1 Fill over-excavation below design elevation of bottom of specified bedding with approved bedding and surround materials placed and compacted to 95% Modified Proctor Density. Drain rock may be used for backfill of over-excavation only with Contract Administrator's approval.

.2 Shape bed true to grade to provide continuous, uniform bearing surface for the system.

.3 Geotextile fabric shall be laid in accordance to the approved shop drawings.

.4 For detention systems using an impermeable liner, a subsequent manufacturer approved impermeable liner and geotextile fabric shall be placed on top of the initial fabric layer and secured per the manufacturer’s recommendations.

.5 Place granular bedding material in 150mm lifts across width of the excavation and compact to 95% Modified Proctor Density in compliance with ASTM D1557.

3.5 SYSTEM INSTALLATION

.1 Handle system components in accordance with manufacturer's recommendations.

.2 Lay and join system components in accordance to the manufacturer's instructions and specifications except as noted otherwise herein. Pipe culvert systems shall be installed in general compliance with Section 33 42 13 - Pipe Culverts.

.3 Lay system components on prepared bed, true to line and grade. Ensure section is in contact with shaped bed throughout its full length.

.4 Keep jointing materials and installed sections free of dirt, water and other foreign materials. Whenever work is stopped, install removable bulkhead at open end to prevent entry of water and foreign materials.

.5 Cut system component, as recommended by the manufacturer, without damaging unit.

3.6 SURROUND MATERIALS

.1 After assembling the system and the Contract Administrator has inspected work in place, place surrounding material in uniform layers not exceeding 150 mm compacted thickness simultaneously on both sides. Material can be placed directly over the assembled sections and allowed to build up equally on each side of the system, as long as care is taken to ensure assembled sections remain true to line and grade.

.2 Compact each layer from bedding to underside of backfill to minimum 95% Modified Proctor Density.

3.7 BACKFILL

.1 Place and compact backfill material in accordance with Section 31 23 01 - Excavating, Trenching and Backfilling.

.2 Backfill requirements, including type of material and compaction requirements, as shown on Contract Drawings, including Standard Detail Drawing G4.

3.8 INSPECTION

.1 Where specified, install inspection chamber at specified location, set plumb and to specified elevation as shown on Standard Detail Drawing S7 or Drawing S10 as applicable. If inspection chamber located in driveway, lane or paved surface install cover or lid as shown on Standard Detail Drawing S9 or Drawing S10 as applicable.

3.9 FLUSHING

.1 Flush completed system per Section 33 01 30.2 Cleaning of Sewers. Before flushing and testing, ensure infiltration / detention system is completely finished and make arrangements with Contract Administrator for scheduling of testing.

.2 Water may be supplied from Municipal fire hydrants upon application for a Hydrant Use Permit.

.3 Obtain municipal approval prior to discharging flushing water to municipal sewers or drainage ditches.

.4 Comply with General Conditions, Clause 20.4, Environmental Laws, in regard to discharge of flushing water.

.5 Provide Contract Administrator with all required approvals prior to discharging flushing water.

.6 Remove foreign material from assembled system and related appurtenances by flushing with water. System to be flushed at water velocities as high as can be obtained from available water sources. Continue flushing at least until flow from most distant point has reached discharge point and until water discharged is clean and clear.

3.10 TESTING

.1 Following installation of a system and prior to substantial completion, the completed installation shall be visibly inspected to ascertain the requirement for cleaning.

.2 Visual inspection shall consist of either physical manual inspection or CCTV camera which shall be submitted to the Contract Administrator for review.

.3 System shall be cleaned, if by Contract Administrator's determination, it is apparent that accumulated solids or siltation exceed acceptable limits which may impede the proper operation of the system design.

.4 Cleaning shall be done in accordance with manufacturer's recommended approved practices, owner's requirement and Contract Administrator's approval.

.5 After cleaning has been completed, a re-inspection may be required to insure effective removal of materials present.

.6 An operating manual, complete with recommended maintenance schedule shall be provided to the Owner and/or Contract Administrator with submission of design proposal.

3.11 INSTALLATION STANDARD

.1 Repair all deficiencies and visible leaks.

.2 Repair procedures and materials subject to approval of Contract Administrator.

.3 Contract Administrator reserves right to require Contractor to replace defective installations at Contractor's sole cost.

.4 Test procedures, including video inspection, to be repeated and repairs made until satisfactory results are obtained.

END OF SECTION

	SEGMENTAL CONCRETE WALL UNITS	**SECTION 03 50 01S** **PAGE 1** **2011**

1.0 GENERAL

.1 Section 03 50 01S refers to those portions of the *Work* that are unique to the supply and installation of segmental concrete wall units for retaining walls. This section must be referenced to and interpreted simultaneously with all other sections pertinent to the work described herein.

1.1 MEASUREMENT AND PAYMENT

.1 Payment for segmental concrete wall units for retaining walls includes all *Work* and incidentals, excavation, crush gravel base and backfill, hollow block fill as specified, wall drainage system as specified, geosynthetics as specified, and all backfill and compaction.

.2 Payment will be based on the total face area installed which includes the face area of the capstones as well as the face area of the block faces buried at the toe of the wall.

2.0 PRODUCTS

2.1 MATERIALS

.1 The City of Kamloops requires that all products incorporated into the segmental concrete wall unit must be recognized on the List of Approved Products and Materials.

END OF SECTION

D. City of Kamloops - Specification Revisions and Supplementary Specifications

SECTION	SUB SECTION	TITLE	SUPPLEMENTARY SPECIFICATION
01 33 01 Project Record Documents	1.4.7S	Format	**Append** to clause: *Drawings* shall be submitted in A1 size.
01 33 01 Project Record Documents	1.4.8S	Format	**Add** new clause: Upon completion of the project, the successful bidder will provide the City with field survey pickup, in a comma delimited ASCII file format.
01 33 01 Project Record Documents	1.7.1S	Recording Actual *Site* Conditions	**Append** to clause: The *Contractor* must have available for inspection by the *Contract Administrator* detailed records and locations of all concealed, or other, *Work* as it is completed.
01 33 01 Project Record Documents	1.7.5S	Recording Actual *Site* Conditions	**Append** to clause: In addition to all other requirements, the *Contractor* is required to provide survey as noted in the City of Kamloops Standard Survey Requirements, which is available on the City of Kamloops website (http://www.kamloops.ca/development/mmcd.shtml)
01 33 01 Project Record Documents	1.8.1S	Payment	**Delete** and **Replace** with**:** Payment for all *Work* performed under this Section shall be covered in the lump sum pricing in the *Schedule of Quantities and Prices*.
01 42 00 Reference Specifications	1.1.26S (2012-06-08)*	Nomenclature	**Delete** clause.
01 42 00 Reference Specifications	1.2.15S (2012-06-08)*	Referenced Specifications	**Delete** clauses: .1 CSA A3000 Portland Cement; .2 CSA A3000 Masonry Cement; .5 CAN/CSA-A23.5 Supplementary Cementing Materials; .10 CSA A3000 Blending Hydraulic Cement; .11 CSA A3000 Cementitious Hydraulic Slag.

01 42 00 Reference Specifications	1.2.18S (2012-06-08)*	Referenced Specifications	**Delete**: "CSA" **Replace** with: "**CSA A3000** Cementitious Materials Compendium"
01 55 00 Traffic Control, Vehicle Access and Parking	1.0.5S	General	**Delete** clause and **Replace** with: Inform all *Owner*s or occupants of properties where access is affected a minimum of 48 hours before the start of *Work*, unless directed otherwise in the *Contract Documents*.
01 55 00 Traffic Control, Vehicle Access and Parking	1.4.9.6S	Traffic Control	**Add** new clause: During non *Work* hours equipment shall not be parked on travelled areas and will be barricaded complete with flashing beacons around equipment when adequate lighting is not available.
01 55 00 Traffic Control, Vehicle Access and Parking	1.4.10.3S (2010-03-25)*****	Traffic Control	**Delete** clause and **Replace** with: When workmen or equipment are employed on travelled way over brow of hills, around sharp curves or at other locations where oncoming traffic would not otherwise have adequate warning.
01 55 00 Traffic Control, Vehicle Access and Parking	1.4.14S	Traffic Control	**Add** new clause: The *Contractor* must submit a detailed traffic control plan to the City of Kamloops Transportation Department, for approval, indicating all phases of lane closures with corresponding timelines a minimum two weeks prior to the start of the *Work*. There will be no additional payment made for any requirements made by the Transportation Department. Generally, the traffic control plan shall: • Identify the Proponent's Traffic Manager and state his/her qualifications, duties and responsibilities. As minimum requirements, the Proponent's Traffic Manager shall: ○ ensure compliance with the requirements of Part 18 of the WCB Occupational Health and Safety Regulation regarding supervision of traffic control persons at the work zone. ○ ensure that emergency traffic control operations are carried out in accordance with the Incident Response Plan. • identify hours of work, • identify the work zone location and direction and distance to nearest landmarks, • identify the size of the work zone, • identify lanes affected by the works,

			• identify lane configuration in the work zone,
			• indicate whether accesses or intersections will be affected by the work zone or by traffic control devices,
			• identify requirements for vehicle storage,
			• identify vehicle storage areas to meet requirements identified above (Note that on-street parking of equipment will be considered),
			• Provide a layout showing:
			  ○ the location of the work zone and,
			  ○ the location of vehicle storage areas.
			  ○ the location and nature of hazardous areas and mitigation measure to be implemented and,
			  ○ identify proposed traffic control by referencing the specific layout(s) contained in the Ministry of Transportation Traffic Control Manual (TCM) or by showing a custom traffic control layout(s) if layouts in the TCM are not applicable.
			• If required, custom traffic control layouts shall:
			  ○ show schematically the placement of all traffic control devices;
			  ○ place all traffic control devices in accordance with the standards contained in the TCM;
			  ○ follow symbol conventions for identifying traffic control devices as per the TCM and;
			  ○ have all dimensions and explanatory notes on the layout typed or hand printed.

01 55 00 Traffic Control, Vehicle Access and Parking	1.4.15S	Traffic Control	**Add** new clause: Traffic control to be maintained at all times by the *Contractor*, including weekends, and continually maintain traffic control devices in use by: • checking signs daily for legibility, damage, suitability and location. Clean, repair or replace to ensure clarity and reflectance; • removing or covering signs which do not apply to conditions existing each day
01 55 00 Traffic Control, Vehicle Access and Parking	1.4.16S	Traffic Control	**Add** new clause: The Contractor must maintain access to all parking lots and businesses throughout construction.

01 55 00
 	
Traffic Control, Vehicle Access and Parking
	1.4.17S	Traffic Control	**Add** new clause:
			The Contractor will be responsible for creating an incident response plan. This plan shall;
			• identify the type of traffic incidents that could occur in the work zone,
			• identify the Traffic Control Supervisor,
			• contain a contact list of emergency response agencies,
			• identify a procedure(s) to respond to a traffic incident that occurs within the
			• work zone,
			• identify a procedure(s) to inform and update the City of the following:
			  ○ incident occurrence,
			  ○ response measures taken,
			  ○ clearance measures required,
			  ○ estimated clearance time,
			  ○ incident clearance,
			• identify a procedure(s) to inform the travelling public of estimated duration and, if applicable, alternate routes and,
			• record details of the incident and report the incident to the City within 24 hours

01 55 00 Traffic Control, Vehicle Access and Parking	1.4.18S	Traffic Control	**Add** new clause: Traffic control to be maintained at all times by the *Contractor*, including weekends, and continually maintain traffic control devices in use by: • checking signs daily for legibility, damage, suitability and location. Clean, repair or replace to ensure clarity and reflectance; • removing or covering signs which do not apply to conditions existing each day.
01 57 01 Environmental Protection	1.2.2.2S (2010-03-25)*****	Temporary Erosion and Sediment Controls	**Append** to clause: "watercourses."

01 58 01 Project Identification	1.2.1S-.2S	Temporary Project Signage	**Delete** clauses and **Replace** with: .1 Construction Signage .1 Provide and erect, within 2 weeks of signing *Contract*, a project sign in a location designated by the *Contract Administrator*. .2 Construction sign shall be as shown on Supplemental Detail Drawing SG 12. .3 Maintain sign in good condition for duration of *Work*. Clean periodically. Deliver to City of Kamloops Public Works Yard after completion of project. .4 No other signs or advertisements, other than warning signs, are permitted on *Site*, unless approved by the *Contract Administrator*. .2 Public Notice .1 Advise residents and/or other parties within the affected area of planned construction activities and schedule a minimum of 48 hours before the start of the *Work*, unless directed otherwise in the *Contract Documents*. Coordinate with and obtain *Contract Administrator*'s approval before delivery or mailing of public notices.
03 30 20 Concrete Walks, Curbs, and Gutters	1.4.10S	Measurement and Payment	**Add** new clause: Payment for monolithic curb, gutter and sidewalk, either hand formed or machine placed shall be paid on a lineal metre basis as measured along centerline between the gutter and the back of sidewalk. Base materials as shown on Supplemental Detail Drawing SC1 shall be paid under items in Sections 32 11 23 and 32 11 16.1, Granular Base and Granular Sub-base, respectively.
03 30 20 Concrete Walks, Curbs, and Gutters	2.1.5.1S (2009-11-19)*****	Concrete Mixes and Materials	**Change** clause to read: Minimum cement content to read: 335 kg/m3
03 30 20 Concrete Walks, Curbs, and Gutters	2.1.5.2S	Concrete mixes and materials	**Change** clause to read: Air Entrainment to read: 5 to 8%. Maximum aggregate size to read: 20 mm minus
03 30 20 Concrete Walks, Curbs, and Gutters	3.9.1S	Expansion Joints	**Delete** clause and **Replace** with: Expansion joints shall be installed at all curb returns or driveway crossings, or as directed by the *Contract Administrator,* in non-monolithic sidewalks every ninth panel.

03 30 20 Concrete Walks, Curbs, and Gutters	3.12.3S	Finishing	**Delete** clause. No grooves or scoring is permitted. All concrete surfaces shall be brush or broom finished.
03 30 53 Cast-In-Place Concrete	2.1.1S (2012-06-08)*	Materials	**Delete**: "CAN/CSA-A5." **Replace** with: "CSA A3000."
03 30 53 Cast-In-Place Concrete	2.1.2S (2012-06-08)*	Materials	**Delete**: "CAN/CSA-A23.5." **Replace** with: "CSA A3000."
26 42 13 Cathodic Protection	1.9.2S-.6S	Inspection and Testing	**Delete** clauses and **Replace** with: .2 Conduct electrical resistance measurements across each bonded fitting/appurtenance prior to application of the protective coating on the welds. .3 Test DC current between the anodes and the metal components at each test station. .4 Test pipe-to-soil potential between the watermain components or service laterals and a portable copper/copper sulphate reference electrode at all test stations. Readings must satisfy NACE International Standard RP-01-69 (latest edition). .5 Supply all necessary instrument, meters, equipment and qualified personnel to make tests at test stations and wiring required under 3.0 of this Section. .6 Cathodic protection measurements should be obtained and confirmed prior to any road paving.
26 42 13 Cathodic Protection	2.2.3S	Thermite Welds	**Add** new clause: Thermite weld caps to be Royston Handy-Cap IP or approved equivalent.
26 42 13 Cathodic Protection	2.3.1S-.3S	Cables	**Delete** clauses and **Replace** with: .1 Single conductors to be stranded copper, type RWU75 XLPE insulated except as noted. .2 Size cables as follows: • Structure and test leads #10 AWG • Anode #10 AWG

<table>
<tr>
<td>26 42 13

Cathodic Protection</td>
<td>2.4.1S</td>
<td>Copper Sleeves</td>
<td>Delete clause and Replace with:

Copper sleeves for thermite welding #10 AWG cable to pipe/fittings to be CAB-133-1H.</td>
</tr>
<tr>
<td>26 42 13

Cathodic Protection</td>
<td>2.8.1S</td>
<td>Test Station Terminal</td>
<td>Delete clause and Replace with:

Test station terminal to be Cott Manufacturing Big Fink with 0.1-ohm Holloway Shunt, as per Supplemental Detail Drawing SW111 or approved equivalent.</td>
</tr>
<tr>
<td>26 42 13

Cathodic Protection</td>
<td>2.10.1S-.3S</td>
<td>Anodes</td>
<td>Delete clauses and Replace with:

.1 Use high-potential magnesium or high-purity zinc anodes with the following chemical composition.

<u>High-potential Magnesium</u>

<table>
<tr><th><u>Metal</u></th><th><u>Typical Composition (%)</u></th></tr>
<tr><td>Aluminum</td><td><0.01</td></tr>
<tr><td>Zinc</td><td><0.05</td></tr>
<tr><td>Manganese</td><td>0.5 – 1.3</td></tr>
<tr><td>Iron</td><td><0.03</td></tr>
<tr><td>Nickel</td><td><0.001</td></tr>
<tr><td>Copper</td><td><0.02</td></tr>
<tr><td>Other</td><td><0.05</td></tr>
<tr><td>Magnesium</td><td>Balance</td></tr>
</table>
<u>High-purity Zinc</u>

<table>
<tr><th><u>Metal</u></th><th><u>Typical Composition (%)</u></th></tr>
<tr><td>Iron</td><td>0.0014 Max</td></tr>
<tr><td>Lead</td><td>0.003 Max</td></tr>
<tr><td>Copper</td><td>0.002 Max</td></tr>
<tr><td>Cadmium</td><td>0.003 Max</td></tr>
<tr><td>Aluminum</td><td>0.005 Max</td></tr>
<tr><td>Zinc</td><td>Balance</td></tr>
</table>
.2 Package anodes in cardboard tubes with backfill composed of 75% gypsum, 20% bentonite, 5% sodium sulphate
.3 Provide #10 AWG RWU insulated stranded copper cable with each anode. The cable length to be sized to reach the test station or the fitting as required.</td>
</tr>
</table>

26 42 13 Cathodic Protection	2.12S	Pipe Clamps	**Add** new section. .1 Pipe clamps to be Thomas & Betts (T&B) 3903 waterpipe ground clamp or approved equivalent.
26 42 13 Cathodic Protection	3.1.1S-.2S	General	**Delete** clauses and **Replace** with: .1 All piping, fittings, hydrants, specials, service connections (up to property line) to be cathodically protected where required except for piping and reinforcing steel in concrete chambers that is electrically isolated from the cathodically protected components. .2 Pipe bedding details, including granular surround (pipe cushion) and material specifications to be as shown on *Contract Drawings*, including Supplemental Detail Drawing SG4. .3 Damage to cable insulation should be avoided and repairs made if damage occurs. .4 No test station required for cathodically protected service laterals. Install monitoring wire inside of curb box as shown on Supplemental Detail Drawing SW15.
26 42 13 Cathodic Protection	3.2.5S	Excavation, Trenching and Backfilling	**Add** new clause: Cables to be backfilled with rock-free native material or bedding
26 42 13 Cathodic Protection	3.3S	Pipe Electrical Isolation	**Delete** section.
26 42 13 Cathodic Protection	3.4S	Joint Continuity	**Delete** section.
26 42 13 Cathodic Protection	3.4S	Component Continuity	**Add** new section. .1 Where necessary attach two #10 AWG bond cables across each isolated fitting, valve or pipe at each test station location as shown on Supplemental Detail Drawing SW107.
26 42 13 Cathodic Protection	3.5S	Cable Connections	**Delete** section.

26 42 13 Cathodic Protection	3.5S	Cable Connections to Steel, Ductile Iron and Cast Iron	**Add** new section. .1 Thermite weld structure leads to the steel, ductile iron and cast iron watermain components as noted on Supplemental Detail Drawings SW111, SW107 and SW119. .2 The welder and weld charge to be sized appropriately for the size of cable and fitting/component type/thickness. .3 Thermite welds to be installed on clean, dry, bare components as per manufacturer's instructions and as shown on Supplemental Detail Drawing SW16. Thoroughly clean the surface to shiny metal using a file and metal brush or a grinder. .4 Strip the insulation for about 50-mm from the end of the cable being careful not to nick or otherwise damage the copper conductor. .5 Sleeve cables with copper sleeves and crimp the sleeves on the ends with a crimping tool. .6 After welding, remove the slag, wait for weld to cool, and apply weld cap to each weld as per the manufacturer's instructions. .7 Wrap cables around the fitting and fasten with a fibreglass reinforced packaging tape to the pipe to minimize strain on the thermite weld connections, as noted on Supplemental Detail Drawing SW107.
26 42 13 Cathodic Protection	3.6S	Uncoated Fittings	**Delete** section.
26 42 13 Cathodic Protection	3.6S	Cable Connections to Copper Pipe	**Add** new section. .1 Do not thermal weld onto copper pipe. Attach all cables to copper service laterals and standpipe copper pipe using a ground clamp. .2 Strip the insulation for about 50-mm from the end of the cable being careful not to nick or otherwise damage the copper conductor. .3 Crimp the structure leads under the ground clamp to the pipe and wrap cables around the pipe to prevent straining the cable connection as per Supplemental Detail Drawings SW15 and SW8.
26 42 13 Cathodic Protection	3.7.1S-.7S	Test Stations	**Delete** clauses and **Replace** with: .1 Locate test stations behind the curb face and/or sidewalk, or directly over the components as noted on the *Contract Drawings*. .2 Install test stations per Supplemental Detail Drawing

			sW104 and SW111. The cables to enter via a minimum 300-mm section of 75-mm RPVC, which supports the test station terminal. .3 All cables to be continuous from the watermain fittings/appurtenances and sacrificial anode to each test station without splicing. If splicing is required then use a heat shrink type connection. .4 Cables to have enough slack to allow terminal board removal to a minimum of 300-mm above valve box cover. .5 Place trench marker tape in trench excavations 300-mm above the structure and anode cables. .6 Test stations to be housed inside a traffic box as per Supplemental Detail Drawing SW111.
26 42 13 Cathodic Protection	3.8.1S-.4S	Anode Installation	**Delete** clauses and **Replace** with: .1 Install anodes at all locations noted on the Drawings. .2 Install anodes horizontally at pipe depth a minimum of 1-m from the components to be protected as noted on Supplemental Detail Drawings SW119, SW15 and SW111. .3 Perforate the anodes cardboard tube liberally and thoroughly wet with a minimum of 10-litres of water immediately prior to backfilling. .4 Backfill around the anode with rock-free native material unless otherwise specified. Backfill material to surround the anode a minimum 300-mm and be firmly compacted .5 Anode lead wire must be securely connected to the anode. Lead wire should be inspected for assurance that it is not damaged. .6 Care should be exercised during all operations so that lead wires and connections are not damaged. Sufficient slack should exist in lead wires to avoid strain.
26 42 13 Cathodic Protection	3.9S	Cable Extensions	**Add** new section. .1 All cables requiring extension should be spliced using a waterproof heat shrink and double wrapped with CSA approved electrical tape.
26 56 01 Roadway Lighting	1.4.1S	Electrical Energy Supply	**Append** to clause: Energy supply shall be 120/240 volt.
26 56 01 Roadway Lighting	1.6.2S	Permits and Tests	**Append** to clause: Forward Electrical Permits to City of Kamloops Electrical Department.

26 56 01 Roadway Lighting	2.4S	Plastic Junction Boxes	**Delete** section.
26 56 01 Roadway Lighting	2.17S	Extruded Aluminum Signs	**Delete** section and **Replace** with: .1 Refer to New City of Kamloops Supplementary Specification, Section 34 41 15 S.
26 56 01 Roadway Lighting	2.19S	Service Panels	**Add** new section. .1 Install service panels in accordance with Supplemental Detail Drawing SE7.6
26 56 01 Roadway Lighting	3.3.1S	Concrete Bases	**Delete** clause and **Replace** with: Install concrete bases in accordance with Section 03 30 53 – Cast-In-Place Concrete and as shown on Standard Detail Drawings CE1.8, CE1.9, CE1.13, SCE1.14 and Supplemental Detail Drawings SE1.1, SE1.2, SE1.4.
26 56 01 Roadway Lighting	3.3.4S	Concrete Bases	**Delete** clause and **Replace** with: Cast-in-place bases shall not be permitted. Round sonotube forms shall not be permitted.
26 56 01 Roadway Lighting	3.3.7S	Concrete Bases	**Add** new clause: Bases for Lumec decorative poles shall be 1.2 m deep for post top type and 1.5 m deep for davit type. These bases shall come with 19 mm diameter x 686 mm long anchor bolts. The bolt circle diameter shall be 240 mm. These bases shall come with 2 x 30 mm conduits.
26 56 01 Roadway Lighting	3.4.1S	Junction Boxes and Vaults	**Delete** clause and **Replace** with: Install junction boxes and vaults as shown on Standard Detail Drawings E2.2 to E2.6
26 56 01 Roadway Lighting	3.6.1S	Poles and Related Equipment	**Delete** clause and **Replace** with: Install poles and related equipment as shown on Supplemental Detail Drawings SE4.1, SE4.17 and SE4.18.

26 56 01 Roadway Lighting	3.7.2S	Electrical	**Delete** clause and **Replace** with: Mount electrical service panels in service base or on poles as shown on Standard Detail Drawings E7.2 to E7.4, E7.7, E7.8 and Supplemental Detail Drawing SE7.6.
26 56 01 Roadway Lighting	3.8.3S	Wiring	**Delete** clause and **Replace** with: Make conductor splices in pole handholes.
26 56 01 Roadway Lighting	3.8.10S	Wiring	**Delete** clause and **Replace** with: Completely cover multiple wire termination splice with Scotch 88 or 33. Completely cover 2 to 4 wire terminations with Scotch Kit DBR6.
26 56 01 Roadway Lighting	3.8.11S	Wiring	**Delete** clause and **Replace** with: Bond all steel junction box lids and vault lids with a No.8 RW90 conductor.
26 56 01 Roadway Lighting	3.9.1S	Pole Mounted Receptacles	**Append** to clause: Receptacle to be 15A – 120V corrosion resistant duplex spec grade GFCI.
26 56 01 Roadway Lighting	3.10.2S	Luminaires and Photocells	**Append** to clause: Any required tilt angle shall be provided on design Drawing. Power supply shall be 120 volt.
26 56 01 Roadway Lighting	3.10.4S	Luminaires Fusing	**Add** new clause: Luminaire fusing shall be 10 amp 600 volt. All luminaries shall have dropglass of Type II, III or V distribution.
26 56 01 Roadway Lighting	3.10.5S	Luminaires Ballast	**Add** new clause: All luminaire ballast shall be constant wattage integral (CWI) 120/240.
26 56 01 Roadway Lighting	3.11.5S	Grounding and Bonding	**Add** new clause: Bond all power bases.

<table>
<tr><td>31 05 17

Aggregates and Granular Materials</td><td>2.2.2S</td><td>Native Material</td><td>Add new clause:

For pipe bedding, "approved native material" shall meet the gradations of:
a) Granular Pipe Bedding and Surround Material or;
b) Pit Run Sand or;
c) River Sand.</td></tr>
<tr><td>31 05 17

Aggregates and Granular Materials</td><td>2.7.1S (2011-08-04)*</td><td>Granular Pipe Bedding and Surround Material</td><td>Delete table and Replace with:

<table>
<tr><th>Sieve Designation</th><th>Type 1*</th><th>Type 2*</th><th>Type 3*</th></tr>
<tr><td>50mm</td><td>100</td><td>100</td><td>100-100</td></tr>
<tr><td>38mm</td><td>100</td><td>100</td><td>90-100</td></tr>
<tr><td>25mm</td><td>100</td><td>100</td><td>20-60</td></tr>
<tr><td>19mm</td><td>90-100</td><td>90-100</td><td>0-15</td></tr>
<tr><td>12.5mm</td><td>65-85</td><td>70-100</td><td></td></tr>
<tr><td>9.5 mm</td><td>50-75</td><td></td><td>0-5</td></tr>
<tr><td>4.75mm</td><td>25-50</td><td>40-70</td><td></td></tr>
<tr><td>2.36mm</td><td>10-35</td><td>25-52</td><td></td></tr>
<tr><td>1.18mm</td><td>6-26</td><td>15-38</td><td></td></tr>
<tr><td>0.60mm</td><td>3-17</td><td>6-27</td><td></td></tr>
<tr><td>0.30mm</td><td></td><td>3-20</td><td></td></tr>
<tr><td>0.075mm</td><td>0-5</td><td>0-8</td><td></td></tr>
</table>
*Type 1: standard gradation
*Type 2: to be used only in dry trench conditions and with the Contract Administrator’s prior approval
*Type 3: minimum 40% Porosity</td></tr>
<tr><td>31 05 17

Aggregates and Granular Materials</td><td>2.7.2S</td><td>Granular Pipe Bedding and Surround Material</td><td>Delete clause and Replace with:

Refer to Section 31 05 17, new Clause 2.2.2 above.</td></tr>
<tr><td>31 05 17

Aggregates and Granular Materials</td><td>2.7.3S</td><td>Approved Native Material</td><td>Add new clause:

If not specified in the Contract Documents or on the Contract Drawings, the Contractor, at their expense, must supply material and gradation test information to the Contract Administrator for approval before using native material as pipe bedding and surround.</td></tr>
</table>

<table>
<tr>
<td>31 05 17

Aggregates and Granular Materials</td>
<td>2.10.1S</td>
<td>Granular Base</td>
<td>Delete table and Replace with:

<table>
<tr><th>Sieve Designation (Wet sieving)</th><th>Percent Passing</th></tr>
<tr><td>25 mm</td><td>100</td></tr>
<tr><td>19 mm</td><td>80-100</td></tr>
<tr><td>9.5 mm</td><td>50-90</td></tr>
<tr><td>4.75 mm</td><td>35-70</td></tr>
<tr><td>2.36 mm</td><td>25-50</td></tr>
<tr><td>1.18 mm</td><td>15-35</td></tr>
<tr><td>0.30 mm</td><td>5-20</td></tr>
<tr><td>0.075 mm</td><td>0-5</td></tr>
</table>
</td>
</tr>
<tr>
<td>31 05 17

Aggregates and Granular Materials</td>
<td>2.11.1S</td>
<td>Recycled Aggregate Material</td>
<td>Delete sentence:

"Recycled material should consist only of crushed Portland cement concrete; other construction and demolition materials such as asphaltic pavements, bricks, plaster, etc. are not acceptable."

Replace sentence with:

"Recycled material for granular base aggregate only should consist of crushed Portland cement concrete or asphaltic pavement; other construction and demolition materials such as bricks, plaster, etc. are not acceptable. Granular base aggregate may contain up to a maximum 20% by mass of recycled material."</td>
</tr>
<tr>
<td>31 05 17

Aggregates and Granular Materials</td>
<td>2.13S</td>
<td>Shoulder Aggregate</td>
<td>Add new section:

.1 To be 19mm crushed gravel conforming to the following gradations:

<table>
<tr><th>Sieve Designation (Wet sieving)</th><th>Percent Passing</th></tr>
<tr><td>19 mm</td><td>100</td></tr>
<tr><td>13.2 mm</td><td>84-100</td></tr>
<tr><td>9.5 mm</td><td>73-90</td></tr>
<tr><td>4.75 mm</td><td>50-75</td></tr>
<tr><td>2.36 mm</td><td>35-57</td></tr>
<tr><td>1.18 mm</td><td>26-45</td></tr>
<tr><td>0.600 mm</td><td>18-34</td></tr>
<tr><td>0.300 mm</td><td>10-26</td></tr>
<tr><td>0.150 mm</td><td>5-17</td></tr>
<tr><td>0.075 mm</td><td>3-7</td></tr>
</table>
</td>
</tr>
<tr>
<td>31 11 01

Clearing and Grubbing</td>
<td>1.3.2S</td>
<td>Protection of Existing Features</td>
<td>Delete clause:</td>
</tr>
</table>

31 11 41 Shrub and Tree Preservation	1.2.4S	References	**Add** new clause: Trees and Development: A technical Guide to Preservation of trees during land development.
31 11 41 Shrub and Tree Preservation	2.1.9S	Materials	**Delete** clause.
31 11 41 Shrub and Tree Preservation	3.1.1S	Existing Trees	**Append** to clause: "The following guidelines shall be used to help ensure the longevity of the trees and are based on Parks Regulation By-law No. 35-66 Section 8(f) and Schedule B – Tree Protection Guidelines: • open mesh fencing shall be erected around the trees at an adequate distance to ensure no contact is made with construction equipment; • no heavy equipment shall be driven over the area within the drip line; • stockpiling of materials shall not be permitted within the drip line; • the trees shall not be used to support signs or any other structures; • where tree roots are cut, they shall be cut to have straight edges; • necessary precautions shall be taken to protect trees from construction works that would jeopardize their health (ie. heat, liquid contaminants, concrete, etc). The *Contractor* must ensure that all trees and ground covers are watered sufficient enough to ensure that they are not stressed during the *Work*. The *Contractor* will be responsible for any damage to trees, up to and including removal and replacement, at their cost."
31 11 41 Shrub and Tree Preservation	3.1.6S	Existing Trees	**Delete**: Water retained trees 3 times during summer. **Replace** with: Water retained trees once every two weeks during May 1st to October 31st.

<table>
<tr><td>31 11 41

Shrub and Tree Preservation</td><td>3.2S</td><td>Raising Grade Around</td><td colspan="3">Delete: “Raising Grade Around”

Replace with: “Raising Grade Around Existing Trees”</td></tr>
<tr><td>31 11 41

Shrub and Tree Preservation</td><td>3.2.4S</td><td>Raising Grade Around Existing Trees</td><td colspan="3">Delete: “Protect bark of buried portion of tree from abrasion by surrounding trunk with asphalted felt.”

Replace with: “Protect bark of buried portion of tree from abrasion by surrounding trunk with 100 mm plastic weeping tile.”</td></tr>
<tr><td>31 11 41

Shrub and Tree Preservation</td><td>3.3.2S</td><td>Raising Grade Around Existing Trees</td><td colspan="3">Delete:

Seal cut edges 10 mm in diameter and larger with wound dressing.</td></tr>
<tr><td>31 11 41

Shrub and Tree Preservation</td><td>3.4.1S</td><td>Pruning</td><td colspan="3">Delete clause and Replace with:

Selectively remove only the diseased portions or dead branches within the canopy of the tree.</td></tr>
<tr><td rowspan="8">31 22 01

Site Grading</td><td rowspan="8">3.3.1S (2009-11-19)*</td><td rowspan="8">Tolerances</td><td colspan="3">Delete clause and Replace with:

TABLE 2: TOLERANCES FOR SUBGRADES WHERE GROWING MEDIUM (TOPSOIL) TO BE PLACED OVER SUBGRADE</td></tr>
<tr><td>Conditions</td><td>Intended Growing Medium Depth</td><td>Tolerance</td></tr>
<tr><td rowspan="3">Within 3 m from fixed elevations (e.g., paving edges, curbs, etc.)</td><td>0 - 150 mm</td><td>± 25 mm</td></tr>
<tr><td>151 - 300 mm</td><td>± 25 mm</td></tr>
<tr><td>301 -600 mm</td><td>± 50 mm</td></tr>
<tr><td rowspan="3">Other areas</td><td>0 - 150 mm</td><td>± 25 mm</td></tr>
<tr><td>151 - 300 mm</td><td>± 50 mm</td></tr>
<tr><td>301 -600 mm</td><td>± 50 mm</td></tr>
</table>

31 23 01 Excavating, Trenching and Backfilling	1.10.6S	Excavating, Trenching and Backfilling	**Add** to clause: ...excavation **"surveyed"** cross sections... **Append** to clause**:** Areas shall be surveyed by *Contractor* and survey file supplied to *Contract Administrator* for volume calculation check.
31 23 01 Excavating, Trenching and Backfilling	3.6.5S	Surface Restoration	**Delete** clause:
31 23 01 Excavating, Trenching and Backfilling	3.6.7.5S	Surface Restoration	**Delete** clause and **Replace** with: Restore pavement as detailed on Supplemental Detail Drawing SG5. .1 All asphalt shall be saw cut 500 mm wider and longer than the surface dimensions of the actual trench excavation. This saw cut must extend cleanly through the existing asphalt to the base material prior to asphalt removal. .2 If the average thickness of the existing asphalt is greater than 100 mm, and is competent and stable, grind it to a depth of 50 mm and a width of 200 mm along the saw cut edge. This can be done just prior to the final asphalt restoration. .3 Where the edge of the saw cut or milled asphalt, whichever is wider, extends into the travel lane, it should be extended to the midpoint of that lane. Where the edge extends past the midpoint of the travel lane, it should be extended to the far edge of that travel lane. .4 Where the edge of the saw cut or milled asphalt, whichever is wider, is less than 1.5 m from the lip of gutter or edge of paved shoulder, it should be extended to the lip of gutter or edge of paved shoulder. .5 When an area of existing asphalt between two transverse trenches is less than one third (1/3) of the total area of the proposed paving of the two trenches plus the area between them (based on the shortest trench), the existing asphalt shall be removed and the area paved in conjunction with the paving of the two trenches. .6 Regardless of 3.6.7.5.5, if the longitudinal distance between two trenches is less than three 3 m it shall be removed and the area paved in conjunction with the paving of the two trenches .7 Longitudinal trenches must be paved with a paving machine.

<table>
<tr><td></td><td></td><td></td><td>.8 Hot-mix paving shall meet the thickness of the existing pavement or that shown on the Contract Drawings. If the thickness of the hot-mix paving is 75 mm or less, it shall be placed in one lift. If the thickness of the hot-mix paving is greater than 75 mm it shall be placed in two lifts.
.9 Vertical faces and the surface of the lower course of asphalt must be painted with bituminous material prior to hot mix paving.</td></tr>
<tr><td>31 23 01

Excavating, Trenching and Backfilling</td><td>3.6.7.11S</td><td>Surface Restoration</td><td>Add new clause:

Permanent pavement restoration shall include installation of road base and sub-base to Section 32 11 23 and Section 32 11 16.1 respectively, to depth specified.</td></tr>
<tr><td>31 23 23

Controlled Density Fill</td><td>2.1.1S (2012-06-08)*</td><td>Materials</td><td>Delete clause and Replace with:

"Portland Cement: to CSA A3000."</td></tr>
<tr><td>31 23 23

Controlled Density Fill</td><td>2.1.2S (2012-06-08)*</td><td>Materials</td><td>Delete clause and Replace with:

"Fly ash: to CSA A3000."</td></tr>
<tr><td>31 36 13

Gabions</td><td>3.3.7S</td><td>Filling</td><td>Delete clause:</td></tr>
<tr><td>31 37 10

Riprap</td><td>2.1.1.1.1 S(2009-11-19)*</td><td>Riprap</td><td>Delete table and Replace with:

<table>
<tr><th>Percent Heavier Than</th><th>Percent Lighter Than</th><th>Mass (kg)</th><th colspan="2">Equivalent
Weight (N)</th><th>Diameter (mm)</th></tr>
<tr><td>0
50
100</td><td>100
50
0</td><td colspan="3">As specified in Contract Documents</td></tr>
</table></td></tr>
<tr><td>31 37 10

Riprap</td><td>3.2.7S</td><td>Placement</td><td>Delete clause:</td></tr>
<tr><td>32 12 13.2

Asphalt Prime</td><td></td><td></td><td>Delete the entire Section as the City of Kamloops does not apply a prime coat.</td></tr>
</table>

<table>
<tr><td>32 12 16

Hot-mix Asphalt Concrete Paving</td><td>1.5.2S</td><td>Measurement and Payment</td><td>Delete clause and sub-clauses and Replace with:

.2 Refer to new Sub-section 4.0 Testing Frequency and Procedures and Sub-section 5.0 Payment Adjustment for Noncompliance.</td></tr>
<tr><td>32 12 16

Hot-mix Asphalt Concrete Paving</td><td>2.1.1S</td><td>Materials</td><td>Delete clause and Replace with:

Asphalt cement shall be 80-100 Group "A", or 85-100 for all roads. 120-150 Group "A" asphalt cement may be used, with approved special mix designs, on residential roads and lanes.</td></tr>
<tr><td>32 12 16

Hot-mix Asphalt Concrete Paving</td><td>2.1.3.2S</td><td>Aggregates</td><td>Change table to read as follows:

<table>
<tr><th>Sieve size</th><th>Coarse Mix</th><th>Medium Mix</th><th>Fine Mix</th><th>Sand Mix</th></tr>
<tr><td>37.5mm</td><td>100</td><td></td><td></td><td></td></tr>
<tr><td>25 mm</td><td>80-100</td><td></td><td></td><td></td></tr>
<tr><td>19.5mm</td><td>60-92</td><td>100</td><td></td><td></td></tr>
<tr><td>12.5mm</td><td>50-85</td><td>84-95</td><td>100</td><td></td></tr>
<tr><td>9.5 mm</td><td>40-80</td><td>73-90</td><td>90-100</td><td>100</td></tr>
<tr><td>4.75mm</td><td>30-65</td><td>50-75</td><td>55-80</td><td>80-100</td></tr>
<tr><td>2.36mm</td><td>20-50</td><td>35-57</td><td>32-64</td><td>67-94</td></tr>
<tr><td>1.18mm</td><td>15-35</td><td>26-45</td><td>24-51</td><td>56-88</td></tr>
<tr><td>0.60mm</td><td>8-30</td><td>18-34</td><td>17-40</td><td>40-78</td></tr>
<tr><td>0.30mm</td><td>6-22</td><td>10-26</td><td>13-29</td><td>22-57</td></tr>
<tr><td>0.15mm</td><td>3-15</td><td>6-17</td><td>7-18</td><td>8-35</td></tr>
<tr><td>0.075mm</td><td>1-7</td><td>3-7</td><td>4-10</td><td>5-14</td></tr>
</table></td></tr>
<tr><td>32 12 16

Hot-mix Asphalt Concrete Paving</td><td>2.1.3.12S</td><td>Aggregates</td><td>Delete first paragraph and Replace with:

Crushed fragments: at least 85% of particles retained on sieves from 4.75 mm and larger shall have at least two freshly fractured faces. Material shall be tested in accordance with ASTM C136 and ASTM C117.

Remainder of 2.1.3.12 shall remain unchanged.</td></tr>
<tr><td>32 12 16

Hot-mix Asphalt Concrete Paving</td><td>2.2.2S</td><td>Mix Design</td><td>Delete clause and Replace with:

On roads classified as "Locals", asphalt mix may contain up to a maximum 20% by mass of R.A.P. without a change in the mix design, provided all other specifications are being met. Contract Administrator may approve a higher proportion of R.A.P. if the Contractor demonstrates the ability to meet the specifications.</td></tr>
</table>

<table>
<tr>
<td>32 12 16

Hot-mix Asphalt Concrete Paving</td>
<td>2.2.3.2S</td>
<td>Mix Design</td>
<td>Change table clause “Voids in Mineral Aggregate” to read:

<table>
<tr><th>Property</th><th></th><th>Pavement course</th></tr>
<tr><td>Voids in Mineral Aggregate</td><td>%min.</td><td>13 lower course
14 upper course
15 fine</td></tr>
</table>
</td>
</tr>
<tr>
<td>32 12 16

Hot-mix Asphalt Concrete Paving</td>
<td>2.2.4S</td>
<td>Mix Design</td>
<td>Add new clause:

Adjustments to job mix formula:

.1 After the production job mix formula has been established in accordance with 2.2.1, no field adjustment to that job mix formula will be permitted without prior written authorization by the Contract Administrator.
.2 Any request for a field adjustment shall be in writing together with supporting documentation to the Contract Administrator. Within four hours of receipt of the proposed field adjustments, the Contract Administrator will review and notify the Contractor if the adjustment is acceptable. Acceptance of the field adjustment by the Contract Administrator does not negate the responsibility of the Contractor to maintain the acceptable parameters of the other Marshall Properties including but not limited to; Stability, Flow Value, Air Voids, VMA and Retained Stability.
.3 The Contract Administrator will limit the number of field adjustments to the laboratory prepared job mix formula to two and maximum one per lot.
.4 No field adjustment will be acceptable if it results in a change from the job mix formula, for any property, in excess of the maximum adjustment for that property permitted in the following table:

<table>
<tr><th>Job Mix Formula Property</th><th>Max Field Adjustment</th></tr>
<tr><td>Percentage Passing by Sieve Size (mm):</td><td></td></tr>
<tr><td>25, 19</td><td>+/- 2.0%</td></tr>
<tr><td>12.5 and 9.5</td><td>+/- 2.0%</td></tr>
<tr><td>4.75 and 2.36</td><td>+/- 1.5%</td></tr>
<tr><td>1.18 and .6</td><td>+/- 1.5%</td></tr>
<tr><td>.3 and .15</td><td>+/- 1.5%</td></tr>
<tr><td>0.075</td><td>+/- 0.5%</td></tr>
<tr><td>Asphalt Cement content</td><td>+/- 0.2%</td></tr>
</table>
</td>
</tr>
</table>

			.5 Ignition Oven Calibration .1 Within five *Days* after the *Contractor* has received acceptance of the job mix formula from the *Contract Administrator*, the *Contractor* must prepare eight blank aggregate samples and sufficient oil to allow for the testing firm/City laboratory staff to calibrate their ignition oven. Refer to ASTM D 6307 Table 1 for appropriate sample sizes. .2 If the job mix formula does not change for a period of 4 months or greater, the *Contract Administrator* may require addition blanks to be provided. No additional payment shall be provided for production of these extra blanks.
32 12 16 Hot-mix Asphalt Concrete Paving	3.5.4.1S-3S	Placing	**Delete** clauses and **Replace** with: .1 Levelling course(s) and lower course in layers not exceeding 75 mm each. .2 Surface and lower course in layers not exceeding 75 mm each, and a minimum of 50 mm.
32 12 16 Hot-Mix Asphalt Concrete Paving	4.0S	Testing Frequency and Procedures	**Add** new sub-section. .1 Unless otherwise specified in the *Contract Documents*, the following definitions shall apply: .1 Lot .1 For the purposes of this Section, a Lot shall be defined as one days scheduled production of at least 100 tones where no changes have occurred, for each individual project. .2 Where one days production is less than 100 tones the material will be added to the next Lot that has the same criteria as described above, except that: • If the test indicates that this production is subject to a payment adjustment or to rejection, it shall be designated as a separate lot and additional testing may be directed by the *Contract Administrator* to ensure sufficient test results are available. • If no further material will be produced with the same criteria, this production will be added to the previous day's production as an additional sub-lot. • If there is no previous or subsequent lot, testing shall be at

			the discretion of the *Contract Administrator*. .3 A Lot shall be no more than 2 days total production even if the above criteria have not been changed or met. .2 Sub-Lot .1 A Lot shall be divided in to 3 equal sub-lots defined by lineal meters of production. .2 In accordance with section 4.0.1.1.2 a Lot may be divided in to as many as 5 sub-lots. .2 Special testing will be undertaken by a third party testing firm, agreed on by both parties.
32 12 16 Hot-Mix Asphalt Concrete Paving	4.1S	Aggregate Gradation and Asphalt Cement Content	**Add** new clause: .1 A Marshall analysis shall be performed per sub-lot by both parties or at the *Contract Administrator's* discretion. .2 Asphalt content shall be determined in accordance with ASTM D2172 or D6307. Gradation analysis of extracted aggregate shall be performed in accordance with ASTM C136 and C117. .3 Additional loose samples (*Dispute* bags) for special testing will be taken concurrently with *Quality Assurance* sampling by the *Contract Administrator* and will only be tested by a third party in the case of adjudication of results from *Quality Control* and *Quality Assurance* test results. These samples shall be delivered and stored at the City of Kamloops Laboratory at 955 Concordia Way. .4 The *Contractor* shall, prior to requesting payment in accordance with *GC* 18.1.1S, provide all *Quality Control* testing results to the *Contract Administrator.* .5 When analyses identifies non-conformance with specified properties, the *Contractor* must immediately initiate remedial measures, and submit, at its expense, evidence that compliance exists with the approved mix design. Failure to do so will result in suspension of plant mixing operations. .6 The asphalt content of the asphalt mix will be determined using the average of the sub-lot results. The actual asphalt cement content will be compared to the approved mix design asphalt cement content and the deviation will be used for payment adjustment. .7 If the asphalt cement content is within the remove and replace criteria, the area is rejected automatically regardless of the values of other acceptance parameters. .8 When the average of the sub-lot aggregate analyses fail to comply with tolerances set forth in 3.1.4 of the specification, the *Contractor* will suspend production and shall not commence construction again until it has

			demonstrated that corrective action has been taken and that the aggregate gradation is within the specified tolerance limits.
32 12 16 Hot-Mix Asphalt Concrete Paving	4.2S	Thickness	**Add** new clause: .1 Cores shall be taken at a minimum of one per sub-lot, unless specified otherwise by *Contract Administrator.* .2 If the deficiency of any individual core exceeds 10mm, the *Contractor* shall have the opportunity to pay for the cost of extracting and sampling, by the *Contract Administrator*, additional cores on either side of the failed core (location to be generally agreed upon by the *Contract Administrator* and the *Contractor*) to minimize the area for removal and replacement, provided the area being re-cored will be included in the new removal limits. .3 Sampling and testing for thickness determination shall be in accordance with ASTM D3549.
32 12 16 Hot-Mix Asphalt Concrete Paving	4.3S	Density	**Add** new clause: .1 Cores shall be taken at a minimum of one per sub-lot, unless specified otherwise by *Contract Administrator.* *.2* The *Contract Administrator* shall notify the *Contractor* and the *Owner* 24 hours prior to core extraction to allow the *Contractor* and *Owner* the opportunity to be present. .3 The average of the three cores shall be used to determine the density of the Lot provided no individual core is less than 95%. .4 In the event that the three core average is below 97%, but none fall below 95%, the *Contractor* shall have ONE opportunity to pay for the cost of extracting and sampling, by the *Contract Administrator*, additional cores on either side of the failed core (location to be agreed upon by the *Contract Administrator* and the *Contractor*) to minimize the area for payment adjustment. .5 In the event that the three core average exceeds 97%, but at least one core falls below 95%, the *Contractor* shall have the opportunity to pay for the cost of extracting and sampling, by the *Contract Administrator*, additional cores on either side of the failed core (location to be generally agreed upon by the *Contract Administrator* and the *Contractor*) to minimize the area for removal and replacement, provided the area being re-cored will be included in the new removal limits.

<table>
<tr>
<td>32 12 16

Hot-mix Asphalt Concrete Paving</td>
<td>5.0S</td>
<td>Payment Adjustment for Noncompliance</td>
<td>Add new sub-section.</td>
</tr>
<tr>
<td>32 12 16

Hot-Mix Asphalt Concrete Paving</td>
<td>5.1S</td>
<td>Aggregate Gradation</td>
<td>Add new clause:

.1 Non-compliance shall be subject to removal and replacement of the Lot at the discretion of the Contract Administrator.</td>
</tr>
<tr>
<td>32 12 16

Hot-Mix Asphalt Concrete Paving</td>
<td>5.2S</td>
<td>Asphalt Cement</td>
<td>Add new clause:

.1 Payment adjustment for noncompliance with the tolerance specified:

<table>
<tr><th>Asphalt Content Deviation from Design %</th><th>Payment Adjustment Factor</th></tr>
<tr><td>+ 0.51 or Greater</td><td>Remove and Replace</td></tr>
<tr><td>+ 0.41 to 0.50</td><td>0.75</td></tr>
<tr><td>+ 0.31 to 0.40</td><td>0.10</td></tr>
<tr><td>+ 0.30 to 0.00</td><td>0.00</td></tr>
<tr><td colspan="2">DESIGN %</td></tr>
<tr><td>- 0.30 to 0.00</td><td>0.00</td></tr>
<tr><td>- 0.31 or Less</td><td>Remove and Replace</td></tr>
</table>

.2 Adjustment for asphalt cement content noncompliance to the amount payable for Hot Mix Asphalt Paving equals the unit bid price times the payment adjustment factor times the quantity to which the factor is to be applied, i.e.:

Ac = P(Fc)(Qn)

where:

Ac = Adjustment for asphalt cement content compliance.
P = Unit Bid Price.
Fc = Payment Adjustment Factor for Asphalt Cement Content noncompliance.
Qn = Asphalt measured for payment per Lot.</td>
</tr>
</table>

<table>
<tr>
<td>32 12 16

Hot-Mix Asphalt Concrete Paving</td>
<td>5.3S</td>
<td>Pavement Thickness</td>
<td>Add new clause:

.1 Pavement of any type found to be deficient in thickness by more than 10mm must be removed and replaced by pavement, of specified thickness, at the Contractor's expense.
.2 No payment will be made for additional thickness.</td>
</tr>
<tr>
<td>32 12 16

Hot-Mix Asphalt Concrete Paving</td>
<td>5.4S</td>
<td>Density</td>
<td>Add new clause:

.1 The minimum specified density for acceptance, without payment adjustment, must be 97% of the 75 blow Marshall Density as determined by the Quality Assurance results.

.2 Payment adjustment for density noncompliance will be as follows:

<table>
<tr><th>Density (% of 75 Blow Marshall)</th><th>Payment Adjustment Factor</th></tr>
<tr><td>97 and greater</td><td>0.0</td></tr>
<tr><td>96.9</td><td>0.01</td></tr>
<tr><td>96.8</td><td>0.03</td></tr>
<tr><td>96.7</td><td>0.05</td></tr>
<tr><td>96.6</td><td>0.07</td></tr>
<tr><td>96.5</td><td>0.09</td></tr>
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<tr><td>95.1</td><td>0.47</td></tr>
<tr><td>95.0</td><td>0.50</td></tr>
<tr><td>Less than 95.0</td><td>No Payment (subject to removal and replacement after review by the Contract Administrator)</td></tr>
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			.3 Adjustment for density specification noncompliance shall be determined as follows: AD = P(FD)(QnD) where: AD = Adjustment for density noncompliance. P = Unit Bid Price. FD = Payment Adjustment Factor for density non-compliance. QnD = Asphalt measured for payment within a unit of test area as defined in 4.3.
32 12 16 Hot-Mix Asphalt Concrete Paving	5.5S	Adjusted Payments	**Add** new clause: .1 The total adjustment arising from pavement deficiencies identified in the foregoing shall be determined as follows: Ar = Ac+At+AD where: Ar = Total Adjustment. Ac = Adjustment for asphalt cement content non-compliance. At = Adjustment for thickness deficiency. AD = Adjustment for density noncompliance. The total adjustment (Ar) shall be paid to the City of Kamloops. .2 In the event that the *Owner* is not privy to the unit rate for the asphalt *Work*, the *Contract Administrator* shall determine an estimated rate based on factors such as current market pricing, scope of project etc.
32 13 13 Portland Cement Concrete Paving	2.1.4S (2012-06-08)*	Materials	**Delete** clause and **Replace** with: "Concrete mixes and materials: to Section 03 30 53 – Cast-in-place Concrete meeting CSA A23.1 Exposure Class C2."
32 13 16.1 Roller Compacted Concrete Paving	2.1.3S (2012-06-08)*	Materials	**Delete**: "CAN/3-A5." **Replace** with: "CSA A3000."

32 13 16.1 Roller Compacted Concrete Paving	2.1.4S (2012-06-08)*	Materials	**Delete** clause and **Replace** with: "Fly Ash: to CSA A3000."
32 14 01 Unit Paving	1.3.2S	Samples	**Add** new clause: *Contractor* is to provide a mock-up of each typical paving pattern identified in the contract documents for City's (or City representative's) review and approval prior to placement of contracted *Works*.
32 14 01 Unit Paving	1.3.3S	Samples	**Add** new clause: Mock-up is to be a minimum of 3m x 3m paver area illustrating joint sizes, lines, laying pattern(s), colour(s) and textures for the project. The approved mock-up will be the standard from which the *Work* of the project is judged.
32 14 01 Unit Paving	1.3.4S	Samples	**Add** new clause: The City reserves the right to make modifications to the paving patterns identified in the construction documents based on a mock-up. Any pavers installed without prior approval will be removed and replaced at the *Contractor's* expense.
32 14 01 Unit Paving	1.4.1S	Shop Drawings	**Delete** clause and **Replace** with: In place of *Shop Drawings* submission showing paving layout, the *Contractor* is to prepare mock-up as identified in clauses 1.3.2 and 1.3.3 in advance of ordering and shipment of all material required to complete work identified on the drawings. The City (or City representative) reserves the right to make modifications to paver colors, pattern and layout based on mock-up.
32 14 01 Unit Paving	1.4.2S	Shop Drawings	**Delete** clause and **Replace** with: Compensation for any changes paving pattern identified in the *Contract Documents* will be limited to supply and install costs of mock-up sample only, based on unit rates identified in the *Schedule of Quantities and Prices*.

32 14 01 Unit Paving	1.7.2S	Inspection and Testing	**Add** new clause: Pavers are to be inspected for excessive efflorescence staining while on pallets. Excessive staining is considered to be over 10% of total amount of pavers or if saturation of staining has penetrated into the paver so as to require excessive wear time or chemical treatment to remove staining. No pavers that exhibit excessive efflorescence staining are to be laid until City's (or City representative) has reviewed and approved their use. Any pavers installed without prior approval will be removed and replaced at the *Contractor's* expense.
32 14 01 Unit Paving	2.1.6S	Materials	**Delete** clause and **Replace** with: Edge Restraint: All edges of the pavers installation shall be restrained. .1 Aluminum, steel, plastic edging to have a "L" shaped profile and provide a smooth vertical surface against the pavers and provide for adequate staking on the outside of the paver . Consult paver manufacturer's literature for recommendations**. Permaloc Aluminum StructurEdge or EdgePro flexible and rigid plastic edge restraints are acceptable**.
32 14 01 Unit Paving	2.1.7S	Materials	**Add** new clause: Polymeric Jointing Sand: to be Techiseal, or pre-approved. To be installed in strict accordance with manufacturer's instructions.
32 14 01 Unit Paving	3.5.4.3S	Unit Paving	**Delete** clause and **Replace** with: Fill spaces between pavers with polymeric sand. Apply polymeric sand dry and to a dry surface to avoid paver staining. Any pavers stained will be cleaned using an acceptable cleaner to the satisfaction of the *Contract Administrator.* If staining is severe, pavers will be replaced at *Contractor's* expense.
32 14 01 Unit Paving	3.6.2S	Acceptance	**Add** new clause: Efflorescence staining is to be removed with an acceptable efflorescence cleaner; **Techniseal EC Efflorescence Cleaner.**
32 17 23 Painted Pavement Markings	2.1.3S	Materials	**Delete** clause and **Replace** with: .3 Paint .1 May 1st through Oct 14th paint must meet max VOC 150g/L.

			Oct 15th through April 30th must meet max VOC 450g/L. .2 Colour: Yellow to Federal #33538, black 512-301, white 513-301.
32 17 23 Painted Pavement Markings	2.1.4S	Materials	**Delete** clause and **Replace** with: Thinner: Thinner must comply with paint manufactures recommendations
32 17 23 Painted Pavement Markings	2.1.5.1S	Glass beads	**Delete** clause and **Replace** with: .1 Glass beads: overlay type to AASHTO M247, Type I, double coated. .2 Glass beads shall be to British Columbia Ministry of Transportation approved specifications.
32 17 23 Painted Pavement Markings	2.1.6S (2012-06-08)*	Materials	**Delete**: "Temporary pavement marking tape:" **Replace** with: "Pavement Markings:"
32 17 23 Painted Pavement Markings	2.1.7S (2009-11-19)*****	Materials	**Delete** clause and **Replace** with: Thermoplastic material. .1 Material composition shall be at the discretion of the manufacturer subject to the approval of the *Contract Administrator*. Each formulation shall be identified by a code number .2 No retained water when tested by ASTM D-570 .3 Specific gravity of the supplied product shall be within 3% of that specified for the selected formulation. .4 Material shall not deteriorate upon contact with de-icing chemicals, gasoline, diesel fuel or grease dropped by traffic. .5 Material shall not break down, deteriorate, scorch or discolour, if held within the application temperature range specified by the manufacturer for a period of four hours and it must be able to be reheated from room temperature to the application temperature four (4) times without showing any of these detrimental effects. .6 When applied at the temperature recommended by the manufacturer and at a film thickness of 2 to 4mm, the material shall set solid and show no tracking under traffic after elapsed times as follows:

			.1 Two (2) minutes at an air temperature of 10 degrees C, relative humidity less than 75%, and road surface temperature from 10 degrees C to 20 degrees C. .2 Five (5) minutes at an air temperature of 32 degrees C, relative humidity less than 75%, and road surface temperature from 35 degrees C to 50 degrees C. .3 The drying time under conditions intermediate between the two air temperatures shall be interpolated using a straight line model. .7 The quantity, type, and gradation of the component reflecting glass spheres premixed in the thermoplastic material shall be at the discretion of the manufacturer, but shall provide retro-reflection levels specified below.
32 17 23 Painted Pavement Markings	3.1.3S	Equipment Requirements	**Add** new clause: *Contract Administrator* must approve alternate painting equipment.
32 17 23 Painted Pavement Markings	3.2.2S	Condition of Surfaces	**Add** new clause: Ensure pavement and atmospheric conditions comply with paint manufacturer's recommendations.
32 17 23 Painted Pavement Markings	3.3.2.3S	Painted Markings	**Delete** clause and **Replace** with: Paint application rate of 15.75 wet mil thickness
32 17 23 Painted Pavement Markings	3.3.2.8S	Painted Markings	**Delete** clause and **Replace** with: Glass beads: apply at a rate of 1000g per litre of paint.
32 17 23 Painted Pavement Markings	3.3.3.3S (2012-06-08)*	Application	**Delete**: "° C." **Replace** with: "° F."

32 17 23 Painted Pavement Markings	3.4.1S	Tolerance	**Delete** clause and **Replace** with: Ensure painted markings are within plus or minus 10mm of specified dimensions.
32 31 13 Chain Link Fences and Gates	3.3S; 3.4S; 3.5S (2009-11-19)*****		**Append** to section: 3.3 Installation of Gates 1. Install gates in locations as shown on *Contract Drawings*. 2. Level contours between gate posts and set gate bottom approximately 40 mm above ground surface. 3. Determine position of centre gate rest for double gate. Cast gate rest in concrete as directed. Dome concrete above ground level to shed water. 4. Install gate stops where specified. 3.4 Touch up 1. Clean damaged surfaces with wire brush removing loose and cracked coatings. Apply two coats of organic zinc-rich paint to damaged areas. Pre-treat damaged surfaces according to manufacturer's instructions for zinc-rich paint. 3.5 Cleaning 1. Clean and trim areas disturbed by operations. Dispose of surplus material as specified in *Contract Documents*.
32 92 19 Hydraulic Seeding	2.1.2S	Grass Seed	**Append** to clause: Dryland seed mixture for non-watered areas shall be proportioned as follows: 20% Hard Fescue, 10% Creeping Red Fescue, 10% Annual Rye, 10% Alfalfa, 50% Crested Wheat Grass. Domestic Dryland seed mixture for non-watered areas shall be proportioned as follows: 20% Crested wheatgrass 20% Hard fescue 20% Russian wild rye

			15% Slender wheatgrass 10% Tall wheatgrass 10% Sheep fescue 5% Dryland Alfalfa Native *Dryland seed mix:* 55% Bluebunch wheatgrass 5% Junegrass 5% Sandburgs bluegrass 10% Rough fescue 15% Rocky Mt. Fescue Both mixes to be seeded with Cereal Fall rye cover crop
32 92 19 Hydraulic Seeding	3.2.1S	Seeding General	**Delete** clause and **Replace** with: .1 The best times of year to seed in semi-arid grasslands are late summer to mid spring as long as snow and cold weather are not factors in seed or hydroseed application (usually to the first winter weather in Nov.-Dec. to Feb.-March). The best time to seed is immediately after soil disturbance generally within 10 days. If possible, schedule construction to be finished in midsummer to early fall or early to mid spring for best germination results. Irrigation allows the summer months to be included. .2 Seed only when wind speeds allow the full amount of materials applied evenly to the target area, Seed on soil that is free of standing water, fewer than 5 cm of fresh snow, and never on compacted old snow to ensure successful bonding with the soil. (assuming late November seedings are in fresh soil disturbances during freezing weather)
32 92 19 Hydraulic Seeding	3.2.2S	Seeding General	**Delete** clause and **Replace** with: .2 Rates of application .1 Fertilizer – 18-18-18 50% slow release with SCU sulphur-coated urea at 350 kg/ha (kilograms per hectare)(35kg/1000m²), 250kg/ha with topsoil, 400-500kg/ha with poor nutrient difficult conditions .2 Mulch – Long softwood fibre Hydroseeding Mulch,

			1:1 slopes/difficult, 3000kg/ha 2:1 slopes, 2500kg/ha 3:1 slopes, 2000kg/ha Flat to moderate slopes, 1500kg/ha .3 Tackifier – Polymer tackifier (Acrylate Copolymer) 1:1 slopes/difficult, 7kg/ha 2:1 slopes, 6kg/ha 3:1 slopes, 5kg/ha Flat to moderate slopes, 4kg/ha Tackifier - Gwar gum based Tackifier 1:1 slopes/difficult, 70kg/ha 2:1 slopes, 60kg/ha 3:1 slopes, 50kg/ha Flat to moderate slopes, 40kg/ha (mulch with 3% by weight of gwar gum based tackifier is available and same mixture as above) .4 Seed Mixes – 50kg/ha (5kg/1000m²) Cover crop – 50kg/ha
32 92 19 Hydraulic Seeding	3.3.1S (2011-08-04)*	Equipment	**Delete**: "equipment to equipment" **Replace** with: "equipment adjustment to reflect Rates of Application determined for the project."
32 92 19 Hydraulic Seeding	3.5.4S (2011-08-04)*	Application for Hydraulic Seeding	**Delete**: "Use seed within eight hours from inoculation or to be reinoculated." **Replace** with: "Use seed within eight hours from inoculation; otherwise, seed to be reinoculated."

32 92 20 Seeding	2.1.2S	Grass Seed	**Append** to clause: Dryland seed mixture for watered-mowed areas: 20% Hard fescue 20% Sheep fescue 20% Chewings fescue 20% Intermediate wheatgrass 10% Creeping Red fescue 10% Crested wheatgrass If hydroseeding add Cereal Fall rye at 50kg/ha If hand or drill seeding add 10kg/ha Annual ryegrass
32 92 20 Seeding	3.3.5S (2011-08-04)*	Application For Mechanical Dry Seeding	**Delete** clause and **Replace** with: Apply mulch with seed; or apply mulch immediately after seeding. Do not seed areas which cannot be mulched the same day.
32 92 20 Seeding	3.8.1S (2011-08-04)*	Guarantee/ Maintenance	**Delete**: "guarantee period" **Replace** with: "Maintenance Period"
32 92 20 Seeding	3.8.2S (2011-08-04)*	Guarantee/ Maintenance	**Delete**: "guarantee period" **Replace** with: "Maintenance Period"
32 92 23 Sodding	3.1.6S	Finish Grade Preparation	**Add** new clause: The *Contractor* must notify the property *Owner* in writing within 48 hours in advance of when sodding will occur so that the property *Owner* can establish watering cycles within 12 hours of sod being laid. Documentation with respect to contact with property *Owner* will be required.
32 92 23 Sodding	3.4.1S-.2S	Grass Maintenance	**Delete** clauses and **Replace** with: .1 The *Contractor* will be required to provide initial watering of the sod. .2 Protect all sodded areas with warning signs, temporary wire or twine fences, or equivalent as approved by the *Contract Administrator*.

32 92 23 Sodding	3.5.1.4S	Conditions for *Total Performance*	**Delete** clause and **Replace** with: Documentation is provided to the *Contract Administrator* that property *Owner*s have been contacted by written notification to assume maintenance of sod.
32 92 23 Sodding	3.5.1S	Conditions for *Total Performance*	**Delete** clauses: 3.5.1.5, 3.5.1.6, and 3.5.1.7.
32 92 23 Sodding	3.6S	Guarantee/ Maintenance	**Delete** clauses: 3.6.1 and 3.6.2.
32 93 01 Planting of Trees, Shrubs, and Ground Covers	1.2.4S	References	**Add** new clause: Trees and Development: A technical guide to preservation of trees during land development.
32 93 01 Planting of Trees, Shrubs, and Ground Covers	1.8.1S	Site Examination	**Append** to clause: *Contract Administrator* shall inspect and approve surface preparation prior to installation commencing.
32 93 01 Planting of Trees, Shrubs, and Ground Covers	2.4.1S	Mulch	**Delete**: "Bark mulch to be 25 mm minus Douglas Fir or Hemlock bark chips and fines, or combination of both," **Replace** with: "Bark chips to be 50 mm minus Douglas Fir or Hemlock bark chips and fines, or Pine chips and fines, or combination of Fir, Hemlock, and Pine,"
32 93 01 Planting of Trees, Shrubs, and Ground Covers	2.5.1S	Stakes	**Delete** clause and **Replace** with: Pressure treated wood 50 to 70 mm diameter approximately 2 m long or Tbar metal.

32 93 01 Planting of Trees, Shrubs, and Ground Covers	2.6.1S	Guying Collar	**Delete** clause and **Replace** with: 25 mm cloth straps.
32 93 01 Planting of Trees, Shrubs, and Ground Covers	3.3.1S	Planting	**Delete** clause and **Replace** with: Ensure all planting in general compliance with ISA tree planting standard found at: www.treesaregood.com/treecare/tree_planting.aspx
32 93 01 Planting of Trees, Shrubs, and Ground Covers	3.3.4.2S	Planting	**Delete** clause and **Replace** with: Fold back and cut off the top 1/3 of burlap and wire basket on ball and burlapped stock without disturbing root ball. Remove container from grown stock before planting.
32 93 01 Planting of Trees, Shrubs, and Ground Covers	3.3.7S	Planting	**Add** new clause: Container Grown Plants: .1 Remove the plastic or fibre pot. .2 Locate the trunk flare and cut back the soil medium to the same level as the trunk collar. .3 Cut or score the outer edge and bottom of the exposed root ball. .4 Backfill, water and plant as stated in 3.3.3, 3.3.4 and 3.3.6.
32 93 01 Planting of Trees, Shrubs, and Ground Covers	3.6.1S	Pruning	**Delete** clause and **Replace** with: Limit pruning to minimum necessary to remove dead or injured branches.

32 93 01 Planting of Trees, Shrubs, and Ground Covers	3.6.6S	Pruning	**Delete** clause.
32 93 01 Planting of Trees, Shrubs, and Ground Covers	3.11.2S (2011-08-04)*****	Guarantee/ Maintenance	**Delete**: "guarantee period" **Replace** with: "Maintenance Period"
32 93 01 Planting of Trees, Shrubs, and Ground Covers	3.11.3S (2011-08-04)*****	Guarantee/ Maintenance	**Delete**: "guarantee period" **Replace** with: "Maintenance Period"
33 01 30.1 CCTV Inspection of Pipelines	1.3.1S (2012-06-08)*	Submission of Certification	**Delete**: "current NAAPI certification" **Replace** with: "current NASSCO certification"
33 01 30.1 CCTV Inspection of Pipelines	1.6.5S	Measurement for Payment	**Delete**: "WRc" and "CU" **Replace** with: "PACP" and "MCU"
33 01 30.1 CCTV Inspection of Pipelines	3.1.1S (2012-06-08)*	CCTV Inspection	**Delete**: "by NAAPI." **Replace** with: "by NASSCO."
33 01 30.1 CCTV Inspection of Pipelines	3.1.14S	CCTV Inspection	**Delete**: "WRc" **Replace** with: "PACP"
33 01 30.1 CCTV Inspection of Pipelines	3.1.15S	CCTV Inspection	**Delete**: "WRc" **Replace** with: "PACP"

33 01 30.1 CCTV Inspection of Pipelines	3.7.1S	Photographs and/or Digital Images	**Delete** clause and **Replace** with: Photograph all major defects and code with appropriate PACP codes.
33 01 30.1 CCTV Inspection of Pipelines	3.7.2.5S	Photographs and/or Digital Images	**Delete**: "WRc" **Replace** with: "PACP"
33 01 30.1 CCTV Inspection of Pipelines	3.8.3S	Inspection Reporting Hard Copies & Digital Format	**Delete** "not"
33 01 30.1 CCTV Inspection of Pipelines	3.10.1S	Root Cutting & Removal	**Delete** clause and **Replace** with: Remove roots for condition codes RBB, RBC, RBJ, RBL, RTB, RTC, RTJ and RTL
33 01 30.1 CCTV Inspection of Pipelines	3.12.4S	Coding Accuracy	**Delete**: "the NAAPI Level of Qualification for WRC Operators." **Replace** with: "the NASSCO Level of Qualification for PACP Operators."
33 11 01 Water Works	1.8.13S (2009-11-19)*****	Measurement and Payment	**Delete** clause and **Replace** with: Payment for tie-ins to existing mains where all pipework is to be undertaken by the *Contractor* will be as 1.8.12 of this Section, including all pipes, fittings and necessary tie-in *Work* to complete tie-in as shown on *Contract Drawings*.
33 11 01 Water Works	1.8.14S	Measurement and Payment	**Add** new clause: Payment for hydrants includes the hydrant body, lateral connections from mainline tee off watermain to hydrants, isolation valve at the mainline tee and curb valve with adjustable valve box and all other incidental *Work* as shown on Supplemental Detail Drawing SW4.

33 11 01 Water Works	1.8.15S	Measurement and Payment	**Add** new clause: Payment for canusa heat shrinkable sleeves includes all labour, equipment, and materials necessary to complete *Work,* as required and in locations shown in the *Contract Drawings*. Inform the *Site Inspector* of locations, prior to installing shrinkable sleeves, for approval. Measurement will be for each wrapped pipe joint.
33 11 01 Water Works	1.8.16S	Measurement and Payment	**Add** new clause: Payment for pipe insulation includes all labour, equipment, and materials necessary to complete *Work,* as per the detail and in locations shown in the *Contract Drawings*. Inform the *Site Inspector* of locations, prior to installing pipe insulation, for approval. Measurement will be by the lineal metre.
33 11 01 Water Works	2.1.4S	General	**Add** new clause: The City of Kamloops requires that all water main pipe is to be factory capped or bagged at both ends. Caps or bags shall not be removed until pipe is installed.
33 11 01 Water Works	2.2.2.1.5 S	Polyvinyl Chloride (PVC) Pressure Pipe	**Add** new clause: Steel ring and pin gasketed joint restraint pipe engineered for Horizontal Directional Drilling (HDD) and other trenchless applications are acceptable to the City of Kamloops.
33 11 01 Water Works	2.2.2.2S (2011-08-04)*****	Polyvinyl Chloride (PVC) Pressure Pipe	**Delete** clause and **Replace** with: Joints: It is mandatory that the push-on integrally thickened bell and spigot type conform to ASTM D3139 Clause 6.2 with single elastomeric gasket to ASTM F477.
33 11 01 Water Works	2.2.4.1S	Fittings	**Delete** clause: This product is not used in the City of Kamloops.
33 11 01 Water Works	2.3.3S	Mainline Butterfly Valves	**Delete** clause and **Replace** with: Butterfly valves shall be installed on mains larger than or equal to 350 mm diameter. Butterfly valves shall be full body, fusion bonded epoxy coated to AWWA C550, suitable for direct bury

			and conforming to AWWA C504. Refer to City of Kamloops Amendments to Supplemental Detail Drawings SW11 and SW12 for installation requirements.
33 11 01 Water Works	2.3.4S	Blowdown or Blowoff Valves Standpipes	**Delete** clause and **Replace** with: Standpipes shall be self draining and come with hose thread nozzle adapters. Hose nozzles shall be nominal 64 mm I.D. with 4 threads per 25.4 mm.
33 11 01 Water Works	2.3.7.6S	Service Valve Boxes	**Add** new clause: Curb boxes in corrosive soils shall be 'telescoping type' galvanized steel.
33 11 01 Water Works	2.4.7S (2012-06-08)*	Valve and Large Meter Chambers	**Delete**: "CAN/CSA-A8." **Replace** with: "CSA A3000."
33 11 01 Water Works	2.5.1S	Service Connections, Pipe, Joints and Fittings	**Delete** clause and **Replace** with: Pipe diameters 19 mm to 50 mm shall be Type K annealed copper to ASTM B88M and Warnock Hersey Certified. Pipe diameters from 19 mm to 25 mm, material may be a flexible aluminum core pipe, permanently bonded to layers of durable high temperature polyethylene plastic to AWWA C903. Service line pipe may be cross linked polyethylene (PEXa) pipe with an approved cell classification of 354400 in accordance with ASTM D 3350, and a minimum degree of cross linking of 80% in accordance with ASTM D 2765, Method B. Pipe to have a co-extruded UV shield made from UV resistant, high density polyethylene, colour blue. UV shield to allow exposure to natural sunlight for up to one year. Pipe to be certified to standards, by an approved testing agency: CSA B 137.5; ASTM F 876; ASTM F 877; PPI TR4; NSF 14; NSF 14; NSF 61. Pipe to be certified to AWWA C 904 "Crosslinked Polyethylene (PEX) Pressure Pipe, 12.5 mm through 75 mm, for water service. Pipe to be manufactured in an ISO 9001 Certified production facility. Pipe to be certified to AWWA C 904, "Cross-linked Polyethylene (PEX) Pressure Pipe, 12.5 mm to 75 mm, for Water Service" by an approved testing agency. Pipe to be manufactured in an ISO 901 Certified production facility. Polyethylene pipe is not approved as service pipe.

33 11 01 Water Works	2.5.3.2.1 S	Service Saddles	**Delete** clause and **Replace** with: Water service saddles shall be constructed of "passivated" stainless steel for corrosion resistance. Stainless steel components shall be Type 304 or 304 L. Welding must be performed in a controlled environment to prevent sensitization.
33 11 01 Water Works	2.6.1.6.1 S	Hose and Pump Nozzle Threads	**Delete** clause and **Replace** with: Hose nozzles shall conform to the NFPA standards for fire hydrants.
33 11 01 Water Works	2.6.1.6.2 S	Hose and Pump Nozzle Threads	**Delete** clause and **Replace** with: Pumper nozzles shall be nominal 100 mm I.D., UFE STORZ Nozzles.
33 11 01 Water Works	2.6.1.6.3 S	Hose and Pump Nozzle Threads	**Delete** clause.
33 11 01 Water Works	2.6.2S	Colour	**Delete** clause and **Replace** with: All hydrants shall be painted as follows, or as approved by the *Contract Administrator*: Body of 3 port hydrants: Safety Yellow. Body of 2 port hydrants: Safety Red. Bonnets for 2 and 3 port hydrants: High Gloss White. For STORZ cap: Black.
33 11 01 Water Works	2.7.1S	Underground Service Line Valves and Fittings	**Append** to clause: 50 mm stops shall be non-draining ball type with full flow and full port.
33 11 01 Water Works	2.7.3.3S	Curb Stops	**Delete** clause and **Replace** with: Curb stops shall be non-draining ball type, full flow and full port.
33 11 01 Water Works	3.3.3S	Trenching	**Delete** clause and **Replace** with: Trench depth to provide cover over pipe of not less than 1.8 m from finished grade unless shown otherwise on *Contract Drawings*.
33 11 01 Water Works	3.5.8S	Granular Bedding	**Delete** clause.

33 11 01 Water Works	3.6.6S	Pipe Installation	**Delete** clause and **Replace** with: Do not exceed maximum joint deflection specified in AWWA C600 nor one half of the maximum joint deflection recommended by pipe manufacturer. Deflections in pipelines in excess of those allowed above shall be achieved using bends. PVC pipe shall not be bent to achieve required curvature.
33 11 01 Water Works	3.9.13S	Undercrossing	**Delete** clause and **Replace** with: Use fabricated high density polyethylene casing spacers to maintain carrier pipe in true alignment and uniform separation from encasing pipe.
33 11 01 Water Works	3.9.14S	Undercrossing	**Delete** clause and **Replace** with: Clearance between casing spacers and encasing pipe to be a maximum of 15 mm when carrier pipe is in position.
33 11 01 Water Works	3.12.3S	Hydrants	**Append** to clause: Hydrants shall be offset 1000 mm from property line to spindle.
33 11 01 Water Works	3.12.6S	Hydrants	**Delete** clause and **Replace** with: Hydrants not in service shall be identified by securing a canvas bag over the hydrant.
33 11 01 Water Works	3.13.6S	Backfill	**Append** to clause: , or as approved by the *Contract Administrator*.
33 11 01 Water Works	3.18.3S	Cleaning and Preliminary Flushing	**Delete** clause and **Replace** with: Water for pressure testing and flushing may be obtained from the City water fill station. Water used for disinfection, or flushing, shall not be disposed of in a storm main unless it has been de-chlorinated.
33 11 01 Water Works	3.19.2S	Testing Procedure	**Delete** paragraph: Submit pipeline to a test of 1.5 times working pressure applied at highest elevation in each section, with a minimum 1380 kPa applied at lowest point of test section.

			Replace with: The minimum test pressure shall be the greater of either 1034 kPa or 1.5 times the operating pressure, imposed at the low point of any main in each test section.
33 11 01 Water Works	3.19.2S	Testing Procedure	**Delete** paragraph: Maximum allowable leakage rate at test pressure to not exceed 1.25 litres per millimetre diameter of pipe per kilometre per 24 hour period. **Replace** with: Allowable leakage shall be determined by the formula L=ND(square root P) divided by 131,000. L shall equal the allowable leakage per hour, N is the number of allowed joints ** in the test section, D is the inside diameter of the pipe in mm and P is the test pressure in kilopascals. **The number of joints in a test section shall be calculated by using the total length of mains (excluding hydrant leads) divided by the standard length of pipe used. Only one joint will be allowed for the combined hydrant, lead, isolation valve and tee.
33 11 01 Water Works	3.21S	Disinfection and Flushing Procedures	**Delete** wording: "not less than 25 mg/l free chlorine" in clauses 3.21.2, 3.21.4, 3.21.5, and 3.21.6. **Replace** with: "50 mg/l free chlorine" in clauses 3.21.2, 3.21.4, 3.21.5, and 3.21.6.
33 11 01 Water Works	3.21.5S	Disinfection and Flushing Procedures	**Delete** table and **Replace** with: Pipe Size Chlorine (mm) / 100% Chlorine Solution (kg) / 1% Chlorine Solution (litres) 100 / 0.012 / 1.20 150 / 0.027 / 2.65 200 / 0.047 / 4.71 250 / 0.074 / 7.37 300 / 0.106 / 10.60 400 / 0.189 / 18.85

33 11 01 Water Works	3.24.1S	Bacteriological Tests	**Add** new clause: Bacteriological tests shall be as per the current ANSI/AWWA C651 Standard for Disinfecting Water Mains. Quoting from a part of Section 5: Verification: "Standard conditions. After final flushing and before the new water main is connected to the distribution system, two consecutive sets of acceptable samples, taken 24 hr apart, shall be collected from the new main."
33 30 01 Sanitary Sewers	1.6.5S	Measurement and Payment	**Delete** clause and **Replace** with: Payment for concrete bedding or controlled density fill, where shown on *Contract Drawings*, will be made as extra-over payment to sanitary sewer under 1.6.4 of this Section. No payment will be made for concrete bedding or controlled density fill required as a result of unauthorized excavation beyond neat lines or limits of excavation shown on *Contract Drawings* or Supplemental Detail Drawing SG4.
33 30 01 Sanitary Sewers	2.1.1S	Non-reinforced Concrete Pipe and Fittings	**Delete** clause. Non-reinforced concrete pipe shall not be used within the City of Kamloops.
33 30 01 Sanitary Sewers	2.1.3.4S (2009-11-19)*****	Concrete Pipe	**Delete:** "Life". **Replace** with: "Lift"
33 30 01 Sanitary Sewers	2.3.5S	Service Connections	**Delete** clause and **Replace** with: Service connections to reinforced concrete pipe shall be made using approved PVC saddles.
33 30 01 Sanitary Sewers	2.4.2S	Concrete	**Delete** clause and **Replace** with: Concrete to be 25 MPa and cement shall be Type 50 (or approved equivalent).

33 30 01 Sanitary Sewers	3.6.6S	Pipe Installation	**Delete** clause and **Replace** with: Do not exceed one half of the maximum joint deflection recommended by pipe manufacturer. PVC pipe shall not be bent to achieve required curvature.
33 30 01 Sanitary Sewers	3.10.3S	Service Connection Installation	**Append** to clause: Inspection chamber shall be 200 mm diameter and shall not be installed with a plug.
33 30 01 Sanitary Sewers	3.10.4S	Service Connection Installation	**Delete** clause.
33 30 01 Sanitary Sewers	3.11.2S	Cleaning and Flushing	**Delete** clause and **Replace** with: Water for testing and flushing may be obtained from the City water fill station. Water used for disinfection, or flushing, shall not be disposed of in a storm main unless it has been de--chlorinated.
33 30 01 Sanitary Sewers	3.12.1S	Leakage Testing General	**Delete** clause and **Replace** with: Upon completion of cleaning and flushing of each section, the *Contractor* shall carry out leakage testing as follows: .1 Water exfiltration test when specified on the Drawings or in the *Contract Documents*. .2 Low pressure air test on all sewer installations. .3 Infiltration test when specified on the Drawings or in the *Contract Documents*. .4 Rubber ball test, lamp test, mandrel test when specified on the Drawings or in the *Contract Documents*. .5 Individual joint tests in lieu of low pressure air test with the approval of the *Contract Administrator*.
33 30 01 Sanitary Sewers	3.14.4S	Low Pressure Air Test	**Delete** clause and **Replace** with: Commence test period when pressure decreases to 24 kPa above average groundwater pressure and end when pressure decreases to 20.5 kPa above average groundwater pressure. Do not add air to test section during test period. If test period is less than 1 minute per 25 mm of pipe diameter, then the section of sanitary pipe and services shall be deemed to have failed. Retest upon completion of repairs to any leaks.

33 34 01 Sewage Force Mains	2.2.4.2S	Pipe, Joints and Fittings	**Append** to clause: All fusion joints must be electronically data-logged and supplied to the *Contract Administrator* daily for approval. Parameters that need to be recorded, at minimum, are as follows: • date, time, • technician, equipment type, and unit #, • fusion # (which also must be permanently marked on pipe at joint), • ambient temperature, preheat time, • iron temperature, heat soak time, • drag pressure, hydraulic pressure, total fusion pressure and, • cooling time.
33 34 01 Sewage Force Mains	3.6.6S	Pipe Installation	**Delete** clause and **Replace** with: Do not exceed maximum joint deflection specified in AWWA C600 nor one half of the maximum joint deflection recommended by pipe manufacturer. Deflections in pipelines in excess of those allowed above shall be achieved using bends. PVC pipe shall not be bent to achieve required curvature. For HDPE pipe, pipe cold bending shall be allowed to a minimum radius of 50 times the nominal pipe size without special fittings.
33 34 01 Sewage Force Mains	3.15.2S	Pressure Testing Procedure	**Delete** clause and **Replace** with: Before pipe is filled with water, pipe bedding, concreting of all valves and fittings and backfilling to be completed as required in this specification. Fill each section of pipe and allow to remain full of water for a period of at least 24 hours prior to commencement of any pressure tests. The minimum test pressure shall be the greater of either 1034 kPa or 1.5 times the operating pressure, imposed at the low point of any main in each test section. Ensure that test pressure does not exceed pipe or thrust restraint design pressures. Allowable leakage shall be determined by the formula L=ND(square root P) divided by 131,000. L shall equal the allowable leakage per hour, N is the number of allowed joints ** in the test section, D is the inside diameter of the pipe in mm and P is the test pressure in kilopascals. Minimum duration of test period to be 2 hours. Maximum test pressures should not exceed those specified in CSA B137.3 – Table 9 **The number of joints in a test section shall be calculated by using the total length of mains divided by the standard length of pipe used.

33 40 01 Storm Sewers	1.7.2S	Inspection and Testing	**Add** new clause: Storm sewer mains shall be tested as per Sanitary Sewer mains, Section 33 30 01 items 3.11 to 3.17.
33 40 01 Storm Sewers	2.1.1S	Non-reinforced Circular Concrete Pipe and Fittings	**Delete** clause. Non-reinforced concrete pipe and fittings shall not be used within the City of Kamloops.
33 40 01 Storm Sewers	2.4.5S	HDPE Pipe, Mainline Open Profile	**Add** new clause: Restrictions for use in the City of Kamloops: .1 Use only for trunkmains with no potential for any services to be connected. .2 Minimum 5% grade. .3 Designer must consider expansion and Contraction.
33 40 01 Storm Sewers	2.5.1S	Spiral Rib Pipe Steel	**Append** to clause: Spiral ribbed steel pipe shall be used only when specifically recognized on the List of Approved Products and Materials.
33 40 01 Storm Sewers	2.6.1S	Service Connections	**Delete** clause and **Replace** with: Storm sewer service connections shall be 150 mm minimum diameter. Maximum diameter shall be as specified on the *Contract Drawings*.
33 40 01 Storm Sewers	2.6.5S	Service Connections	**Delete** clause and **Replace** with: Manufactured connections to reinforced concrete pipe to be made using approved PVC saddles.
33 40 01 Storm Sewers	2.11S	HDPE Pipe	**Add** new section: .1 High Density Polyethylene Pipe .1 Pipe: .1 To ASTM F894, or CSA B182.6. .2 Smooth wall only. .2 Joints: .1 Bell and spigot, gasketed type. .2 Plain end extrusion weld. .3 Restrictions for use in the City of Kamloops:

			.1 Use only for trunkmains with no potential for any services to be connected. .2 Minimum 5% grade. .3 Designer must consider expansion and Contraction.
33 40 01 Storm Sewers	3.1.2S	General	**Add** new clause. The Contract Administrator shall be notified where groundwater exists in all excavations with a depth greater than 1m.
33 40 01 Storm Sewers	3.1.3S	General	**Add** new clause. The Contract Administrator shall have a detailed water analysis on file including volumes and the direction of the "groundwater" course.
33 40 01 Storm Sewers	3.6.6S	Pipe Installation	**Delete** clause and **Replace** with: Do not exceed one half of the maximum joint deflection recommended by pipe manufacturer.
33 40 01 Storm Sewers	3.10.3S	Service Connection Installation	**Delete** clause and **Replace** with: Install inspection chambers at all storm sewer service connections, set plumb and to specified elevation as shown on Supplemental Detail Drawing SS8 or Standard Detail Drawing S10 as applicable. If inspection chamber located in driveway, lane, or paved surface, install cover or lid as shown on Supplemental Detail Drawing SS9 or Standard Detail Drawing S10 as applicable. Inspection chambers shall be 200mm diameter, and shall not be installed with a plug.
33 40 01 Storm Sewers	3.10.4S	Service Connection Installation	**Delete** clause.
33 40 01 Storm Sewers	3.11.2S	Cleaning and Flushing	**Delete** clause and **Replace** with: Water for testing and flushing may be obtained from the City water fill station.. Water used for disinfection, or flushing, shall not be disposed of in a storm main unless it has been de--chlorinated.
33 40 01 Storm Sewers	3.15.1S	Perforated Drain Pipe	**Append** to clause: Drain pipe shall be factory drilled PVC or HDPE.

33 40 01 Storm Sewers	3.15.3S	Perforated Drain Pipe	**Delete** clause and **Replace** with: Connect to catch basins or storm manholes.
33 40 01 Storm Sewers	3.15.5S	Perforated Drain Pipe	**Delete** clause and **Replace** with: Install sweep bend and cap at ground grade at upstream end of run and at all laterals.
33 40 01 Storm Sewers	3.15.7S	Perforated Drain Pipe	**Add** new clause: Continuous runs of perforated pipe longer than 40m will have an access point installed.
33 40 01 Storm Sewers	3.15.8S	Perforated Drain Pipe	**Add** new clause: The distance from a tee or 90 degree long radius bend to an access point will not exceed 15m.
33 42 13 Pipe Culverts	2.9S	High Strength Glass Reinforced Composite Headwalls	**Add** new section: 1. Fabricated, lightweight composite headwall structures may be used on approval from the Engineer. Composite headwalls should be manufactured with glass reinforced composites that will have polymer concrete cores in strategic areas as required for stiffness, high impact and high loading.
33 44 01 Manholes and Catchbasins	1.5.7S	Measurement and Payment	**Add** new clause: Payment for replacement of existing manhole frames and covers with new manhole frames and covers shall include all labor, equipment and materials necessary to remove existing castings, deliver to the City of Kamloops material site on McGill road and replace with new castings.

33 44 01 Manholes and Catchbasins	1.5.8S	Measurement and Payment	**Add** new clause: Payment for replacing existing catchbasins with new catchbasin frame and grates shall include all labor, equipment and materials necessary to remove existing castings, deliver and neatly stack the old frame and grates at the City of Kamloops material site on McGill road and replace with new castings to new road/gutter grade.
33 44 01 Manholes and Catchbasins	2.1.2S	Materials	**Delete** clause and **Replace** with: Concrete shall be a minimum 25 MPa, Type 50 cement (or approved equivalent), or as otherwise specified in the *Contract Drawings*.
33 44 01 Manholes and Catchbasins	2.1.11S	Materials	**Delete** clause and **Replace** with: Catchbasin leads shall be a minimum of 200 mm diameter and of PVC SDR 35.
33 44 01 Manholes and Catchbasins	2.1.15.2S (2012-06-08)*	Materials	**Delete**: "CAN/CSA-A8." **Replace** with: "CSA A3000."
33 44 01 Manholes and Catchbasins	2.1.23S	Materials	**Delete** clause. The City of Kamloops does not permit the installation of corrugated steel pipe manholes.
33 44 01 Manholes and Catchbasins	3.3.12S	Manhole Installation	**Delete** the words. "Masonry &".
33 44 01 Manholes and Catchbasins	3.3.19S	Manhole Installation	**Add** new clause: New manhole frames and covers shall be set 5 mm below finished grade. New castings must be raised to grade using precast concrete grade rings. Fine adjustment to achieve slope or crossfall must be made by using steel shims or tapered precast concrete grade rings. The castings/grade rings must be secured to the top of the manhole using 25 MPa ready-mix concrete. The excavation must be topped with a minimum of 75 mm of asphalt pavement.

33 44 01 Manholes and Catchbasins	3.4S	Cleanout Installation	**Delete** clause. The City of Kamloops does not permit the installation of cleanouts.
33 44 01 Manholes and Catchbasins	3.10.2S	Remove Existing Units	**Add** new clause: Site Inspector will provide a list of the catchbasins requiring replacement prior to start of construction. The Contractor shall arrange a time with the Site Inspector to deliver and neatly stack the old frame and grates at the City of Kamloops material site on McGill road.
33 44 01 Manholes and Catchbasins	3.10.3S	Remove Existing Units	**Add** new clause: Old manhole castings shall be removed. The Contractor shall arrange a time with the Site Inspector to deliver and neatly stack the old castings at the City of Kamloops material site on McGill road.
33 44 01 Manholes and Catchbasins	3.11.1S	Leakage Test	**Delete** clause and **Replace** with: Perform leakage testing of all manholes in accordance with Section 33 30 01 Sanitary Sewers.
34 41 13 Traffic Signals	1.4.1S	Electrical Energy Supply	**Append** to clause: Energy supply shall be 120/240 volt.
34 41 13 Traffic Signals	2.4.1S	Plastic Junction Boxes	**Delete** clause. This product is not used in the City of Kamloops.
34 41 13 Traffic Signals	2.7.5S	Conductors and Cables	**Add** new clause: Refer to Supplemental Detail Drawing SE7.13.
34 41 13 Traffic Signals	2.11.1S-.4S	Service Panels	**Delete** clause and **Replace** with: Refer to Supplemental Detail Drawing SE7.6
34 41 13 Traffic Signals	2.15.1S	Loop Sealant and Backer Rod	**Delete** clause.
34 41 13 Traffic Signals	2.16.1S	Traffic and Pedestrian Signals	**Delete** clause and **Replace** with: Poly carbonate casing with yellow aluminum backboards complete with 3M reflective tape.

34 41 13 Traffic Signals	2.18.1S	Traffic Signal Lamps	**Delete** clause.
34 41 13 Traffic Signals	2.21.1S	Pedestrian/ Cyclist Pushbuttons	**Delete** clause and **Replace** with: Pushbutton, round diameter 80mm black on yellow high density polyethylene or aluminum housing with yellow or stainless steel finish.
34 41 13 Traffic Signals	2.25S	Post Mount Flasher	**Delete** clause and sub-clauses.
34 41 13 Traffic Signals	2.27.6S	Video Detection Systems	**Delete** clause and **Replace** with: Video detection system install as per Supplemental Detail Drawing SE5.14 (signal arm mounting).
34 41 13 Traffic Signals	2.29.1S	Illuminated Crosswalk Signs	**Delete** clause and **Replace** with: Refer to *Contract Drawings* and Supplemental Detail Drawing SE5.15
34 41 13 Traffic Signals	2.32S	Extruded Aluminum Signs	**Delete** section and **Replace** with: Refer to New City of Kamloops Supplementary Specification, Section 34 41 15 S.
34 41 13 Traffic Signals	3.3.1S	Concrete Bases	**Delete** clause and **Replace** with: Install concrete bases in accordance with Section 03 30 53 – Cast-In-Place Concrete and as shown on Standard Detail Drawings CE1.8, CE1.9, CE1.13, CE1.14 and Supplemental Detail Drawings SE1.1, SE1.2, SE1.4.
34 41 13 Traffic Signals	3.4.1S	Junction Boxes and Vaults	**Delete** clause and **Replace** with: Install junction boxes and vaults as shown on Standard Detail Drawings E2.3 to E2.6
34 41 13 Traffic Signals	3.6.1S	Poles and Related Equipment	**Delete** clause and **Replace** with: Install poles and related equipment as shown on Supplemental Detail Drawings SE4.1, SE4.17 and SE4.18.

34 41 13 Traffic Signals	3.6.7S	Poles and Related Equipment	**Delete** clause and **Replace** with: Field drilling of holes larger than 33 mm diameter not allowed in Type 1, 3, 6, 7, S & L shafts, and all arms and extensions. Where larger holes are required, reinforce holes with welded bushing prior to galvanizing.
34 41 13 Traffic Signals	3.7.1S	Traffic and Pedestrian Signal Head Mounting	**Delete** clause and **Replace** with: Install traffic and pedestrian signal heads as shown on Standard Detail Drawing E5.2, and Supplemental Detail Drawings SE5.7 and SE5.8.
34 41 13 Traffic Signals	3.7.2S	Traffic and Pedestrian Signal Head Mounting	**Append** to clause: Primary traffic heads shall be tethered to mast arm using 4.763 mm (3/16 inch) stainless steel aircraft cable.
34 41 13 Traffic Signals	3.7.4S	Traffic and Pedestrian Signal Head Mounting	**Delete** clause and **Replace** with: Completely cover all traffic and pedestrian signal heads with a signal bag, of correct size and shape, from time they are installed to system start-up.
34 41 13 Traffic Signals	3.8.1S	Audible Signals	**Delete** clause and **Replace** with: Install audible signals inside pedestrian heads.
34 41 13 Traffic Signals	3.8.3S	Audible Signals	**Delete** clause.
34 41 13 Traffic Signals	3.9.1S	Pedestrian Pushbuttons	**Delete** clause and **Replace** with: Install pedestrian pushbuttons and posts as shown on Standard Detail Drawing E6.3 and Supplemental Detail Drawing SE6.2.
34 41 13 Traffic Signals	3.10.2S	Luminaires and Photocells	**Append** to clause: Any required tilt angle shall be provided on design Drawing. Power supply shall be 120 volt.
34 41 13 Traffic Signals	3.10.4S	Luminaires and Photocells	**Add** new clause: Luminaire fusing shall be 10 amp 600 volt.

34 41 13 Traffic Signals	3.12.1S	Electrical Service and Telephone Demarcation Panels	**Delete** clause and **Replace** with: Mount electrical service panels in service kiosk as shown Supplemental Detail Drawing SE7.6 and SE7.19.
34 41 13 Traffic Signals	3.12.3S	Electrical Service and Telephone Demarcation Panels	**Add** new clause: All conduits exiting a panel or powerbase shall be sealed with duct seal. A positive adhesive, waterproof seal (ex silicone sealant) is required between the powerbase and the powerbase pole. Powerbase door shall be 90 degrees to road opposite to traffic flow.
34 41 13 Traffic Signals	3.13.1S	Electrical Service Panels	**Delete** clause and **Replace** with: Mount electrical service panels in service base or on poles as shown Supplemental Detail Drawing SE7.6.
34 41 13 Traffic Signals	3.14.1S	Wiring	**Delete** clause and **Replace** with: Splices for signal cable to be in junction boxes, splices for camera wire, pedestrian pushbutton and luminaires to be in pole handholes.
34 41 13 Traffic Signals	3.14.3S	Wiring	**Delete** clause.
34 41 13 Traffic Signals	3.14.8S	Wiring	**Delete** clause.
34 41 13 Traffic Signals	3.14.11S	Wiring	**Delete** clause and **Replace** with: Completely cover multiple wire termination splice with Scotch 88. Completely cover 2 to 4 wire terminations with Scotch Kit DBR6.
34 41 13 Traffic Signals	3.14.12S	Wiring	**Delete** clause and **Replace** with: If conductor connections require use of split bolts or similar style devices due to wire size, completely cover splice with Scotch 88 tape.

34 41 13 Traffic Signals	3.14.13S	Wiring	**Delete** clause and **Replace** with: Bond all steel junction box lids and vault lids with a No.8 RW90 conductor.
34 41 13 Traffic Signals	3.15.1S	Pole Mounted Receptacles	**Append** to clause. Receptacle to be 15A120V corrosion resistant duplex spec. grade GFCI.
34 41 13 Traffic Signals	3.16.1S	Traffic Controller	**Delete** clause and **Replace** with: Install traffic controllers as shown on Supplemental Detail Drawings SE1.1, SE1.2 and SE 1.4.
34 41 13 Traffic Signals	3.17.1S- .2S	Detector Loops	**Delete** clauses and **Replace** with: .1 Detector loops shall be installed as shown on Supplemental Detail Drawing SE8.7.
34 41 13 Traffic Signals	3.18S	Flasher Luminaires	**Delete** clause: This product is not used in the City of Kamloops.
34 41 13 Traffic Signals	3.19.1S	Advance Warning Signs	**Delete** clause and **Replace** with: Install advance warning signs as shown on Standard Detail Drawings E10.1, E10.2, Supplemental Detail Drawing SE10.3 and Standard Detail Drawings E10.4 to E 10.10.
34 41 13 Traffic Signals	3.25.2S	Video Detection	**Delete** clause and **Replace** with: Mount on signal pole as shown on Supplemental Detail Drawing SE5.14.
34 41 13 Traffic Signals	3.26.1	Illuminated Crosswalk Signs	**Delete** clause and **Replace** with: Install illuminated crosswalk sign as shown on Supplemental Detail Drawing SE5.15