

File No. 04-1000-20-2013-228

November 12, 2013

s.22(1)

Dear

s.22(1)

Re: **Request for Access to Records under the Freedom of Information and Protection of Privacy Act (the "Act")**

I am responding to your request of August 14, 2013 under the *Freedom of Information and Protection of Privacy Act* for:

Copy of awarded contract for RFP PS20110826

All responsive records are attached. Some information has been severed under s. 17(1) (d) & (f) and s. 21(1) of the Act. You can read or download this section here:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/96165_00

Under section 52 of the Act you may ask the Information & Privacy Commissioner to review any matter related to the City's response to your request. The Act allows you 30 business days from the date you receive this notice to request a review by writing to:

Office of the Information & Privacy Commissioner,
P.O. Box 9038, Stn. Prov. Govt.
Victoria, B.C. V8W 9A4
Tel. 250-387-5629; Fax 250-387-1696

If you request a review, please provide the Commissioner's office with the following:

- the file number assigned to your request (04-1000-20-2013-228);
- a copy of this letter;
- a copy of your original request for information sent to the City of Vancouver; and
- detailed reasons or grounds upon which you are seeking a review.

Please do not hesitate to contact me if you have any questions.

Yours truly,

A handwritten signature in black ink, consisting of a stylized 'B' followed by a wavy line.

Barbara J. Van Fraassen, BA
Director, Access to Information

Barbara.vanfraassen@vancouver.ca
453 W. 12th Avenue Vancouver BC V5Y 1V4
Phone: 604.873.7999
Fax: 604.873.7419

Att.

:sr

File No.: 12-1696

MEMORANDUM

July 15, 2013

TO: Janice MacKenzie, City Clerk

cc: Jing Fan, Buyer II - Supply Management (*by email - without enclosure*)

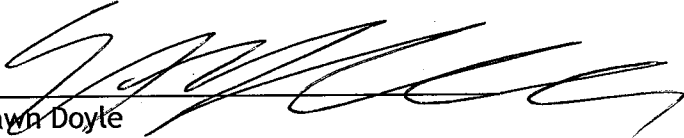
FROM: Shawn Doyle, Solicitor, Law Department

SUBJECT: Supply Agreement (Request for Proposal No. PS20110826) dated July 15, 2013 between City of Vancouver and Flocor Inc. (the "Agreement")

Enclosed please find the above-noted contract for filing. Please note the following:

TYPE OF AGREEMENT	One (1) originally signed Agreement
DATE OF AGREEMENT (if this date is execution date and there is more than one date, use the latest date as the date of the agreement)	July 15, 2013
PARTIES (complete names)	City of Vancouver and Flocor Inc.
CIVIC ADDRESS (no abbreviations - must be searchable)	N/A
LEGAL DESCRIPTION (no abbreviations - must be searchable)	N/A
EXPIRY DATE (indicate "N/A" if there is no expiry date)	July 14, 2016, plus option to renew for up to two successive one-year periods
RETENTION DATE (if there is an expiry date, fill in the date that the City Clerk may send this document to Records - usually one year after expiry date)	

REMINDER DATE (if there are no expiry/retention dates, THIS MUST BE FILLED IN - the lawyer can help to determine when this agreement could possibly be sent to Records - City Clerks will use this date to remind us to review the agreement to determine whether it can be sent to Records)	January 14, 2016
WHO TO NOTIFY: (this may be more than one person) make sure you indicate the person's name, department (including division) and telephone number]	Shawn Doyle Solicitor, Law Department Phone: (604) 873-7692 Jing Fan Buyer II - Supply Management Phone: (604) 871-6183
FILE NUMBER (Law Department file number)	12-1696


 Shawn Doyle

SSD:mek
 Attachment

SUPPLY AGREEMENT

BETWEEN


FLOCOR INC.

AND

CITY OF VANCOUVER

RELATING TO SUPPLY AND DELIVERY OF PIPE AND FITTINGS

JULY 15, 2013

Initialed By: 
City of Vancouver
#160459v1
July 11, 2013



Initialed By:
Flocor Inc.

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SUPPLY AGREEMENT

THIS AGREEMENT is made as of July 15, 2013

BETWEEN:

FLOCOR INC., a corporation organized under the laws of Canada and having an office at 7168 Progress Way, Delta, British Columbia, V4G 1H2

(hereinafter referred to as the "Supplier")

AND:

CITY OF VANCOUVER, a municipal corporation continued under the *Vancouver Charter* (British Columbia) and having an office at 453 West 12th Avenue, Vancouver, British Columbia, V5Y 1V4

(hereinafter referred to as the "City")

WHEREAS the Supplier is in the business of sales and distribution of pipe and fittings, among other things;

AND WHEREAS the City wishes to purchase pipe and fittings, upon and subject to the terms and conditions hereinafter set forth,

NOW THEREFORE, in consideration of the premises and the covenants herein contained, the parties hereto agree as set forth herein.

ARTICLE 1 INTERPRETATION


1.01 Definitions


In this Agreement, unless something in the subject matter or context is inconsistent therewith:

"Agreement" means this agreement, including the schedules hereto, and all amendments made hereto or thereto by written agreement between the Parties;

"Business Day" means a day that is not a Saturday, a Sunday or a public holiday in Vancouver, British Columbia;

"Competent Authority" means (i) any multinational, federal, provincial, state, regional, municipal, local or other government or governmental body and any ministry, department, division, bureau, agent, agency, commission, board or authority of any

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government or governmental body, domestic or foreign, (ii) any domestic, foreign or international judicial, quasi-judicial or administrative court, tribunal, commission, board, panel, arbitrator or arbitral body acting under the authority of any of the foregoing or (iii) any quasi-governmental or private body exercising any statutory, regulatory, expropriation or taxing authority under the authority of any of the foregoing;

"Confidential Information" means all or any confidential information (however recorded or preserved) disclosed before, on or after the date of this Agreement by either Party or any of its Representatives to the Party or its Representatives in connection with this Agreement, concerning:

- (a) this Agreement; or
- (b) the affairs, operations, processes, know-how, suppliers, plans or intentions of the disclosing Party or of any member of the disclosing Party's Group, including, without limitation, any information which is not generally known to the public or which has been specifically identified as confidential or proprietary by the disclosing Party,

but does not include:

- (c) any information that is or becomes generally available to the public or to industry professionals (other than as a result of its disclosure by the receiving Party or its Representatives in breach of this Agreement);
- (d) any information that was available to the receiving Party on a non-confidential basis prior to disclosure by the disclosing Party;
- (e) any information that was, is or becomes available to the receiving Party on a non-confidential basis from a person who, to the receiving Party's knowledge, is not bound by a confidentiality agreement or other duty of confidentiality with or to the disclosing Party or a member of the disclosing Party's Group or otherwise prohibited from disclosing the information to the receiving Party;
- (f) any information that was known to the receiving Party before the information was disclosed to it by the disclosing Party or its Representatives and was not subject to a confidentiality agreement or other duty of confidentiality (including any obligation under this Agreement) with or to the disclosing Party or a member of the disclosing Party's Group;
- (g) any information that the Parties agree in writing is not confidential or may be disclosed; and
- (h) any information unrelated to this Agreement that is developed by or for the receiving Party independently of and without reference to the information disclosed by the disclosing Party;

"Consent" means an approval, clearance, registration, franchise, right, privilege, certification, quota, consent, permit, licence, qualification, filing, exemption,

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certificate or permission and any such other matter or authorization whatsoever, including any condition thereof, that is lawfully and necessarily required from any Competent Authority in connection with the Supply;

"Delivery" means the completion of delivery of the Products ordered in a particular Order, as amended, in accordance with Section 3.04;

"Delivery Date" has the meaning ascribed to such term in Section 3.02(b)(iii);

"Delivery Location" has the meaning ascribed to such term in Section 3.02(b)(iii);

"Effective Date" has the meaning ascribed to such term in Section 2.01;

"Encumbrance" means any mortgage, charge, pledge, hypothecation, security interest, assignment, lien or claim of lien (statutory or otherwise), easement, deemed or statutory trust, restrictive covenant, adverse claim, exception, reservation, right of occupation, any matter capable of registration against title, right of pre-emption, privilege or other encumbrance or third party right of any nature or any other arrangement or condition that, in substance, secures payment or performance of an obligation;

"Force Majeure" means, exhaustively, any:

- (a) war, hostilities (whether war is declared or not), invasion, act of foreign enemies;
- (b) rebellion, terrorism (or threat of terrorism), revolution, insurrection, military or usurped power or civil war;
- (c) riot, civil commotion or disorder, strike or lockout by persons other than the Supplier's personnel and other employees, Subcontractors or any other person for whom the Supplier is responsible;
- (d) natural catastrophe, such as an earthquake, forest fire, landslide or flood; or
- (e) change in Law or action by a Competent Authority, which makes it illegal or impossible for a Party to perform its obligations under this Agreement;

"Group" means:

- (f) in respect of the Supplier, the group constituted from time to time by:
 - (i) the Supplier;
 - (ii) all persons that directly or indirectly control or are controlled by the Supplier; and
 - (iii) all persons that are directly or indirectly controlled by any person that directly or indirectly controls the Supplier; and

- (g) in respect of the City, the group constituted from time to time by:
 - (i) the City; and
 - (ii) all bodies corporate directly or indirectly controlled by the City.

"Intellectual Property Rights" means any and all current and future any and all proprietary rights provided under patent law, copyright law, design patent or industrial design law, or any other applicable statutory provision or common law principle, including trade secret law, that may provide a right in ideas, formulae, algorithms, concepts, inventions, know-how, computer software, database or design, or the expression or use thereof, whether registered or unregistered, together with any right to apply for or register any of the foregoing;

"Laws" means all laws, statutes, codes, ordinances, decrees, rules, regulations, by-laws, judicial or arbitral or administrative or ministerial or departmental or regulatory judgments, orders, decisions, rulings, determinations or awards of any Competent Authority whether or not having the force of law and any legal requirements or bases of liability under the common law or civil law, including all such Laws relating to Taxes, the environment, human health or safety, pollution and other environmental degradation, and hazardous materials;

"Order" means an order for Products submitted by the City in accordance with Section 3.02;

"Parties" means the City and the Supplier and **"Party"** means one of them or any of them, as the context requires;

"Permitted Purpose" has the meaning ascribed thereto in Section 7.01;

"Products" means the products set out in Schedule A, and, where the context requires, Products ordered by, or supplied to, the City;

"Proposal" means the Supplier's proposal dated January 29th, 2013 submitted in response to the RFP, as revised, which proposal forms Schedule D hereto, together with all correspondence between the City and the Supplier related thereto;

"Representative" means a Group member of a Party, or an official, officer, employee, agent, subcontractor or other representative of a Party or any member of its Group, or any other person for whom the Party is responsible;

"RFP" means the City's Request for Proposal number PS20110826, which document forms Schedule E hereto;

"Sales Tax" has the meaning ascribed to such term in Section 8.01;

"Specifications" means, for each Product, the specifications therefor set forth in Schedule B;

"Subcontractor" means any person engaged by the Supplier to perform any part of the Supply;

"Supply" means the supply of Products by the Supplier to the City pursuant to Orders;

"Taxes" means all taxes, duties, imposts, levies, assessments, tariffs and other charges imposed, assessed or collected by a Competent Authority, including:

- (a) any gross income, net income, gross receipts, business, royalty, capital, capital gains, goods and services, harmonized sales, value added, severance, stamp, franchise, occupation, premium, capital stock, sales and use, real property, land transfer, personal property, ad valorem, transfer, licence, import, customs, profits, windfall profits, environmental, carbon, emissions, pollution, payroll, employment, employer health, pension plan, anti-dumping, countervailing, or excise tax, duty, import, levy, assessment, tariff or other charge;
- (b) all withholdings on amounts paid to or by the relevant person;
- (c) all statutory remittances, employment insurance premiums and social security or pension plan contributions or premiums and Canada pension plan contributions;
- (d) any fine, penalty, interest or addition to tax;
- (e) any tax imposed, assessed, or collected or payable pursuant to any tax-sharing agreement or any other contract relating to the sharing or payment of any such tax, levy, assessment, tariff, duty, deficiency or fee; and
- (f) any liability for any of the foregoing as a transferee, successor, guarantor, or by contract or by operation of law.


1.02 Headings

This division of this Agreement into articles and sections and the insertion of headings are for convenience of reference only and do not affect the construction or interpretation of this Agreement. The terms "hereof", "hereunder" and similar expressions refer to this Agreement, including its schedules, and not to any particular article, section or other portion hereof. Unless something in the subject matter or context is inconsistent therewith, references herein to articles, sections and schedules are to articles, sections and schedules of this Agreement.

1.03 Extended Meanings

In this Agreement:

- (a) words importing the singular include the plural and vice versa, words importing a gender include all genders and words importing persons include individuals, partnerships, associations, trusts, unincorporated organizations and corporations, except where the context requires otherwise;

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- (b) any provision calling for "agreement" requires the relevant agreement to be recorded in writing and signed by both Parties;
- (c) the words "include", "includes", "including" and "included" shall be construed without implying limitation by the words which follow those words and without prejudice to the generality of the provisions to which such words relate, unless inconsistent with the context;
- (d) the rule of interpretation known as *ejusdem generis* shall not apply;
- (e) each reference to a specific statute, regulation, law or any subordinate instrument or statutory or regulatory provision shall be construed as including any legal or regulatory provision which subsequently amends or replaces the same, and shall include any and all subordinate instruments, orders, rules, regulations and bylaws made thereunder or guidelines issued in respect thereof;
- (f) each reference to a writing means a writing that is hand-written, type-written, printed or electronically made, and which results in a permanent un-editable record; and
- (g) "control" when used to describe a relationship between one person and any other person, has the following meanings:
 - (i) a person controls a body corporate if securities of the body corporate to which are attached more than 50% of the votes that may be cast to elect directors of the body corporate are beneficially owned by the person and the votes attached to those securities are sufficient, if exercised, to elect a majority of the directors of the body corporate;
 - (ii) a person controls an unincorporated entity, other than a limited partnership, if more than 50% of the ownership interests, however designated, into which the entity is divided are beneficially owned by that Person and the Person is able to direct the business and affairs of the entity;
 - (iii) the general partner of a limited partnership controls the limited partnership; and
 - (iv) a person who controls an entity is deemed to control any entity that is controlled, or deemed to be controlled, by the entity.

1.04 Schedules

- (a) The following are the schedules hereto, each of which is deemed to be part hereof:

Schedule A	Products and Prices
Schedule B	Product Specifications
Schedule C	Service Level Commitments

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Schedule D Proposal
Schedule E RFP

- (b) In the event of any inconsistency between any article of this Agreement and any schedule to this Agreement, or any inconsistency among schedules to this Agreement, the provision specifying the higher standard of Product or the higher standard of service to the City, or the greater obligation for the Supplier, shall be deemed to apply.

ARTICLE 2 EFFECTIVENESS

2.01 Effective Date

This Agreement shall come into full force and effect on the July 15, 2013 (the "Effective Date").

2.02 Term

- (a) Unless earlier terminated pursuant to Article 6, this Agreement shall terminate on the third anniversary of the Effective Date or on such later date as the Parties may agree in writing.
- (b) Subject to termination pursuant to Article 6, but notwithstanding Section 2.02(a), the term of this Agreement may be extended for up two successive one-year periods following the third anniversary of the Effective Date, upon the written agreement of the Parties.


ARTICLE 3 SUPPLY; GENERAL TERMS


3.01 Supply

- (a) During the term of effectiveness of this Agreement, the Supplier shall supply, and the City shall purchase, such quantities of Products as the City may order under Section 3.02, in accordance with this Agreement.
- (b) The Supplier shall maintain at all times sufficient inventories of the Products to meet the business plans and requirements of the City.
- (c) Without limiting the foregoing Section 3.01(b), Table 2 within Schedule A hereto contains certain estimates of the City's annual Product requirements. The Supplier acknowledges such estimates and affirms its capacity to supply Products to the City in accordance therewith; however, the City can offer no assurances that it shall purchase Products in accordance with such estimates.

3.02 Orders

- (a) The City may deliver Orders to the Supplier from time to time during the term of effectiveness of this Agreement.

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- (b) Each Order shall:
 - (i) be given in writing
 - (ii) state that it is an order made under, and subject to the terms of, this Agreement;
 - (iii) specify the type and quantity of Products ordered; and
 - (iv) specify the date by which the Products ordered pursuant to the Order are to be delivered (the "Delivery Date"), and the location or address to which they are to be delivered (the "Delivery Location"), provided that each Delivery Location must be within the City of Vancouver.

3.03 Product and Supply Requirements

- (a) The Supplier shall manufacture, pack, transport and supply the Products (in each case to the extent applicable) in accordance with Schedule B and all:
 - (i) Product manufacturer recommendations and requirements;
 - (ii) generally accepted industry standards and practices; and
 - (iii) applicable Laws.
- (b) The Products supplied to the City by the Supplier under this agreement shall:
 - (i) be new;
 - (ii) conform to the Specifications;
 - (iii) be free from defects in design, material and workmanship and remain so for a minimum one year after Delivery, and be subject to a manufacturer's warranty against defects of any type for at least one year after Delivery; and
 - (iv) comply with all applicable Laws.
- (c) The Supplier shall ensure that the Products are properly packed and secured in such manner as to enable them to reach their destination in good condition.
- (d) The Supplier shall obtain and maintain in force at all times all Consents needed to manufacture (if applicable) and supply the Products in accordance with the terms of this Agreement.
- (e) The Supplier shall ensure that title in Products supplied by the Supplier hereunder, when such title passes to the City hereunder, shall be free and clear of Encumbrances. The Supplier shall not enter any contract that reserves ownership of Products supplied by the Supplier hereunder in favour of any third

party and, at the request of the City, the Supplier must provide evidence that no such contract has been entered into.

- (f) The Supplier shall adhere to, and shall ensure that the Products and Supply conform to, the City's Supplier Code of Conduct referred to in Section 9.0 on page A-5 of the RFP.

3.04 Delivery Requirements

- (a) The Supplier shall deliver the Products ordered in each Order to the applicable Delivery Location by the applicable Delivery Date, and between 8:00 a.m. and 2:30 p.m. on Business Days only.
- (b) Delivery of the Products specified in an Order shall be deemed to be complete only upon the completion of their unloading at the Delivery Location.
- (c) The Supplier shall not deliver the Products specified in an Order by instalments except with the prior written consent of the City.
- (d) If the Products specified in an Order are not delivered in accordance herewith by the specified Delivery Date, then, without limiting any other right or remedy the City may have under this Agreement or otherwise, the City may:
 - (i) refuse to take any subsequent attempted delivery of such Products associated with such Order;
 - (ii) obtain substitute products from another supplier and recover from the Supplier any costs and expenses reasonably incurred by the City in obtaining such substitute products; or
 - (iii) claim damages against the Supplier for any other costs, expenses or losses resulting from the Supplier's failure to deliver the Products specified in the Order by the Delivery Date,

provided that the Supplier shall have no liability for any failure or delay in delivering the Products specified in an Order to the extent that such failure or delay is caused by the City's failure to comply with its obligations under this Agreement.

- (e) Each shipment of Products shall be accompanied by a delivery document from the Supplier showing the Order number, the date of the Order, the type and quantity of Products included in the Order, and, in the case of an Order being delivered by instalments, the outstanding balance of Products remaining to be delivered.
- (f) If the Supplier requires the City to return any shipping containers, or other packaging or shipping materials, to the Supplier, that fact must be clearly stated on the delivery document accompanying the relevant Products, and any such returns shall be at the Supplier's expense.

- (g) In respect of any Products that originate outside Canada, the Supplier shall be responsible for all customs and import Taxes, costs, expenses, administrative duties and formalities.

3.05 Rejection of Defective Products

- (a) The City shall not be deemed to have accepted any particular Products until it has had a reasonable time to inspect them following Delivery, or, in the case of a latent defect in the Products, until a reasonable time after the latent defect has become apparent.
- (b) In addition to the general inspection right stated in Section 3.05(a) above, the specific testing and inspection rights and requirements stated in Schedule B in respect of particular Products shall apply to those Products. In the event of any conflict between Section 3.05(a) and Schedule B in respect of a particular Product, Schedule B shall apply. For purposes hereof, the fact that two standards or requirements are different shall not constitute a conflict unless compliance with both of them is logically impossible.
- (c) If any Products delivered to the City do not comply with the Specifications, or are otherwise not in conformity with the terms of this Agreement, then, without limiting any other right or remedy that the City may have, the City may reject those Products and:
 - (i) require the Supplier to remove the rejected Products from any City facility or work site at the Supplier's risk and expense within 10 Business Days of being requested to do so;
 - (ii) require the Supplier to repair or replace the rejected Products at the Supplier's risk and expense within 30 Business Days of being requested to do so;
 - (iii) require the Supplier to repay the price of the rejected Products in full (whether or not the City has previously required the Supplier to repair or replace the rejected Products); and
 - (iv) claim damages for any other costs, expenses or losses resulting from the Supplier's delivery of Products that are not in conformity with the terms of this Agreement.
- (d) In addition to the general rights to reject Products and obtain related remedies pursuant to above Section 3.05(c), the specific rejection and replacement rights stated in Schedule B in respect of particular Products shall apply to those Products. In the event of any conflict between Section 3.05(c) and Schedule B in respect of a particular Product, Schedule B shall apply. For purposes hereof, the fact that two standards or requirements are different shall not constitute a conflict unless compliance with both of them is logically impossible.

- (e) The City's rights and remedies under this Section 3.05 and Schedule B are in addition to the rights and remedies available to it under Article 5, Article 6 and applicable Laws.
- (f) The terms of this Agreement shall apply to any repaired or replacement Products supplied by the Supplier pursuant to Section 3.05(c) or Schedule B.
- (g) If the Supplier fails to promptly repair or replace rejected Products in accordance with clause 3.05(c) or Schedule B, the City may, without affecting any of its other rights hereunder, obtain substitute products from a third-party supplier, or have the rejected Products repaired by a third party, and the Supplier shall reimburse the City for the costs it incurs in doing so.

3.06 Risk and Title

- (a) The risk in Products delivered to the City hereunder shall pass to the City on Delivery.
- (b) Title to Products delivered to the City hereunder shall pass to the City on Delivery. The Supplier shall deliver to the City any documentation, including a bill of sale, which the City may reasonably require to evidence the transfer of title in and to Products to the City, free and clear of all Encumbrances.

3.07 Certain Supplier Representations and Warranties

The Supplier represents and warrants that:

- (a) the Supplier has the full right, power, and authority to enter into this Agreement and to perform the Supply;
- (b) Supplier is a corporation duly organized, validly existing and in good standing under the laws of Canada and is lawfully authorized to do business in the Province of British Columbia;
- (c) the Supplier is not a party to or bound by any agreement (written or oral), indenture, instrument, licence, permit or understanding or other obligation or restriction under the terms of which the execution, delivery or performance of this Agreement does or shall constitute or result in a violation or breach;
- (d) the Supplier has a valid City of Vancouver business license;
- (e) all statements made by the Supplier in its Proposal are true and accurate;
- (f) the Supplier is an authorized distributor of the Products;
- (g) the Supplier and the Supplier's personnel and Subcontractors have the skills, training, experience and expertise which are necessary to supply the Products in accordance with the terms of this Agreement; and

- (h) without prejudice to any other provision hereof, including any higher standard set forth elsewhere herein, the Supplier shall continually meet or exceed the Supplier commitments set forth in Schedule C and shall provide all further services and do all further things as are described in Schedule D or Schedule E hereof as being services to be provided or other things to be done by the contractor selected pursuant to the RFP or by the Supplier.

3.08 Product Warranties

- (a) All Products provided under the Agreement shall be covered by the Supplier's and the Products' manufacturers' ordinary warranties (in each case, for a minimum of one year) against defects in materials, workmanship and performance.
- (b) All costs associated with warranty repairs shall be the responsibility of the Supplier, including repair, adjustment, and shipping costs, and replacements of Products.
- (c) If requested by the City, the Supplier shall handle and manage all claims on manufacturer warranties for Product defects and resolve all matters either by repairing or replacing Products at the City's sole discretion.
- (d) The Supplier shall deliver to the City all such documentation as the City may reasonably require to evidence that Products are subject to a manufacturer's warranty or additional Supplier warranty, on terms which are acceptable to the City. If any manufacturers' warranties are issued to the Supplier and not the City, the Supplier shall take all such further steps and actions as may be required to assign the benefit of such warranties to the City. At the City's request, the Supplier shall make, coordinate and administer on its behalf any warranty claim against a Product manufacturer.

3.09 No Exclusivity

- (a) The City is not bound to treat the Supplier as its exclusive supplier of any Products.
- (b) The City shall be entitled, in its sole discretion, to purchase products of the same type as, or similar to, the Products, from any supplier at any time.

3.10 Absence of Conflicts of Interest

- (a) Neither the Supplier, nor any of its Representatives has given or shall give or offer to give to the City or any official, officer, employee or agent of the City any gratuity, reward, advantage or benefit of any kind as consideration for doing or forbearing to do, or for having done or forborne to do, any act in connection with this Agreement.
- (b) To the best of the Supplier's knowledge, the Supplier, its Subcontractors, and their respective directors, officers, employees and agents have no pecuniary interests or any other current or past interests or dealings, including with any

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officials, officers or employees of the City, that would cause any conflict of interest or be seen to cause a conflict of interest in respect of the Supply. Should such a conflict or perceived conflict arise during the term of this Agreement, the Supplier shall declare it immediately in writing to the City. The City may direct the Supplier to resolve any conflict or perceived conflict to the satisfaction of the City. The Supplier warrants that neither the Supplier nor any of its Subcontractors, or any of their respective directors, officers, employees or agents, has any predisposition, affinity or association with any third party which would impair or be seen to impair or qualify the Supplier's provision of the Supply.

**ARTICLE 4
PAYMENT**

4.01 Payment to the Supplier


- (a) The Supplier shall be entitled to invoice the City for each Order made by the City, on or at any time after Delivery.
- (b) Subject to Article 6, the City shall pay the Supplier in respect of each Order in accordance with Schedule A and Article 8, thirty (30) days after the receipt of an invoice relating to such Order prepared in accordance with Section 4.01(a) and Section 4.02.
- (c) Notwithstanding any other provisions of this Agreement, the Supplier shall not be entitled to payment for any Supply that has not been performed in compliance with the provisions of this Agreement.


4.02 Content of Invoices

- (a) Each of the Supplier's invoices shall set out, at a minimum (and in such form or format as required by the City):
 - (i) the relevant Order number;
 - (ii) an itemized list of the amounts owing;
 - (iii) a description of the Products to which the invoice relates; and
 - (iv) the total amount payable under the invoice; and
 - (v) such other information as the City may require from time to time.

4.03 Currency of Payment

All prices stated herein are denominated in, all invoices hereunder shall be stated in, and all payments hereunder shall be made in, Canadian dollars.

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
4.04 Set Off


Notwithstanding any provision to the contrary in this Agreement and without prejudice to any other remedy which the City may have (whether in common law or equity), the City shall be entitled to deduct from and set off against any sum(s) otherwise due to the Supplier hereunder any sums which are due from the Supplier to the City or which the Supplier is liable to pay to the City under this Agreement or in connection herewith (including without limitation any monies overpaid to the Supplier under this Agreement or otherwise due and payable to the City by reason of any error in payment under this Agreement).

ARTICLE 5 LIABILITY AND INSURANCE

5.01 Indemnification by the Supplier

- (a) The Supplier shall indemnify and keep indemnified and hold the City and its officials, officers, employees and agents harmless against all losses, liabilities, claims, demands, costs and expenses (including legal fees), fines, penalties or charges (including those imposed by statute or otherwise imposed), arising out of or in connection with:
 - (i) any loss or damage arising from a claim by any third party concerning or arising out of the Supply or the use of the Products, to the extent that such claim arises out of any negligence, wilful misconduct or failure to adhere to this Agreement by the Supplier or any of its Representatives;
 - (ii) any occupational illness, injury or death of any person, which occurs during, or as a result of, the Supply or the use of the Products, to the extent that such illness, injury or death is attributable to the acts or omissions of the Supplier or any of its Representatives;
 - (iii) any other failure by the Supplier to fully comply with the provisions of this Agreement;
 - (iv) a breach by the Supplier or any Subcontractor of any Law in the course of, or as a result of, the provision of the Supply;
 - (v) any actual or alleged infringement of any Intellectual Property Rights caused by the Supply or the use of the Products, and
 - (vi) any breach of the warranties of the Supplier contained herein.
- (b) Nothing in this Section 5.01 or otherwise in this Agreement shall limit or exclude any direct liability (whether in contract, tort, for breach of statutory duty or any other legal basis) of the Supplier to the City.

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5.02 Insurance


- (a) In addition to those mandatory insurance policies that the Supplier is required to carry by any applicable Laws, the Supplier shall take out and maintain in force, with a reputable insurance company, during the term of this Agreement and for a period of five years afterwards, commercial general liability insurance with coverage of not less than five million dollars (\$5,000,000) per occurrence and at least five million dollars (\$5,000,000) of annual aggregate coverage endorsing the City as an additional insured on a primary and non-contributory basis. The deductible per occurrence shall not exceed two thousand five hundred dollars (\$2,500).
- (b) The Supplier shall ensure that vehicles owned or operated by the Supplier in connection with the Agreement are covered by third party legal liability insurance in an amount not less than five million dollars (\$5,000,000) per occurrence.
- (c) The Supplier shall ensure that any Subcontractors also maintain the same insurance as the Supplier, having regard to the obligations under this Agreement which they are contracted to fulfil.
- (d) The Supplier's liabilities under this agreement shall not be deemed to be released or limited by the Supplier taking out the insurance policies referred to in Section 5.02(a) or Section 5.02(b).
- (e) The cost of the insurances arising under this Section 5.02 shall be deemed to be incorporated into the unit prices specified in Schedule A.
- (f) As a condition precedent to any payment from the City to the Supplier under this Agreement, and as and when reasonably requested by the City, the Supplier shall provide evidence of all required insurance in the form of a "Certificate of Insurance" (on the City's form).

ARTICLE 6 FORCE MAJEURE; TERMINATION

6.01 Force Majeure

- (a) No Party shall be deemed to be in breach of this Agreement or otherwise liable to another Party in any manner whatsoever for any failure or delay in performing its obligations under this Agreement reasonably due to Force Majeure.
- (b) If either Party's performance of its obligations under this Agreement is affected by an event of Force Majeure, then:
 - (i) it shall give written notice to the other Parties, specifying the nature and extent of the event of Force Majeure, as soon as reasonably practicable after becoming aware of the event of Force Majeure;

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- (ii) performance of such obligation(s) shall be deemed suspended but only for a period equal to the delay reasonably caused by such event;
 - (iii) it shall not be entitled to payment from any of the other Parties in respect of extra costs and expenses incurred as a result of the event of Force Majeure; and
 - (iv) it shall use all reasonable diligence to mitigate the cause and the result of the event of Force Majeure and to remedy the situation and resume its obligations under this Agreement.
- (c) Notwithstanding the obligations of a Party affected by an event of Force Majeure pursuant to Section 6.01(b), if the event of Force Majeure renders it impossible or impractical for the Supplier to provide the Supply in accordance with this Agreement for a period of at least 90 days, the City may terminate this Agreement upon notice delivered to the Supplier at any time following the expiration of such period of 90 days.

6.02 Purchaser Termination Rights


The City shall have the following rights:

- (a) The City may terminate this Agreement at any time (and for its convenience) upon thirty (30) days' written notice to the Supplier.
- (b) If the City reasonably considers that the Supplier is not discharging any of its material obligations under this Agreement, the City may inform the Supplier by notice stating the grounds for the notice. If evidence of remediation satisfactory to the City, is not received as soon as practicable or in any case within 10 days or such longer period as agreed by the Parties, the City may by a further notice to the Supplier of at least 5 days terminate this Agreement.
- (c) The City may terminate this Agreement with immediate effect if the Supplier becomes bankrupt or insolvent, goes into liquidation, has a receiver or administrator appointed over it or any of its assets of undertaking, enters into any arrangement for the benefit of its creditors, becomes the subject of any moratorium or carries on business under a receiver, trustee, manager or arrangement for the benefit of its creditors, or if any act is done or event occurs which (under applicable Laws) has a similar effect to any of these acts or events.

6.03 Supplier Termination Rights

After giving at least thirty (30) days' written notice to the City, the Supplier may terminate this Agreement when:

- (a) 90 days after the due date for payment of an invoice issued by the Supplier to the City hereunder, it has not received payment of that part which has not by that time been contested in writing by the City and provided always that:

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- (i) the Supplier has issued a notice of reminder to the City following the due date for payment in relation to such unpaid sum; and
- (ii) the termination notice may not be issued until the expiry of 45 days following the issue of such reminder notice; or
- (b) the City commits any material persistent breaches of its obligations under this Agreement, which render performance by the Supplier of its obligations under this Agreement or a substantial part thereof impossible or significantly adversely affect such performance of this Agreement as a whole, and further which remain irremediable after 90 days.

6.04 Consequences of Termination

- (a) Termination of this Agreement shall not prejudice or affect the accrued rights or claims and liabilities of the Parties.
- (b) After termination of this Agreement, the provisions of Section 3.07, Article 5, Article 7 and Article 9 shall remain in force.

ARTICLE 7 RIGHTS AND OBLIGATIONS CONCERNING INFORMATION

7.01 *Freedom of Information and Protection of Privacy Act*

The Supplier acknowledges that the City is subject to the *Freedom of Information and Protection of Privacy Act* (British Columbia), which imposes significant obligations on the City's contractors to protect all personal information acquired from the City in the course of providing any service to the City.

7.02 No Promotion


The Supplier shall not disclose or promote its relationship with the City, including by means of any oral declarations, announcements, sales literature, letters, client lists, press releases, brochures or other written materials, without, in each case, the express prior written consent of the City.

7.03 Confidentiality Obligation

Each Party shall keep the Confidential Information of the other Party confidential and each Party shall not use such Confidential Information, except for the purpose of exercising or performing its rights and obligations under this Agreement or making use of the Products (a "**Permitted Purpose**"), or disclose such Confidential Information in whole or in part to any third party, except as expressly permitted by this Article 7.

7.04 Disclosure to Representatives

A Party may disclose another Party's Confidential Information to those of its Representatives who need to know such Confidential Information for the Permitted Purpose, provided that it informs such Representatives of the confidential nature of the Confidential

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Information prior to disclosure, and at all times it is responsible for such Representatives' compliance with the confidentiality obligations set out in this Article 7.

7.05 Disclosures Required by Law

A Party may disclose Confidential Information to the extent required by any applicable Laws or by any Competent Authority provided that, where legally permitted, it notifies the other Party before doing so, gives the other Party a reasonable opportunity to take any steps that such Party considers necessary to protect the confidentiality of that information, and notifies the third person that the information is Confidential Information. In any event, a Party shall furnish only that portion of the Confidential Information which it is legally required to disclose and shall use its reasonable endeavours to obtain a protective order or other reliable assurance that the Confidential Information shall be accorded confidential treatment.

7.06 Other Disclosures by the City

The City's obligations under this Article 7 are wholly subject to and qualified by, the applicable provisions of the *Freedom of Information and Protection of Privacy Act* (British Columbia) and, notwithstanding any other provision of this Article 7, the City may disclose Confidential Information in any manner compliant with such statute or otherwise in furtherance of its public role or duties, including in the course of publicly reporting to the Vancouver City Council.


ARTICLE 8 TAXES

8.01 Taxes for Own Accounts

Unless otherwise expressly stated in this Article 8, any Taxes becoming due and payable by either Party pursuant to any applicable Laws by either Party as a result of the entering into, the performance of obligations under or the taking of payment pursuant to this Agreement, shall be for the account of that Party, and for greater certainty the prices set forth in Schedule A include all such Taxes except for applicable Taxes arising under all sales, excise and value added tax legislation (including, without limitation, the *Excise Tax Act* (Canada) and similar Canadian provincial legislation) (collectively, the "Sales Tax") as a result of the sale of Products within Canada hereunder, unless it is clearly stated that they are intended to be Sales Tax-inclusive.

8.02 Withholding Taxes

- (a) Notwithstanding any other provision to the contrary, if the City considers it necessary to satisfy its obligations under any Law relating to Taxes, the City may:
 - (i) withhold an amount from a payment made to the Supplier; and
 - (ii) pay the withheld amount directly to the relevant Competent Authority.

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- (b) If an amount withheld in accordance with Section 8.02(a) is paid by the City to the relevant Competent Authority, it is deemed to have been paid to the Supplier on the date on which the remainder of the payment to which it relates was paid to the Supplier.
- (c) The Supplier agrees and acknowledges that it has no claim against the City for any amounts withheld and paid to the relevant Competent Authority in accordance with Section 8.02(a).
- (d) If the City does not withhold an amount under Section 8.02(a) which it is required to withhold pursuant to any laws relating to Taxes, the Supplier agrees to pay that amount to the City, upon request by the City.
- (e) The Supplier agrees that the City shall not be required to increase any payment to the Supplier by the amount withheld by the City under Section 8.02(a).

ARTICLE 9 DISPUTE RESOLUTION

9.01 Optional Procedure

All claims, disputes or issues in dispute between the City and the Supplier in relation to this Agreement shall be decided by mediation or arbitration, if the Parties so agree in writing, or, failing any such agreement, by the courts of competent jurisdiction in the Province of British Columbia.

9.02 Arbitration

- (a) In the event that Parties agree to arbitration pursuant to Section 9.01:
 - (i) the arbitration shall be conducted pursuant to the *Commercial Arbitration Act* (British Columbia) and shall be governed by the rules of the British Columbia International Commercial Arbitration Centre, except that the arbitrator or arbitrators shall be agreed upon by the Parties, and failing agreement by the Parties, shall be appointed by a court of competent jurisdiction within the Province of British Columbia. The parties shall share equally the costs of the arbitration but shall be responsible for their own separate costs and expenses in relation to the arbitration including legal fees and disbursements; and
 - (ii) the arbitration shall take place in Vancouver, British Columbia and shall be governed by the laws of British Columbia.

ARTICLE 10 MISCELLANEOUS

10.01 Assignment

- (a) The Supplier shall not assign this Agreement (including by operation of law) without the express prior written consent of the City.

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- (b) If the Supplier is a company, then any change in the control of the company shall be deemed to constitute an assignment for the purposes of Section 10.01(a).
- (c) No assignment permitted by the City shall relieve the Supplier from any obligation under this Agreement or impose any liability upon the City.
- (d) The City may at any time and from time to time assign this Agreement, in whole or in part, upon notice to (and without the consent of) the Supplier.

10.02 Subcontracting

The Supplier may, on its own behalf and not on behalf of the City, engage a Subcontractor to assist in the performance of the Supply, provided that:

- (a) the engagement of such Subcontractor has been previously specifically approved by the City in writing;
- (b) such Subcontractor has given a written deed to the City in which it has undertaken to abide by the terms of this Agreement; and
- (c) the Supplier shall remain wholly liable for the due performance of its obligations under this Agreement and shall be wholly responsible for the acts and omissions of such Subcontractor.

10.03 Time of the Essence

Time is of the essence of this Agreement.

10.04 Costs


Each of the Parties hereto shall pay its respective legal fees and other costs and expenses incurred in connection with the preparation, execution and delivery of this Agreement and all documents and instruments executed pursuant hereto and any other costs and expenses whatsoever and howsoever incurred.

10.05 Benefit of this Agreement

- (a) This Agreement shall inure to the benefit of and be binding upon the respective successors and permitted assigns of the Parties hereto.
- (b) Except as expressly set forth in the foregoing Section 10.05(a) or Section 5.01, nothing in this Agreement shall be construed to give any rights or benefits to anyone other than the City and the Supplier.

10.06 Entire Agreement

This Agreement constitutes the entire agreement between the Parties hereto with respect to the subject matter hereof and cancels and supersedes any prior understandings and agreements between the parties hereto with respect thereto. There are no

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representations, warranties, terms, conditions, undertakings or collateral agreements, express, implied or statutory, between the Parties in relation to the subject matter hereof other than as expressly set forth in this Agreement.

10.07 Amendments and Waiver

No modification of or amendment to this Agreement is valid or binding unless set forth in writing and fully executed by the Parties hereto and no waiver of any breach of any term or provision of this Agreement is effective or binding unless made in writing and signed by the Party purporting to give such waiver and, unless otherwise provided, is limited to the specific breach waiver.

10.08 Notices

- (a) Any invoice, Order, demand, notice or other communication to be given to a Party in connection with this Agreement must be given in writing and must be given by personal delivery to an authorized agent of a Party, or delivered by registered mail, by courier or by facsimile transmission (with delivery confirmation), addressed to a Party as follows:

- (i) If to the Supplier:

Flocor Inc.
Outside Sales
7168 Progress Way
Delta, British Columbia V4G 1H2

Attention: Greg Doucette
Phone: 604-940-1449
Cell: 604-340-2052
Facsimile: 604-940-9878; and


- (ii) If to the City:


City of Vancouver
Category Manager - MRO
Supply Chain Management
453 W 12th Ave,
Vancouver, British Columbia V5Y 1V4

Phone: 604-873-7254
Facsimile: 604-873-7057
Email: purchasing@vancouver.ca

or to such other address or facsimile number as may be designated by notice given by either Party to the other.

- (b) Any order, demand, notice or other communication shall be conclusively deemed to have been given:

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- (i) if given by personal delivery, on the day of actual delivery thereof;
- (ii) if given by registered mail, on the tenth Business Day following the deposit thereof in the mail;
- (iii) if given by courier, on the Business Day following confirmation by the courier that the notice has been delivered; and
- (iv) if given by facsimile transmission, on the day of transmittal thereof if given during the normal business hours of the recipient and on the Business Day during which such normal business hours next occur if not given during such hours on any day.

Notwithstanding the foregoing, if the Party giving any demand, notice or other communication knows or ought reasonably to know of any difficulties with the postal system which might affect the delivery of mail, any such order, demand, notice or other communication must not be mailed but must be given by personal delivery, courier or facsimile transmission.

10.09 Governing Law and Jurisdiction


- (a) This Agreement is governed by and must be construed in accordance with the laws of the Province of British Columbia.
- (b) All provisions of the *International Sale of Goods Act* (British Columbia) are specifically excluded from application to this Agreement.
- (c) This Agreement is subject to the exclusive jurisdiction of the courts in the Province of British Columbia except:
 - (i) as otherwise agreed by the Parties pursuant to Article 9; and
 - (ii) to the extent necessary to enforce, in another jurisdiction, any decision or award made pursuant to Article 9 or any judgment of any court in the Province of British Columbia.


10.10 Further Assurances

Each Party agrees to do all things and execute all deeds, instruments, transfers or other documents as may be necessary or desirable to give full effect to the provisions of this Agreement and the transactions contemplated by it.

10.11 Severance

If any term or condition of this Agreement is for any reason held to be illegal, invalid, ineffective, inoperable or otherwise unenforceable, it shall be severed and deemed to be deleted from this Agreement and the validity and enforceability of the remainder of this Agreement shall not be affected or impaired thereby. If any term or condition of this Agreement is found to be illegal, invalid ineffective, inoperable or otherwise unenforceable,

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but would not be so if some part of it were deleted, the term or condition shall apply with such modifications as may be necessary to make it enforceable.

10.12 Counterparts

This Agreement may be executed in any number of counterparts. All counterparts, taken together, constitute one instrument. A Party may execute this Agreement by signing any counterpart.

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10.13 Electronic Execution

Delivery of an executed signature page to this Agreement by either Party by electronic transmission shall be as effective as delivery of a manually executed copy of this Agreement by such party.

IN WITNESS WHEREOF this Agreement has been executed as of the day and year first above written by and on behalf of the Parties by their duly authorized signatories:

FLOCOR INC.

Per:



Greg Doucette, Outside Sales



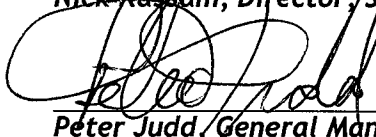
Kevin Gresham, BC Regional Manager

CITY OF VANCOUVER

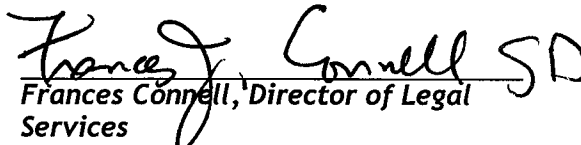
Per:



Nick Kassam, Director, SCM



**Peter Judd, General Manager,
Engineering Services**




**Frances Connell, Director of Legal
Services** SD

**SCHEDULE A
PRODUCTS AND PRICES****1.0 GENERAL**

Prices of Products shall be the unit prices specified in Table 2 forming part of this Schedule A, subject to sections 2.0 through 7.0 of this Schedule A.

2.0 CATEGORY A - COPPER TUBE

2.1 s.17(1)(d) & (f) and s.21(1)



2.2 s.17(1)(d) & (f) and s.21(1)



2.3 For purposes of the aforesaid formula, the "market cost" shall be the average of the market costs (dollar/pound) published by Commodity Exchange (COMEX) for each of the most recent prior three months for which such data have been published.


2.4 s.17(1)(d) & (f) and s.21(1)





2.5



s.17(1)(d) & (f) and s.21(1)



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3.0 CATEGORY B - PVC PIPE AND FITTINGS

- 3.1 All PVC pipe prices set out in Table 2, Part B, forming part of this Schedule A will be fixed for one year from the Effective Date of the Agreement. The prices for the second year and the third year of the Agreement will be as agreed by both parties in writing. Furthermore, at each of the first and second anniversary dates of the Agreement, the Supplier will provide the City with price increase or decrease documentation from multiple pipe manufacturers. The price adjustments for the second and third years will take into account this documentation.

4.0 CATEGORY C - WATERWORKS SERVICE SADDLES

- 4.1 s.17(1)(d) & (f) and s.21(1)

5.0 CATEGORY D - MECHANICAL COUPLINGS FOR DWV/SEWER

- 5.1 All mechanical couplings for DWV/Sewer prices set out in Table 2, Part D, forming part of this Schedule A will be fixed for the three-year term of the Agreement from the Effective Date.

6.0 CATEGORY E - WATERWORKS BRASS AND SCREWED BRASS FITTINGS

- 6.1 All waterworks brass and screwed brass fittings prices set out in Table 2, Part E, forming part of this Schedule A will be fixed for the three-year term of the Agreement from the Effective Date.


7.0 CATEGORY F - DUCTILE IRON FITTINGS

- 7.1 All ductile iron fittings prices set out in Table 2, Part F, forming part of this Schedule A will be fixed for the three-year term of the Agreement from the Effective Date.

Table 2: Prices

Table 2, Part A: Copper Tube

Item No.	Size	Lengths	Weight per 100 Lin Ft	Annual Est. Q'ties	Unit	Manufacturer	Unit Price (per lin. ft)
1	3/4"	66 ft Coils	lb	8,900	100 lin ft	Great Lakes Copper	s.17(1)(d) & (f) and s.21(1)
2	1"	66 ft Coils	lb	1,500	100 lin ft	Great Lakes Copper	
3A.	1-1/2"	66 ft Coils	lb	1,400	100 lin ft	Great Lakes Copper	
3B.	1-1/2"	20 ft Straight Lengths	lb	1,500	100 lin ft	Great Lakes Copper	
4	2"	20 ft Straight Lengths	lb	2,000	100 lin ft	Great Lakes Copper	

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

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
Table 2, Part B: PVC Pipe and Fittings

Item	Description	Annual Est. Quotes	Manufacturer	Unit Price (per ft)
PVC SDR-28 SEWER PIPE				s.17(1)(d) & (f) and s.21(1)
1	4" Pipe 6.5 Ft. Long	11,000	Northern / Royal	
2	4" Pipe 13 Ft. Long	19,000	Northern / Royal	
3	6" Pipe 6.5 Ft. Long	17,000	Northern / Royal	
4	6" Pipe 13 Ft. Long	27,000	Northern / Royal	
PVC SDR-35 SEWER PIPE				
5	8" Pipe 13 Ft. Long	14,000	Northern / Royal	
6	10" Pipe 13 Ft. Long	6,500	Northern / Royal	
7	12" Pipe 13 Ft. Long	4,500	Northern / Royal	
8	15" Pipe 13 Ft. Long	4,000	Northern / Royal	
Item	Description	Annual Est. Quotes	Manufacturer	Unit Price (per ea)
PVC SDR-28 SEWER FITTINGS				s.17(1)(d) & (f) and s.21(1)
1	4" x 22.5 ° Bends, Long Radius	985	Tigre / Plastic Trends / GPK	
2	4" x 45 ° Bends, Long Radius	810	Tigre / Plastic Trends / GPK	
3	4" x 90 ° Bends, Long Radius	2	Tigre / Plastic Trends / GPK	
4	4" Caps	310	Tigre / Plastic Trends / GPK	
5	4" Plugs	5	Tigre / Plastic Trends / GPK	
6	4" Off 4" Wyes	110	Tigre / Plastic Trends / GPK	
7	4" x 6" Increases, Concentric, Gradual Taper, Bell by Spigot	2,300	Tigre / Plastic Trends / GPK	
8	6" x 22.5 ° Bends, Short Radius	2,900	Tigre / Plastic Trends / GPK	
9	6" x 45 ° Bends, Short Radius	3,500	Tigre / Plastic Trends / GPK	
10	6" x 90° Bends, Long Radius	1	Tigre / Plastic Trends / GPK	
11	6" Caps	840	Tigre / Plastic Trends / GPK	
12	6" Plugs	200	Tigre / Plastic Trends / GPK	
13	4" Off 6" Wyes	1	Tigre / Plastic Trends / GPK	
14	4" Off 6" Saddle Wyes	1	Tigre / Plastic Trends / GPK	
15	6" Off 6" Wyes	650	Tigre / Plastic Trends / GPK	
16	6" Off 6" Tees	1	Tigre / Plastic Trends / GPK	
17	4" Double Bell Hubs	1	Tigre / Plastic Trends / GPK	

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18	6" Double Bell Hubs	1	Tigre / Plastic Trends / GPK	s.17(1)(d) & (f) and s.21(1)
PVC SDR-35 SEWER FITTINGS				
19	6" x 8" Increases, Concentric, Gradual Taper, Bell by Spigot	55	Tigre / Plastic Trends / GPK	GD
20	8" x 22.5° Bends, Short Radius	160	Tigre / Plastic Trends / GPK	
21	8" x 45° Bends, Short Radius	190	Tigre / Plastic Trends / GPK	
22	8" x 90° Bends, Long Radius	1	Tigre / Plastic Trends / GPK	
23	8" Caps	65	Tigre / Plastic Trends / GPK	
24	8" Plugs	15	Tigre / Plastic Trends / GPK	
25	8" Double Bell Hubs	1	Tigre / Plastic Trends / GPK	
26	4" Off 8" Saddle Wyes	1	Tigre / Plastic Trends / GPK	
27	6" Off 8" Wyes	460	Tigre / Plastic Trends / GPK	
28	6" Off 8" Saddle Wyes	2	Tigre / Plastic Trends / GPK	
29	8" Off 8" Wyes	50	Tigre / Plastic Trends / GPK	
30	8" x 10" Increases, Concentric, Gradual Taper, Bell by Bell	30	Tigre / Plastic Trends / GPK	
31	10" x 22.5° Bends, Short Radius	55	Tigre / Plastic Trends / GPK	
32	10" x 45° Bends, Short Radius	70	Tigre / Plastic Trends / GPK	
33	10 x 90° Bends, Long Radius	1	Tigre / Plastic Trends / GPK	
34	10" Caps	30	Tigre / Plastic Trends / GPK	
35	10" Plugs	5	Tigre / Plastic Trends / GPK	
36	10" Double Bell Hubs	1	Tigre / Plastic Trends / GPK	
37	4" Off 10" Saddle Wyes	1	Tigre / Plastic Trends / GPK	
38	6" Off 10" Wyes	240	Tigre / Plastic Trends / GPK	
39	6" Off 10" Saddle Wyes	1	Tigre / Plastic Trends / GPK	
40	8" Off 10" Wyes	15	Tigre / Plastic Trends / GPK	
41	10" Off 10" Wyes	20	Tigre / Plastic Trends / GPK	
42	10" x 12" Increases, Concentric, Gradual Taper, Bell by Bell	10	Tigre / Plastic Trends / GPK	
43	12" x 22.5° Bends, Short Radius	30	Tigre / Plastic Trends / GPK	
44	12" x 45° Bends, Short Radius	25	Tigre / Plastic Trends / GPK	
45	12" x 90° Bends, Long Radius	1	Tigre / Plastic Trends / GPK	
46	12" Caps	15	Tigre / Plastic Trends / GPK	
47	12" Plugs	3	Tigre / Plastic Trends / GPK	
48	4" Off 12" Wyes	3	Tigre / Plastic Trends / GPK	
49	6" Off 12" Wyes	140	Tigre / Plastic Trends / GPK	
50	6" Off 12" Saddle Wyes	1	Tigre / Plastic Trends / GPK	
51	8" Off 12" Wyes	15	Tigre / Plastic Trends / GPK	
52	10" Off 12" Wyes	3	Tigre / Plastic Trends / GPK	
53	12" Off 12" Wyes	7	Tigre / Plastic Trends / GPK	
54	15" x 22.5° Bends, Short Radius	15	Tigre / Plastic Trends / GPK	
55	15" x 45° Bends, Short Radius	15	Tigre / Plastic Trends / GPK	
56	6" x 15" Wyes	120	Tigre / Plastic Trends / GPK	


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SCHEDULE A

SUPPLY AND DELIVERY OF PIPE AND FITTINGS

57	6" x 15" Saddle Wyes	2	Tigre / Plastic Trends / GPK	s.17(1)(d) & (f) and s.21(1)
58	8" x 15" Wyes	15	Tigre / Plastic Trends / GPK	
59	12" x 15" Wyes	1	Tigre / Plastic Trends / GPK	
60	15" Caps	20	Tigre / Plastic Trends / GPK	
61	12" x 6" Inserta Tee	60	Tigre / Plastic Trends / GPK / Reiber	
62	15" x 6" Inserta Tee	25	Tigre / Plastic Trends / GPK / Reiber	

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


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Table 2, Part C: Waterworks Service Saddles

Item	Description	Annual Est. Q'ties	Manufacturer
SERVICE SADDLES - C.C. THREADS			
1	4" x 1 1/2"	6	Robar
2	4" x 2"	4	Robar
3	6" x 1 1/2"	445	Robar
4	6" x 2"	40	Robar
5	8" x 1 1/2"	360	Robar
6	8" x 2"	60	Robar
7	12" x 1 1/2"	120	Robar
8	12" x 2"	12	Robar
9	18" x 1 1/2"	6	Robar
SADDLES - I.P. THREADS			
10	4" x 1 1/2"	1	Robar
11	4" x 2"	2	Robar
12	6" x 1 1/2"	1	Robar
13	6" x 2"	8	Robar
14	8" x 1 1/2"	1	Robar
15	8" x 2"	9	Robar
16	12" x 1 1/2"	1	Robar
17	12" x 2"	1	Robar

s.17(1)(d) & (f) and
s.21(1)

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
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SCHEDULE A

SUPPLY AND DELIVERY OF PIPE AND FITTINGS

Table2, Part D: Mechanical Couplings for DWV/Sewer

ITEM				COUPLING			CLAMP & SHEARING RING			CERTIFICATIONS
Item No.	Size	To Join To	Annual Est. Qty	Manufacturer	Gasket Material Specification	Length in mm	Material Specification & Thickness	No. of Clamps per Shear Ring	No. of Clamps per Coupling	List of all Approvals
1	100mm	CI/PL	725	s.17(1)(d) & (f) and s.21(1)	Rollee /Ferno	ASTM D5926	102.1	0.4	2	Warnock / Hersey
2	100mm	Clay 1	3		Rollee /Ferno	ASTM D5926	104.1	0.4	2	Warnock / Hersey
3	100mm	Clay 2	1		Rollee /Ferno	ASTM D5926	100.8	0.4	2	Warnock / Hersey
4	100mm	Clay 1	520		Rollee /Ferno	ASTM D5926	103.4	0.4	2	Warnock / Hersey
4A.	100mm	Clay 2	500		Rollee /Ferno	ASTM D5926	100.8	0.4	2	Warnock / Hersey
5	100mm	ABS	100		Rollee /Ferno	ASTM D5926		0.4	2	Warnock / Hersey
6	150mm	ABS	100		Rollee /Ferno	ASTM D5926		0.4	2	Warnock / Hersey
7	150mm	CI/PL	1,320		Rollee /Ferno	ASTM D5926	145.8	0.4	2	Warnock / Hersey
8	150mm	Clay 1	6	Rollee /Ferno	ASTM D5926	153	0.4	2	Warnock / Hersey	

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SUPPLY AND DELIVERY OF PIPE AND FITTINGS

8A.	150mm	Clay 2	Clay 2	10	s.17(1)(d) & (f) and s.21(1)					Rollee /Ferno	ASTM D5926	152.8	0.4	2	2	Warnock / Hersey
9	150mm	Clay 1	Cl/PL	450						Rollee /Ferno	ASTM D5926	149.7	0.4	2	2	Warnock / Hersey
9A.	150mm	Clay 2	Cl/PL	2,600						Rollee /Ferno	ASTM D5926	150	0.4	2	2	Warnock / Hersey
10	200mm	Cl/PL	Cl/PL	224						Rollee /Ferno	ASTM D5926	153.4	0.4	2	2	Warnock / Hersey
11	200mm	Clay 1	Clay 1	20						Rollee /Ferno	ASTM D5926	152.2	0.4	2	2	Warnock / Hersey
12	200mm	Clay 2	Clay 2	35						Rollee /Ferno	ASTM D5926	149.9	0.4	2	2	Warnock / Hersey
13	200mm	Clay 1	Cl/PL	370						Rollee /Ferno	ASTM D5926	150	0.4	2	2	Warnock / Hersey
14	250mm	Cl/PL	Cl/PL	65						Rollee /Ferno	ASTM D5926	150	0.4	2	2	Warnock / Hersey
15	250mm	Clay 1	Clay 1	25						Rollee /Ferno	ASTM D5926	150	0.4	2	2	Warnock / Hersey
16	250mm	Clay 1	Cl/PL	145						Rollee /Ferno	ASTM D5926	160.5	0.4	2	2	Warnock / Hersey
17	300mm	Cl/PL	Cl/PL	35						Rollee /Ferno	ASTM D5926	160.5	0.4	2	2	Warnock / Hersey
18	300mm	Clay 1	Clay 1	15						Rollee /Ferno	ASTM D5926	163	0.4	2	2	Warnock / Hersey
19	300mm	Clay 1	Cl/PL	60						Rollee /Ferno	ASTM D5926	163	0.4	2	2	Warnock / Hersey

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20	375mm	CI/PL	CI/PL	17	<div style="background-color: black; color: red; padding: 5px;"> s.17(1)(d) & (f) and s.21(1) </div>	Rollee /Fernco	ASTM D5926	251.2	0.4	2	2	Warnock / Hersey
21	375mm	Clay 1	Clay 1	1		Rollee. /Fernco	ASTM D5926	251.2	0.4	2	2	Warnock / Hersey
22	375mm	Clay 1	CI/PL	15		Rollee /Fernco	ASTM D5926	251.2	0.4	2	2	Warnock / Hersey
23	375mm	Clay 2	Clay 2	1		Rollee /Fernco	ASTM D5926	251.2	0.4	2	2	Warnock / Hersey

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
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Table 2, Part E: Waterworks Brass and Screwed Brass Fittings

Item	Description	Annual Est. Qty	Manufacturer
SECTION I - MAIN STOPS			
1	¾" C.C. Thread x ¾" Compression Joint for Copper Tube	520	Mueller
2	1" C.C. Thread x 1" Compression Joint for Copper Tube	30	Mueller
3	1 ½" C.C. Thread x 1 ½" Compression Joint for Copper Tube	930	Mueller
4	2" C.C. Thread x 2" Compression Joint for Copper Tube	100	Mueller
SECTION II - COUPLINGS			
5	¾" Female I.P. Thread x ¾" Compression Joint for Copper Tube	45	Mueller
6	Female I.P. Thread x 1" Compression Joint for Copper Tube	1	Mueller
7	¾" Male I.P. Thread x ¾" Compression Joint for Copper Tube	840	Mueller
8	1 ½" Male I.P. Thread x 1 ½" Compression Joint for Copper Tube	45	Mueller
9	2" Male I.P. Thread x 2" Compression Joint for Copper Tube	25	Mueller
10	¾" x ¾" Compression Joint for Copper Tube - both ends	760	Mueller
11	1" x 1" Compression Joint for Copper Tube - both ends	50	Mueller
12	1 ½" x 1 ½" Compression Joint for Copper Tube - both	180	Mueller
13	2" x 2" Compression Joint for Copper Tube - both ends	95	Mueller
14	¾" Copper - Main Adaptor (FF x CTS)	720	Mueller
15	1" Copper - Main Adaptor (FF x CTS)	20	Mueller
16	1 ½" Copper - Main Adaptor (FF x CTS)	5	Mueller
17	2" Copper - Main Adaptor (FF x CTS)	1	Mueller
18	1 ½" Copper - Iron Adaptor (FF x FIP)	1	Mueller
19	2" Copper - Iron Adaptor (FF x FIP)	1	Mueller
20	1" Copper - Iron Adaptor (FF x FIP)	1	Mueller
SECTION III - CURB STOPS			
21	¾" Female I.P. Thread x ¾" Female I.P. Thread	50	Mueller
22	1" Female I.P. Thread x 1" Female I.P. Thread	20	Mueller
23	1 ½" Female I.P. Thread x 1 ½" Female I.P. Thread	80	Mueller
24	2" Female I.P. Thread x 2" Female I.P. Thread	210	Mueller
25	¾" Female I.P. Thread x ¾" Compression Joint for Copper Tube	1000	Mueller
26	1" Female I.P. Thread x 1" Compression Joint for Copper Tube	30	Mueller
27	1 ½" Female I.P. Thread x 1 ½" Compression Joint for Copper Tube	810	Mueller
28	2" Female I.P. Thread x 2" Compression Joint for Copper Tube	50	Mueller
29	¾" Compression Joint for Copper Tube - both ends	260	Mueller

s.17(1)(d)
& (f) and
s.21(1)


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30	1" Compression Joint for Copper Tube - both ends	15	Mueller
SECTION IV - SCREWED BRASS FITTINGS			
31	¾" X ½" Brass Bushing, Outside Hexagon	12	Merit Brass
32	1" x ¾" Brass Bushing, Outside Hexagon	10	Merit Brass
33	1 ½" x ¾" Brass Bushing, Outside Hexagon	20	Merit Brass
34	2" x ¾" Brass Building, Outside Hexagon	15	Merit Brass
35	2" x 1" Brass Bushing, Outside Hexagon	12	Merit Brass
36	2" x 1 ½" Brass Bushing, Outside Hexagon	33	Merit Brass
37	½" x 90° Brass Elbow	1	Merit Brass
38	¾" x 90° Brass Elbow	6	Merit Brass
39	1" x 90° Brass Elbow	8	Merit Brass
40	1 ½" x 90° Brass Elbow	4	Merit Brass
41	2" x 90° Brass Elbow	20	Merit Brass
42	½" x 90° Brass Street Elbow	1	Merit Brass
43	¾" x 90° Brass Street Elbow	3	Merit Brass
44	1" x 90° Brass Street Elbow	1	Merit Brass
45	1 ½" x 90° Brass Street Elbow	3	Merit Brass
46	2" x 90° Brass Street Elbow	15	Merit Brass
47	½" x 1" Brass Nipple	1	Merit Brass
48	½" x 2" Brass Nipple	1	Merit Brass
49	½" x 3" Brass Nipple	2	Merit Brass
50	¾" x 1" Brass Nipple	1	Merit Brass
51	¾" x 2" Brass Nipple	45	Merit Brass
52	¾" x 3" Brass Nipple	16	Merit Brass
53	¾" x 4" Brass Nipple	10	Merit Brass
54	¾" x 5" Brass Nipple	1	Merit Brass
55	¾" x 6" Brass Nipple	15	Merit Brass
56	1" x 2" Brass Nipple	9	Merit Brass
57	1" x 3" Brass Nipple	15	Merit Brass
58	1" x 4" Brass Nipple	10	Merit Brass
59	1 ½" x 4" Brass Nipple	15	Merit Brass
60	1 ½" x 6" Brass Nipple	6	Merit Brass
61	1 ½" x 6" Brass Nipple	6	Merit Brass
62	2" x 4" Brass Nipple	50	Merit Brass
63	2" x 5" Brass Nipple	4	Merit Brass
64	2" x 6" Brass Nipple	25	Merit Brass
65	½" Solid Brass Plug, Square-head (MIP Thread)	4	Merit Brass
66	¾" Solid Brass Plug, Square-head (MIP Thread)	15	Merit Brass
67	1" Solid Brass Plug, Square-head (MIP Thread)	5	Merit Brass
68	1 ½" Solid Brass Plug, Square-head (MIP Thread)	10	Merit Brass
69	2" Solid Brass Plug, Square-head (MIP Thread)	65	Merit Brass
70	¾" Brass Tee	10	Merit Brass
71	1" Brass Tee	3	Merit Brass


s.17(1)(d)
& (f) and
s.21(1)


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72	2" Brass Tee	3	Merit Brass	s.17(1)(d) & (f) and s.21(1)
73	½" x ¾" Brass Reducing Coupling	1	Merit Brass	
74	1" x ¾" Brass Reducing Coupling	5	Merit Brass	
75	1 ½" x 1" Brass Reducing Coupling	5	Merit Brass	
76	2" x 1 ½" Brass Reducing Coupling	6	Merit Brass	
77	½" Brass Couplings	1	Merit Brass	
78	¾" Brass Couplings	20	Merit Brass	
79	1" Brass Couplings	7	Merit Brass	
80	1 ½" Brass Couplings	6	Merit Brass	
81	2" Brass Couplings	6	Merit Brass	

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
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SUPPLY AND DELIVERY OF PIPE AND FITTINGS

Table 2, Part F: Ductile Iron Fittings

Item No.	Description	Annual Est. Q'ties	Manufacturer
SECTION I - CROSSES			
1	12" x 12" x 12" x 12" M.J. Bell Cross (300mm x 300mm x 300mm x 300mm)	3	Star Pipe Products /TCI
2	12" x 12" x 8" x 8" M.J. Bell Cross (300mm x 300mm x 200mm x 200mm)	4	Star Pipe Products /TCI
3	12" x 12" x 6" x 6" M.J. Bell Cross (300mm x 300mm x 150mm x 150mm)	2	Star Pipe Products /TCI
4	8" x 8" x 8" x 8" M.J. Bell Cross (200mm x 200mm x 200mm x 200mm)	6	Star Pipe Products /TCI
5	8" x 8" x 6" x 6" M.J. Bell Cross (200mm x 200mm x 150mm x 150mm)	6	Star Pipe Products /TCI
6	8" x 8" x 4" x 4" M.J. Bell Cross (200mm x 200mm x 100mm x 100mm)	1	Star Pipe Products /TCI
7	6" x 6" x 6" x 6" M.J. Bell Cross (150mm x 150mm x 150mm x 150mm)	1	Star Pipe Products /TCI
8	6" x 6" x 4" x 4" M.J. Bell Cross (150mm x 150mm x 100mm x 100mm)	1	Star Pipe Products /TCI
SECTION II - TEES			
9	12" x 12" x 12" M.J. Bell Tee (300mm x 300mm x 300mm)	5	Star Pipe Products /TCI
10	12" x 12" x 8" M.J. Bell Tee (300mm x 300mm x 200mm)	10	Star Pipe Products /TCI
11	12" x 12" x 6" M.J. Bell Tee (300mm x 300mm x 150mm)	7	Star Pipe Products /TCI
12	12" x 12" x 4" M.J. Bell Tee (300mm x 300mm x 100mm)	1	Star Pipe Products /TCI
13	8" x 8" x 8" M.J. Bell Tee (200mm x 200mm x 200mm)	24	Star Pipe Products /TCI

s.17(1)(d) & (f) and s.21(1)

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s.17(1)(d) & (f) and s.21(1)

14	8" x 8" x 6" M.J. Bell Tee (200mm x 200mm x 150mm)	5	Star Pipe Products /TCI
15	8" x 8" x 4" M.J. Bell Tee (200mm x 200mm x 100mm)	2	Star Pipe Products /TCI
16	6" x 6" x 8" M.J. Bell Tee (150mm x 150mm x 200mm)	4	Star Pipe Products /TCI
17	6" x 6" x 6" M.J. Bell Tee (150mm x 150mm x 150mm)	4	Star Pipe Products /TCI
18	6" x 6" x 4" M.J. Bell Tee (150mm x 150mm x 100mm)	1	Star Pipe Products /TCI
19	4" x 4" x 4" M.J. Bell Tee (100mm x 100mm x 100mm)	2	Star Pipe Products /TCI
20	12" x 12" x M.J. Bell x 2" IPT Tapped Tee (300mm x 300mm x 50mm)	6	Star Pipe Products /TCI
21	4" x 4" M.J. Bell x 2" IPT Tapped Tee (100mm x 100mm x 50mm)	4	Star Pipe Products /TCI
22	12" x 12" M.J. Bell x 6" Flanged Tee (300mm x 300mm x 150mm)	24	Star Pipe Products /TCI
23	12" x 12" M.J. Bell x 12" Flanged Tee (300mm x 300mm x 300mm)	6	Star Pipe Products /TCI
24	12" x 12" M.J. Bell x 8" Flanged Tee (300mm x 300mm x 200mm)	6	Star Pipe Products /TCI
25	12" x 12" M.J. Bell x 4" Flanged Tee (300mm x 300mm x 100mm)	5	Star Pipe Products /TCI
26	8" x 8" M.J. Bell x 8" Flanged Tee (200mm x 200mm x 200mm)	7	Star Pipe Products /TCI
27	8" x 8" M.J. Bell x 6" Flanged Tee (200mm x 200mm x 150mm)	66	Star Pipe Products /TCI
28	8" x 8" M.J. Bell x 4" Flanged Tee (200mm x 200mm x 100mm)	13	Star Pipe Products /TCI
29	6" x 6" M.J. Bell x 6" Flanged Tee (150mm x 150mm x 150mm)	14	Star Pipe Products /TCI
30	6" x 6" M.J. Bell x 4" Flanged Tee (150mm x 150mm x 100mm)	6	Star Pipe Products /TCI

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
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SCHEDULE A SUPPLY AND DELIVERY OF PIPE AND FITTINGS

31	4" x 4" M.J. Bell x 4" Flanged Tee (100mm x 100mm x 100mm)	1	Star Pipe Products /TCI
32	4" x 4" M.J. Bell x 6" Flanged Tee (100mm x 100mm x 150mm)	1	Star Pipe Products /TCI
33	8" x 8" x 12" M.J. Tee (200mm x 200mm x 300mm)		
34	12" x 12" x 12" Flanged Tee (300mm x 300mm x 300mm)	1	Star Pipe Products /TCI
35	12" x 12" x 8" Flanged Tee (300mm x 300mm x 200mm)	7	Star Pipe Products /TCI
36	12" x 12" x 6" Flanged Tee (300mm x 300mm x 150mm)	1	Star Pipe Products /TCI
37	12" x 12" x 4" Flanged Tee (300mm x 300mm x 100mm)	1	Star Pipe Products /TCI
38	8" x 8" x 8" Flanged Tee (200mm x 200mm x 200mm)	1	Star Pipe Products /TCI
39	8" x 8" x 6" Flanged Tee (200mm x 200mm x 150mm)	5	Star Pipe Products /TCI
40	6" x 6" x 6" Flanged Tee (150mm x 150mm x 150mm)	1	Star Pipe Products /TCI
41	6" x 6" x 4" Flanged Tee (150mm x 150mm x 100mm)	1	Star Pipe Products /TCI
42	6" x 4" x 6" Flanged Tee (150mm x 100mm x 150mm)	1	Star Pipe Products /TCI
43	4" x 4" x 4" Flanged Tee (100mm x 100mm x 100mm)	9	Star Pipe Products /TCI
44	6" M.J. x 6" x 6" Flanged Tee (150mm x 150mm x 150mm)	5	Star Pipe Products /TCI
45	12" M.J. x 12" Flanged x 6" M.J. Tee (300mm x 300mm x 150mm)		
46	12" M.J. x 12" Flanged x 6" Flanged Tee (300mm x 300mm x 150mm)	20	Star Pipe Products /TCI
47	8" M.J. x 8" Flange x 6" Flange Tee (200mm x 200mm x 150mm)	14	Star Pipe Products /TCI
48	8" M.J. x 8" Flange x 8" Flange Tee (200mm x 200mm x 200mm)	4	Star Pipe Products /TCI

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
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SUPPLY AND DELIVERY OF PIPE AND FITTINGS

SECTION III - ADAPTORS AND SLEEVES			
49	12" M.J. Bell x 12" Flanged Adaptor (300mm x 300mm)	13	Star Pipe Products /TCI
50	8" M.J. Bell x 8" Flanged Adaptor (200mm x 200mm)	10	Star Pipe Products /TCI
51	6" M.J. Bell x 6" Flanged Adaptor (150mm x 150mm)	6	Star Pipe Products /TCI
52	4" M.J. Bell x 4" Flanged Adaptor (100mm x 100mm)	14	Star Pipe Products /TCI
53	12" M.J. Sleeve (300mm)	52	Star Pipe Products /TCI
54	8" M.J. Sleeve (200mm)	105	Star Pipe Products /TCI
55	6" M.J. Sleeve (150mm)	85	Star Pipe Products /TCI
56	4" M.J. Sleeve (100mm)	15	Star Pipe Products /TCI
SECTION IV - PLUGS AND CAPS			
57	12" M.J. Plug (300mm)	12	Star Pipe Products /TCI
58	8" M.J. Plug (200mm)	20	Star Pipe Products /TCI
59	6" M.J. Plug (150mm)	20	Star Pipe Products /TCI
60	4" M.J. Plug (100mm)	10	Star Pipe Products /TCI
61	12" M.J. Cap (300mm)	10	Star Pipe Products /TCI
62	8" M.J. Cap (200mm)	20	Star Pipe Products /TCI
63	6" M.J. Cap (150mm)	35	Star Pipe Products /TCI
64	4" M.J. Cap (100mm)	10	Star Pipe Products /TCI

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SECTION V - BENDS

65	12" X 90 deg. M.J. Bell Bend (300mm x 90 deg.)	8	Star Pipe Products /TCI
66	12" x 45 deg. M.J. Bell Bend (300mm x 45 deg.)	35	Star Pipe Products /TCI
67	12" x 22.5 deg. M.J. Bell Bend (300mm x 22.5 deg.)	5	Star Pipe Products /TCI
68	12" x 11 1/4 deg. M.J. Bell Bend (300mm x 11.25 deg.)	5	Star Pipe Products /TCI
69	8" x 90 deg. M.J. Bell Bend (200mm x 90 deg.)	6	Star Pipe Products /TCI
70	8" x 45 deg. M.J. Bell Bend (200mm x 45 deg.)	75	Star Pipe Products /TCI
71	8" x 22 1/2 deg. M.J. Bell Bend (200mm x 22.5 deg.)	15	Star Pipe Products /TCI
72	8" x 11 1/4 deg. M.J. Bell Bend (200mm x 11.25 deg.)	8	Star Pipe Products /TCI
73	6" x 90 deg. M.J. Bell Bend (150mm x 90 deg.)	8	Star Pipe Products /TCI
74	6" x 45 deg. M.J. Bell Bend (150mm x 45 deg.)	80	Star Pipe Products /TCI
75	6" x 22 1/2 deg. M.J. Bell Bend (150mm x 22.5 deg.)	8	Star Pipe Products /TCI
76	6" x 11 1/4 deg. M.J. Bell Bend (150mm x 11.25 deg.)	2	Star Pipe Products /TCI
77	4" x 90 deg. M.J. Bell Bend (100mm x 90 deg.)	6	Star Pipe Products /TCI
78	4" x 45 deg. M.J. Bell Bend (100mm x 45 deg.)	15	Star Pipe Products /TCI
79	4" x 22 1/2 deg. M.J. Bell Bend (100mm x 22.5 deg.)	1	Star Pipe Products /TCI
80	4" x 11 1/4 deg. M.J. Bell Bend (100mm x 11.25 deg.)	1	Star Pipe Products /TCI
81	6" x 45 deg. Flanged Bend (150mm x 90 deg.)	3	Star Pipe Products

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
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82	8" x 45 deg. Flanged Bend (200mm x 90 deg.)	2	Star Pipe Products /TCI
83	8" x 11 1/4 deg. Flanged Bend (200mm x 11 1/4 deg.)	1	Star Pipe Products /TCI
84	12" x 90 deg. Flanged Bend (300mm x 90 deg.)	1	Star Pipe Products /TCI
85	12" x 45 deg. Flanged Bend (300mm x 4 deg.)	1	Star Pipe Products /TCI
86	8" x 90 deg. Flanged Bend (200mm x 90 deg.)	2	Star Pipe Products /TCI
87	6" x 90 deg. Flanged Bend (150mm x 90 deg.)	2	Star Pipe Products /TCI
88	4" x 90 deg. Flanged Bend (100mm x 90 deg.)	3	Star Pipe Products /TCI
89	4" x 45 deg. Flanged Bend (100mm x 45 deg.)	1	Star Pipe Products /TCI
90	4" x 22 1/2 deg. Flanged Bend (100mm x 22.5 deg.)	0	Star Pipe Products /TCI
SECTION VI - REDUCERS			
91	12" M.J. x 8" M.J. Bell Reducer - Long Body (300mm x 200mm)	3	Star Pipe Products /TCI
92	12" M.J. x 6" M.J. Bell Reducer - Long Body (300mm x 150mm)	1	Star Pipe Products /TCI
93	8" M.J. x 6" M.J. Bell Reducer - Long body (200mm x 150mm)	14	Star Pipe Products /TCI
94	6" M.J. x 4" M.J. Bell Reducer - Long Body (150mm x 100mm)	2	Star Pipe Products /TCI
95	12" M.J. x 8" M.J. Bell Reducer - Short Body (300mm x 200mm)	1	Star Pipe Products /TCI
96	8" M.J. x 6" M.J. Bell Reducer - Short Body (200mm x 150mm)	1	Star Pipe Products /TCI
97	8" M.J. x 4" M.J. Bell Reducer - Short Body (200mm x 100mm)	1	Star Pipe Products /TCI

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SUPPLY AND DELIVERY OF PIPE AND FITTINGS

98	12" P.E. x 8" P.E. Reducer (300mm x 200mm)	1	Star Pipe Products /TCI
99	8" P.E. x 6" M.J. Reducer (200mm x 150mm)	7	Star Pipe Products /TCI
100	8" P.E. x 6" P.E. Reducer (200mm x 150mm)	3	Star Pipe Products /TCI
101	8" M.J. x 6" P.E. Reducer (200mm x 150mm)	8	Star Pipe Products /TCI
SECTION VII - OFFSET BENDS			
102	6" M.J. x 18" Offset Bends (150mm x 450mm)	20	Star Pipe Products /TCI
103	8" M.J. x 18" Offset Bends (200mm x 450mm)	15	Star Pipe Products /TCI
104	8" M.J. x 12" Offset Bends (200mm x 300mm)	25	Star Pipe Products /TCI
105	6" M.J. x 12" Offset Bends (150mm x 300mm)	30	Star Pipe Products /TCI
106	4" M.J. x 12" Offset Bends (100mm x 300mm)	8	Star Pipe Products /TCI
107	4" M.J. x 18" Offset Bends (100mm x 450mm)	5	Star Pipe Products /TCI
108	12" M.J. x 12" Offset Bends (300mm x 300mm)	8	Star Pipe Products /TCI
109	12" M.J. x 18" Offset Bends (300mm x 450mm)	8	Star Pipe Products /TCI
SECTION VIII - MISCELLANEOUS			
110	12" D.I. M.J. Gland (300mm)	50	Star Pipe Products /TCI
111	8" D.I. M.J. Gland (200mm)	150	Star Pipe Products /TCI
112	6" D.I. M.J. Gland (150mm)	220	Star Pipe Products /TCI
113	4" D.I. M.J. Gland (100mm)	50	Star Pipe Products /TCI

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114	12" M.J. Gasket (300mm)	350	Star Pipe Products /TCI
115	8" M.J. Gasket (200mm)	800	Star Pipe Products /TCI
116	6" M.J. Gasket (150mm)	700	Star Pipe Products /TCI
117	4" M.J. Gasket (100mm)	200	Star Pipe Products /TCI

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**SCHEDULE B
PRODUCT SPECIFICATIONS**

1.0 COPPER TUBE


- 1.1 Scope:** This specification is for the manufacture, supply and delivery of copper tube for use with solder, flared and compression type fittings for underground water service pipe for the supply of potable water.
- 1.2 Specifications:** Copper tube shall conform to the latest edition of the American Society for Testing and Materials (hereinafter referred to as ASTM) Standard Specifications for Seamless Copper Water Tube, designation B88 with the following additional information and requirements.
- 1.3 Tube Sizes and Type:** Standard sizes shall be supplied in 3/4", 1", 1-1/2" and 2" Type K soft seamless copper water tube.
- 1.4 Temper:** Copper tube supplied in straight lengths shall be annealed.
- 1.5 Dimensions, Weights and Permissible Variations:** Conformance of the copper water tube supplied will be determined in accordance with the dimensional requirements prescribed in Section 11 of ASTM B88. Any measured value outside the specified limiting values for any dimensions will be cause for rejection.
- 1.6 Testing:** Test procedure shall be in accordance with the latest edition of ASTM Standard B88. The expansion test and dimensional tests described in Sections 9.0 and Section 11 respectively of the such standard shall be carried out on samples of the tube selected with the following frequency:

Estimated Quantity	Frequency
0 to 5,000 ft	One sample per 100 ft or part thereof
over 5,000 ft	One sample from each lot of 2,000 lb or part thereof

Testing shall be conducted by the Canadian Standards Association, or any accredited certified independent testing laboratory and shall be identifiable with the actual batches of supplied tube. The cost of independent testing will be borne by the Supplier.

The Supplier will specify the name of the testing laboratory whenever the City requires.

The City may elect to require the Supplier to provide testing certificates for batches supplied to the City.

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- 1.7 **Lengths:** Copper tube supplied in coils shall be 66 ft in length; straight lengths shall be 20 ft.
- 1.8 **How Furnished:** 3/4" and 1" copper tube shall be supplied in coils of 66 ft; 1-1/2" copper tube shall be supplied in coils of 66 ft or in straight lengths of 20 ft; 2" type shall be supplied in straight lengths of 20 ft.
- 1.9 **Packing:** All material shall be packed in such a manner as to prevent damage in ordinary handling and transportation. Tubing that has been deformed due to stacking during shipment will not be accepted.

Deformed or damaged tubing exceeding 10% of the order release quantity may lead to rejection of the entire delivery.


2.0 PVC PIPE & FITTINGS

- 2.1 **Scope:** All Poly Vinyl Chloride (PVC) Sewer Pipe and Fittings shall be type PSM in conformance with the most recent revision of Canadian Standards Association (CSA) B182.1 and B182.2, unless otherwise indicated herein.
- 2.2 **Dimensions:** Dimensions for all SDR-28 and SDR-35 Sewer Pipe and Fittings shall be in accordance with CSA B182.2 as indicated in the following table:

Nominal Size	SDR No.	Outside Dia. (Minimum)	Outside Dia. (Maximum)	Min. Wall Thickness
4"	28	106.85 mm 4.207"	107.25 mm 4.222"	3.81 mm 0.150"
6"	28	159.10 mm 6.264"	159.65 mm 6.285"	5.69 mm 0.224"
8"	35"	213.05 mm 8.388"	213.65 mm"8.411"	6.10 mm 0.240"
10"	35	266.30 mm 10.484"	267.10 mm 10.516"	7.62 mm 0.300"
12"	35	317.05 mm 12.482"	317.95 mm 12.518"	9.07 mm 0.357"
15"	35	388.05 mm 15.278"	389.20 mm 15.323"	11.10 mm 0.437"

Laying lengths of pipe segments shall be as indicated in Table 2, Part B of Schedule A.

- 2.3 **Joints:** All pipe and fittings shall be push-on bell and spigot joints with elastomeric gaskets, all in conformance with the latest revision of ASTM D3034 and ASTM D3212. Bells shall be integral with the pipe or fitting with the gasket factory-assembled and securely locked in place to prevent displacement during shipping or assembly. Prices

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indicated in Table 2, Part B of Schedule A include the prices of gaskets and any lubricant required for joint assembly. Per the City request, the Supplier will provide the complete joint design diagrams and dimensional details for all the pipe and fittings to be supplied under the Agreement. All spigots on pipe and fittings having spigot ends will be bevelled or tapered to the satisfaction of the City Engineer to permit ease of installation. Furthermore, also to permit ease of installation, the bell and spigot of each sewer pipe and fitting must be 100% compatible with each other.

- 2.4 **Certifications:** City Engineer requires that the manufacturer's certifications, as per Section 11 of ASTM D3034, accompany each manufacturing run when shipped, provided that the City Engineer and the Supplier have reached mutual prior agreement on the acceptable nature of this certification.
- 2.5 **Testing:** Testing may be carried out in lieu of acceptance of the certification, and in addition to certification if so required by the City Engineer.

The Supplier will assume the costs of testing and materials for up to 1% of the total quantity supplied. The following mandatory tests required shall be in accordance with the latest revision of the following CSA and ASTM standards, and will be performed by a mutually acceptable independent laboratory:


- | | | |
|-----|---------------------------------------|-----------------------|
| (a) | Pipe Stiffness | ASTM D2412 |
| (b) | Joint Test | ASTM D3212 |
| (c) | Compression Testing (Flattening) | CSA B182.2/ASTM D3034 |
| (d) | Impact Resistance | CSA B182.2 |
| (e) | Extrusion Quality (Solvent Immersion) | ASTM D2152 |

Any other type of testing required shall be at the discretion of the City Engineer, and shall be in accordance with CSA B182.2 and ASTM D3034.

Upon delivery of the pipe and fittings, the City Engineer may require that a randomly selected pipe and fitting joint is assembled to determine the bell and spigot compatibility. The assembly of the joint should not be time consuming and should be relatively easy. The joint assembly should not require excessive force or bell and spigot modifications in order to fit properly.

Samples will be chosen on the basis of one per lot, where a lot may be distinguished by different production runs or different pallet loads, or some other such natural division which, in the opinion of the City Engineer, allowed practicable separation of any shipment into lots containing approximately 1,000 lineal feet of pipe.

In the event that a pipe sample representing a lot fails to meet these specifications, two more samples shall be chosen from the same lot and retested. If one or both of these samples also fails to meet specifications, that lot shall be rejected

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3.0 WATERWORKS SERVICE SADDLES

- 3.1 **Scope:** The service saddle shall be designed to provide a drip-tight connection when used as a service connection to the watermain. The body of the service saddle shall be made to conform to the outside configuration of the watermain. The materials used to produce the service saddle body shall be ductile iron and shall conform to the latest edition of the American Society for Testing and Materials (ASTM) Standard Specifications for Ductile Iron Castings, designation A536, grade 65-45-12 with the following additional information and requirements:
- 3.2 **Size and Type:** Service saddles shall be supplied in 1 ½" and 2" service sizes to be used for ductile or cast iron pipe size 4", 6", 8", 12" and 18" in diameter. All saddles shall use double U-bolt straps.
- 3.3 **Gaskets:** Gaskets shall be made of nitrile type (Acrylonitrile Butadiene, NBR) material to resist oil, natural gas, acids, alkalines, hydrocarbon fluids and water. Rubber (SBR) gaskets will not be accepted.
- 3.4 **Nuts, Washers and U-Bolt Straps:** Nuts, washers and U-bolt straps shall be made of high tensile strength, low alloy steel (Corten) conforming to Section 11-7.5, American Water Works Association (AWWA) C-111-85 composition specifications.
- 3.5 **Type of Thread at Outlet:** Internal threads at the outlet shall be C.C. or I.P. threads.

4.0 MECHANICAL COUPLINGS FOR DWV/SEWER:**4.1 Definitions:**

- (a) **"Coupling"** shall mean the complete assembly, and shall include the gasket, clamps, bushings, shear rings, and any other part required to make a joint meeting specifications;
- (b) **"Gasket"** shall mean the sleeve used to join two pipes;
- (c) **"Clamp"** shall mean the complete assembly used to secure the gasket to the pipe being joined;
- (d) **"Bushing"** shall mean a cylinder of material used to make up any difference between the inside diameter of the gasket and the outside diameter of the pipe being joined; and
- (e) **"Shear ring"** shall mean an assembly used to increase the shear resistance of the coupling.


All references to standards such as CSA or ASTM in the specification shall mean the latest revision.

4.2 General Requirements:

- (a) The coupling shall make a joint between sections of pipe with outside diameters in the range as specified in Section 4.6 - Pipe Size Tolerances, which shall not fail or leak when tested in accordance with Section 4.4 - Detailed Requirements.
- (b) Gaskets and bushings shall be one piece and shall be manufactured from an elastomeric material which meets the chemical and physical requirements of Section 4.3 - Detailed Requirements.
- (c) Clamps and tightening mechanisms shall be 300 series stainless steel conforming to ASTM A167 (latest revision). Only full circle clamps and tightening mechanisms are permissible, and shall be held in place with spotwelds. The length of the serrated portion of the clamp shall be limited to one quarter of the circumference of the coupling, measured from the upstream side of the tightening screw. Partial clamps attached to the shearband by spot welding are not acceptable. Clamps and tightening mechanisms shall withstand 1.5 times the torque required to maintain an effective seal when tested (min. 3 samples) in accordance with Section 4.3 - Detailed Requirements, without defect or distortion. They shall withstand a minimum torque of 6.8 N.m. (60 inch pounds).
- (d) The coupling shall be free from porosity and air pockets, and its surface shall be smooth and free pitting, cracks, blisters, air marks or any other imperfections which could affect its performance in service.
- (e) Gaskets shall not have centre stops.
- (f) No part of the couplings shall protrude into the waterway at a joint.

4.3 Detailed Requirements:

- (a) **General:** All couplings shall meet or exceed the requirements of the latest issue of CSA Standard B 602 - Mechanical Couplings for Drain, Waste and Vent Pipe and Sewer Pipe. In addition to compliance with CSA B 602, all couplings shall meet the shear resistance test specified below.
- (b) **Shear Resistance:** The joint made by a coupling shall have sufficient resistance to shear to meet this test: The two lengths of pipe shall be joined using a coupling in accordance with the manufacturer's specifications. The two joined lengths of pipe shall be supported on blocks at three locations. One length shall be supported on two blocks, one near the uncoupled end and the other immediately adjacent to the coupling. This length shall then be firmly restrained in position. The other coupled length shall be supported by a single block located at least 1.0 m from the coupling. A load of 2.7 kg/mm of nominal pipe diameter shall be uniformly applied over an arch of 120° and along a longitudinal length of 300 mm at the end, immediately adjacent to the

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coupling of the pipe having only one support. Under this loading, the joint shall show no visible leakage or deflection of more than 0.04 mm/mm diameter from true alignment when an internal hydrostatic pressure of 30KPa (3.05 m head of water) is applied for a period of one (1) hour after the application of the shear load with the temperature of water, pipe and atmosphere within the range 16°C to 24°C.

(c) **Coupling Length:**

- (i) 100mm and 150mm diameter couplings shall be not less than 100mm long;
- (ii) 200mm and 250mm diameter couplings shall be not less than 120mm long; and
- (iii) 300mm and 375mm diameter couplings shall be not less than 140mm long.

- (d) **Bushings:** Bushing supplied loose with a coupling are not acceptable. Bushings shall be permanently fixed in position, in such a way that separation will not take place under any circumstances.

Only one bushing will be allowed on end of the coupling. Opposite end shall be sized to fit the pipe dimension shown in Section 4.6 - Pipe Size Tolerances.. The reduction in size of the inside diameter shall extend to the centre of the coupling. The acceptable method of reduction of the inside diameter on one half of the coupling is to monolithically cast a ring of the same material with the gasket.

- (e) **Shear Rings:** Couplings supplied without shear rings are not acceptable. The ends of the shear rings shall have a minimum overlap of 50mm. Where the two (2) clamp assemblies are used on each end of the coupling to secure the coupling to the pipe, the width of the shear ring shall be extended under the inner tightening band. Each tightening band shall be attached to the shearband and the coupling assembly in such a way that it cannot wholly or partly slide off the shearband.

- 4.4 **Marking:** Each coupling shall be clearly marked with manufacturer's name or trade mark, product or catalogue number, place of manufacture, any applicable patents, the nominal pipe diameter, its application and the corresponding item number in this request for quotation.

4.5 **Pipe Size Tolerances:**

	Pipe O.D. Size Range
--	----------------------

<i>Nominal Diameter</i>	<i>Vit Clay 1 mm inch</i>	<i>Vit Clay 2 mm inch</i>	<i>Cast Iron/Plastic mm inch</i>
100mm 4"	127 - 137	137 - 147	107 - 114
	5.0" - 5.39"	5.39" - 5.79"	4.21" - 4.49"
150mm 6"	183 - 196	196 - 203	159 - 168
	7.20" - 7.72"	7.72" - 7.99"	6.26" - 6.61"
200mm 8"	239 - 258	254 - 264	206 - 222
	9.41" - 10.16"	10.0" - 10.39"	8.11" - 8.74"
250mm 10"	293 - 320	--	260 - 272
	11.53" - 12.60"	--	10.24" - 10.71"
300mm 12"	359 - 371	--	310 - 325
	14.13" - 14.60"	--	12.20" - 12.80"
375mm 15"	418 - 462	479 - 490	380 - 396
	16.46" - 18.19"	18.50" - 19.29"	14.96" - 15.59"

- 4.6 **Test Results:** Per request, the Supplier will submit test results which verify that the Products comply with the City's specifications. The test results shall be certified by a professional engineer. Where submitted test results are not certified, and where the City requests further verification, the City reserves the option to request the Supplier to supply the test results which a professional engineer has certified as complying with City specifications.

The Supplier will bear all costs incurred to provide the City with the test results.

- 4.7 **Ongoing Testing for Quality Control:** During the term of the Agreement, the City shall, at its option, test products taken from routine deliveries to the City, for compliance with City specifications. The City will bear the cost of initial testing. In the event of a failure, the City will charge the Supplier all costs for retesting to ensure compliance with City specifications.

Notwithstanding the above, the Supplier shall notify the City immediately of any change in the product or its manufacture which would in any way change its performance as described by the results submitted in accordance with Section 4.6 - Test Results.

- 4.8 **Assembly:** Before delivery to the City, all components for each coupling shall be assembled in such a way that no parts can be dislodged during handling or installation.

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- 4.9 **Packaging:** Each carton of couplings shall be clearly marked with the corresponding item numbers as listed in the Table 2, Part D of Schedule A. The quantities contained within boxes shall also be identified

5.0 WATERWORKS BRASS AND SCREWED BRASS FITTINGS:

- 5.1 **Specifications:** The Supplier provides all Products to be supplied under the Agreement in accordance with the specifications set out below, and all other Requirements, including all referenced standards.

Specifications described herein apply to nominal size service connection valves and fittings, including corporation main stops, curb stops, couplings and adaptors to be used with approved water service lines.

- 5.2 **Standards:** All waterworks brass and screwed brass fittings supplied under the Agreement must be in accordance with the following standards and regulations:

- (a) ANSI/AWWA/C800 for Underground Service Line, Valves and Fittings (latest revision).
- (b) ANSI/NSF 61/Drinking Water System Components, Health Effects (latest revision).

- 5.3 **Standard of Manufacture and Testing:** The Products supplied must include compliance certifications certifying:

- (a) that each fitting conforms to ANSI/AWWA/C800 for Underground Service Line Valves and Fittings (latest revision). The Supplier shall provide certification of compliance with AWWA C800 and shall also provide certification that all valves and fittings have been tested to standing pressure of 300 psi. The City may ask for a third party tests verifying the performance requirements as detailed.
- (b) that each fitting be certified as suitable for contact with drinking water by an accredited certifying organization in accordance with ANSI/NSF 61, Drinking Water System Components, Health Effects.

- 5.4 **Pressure Rating and Class:** The working pressure for all fittings shall be 150 psi high pressure in accordance with AWWA C800 (latest revision).

- 5.5 **Corporation Main Stops and Curb Stops:** All main stops shall be of a design that makes them adaptable for use with a Mueller tapping machine and shall be of the following characteristics:

- (a) acceptable sizes - $\frac{3}{4}$ ", 1", 1 $\frac{1}{2}$ ", and 2" in nominal sizes;
- (b) pressure rating - can hold 300 psi standing pressure for ball-type valves;

- (c) operating strength - maximum operating torque for ball valves - 25ft. lbs, operating stem/ball connection strength - 40 ft. lbs. Torque restraint without signs of damage or stem deformation;
- (d) body design - full port ball valve;
- (e) stem design must be designed to maintain pressure within the valve so that it does leak while the top cap is removed through maintenance or valve damage;
- (f) rotation of curb stops shall be 90 degrees.

5.6 Fittings and End Connections/Couplings:

- (a) All line couplings shall be supplied without an internal stop;
- (b) All main stop threads shall be AWWA threads;
- (c) All compression end nuts shall bottom out to the fitting body as an indication of correct tightness;
- (d) All stainless steel inserts (where required) shall bear the manufacturer's name by metal stamp.

5.7 Couplings: Compression joint couplings for copper tube both ends (items 10 - 13 of Table 2, Part E of Schedule A) shall be supplied without an internal stop.

5.8 Pipe Threads: Pipe threads shall be in accordance with the AWWA Standard for Threads for Underground Service Line Fittings C800-84 (latest revision), which will form part of this specification. All threads shall be right-hand unless otherwise stated.

5.9 Drain or Waste Plugs: Main stops and curb stops shall be without drain or waste plugs.

6.0 DUCTILE IRON FITTINGS:

6.1 Material Specifications - General: Unless otherwise stated herein, all fittings and accessories shall conform to the latest revision of the following American Water Works Association (AWWA) Standards:

- (a) C104 CEMENT MORTAR LINING FOR DUCTILE IRON PIPE AND FITTING FOR WATER.
- (b) C110 DUCTILE IRON AND GREY IRON FITTINGS, 3 IN. THROUGH 48 IN., FOR WATER AND OTHER LIQUIDS.
- (c) C111/A21.11 RUBBER GASKET JOINTS FOR DUCTILE IRON PRESSURE PIPE AND FITTINGS

All fittings shall be cast from ductile iron. All mechanical joint glands shall be cast from ductile iron.

6.2 Pressure Rating: Fittings shall be designed for working water pressure of 200 psi (1380 kPa).

6.3 Size Of Fittings:

- (a) Unless otherwise specified herein or in Table 2, Part F of Schedule A, all fittings shall conform to the dimensions and tolerances set out in AWWA Standard C110.
- (b) Unless otherwise specified herein or in the Table 2, Part F of Schedule A, all mechanical joint sleeves shall be supplied in the long dimension "L2" shown in Table 10 of AWWA Standard C110.
- (c) When fittings for use with British Standard (B'Std.) pipe are specified, the bell dimensions shall be increased to fit the dimensions shown below. All other dimensions and tolerances shall comply with AWWA C110. Gaskets shall be supplied suitable for use with either B'std. or AWWA pipe.

6.4 British Standard Cast-Iron Pipe Dimensions:

Nominal Size	Dimensions & Tolerances
4 inch	5.00 inches + 0.07 - 0.03
6 inch	7.19 inches + 0.07 - 0.03
8 inch	9.34 inches + 0.07 - 0.03
12 inch	13.30 inches + 0.07 - 0.03

6.5 Gaskets: Gaskets shall be manufactured from Nitrile type (Acrylonitrile Butadiene, NBR) material, in conformance with AWWA Standard C111/A21.11.

Physical tests, performed in accordance with appropriate ASTM specifications, shall be made on each composite of the gasket material for the following:

- (a) Tensile Strength
- (b) Elongation
- (c) Durometer (on finished gasket)
- (d) Compression Set
- (e) Accelerated Aging
- (f) Water Absorption

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The above tests may be required by the City Engineer on one gasket chosen from every batch of a thousand gaskets or part thereof, or from labs of gasket material representing the same number of gaskets, (for example, two test results would be required for 1200 gaskets).

At the request of the City Engineer, the Supplier shall submit test results for the physical tests (a) to (f) inclusive.


- 6.6 **Lining Thickness:** The cement lining shall be of standard thickness specified in Section 4-7.1 of AWWA Standard C104. The maximum cement lining thickness shall not exceed the specified minimum thickness by more than 150 percent.
- 6.7 **Inspection:** The City reserves the right to inspect, or to appoint an inspection company to inspect, all material manufactured to fulfill the Agreement. The manufacturer will cooperate to the fullest extent by allowing the inspector full access to the plant, and by supplying all necessary information when requested. The inspection company appointed by the City to conduct inspections at the place of manufacture will be paid by the City except if re-inspection is required as outlined in the special conditions of the tender form. The City will not be liable for any other costs occasioned by such inspection for the manufacturer.

The current finished fittings inspection process occurs at the Supplier's storage yard. An effort is made to inspect all fittings destined for the City within two or three working days of arrival in the Supplier's storage yard. This arrangement is also beneficial for inspection of Vancouver destined fittings acquired by a private Supplier by separate purchase arrangements (if through the same manufacturer). Fittings are marked as approved or rejected.

The Supplier shall notify a designated representative of the City's Kent Construction Supplies and Services, Materials Lab at least 48 hours prior to an anticipated fittings delivery to the Supplier's storage yard. The Supplier is not obligated to delay, or withhold delivery of any fittings that have not been inspected once notification has been provided to the Materials Engineer. Fittings inspection is not intended to supersede the City's operational requirements, nor shall it create extra work for the Supplier beyond that already stated herein.

In the event the City is unable to attend the storage facility, fittings may be inspected at the City's job or storage sites rather than interfere with the Supplier's operations or storage space. However, it is desired that any fittings marked "C. of V. Inspected" be given delivery preference over non-inspected fittings, where possible.

Rejected fittings shall not be shipped to the City or the City Supplier's job site or storage facilities. City staff will conduct a further inspection at the job site to ensure only approved, with the above exception, and undamaged fittings are received. In the case of a private Supplier, City inspector's review deliveries to ensure fittings have been approved.

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Any fittings rejected as not meeting these specifications shall be replaced within twenty four hours at no cost to the City, or, at the City's option, a refund of the purchase price shall be made to the City. In the event, damaged or non-approved fittings are delivered or discovered at the City job or storage site, the unacceptable fittings shall be removed within twenty four hours by the Supplier at no cost to the City.


Following completion of tests by the City, or its testing lab, for the physical characteristics of the fittings or fittings cement lining, should any fitting be rejected due to its failure to meet the criteria of AWWA Standards C104, C110 or C111, or latest edition thereof, all other fittings of the same size and casting period shall be rejected, unless individual fittings (e.g. fitting number) or fittings of different lots are identified in a manner satisfactory to the city Waterworks Engineer to permit, at the City's sole discretion, a lesser amount of fittings to be rejected.

No fitting will be accepted which does not meet the requirements of these specifications or which have been broken, cracked or otherwise damaged in transit to the place of delivery. The inspection and approval by the City Engineer at the place of delivery shall not relieve the manufacturer of responsibility in case of later discovery of other flaws or defects, or other non-conformance to these specifications.

- 6.8 **Manufacturer's Data:** If not previously submitted, or unless otherwise requested, the Supplier will submit two sets of detailed specifications, dimensional drawings and tolerances for all fittings, types of joints, joint accessories, Nitrile gaskets, bolts, etc.
- 6.9 **Testing and Test Results:** In addition to the specified tests in AWWA Standard C110, the City may examine the ductile iron microstructure of fittings at the manufacturer's plant or after delivery of fittings to the City. Samples for microstructure examination may be obtained from either the remaining portion of the keel blocks (in plant inspection) or from locations on the completed fittings. The microstructure examination shall reveal suitable microstructure consisting of a ferritic-peralitic matrix with Type I or Type II graphite nodules per American Society of Testing Materials (ASTM) A247 06, METHOD FOR EVALUATING THE MICROSTRUCTURE OF GRAPHITE IN IRON CASTINGS, and ASTM A395 04, Figure 1, FERRITIC DUCTILE IRON PRESSURE-RETAINING CASTINGS FOR USE AT ELEVATED TEMPERATURES. If the sample does not meet the above microstructure requirement, two retests shall be obtained from the originally sampled block or fitting. If both retests are found acceptable, the representative lot shall be accepted; if either retest is rejected, the representative lot shall be rejected.


At the request of the City Engineer, the Supplier shall forward written transcripts of all tests, as required by AWWA C104, C110 and C111, including tensile, impact and gasket tests, pertaining to the manufacture of fittings against the Agreement. A copy shall also be forwarded weekly to the inspection company, if one is appointed.

Fittings in any shipment shall have been passed by the inspection company, if appointed, before shipment is made. Their approval of the pipe shall be certified on the delivery sheet.

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All tests shall be identified against individual fitting numbers or batches of fittings. If fittings are not individually numbered, the City Engineer may reject one or more batches of fittings rather than individual fittings.

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**SCHEDULE C
SERVICE LEVEL COMMITMENTS**

The following Supplier commitments will be monitored and jointly reviewed by the City and the Supplier to ensure that, and the Supplier commits itself to ensure that, service levels shall continually meet or exceed the City's operational requirements and such following commitments shall be met or exceeded by the Supplier:

s.17(1)(d) & (f) and s.21(1)




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**SCHEDULE D
PROPOSAL**

The Supplier's proposal (submitted on January 29, 2013 and revised on July 3, 2013) in response to RFP PS20110826 - SUPPLY AND DELIVERY OF PIPE AND FITTINGS is incorporated herein by reference.

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SCHEDULE E
RFP

The City's Request for Proposal RFP PS20110826 - SUPPLY AND DELIVERY OF PIPE AND FITTINGS is incorporated herein by reference.

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