REQUEST FOR PROPOSALS No. 23-014

French Creek Pollution Control Centre
Influent Pipe Lining

ISSUED: February 3, 2023

CLOSING DATE AND TIME:
Submissions must be received on or before:
3:00 PM (15:00 hrs) Local Time on March 2, 2023

Submissions and Questions are to be directed to:

Rob Wood, Project Engineer
Regional District of Nanaimo
4600 Hammond Bay Road
Nanaimo, BC V9T 5A8
250-758-1157
rwood@rdn.bc.ca

Questions are requested at least five (5) business days before the closing date

Non-Mandatory Onsite Information Session
1:00 PM (13:00 hrs) Local Time on February 9, 2023
French Creek Pollution Control Centre
957 Lee Road
Parksville, BC

Proposals will not be opened in public

Instructions to Proponents

The Regional District of Nanaimo (RDN) invites qualified firms to submit a proposal package to provide a cured-in-place pipe (CIPP) lining for an approximately 24m length of 750mm diameter steel influent pipe at the French Creek Pollution Control Centre (FCPCC) as set forth in this Request for Proposal (RFP).

Closing Date / Time / Submission Method

Submissions must be received on or before 3:00 PM (15:00 hrs), Local Time, on March 2, 2023.

Submission Method:

By Email: In PDF format with "**RFP No. 23-014 FCPCC Influent Pipe Lining**" as the subject line at this electronic address: rwood@rdn.bc.ca

Please note: Maximum email file size limit is 20MB, or less. The Regional District of Nanaimo (RDN) will not be liable for any technological delays of submissions.

Submissions received in any other manner will not be accepted.

Onsite Information Session (Non-Mandatory)

A non-mandatory onsite information session will be held to provide Proponents an opportunity to review the site conditions and ask questions. Proponents are required to bring their own PPE; CSA hard-toe boots and safety vest. The meeting will be held at FCPCC at the date and time indicated on the cover-page. Please RSVP by email to the listed RDN contact for this RFP.

Amendment to Proposals

Proposals may be amended in writing and sent via email to the RDN contact person identified on the cover page on or before the closing. Such amendments should be signed by the authorized signatory of the Proponent.

Addenda

If the RDN determines that an amendment is required to this RFP, the RDN will post the Addendum on the RDN (https://www.rdn.bc.ca/current-bid-opportunities) and BC Bid (www.new.bcbid.gov.bc.ca) websites. Each addendum will be incorporated into and become part of the RFP. No amendment of any kind to the RFP is effective unless it is contained in a written addendum issued by the RDN. It is the sole responsibility of the Proponent to check and ensure all amendments are included prior to submitting their final Proposal submission.

Withdrawal of Proposals

The Proponent may withdraw their Proposal at any time by submitting a written withdrawal email to the RDN contact person identified on the cover page on or before the closing.

Unsuccessful Vendors

The RDN will offer debriefings to unsuccessful Proponents, on request, at a mutually agreeable time.

1. INTRODUCTION

The purpose of this Request for Proposal is to solicit submissions from qualified contractors to provide a CIPP lining for an approximately 24m length of 760mm diameter steel influent pipe at the FCPCC. The FCPCC is located at 957 Lee Road, Parksville, BC. Details of the requirements are described in the following sections.

Contract award is subject to approval from the Board of Directors of the RDN and the ability to provide bypass pumping (by others) suitable to the RDN and the Proponent.

2. BACKGROUND

French Creek Pollution Control Centre Background

Wastewater from approximately 28,000 people and businesses in Qualicum Beach, Parksville and the service areas of French Creek, Pacific Shores, Surfside and Barclay Crescent flows to the French Creek Pollution Control Centre (FCPCC), constructed in 1977. FCPCC also treats septage from septic systems and wastewater from properties with holding tanks.

FCPCC currently provides primary and secondary treatment to remove more than 90% of the biochemical oxygen demand (BOD) and total suspended solids (TSS). Solids removed during the treatment process are treated further to become biosolids. FCPCC treated 3.6 billion litres of wastewater in 2020. Treated wastewater is discharged into the Strait of Georgia 2,440 m offshore at a depth of 61 m.

Project Background

All flows to the FCPCC enter the headworks of the plant via the subject open-channel (non-pressurised) influent pipe. The influent pipe was constructed in 1977. Approximately half the length is buried while the other half is exposed and hung from the ceiling of the administration building. The wall thickness of the pipe has thinned over the years, primarily along the bottom portion due to erosion, and has leaked recently at spot locations within the exposed section. The leaks were repaired with gasketed couplers. Drawings, photos and a wall thickness test report are provided in the appendices.

The RDN has considered options for renewing the pipe and has selected CIPP lining as the preferred solution due to its ability to reinstate the structural integrity of the pipe and to be deployed in a timely manner.

Project Asset Description

The pipe to be lined by CIPP methods is an approximately 24m long, 30” (760mm) nominal diameter steel pipe with approximate original wall thickness of at least 0.30” (7.6mm). Recent wall thickness testing indicates a 150mm wide band along the invert of the pipe is very thin, with measurements down to 0.075” (2mm) thick. The pipe has leaked at the invert in four locations within the exposed section through the pipe gallery. Three of those leaks have developed in the last year, with two of those in the last two months. Pipe wall thickness testing reports are in **Appendix D**.

The pipe is located between Manhole 2 (south of the Administration Building) on the upstream side, and a concrete open-channel in the headworks on the downstream side. Raw wastewater flows through the pipe via gravity. The pipe is not pressurised. Approximately 10m of the pipe is exposed within the pipe gallery and adjacent stairwell. The remainder of the pipe is buried underground at a depth of approximately 5m to invert, with the exception of a short section on the downstream end that is encased

in concrete between the pipe gallery and open-channel. The pipe is supported through the pipe gallery by two steel hangers bolted to the wall of the building. Reference drawings and photo markups of the pipe are in the appendices.

Appurtenances on the pipe include five (5) unrestrained, rubber-gasketed steel couplers. Three (3) of the couplers are buried and two (2) are in the exposed section of the stairwell and pipe gallery. Also within the pipe gallery section are three lines that connect to the obvert of the pipe. Two are drain pipes from the lab (75mm dia.) and washrooms (100mm dia.) that are to be maintained. The other is an old sampling pipe (est. 25mm dia.) to be capped and abandoned.

Manhole 2 has access for vehicles via the septage receiving area. The open-channel at downstream end in the "Influent Works Area" is accessed through one or more mandoors. Vehicle access is not possible. Reference **Appendix C** for photos of the area. **Visiting the site to review access constraints is strongly recommended.**

3. SCOPE OF SERVICES

The Proponent is required to provide the following services:

1. All labour, materials, equipment and temporary works (e.g. for access and/or installation) necessary to clean, inspect, repair, test and perform CIPP lining of the existing steel pipe from Manhole 2 to the open channel in the "Influent Works Area" shown on the sketch in **Appendix B**.
2. Design, supply and installation of additional supports through the exposed pipe section in the stairwell and pipe gallery, if required.
3. Field verify dimensions and other attributes of host pipe necessary to manufacture CIPP tube and install the liner.
4. Manage small amounts of seepage (< 10 lpm) from the bypass plug, to be installed by others at Manhole 1 shown on the sketch in **Appendix B**, and from any backwater at the discharge point in the "Influent Works Area".
5. Cleaning of the host pipe to achieve a clean and near bare metal surface that is uniform and will not subject the lining to point loads or other concentrated stresses that would reduce the long-term performance of the lining.
6. CCTV inspection of the pipe at the following milestones:
    a. Following cleaning, to review acceptability of cleaning and to identify any areas requiring spot repair prior to lining.
    b. Following spot repairs to confirm repairs are acceptable for lining to commence.
    c. Following lining to review for imperfections, circumferential fins and other potential concerns. Provide copies of the CCTV inspection video and report to RDN for project records.
7. Spot repair and closure of gaps and orifices on the existing steel pipe as required to facilitate lining. Reference photos and record drawings in the appendices.

8. Supply and installation of the CIPP liner, including termination and line tap seals smooth and free of any protrusions that could cause an attachment of rags, hair, etc. to the pipe wall.

9. Hydrostatic testing of the completed liner, at 5 psi, to confirm the liner is leak-free prior to placing into service.

10. Cleaning and CCTV inspecton of the reinforced concrete pipe between Manhole 2 and upstream Manhole 1, approximately 45m. Manhole 1 will have an inflatable plug inserted (by others) into the downstream end for bypass purposes. Reference the drawing markup in **Appendix B**.

The RDN will engage others to provide:

1. Bypass of the wastewater flows from Manhole 1 to downstream of the section of pipe to be CIPP lined. Bypass routing options are shown in **Appendix B**.

4. DELIVERABLES

Where applicable, deliverables are to be submitted to the RDN a minimum of six (6) weeks in advance of the planned work commencement. The deliverables shall be reviewed and accepted by the RDN prior to commencing work. The RDN will review submittals within 14 calendar days.

1. Liner design to AWWA Class IV CIPP lining requirements, with a minimum design life of 50 years, sealed by a Qualified Professional Engineer licensed to practice in the Province of British Columbia. The design submission shall include, at minimum:

    a. Wall thickness computations.

    b. Name, type and manufacturer of each unique resin and tube proposed for use.

    c. CIPP curing schedule and description provided by the resin supplier indicating the temperature, staging, duration and pressure required to achieve a proper cure of the resin and fabric tube composite.

    d. Staging, including cool-down procedures.

    e. Substantiation of material properties used in the design based on previous installations and quality control tests.

2. The liner design shall consider the following information, at minimum:

    a. The CIPP liner shall meet Class IV requirements for the stated design conditions in accordance with AWWA's Structural Classifications of Pressure Pipe Linings, Suggested Protocol for Product Classification.

    b. Record drawings in **Appendix F**, for information on existing pipe supports, couplers, line taps, etc.

    c. Wastewater characterisation information in **Appendix E**.

    d. Pipe wall thickness test reports in **Appendix D**.

    e. Site specific conditions from an onsite review by a technical representative of the Proponent.

3. Shop drawings for additional pipe supports through the exposed pipe section in the stairwell and pipe gallery, if required. Shop drawings to be sealed by a Qualified Professional Engineer licensed to practice in the Province of British Columbia.

4. CCTV inspection reports for the CIPP lined pipe – post-cleaning and post-liner installation.

5. Hydrostatic testing report. Hydrostatic testing acceptability requirement is to achieve no pressure drop and no observable leakage for two (2) hours at 5 psi.

6. Sealed letter from the CIPP design Engineer of Record confirming review of the quality control documents, including the CCTV inspection reports, was performed and that the lining was manufactured, transported and installed according to the design and lining manufacturer's requirements.

7. CCTV inspection reports for the existing reinforced concrete pipe section.

8. A comprehensive quality control submittal including a completed inspection and test plan and a copy of all quality control documents (e.g. field and lab test reports and daily field records) for the project.

5. SCHEDULE

The Proponent shall propose a work window in the dry summer months when plant flows are the lowest. The work window shall conform to the following requirements.

1. Earliest instatement of bypass pumping shall be **June 5, 2023**.

2. Achieve Substantial Completion (hydrostatic testing is complete and successful, and pipe is fit for service) of the project no later than **September 1, 2023**.

3. Time from instatement to removal of bypass pumping not to exceed **14 calendar days**. The Proponent may be responsible for bypass pumping costs if this time is exceeded.

The Proponent shall advise, in their RFP submission, if there are any issues or concerns with the above requirements.

6. REFERENCE / BACKGROUND INFORMATION

The following reference documents are included in the appendices for additional facility and project background.

- **Appendix A** – Fee Proposal Form
- **Appendix B** – Site Layout and Access
- **Appendix C** – Reference Photos Log
- **Appendix D** – Host Pipe Wall Thickness Test Reports
- **Appendix E** – Wastewater Design Criteria and Characterisation Tables
- **Appendix F** – Record Drawings
- **Appendix G** – Form of Contract
- **Appendix H** – WWS-COM-10.1 Contractor-Supplier Package – EMS Requirements
- **Appendix I** – Prime Contractor Preconstruction Meeting Form

7. PROPOSAL SUBMISSION AND EVALUATION

Submission

The RDN requests submissions from qualified CIPP contractors of a detailed proposal demonstrating that their solution meets the criteria provided above and further detailed in the appendices. One of the primary concerns for Proponents to address in their Proposals is the long-term performance of the lining against erosion by sand and sediment in the raw wastewater. The characteristics of the wastewater are included in the design criteria shown in **Appendix E**. To assist in receiving similar and relevant information, and to ensure your Proposal receives fair evaluation, the RDN asks Proponents to provide the following information.

Please include with your proposal:

a) Description of the proposed cleaning equipment and method, including how / where debris will be removed and disposed of.
b) Description of the CCTV equipment, its capabilities and the video quality produced.
c) Description of the proposed repair method(s), including addressing the pipe appurtenances.
d) Description of the proposed lining, including:
    a. Material type and thickness, and reasons for selection. Include reference to any applicable standards the materials conform to – e.g. ASTM F2019 and D5813. **NOTE: Polyester resin systems will not be approved for use.**
    b. Resistance to chemical attack, particularly H_2S. Chemical resistance must meet requirements of ASTM D5813 Sections 6.4 and 8.2, and ASTM F1216 Appendix X2. Reference wastewater characterisation table in **Appendix E** for chemical properties.
    c. Resistance to abrasion.
    d. Testing results for the following ASTM standard tests, or other relevant tests.
        i. ASTM D1599 – Standard Test Method for Resistance to Short-Time Hydraulic Pressure of Plastic Pipe, Tubing, and Fittings.
        ii. ASTM D2990 – Standard Test Methods for Tensile, Compressive, and Flexural Creep and Creep-Rupture of Plastics.
        iii. ASTM D2992 – Standard Practice for Obtaining Hydrostatic or Pressure Design Basis for "Fiberglass"; (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe and Fittings.
    e. Estimated life expectancy based on the fluid characteristics and site conditions of this project.
    f. Method of installation and curing, including details of continuous temperature monitoring.
    g. Description and technical information (e.g. data sheets and/or shop drawings) of the proposed liner terminations and line tap seals.
e) Identification and description of access plans and methods, particularly if removal or modification of existing plant building components or infrastructure is proposed. Inlcude identification of:
    a. Access points.
    b. Staging areas.
f) Relevant, sample quality control plan that includes an inspection and test plan with appropriate hold points and quality control forms.
g) Description of method for hydrostatic testing, including removal of air from the pipe and confirmation whether the termination and line tap seals are included in the test.
h) Gantt chart schedule identifying the key activities and milestone dates.

i) List of any support resources / services requested to be provided by the Owner. E.g. power, disposal of debris from pipe cleaning, etc.
j) Description of three to five similar or relevant reference projects completed within the last 10 years. Details for each project to include:
    a. Project name and location.
    b. Name and contact information for the owner's representative or engineer of record.
    c. Type of fluid transported through pipe.
    d. Parent pipe material type, diameter and length of pipe lined.
k) Curriculum vitae for the key project personnel, including the project manager and superintendent.
l) Description of any corporate sustainability initiatives / practices in place. For example:
    a. Describe the systems, policies and/or practices you use to understand and manage your energy consumption and to reduce GHG emissions resulting from your own operational activities.
    b. Describe the systems, policies and/or practices you use to reduce waste, associated with by-products of production and other operational activities, and to work towards a circular economy through the repurposing of materials/waste.
    c. Describe the systems, policies and/or practices you use to manage and reduce harmful gaseous emissions (e.g. VOCs, Sox, Nox, other air pollutants, toxic fumes); harmful solid emissions (e.g. scarce metals, use of hazardous pesticides, particulate matter); and harmful liquid emissions (e.g. spills, liquid toxic waste, chemical fluids).
    d. Describe any employment training, skills training, career mentoring, and/or apprenticeship opportunities you provide within your company.
    e. Describe the systems, policies and/or practices you use to support local economic development in the communities and regions where you operate and do business such as sub-contracting and purchasing from local suppliers, partnerships with local organizations, and/or providing employment and skills training opportunities for the local workforce.
    f. Describe the systems, policies and/or practices you use to promote wellness, active living, and/or work-life balance programs for all employees including strategies to manage physical safety and mental/emotional wellness.
m) Completion of the attached Fee Proposal form in **Appendix A**.

Evaluation

Proposals will be evaluated on a 30% financial, 70% technical basis. The technical evaluation will review:

- Performance of proposed liner materials and stated design life
- Proposed methodology
- Sample deliverables
- Qualifications and experience of proposed team
- Project and client references
- Schedule
- Sustainability practices

Proposals submitted should be in enough detail to allow the RDN to determine the Proponent's qualifications and capabilities from the documents received. The selection committee, formed at the RDN's sole discretion, will score the Proposals in accordance with the criteria provided.

The RDN may evaluate proposals on a comparative basis by comparing one Proponent's proposal to another Proponent's proposal. The RDN reserves the right to not complete a detailed evaluation if the RDN concludes the proposal is materially incomplete, irregular or if it contains any financial or commercial terms that are unacceptable to the RDN.

The selection committee may proceed with an award recommendation or the RDN may proceed to negotiate with the highest evaluated Proponent with the intent of developing an agreement. If the parties after having bargained in good faith are unable to conclude a formal agreement, the RDN and the Proponent will be released without penalty or further obligations other than any surviving obligations regarding confidentiality and the RDN may, at its discretion, contact the Proponent of the next best rated Proposal and attempt to conclude a formal agreement with it, and so on until a contract is concluded or the proposal process is cancelled.

The RDN reserves the right to award the assignment in whole or in part or to add or delete any portion of the work. Throughout the evaluation process, the evaluation committee may seek additional clarification on any aspect of the Proposal to verify or clarify the information provided and conduct any background investigation and/or seek any additional information it considers necessary.

8. *PROPOSED PURCHASE CONTRACT*

The RDN's preferred form of Contract is attached herein in **Appendix G**. The Contract will also include the following forms: 'WWS-COM-10.1 Contractor-Supplier Package – EMS Requirements' and the 'Prime Contractor Preconstruction Meeting Form' in **Appendices H and I**, respectively. Proponents should carefully review this form of Contract. Proponents may (but are not required to) request that the RDN consider revisions to the form of Contract and include any clauses of concern in their proposal along with suggested language changes. Failure to do so means acceptance of the agreement as presented.

REGIONAL DISTRICT OF NANAIMO

Appendix A
Fee Proposal Form

REGIONAL DISTRICT OF NANAIMO

FEE PROPOSAL FORM
French Creek Pollution Control Centre – Influent Pipe Lining
Page 1 of 2

Date: _____

Company: _____

Address: _____

Telephone:_____

Email: _____

To: Regional District of Nanaimo
Rob Wood, Project Engineer
rwood@rdn.bc.ca

Having had the opportunity to examine the Project site, and having carefully examined all of the documents including any Addenda issued as supplements thereto, we hereby offer to perform the Work set forth in the aforesaid documents for the Stipulated Contract Price. The Price includes the Contractor's labour, material, equipment, material costs, overhead and profit, all taxes and duties, and shall represent the complete cost to the Owner of such charges excluding GST which shall be shown separately.

Item Breakdown (*enter '0' if item is not required):

Mob / Demob:	$ _____
Pipe Cleaning & Inspection:	$ _____
Liner Design:	$ _____
Liner Supply:	$ _____
Liner Installation:	$ _____
Temporary Works*:	$ _____
Additional Pipe Supports*:	$ _____
Quality Control:	$ _____
Bonding & Insurance:	$ _____
Lump Sum Total:	$ _____
GST (5%):	$ _____
Total Stipulated Contract Price:	$ _____

REGIONAL DISTRICT OF NANAIMO

FEE PROPOSAL FORM
French Creek Pollution Control Centre – Influent Pipe Lining
Page 2 of 2

ACCEPTANCE

.1 This fee proposal is open to acceptance for a period of sixty calendar (60) days from the closing date.

.2 Submission of this fee proposal implies acceptance of the existing conditions at the site.

.3 We understand that the lowest or any proposal will not necessarily be accepted. The RDN, in its sole discretion, reserves the right not to proceed with the Project.

.4 The Owner reserves the right to waive minor defects or irregularities in the proposal or fee.

.5 We agree to be designated as the Prime Contractor for this project per WorkSafeBC OH&S Regulations and have the necessary qualifications and are willing to accept the responsibilities as Prime Contractor for the project.

.6 We can complete the work by **September 1, 2023**.

Company: _____

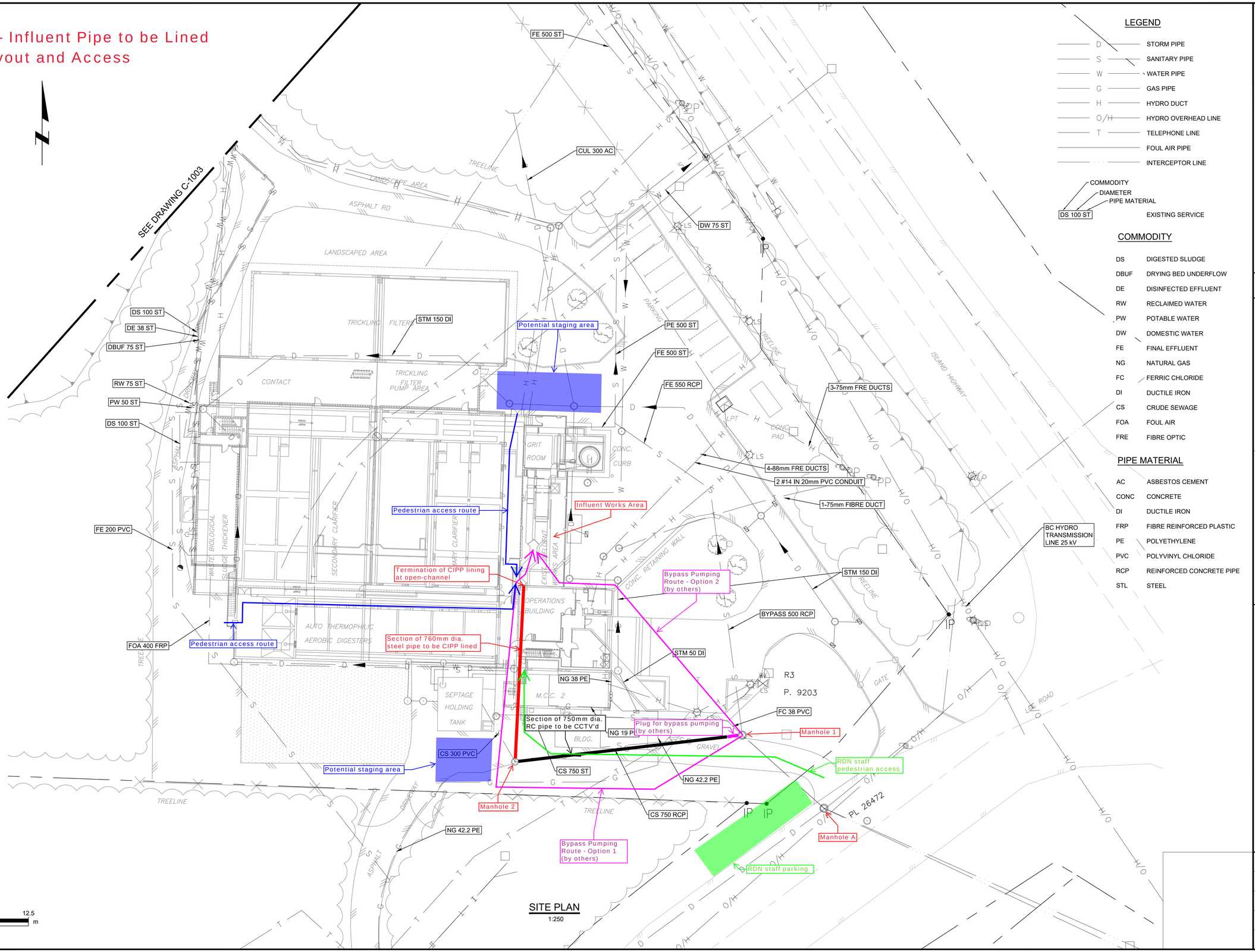
Signature: _____
(Authorized Officer)

Printed: _____
(Authorized Officer)

REGIONAL DISTRICT OF NANAIMO

Appendix B
Site Layout and Access Sketch

FCPCC - Influent Pipe to be Lined
Site Layout and Access



SITE PLAN
1:250

LEGEND

D	STORM PIPE
S	SANITARY PIPE
W	WATER PIPE
G	GAS PIPE
H	HYDRO DUCT
O/H	HYDRO OVERHEAD LINE
T	TELEPHONE LINE
	FOUL AIR PIPE
	INTERCEPTOR LINE

COMMODITY
DIAMETER
PIPE MATERIAL
DS 100 ST — EXISTING SERVICE

COMMODITY

DS	DIGESTED SLUDGE
DBUF	DRYING BED UNDERFLOW
DE	DISINFECTED EFFLUENT
RW	RECLAIMED WATER
PW	POTABLE WATER
DW	DOMESTIC WATER
FE	FINAL EFFLUENT
NG	NATURAL GAS
FC	FERRIC CHLORIDE
DI	DUCTILE IRON
CS	CRUDE SEWAGE
FOA	FOUL AIR
FRE	FIBRE OPTIC

PIPE MATERIAL

AC	ASBESTOS CEMENT
CONC	CONCRETE
DI	DUCTILE IRON
FRP	FIBRE REINFORCED PLASTIC
PE	POLYETHYLENE
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
STL	STEEL

REV	DESCRIPTION	CHK	DRN	DATE (Y/M/D)
A	ISSUED FOR 60% DETAILED DESIGN	KM	SI	2019/09/24

VERIFY SCALE IF PLAN SHEET IS REDUCED
30 mm

DRN BY: SI
DES BY: BY
CHK BY: KM
APP BY: MC

PREPARED FOR:
REGIONAL DISTRICT OF NANAIMO

PREPARED BY:
AECOM
4th FLOOR,
3292 PRODUCTION WAY,
BURNABY, B.C., V5A 4R4
604-444-6400

REGIONAL DISTRICT OF NANAIMO
FRENCH CREEK POLLUTION CONTROL CENTRE
STAGE IV EXPANSION

CIVIL
EXISTING SITE AND SERVICES PLAN
SHEET 2 OF 2

PROJECT START DATE (M / Y)	SEP/2019
PROJECT NO.	60590631
FILENAME	60590631-C-1004.dwg
RDN DRAWING No.	
DRAWING No.	C-1004

Plotted By: snejaignatova
Plot File Date Created: Sep/17/2019 3:25 PM
Layout-Sheet Name: C-1004
Filename: P:\60590631\900-CAD_GIS\910-CAD\20-SHEETS\C\60590631-C-1004.DWG

REGIONAL DISTRICT OF NANAIMO

Appendix C
Reference Photos Log



1. Manhole “A” at Lee Road, just outside FCPCC fence line



2. Close-up of Manhole “A”



3. View of Manhole “A” area from across Lee Road.



4. View looking into FCPCC from outside fence – U/G RCP wastewater influent line runs left of building in foreground.



5. View of Manhole No. 1 (red arrow) across the fence on FCPCC property.



6. Close-up of bypass Manhole No. 1.



7. View looking past Manhole No. 1, through fence and to Lee Road



8. Close-up of Manhole No. 2 (see nearby area photo next page).



9. Looking past Manhole No. 2 toward Manhole No. 1 and FCPCC perimeter fence.



10. View down Manhole 2.



11. View down Manhole 2 showing 100 mm pipe from change room (left) and 300 mm pipe from septage holding tank (right)



12. View past Manhole No. 2 toward plant, where U/G RCP wastewater influent line becomes steel & runs through building & into process.



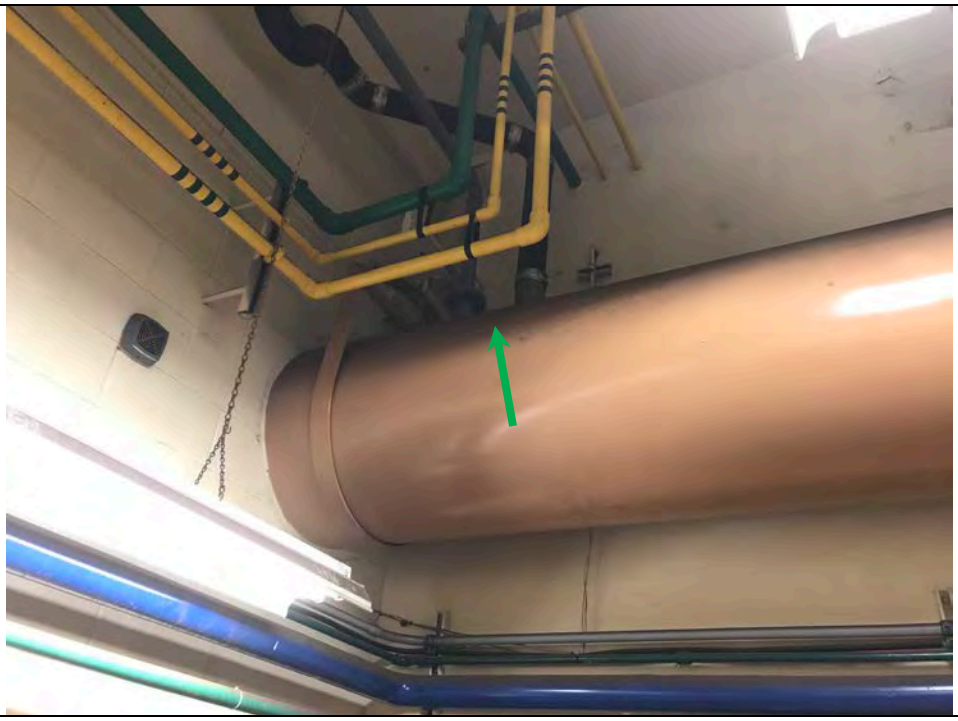
13. Easy access to Manhole No. 2 off Lee Road.



14. Location where steel 750 mm wastewater influent pipe enters FCPCC process building.



15. Continuation of 750 mm wastewater influent pipe passing through building.



16. Close-up of 750 mm pipe in photo 15 showing small branch connections on top (green arrow).



17. Close-up of 750 mm pipe in photo 15 showing small (plugged) branch connection on top (green arrow).



18. Close-up of 750 mm pipe in photo 15 showing dry end of connection with plant process open channel (green arrow).



19. Wet end of 750 mm wastewater influent pipe entering "Influent Works Area" open channel (renewal finishes here).



20. Left side close-up of photo 19 above.



21. Right side close-up of photo 19 above.



22. View of area around "influent Works Area" open channel – pipe entry at green arrow.



23. View of area around "Inlfuent Works Area" open channel – flow direction shown by red arrow.

REGIONAL DISTRICT OF NANAIMO

Appendix D
Host Pipe Wall Thickness Test Reports

Acuren Group Inc.
12271 Horseshoe Way
Richmond, BC, Canada V7A 4V4
www.acuren.com

Phone: 604.275.3800
Fax: 604.274.7235

A Higher Level of Reliability

NONDESTRUCTIVE EXAMINATION

CLIENT: REGIONAL DISTRICT OF NANAIMO
FRENCH CREEK WWPCC 957 LEE ROAD
PARKSVILLE, BC
V9P 1Z4

DATE: January 20,2023
ACUREN JOB #: 617-J043808
REPORT #: 617J043808-220120-DLS-01
CONTRACT/PO: WO:

ATTENTION: **MARK REID** WORK LOCATION: FCPCC

PROJECT: Influent Waste Water Piping Thickness Survey

ITEM(S) EXAMINED: Pipe section as accessible from inside of the building

PART #: MATERIAL: Carbon steel THICKNESS: various

SCOPE: Perform thickness testing on the accessible areas of the piping- similar locations to the December 2020 inspection

TYPE OF INSPECTION: Ultrasonic

TEST DETAILS:

ACCEPTANCE STANDARD: Client's Information REVISION: N/A
PROCEDURE/TECHNIQUE: CAN-UT-14T001 REVISION: 10

TYPE: Thickness METHOD: Contact

INSTRUMENT: Krautkramer MODEL: USM Go+ S/N: GOPLS14080262 CAL DUE: September 17,2023

CAL. BLOCK: Step Block S/N: CABLE-TYPE: Coaxial LENGTH: 36"

CAL. BLOCK: S/N: COUPLANT: Sonotech - UT-X

Probe & Technique Details:

	TEST ANGLE (°)	PROBE TYPE	CRYSTAL SIZE	FREQ. (MHz)	SERIAL NUMBER	DAMPING Ω	TEST FROM	REFERENCE REFLECTOR	TRANSFER VALUE	REFERENCE dB	REFERENCE % FSH	SCAN dB	RANGE
1	0	FH2E	5/16	8	01418B	NA	One side	Backwall	NA	64	90	NA	.500”
2													
3													
4													

TEST SURFACE CONDITION: Clean Bare Metal TEST SURFACE TEMPERATURE: 18°C

RESULTS:

The piping inspected is located one floor below the offices at French Creek Pollution Control Centre. The piping was accessed by a supplied scaffold.

Thickness scanning was performed on the accessible areas of the piping (approximately 75% of the circumference) at 1’ intervals with 0’ being the south wall at the stairwell. These locations are fairly close to the ones that were used during the 2020 inspection. As the scaffold set-up was slightly different from the 2020 inspection 1’ to 13’ was accessible for this survey whereas 2’ to 12 was accessible during the 2020 inspection.

Client acknowledges receipt and custody of the report or other work ("Deliverable"). Client agrees that it is responsible for assuring that acceptance standards, specifications and criteria in the Deliverable and Statement of Work ("SOW") are correct. Client acknowledges that Acuren is providing the Deliverable according to the SOW, and not any other standards. Client acknowledges that it is responsible for the failure of any items inspected to meet standards, and for remediation. Client has 15 business days following the date Acuren provides the Deliverable to inspect it, identify deficiencies in writing, and provide written rejection, or else the Deliverable will be deemed accepted. The Deliverable and other services provided by Acuren are governed by a Master Services Agreement ("MSA"). If the parties have not entered into an MSA, then the Deliverable and services are governed by the SOW and the "Acuren Standard Service Terms" (www.acuren.com/serviceterms) in effect when the services were ordered.

CLIENT: _____ _____
CLIENT PRINTED NAME | CLIENT SIGNATURE ACCEPTED & ACKNOWLEDGED BY

ACUREN TECHNICIAN: Darren Sharpe _____
1st Technician
CGSB I, SNT I
CGSB Reg. #3903
2nd Technician

REVIEWER:

	TOTAL HOURS	S.T.	O.T.	SHIFT
1ST TECHNICIAN:				Day ☐
2ND TECHNICIAN:				PM ☐

KILOMETRES: OTHER CHARGES: YES ☐ NO ☐
(IF YES, SEE DAILY OR PROJECT TIME REPORT)

(Generated Using: CAN-QUA-02F007 R10 - 12/09/2021)

Areas of erosion/internal material loss were noted within 2” to 3” either side of bottom dead centre. Discussions with plant personnel revealed that three locations at bottom dead centre have leaked since the 2020 inspection. Two of these are mechanically banded and fall at approximately the 6’6” and 9’ locations. An additional seal patch is installed at approximately the 3’ location.

Thickness scans at the one-foot intervals revealed measurements that ranged from .075” to .300.”

Thickness scanning at random locations along that bottom dead centre 6” band revealed several locations of thinning with the lowest measurement obtained being approximately .075.”

It should be noted that due to varying condition of the internal erosion/material loss (ie not a smooth internal surface) in some instances it is difficult to obtain repeatable measurements. This is noted in the table below.

The accessible areas scanned outside of that bottom approximate 6” band revealed no appreciable areas of internal material loss. The measurements obtained outside of the bottom 6” band ranged from 0.275” to 0.300.”

The table below shows the 2020 results as well as the results from the 2023 inspection.

Location (0' is the south wall at the stairs)	2023 Thickness results	2020 Thickness results	2023 Comments
0'	Not accessible	Not accessible	
1'	.278" to .292"	Not accessible	Suspected internal material loss. Repeatable thickness measurements were not attainable due to internal surface condition
2'	.118" to .294"	.284" to .290	Internal material loss at bottom
3'	.283" to .299"	.154" to .292"	Seal patch at bottom dead centre. Measurements taken outside of the patch
4'	.076" to .298"	.283" to .293"	Internal material loss at bottom
5'	.283" to .300"	.284" to .293"	Suspected internal material loss. Repeatable thickness measurements were not attainable due to internal surface condition
6'	.083" to .296"	.138" to .295"	Internal material loss at bottom
7'	.120" to .298"	.126" to .293"	Internal material loss at bottom
8'	.275" to .296"	.280" to .295"	Suspected internal material loss. Repeatable thickness measurements were not attainable due to internal surface condition
9'	N/A	.155" to .290"	Location is banded due to previous leak
10'	.284" to .294"	.288" to .290"	Suspected internal material loss. Repeatable thickness measurements were not attainable due to internal surface condition. Only lower section of pipe is accessible
11'	.075" to .292"	.124" to .295"	Internal material loss at bottom
12'	.104" to .297"	,284" to .293"	Internal material loss at bottom
13'	.090" to .296"	Not accessible	Internal material loss at bottom
Scanning at bottom dead centre 6" wide band at random locations between 1' intervals a shows thickness range of.075" to .290"			
Scanning above the bottom dead centre area shows a thickness range of .275" to .300"			

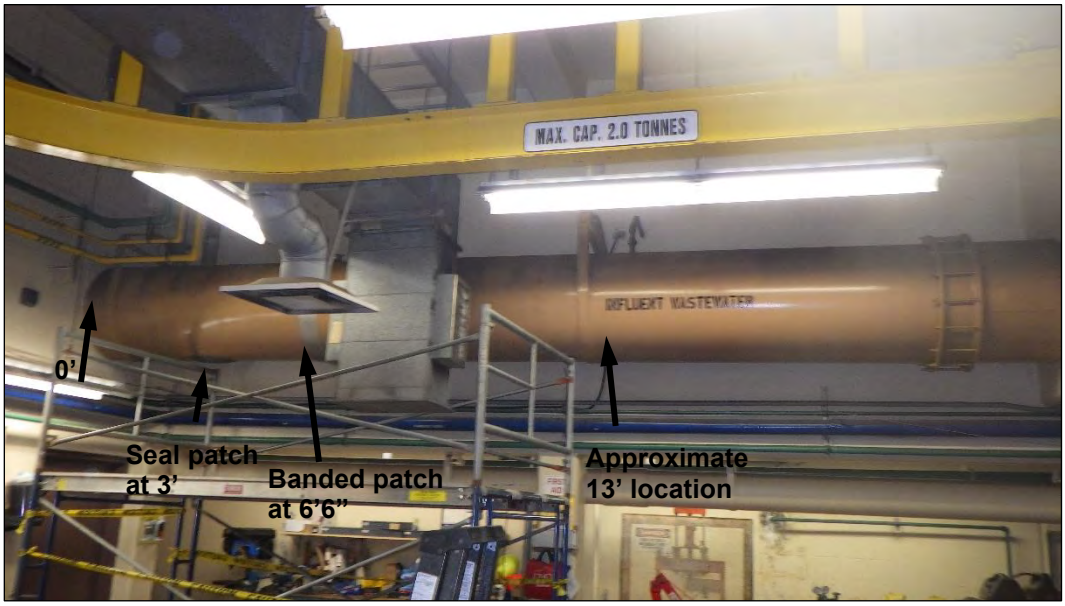


Figure 1 Overview of influent piping

Acuren Group Inc.
12271 Horseshoe Way
Richmond, BC, Canada V7A 4V4
www.acuren.com

Phone: 604.275.3800
Fax: 604.274.7235

A Higher Level of Reliability

NONDESTRUCTIVE EXAMINATION

CLIENT: REGIONAL DISTRICT OF NANAIMO
FRENCH CREEK POLLUTION CONTROL CENTRE
957 LEE ROAD
PARKSVILLE, B.C.
V9P 1Z4

DATE: December24, 2020
ACUREN JOB #: 6174153
REPORT #: 6174153-201223-BTG-01
CONTRACT/PO: 72-54965 WO:

ATTENTION: **CHRIS KERMAN**
WORK LOCATION: On site (FCPCC)

PROJECT: Influent Waste Water Piping thickness survey

ITEM(S) EXAMINED: Influent Waste Water Pipe; as accessed inside the building.

PART #: --- MATERIAL: Carbon steel THICKNESS: 0.290"

SCOPE: Take thickness readings on the pipe as directed by the client.

TYPE OF INSPECTION: Ultrasonic

TEST DETAILS:

ACCEPTANCE STANDARD: Client's Information REVISION: N/A
PROCEDURE/TECHNIQUE: CAN-UT-14T001 REVISION: 9

TYPE: Thickness METHOD: Contact

INSTRUMENT: Olympus MODEL: 38 DL Plus S/N: 140998511 CAL DUE: December 12, 2021
CAL. BLOCK: Step Block S/N: 15-3677 CABLE-TYPE: Potted LENGTH: 4'
CAL. BLOCK: N/A S/N: N/A COUPLANT: Sonotech - UT-X

Probe & Technique Details:

	TEST ANGLE (°)	PROBE TYPE	CRYSTAL SIZE	FREQ. (MHz)	SERIAL NUMBER	DAMPING Ω	TEST FROM	REFERENCE REFLECTOR	TRANSFER VALUE	REFERENCE dB	REFERENCE % FSH	SCAN dB	RANGE
1	0	Dual	¼"	7	1098578	N/A	One Side	Backwall	N/A	60	80	+6	1"

TEST SURFACE CONDITION: Clean Bare Metal TEST SURFACE TEMPERATURE: 15°C to 20°C

RESULTS:

The pipe section surveyed is located 1 floor below the control floor of the main office of the French Creek Pollution Control Centre.

Thickness scanning was conducted as accessible from the supplied scaffold. Scans were conducted every one foot along the length of the pipe for the accessible circumference (the pipe could be tested for a little more than 75% around the circumference) of the pipe at each test location. For the purpose of this inspection the south wall at the stair well was used as the 0' distance marker, scans were conducted from 2' – 12' from this location. Results of this survey identified isolated internal corrosion/material losses on the bottom of the pipe within 2" – 3" either side of the bottom centre. Thickness ranged from 0.124" – 0.295".

Client acknowledges receipt and custody of the report or other work ("Deliverable"). Client agrees that it is responsible for assuring that acceptance standards, specifications and criteria in the Deliverable and Statement of Work ("SOW") are correct. Client acknowledges that Acuren is providing the Deliverable according to the SOW, and not any other standards. Client acknowledges that it is responsible for the failure of any items inspected to meet standards, and for remediation. Client has 15 business days following the date Acuren provides the Deliverable to inspect it, identify deficiencies in writing, and provide written rejection, or else the Deliverable will be deemed accepted. The Deliverable and other services provided by Acuren are governed by a Master Services Agreement ("MSA"). If the parties have not entered into an MSA, then the Deliverable and services are governed by the SOW and the "Acuren Standard Service Terms" (www.acuren.com/serviceterms) in effect when the services were ordered.

CLIENT: _____ _____
CLIENT PRINTED NAME | CLIENT SIGNATURE ACCEPTED & ACKNOWLEDGED BY

ACUREN TECHNICIAN: B. Gutz _____
1st Technician
CGSB II, SNT II
CGSB Reg. #9920
2nd Technician

REVIEWER:

	TOTAL HOURS	S.T.	O.T.	SHIFT
1ST TECHNICIAN:	6	6		Day ☒
2ND TECHNICIAN:				PM ☐

KILOMETRES: 75 OTHER CHARGES: YES ☐ NO ☐
(IF YES, SEE DAILY OR PROJECT TIME REPORT)

(Generated Using: CAN-QUA-02F007 R09 - 02/26/2020)

An additional 6” wide scan was conducted along the bottom of the pipe from 2’ – 12’ recording a lowest reading of 0.075”.

The full surface of the pipe was scanned between 5 and 7 feet from top to bottom (on one side only). No evidence of internal material loss or corrosion was found in the area away from the bottom.

The table below provides the thickness range found across the pipe at the scan areas.

Distance From The wall	**Thickness Scan results**	**Comment**
0' (wall)	Not accessible	
1'	Not accessible	
2'	0.284"-0.290"	
3'	0.154"-0.292"	Internal Corrosion on the bottom
4'	0.283"-0.293"	
5'	0.284"-0.293"	
6'	0.138"-0.295"	Internal Corrosion on the bottom
7'	0.126"-0.293"	Internal Corrosion on the bottom
8'	0.280"-0.295"	
9'	0.155"-0.290"	Internal Corrosion on the bottom - Only scanned on the bottom half of the pipe
10'	0.288"-0.290"	Only scanned on the bottom half of the pipe
11'	0.124"-0.195"	Internal Corrosion on the bottom
12'	0.284"-0.293"	
Bottom scan between 2' - 12'; 0.075" - 0.290"		
Full side scan between 2' and 7' - excluding the bottom of the pipe. 0.283" - 0.297"		

See attached photographs.

Photo 1:

FRENCH CREEK POLLUTION CONTROL CENTRE

General overview of the pipe section surveyed.

DSCF3591.JPG

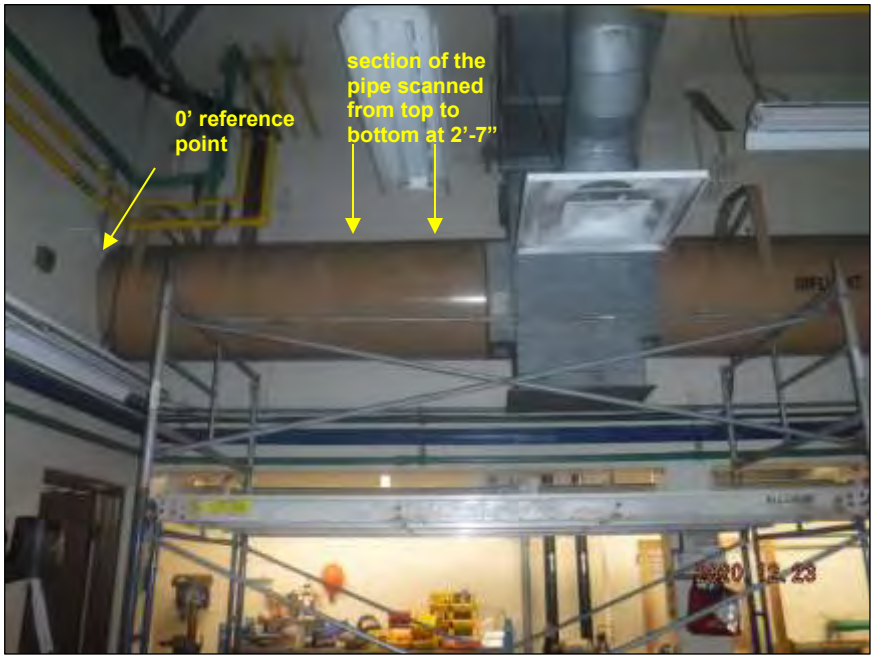


Photo 2:

FRENCH CREEK POLLUTION CONTROL CENTRE

The bottom of the pipe; isolated areas of internal corrosion are found along the bottom of the pipe within 2 – 3 inches of the centre.

DSCF3592.JPG




To MH 2
Flow
Approx. 2.35m
POTABLE TEMPERED WATER
POTABLE TEMPERED WATER


MAX. CAP. 2.0 TONNES
To Open Channel
in Headworks
Flow
3.9m
INFLUENT WASTEWATER
3.0m
0.5m
FIRST
AID
Dimensions are approximate


Maintain drain from lab.
75mm dia.
Maintain drain from washrooms.
100mm dia.

Remove and cap abandoned influent sampler line. Approx. 25mm dia.

INFLUENT WASTEWATER

DOMESTIC WATER

FIRST AID

COLUMBIA

DISPOSABLE POLY-TISSUE EMERGENCY BLANKET

DANGER

REGIONAL DISTRICT OF NANAIMO

Appendix E
Wastewater Design Criteria and Characterisation Tables

FCPCC Maintenance Job: RAE01 – 750 mm Influent Line Renewal

Raw Waste Water Design Criteria – July 15, 2020

General Criteria	**Description**		
Fluid description	Raw municipal waste water influent (RWW)		
Process chemicals:	Ferrous chloride, 0.02 millilitre/litre RWW (200 litre/day added to 10 million litres/day influent flow via MH2, from septage tank)		
Trace elements/compounds:	See list page 2		
Dimensional Criteria	**Design Average**	**Minimum**	**Maximum**
Fluid flow rate (litres per day)	15,500,000	9,000,000	23,500,000
Fluid flow rate (litres per minute)	10,800	3,600	36,240
Fluid specific gravity	1.01	1	1.02
Fluid temperature (deg. C)	16.5	10	22
Fluid pH	7.6	5.9	8.2
Fluid solids* (milligrams/litre)	400	200	680

* Total suspended solids (“soft” and “hard”)

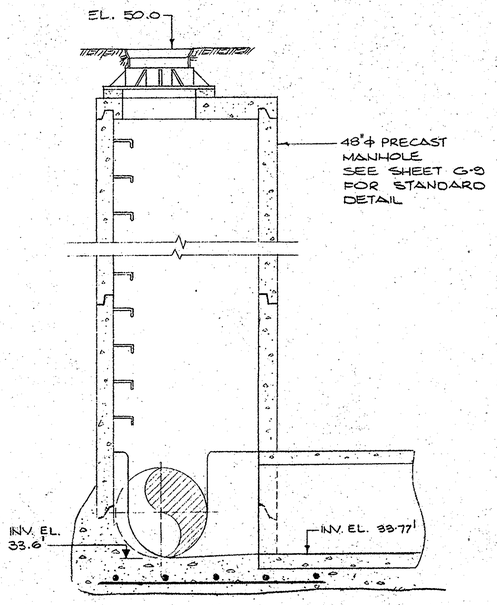
Trace Elements/Compounds in RWW Influent to FCPCC

FCPCC INFLUENT & EFFLUENT (ANNUAL) – October 1st, 2019			
Parameter	Unit	Influent	Effluent
AMMONIA NITROGEN	mg/L	21.9	31.6
ALKALINITY	mg/L	232	238
DISSOLVED CHLORIDE	mg/L	1,970	1,920
TOTAL KJELDAHL NITROGEN	mg/L	51.6	36.2
OIL AND GREASE	mg/L	39.3	<2.0
SULPHATE (D)	mg/L	275	270
SULPHIDE (T)	mg/L	0.155	0.039
CYANIDE (T)	mg/L	<0.0020	0.0044
FLUORIDE (D)	mg/L	1.58	<1.00
TOTAL PHENOLS	mg/L	0.0523	0.0087
TOTAL ORGANIC CARBON	mg/L	45.1	19.0
PHOSPHOROUS (T)	µg/L	6,370	2,410
METALS			
ALUMINUM (T)	µg/L	1,330	42.3
ARSENIC (T)	µg/L	1.16	0.72
BARIUM (D)	µg/L	9.0	<5.0
BORON (D)	µg/L	698	635
CADMIUM (D)	µg/L	0.027	0.033
CHROMIUM (T)	µg/L	6.53	1.26
COBALT (D)	µg/L	0.91	1.67
COPPER (D)	µg/L	22.7	11.7
IRON (D)	µg/L	785	442
LEAD (T)	µg/L	3.11	0.32
MANGANESE (D)	µg/L	128	123
MERCURY (T)	µg/L	<0.010	<0.010
MOLYBDENUM (T)	µg/L	2.88	1.98
NICKEL (D)	µg/L	6.43	7.01
SELENIUM (T)	µg/L	0.66	<0.50
SILVER (T)	µg/L	0.643	<0.050
TIN (T)	µg/L	1.54	0.56
ZINC (T)	µg/L	211	24.9
VOLATILE ORGANIC COMPOUNDS, PCBs, and PHTHALATES			
BENZENE	µg/L	<0.5	<0.5
CHLOROFORM	µg/L	1.2	<1.0
CHLOROMETHANE	µg/L	NT	NT
DICHLOROBROMOMETHANE	µg/L	<1.0	<1.0
DICHLOROMETHANE	µg/L	<3.0	<3.0
ETHYLBENZENE	µg/L	<1.0	<1.0
NAPHTHALENE	µg/L	<0.200	<0.200
TETRACHLOROETHYLENE	µg/L	<1.0	<1.0
TOLUENE	µg/L	1.7	<1.0
1,1,1-TRICHLOROETHANE	µg/L	<1.0	<1.0
1,1,2-TRICHLOROETHANE	µg/L	<1.0	<1.0
TRICHLOROETHYLENE	µg/L	<1.0	<1.0
DI(2-ETHYLHEXYL)PHTHALATE	µg/L	8.0	<1.0
DI-N-BUTYLPHTHALATE	µg/L	<5.0	<1.0
PCB'S	µg/L	<2.45	<0.05

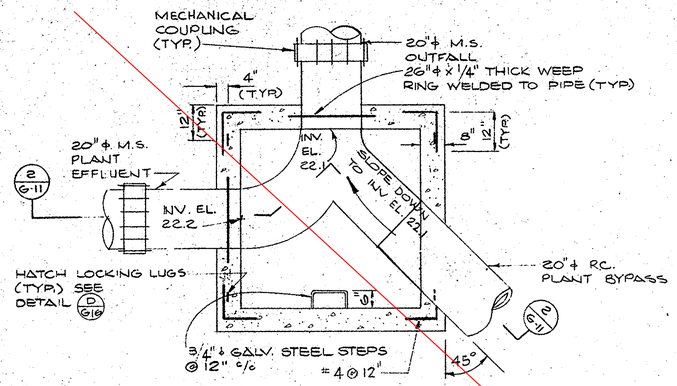
REGIONAL DISTRICT OF NANAIMO

Appendix F
Record Drawings

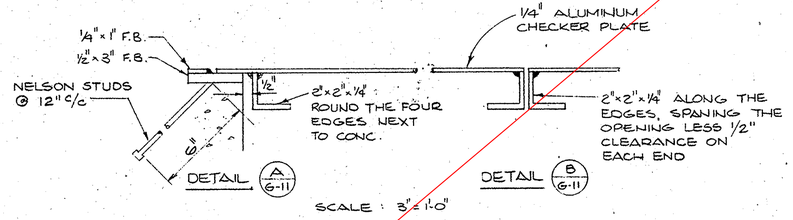
PV-INT-110



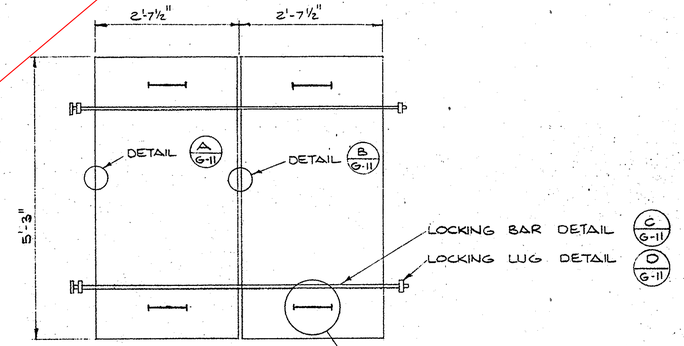
SECTION (1 / G-11)



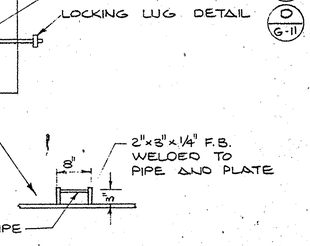
PLAN

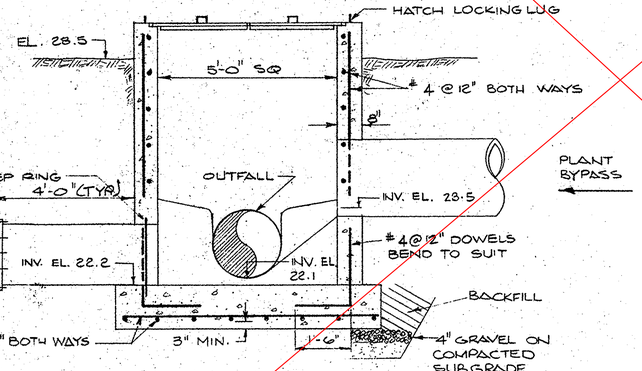


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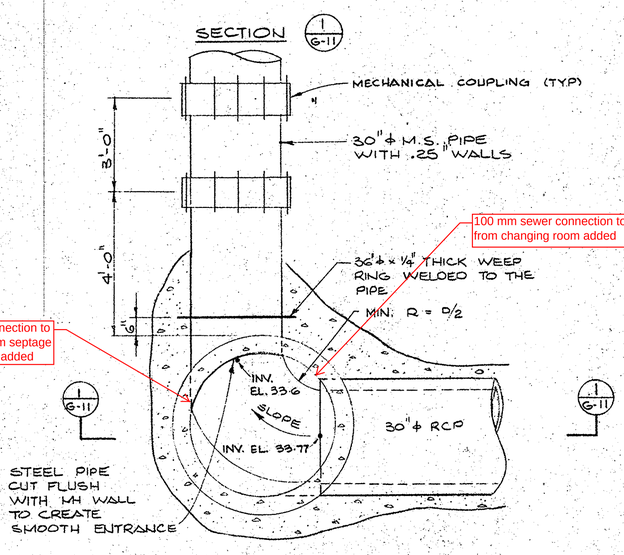
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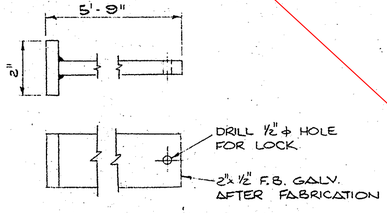
SECTION (2 / G-11)

PLANT EFFLUENT MANHOLE # 1
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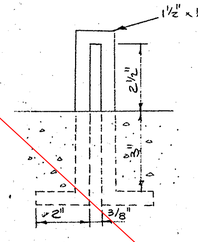
PLAN

PLANT INFLUENT MANHOLE # 2
SCALE : 1/2" = 1'-0"



DETAIL (C / G-11)

LOCKING BAR (TYP.)
SCALE 3/8" = 1"



DETAIL (D / G-11)

LOCKING LUG (TYP.)
SCALE : 3/8" = 1"

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA E. A. PRATT

FC-C-003 **PV-INT-110**

REVISIONS	ISSUE	DATE	DR'N	CH'D	APP'D	DESCRIPTION
	C	MAY/78	I.K.	EAP	WH	"AS CONSTRUCTED"
	B	FEB. '77	ADB	EAP	GJ	Issued for construction incorporating addendum # 1 & 2.
	A					

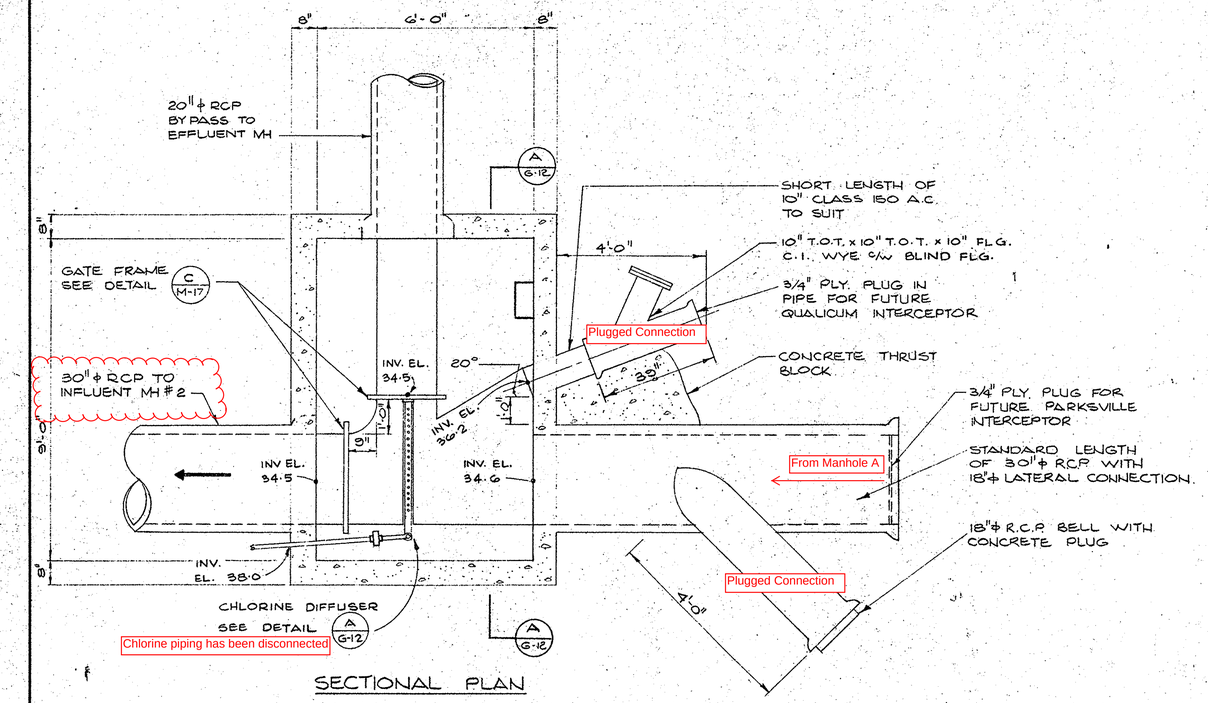
DESIGNED E.A.P.
DRAWN R.M.
CHECKED E.A.Pratt B.W.

DAYTON & KNIGHT LTD.
CONSULTING ENGINEERS
Jan 7 1977

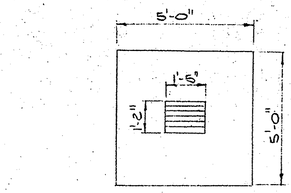
REGIONAL DISTRICT OF NANAIMO
FRENCH CREEK WATER POLLUTION CONTROL CENTRE
OUTSIDE PIPING-DETAILS

SCALE: AS SHOWN
DRAWING No 12.2.41.3
SHEET G-11 OF 17 ISSUE C

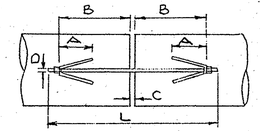
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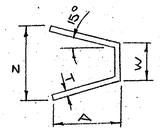


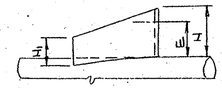
SECTIONAL PLAN



YARD DRAINAGE
CATCH BASIN DETAIL A G-9
N.T.S.



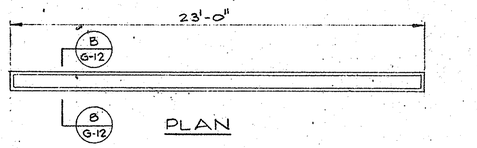




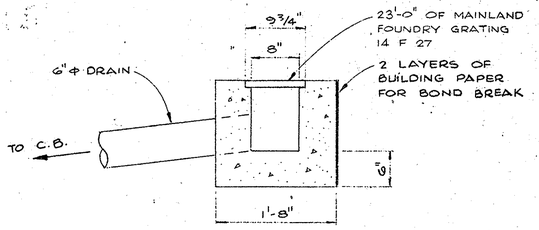
BOLT DIA.	A	W	Z	T	H	E	H,	HOLE DIA.	9" MIDDLE RING L	9" MIDDLE RING B	7" MIDDLE RING L	7" MIDDLE RING B
7/8	4½	1 15/16	4 3/16	3/8	4¼	3 1/8	2	1	25 3/4	11	27	11 5/8

NOTE :
1. FOR VALUES OF C GREATER THAN 1", B MUST BE DECREASED.
2. DIMENSIONS L AND B ARE BASED ON A C-VALUE OF 1".
3. USE HEAT TREATED BOLTS OF YIELD STRENGTH 70,000 P.S.I.

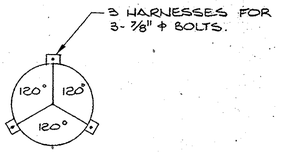
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SECTION

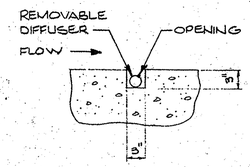


SECTION B G-12
DETAILS B G-9
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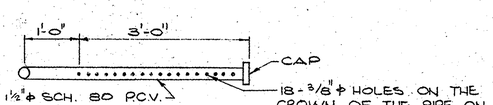


SECTION A G-12

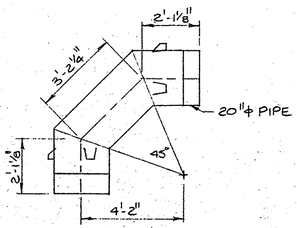
INFLUENT MH #1
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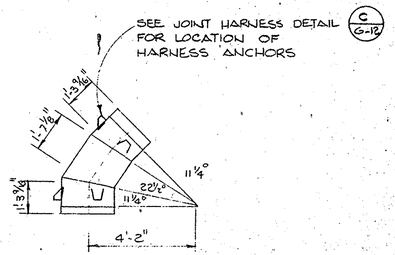
DIFFUSER CHANNEL



DIFFUSER - DETAIL A G-12
SCALE : 3/4" = 1'-0"



90° BEND DETAIL D G-9
N.T.S.



45° BEND DETAIL E G-9
N.T.S.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA E. A. PRATT

FC-C-002 **PV-INT-111**

REVISIONS	ISSUE	DATE	DR'N	CH'D	APP'D	DESCRIPTION
	C	MAY/78	I.K.	BWP	DNK	"AS CONSTRUCTED"
	B	FEB. '77	ADB	EAP	W	Issued for construction incorporating Addendum # 1 & 2

DESIGNED E. P.
DRAWN R. M.
CHECKED EAPratt BW

DAYTON & KNIGHT LTD.
CONSULTING ENGINEERS
Jan 7 1977

REGIONAL DISTRICT OF NANAIMO
FRENCH CREEK WATER POLLUTION CONTROL CENTRE
OUTSIDE PIPING-DETAILS

SCALE: AS SHOWN.
DRAWING No. 122.41.3
SHEET G-12 OF 17 ISSUE C

PV-INT-117

FOR CONTINUATION SEE SHEET NO. M-11

FOR CONTINUATION SEE SHEET NO. M-5

ACTIVATED SLUDGE BASIN #1

PRIMARY CLARIFIER #2

PRIMARY CLARIFIER #1

LAUNDER TROUGHS SEE DETAIL (1/M-4, A/M-1)

V NOTCH WEIRS BOTH SIDES (TYP.)

ANCHOR BOLTS * (TYP.)

SCUM PIPE OPERATOR * (TYP.)

3'-0"

2'-0" 12" 4'-0" 1" 4'-0" 12"

66'-0"

PIPE GALLERY

14'-0"

GATE SEE DETAIL (B/H-16)

FINE BAR SCREEN SEE DETAIL (B/H-19)

4'-0"

FOR GRIT TANK OUTLET WEIR PLATE SEE DETAIL (A/H-16)

GRIT TANK

AERATION EQUIPMENT *

14'-0"

6"

6"

1½ GTA 4"GTA 2

30" PLANT INFLUENT

PIPE CONTINUES THROUGH SERVICE BUILDING FOR 55' AND SHALL BE SUPPORTED OFF COLUMNS @ BAYLINES (B) AND (C) SEE INFLUENT PIPE SECTION ON DWG. M-14

PLANT INFLUENT CHANNEL

COARSE BAR SCREENS SEE DETAIL (C/H-19)

CURVE BAR SCREEN *

TROUGH EXTENSION SEE DETAIL (B/H-1)

3'-6"

3' GD

3'x4" RED

4' GD

4' SQ

4' SQ

1'-3"

4'-0"

GRIT SEPARATOR AND WASHER *

2" GD

3" GD

SCUM DEWATERER *

HOPPER SEAL SEE ANCHOR DETAIL (A/M-18)

INFLUENT WORKS

PLAN @ EL. 33.0 - 36.0

1'-6"

ADJUSTABLE FIBRE GLASS V NOTCH WEIR, 6' LONG WITH 3 NOTCHES/FT.

12"

¼" ø WATER RELIEF HOLE IN BOTTOM OF EACH BRANCH OF LAUNDER TROUGH SYSTEM.

PLAN

LAUNDER TROUGH SUPPORTS BOTH SIDES. TO BE DETAILED ON SHOP DWGS. BY SUPPLIER.

5'-10"

1'-6"

12"

2'-0"

½" x 2" LONG ½" ø BOLTS GW. WASHER & NUT.

½" EXPANDING ANCHORS (TYP.)

SECTION

TYPICAL LAUNDER TROUGH-DETAIL (A/H-1) (A/M-8)

N.T.S.

(6 REQ'D PER TANK)

3/16" MS PLATE

12" x 12" TROUGH SUPPLIED BY CORP. WELD TO TROUGH ON FINE BAR SCREEN.

SUPPLIED BY CONTRACTOR

12" x 12" MS TROUGH SUPPLIED BY CONTRACTOR FIELD WELD TO HOPPER AND CURVED BAR SCREEN TROUGH.

CURVED BAR SCREEN *

FINE BAR SCREEN

HOPPER

TROUGH EXTENSION - DETAIL (B/M-1)

N.T.S.

FC-M-1001

NOTES:

1. ITEMS MARKED THUS * TO BE SUPPLIED BY THE CORPORATION FOR INSTALLATION BY THE CONTRACTOR.
2. ALL FLIGHT ATTACHMENTS TO BE SECURED WITH BOLTS & LOCK WASHERS AND NUTS.
3. SEE MECHANICAL EQUIPMENT DRAWING FOR THE LOCATION OF COLLECTOR SPROCKETS AND FLOOR RAILS.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA E. A. PRATT

PV-INT-117

REVISIONS	ISSUE	DATE	DR'N	CH'D	APP'D	DESCRIPTION
	C	MAY 78	I.K.	BAP	[illegible]	"AS CONSTRUCTED"
	B	FEB. '77	DCL	BAP	[illegible]	[illegible]

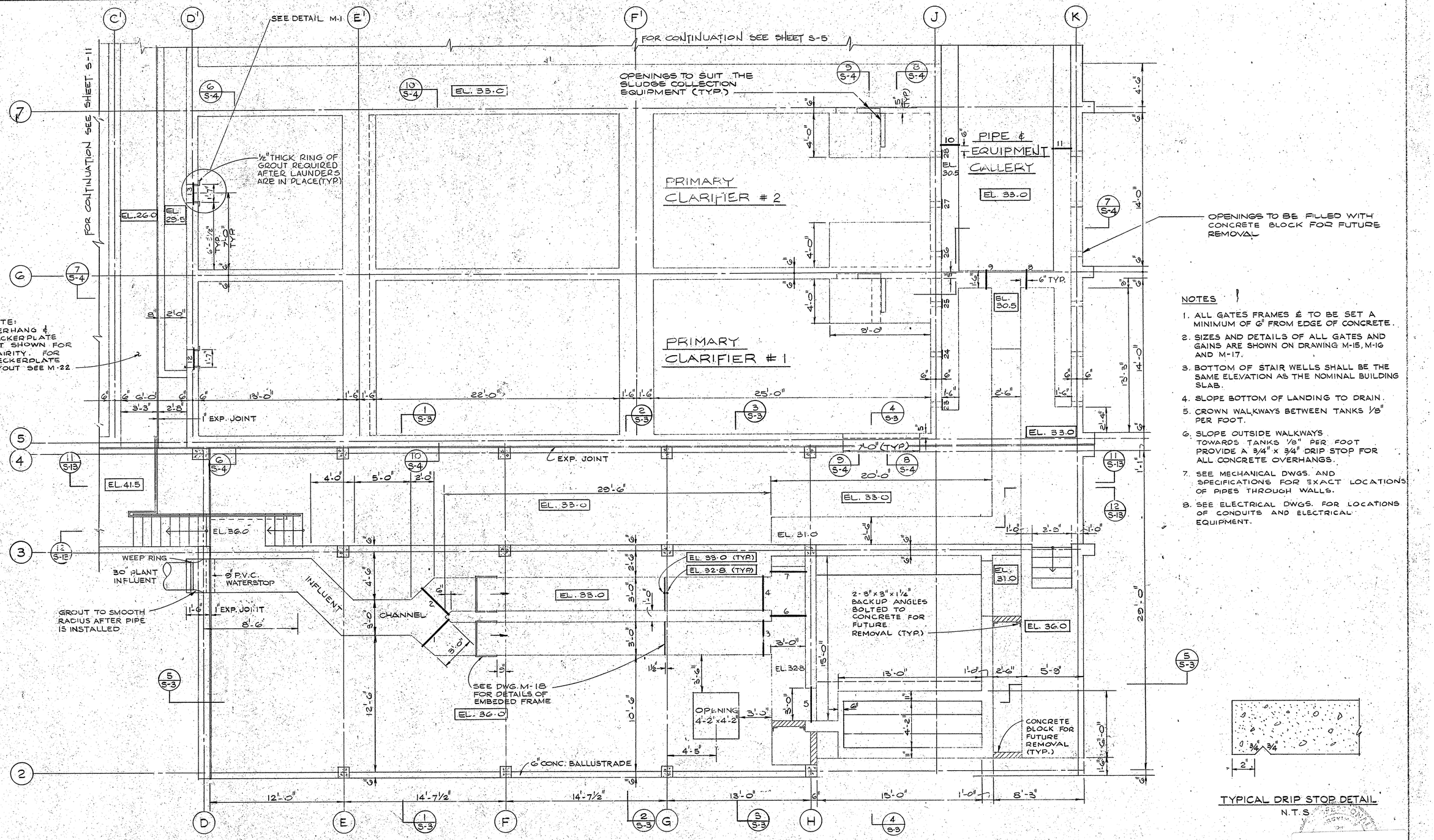
DESIGNED E.A.P.
DRAWN J.N.
CHECKED [illegible]

DAYTON & KNIGHT LTD.
CONSULTING ENGINEERS
Jan 6 1977

REGIONAL DISTRICT OF NANAIMO
FRENCH CREEK WATER POLLUTION CONTROL CENTRE
PRIMARY CLARIFIERS-INFLUENT WORKS-GRIT TANK

SCALE: 1/4" = 1'-0"
DRAWING No. 122-41.3
SHEET M-1 OF 25 ISSUE C

PV-INT-148



PLAN

NOTES

1. ALL GATES FRAMES & TO BE SET A MINIMUM OF 6" FROM EDGE OF CONCRETE.
2. SIZES AND DETAILS OF ALL GATES AND GAINS ARE SHOWN ON DRAWING M-15, M-16 AND M-17.
3. BOTTOM OF STAIR WELLS SHALL BE THE SAME ELEVATION AS THE NOMINAL BUILDING SLAB.
4. SLOPE BOTTOM OF LANDING TO DRAIN.
5. CROWN WALKWAYS BETWEEN TANKS 1/8" PER FOOT.
6. SLOPE OUTSIDE WALKWAYS TOWARDS TANKS 1/8" PER FOOT PROVIDE A 3/4" x 3/4" DRIP STOP FOR ALL CONCRETE OVERHANGS.
7. SEE MECHANICAL DWGS. AND SPECIFICATIONS FOR EXACT LOCATIONS OF PIPES THROUGH WALLS.
8. SEE ELECTRICAL DWGS. FOR LOCATIONS OF CONDUITS AND ELECTRICAL EQUIPMENT.

TYPICAL DRIP STOP DETAIL
N.T.S.

FC-S-1001 **PV-INT-148**

REVISIONS	ISSUE	DATE	DR'N	CH'D	APP'D	DESCRIPTION
	C	MAY/78	I.H.	GW	W/R	"AS CONSTRUCTED"
	B	FEB. '77	ADB	GW	W	Issued for construction incorporating Addendum #1 & 2.

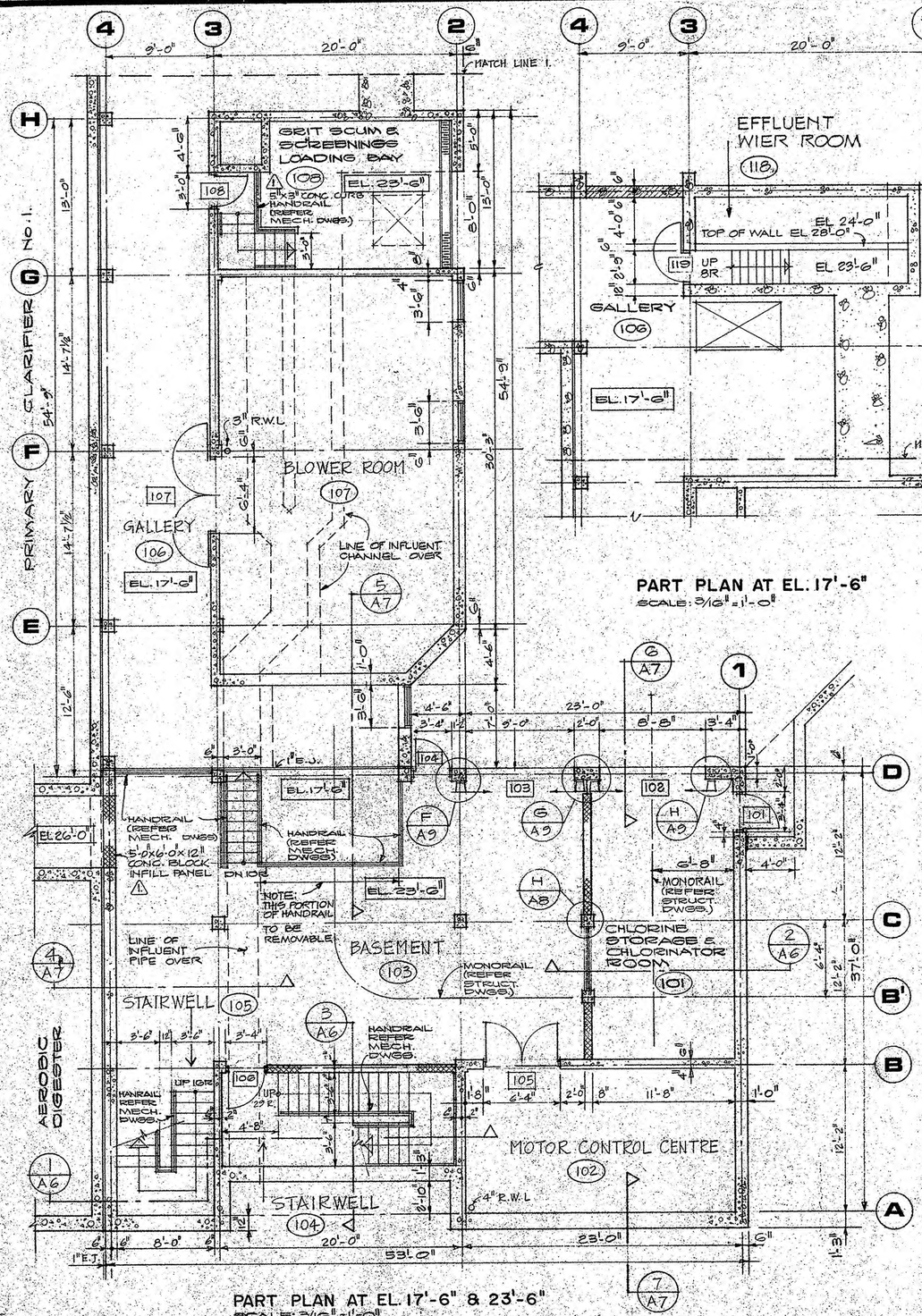
DESIGNED E.P.
DRAWN R.M. / R.H.
CHECKED M.H. B.W.

DAYTON & KNIGHT LTD.
CONSULTING ENGINEERS

REGIONAL DISTRICT OF NANAIMO
FRENCH CREEK WATER POLLUTION CONTROL CENTRE
PRIMARY CLARIFIERS-INFLUENT WORKS AREA

SCALE:
DRAWING No. 3
SHEET S-1 OF 44 ISSUE C

PV-INT-069



TOBY RUSSELL BUCKWELL & partners architects
1650 ALBERNI STREET VANCOUVER BC CANADA TELEPHONE 682-8881

DRAWN	CHECKED
R.HO	
JOB NO	
76-602	
DATE	
7/1/77	

DRAWING NO: 122-41-3

REGISTERED ARCHITECTS TOBY RUSSELL BUCKWELL & PARTNERS BRITISH COLUMBIA

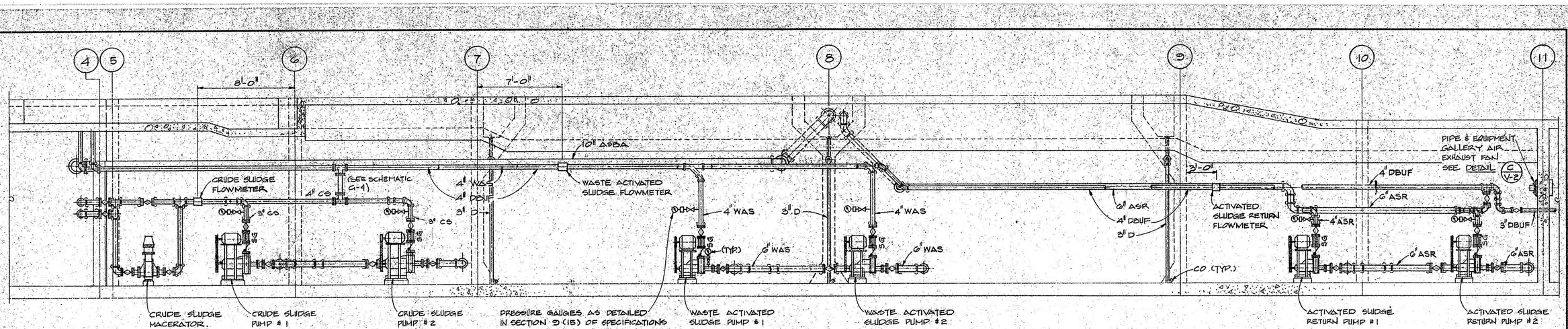
REGIONAL DISTRICT OF NANAIMO
FRENCH CREEK
WATER POLLUTION CONTROL CENTRE

PV-INT-069

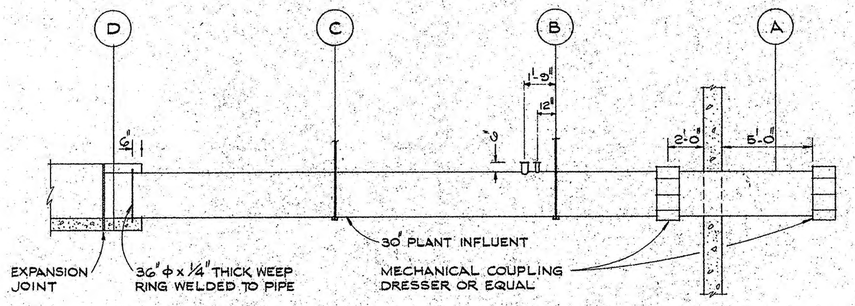
REVISION	DATE
⚠	1-3-77

A1
OF 12

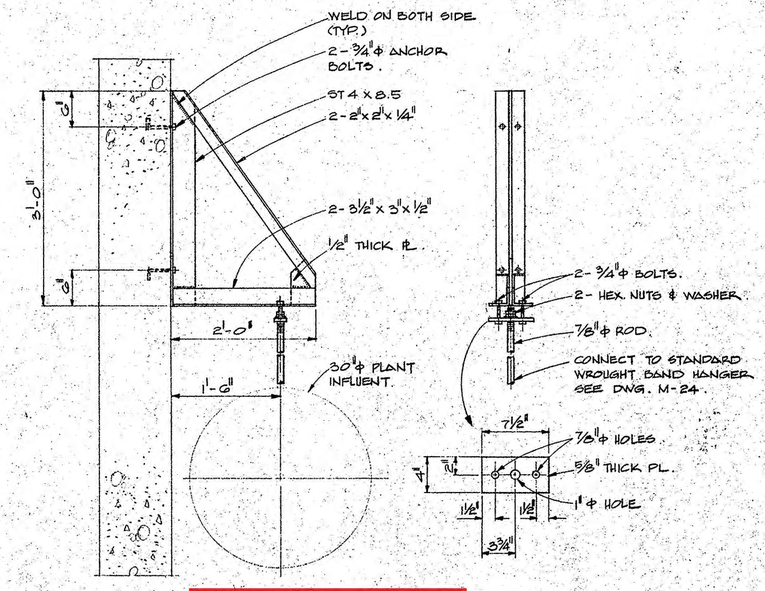
PV-INT-130



SECTION 3/H-5 6/M-9 6/M-9



INFLUENT PIPE SECTION
SCALE : 1/4"=1'-0"



PIPE HANGER DETAIL
SCALE : 1" = 1'-0"

PROFESSIONAL ENGINEER PROVINCE OF E. A. FRATT

PV-INT-130

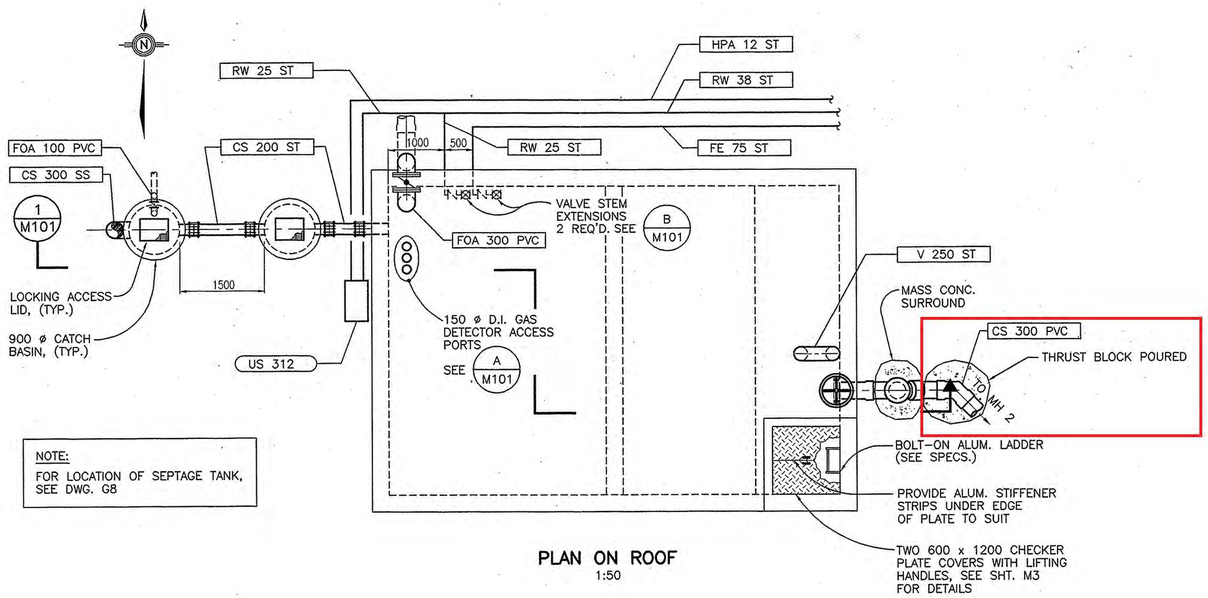
REVISIONS	ISSUE	DATE	DR'N	CH'D	APP'D	DESCRIPTION
	C	MAY/78	I.K.	EAP	WR	"AS CONSTRUCTED"
	B	FEB '77	ADB	EAP	W	Issued for construction incorporating Addendum 3 & 4.

DESIGNED E.P.
DRAWN J.N.
CHECKED EAP

DAYTON & KNIGHT LTD.
CONSULTING ENGINEERS
Jan 6 1977

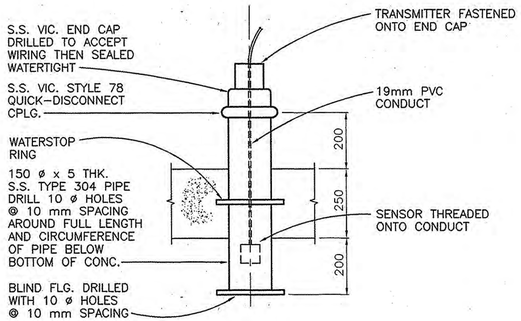
REGIONAL DISTRICT OF NANAIMO
FRENCH CREEK WATER POLLUTION CONTROL CENTRE
PIPE GALLERY-SECTION

SCALE: 1/4" = 1'-0"
DRAWING No. 122.41.3
SHEET M-14 OF 25 ISSUE C

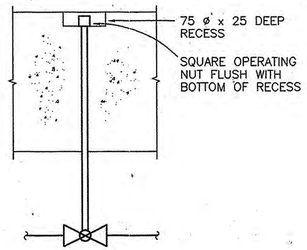


NOTE:
FOR LOCATION OF SEPTAGE TANK, SEE DWG. G8

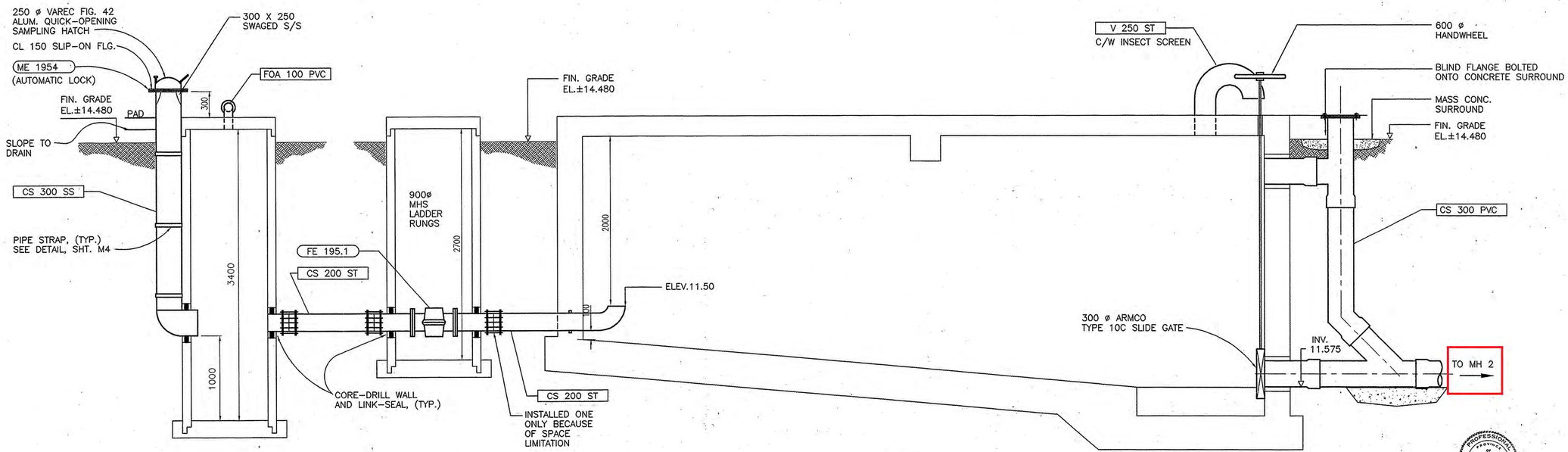
PLAN ON ROOF
1:50



GAS DETECTOR ACCESS PORT
DETAIL A M101
1:10



VALVE STEM EXTENSION
DETAIL B M101
1:5



SECTION 1 M101
1:25

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA JOHN W. C. BOYLE

PV-INT-310

ACAD DWG. M101 1:25 97-06-02

AutoCAD DRAWING

REVISIONS	ISSUE	DATE	DRAWN	CHK'D	APP'D	DESCRIPTION
	B	JUNE/97	BDL	JWB	JWB	RECORD DRAWING

DESIGNED H.W.
DRAWN DBC/LW
CHECKED JWB

DAYTON & KNIGHT LTD.
Consulting Engineers
JAN 22 1999

REGIONAL DISTRICT OF NANAIMO
FRENCH CREEK W.P.C.C. STAGE 2 EXPANSION
SEPTAGE HOLDING TANK – PLAN – SECTION

SCALE: AS SHOWN
M101
DRAWING No. 122.78.1
SHEET 91 OF 180 ISSUE B

D:\acad13\DRAWINGS\FR-CREEK\M\m101 Mon Jan 25 08:50:02 1999

REGIONAL DISTRICT OF NANAIMO

Appendix G
Form of Contract

REGIONAL DISTRICT OF NANAIMO

CONTRACTOR SERVICES AGREEMENT

THIS AGREEMENT made the _____ day of _____, 20_____.

BETWEEN:

REGIONAL DISTRICT OF NANAIMO
6300 Hammond Bay Road
Nanaimo, BC
V9T 6N2

(hereinafter called the "Regional District")

AND:

(hereinafter called the "Contractor")

NOW THIS AGREEMENT WITNESSETH:

THAT in consideration of the terms, conditions and covenants hereinafter set forth, the Regional District and the Contractor covenant and agree each with the other as follows:

1. Services

The Regional District retains the Contractor to provide the Services described in Schedule “A” (the “Contract Documents”) and the Contractor agrees to provide the Services in a diligent manner.

2. Term

The Contractor will provide the Services during the period (hereinafter called the "Term") commencing on <Start Date> and ending on <End Date>, unless sooner terminated as hereinafter provided.

3. Payment

The Regional District will pay to the Contractor as full payment for the Services; the amount set out in Schedule 'B' at the times and in the manner therein set out.

4. Independent Contractor

The Contractor will always be an independent contractor and not the servant, employee, or agent of the Regional District.

5. Assignment and Sub-contracting

The Contractor will not, without the prior written consent of the Regional District, assign or subcontract this Agreement or any portion thereof.

6. Indemnity

The Contractor will indemnify and save harmless the Regional District from all losses, claims, damages, or expenses arising from or due to the negligence of the Contractor in performing the Services or the Contractor's breach of this Agreement.

7. Insurance

a) Prior to the commencement of the Services the Contractor shall provide a certificate of Commercial General Liability (CGL) insurance in the amount of $5,000,000 which shall provide coverage for property damage and third-party personal injury and death. The certificate shall name the Regional District as an additional insured. The certificate of insurance shall contain a clause requiring notification of the Regional District 30 days in advance if the insurance policy is cancelled.

b) Automobile Third Party Liability on all owned or leased vehicles in an amount not less than $5,000,000.

c) Contractor is responsible for any other insurance required to protect their interests.

d) The cost of any insurance and deductibles are the responsibility of the Contractor.

8. WCB Coverage & Prime Contractor Designation

The Contractor must be registered with WorkSafe BC and be in good standing with remittance up to date throughout the agreement and is designated as the Prime Contractor and shall fulfill the Prime Contractor responsibilities as defined in:

a) WorkSafeBC Occupational Health and Safety Regulation, Notice of Project, Section 20.2, and Coordination of multiple employer workplaces, Section 20.3;

b) Workers Compensation Act (BC), Coordination at multiple-employer workplaces, Section 118, Subsections (1) & (2); and

c) General Requirements, Section 3.10 WorkSafe BC.

9. Termination

Notwithstanding any other provision of this Agreement:

If the Contractor fails to comply with any provision of this Agreement, then, and in addition to any other remedy or remedies available to the Regional District, the Regional District may, at its option, terminate this Agreement immediately by giving written notice of termination to the Contractor if there is supporting evidence of the Vendor becoming bankrupt or threatens bankruptcy, provides false declarations, documented significant deficiencies of any substantive requirements or obligations of the work, professional misconduct, violations of health and safety laws, or demonstrated abusive behavior towards the general public or RDN staff. The Regional District will be under no further obligation to the

SAMPLE

Contractor except to pay the Contractor such amount as the Contractor may be entitled to receive, pursuant to Schedule 'B', for services properly performed and provided to the date notice is given to the Contractor less any amounts necessary to compensate the Regional District for damages or costs incurred by the Regional District arising from the Contractor's default.

10. Prior Dealings

All prior negotiations and agreements between the parties relating to the subject matter of this Agreement are superseded by this Agreement. There are no representations, warranties, understandings, or agreements other than those expressly set forth in the Agreement or subsequently agreed to in writing, which writing shall be executed by a duly authorized officer of the party to be bound thereby.

11. Waiver

The failure of either party at any time to require the other party's performance of any obligation under this Agreement shall not affect the right to require performance of that obligation in the future. Any waiver by either party of any such breach or any such provision hereof shall not be construed as a waiver or modification of this provision itself, or a waiver or modification of any other right under this Agreement.

12. Counterparts

This Agreement may be executed in any number of counterparts, each of which will be deemed to be an original and all of which taken together will be deemed to constitute one and the same instrument. Delivery by electronic transmission in portable document format (PDF) of an executed counterpart of this Agreement is as effective as delivery of an originally executed counterpart of this Agreement.

13. Dispute Resolution

If the parties to this Agreement are unable to agree on the interpretation or application of any provision in the Agreement, or are unable to resolve any other issue relating to this Agreement, the parties agree to the following process in the order it is set out:

a) the party initiating the process will send written notice to the other party (the "Dispute Notice"); and;
b) the parties will promptly, diligently and in good faith, including the senior management of both parties, take all reasonable measures to negotiate an acceptable resolution to the disagreement or dispute.
c) if the dispute is not resolved through collaborative negotiation within 30 Business Days of the dispute arising, the parties must then attempt to resolve the dispute through mediation under the rules of the Mediate BC Society and will be held in Nanaimo, BC.

14. Freedom of Information

The Contractor acknowledges and agrees that any Confidential Information disclosed by it to the RDN under this Agreement may be subject to a request for public disclosure under the Freedom of Information and Protection of Privacy Act, R.S.B.C. 1996, c.165, as amended from time to time.

15. Governing Law

This Agreement is governed by and is to be interpreted and construed in accordance with, the laws applicable in British Columbia.

SAMPLE

16. Delay in Performance

Neither the RDN nor the Service Provider shall be deemed to be in default of this Agreement for delays in performance caused by circumstances beyond the reasonable control of the non-performing party. For purposes of this Agreement, such circumstances include, but are not limited to abnormal weather conditions, flood, earthquake, fire, pandemic, epidemic, war, riot and other civil disturbance, strike, lockout, work slowdown and other labour disturbances, sabotage, judicial restraint and inability to procure permits, licenses or authorizations from any local, provincial or federal agency for any of the supplies, materials, accesses or services required to be provided by either the RDN or the Service Provider under this Agreement. If any such circumstances occur, the non-performing party shall, as soon as possible after being prevented from performing, give written notice to the other party describing the circumstances preventing continued performance and the efforts being made to resume performance of this Agreement.

17. Amendment

This Agreement may not be modified or amended except by the written agreement of the parties.

18. Judge of Work and Materials

The REGIONAL DISTRICT shall be the final judge of all work and materials in respect of both quality and quantity and their decisions of all questions in dispute with regard thereto will be final. All materials shall be subject to inspection and test by and shall meet the approval of the REGIONAL DISTRICT.

In case any materials, equipment and supplies are defective in material or quality or otherwise not in conformity with the specifications of the contract, the REGIONAL DISTRICT shall have the right either to reject them or to require their correction. Acceptance or rejection of the materials, equipment, supplies, etc. shall be made as promptly as practicable after delivery, but failure to inspect and accept or reject supplies shall not relieve the contractor from responsibility for such supplies as are not in accordance with the specifications.

19. CSA Seal or Provincial Certificate Approval

All electrical material and equipment, and all manufacturing and assembling procedures and workmanship, shall be in accordance with the requirements of the current edition and revisions of the Canadian Electrical Code Part 1 (CSA Standard C22.1 – 2012) as adopted and amended by the Province of British Columbia (hereinafter referred to as the "Electrical Code"), as amended from time to time.

Only approved materials and equipment shall be used and where specified materials and equipment do not have current approval, as required by the Electrical Code, the Contractor shall offer approved substitutes.

Each completed assembly shall carry the approval seal either of the Inspection Department, and where alterations are required by the Department the Contractor shall make these at his own expense. The Contractor shall pay all fees and costs incurred in obtaining the required approvals.

20. Rectification of Damage and Defects

The Contractor shall rectify any loss or damage for which, in the opinion of the REGIONAL DISTRICT, the Contractor is responsible, at no charge to the REGIONAL DISTRICT and to the satisfaction of the REGIONAL DISTRICT. In the alternative, the REGIONAL DISTRICT may repair the loss or damage and the Contractor shall pay to the REGIONAL DISTRICT the costs of repairing the loss or damage

SAMPLE

forthwith upon demand from the REGIONAL DISTRICT. Where, in the opinion of the REGIONAL DISTRICT, it is not practical or desirable to repair the loss or damage, the REGIONAL DISTRICT may estimate the cost of the loss or damage and deduct such estimated amount from the amount owing to the Contractor hereunder.

21. Warranty and Guarantee

The work shall be warranted to be free of defects and shall be guaranteed by the Contractor for a period of one (1) year from the date of acceptance. On receipt of notice from the REGIONAL DISTRICT the Contractor shall promptly make all repairs arising out of defective work or any equipment or materials supplied by him.

The REGIONAL DISTRICT is hereby authorized to make such repairs if, ten (10) days after the giving of such notice to the Contract, the Contractor has failed to make or undertake with due diligence said repairs; provided, however, that in the case of an emergency, where, in the opinion of the REGIONAL DISTRICT delay would cause serious loss or damage, repairs may be made without notice being sent to the Contractor, and all expense in connection therewith shall be charged to the Contractor.

22. Statutes, Bylaws, Regulations and Permits

Unless otherwise noted, the Contractor shall take out all necessary permits and licenses required to permit the Contractor to perform its obligations under the Contract. The Contractor shall give all notices and comply with all REGIONAL DISTRICT regulations, all laws, by-laws, ordinances, rules, and regulations, whether federal, provincial, or municipal, relating to the business it carries on and the services provided pursuant to the Contract, including the Workers' Compensation Act and the Employment Standards Act.

23. Site Inspection

The Contractor shall make site inspections of all appropriate areas to determine their general condition and to ensure the fulfillment of the contract requirements.

24. Use of Premises

The Contractor shall abide by, and shall ensure its employees abide by, all appropriate regulations, including but not limited to regulations relating to fire, safety, parking, traffic control and health. The Contractor will ensure that all of its employees are aware of the applicable regulations.

25. Clean Up

The Contractor shall at all times conduct the work in an orderly and reasonably tidy manner and shall at suitable intervals remove any accumulation of rubbish or refuse materials. At no time shall any person employed by the Contractor or by any of his Subcontractors discard any litter or garbage on or adjacent to the site, except into a suitable container. Upon completion and before final acceptance of the work, the Contractor shall remove all rubbish, surplus, or discarded materials and equipment and shall leave the site in a clean and neat condition.

26. Change Orders

If for any reason it may become desirable during the course of the work to change the alignment, dimensions, or design, or to add to or to omit portions thereof, the REGIONAL DISTRICT reserves the right to issue change orders to give effect to such changes as may, in the opinion of the REGIONAL DISTRICT be necessary or desirable.

SAMPLE

The change may or may not result in a change in the amount of the work. If the changes do, in the opinion of the REGIONAL DISTRICT, change the amount of the work, the contract price shall be adjusted as mutually agreed between the Contractor and the REGIONAL DISTRICT.

The adjustment for the Contract Price shall not exceed the actual cost of the Contractor's work for the change in the Work, plus an allowance for overhead and profit as follows:

.1 For Contractor, for overhead and profit, 10% of the actual cost of the Contractor's work;

.2 For Contractor, for overhead and profit, 10% of the amount for Subcontractor's work, being the actual cost of the Subcontractor's work plus the amount determined as set out in .3 below;

.3 For Subcontractor, for overhead and profit, 10% of the actual cost of the Subcontractor's work."

If a change in the Work results in a net decrease in the Contract Price, the amount of the credit shall be the net cost, without deduction for overhead and profit. When both additions and deletions covering related work or substitutions are involved in a change in the Work, the allowance for overhead and profit shall be calculated on the basis of the net increase, if any, with respect to that change in the Work."

27. Collection of Personal Information

Unless the Agreement otherwise specifies or the Regional District otherwise directs in writing, the Contractor may only collect or create Personal Information that is necessary for the performance of the Contractor's obligations, or the exercise of the Contractor's rights, under the Agreement.

Unless the Agreement otherwise specifies or the Regional District otherwise directs in writing, the Contractor must collect personal information directly from the individual the information is about.

Unless the Agreement otherwise specifies or the Regional District otherwise directs in writing, the Contractor must tell an individual from whom the Contractor collects personal information:

a) the purpose for collecting it;

b) the legal authority for collecting it; and

c) the title, business address and business telephone number of the person designated by the Regional District to answer questions about the Contractor's collection of personal information.

28. Competency and Qualifications

The Contractor will employ properly licensed, trained, and unimpaired workers throughout the duration of the contract.

29. Utility Location

It is the responsibility of the Contractor to locate any utilities in the vicinity of any construction, exploration, or investigation if required.

30. Builder's Lien

The Contractor shall, at its own expense, cause any and all builders liens and other liens for labour, services or materials alleged to have been furnished with respect to the lands comprising the work site or

SAMPLE

the work which may be registered against or otherwise affect the lands or the work, except liens properly filed by the Contractor on its own behalf, to be paid, satisfied, released or vacated forthwith after the REGIONAL DISTRICT has sent written notice of any claim for any such lien. In the event of a bona fide dispute regarding the validity or correctness of any claim for such lien, the Contractor shall be entitled to defend against a claim for such lien in any proceedings brought in respect therefor after first paying into court the amount claimed plus any interest payable, or providing sufficient security therefor and such cost as the court may direct and registering all such documents as may be necessary to cancel such lien, or providing such other reasonable security in respect of such claims as the REGIONAL DISTRICT may in writing approve. Upon receiving satisfactory security for any costs and an indemnity in writing from the Contractor, the REGIONAL DISTRICT may authorize the Contractor to apply to the court in the name of the REGIONAL DISTRICT to have any lien removed upon payment into court or deposit in court of satisfactory security therefor.

31. Bonding

The successful Proponent must provide a Performance Bond and Labour and Material Payment Bond each of which shall equal fifty percent (50%) of the Total Contract Price, issued by a Surety licensed to transact the business of suretyship in the Province of British Columbia. The Performance Bond shall encompass the Warranty and Guarantee period and shall, in any event, be in effect for no less than two (2) years from the date of issuance of the Notice of Acceptance.

SAMPLE

SIGNATURES

IN WITNESS WHEREOF the parties hereto have executed this Agreement as follows:

For the Regional District of Nanaimo:

_____
Signature

_____
Printed Name

For the Contractor:

_____
Signature

_____
Printed Name

SAMPLE

SCHEDULE "A"

SCOPE OF WORK

“Contract Documents” consist of the following documents which copies are attached to this Agreement:

(1) This duly executed Agreement

(2) The duly executed Tender Form

(3) All Addenda

(4) Drawings

(5) Written Specifications

(6) The Tender Documents

(7) Other relevant documents.

SAMPLE

SCHEDULE "B"

CONTRACT PRICE

The Contract Price shall be the sum in Canadian Dollars of the following:

(a) Up to the Price of $_____ and;

(b) Payments made on account of change orders, as may be required by the Contract Documents.

The Contract Price shall be the entire compensation owing to the Contractor by the REGIONAL DISTRICT for the Work and shall cover and include all supervision, labour, materials, Contractor's Plant and Equipment, overhead, profit, financing costs and all other costs and expenses whatsoever incurred in performing the Contract excluding GST.

The Contractor will be solely responsible for invoicing the REGIONAL DISTRICT ensuring to include the REGIONAL DISTRICT's Purchase Order number on all invoices to assure timely payment.
All invoices are subject to prior review and approval by the REGIONAL DISTRICT and approved invoices will be paid on a net 30 days' basis from date of receipt unless otherwise agreed to in writing.

If the REGIONAL DISTRICT does not approve of the services or part of them which are the subject of the invoice, the REGIONAL DISTRICT shall advise the Contractor in writing of the reasons for non-approval and the Contractor shall remedy at no additional cost to the REGIONAL DISTRICT before the REGIONAL DISTRICT shall be obliged to pay the invoice or any part of it, as the case may be.

SAMPLE

REGIONAL DISTRICT OF NANAIMO

Appendix H
WWS-COM-10.1 Contractor-Supplier Package – EMS Requirements

WWS-COM-10.1 Contractor-Supplier Package

The purpose of this package is to convey the requirements of Regional District of Nanaimo Wastewater Services' (WWS) Environmental Management System (EMS) to contractors and suppliers. This package is applicable to all wastewater treatment facilities and pump stations.

As a contractor or supplier to WWS, you have a responsibility to comply with all provisions identified in the Contract Documents regarding Environmental Protection. Where Contract Documents do not exist, the service provider will comply with Sections Two, Three and Four.

Please retain a copy for your records.

PACKAGE CONTENTS:

1.0 General Overview: ISO 14001
- 1.1 Environmental Management System (EMS)
- 1.2 Environmental Policy and ISO Clause
- 1.3 Environmental Aspects and Impacts
- 1.4 Environmental Objectives and Targets
- 1.5 Environmental Management Programs (EMPs)

2.0 Operating Procedures

3.0 Emergency Preparedness and Response Procedures

4.0 Environmental Specifications
- 4.1 Air Emissions
- 4.2 Cleaning Equipment
- 4.3 Dust Control
- 4.4 Energy Consumption
- 4.5 Hazardous Materials
- 4.6 Noise
- 4.7 Sensitive Areas
- 4.8 Spills
- 4.9 Surface Water Control
- 4.10 Waste Management - Solid Non-Hazardous Waste

5.0 Attachments
- Environmental Policy
- ISO Clause

I, _____ of _____
(please print name) (please print company name)

acknowledge that I have received a Contractor-Supplier Package (ISO 14001 Contractor Supplier Environmental Performance Requirements) containing the materials listed above.

_____ _____
(Date) (Supplier/Contractor Employee's Signature)

_____ _____
(Date) (WWS Project Manager's Signature)

1.0 GENERAL OVERVIEW: ISO 14001

1.1 Environmental Management System (EMS)

- An EMS is the part of an organization's management system, used to develop and implement its environmental policy and manage its environmental aspects.
- It includes organizational structure, planning activities, responsibilities, practices, procedures, processes and resources.

1.2 Environmental Policy and ISO Clause

- An Environmental Policy is a statement by the organization of its overall intentions and direction related to its environmental performance. It provides a framework for action and for the setting of environmental objectives and environmental targets.
- It is a driver for implementing and maintaining our EMS and reflects commitment to continual improvement, legal compliance and prevention of pollution
- The Environmental Policy is posted at each of the WWS wastewater treatment facilities and pump stations, and is available on the RDN website: www.rdn.bc.ca
- Uncontrolled copy of the Environmental Policy attached (Section 5.0 of this package)
- Uncontrolled copy of WWS' ISO Clause (Section 5.0 of this package)

1.3 Environmental Aspects and Impacts

- Environmental Aspect: element of an organization's activities, products or services that can interact with the environment.
- Environmental Impacts: any changes to the environment whether adverse or beneficial, wholly or partially resulting from an organization's environmental aspects.
- Environmental impacts include:
    - Air Pollution and Odour
    - Depletion of Natural Resources (Energy Use)
    - Landfill (Garbage)
    - Noise
    - General Repairs-Construction (Sensitive Areas)
    - Sewage Bypass (Leak/Spill)
    - Treatment Disposal (Hazardous Waste)

1.4 Environmental Objectives and Actions

- Environmental Objective: overall environmental goal consistent with the environmental policy, that an organization sets itself to achieve.
- Environmental Target: a detailed performance requirement that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives.
- Objective and Targets are set to minimize environmental impacts.
- Any legal requirements that must be met by the organization (i.e. permit requirements) help create the objectives and targets.

2.0 OPERATING PROCEDURES

- All WWS wastewater treatment facilities have Operating Procedure Manuals.
- Procedures applicable to contractors and suppliers will be supplied by the WWS Project Manager at pre-construction meetings or prior to the work commencing.
- Contractors and Suppliers will be required to sign a Procedure Checklist acknowledging that they have received copies of applicable procedures at a pre-construction meeting or prior to commencing work on site.
- The WWS Project Manager will ensure that a site induction is completed prior to work commencing as per the ISO Clause attached. (Section 5.0 of this package)

3.0 EMERGENCY PREPAREDNESS AND RESPONSE PROCEDURES

- All WWS wastewater treatment facilities have Emergency Preparedness and Response Procedure Manuals.
- Procedures applicable to contractors and suppliers will be supplied by the WWS Project Manager at pre-construction meetings or prior to the work commencing.
- Contractors and Suppliers will be required to sign a Procedure Checklist acknowledging that they have received copies of applicable procedures at a pre-construction meeting or prior to commencing work on site.
- The WWS Project Manager will ensure that a site induction is completed prior to work commencing as per the ISO Clause (Section 5.0 of this package).

4.0 ENVIRONMENTAL SPECIFICATIONS

Contractors and suppliers must abide by the following environmental specifications while working on site, as applicable.

4.1 Air Emissions

- Contractors and Suppliers will ensure that excess vehicle idling is minimized.
- Contractors will ensure that their staff are trained in the proper use and handling of all materials and chemicals to ensure air emissions/odours are minimized.
- No open burning of waste materials is permitted.

4.2 Cleaning Equipment

- Do not clean equipment in streams/rivers or lakes.
- Clean construction equipment prior to entering roadways.
- Do not clean equipment in locations where debris can gain access to sewers, watercourses or aquifers.

4.3 Dust Control

- Transport dusty materials in covered haulage vehicles.
- Public roadways shall be kept clean and free of mud.

4.4 Energy Consumption

- Contractors and Suppliers will use energy efficient equipment when undertaking any work on a job site, where practical.
- Contractors and Suppliers staff will turn off lights and equipment when not in use and where practical when on a job site.

4.5 Hazardous Materials

- Hazardous materials brought on site and removed shall be managed in accordance with current MOE Regulations current at the time of work.
- Governing Ministry of Labour Regulations respecting protection of works, remedial handling and disposition of Designated Substances encountered shall be followed.
- Do not empty fuel, lubricants, herbicides, pesticides, fungicides, paint materials, solvents or other chemicals into sewers or watercourses (only legally acceptable disposal methods are acceptable).

4.6 Noise

- Use vehicles and equipment with efficient muffling devices.
- Provide and use devices that will minimize noise levels in construction areas.
- Minimize noise resulting from activities while on-site whenever practical.

4.7 Sensitive Areas

- Inform WWS staff in writing of the particular schedule for each river crossing, channelizing or other work in the designated sensitive areas.
- Avoid encroachment on unique natural areas and establish boundary protection and signage to avoid encroachment.
- Do not disturb habitats of rare or endangered species. Agree and implement mitigative measures with WWS staff.
- Protect wetland sites used as feeding or breeding areas by migratory fowls or as habitats for other animals and establish boundary protection and signage to avoid such encroachment.
- Schedule construction in sensitive areas so that there will be minimal interference with water uses including fish migration or spawning, or disruption of incubation periods for eggs.
- Keep removal of vegetation to a minimum.
- Contain and deposit on land all aquatic plants uprooted or cut prior to or during construction.

4.8 Spills

- If requested, the contractor will provide to the WWS Project Manager for approval an Environmental Plan which addresses spill prevention, and spill response and communication.
- The contractor will be provided with a WWS Spill Response procedure in the event an Environmental Plan is not requested by WWS. If the contractor is provided with a WWS Spill Response procedure, the contractor will be required to follow instructions assigned to 'operator' in the procedure.
- Spill containment must be provided for any equipment containing fuel.
- Be prepared at all times to intercept, clean up and dispose of any spillage that may occur whether on land or water.
- Keep all materials required for clean-up of spills readily accessible on-site (e.g. spill kit)
- The contractor must dispose of all spillage and contaminated material the contractor generates. Contaminated material may not be stored on site.
- Report spills to EMBC at 1-800-663-3456 as per the *BC Spill Reporting Regulation*, which applies for the purposes of the *BC Environmental Management Act*.
- Notify WWS staff immediately if there are any spills and provide the EMBC confirmation number, where one has been provided.
- Results of all spill investigations must be forwarded to the WWS Project Manager and Chief Operator of the facility at which the spill occurred.

- Reporting of releases is also a requirement of federal and other provincial legislation, including the Canadian Environmental Protection Act, and the Transportation of Dangerous Goods Act.

4.9 Sediment and Erosion Control

- The contractor, where ground work is required, will follow the project's sediment and erosion control plans.
- If no sediment and erosion control plan is in place the following procedures should be used:
  - Control all surface water and groundwater including rainfall and run-off. Ensure that erosion is controlled and that flooding of excavations or damage to structures does not occur.
  - Intercept surface drainage as far back from excavations as practical by means of ditches, berms or other interception methods as may be required for effective control.
  - Direct pumped water or run-off to settling ponds or sediment basins prior to discharge to adjacent storm sewers or watercourses as per provincial and federal regulations
  - The contractor is to discharge only to RDN approved discharge point(s).
  - Intercept and divert concentrated run-off from unstable areas under sheet flow conditions, as directed by the Engineer.
  - Do not direct any flow of water across or over pavements, except through approved pipes or properly constructed troughs.
  - Keep gutters and drainage ditches open at all times to provide adequate surface drainage.
  - Maintain all existing storm sewers clean and free of deleterious materials and blockages.
  - Provide splash pads where water is discharged to the watercourse.
  - Dispose of water so as not to be injurious to public health or safety, to property or to any part of work completed of under construction.
- The contractor must follow any other requirements identified in the contract document with WWS.

4.10 Waste Management – Solid Non-Hazardous Waste

- No open burning is permitted.
- All wastes generated by contractors will be cleaned-up and disposed of as per BC Ministry of Environment Regulations.
- Whenever possible Contractors and Suppliers should utilize recycling opportunities for the disposal of waste.

5.0 ATTACHMENTS

REGIONAL DISTRICT OF NANAIMO

RDN Wastewater Services Environmental Policy

The Regional District of Nanaimo's (RDN) Wastewater Services (WWS) Environmental Policy reflects the values and priorities of the RDN's Board Strategic Plan 2019 - 2022, Regional Growth Strategy and Liquid Waste Management Plan.

The RDN's WWS is committed to providing reliable, high quality, and cost-effective wastewater services to the people and communities we serve. We strive to optimize our treatment and re-use processes and employ proven pollution prevention strategies at our facilities to protect and enhance the natural environment for future generations. In fulfillment of this commitment, it is the WWS policy:

- To do our utmost to comply with the letter and spirit of relevant environmental laws and regulations. There shall be thorough and accurate measurement and reporting of our environmental compliance.
- To prevent pollution. This includes improving the quality of treated wastewater and avoiding or reducing environmental pollution produced directly from WWS operations, or indirectly by the consumption of power, fuel, chemicals, and other resources.
- To identify and monitor environmental impacts and set measurable objectives and targets to reduce those impacts on the environment.
- To foster openness and dialogue with employees, First Nations and the public, including community engagement and public outreach, and respond to their concerns about potential hazards and impacts of our operations.
- To continually improve our performance relevant to this environmental policy.

This policy will be communicated regularly to all WWS staff and will be made available to regulatory agencies, the public, or other interested parties upon request.

Randy Alexander

General Manager, Regional and Community Utilities
Date: 20 November 2019

Document #: PM-03.2
Revision #: 11

ISO CLAUSE

Whereas the Regional District of Nanaimo's Wastewater Services (WWS) is operating to the ISO 14001:2015 standard, it is a condition of this contract that the Contractor comply with the WWS' Environmental Management System (EMS).

As per PM-08.0 Element 7.2 Competence and Element 7.3 Awareness, paragraph 5.11 of the WWS' EMS Policy and Procedure Manual:

1. Any contracted personnel whose activities can create a significant impact (as defined by the WWS' EMS) on the environment are required to undergo training. Such training will require one session of approximately one half hour.

2. While the Regional District of Nanaimo (the RDN) will provide the initial training to a representative Contractor, it is the responsibility of the Contractor to train the Contractor's own personnel, as well as any personnel of the Contractor's Subcontractor who will be working on a site of WWS.

3. The Contractor hereby warrants that it will provide any ISO 14001 related training which the RDN deems necessary to the Contractor's own personnel and any personnel of the Contractor's Subcontractor and will forward records thereof to the RDN at no additional charge to the RDN.

REGIONAL DISTRICT OF NANAIMO

Appendix I
Prime Contractor Preconstruction Meeting Form

REGIONAL DISTRICT OF NANAIMO

Prime Contractor Preconstruction Meeting Form

Date		Meeting Location	
Contract #		WSBC Firm #	
Prime Contractor Company Name			
Prime Contractor's Superintendent			
Description of Designated Workplace			
Description of Work			
RDN Contract Representative			

Agreement

The Prime Contractor:

Check	
☐	Acknowledges appointment as Prime Contractor defined by WorkSafeBC OH&S Regulation Sections 20.2 and 20.3, and in the Workers' Compensation Act, Sections 118 Clauses 1 and 2.
☐	Understands the Owners duties as defined in the Workers' Compensation Act, Section 119.
☐	Understands for any discrepancy establishing health and safety protocol, WorkSafeBC OH&S Regulation and/or the Workers' Compensation Act (Part 3) shall prevail.
☐	Acknowledges being informed of any known workplace hazards by the owner or owner's delegate, by signing attached "Existing Known Hazard Assessment" form.
☐	Shall communicate known hazards to any persons who may be affected and ensure appropriate measures are taken to effectively control or eliminate the hazards.
☐	Shall ensure all workers are suitably trained and qualified to perform the duties for which they have been assigned.
☐	Shall ensure or coordinate first aid equipment and services as required by WorkSafeBC OH&S Regulation.
☐	Shall coordinate the occupational health and safety activities for the project.
☐	Assumes responsibility for the health and safety of all workers and for ensuring compliance by all workers with the Workers Compensation Act (Part 3) and WorkSafeBC OH&S Regulation.
☐	Understands any WorkSafeBC violation by the Prime Contractor may be considered a breach of contract resulting in possible termination or suspension of

	the contract and/or any other actions deemed appropriate at the discretion of the RDN.
☐	Understands any penalties, sanctions or additional costs levied against the Prime Contractor will be the responsibility of the Prime Contractor.
☐	Confirms the Prime Contractor's Safe Work procedures and risk assessments were prepared by, or approved by, a Qualified Person as defined by WorkSafeBC OH&S Regulation.
☐	Accepts the following required documents shall be maintained and made available upon request from the RDN and/or WorkSafeBC Prevention Officer at the workplace

Documents required to be maintained and available by the Prime Contractor will include, but not be limited to:

Check	
☐	All notices which the Prime Contractor is required to provide to WorkSafeBC as per WorkSafeBC OH&S Regulation.
☐	Any written summaries of remedial action taken to reduce occupational health and safety hazards within the area of responsibility.
☐	All directives and inspection reports issued by WorkSafeBC.
☐	Records of any incidents and accidents occurring within the Prime Contractor's area of responsibility.
☐	Completed accident investigations for any incidents and accidents occurring within the Prime Contractor's area of responsibility

On a **construction project** workplace, these additional documents are required to be maintained and available by the Prime Contractor:

• Records of all orientation and regular safety meetings held between contractors and their workers, including topics discussed, worker names and companies in attendance.
• Written evidence of regular inspections within the workplace.
• Occupational first aid records.
• Worker training records.
• Current list of the name of a qualified person designated to be responsible for each subcontractor (employer's) site health and safety activities.
• Diagram of the emergency route to the hospital.

The following information must be **provided** to the RDN Contract Representative:

Check	
☐	WorkSafeBC Notice of Project (if applicable)
☐	WorkSafeBC Clearance Letter
☐	Prime Contractor's OH&S Safety Program
☐	Prime Contractor's Site/Project Specific Hazard Identification and Risk Assessments, Safe Work Procedures, etc.

☐	First Aid Attendant(s)	
☐	Safety Supervisor(s)	
☐	Location of First Aid Station	

Signature of Prime Contractor	
Signature of RDN Contract Representative	

Pre-Existing and Known Hazard Identification

Discussion between the Prime Contractor and the RDN Contract Representative

Date		Meeting Location	
Prime Contractor Company Name			
Prime Contractor's Superintendent			
RDN Contract Representative			

- RDN Contract Representative to make the Prime Contractor aware of any known extraordinary pre-existing hazards specific to the contract.
- It is recognized the pre-existing and known hazards identified may not be a comprehensive list and due caution is always required.
- Use additional pages if necessary.

Identified Extraordinary Hazards	Action required to eliminate or control hazards and ensure worker safety

Prime Contractor Representative (signature)	RDN Contract Representative (signature)
Prime Contractor Representative (print name)	RDN Contract Representative (print name)