REQUEST FOR PROPOSALS No. 22-034

GNPCC Grit and Primary Sedimentation Tanks Mechanism Supply

ISSUED: April 19, 2022

CLOSING DATE AND TIME:
Submissions must be received on or before:
3:00 PM (15:00 hrs) Local Time on Thursday May 19, 2022

Submissions and Questions are to be directed to:
Scot Merriam, SRM Projects Ltd. 250-758-5352 smerriam@srmprojects.ca

Questions shall be submitted at least five (5) business days before the closing date.

Proponent's Optional Information Meeting (RSVP requested):

10:30am Thursday May 5, 2022
Greater Nanaimo Pollution Control Centre
4600 Hammond Bay Road (access off McGuffie Road)
Nanaimo, BC V9T 5A8

Site visit attendees are required to wear steel-toed footwear and a high visibility vest.

Proposals will not be opened in public

1. INSTRUCTIONS TO PROPONENTS

1.1 Closing Date/Time/Submission Method
Submissions must be received on or before 3:00 PM (15:00 hrs), Local Time, on Thursday May 19, 2022.

Submission Method:

By Email: In PDF format with "22-034 GNPCC Grit and Primary Sedimentation Tanks Mechanism Supply – Vendor Name**"** as the subject line at this electronic address:

smerriam@srmprojects.ca

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

Submissions received in any other manner will not be accepted.

1.2 Request for Proposals Package Contents
Proponents are requested to check that they have received all the following RFP package documents:

a) Request for Proposals;
b) Sample contract Agreement;
c) Sample contract General Conditions;
d) Purchase Specification (includes reference drawings, photos, fluid design criteria and other information)

1.3 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.

1.4 Addenda
If the RDN determines that an amendment is required to this RFP, the RDN will post the Addendum on the RDN (www.rdn.bc.ca) and BC Bid (www.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.

1.5 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.

1.6 Unsuccessful Vendors
The District will offer debriefings to unsuccessful Proponents, on request, at a mutually agreeable time.

2. INTRODUCTION

The purpose of this Request for Proposal (RFP) is to solicit submissions from qualified firms to supply the mechanism components (running gear) for 3 grit tanks and 3 primary sedimentation tanks at the Greater Nanaimo Pollution Control Centre (GNPCC), as described more fully in the Specifications.

The above Goods must be delivered to the Delivery Point no later than April 30, 2023

3. BACKGROUND

The No's 1, 2 and 3 grit and primary sedimentation tanks at GNPCC were installed between 1973 and 1989 and have been in operation since. The tank grit and sludge collection mechanisms are now due for replacement. Installation of the new mechanisms is planned to begin in 2023, in parallel with surficial concrete repair/relining work also planned to be completed in the No's 1, 2 and 3 grit and primary sedimentation tanks.

4. SCOPE OF SERVICES

The scope of services required is confined to the custom supply (design, procure materials/equipment, manufacture, document, deliver) of the mechanism components for the 3 grit tanks and 3 primary sedimentation tanks at the Greater Nanaimo Pollution Control Centre (GNPCC), as described more fully in the Specifications.

5. DELIVERABLES AND OUTCOMES

A key desired outcome of this supply RFP is to standardize, to the extent possible, all the grit and primary sedimentation tank mechanism components at GNPCC; in specific, to be as similar as possible to the mechanism components in primary sedimentation tank No. 4, which were provided in 2012 by PolyChem Systems (division of Brentwood Industries).

6. REFERENCE INFORMATION

Please see reference information listed in and attached to "Grit & Sedimentation Tanks Mechanism Purchase Specification".

7. PROPOSAL SUBMISSION AND EVALUATION

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) Corporate background, history, and areas of expertise;
b) Detailed description of materials of construction for all Goods provided;
c) Sketches, photos and diagrams to describe the nature and advantages of the Goods proposed;
d) Describe your quality management process and any certifications;
e) Detailed warranty information;

f) Layout the plan to accomplish the supply of Goods including timelines and key milestones such as delivery time to the Delivery Point;
g) Describe how your firm will monitor the supply progression and provide regular status reports;
h) Identify challenges, constraints and obstacles to the desired supply of the Goods and advise strategy to minimize;
i) A list of proponent's three latest customers (goods delivered and in use), with contact information and year of delivery, for similar scope of equipment supply;
j) Comprehensive proposed fee, in Canadian Dollars, broken down by tank;
k) Validity period for the proposal.

Proposals will be evaluated on the following basis 60% Technical, 40% Financial.

The lowest price proposal will receive full marks. Other proposals will receive reduced scores based on the proportion higher than the lowest price. i.e. Score = Min Cost/Cost x Fee Points.

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 or, irregular or contain 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 (Agreement and General Conditions) is attached herein. Proponents should carefully review this form of Contract. Should any vendors request that RDN consider revisions to the form of Contract, Proponents should include any clauses of concern in their proposal submission and suggest replacement language.

9. GENERAL RFP CONDITIONS

9.1 No Contract

By submitting a Request for Proposal and participating in the process as outlined in this RFP, proponents expressly agree that no contract of any kind is formed until a fully executed contract is in place.

9.2 Privilege Clause

The lowest cost or any proposal may not necessarily be accepted.

9.3 Acceptance and Rejection of Submissions

This RFP does not commit the RDN, in any way to select a preferred Proponent, or to proceed to negotiate a contract, or to award any contract. The RDN reserves the right in its sole discretion cancel this RFP, up until award, for any reason whatsoever

The RDN may accept or waive a minor and inconsequential irregularity, or where applicable to do so, the RDN may, as a condition of acceptance of the Submission, request a Proponent to correct a minor or inconsequential irregularity with no change in the Submission.

9.4 Conflict of Interest

Proponents shall disclose in their Proposals any actual or potential Conflict of Interest and existing business relationships it may have with the RDN, its elected officials, appointed officials or employees.

9.5 Solicitation of Board Members and RDN Staff

Proponents and their agents will not contact any member of the RDN Board or RDN Staff with respect to this RFP, other than the RDN Contact named in this document.

9.6 Litigation Clause

The RDN may, in its absolute discretion, reject a Proposal submitted by Proponent, if the Proponent, or any officer or director of the Proponent is or has been engaged either directly or indirectly through another corporation in legal action against the RDN, its elected or appointed officers and employees in relation to:

(a) any other contract for works or services; or
(b) any matter arising from the RDN's exercise of its powers, duties, or functions under the Local Government Act, Community Charter or another enactment within five years of the date of this Call for Proposals.

In determining whether to reject a Proposal under this clause, the RDN will consider whether the litigation is likely to affect the Proponent's ability to work with the RDN, its consultants and representatives and whether the RDN's experience with the Proponent indicates that the RDN is likely to incur increased staff and legal costs in the administration of this Contract if it is awarded to the Proponent.

9.7 Exclusion of Liability

Proponents are solely responsible for their own expenses in preparing and submitting a Proposal and for any meetings, negotiations, or discussions with the RDN. The RDN will not be liable to any Proponent for any claims, whether for costs, expense, losses or damages, or loss of anticipated profits, or for any other matter whatsoever, incurred by the Proponent in preparing and submitting a Proposal, or participating in negotiations for a Contract, or other activity related to or arising out of this RFP. Except as expressly and specifically permitted in these Instructions to Proponents, no Proponent shall have any claim for compensation of any kind whatsoever, as a result of participating in this RFP, and by submitting a Proposal each Proponent shall be deemed to have agreed that it has no claim.

9.8 Ownership of Proposals

All Proposals, including attachments and any documentation, submitted to and accepted by the RDN in response to this RFP become the property of the RDN.

9.9 Freedom of Information

All submissions will be held in confidence by the RDN. The RDN is bound by the Freedom of Information and Protection of Privacy Act (British Columbia) and all documents submitted to the RDN will be subject to provisions of this legislation. The successful vendor and value of the award is routinely released.

1. TECHNICAL

Technical specifications for RFP 22-034 are outlined below.

1.1. Scope of Supply

The scope of supply is the design (including field measurement), material and equipment procurement, manufacture, documentation and delivery of three complete grit tank mechanisms and three complete primary sedimentation tank mechanisms, summarized as follows.

1.1.1. Grit Tanks 1, 2 and 3 Cross Collectors

- Primary drive reducer and motor;
- Chain drive sprockets, drive chain and tensioner;
- Drive motion sensor(s);
- Torque overload sensor(s);
- Head shaft(s), bearings, sprockets and support brackets;
- Tail shaft(s), bearings, sprockets and support brackets;
- Idler shaft(s), bearings, sprockets and support brackets;
- Cross collector chains;
- Cross collector flights, filler blocks and wear shoes;
- Trough bottom wear strips;
- All required supports and attachment hardware;
- Detailed installation, operation and maintenance manuals;
- Spares, as indicated in this specification;
- Installation and commissioning monitoring by Supply Contractor's technical representative

1.1.2. Primary Sedimentation Tanks 1, 2 and 3 Longitudinal Sludge Collectors

- Primary drive reducer(s) and motor(s);
- Chain drive sprockets, drive chain and tensioner(s);
- Drive motion sensor (s);
- Torque overload sensor(s);
- Head shaft(s), bearings, sprockets and support brackets;
- Tail shaft(s), bearings, sprockets and support brackets;
- Idler shaft(s), bearings, sprockets and support brackets;
- Sludge collector chains;
- Sludge collector flights, filler blocks and wear shoes;
- Collector return rails, supports, deflector guides and wear strips;
- Tank bottom wear strips;
- All required supports and attachment hardware
- Detailed installation, operation and maintenance manuals;
- Spares, as indicated in this specification;
- Installation and commissioning monitoring by Supply Contractor's technical representative

1.1.3. Primary Sedimentation Tanks 1, 2 and 3 Cross Collectors

- Primary drive reducer and motor;
- Chain drive sprockets, drive chain and tensioner;
- Drive motion sensor(s);
- Torque overload sensor(s);
- Head shaft(s), bearings, sprockets and support brackets;
- Tail shaft(s), bearings, sprockets and support brackets;
- Idler shaft(s), bearings, sprockets and support brackets;
- Cross collector chains;
- Cross collector flights, filler blocks and wear shoes;
- Trough bottom wear strips;
- All required supports and attachment hardware;
- Detailed installation, operation and maintenance manuals;
- Spares, as indicated in this specification;
- Installation and commissioning monitoring by Supply Contractor's technical representative

1.2. Existing Plant Reference Information

The following information describes the existing plant.

1.2.1. Drawings

The following drawings, in Appendix A, depict the existing grit and primary sedimentation tanks:

Title	Reference No.	Rev	Date
Primary Sedimentation Tank 4 – G/A Plan (site)	GN-PT-C-103	A	3Dec2013
Primary Sedimentation Tank 4 – Site and Yard Piping Plan (reference markup)	GN-PT-C-403	A	3Dec2013
Aerated Grit Tanks P&ID	P-203	1	1Mar2017
Primary Sedimentation Tank 1 P&ID	P-301	1	1Mar2017
Primary Sedimentation Tank 2 P&ID	P-302	1	1Mar2017
Primary Sedimentation Tank 3 P&ID	P-303	1	1Mar2017
Primary Sedimentation Tank 4 P&ID	P-304	1	1Mar2017
Grit tanks mechanical plan and section	69-7-2 sht M21	A	1Sep1973
Sedimentation tanks mechanical plan and section	69-7-2 sht M24	A	1Sep1973
Grit & sedimentation tanks – concrete outline plan	69-7-2 sht S17	A	1Sep1973
Grit & sedimentation tanks – concrete outline plan	69-7-2 sht S18	A	1Sep1973
Sedimentation tanks – concrete outline plan	69-7-2 sht S19	A	1Sep1973
Grit & sed tanks – concrete outline sections	69-7-2 sht S20	A	1Sep1973

Title Cont'd	Reference No.	Rev	Date
Grit & sed tanks – concrete outline sections	n/a sht S21	A	1Sep1973
Grit & sed tanks – concrete outline sections	69-7 sht S22	A	1Sep1973
Grit tank 3 details – plan and sections	122-78-4 sht 3	A	4Jul1989
Grit tank 3 details – plan and sections	122-72-4 sht 4	A	4Jul1989
Grit tank 3 details – plan	122-72-4 sht 6	A	4Jul1989

1.2.2. Photos

Please refer to Appendix B for photos of the existing 1, 2 and 3 grit tanks and 1, 2, 3 and 4 primary sedimentation tanks.

1.2.3. Reference Equipment Numbers

The following equipment numbers apply to the existing and proposed new equipment. New equipment provided under this RFP shall be durably labelled/tagged with these numbers, as applicable:

Equipment	Equipment No.
No. 1 Grit Tank	T-111
No. 1 Grit Tank Cross Collector Drive	GC-111
No. 2 Grit Tank	T-112
No. 2 Grit Tank Cross Collector Drive	GC-112
No. 3 Grit Tank	T-113
No. 3 Grit Tank Cross Collector Drive	GC-113
No. 1 Primary Sedimentation Tank	T-211
No. 1 Primary Sedimentation Tank Sludge Collector Drive A	SC-211A
No. 1 Primary Sedimentation Tank Sludge Collector Drive B	SC-211B
No. 1 Primary Sedimentation Tank Cross Collector Drive	SC-211C
No. 2 Primary Sedimentation Tank	T-212
No. 2 Primary Sedimentation Tank Sludge Collector Drive A	SC-212A
No. 2 Primary Sedimentation Tank Sludge Collector Drive B	SC-212B

Equipment Cont'd	**Equipment No.**
No. 2 Primary Sedimentation Tank Cross Collector Drive	SC-212C
No. 3 Primary Sedimentation Tank	T-213
No. 3 Primary Sedimentation Tank Sludge Collector Drive A	SC-213A
No. 3 Primary Sedimentation Tank Sludge Collector Drive B	SC-213B
No. 3 Primary Sedimentation Tank Cross Collector Drive	SC-213C

1.2.4. Existing Grit Tank Drives

The existing No's 1, 2 and 3 grit tank drive specifications are as follows:

Motor (same all tanks)	
HP	0.5
RPM	1725
Frame	56C
Power	575VAC/3ph/60Hz
Reducer (same all tanks)	
MFR	Winsmith
Type	Double reduction worm
Model	9MCTD
Part numbers	B396140X0TV (#1 & #3), B396-140A-1 (#1)
Ratio	3000:1
Output torque	8864
Service factor	1

Replacement of the grit tank primary drives in kind is acceptable to RDN if there is no incentive to modernize.

1.2.5. Existing Primary Sedimentation Tank Drives

The existing primary sedimentation tank drive specifications are as follows:

No. 1 Sedimentation Tank	
Motor	
HP	1
RPM	1725
Frame	H56H
Power	575VAC/3ph/60Hz
Reducer	
MFR	Falk
Type	Enclosed gear drive
Model	3KRZ5-21A3
M.O.	7-431099
Ratio	1494.5 / 662.5:1
Output torque	22,550 lb-in
Service factor	n/a

No. 2 Sedimentation Tank	
Motor	
HP	1.5
RPM	1760
Frame	145T
Power	575VAC/3ph/60Hz
Reducer	
MFR	Falk
Type	Enclosed gear drive
Model	1050FZRK5AS
M.O.	97-039434-01
Ratio	1487 / 797.6:1
Output torque	n/a
Service factor	1

No. 3 Sedimentation Tank	
Motor	
HP	1.5
RPM	1760
Frame	145T
Power	575VAC/3ph/60Hz
Reducer	
MFR	Falk
Type	Enclosed gear drive
Model	1050FZRK5AS
M.O.	8939500
Ratio	1487 / 797.6:1
Output torque	n/a
Service factor	n/a

No. 4 Sedimentation Tank – Cross Collector (for reference only)	
Motor	
HP	1
RPM	1765
Frame	143TC
Power	575VAC/3ph/60Hz
Reducer	
MFR	SEW Eurodrive
Type	Helical bevel gear drive
Model	KA77BR37AM145
S.O.	870043534.13.13.001
Ratio	709:1
Output torque	13,717 lb-in
Service factor	1.0

No. 4 Sedimentation Tank – Longitudinal Collector (Typ – for reference only)	
Motor	
HP	1
RPM	1765
Frame	143TC
Power	575VAC/3ph/60Hz
Reducer	
MFR	SEW Eurodrive
Type	Helical bevel gear drive
Model	KA77BR37AM143
S.O.	870043533.13.13.001
Ratio	1388:1
Output torque	13,717
Service factor	1.0

1.3. Design

Mechanism components shall be designed and specified to meet the following requirements.

1.3.1. Fluid Service

Screened raw municipal sewage (SRS) – please refer to more detailed fluid design criteria in Appendix C.

1.3.2. Ambient Temperature

Grit and primary sedimentation tank mechanisms shall be capable of continuous operation in ambient temperatures ranging from -20°C to 40°C.

1.3.3. Design Lifetime

The desired design lifetime for all equipment in the scope of supply is 20 years.

1.3.4. Field Measurement

Supply Contractor shall be responsible for and complete all field measurements required to design and manufacture the Goods. Proponents shall make allowance for two trips to the Greater Nanaimo Pollution Control Center (GNPCC), on pre-planned GNPCC maintenance shutdown dates between April 1, 2022 and October 15, 2022, to complete field measurements. The Regional District of Nanaimo (RDN) will drain, flush out and

implement confined space entry procedures, meeting WorkSafe BC regulations, necessary for the Supply Contractor representative(s) to enter the tanks. Supply Contractor representative(s) shall hold a valid confined space entry training certificate.

1.3.5. Collector Flight Travel Speed

Unless approved otherwise, travel speed for all primary sedimentation tank longitudinal collector flights shall be 0.6 m/min (2 ft/min).

Unless approved otherwise, travel speed for all primary sedimentation tank cross-collector flights shall be 1.2 m/min (4 ft/min).

Unless approved otherwise, travel speed for all grit tank cross collector flights shall be 0.6 m/min (2 ft/min).

1.3.6. Mechanical Loads – Longitudinal Sludge Collector – Sedimentation Tanks

Design primary sludge collector mechanisms to withstand all installation and operating live and dead loads. Design for the following live loads applied to each flight along the tank bottom:

- 25 N/m continuous operating load
- 35 N/m maximum load (frequency of occurrence once per week)
- 50 N/m peak load (frequency of occurrence once per year)
- 75 N/m momentary peak load (frequency of occurrence once in 20 years)

1.3.7. Materials

All materials used in the scope of supply shall be new and free from defects.

Materials of construction shall meet the following general specifications:

Component	**Material Description**
Collector and cross collector chain drive sprocket	Cast Nylon-6; split construction (preferred) or cast iron with polyurethane tooth segment
Collector and cross collector chain idler sprocket and take-up sprocket	UHMW or Cast Nylon-6; solid construction or polyurethane
Spindles/stub shafts	Cast Nylon-6
Cross shafts	Fibreglass reinforced plastic (preferred) or cold rolled steel
Bearings	UHMW or Vesconite
Drive chain	Reinforced nylon resin; stainless steel pins

Component Cont'd	Material Description
Longitudinal collector and cross- collector chain	Non-metallic, reinforced nylon resin; thermoplastic polyester resin (Hitachi Maxco)
Longitudinal collector and cross collector chain pins	Pultruded fibreglass reinforced plastic rod; glass reinforced nylon, glass reinforced polyester, acetal resin or stainless steel
Collector flights	Pultruded fibreglass reinforced plastic, with UV protection, resin to suit fluid service
Collector flight filler block	Moulded polypropylene
Collector flight wear shoes (sed tanks)	Cast Nylon-6 (preferred), or UHMW polyethylene
Collector flight wear shoes (grit tanks)	Cast Nylon-6
Wear strips (sedimentation tanks)	UHMW polyethylene
Wear strips (grit tanks)	UHMW polyethylene
Collector wall bracket	Cast Nylon-6 or polypropylene /CPVC
Collector return rails and anti-flotation guides	Fibreglass reinforced plastic
Drive guards	304 stainless steel
Fasteners, bolts, nuts and washers	316 stainless steel, ASTM A193

1.3.8. Coating for Corrosion Protection

All supplied carbon steel material/equipment not inherently corrosion proof shall be painted according to RDN specification SP-S-0101 "Structural Steel Coating Specification – Indoor Wastewater Service Applications" (see Appendix D), with compatible UV resistant top coat, or other RDN approved equal coating system.

1.3.9. Electrical Supply General

Unless otherwise approved, electrical components of supply shall conform to the following requirements.

All motors shall meet the following requirements:

- 575 VAC, 3 phase, 60 Hz;
- Squirrel cage, induction type, 1.15 service factor (minimum);
- F-1 assembly;
- Severe duty, corrosion resistant TEFC enclosure, meet or exceed requirements of IEEE std. 841

- Premium Efficiency;
- Designed for inverter operation;
- Shall have anti-friction bearings that are suited to their application;
- Meet area classification requirements below;
- Utilize stainless steel nameplates with stainless steel fasteners.

All electrical equipment shall be approved for use in a Zone 2, Group IIA environment, with a maximum surface temperature of 280ºC. Equipment marked for Class 1, Div 2, Group D classified area will also be suitable.

All electrical equipment shall bear a certification mark or label of a certification body accepted in British Columbia, such as CSA or cUL.

1.3.10. Instrumentation Supply General

Unless otherwise approved, instrumentation components of supply shall conform to the following requirements.

Motion switches shall be provided on all drive sprocket hubs to provide motion monitoring of the collector mechanisms. Motion sensors shall be Siemens model 7MH7146-0HA with a Siemens model 7MH7144-1AA2 MFA4p motion alarm controller. The controller will be installed by Others in a remote location. Target(s) compatible with the motion sensor elements shall be integrated into the drive sprocket hubs. Motion sensor elements shall be provided with adjustable stainless steel mounting brackets and hardware.

Drive sprocket hubs shall be provided with a trip lug that, upon torque overload, shall contact the actuator arm of a double throw limit switch which, in turn, shall shut-off the motor and energize the alarm circuit (motor control and control system alarming by Others). Limit switches shall be Square D model 9007CR61B2 with FA1 10” stainless steel rod lever arm. All limit switches shall be provided with adjustable stainless steel mounting brackets and hardware for positioning adjacent to the overload device.

All instrumentation shall be approved for use in a Zone 2, Group IIA environment, with a maximum surface temperature of 280ºC. Equipment marked for Class 1, Div 2, Group D classified area will also be suitable. The motion alarm controllers will be installed remotely, and are not required to be rated for installation in a classified area.

All instrumentation shall bear a certification mark or label of a certification body accepted in British Columbia, such as CSA or cUL.

1.3.11. Safety

All primary/secondary drive equipment shall be guarded to meet the requirements of BC Occupational Health and Safety Regulation, Part 12 “Tools, Machinery and Equipment”.

1.3.12. Primary Drive Reducers

Provide one primary drive reducer/motor for each longitudinal collector and cross collector mechanism.

Motor attachment shall be C-flange (preferred) or foot mount with Atra-Flex coupling.

Reducers shall be helical or worm gear with anti-friction bearings, fully housed in a cast iron housing and oil lubricated with an oil level sight glass.

Reducer gears shall be designed for a minimum twenty (20) year life in accordance with AGMA Standards. Bearings shall be designed for a minimum ABFMA B10 life of 200,000 hours.

1.3.13. Bearings

Unless approved otherwise, bearings shall meet the following general specifications:

- Self aligning;
- Water lubricated while operating;
- Designed to prevent accumulation of settled solids on surfaces

1.3.14. Spindles/Stub Shafts

Unless approved otherwise, wetted collector mechanism spindles/stub shafts shall meet the following general specifications:

- Minimum nominal diameter 125 mm for cantilevered shafts/spindles;
- Minimum nominal diameter 100 mm when supporting cross shafts;
- Keyways and fitted keys for securing sprockets;
- Hold shafts in alignment with mechanical means;
- Tail and idler sprockets for grit/sludge collectors may be cantilever mounted on spindles/stub shafts fastened to the structure of the tank

1.3.15. Cross Shafts

Unless approved otherwise, wetted collector mechanism cross shafts shall meet the following general specifications:

- Minimum head shaft outer diameter 85 mm (for solid carbon steel shafts);
- Minimum idler shaft outer diameter 75 mm (for solid carbon steel shafts);
- Minimum inner and outer diameter for FRP cross shafts to be sized for peak design loading condition;
- Keyways and fitted keys for securing sprockets;
- Hold shafts in alignment with mechanical means;
- Extend longitudinal sludge collector head shafts across width of the primary sedimentation tank and support on bearings mounted on the walls of the tank;
- Extend grit/sludge cross-collector head shafts across width of the collector and support on bearings mounted on the structure (wall or other) of the collector

1.3.16. Sprockets

Unless approved otherwise, sprockets shall meet the following general specifications:

- Tooth profile shall be compatible with chain; minimum 545 mm pitch diameter and twenty- three (23) teeth;
- Shall incorporate chain saver rims and hunting tooth design;
- Headshaft sprockets shall be split construction;
- Maximum 24-hour ASTM D570 water absorption rate: 1.3%;
- Drive sprockets shall be provided with keyway and set screws and be keyed firmly to headshaft;
- Drive sprockets shall be provided with a device (such as a shear-pin) to provide for protection of the drive equipment in the event of excessive loading. Where specified, shear pins shall be provided to transmit torque from the driving hub to the sprocket shear plate with a polymeric gasket located between the shear faces to prevent seizing;
- Primary drive sprocket hubs shall be provided with a trip lug that, upon torque overload, shall contact the actuator arm of the double throw limit switch which, in turn, shall shut-off the motor and energize the alarm circuit

1.3.17. Drive Chain

Unless approved otherwise, drive chain shall meet the following general specifications:

- 66.25 mm pitch links;
- 22 mm diameter rollers;
- 11 mm diameter stainless steel pins; press fitted and held in place with a locking pin;
- Capable of disassembly and assembly in the field by removing the locking pin and connecting pin

1.3.18. Longitudinal Collector and Cross Collector Chain

Unless approved otherwise, longitudinal collector and cross collector chain shall meet the following general specifications:

- Hitachi Maxco NM-720S or RDN approved alternative;
- 150 mm pitch links;
- Maximum 24-hour ASTM D570 water absorption rate: 0.9%;
- Working load not less than 1000 kg based on strength, fatigue and wear;
- Minimum diameter of non-metallic pin: 23 mm; positive lock design;
- Minimum diameter of stainless steel pin: 19 mm;
- Integrally moulded flight attachment links; extending full depth of a flight

1.3.19. Flights

Unless approved otherwise, collector flights shall meet the following general specifications:

- 75 mm wide by 200 mm high;
- Pultruded FRP construction;
- Continuous filaments running the full length of the flight;

- All exposed surfaces shall be smooth and true to form, consistent with ASTM D4385;
- All cut ends, holes and abrasions of FRP flights shall be sealed with a compatible resin coating;
- Maximum 24-hour ASTM D570 water absorption rate: 0.5%;
- "C" channel shape with scraper lip on leading edge;
- Bolted to collector chain attachment links; provide full depth attachment with four (4) bolt array; use 9 mm diameter stainless steel bolts;
- 12 mm thick, reversible (two wearing surfaces) carry and return wear shoes; lugged return wear shoes;
- Mount primary sedimentation tank longitudinal collector flights at 3 m spacing;
- Mount primary sedimentation tank cross-collector flights at 1.5 m spacing;
- Mount grit tank cross-collector flights at 3 m spacing;
- Plastic filler blocks to permit mounting to collector chain attachment links;
- Drill and notch at the factory and band together for shipment

1.3.20. Return Rail Deflector Guides

Unless approved otherwise, return rail deflector guides shall meet the following general specifications:

- Return rail deflector guides of 75 mm by 75 mm and 9.5 mm thick FRP angle;
- Support return rail deflector guides at maximum 3 m spacing;
- Wall bracket assembly constructed of Cast Nylon-6 material or FRP; all fastening hardware type 316 stainless steel

1.3.21. Wear Strips

Unless approved otherwise, wear strips shall meet the following general specifications:

- UHMW 65 mm wide and 9.5 mm thick;
- Attached to return rails and to floor rails using Type 316 stainless steel fasteners;
- Fabricated in 3 m segments: complete with one anchoring hole and at least two slotted holes to accommodate the fasteners

1.4. Required Submittals

The following documents must be submitted to RDN for review and approval in advance of manufacturing and within 12 weeks from issue of purchase order.

1.4.1. General Arrangement Shop Drawings

Supply Contractor shall electronically submit general arrangement shop drawings, including all equipment supplied and depicting as-installed plan, elevation and section views of the equipment on existing RDN plant. Key reference and installation information/dimensions shall be included on the drawings.

The RDN will review Supply Contractor drawing submittal within two weeks. Upon RDN review and return of the drawings, the Supply Contractor shall either (a) PE certify the drawings as approved, (b) revise as noted in RDN redline markups and PE certify the

drawings as approved or (c) revise as noted in RDN redline markups and resubmit the drawings again for another RDN review, as indicated on the returned drawings.

Electronic copies of Supply Contractor PE certified shop drawings shall be returned to RDN for record and to support Supply Contractor claim for any applicable progress payment.

1.5. Quality Assurance and Quality Control

The successful Supply Contractor shall incorporate quality assurance and quality control measures to ensure the Goods are of the highest quality. The following requirements, and Part 3 of the RDN General Conditions of contract, shall apply to supply of the Goods.

1.5.1. Inspection and Test Plan

The successful Supply Contractor shall prepare and submit, for RDN review and approval, an inspection and test plan (ITP) for design, material and equipment procurement, manufacture, documentation and delivery of the Goods. The ITP shall be diligently followed by the Supply Contractor during the supply process.

1.5.2. Quality Assurance

The successful Supply Contractor shall employ and demonstrate written evidence of a functioning, formal quality assurance system. Preference will be given to Supply Contractors that are third party certified to ISO-9001 by an internationally accredited certification body/registrar.

1.5.3. Quality Control

The Supply Contractor's quality assurance system shall employ testing and other checks to ensure conformance of the Goods with these specifications, including but not limited to review of calculations, collection of material test certificates and performing torque or other measurements, dimensional checks and quantity checks as well as Barcol hardness, dry film thickness and other typical industry accepted tests.

1.6. Installation Manual

The successful Supply Contractor must provide the following documents, collected into an "Installation, Manual". One complete printed copy and one complete digital (pdf) copy shall be provided to the RDN no later than December 31, 2022.

1.6.1. Installation Instructions

Supply Contractor shall provide a thorough description of key equipment installation requirements using text and diagrams as appropriate.

1.6.2. General Arrangement Shop Drawings

Supply Contractor shall provide general arrangement drawings for all equipment supplied, depicting as-installed plan, elevation and section views of the equipment on existing RDN

plant. Key reference and installation information/dimensions shall be included on the drawings.

1.7. Operation and Maintenance Manual

The successful Supply Contractor must provide the following documents, collected into an "Operation and Maintenance Manual". One complete printed copy and one complete digital (pdf) copy shall be provided to the RDN 2 weeks in advance of delivery of the Goods.

1.7.1. Operation Instructions

Supply Contractor shall provide a thorough description of key equipment commissioning and routine operating instructions, using text and diagrams as appropriate.

1.7.2. Maintenance Instructions

Supply Contractor shall provide a thorough description of key equipment maintenance requirements (with frequency), using text and diagrams as appropriate.

1.7.3. Parts Information

Supply Contractor shall provide a comprehensive parts list for all equipment supplied, with OEM reference numbers. A numbered parts diagram(s) shall be provided for reference.

1.7.4. Custom Parts Drawings

Supply Contractor shall provide reference drawings for any custom equipment/components in the Goods that are not off-the-shelf. These shall include key dimensions/parameters as well as material(s) of construction.

1.7.5. OEM Cut-Sheets

Supply Contractor shall provide OEM cut-sheets and/or manuals for any off-the-shelf equipment provided as part of the Goods.

1.7.6. General Arrangement Drawings

Supply Contractor shall provide general arrangement drawings for all equipment supplied, depicting as-installed plan, elevation and section views of the equipment on existing RDN plant. Key reference and installation information/dimensions shall be included on the drawings.

1.8. Spares

The following spare parts specifications apply.

1.8.1. Parts List

As outlined in section 1.7 above, Supply Contractor shall provide a comprehensive parts list for all equipment supplied, with OEM reference numbers. A numbered parts diagram(s) shall be provided for reference.

1.8.2. Spare Parts Pricing

Proposals shall include a price list for all recommended, and/or any non-standard or consumable components that are not readily available/off-the-shelf.

2. COMMERCIAL

Commercial specifications for RFP 22-034 are outlined below.

2.1. Quotation and Payment Terms

Quotation and payment terms for the Goods shall be as follows, unless agreed otherwise, in writing, by RDN.

2.1.1. Currency

All payment amounts in Supply Contractor proposals shall represent currency in Canadian dollars.

2.1.2. Taxes

Taxes, where applicable, shall be shown separately.

2.1.3. Duty

Duty, where applicable, shall be shown separately.

2.1.4. Quotation Validity

Quotations should be valid for at least 60 days from the date of RFP closing, to allow for RDN evaluation and purchase approvals.

2.1.5. Escalation

All pricing amounts quoted in proposals shall be firm, with no allowance for escalation of any kind.

2.1.6. Progress Payments

The RDN accepts progress payment draws for (1) Submission of certified shop drawings, (2) Receipt of all materials required for manufacturing, (3) Shipment and (4) Delivery and acceptance at the Delivery Point. Unless alternate progress payment draws are approved in writing by RDN, these progress payment draws will be included in the Supply Agreement.

2.1.7. Payment Processing

The RDN shall pay invoices submitted to it for the Goods, within 30 days of receipt.

2.2. Delivery of Goods

Delivery of the Goods shall be as follows.

2.2.1. Incoterms

Supply Contractor pricing shall be on Incoterms 2020 delivered, duty paid (DDP) basis.

2.2.2. Delivery Schedule

Proponents shall include a draft delivery schedule with proposals, with milestone dates for key schedule items, including but not limited to issue of shop drawings, material procurement, start and end of manufacturing, shipment etc. Upon issue of a purchase order, the successful Supply Contractor shall issue a final delivery schedule to cover supply of the Goods.

2.2.3. Insurance

Supply Contractor shall provide insurance to cover the Goods as outlined in section 4.2 of the RDN General Conditions of contract.

2.2.4. Delivery Date

To meet the planned RDN installation schedule, the Goods should be delivered to the Delivery Point no later than April 30, 2023.

2.3. Shipment

The Goods shall be shipped as follows.

2.3.1. PreAssembly

Equipment shall be pre-assembled, to the degree which is practicable, with due consideration to shipping logistics.

2.3.2. Single Shipment

All of the Goods shall be delivered to RDN as a single shipment.

2.3.3. Shipping Weight

Supply Contractor shall advise RDN of the total confirmed shipping weight and weight of individual packages a minimum of 2 weeks in advance of receipt at the Delivery Point. Unless otherwise arranged with RDN, individual packages shall weigh no more than 1,850 kg.

2.3.4. Delivery Point

The Delivery Point for the Goods is as follows:

Greater Nanaimo Pollution Control Centre
4600 Hammond Bay Road (access off McGuffie Road)
Nanaimo, BC
V9T 5A8
Canada

Tel: 250-758-1157

2.3.5. Unloading at Delivery Point

The RDN shall provide a forklift to unload the Goods, suitable for the shipping weights provided by the Supply Contractor. If required, any crane unloading services must be communicated to the RDN a minimum of 4 weeks in advance of receipt at the Delivery Point.

Supply Contractor shall communicate any other critical unloading instructions to the RDN 4 weeks in advance of receipt at the Delivery Point.

2.3.6. Storage

The Supply Contractor shall provide storage instructions indicating specific requirements to ensure there is no uneven wear, distortion or weathering of components, and shall identify all other special storage requirements.

2.4. Warranty

The warranty for the Goods shall conform to section 3.4 of the RDN General Conditions of contract.

2.4.1. Warranty Period

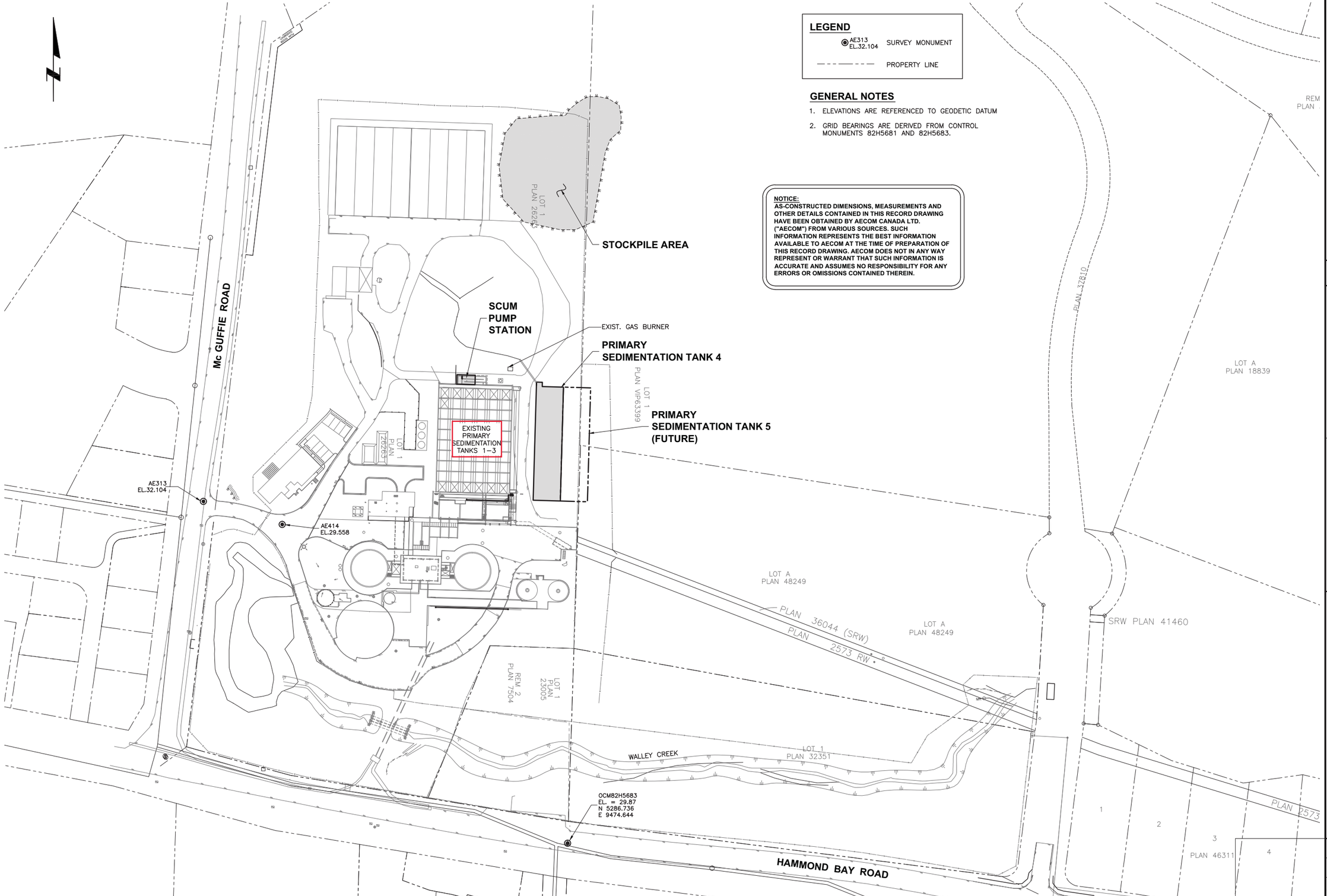
The warranty period shall be as outlined in the Supply Contractor's proposal and any subsequent clarifications.

2.4.2. Warranty Period Commencement

The warranty period shall commence when the RDN puts the Goods into operation, the operational date being no later than October 31, 2024.

APPENDIX A

EXISTING PLANT REFERENCE DRAWINGS



GENERAL ARRANGEMENT PLAN
1:750

VERIFY SCALE IF PLAN SHEET IS REDUCED — 30 mm

REV	DESCRIPTION	DRN	CHK	DATE (Y/M/D)
A	RECORD DRAWING	PTL	JK	2013/12/03

DRN BY: PTL | DES BY: KM | CHK BY: SS | APP BY: KM

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
GREATER NANAIMO POLLUTION CONTROL CENTRE
PRIMARY SEDIMENTATION TANK 4

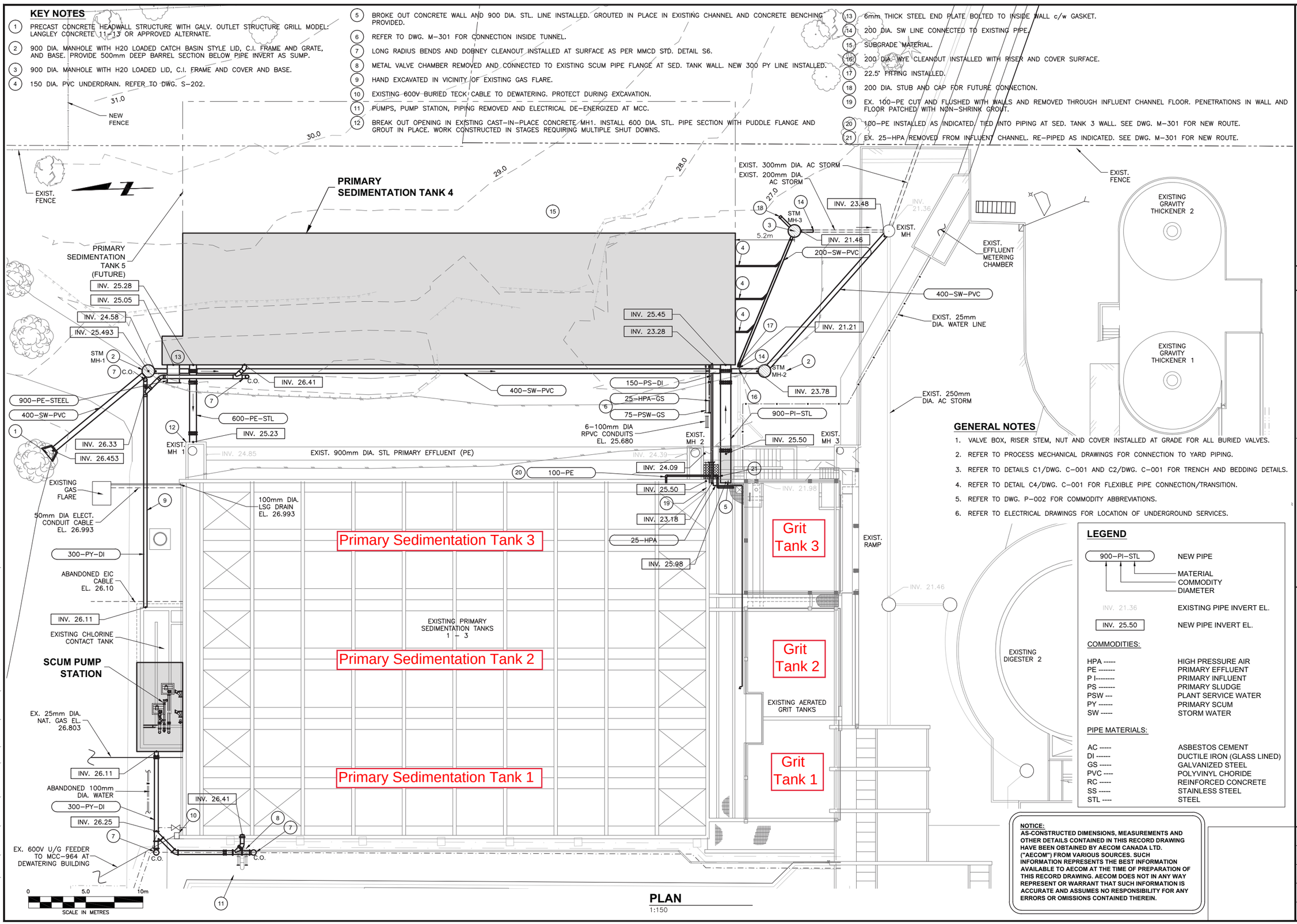
CIVIL
GENERAL ARRANGEMENT PLAN

PROJECT START DATE (M / Y)	OCT 2011
PROJECT NO.	60119790
FILENAME	C-101 to C106 114005.dwg
RDN DRAWING NO.	GN-PT-C-103
DRAWING NO.	C-101

Plotted By: leongp
Plot File Date Created: Mar/03/2014 1:11 PM
Layout-Sheet Name: C 101 OVERALL
Filename: L:\WORK\114000\114005\02A-CAD\WAT\DESIGN\2-CIVIL\AS-BUILT DRAWINGS JANUARY 2014\C-101 TO C106 114005.DWG

KEY NOTES

1. PRECAST CONCRETE HEADWALL STRUCTURE WITH GALV. OUTLET STRUCTURE GRILL MODEL: LANGLEY CONCRETE 11-13 OR APPROVED ALTERNATE.
2. 900 DIA. MANHOLE WITH H20 LOADED CATCH BASIN STYLE LID, C.I. FRAME AND GRATE, AND BASE. PROVIDE 500mm DEEP BARREL SECTION BELOW PIPE INVERT AS SUMP.
3. 900 DIA. MANHOLE WITH H20 LOADED LID, C.I. FRAME AND COVER AND BASE.
4. 150 DIA. PVC UNDERDRAIN. REFER TO DWG. S-202.
5. BROKE OUT CONCRETE WALL AND 900 DIA. STL. LINE INSTALLED. GROUTED IN PLACE IN EXISTING CHANNEL AND CONCRETE BENCHING PROVIDED.
6. REFER TO DWG. M-301 FOR CONNECTION INSIDE TUNNEL.
7. LONG RADIUS BENDS AND DOBNEY CLEANOUT INSTALLED AT SURFACE AS PER MMCD STD. DETAIL S6.
8. METAL VALVE CHAMBER REMOVED AND CONNECTED TO EXISTING SCUM PIPE FLANGE AT SED. TANK WALL. NEW 300 PY LINE INSTALLED.
9. HAND EXCAVATED IN VICINITY OF EXISTING GAS FLARE.
10. EXISTING 600V BURIED TECK CABLE TO DEWATERING. PROTECT DURING EXCAVATION.
11. PUMPS, PUMP STATION, PIPING REMOVED AND ELECTRICAL DE-ENERGIZED AT MCC.
12. BREAK OUT OPENING IN EXISTING CAST-IN-PLACE CONCRETE MH1. INSTALL 600 DIA. STL. PIPE SECTION WITH PUDDLE FLANGE AND GROUT IN PLACE. WORK CONSTRUCTED IN STAGES REQUIRING MULTIPLE SHUT DOWNS.
13. 6mm THICK STEEL END PLATE BOLTED TO INSIDE WALL c/w GASKET.
14. 200 DIA. SW LINE CONNECTED TO EXISTING PIPE.
15. SUBGRADE MATERIAL.
16. 200 DIA. WYE CLEANOUT INSTALLED WITH RISER AND COVER SURFACE.
17. 22.5° FITTING INSTALLED.
18. 200 DIA. STUB AND CAP FOR FUTURE CONNECTION.
19. EX. 100-PE CUT AND FLUSHED WITH WALLS AND REMOVED THROUGH INFLUENT CHANNEL FLOOR. PENETRATIONS IN WALL AND FLOOR PATCHED WITH NON-SHRINK GROUT.
20. 100-PE INSTALLED AS INDICATED, TIED INTO PIPING AT SED. TANK 3 WALL. SEE DWG. M-301 FOR NEW ROUTE.
21. EX. 25-HPA REMOVED FROM INFLUENT CHANNEL. RE-PIPED AS INDICATED. SEE DWG. M-301 FOR NEW ROUTE.



PLAN
1:150

GENERAL NOTES

1. VALVE BOX, RISER STEM, NUT AND COVER INSTALLED AT GRADE FOR ALL BURIED VALVES.
2. REFER TO PROCESS MECHANICAL DRAWINGS FOR CONNECTION TO YARD PIPING.
3. REFER TO DETAILS C1/DWG. C-001 AND C2/DWG. C-001 FOR TRENCH AND BEDDING DETAILS.
4. REFER TO DETAIL C4/DWG. C-001 FOR FLEXIBLE PIPE CONNECTION/TRANSITION.
5. REFER TO DWG. P-002 FOR COMMODITY ABBREVIATIONS.
6. REFER TO ELECTRICAL DRAWINGS FOR LOCATION OF UNDERGROUND SERVICES.

LEGEND

900-PI-STL — NEW PIPE
- MATERIAL
- COMMODITY
- DIAMETER

INV. 21.36 — EXISTING PIPE INVERT EL.

INV. 25.50 — NEW PIPE INVERT EL.

COMMODITIES:

HPA -----	HIGH PRESSURE AIR
PE -------	PRIMARY EFFLUENT
P I--------	PRIMARY INFLUENT
PS -------	PRIMARY SLUDGE
PSW ---	PLANT SERVICE WATER
PY -----	PRIMARY SCUM
SW -----	STORM WATER

PIPE MATERIALS:

AC -----	ASBESTOS CEMENT
DI ------	DUCTILE IRON (GLASS LINED)
GS -----	GALVANIZED STEEL
PVC ----	POLYVINYL CHORIDE
RC -----	REINFORCED CONCRETE
SS -----	STAINLESS STEEL
STL ----	STEEL

NOTICE:
AS-CONSTRUCTED DIMENSIONS, MEASUREMENTS AND OTHER DETAILS CONTAINED IN THIS RECORD DRAWING HAVE BEEN OBTAINED BY AECOM CANADA LTD. ("AECOM") FROM VARIOUS SOURCES. SUCH INFORMATION REPRESENTS THE BEST INFORMATION AVAILABLE TO AECOM AT THE TIME OF PREPARATION OF THIS RECORD DRAWING. AECOM DOES NOT IN ANY WAY REPRESENT OR WARRANT THAT SUCH INFORMATION IS ACCURATE AND ASSUMES NO RESPONSIBILITY FOR ANY ERRORS OR OMISSIONS CONTAINED THEREIN.

REV	DESCRIPTION	DRN	CHK	DATE (Y/M/D)
A	RECORD DRAWING	PTL	JK	2013/12/03

VERIFY SCALE IF PLAN SHEET IS REDUCED — 30 mm

DRN BY: PTL | DES BY: KM | CHK BY: KM | APP BY: KM

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
GREATER NANAIMO POLLUTION CONTROL CENTRE
PRIMARY SEDIMENTATION TANK 4
CIVIL
SITE AND YARD PIPING PLAN

PROJECT START DATE (M / Y): OCT 2011
PROJECT NO.: 60119790
FILENAME: C-101 to C106 114005.dwg
RDN DRAWING NO.: GN-PT-C-403
DRAWING NO.: C-103

Plotted By: leongp
Plot File Date Created: Mar/03/2014 1:11 PM
Layout-Sheet Name: C 103 YARD PIPING
Filename: L:\WORK\114000\114005\02A-CAD\WAT\DESIGN\2-CIVIL\AS-BUILT DRAWINGS JANUARY 2014\C-101 TO C106 114005.DWG

PA
P-207
FROM
GRIT BLOWER 1/2
150-PA

PA
P-207
FROM
GRIT BLOWER 1/2
150-PA

PA
P-207
FROM
GRIT BLOWER 1/2
150-PA

PA
P-207
FROM
GRIT BLOWER 1/2
150-PA

PA
P-207
FROM
GRIT BLOWER 1/2
150-PA

PA
P-207
FROM
GRIT BLOWER 1/2
150-PA

PS
P-305
FROM
PRIMARY SLUDGE
PUMP 1/2
150-PS

SRS
P-201
FROM
RS SCREEN 1
RS SCREEN 2
RS SCREEN 3 (FUTURE)
RS SCREEN 4

Screened raw sewage

PWD
P-908
FROM CENTRATE
PUMP STATION
150-PWD

GR
P-204
FROM
GRIT CYCLONE 1
OVERFLOW
150-GR

GR
P-204
FROM
GRIT CYCLONE 1
ORGANICS
100-GR

PY
P-205
FROM
PRIMARY SCUM
ROTOSTRAINER
UNDERFLOW
150-PY

GR (DRAIN)
P-205
FROM
GRIT SCUM
CONVEYORS
75-GR
(DRAIN)

GR
P-204
FROM
GRIT CYCLONE 2
OVERFLOW
150-GR

GR
P-204
FROM
GRIT CYCLONE 2
ORGANICS
100-GR

250-FOA
150-FOA
250-FOA
150-FOA
250-FOA
350-FOA

FOA
G-104
TO FOA
COLLECTION
HEADER

200-FOA
200-FOA

FOA
P-204
TO
ODOUR
CONTROL

1
SG-1101

T-111
AERATED GRIT TANK 1

CELL 1
CELL 2

SRS
P-301
TO PST 1

1
SG-1102

2
HPG-1103

T-112
AERATED GRIT TANK 2

CELL 1
CELL 2

200-FOA

SRS
P-302
TO PST 2

FOA
P-303
TO ODOUR
CONTROL

200-FOA

SRS
P-303
TO PST 3

900-SRS
BULKHEAD

SRS
P-304
TO PST 4

T-113
AERATED GRIT TANK 3

CELL 1
CELL 2

M
M
M

SRS
TO PST 5
(FUTURE)

GR
P-204
TO
GRIT PUMP 1
GRIT PUMP 2

GR
P-204
TO
GRIT PUMP 1
GRIT PUMP 2

KEY NOTE

1. SEGMENTED VERTICAL BAFFLE GATE
2. NEW SLIDE GATE TO REPLACE EXISTING

AERATED GRIT TANK 1		GRIT TANK 1 CELL 1/2 DIFFUSERS	
EQUIP. NO.:	T-111	TYPE:	COARSE BUBBLE
VOLUME:	577 m3	SPEC:	11529
		QUANTITY:	22

AERATED GRIT TANK 2		GRIT TANK 2 CELL 1/2 DIFFUSERS	
EQUIP. NO.:	T-112	TYPE:	COARSE BUBBLE
VOLUME:	577 m3	SPEC:	11529
		QUANTITY:	24

AERATED GRIT TANK 3		GRIT TANK 3 CELL 1/2 DIFFUSERS	
EQUIP. NO.:	T-113	TYPE:	COARSE BUBBLE
VOLUME:	577 m3	SPEC:	11529
		QUANTITY:	24

VERIFY SCALE IF PLAN SHEET IS REDUCED
30 mm

REV	DESCRIPTION	DRN	CHK	DATE (Y/M/D)
1	ISSUED FOR CONSTRUCTION	KSB	LN	2017/03/01
0	ISSUED FOR TENDER	KSB	LN	2016/11/28

DRN BY: KSB
DES BY: MC
CHK BY: LN
APP BY: KM

PREPARED FOR:
REGIONAL DISTRICT OF NANAIMO

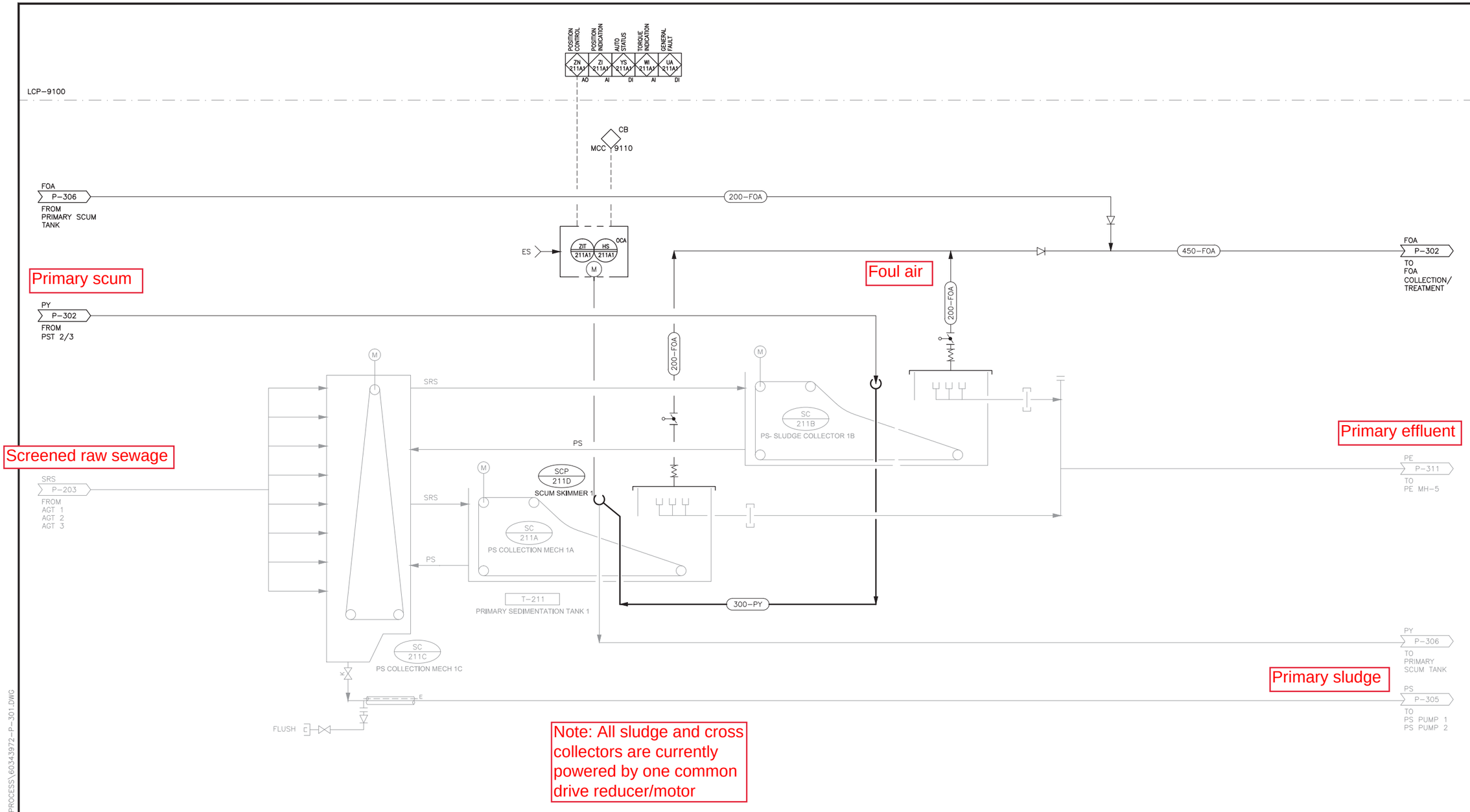
PREPARED BY:
AECOM
4th FLOOR,
3292 PRODUCTION WAY,
BURNABY, B.C., V5A 4R4
604-444-6400

REGIONAL DISTRICT OF NANAIMO
GREATER NANAIMO POLLUTION CONTROL CENTRE
SECONDARY TREATMENT UPGRADE

PROCESS
AERATED GRIT TANKS
PROCESS AND INSTRUMENTATION DIAGRAM

PROJECT START DATE (M / Y)
APR./2015
PROJECT NO.
60343972
FILENAME
60343972-P-203.dwg
RDN DRAWING No.
DRAWING No.
P-203

Plotted By: leongp
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Layout-Sheet Name: P-203 AERATED GRIT TANKS
Filename: P:\60343972\900-WORK\910 CAD\20-SHEETS\PROCESS\60343972-P-203.DWG



PRIMARY SEDIMENTATION TANK 1
PS COLLECTION MECHANISM 1C

EQUIP. NO.: SC-211C
SPEC: N/A
TYPE: FLIGHT CONVEYOR CHAIN
POWER:

PRIMARY SEDIMENTATION TANK 1
PS COLLECTION MECHANISM 1A & 1B

EQUIP. NO.: SC-211A & SC-211B
SPEC: N/A
TYPE: FLIGHT CONVEYOR CHAIN
POWER: 1 hp

PRIMARY SEDIMENTATION
SCUM SKIMMER 1

EQUIP. NO.: SCP-211D
SPEC: 11161
TYPE: TILTING/SLOTTED PIPE
SIZE: 300mm
POWER: 0.5 hp

VERIFY SCALE IF PLAN SHEET IS REDUCED
30 mm

REV	DESCRIPTION	DRN	CHK	DATE (Y/M/D)
1	ISSUED FOR CONSTRUCTION	KSB	LN	2017/03/01
0	ISSUED FOR TENDER	KSB	LN	2016/11/28

DRN BY: KSB
DES BY: MC
CHK BY: LN
APP BY: KM

PREPARED FOR:
REGIONAL DISTRICT OF NANAIMO

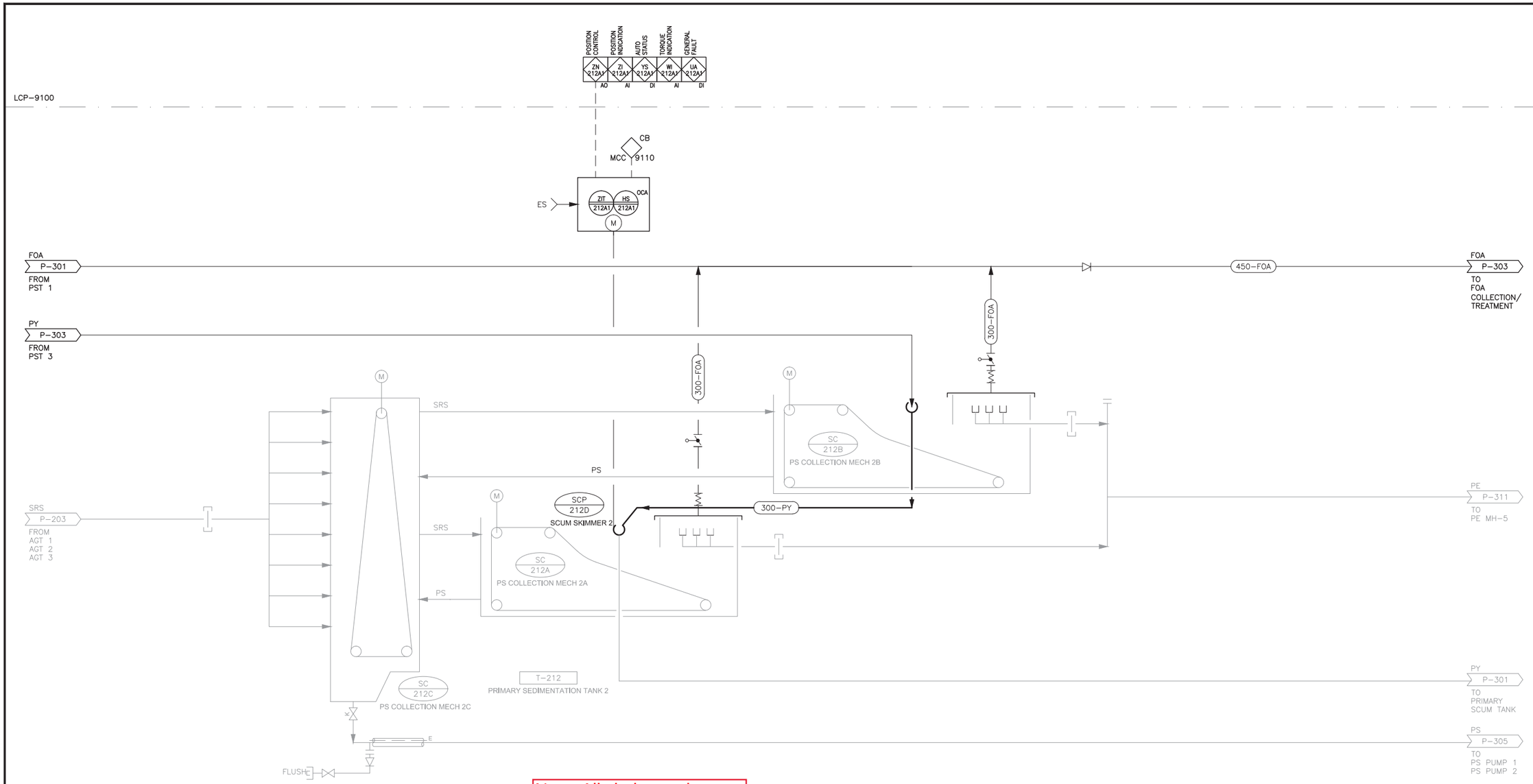
PREPARED BY:
AECOM
4th FLOOR,
3292 PRODUCTION WAY,
BURNABY, B.C., V5A 4R4
604-444-6400

REGIONAL DISTRICT OF NANAIMO
GREATER NANAIMO POLLUTION CONTROL CENTRE
SECONDARY TREATMENT UPGRADE

PROCESS
PRIMARY SEDIMENTATION TANK 1
PROCESS AND INSTRUMENTATION DIAGRAM

PROJECT START DATE (M / Y): APR./2015
PROJECT NO.: 60343972
FILENAME: 60343972-P-301.dwg
RDN DRAWING No.:
DRAWING No.: **P-301**

Plotted By: leongp
Plot File Date Created: Mar/01/2017 2:43 PM
Layout-Sheet Name: P-301
Filename: P:\60343972\900-WORK\910 CAD\20-SHEETS\PROCESS\60343972-P-301.DWG



Note: All sludge and cross collectors are currently powered by one common drive reducer/motor

PRIMARY SEDIMENTATION TANK 2
PS COLLECTION MECHANISM 2C

EQUIP. NO.: SC-212C
SPEC: N/A
TYPE: FLIGHT CONVEYOR CHAIN
POWER:

PRIMARY SEDIMENTATION TANK 2
PS COLLECTION MECHANISM 2A & 2B

EQUIP. NO.: SC-212A & SC-212B
SPEC: N/A
TYPE: FLIGHT CONVEYOR CHAIN
POWER: 1.5 hp

PRIMARY SEDIMENTATION TANK 2
SCUM SKIMMER 2

EQUIP. NO.: SCP-212D
SPEC: 11161
TYPE: TILTING SLOTTED PIPE
SIZE: 300mm
POWER: 0.5 hp

VERIFY SCALE IF PLAN SHEET IS REDUCED
30 mm

REV	DESCRIPTION	DRN	CHK	DATE (Y/M/D)
1	ISSUED FOR CONSTRUCTION	KSB	LN	2017/03/01
0	ISSUED FOR TENDER	KSB	LN	2016/11/28

DRN BY: KSB
DES BY: MC
CHK BY: LN
APP BY: KM

PREPARED FOR:
REGIONAL DISTRICT OF NANAIMO

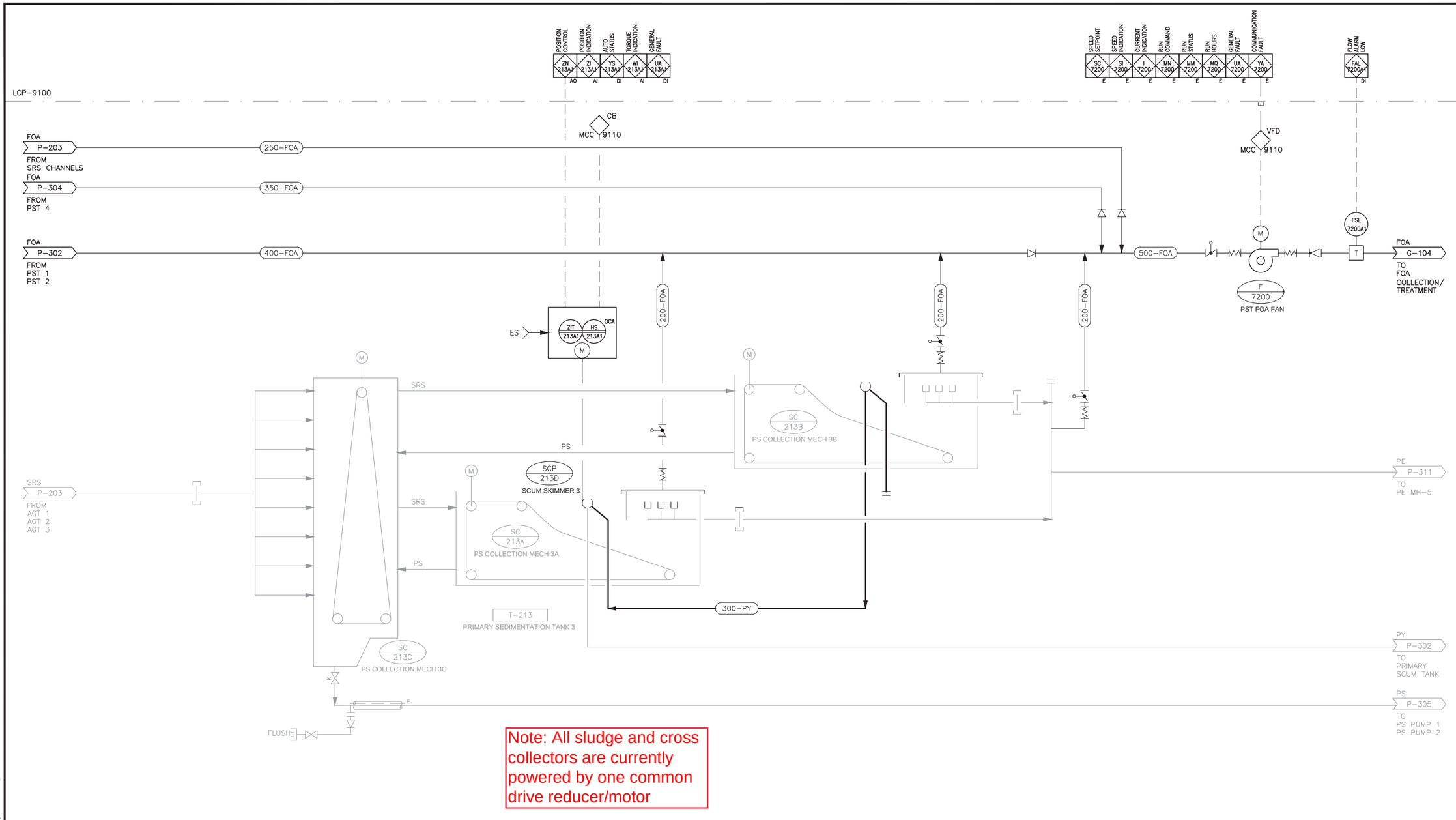
PREPARED BY:
AECOM
4th FLOOR,
3292 PRODUCTION WAY,
BURNABY, B.C., V5A 4R4
604-444-6400

REGIONAL DISTRICT OF NANAIMO
GREATER NANAIMO POLLUTION CONTROL CENTRE
SECONDARY TREATMENT UPGRADE

PROCESS
PRIMARY SEDIMENTATION TANK 2
PROCESS AND INSTRUMENTATION DIAGRAM

PROJECT START DATE (M / Y)
APR./2015
PROJECT NO.
60343972
FILENAME
60343972-P-302.dwg
RDN DRAWING No.
DRAWING No.
P-302

Plotted By: leongp
Plot File Date Created: Mar/01/2017 2:43 PM
Layout-Sheet Name: P-302
Filename: P:\60343972\900-WORK\910 CAD\20-SHEETS\PROCESS\60343972-P-302.DWG



PRIMARY SEDIMENTATION TANK 3
PS COLLECTION MECHANISM 3C

EQUIP. NO.: SC-213C
SPEC: N/A
TYPE: FLIGHT CONVEYOR CHAIN
POWER:

PRIMARY SEDIMENTATION TANK 3
PS COLLECTION MECHANISM 3A & 3B

EQUIP. NO.: SC-213A & SC-213B
SPEC: N/A
TYPE: FLIGHT CONVEYOR CHAIN
POWER: 1 hp

PRIMARY SEDIMENTATION TANK 3
SCUM SKIMMER 3

EQUIP. NO.: SCP-213D
SPEC: 11161
TYPE: TILTING/SLOTTED PIPE
SIZE: 300mm
POWER: 0.5 hp

PRIMARY SEDIMENTATION
TANKS FOA FAN

EQUIP. NO.: F-7200
SPEC: 15821
TYPE: INLINE CENTRIFUGAL
CAPACITY: 2800 CFM
POWER: 3 hp

VERIFY SCALE IF PLAN SHEET IS REDUCED
30 mm

REV	DESCRIPTION	DRN	CHK	DATE (Y/M/D)
1	ISSUED FOR CONSTRUCTION	KSB	LN	2017/03/01
0	ISSUED FOR TENDER	KSB	LN	2016/11/28

DRN BY: KSB
DES BY: MC
CHK BY: LN
APP BY: KM

PREPARED FOR:
REGIONAL DISTRICT OF NANAIMO

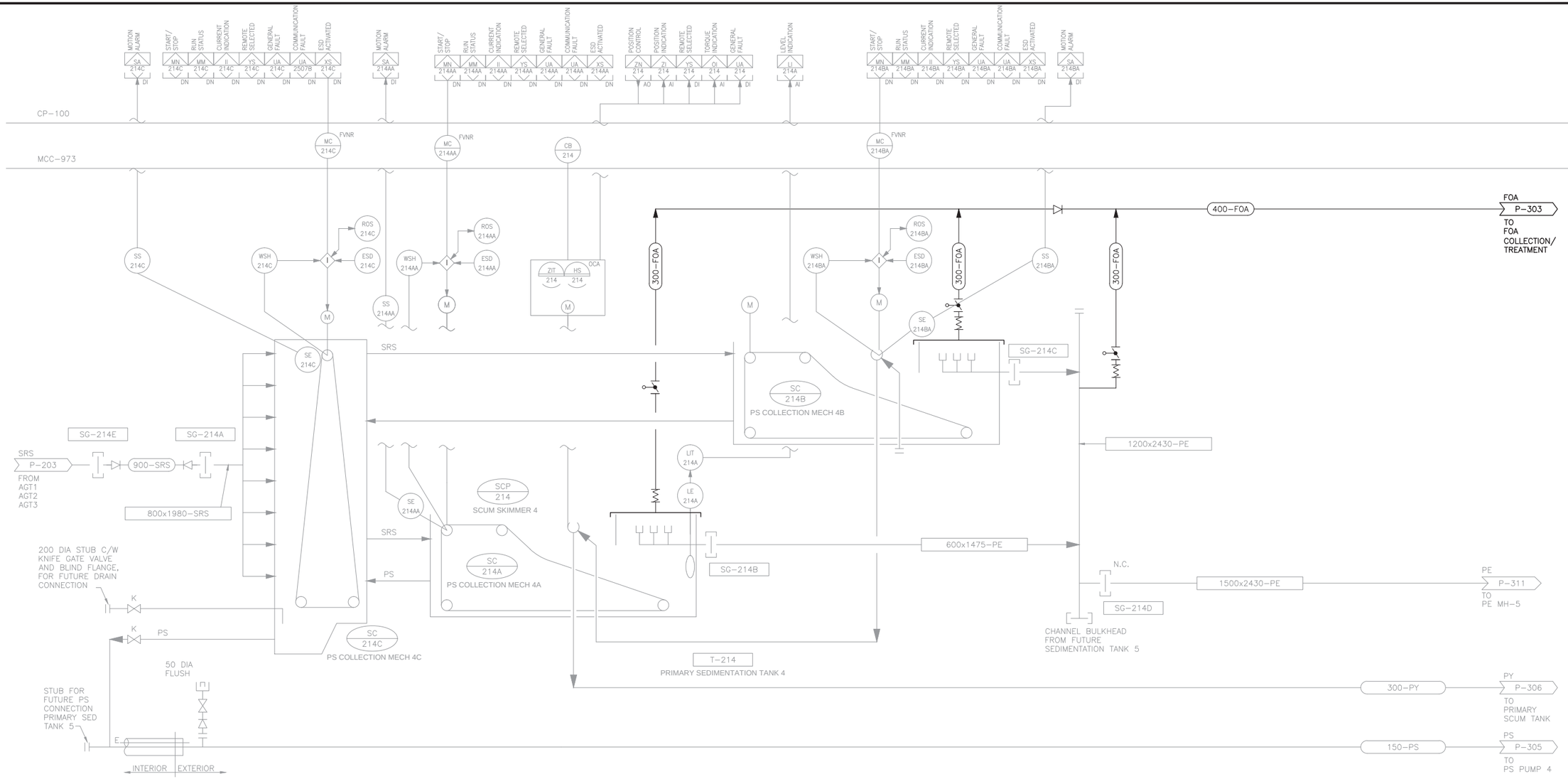
PREPARED BY:
AECOM
4th FLOOR,
3292 PRODUCTION WAY,
BURNABY, B.C., V5A 4R4
604-444-6400

REGIONAL DISTRICT OF NANAIMO
GREATER NANAIMO POLLUTION CONTROL CENTRE
SECONDARY TREATMENT UPGRADE

PROCESS
PRIMARY SEDIMENTATION TANK 3
PROCESS AND INSTRUMENTATION DIAGRAM

PROJECT START DATE (M / Y)
APR./2015
PROJECT NO.
60343972
FILENAME
60343972-P-303.dwg
RDN DRAWING No.
DRAWING No.
P-303

Plotted By: leongp
Plot File Date Created: Mar/01/2017 2:43 PM
Layout-Sheet Name: 60343972-P-303
Filename: P:\60343972\900-WORK\910 CAD\20-SHEETS\PROCESS\60343972-P-303.DWG



Note: Each sludge and cross collector is powered by a separate drive reducer/motor

PRIMARY SEDIMENTATION TANK 4
PS COLLECTION MECHANISM 4C

EQUIP. NO.: SC-214C
SPEC: N/A
TYPE: FLIGHT CONVEYOR CHAIN
POWER: 0.5 hp

PRIMARY SEDIMENTATION TANK 4
PS COLLECTION MECHANISM 4A AND 4B

EQUIP. NO.: SC-214A / SC-214B
SPEC: N/A
TYPE: FLIGHT CONVEYOR CHAIN
POWER: 0.5 hp

PRIMARY SEDIMENTATION TANK 4
SCUM SKIMMER 4

EQUIP. NO.: SCP-214
SPEC: N/A
TYPE: TILTING / SLOTTED PIPE
SIZE: 300mm

VERIFY SCALE IF PLAN SHEET IS REDUCED
30 mm

REV	DESCRIPTION	CHK	DATE (YMD)
1	ISSUED FOR CONSTRUCTION	KSB	2017/03/01
0	ISSUED FOR TENDER	KSB	2016/11/28

DRN BY: KSB
DES BY: MC
CHK BY: LN
APP BY: KM

PREPARED FOR: REGIONAL DISTRICT OF NANAIMO

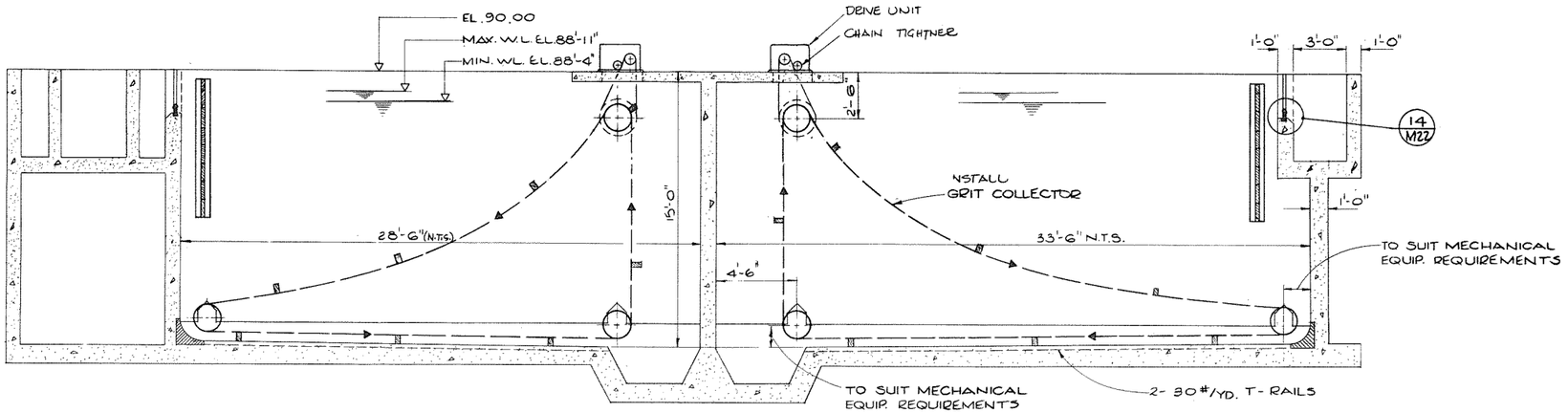
PREPARED BY: AECOM
4th FLOOR, 3292 PRODUCTION WAY, BURNABY, B.C., V5A 4R4
604-444-6400

REGIONAL DISTRICT OF NANAIMO
GREATER NANAIMO POLLUTION CONTROL CENTRE
SECONDARY TREATMENT UPGRADE

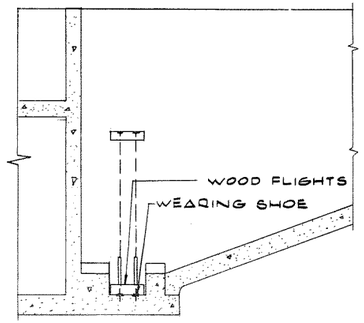
PROCESS
PRIMARY SEDIMENTATION TANK 4
PROCESS AND INSTRUMENTATION DIAGRAM

PROJECT START DATE (M / Y): APR./2015
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DRAWING No.: **P-304**

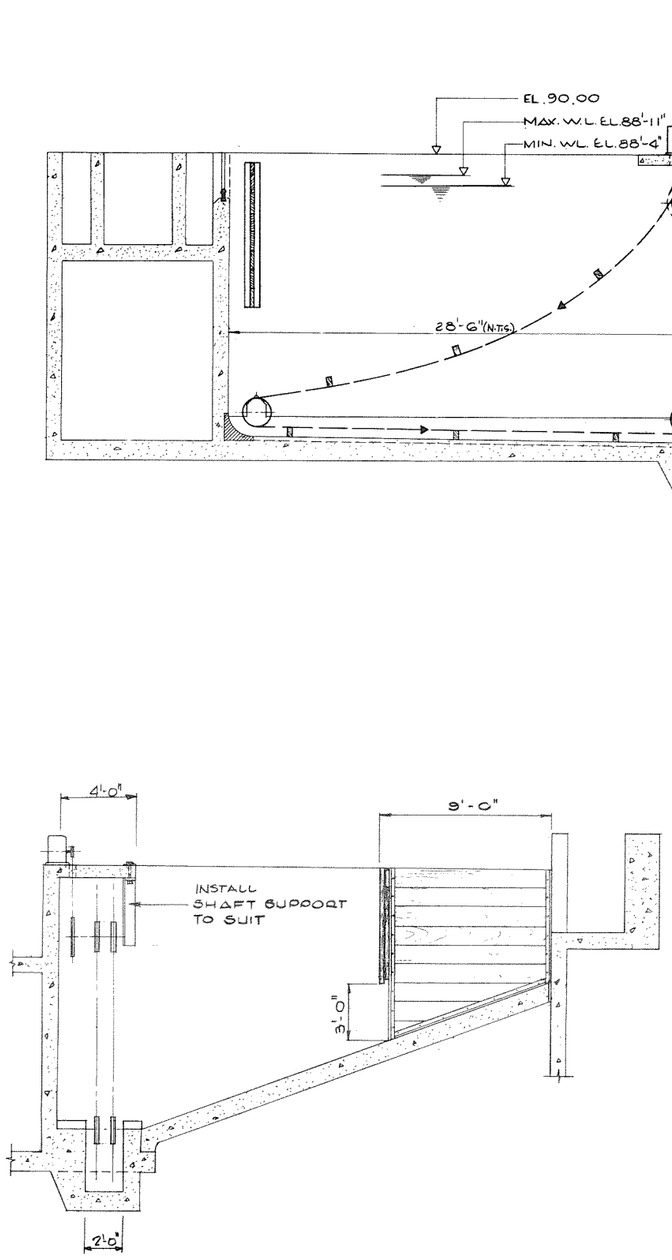
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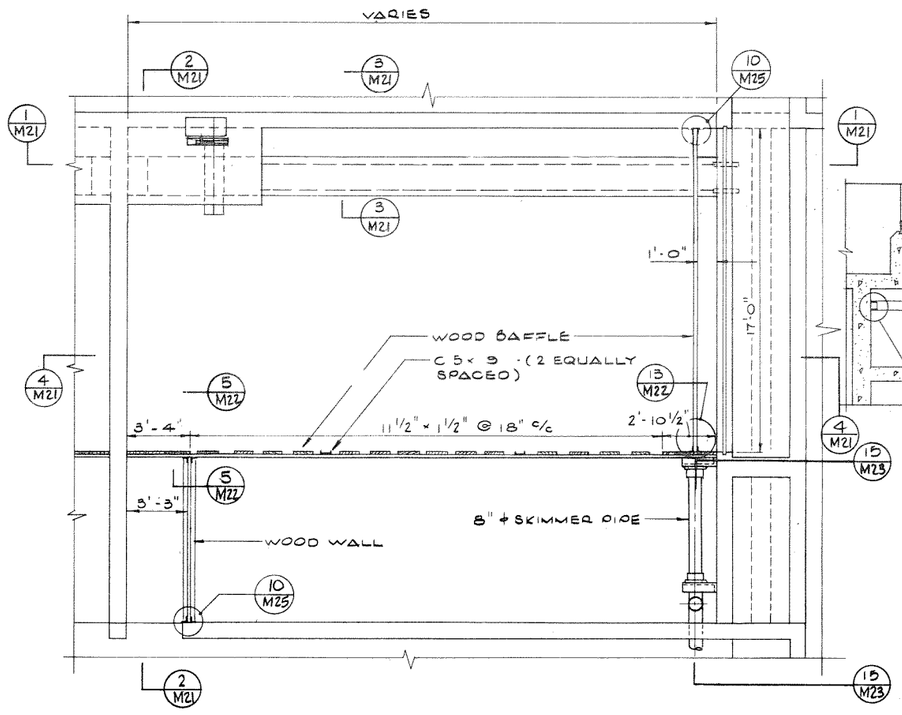
SECTION 1/M21



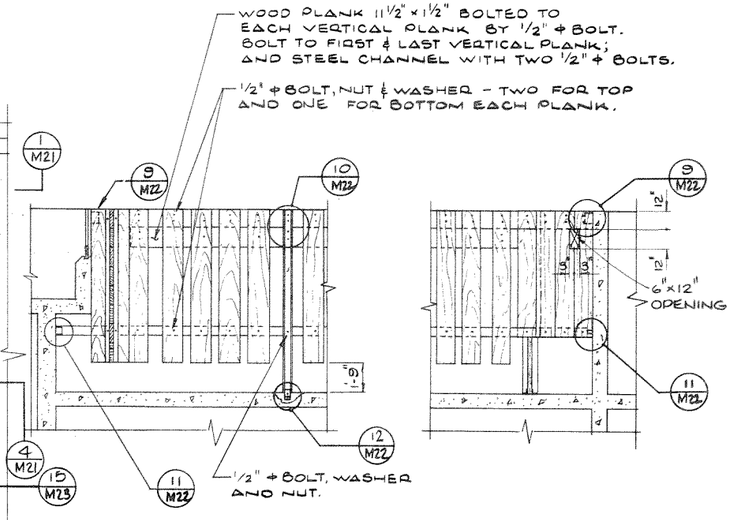
SECTION 3/M21



SECTION 2/M21



TYPICAL PLAN



SECTION 4/M21

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
B. L. WALKER

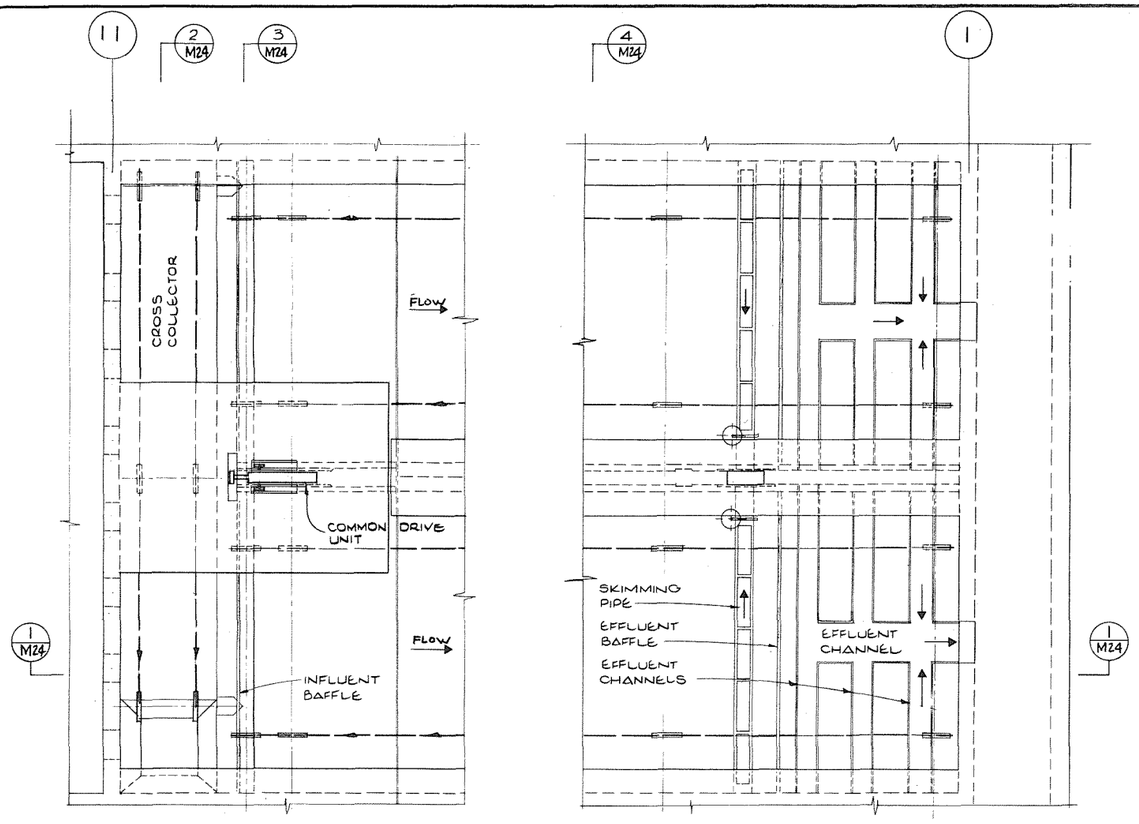
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DESIGNED J.S. B.W.
DRAWN T.T.F. & D.B.C.
CHECKED B.W. W.M.

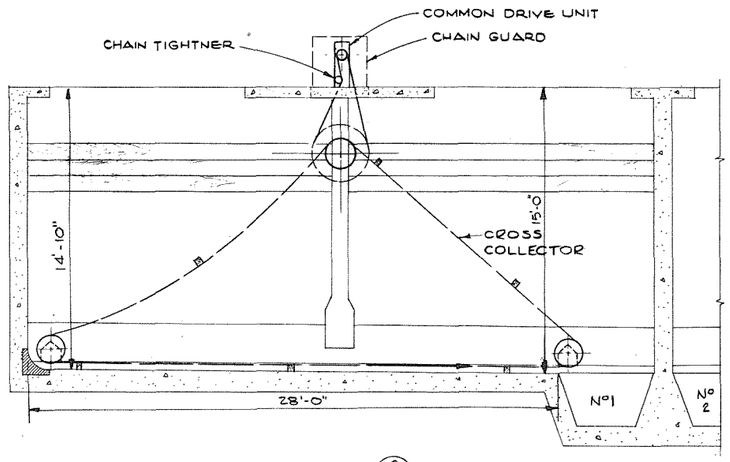
DAYTON & KNIGHT LTD.
CONSULTING ENGINEERS
Sept/ 1923

NANAIMO REGIONAL SEWER AUTHORITY
GREATER NANAIMO WATER POLLUTION CONTROL CENTRE
GRIT TANKS - PLAN VIEW, GRIT COLLECTORS

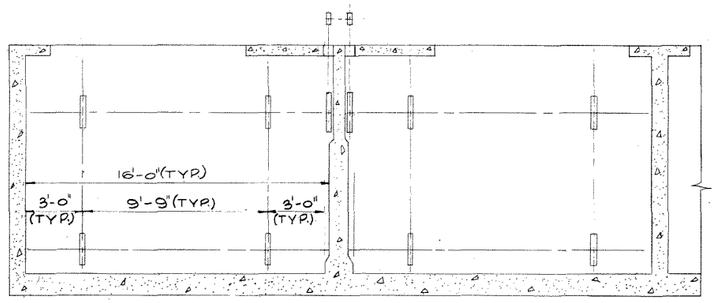
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DRAWING No. 69.7.2
SHEET M 21 OF 31 ISSUE A
THIS DRAWING REDUCED TO HALF SCALE



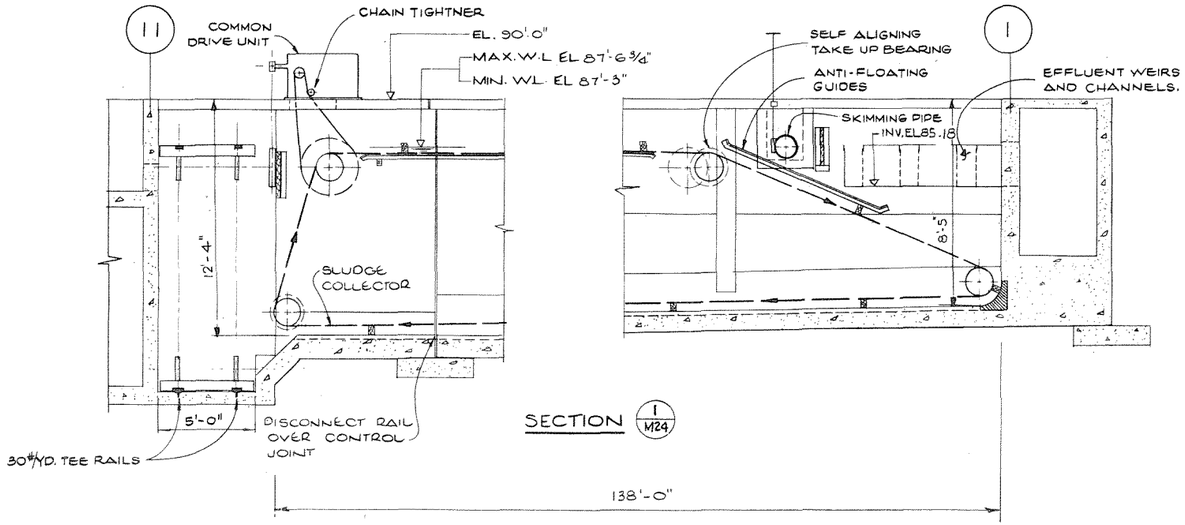
TYPICAL PLAN
SEDIMENTATION TANK No 1



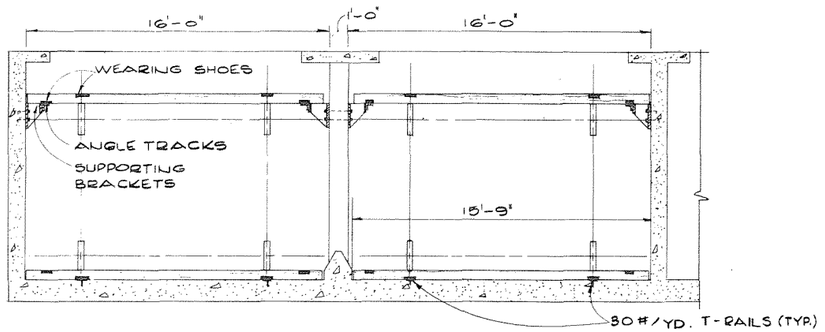
SECTION 2 M24



SECTION 3 M24



SECTION 1 M24



SECTION 4 M24

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
B. L. WALKER

REVISIONS	ISSUE	DATE	DR'N	CH'D	APP'D	DESCRIPTION	ISSUE	DATE	DR'N	CH'D	APP'D	DESCRIPTION

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DRAWN T.T.F.
CHECKED B.W. MJ

DAYTON & KNIGHT LTD.
CONSULTING ENGINEERS
MJ Dayton Sept 1 1972

NANAIMO REGIONAL SEWER AUTHORITY
GREATER NANAIMO WATER POLLUTION CONTROL CENTRE
SEDIMENTATION TANKS - PLAN VIEW, SLUDGE COLLECTORS

SCALE: 1/4"=1'-0"
DRAWING No. 69.7.2
SHEET M 24 OF 31 ISSUE A
THIS DRAWING REDUCED TO HALF SCALE

B D E F H K L

10 11 12 13 14 15

CONTROL JOINT

4'-6" (TYP.)

6" 6"

TEMPORARY 6"ø HOLE, INV. FLUSH WITH CHANNEL SLAB

TO SUIT MECHANICAL EQUIP. REQUIREMENTS (TYP.) *

OPENINGS TO SUIT MECHANICAL EQUIP. REQUIREMENTS (TYP.)*

1/4" / FOOT (TYP.)

WALL TO WALL 144'-0"

14'-6"

11'-0"

16'-4"

7'-6"

6'-0"

GATE No. 4 GATE No. 13 GATE No. 14 GATE No. 5 GATE No. 6

TYPICAL FOR CHLORINE CONTACT TANK ONLY

1'-0" 8" 12" 8"

1/8" / FT.

GR. EL. 85'-2½" (TYP.)

GRATING (TYP.)

10" OPENING

2'-0" TYP.

7'-0"

OPENING TO SUIT* MECH. EQUIPMENT

CONTROL JOINT

GATE No. 25 GATE No. 26

GATE No. 23 GATE No. 24

FOR STAIRWAY SEE DETAIL E M30

GR. EL. 85'-2½"

CONTROL JOINT

GATE No. 3 GATE No. 2 GATE No. 1

KEY, BITUMINUS PAINT AND IGAS JOINT FILLER ALL AROUND (TYP.)

CONTROL JOINT

1" JOINT FILLER

12" x 18" COLUMNS

COLUMN 12" x 18"

SEE DETAIL D M30

FOR STAIRWAY SEE DETAIL F M30

GR. EL. 85'-2½"

43'-10"

31'-4"

10'-11"

1'-0" 2'-0"

6" 6" 8'-0" 6" 6" 28'-6" 6" 6" 31'-0" 6" 6" 31'-0" 6" 6"

4'-6" 4'-6" 29'-6" 10'-4" 12'-10" 8'-10" 6" 2'-0" 2'-0" 6" 32'-0"

A B C 6 7 8 E E' F' G H J L

NOTES:

1. FOR GRIT AND SEDIMENTATION TANK ROOF CONCRETE OUTLINE SEE ARCHITECTURAL DWG'S.
2. ALL ROOF COLUMNS SHALL BE 12" x 12" UNLESS OTHERWISE NOTED.
3. FOR OPENING AT CONCRETE STRUCTURE SEE H&V, M, E DWG'S.

LEGEND

- TEMPORARY CONC. WALLS.
- * - VERIFY DIMENSIONS WITH CORPORATION PRIOR TO POURING CONCRETE.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA J. SKLENAR

REVISIONS	ISSUE	DATE	DR'N	CH'D	APP'D	DESCRIPTION

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DAYTON & KNIGHT LTD.
CONSULTING ENGINEERS
Dayton Sept/1973

NANAIMO REGIONAL SEWER AUTHORITY
GREATER NANAIMO WATER POLLUTION CONTROL CENTRE
GRIT AND SEDIMENTATION TANKS - CONCRETE OUTLINE

SCALE: 1/4" = 1'-0"
DRAWING No. 69.7.2.
SHEET SL7 OF 68 ISSUE A
THIS DRAWING REDUCED TO HALF SCALE

B D E F H K L

3'-6" 8'-6"(TYP.) 17'-0"(TYP.) 8'-6"(TYP.) 3'-6"

INV. EL. 72-5
8"ϕ A.C. CAP
4"
CLEANOUT
EL. 74'-9½"
EL. 74'-11½" (TYP.)
EL. 74'-9½" (TYP.)
8"ϕ A.C. CL. 3300 (TYP.)
4"ϕ N.C.P. PERFORATED PIPE (TYP.)
4"ϕ N.C.P. 45° BEND (TYP.)
8"×4" A.C. 45° WYE (TYP.)
CLEANOUT
INV. EL. 72'-1"
11'-0"
2" 10" 6"
BITUMINOUS PAINT & IGAS JOINT SEALER ALL AROUND
EL. 75'-0"
EL. 74'-9½"
EL. 74'-11½" (TYP.)
EL. 74'-9½" (TYP.)
IGAS JOINT SEALER ALL AROUND
BITUMINUS PAINT ALL AROUND
11 12

3'-0" 11'-6" 15'-6" 7'-0" 11'-6" 17'-0" 5'-6" 5'-6"

EL. 75'-0"
EL. 74'-11½"
EL. 74'-9½"
8'-0"
1'-0"
1'-0"
CONTROL JOINT
4'-4"
6" 6"
42"ϕ R.C. PIPE
2'-2"
8" 1'-10" 1'-10" 8"
CLEANOUT (TYP.)
C.O. C.O. C.O.
A 15
A C

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA J. SKLENAR

REVISIONS	ISSUE	DATE	DR'N	CH'D	APP'D	DESCRIPTION	ISSUE	DATE	DR'N	CH'D	APP'D	DESCRIPTION

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DRAWN A.S.
CHECKED MD

DAYTON & KNIGHT LTD.
CONSULTING ENGINEERS
MD Dayton Sept/ 1973

NANAIMO REGIONAL SEWER AUTHORITY
GREATER NANAIMO WATER POLLUTION CONTROL CENTRE
GRIT AND SEDIMENTATION TANKS - CONCRETE OUTLINE

SCALE: 1/4" = 1'-0"
DRAWING No. 69.7.2
SHEET 518 OF 68 ISSUE A
THIS DRAWING REDUCED TO HALF SCALE

CLEANOUT (TYP)

B D E F H K L

17'-0" 16'-1" (TYP)

6" 6" 5" 5" 6" 6" 5" 5" 6" 6" 5" 5" 6" 6"

CONCRETE FOR FUTURE REMOVAL UNDERNEATH SLAB.

18/S22

CONCRETE FOR FUTURE REMOVAL UNDERNEATH SLAB

GALV. IRON RUNGS (TYP).

F.S.

2'x2' SQ OPENINGS

SUPPORTS FOR MIXER

1'-0"

1'-0"

SLUICE GATE H/M30

7/S22

10"

5'-2"

4'-10"

6"

1 2 8 9 10

GATE No 7

GATE No 8

GATE No 9

GATE No 10

GATE No 11

GATE No 12

GRATING (TYP.)

36" ϕ SLUICE GATE

12"x18" COLUMN (TYP.)

14'-6"

3/S21

12"x18" COLUMN (TYPICAL)

12"x12" COLUMN (TYPICAL)

12"x12" COLUMN (TYPICAL)

4" ϕ NCR PERFORATED PIPE (TYP.)

12" SQ. (TYP.)

3/S21

1/S20

CONTROL JOINT

9"

14'-6"

14'-1"

7@ 14'-6" = WALL TO WALL 144'-0"

LEGEND

→ - FINISHED FLOOR SLOPE 1/4"/FOOT.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA J. SKLENAR

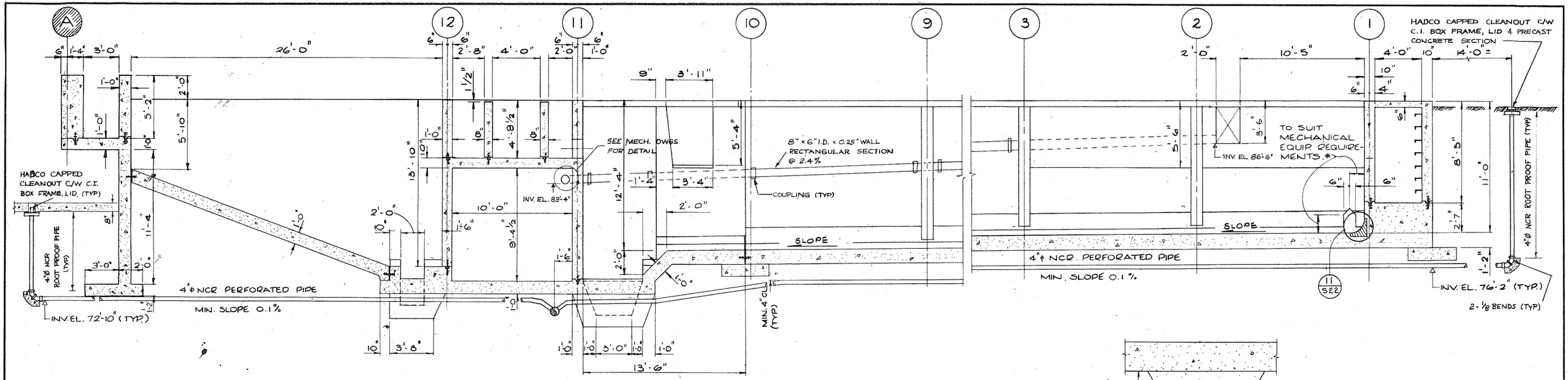
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DESIGNED U.S.
DRAWN D.B.C & A.S.
CHECKED MD

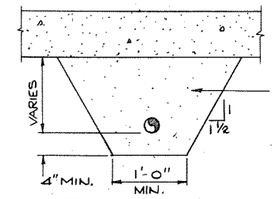
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Sept/ 1973

NANAIMO REGIONAL SEWER AUTHORITY
GREATER NANAIMO WATER POLLUTION CONTROL CENTRE
SEDIMENTATION TANKS - CONCRETE OUTLINE

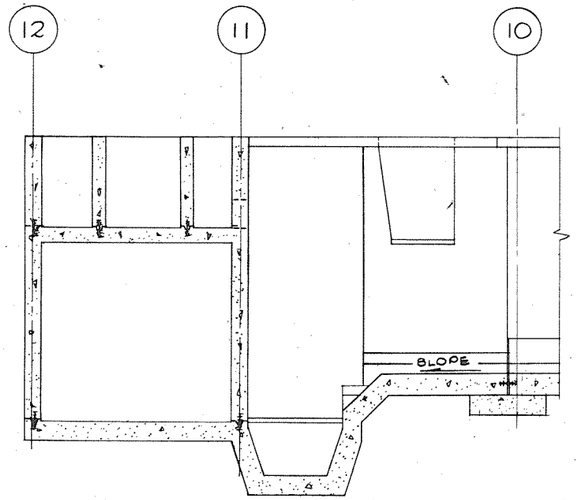
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SHEET 519 OF 68 ISSUE A
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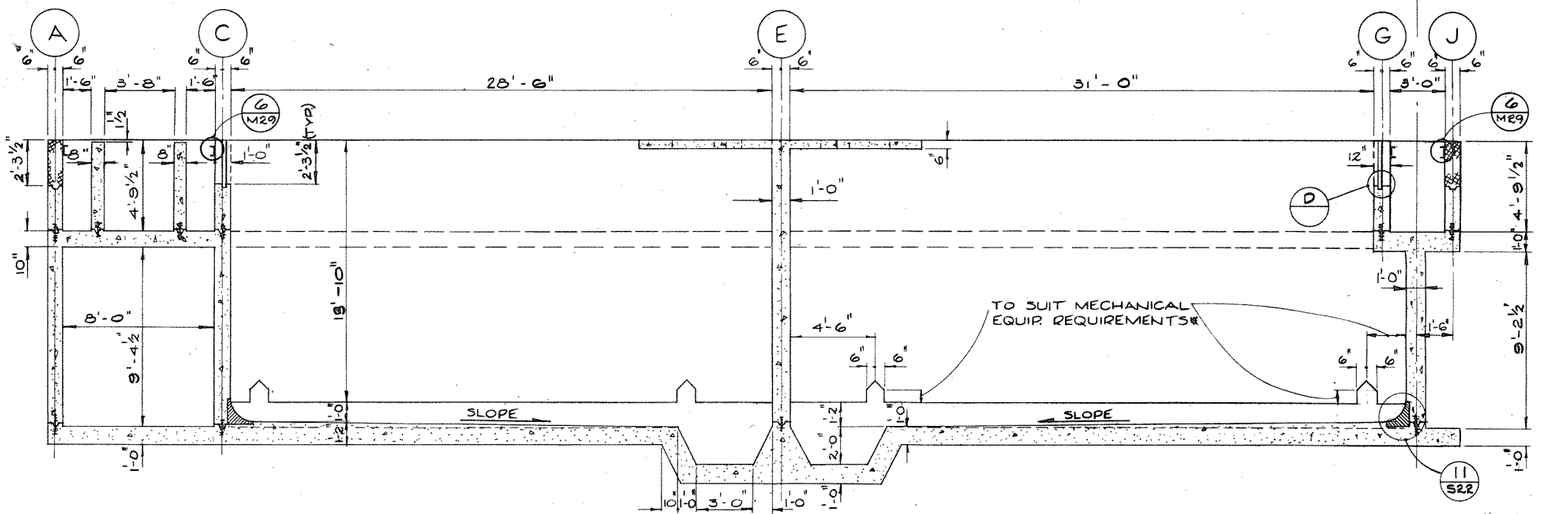
SECTION (1/S19)



FOUNDATION DRAIN DETAIL
N.T.S.



SECTION (5/S17)



SECTION (4/S17)

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA J. SKLENAR

* VERIFY DIMENSIONS WITH CORPORATION PRIOR TO POURING CONCRETE

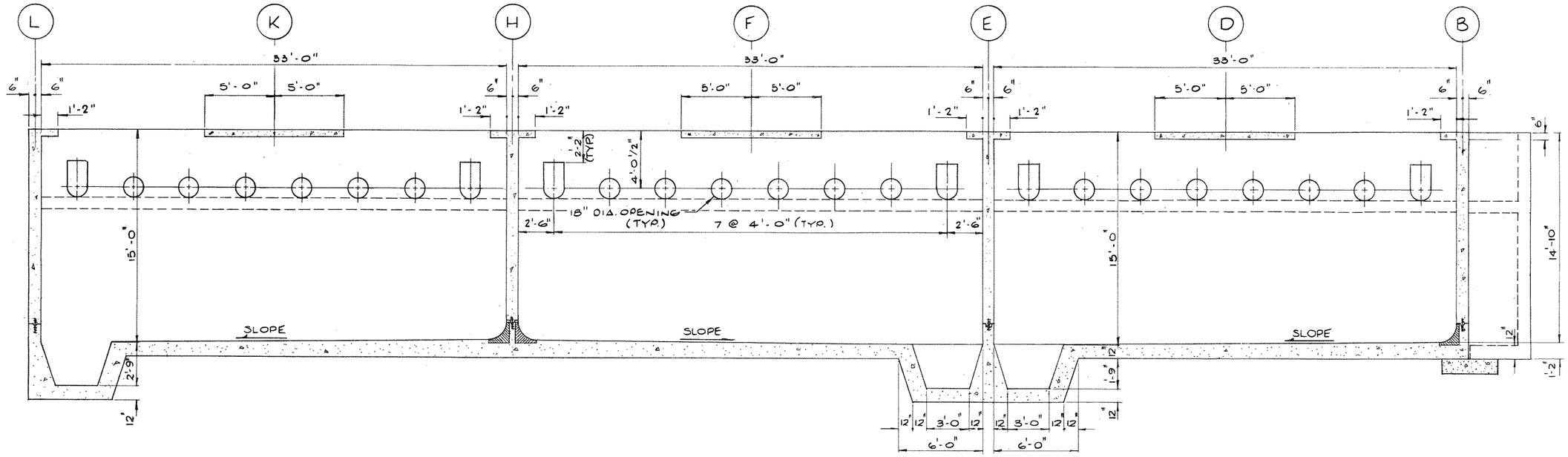
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DRAWN D.B.C. & A.S.
CHECKED N.B.

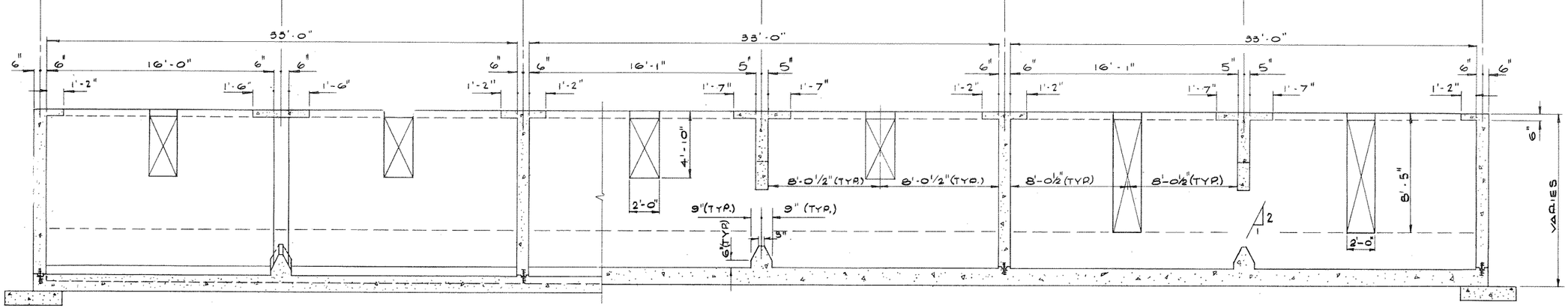
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CONSULTING ENGINEERS
Sept/ 1973

NANAIMO REGIONAL SEWER AUTHORITY
GREATER NANAIMO WATER POLLUTION CONTROL CENTRE
GRIT AND SEDIMENTATION TANKS - CONCRETE OUTLINE

SCALE: 1/2" = 1'-0"
DRAWING No. 69.7.2
SHEET S20 OF 68 ISSUE A
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SECTION (2/S17)



SECTION (3/S19)

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — J. SKLENAR

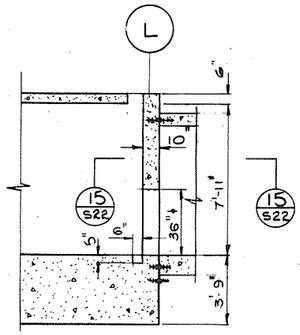
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DESIGNED J.S.
DRAWN O.CURTISS & A.S
CHECKED N.B.

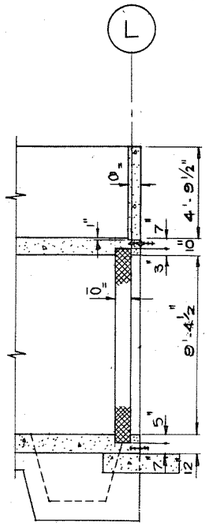
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CONSULTING ENGINEERS
Sept 1 1973

NANAIMO REGIONAL SEWER AUTHORITY
GREATER NANAIMO WATER POLLUTION CONTROL CENTRE
GRIT AND SEDIMENTATION TANKS - CONCRETE OUTLINE

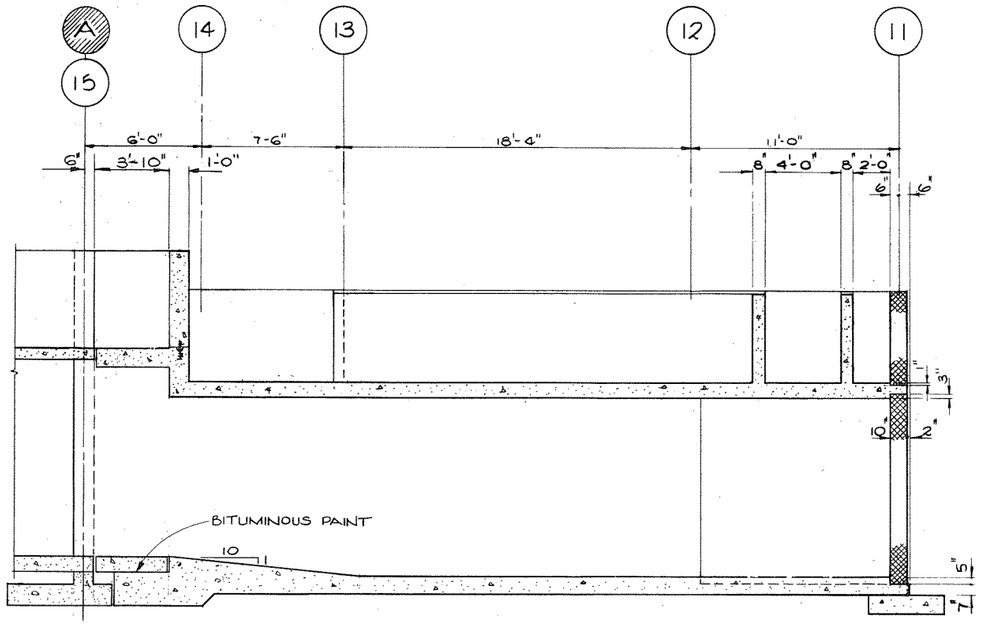
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DRAWING No.
SHEET S21 OF 68 ISSUE A
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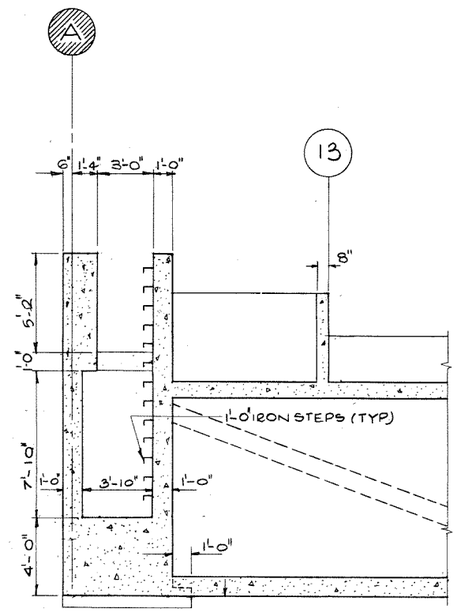
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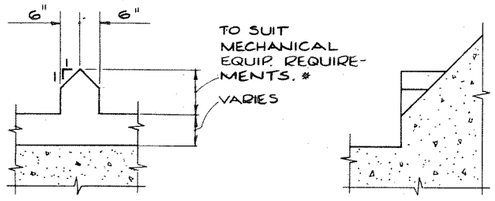
SECTION (9/517)
SCALE: 1/4" = 1'-0"



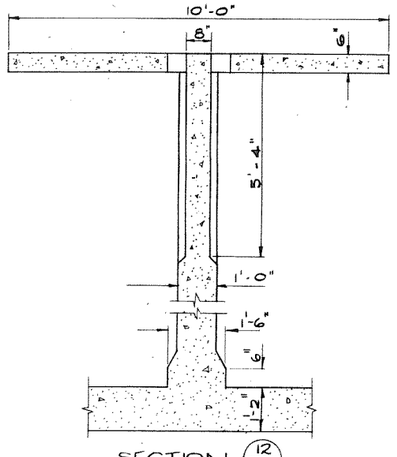
SECTION (6/517)
SCALE: 1/4" = 1'-0"



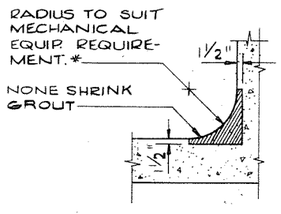
SECTION (8/517)
SCALE: 1/4" = 1'-0"



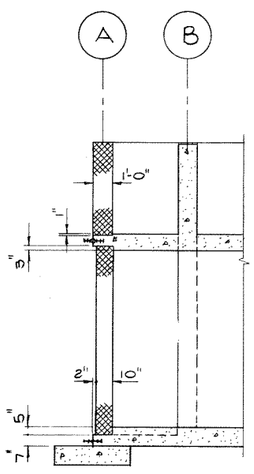
DETAIL (10/517)
SCALE: 1/2" = 1'-0"



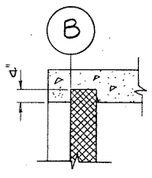
SECTION (12/517)
SCALE: 1/2" = 1'-0"



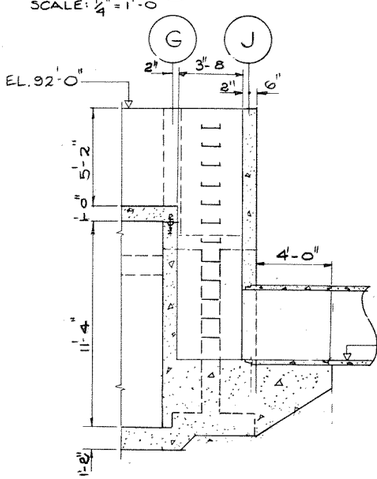
DETAIL (11/520)
SCALE: 1/2" = 1'-0"



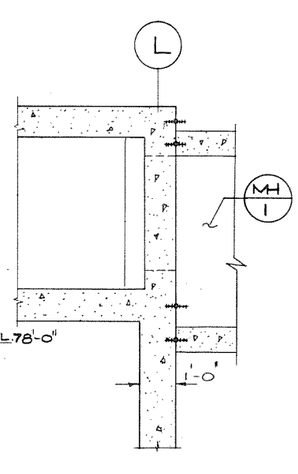
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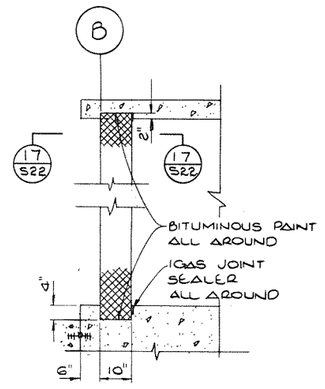
SECTION (17/522)
SCALE 1/2" = 1'-0"



SECTION (14/517)
SCALE: 1/4" = 1'-0"



SECTION (15/522)
SCALE: 1/2" = 1'-0"



SECTION (18/519)
SCALE 1/2" = 1'-0"

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
J. SKLENAR

* VERIFY DIMENSIONS WITH CORPORATION PRIOR TO POURING CONCRETE.

REVISIONS	ISSUE	DATE	DR'N	CH'D	APP'D	DESCRIPTION	ISSUE	DATE	DR'N	CH'D	APP'D	DESCRIPTION

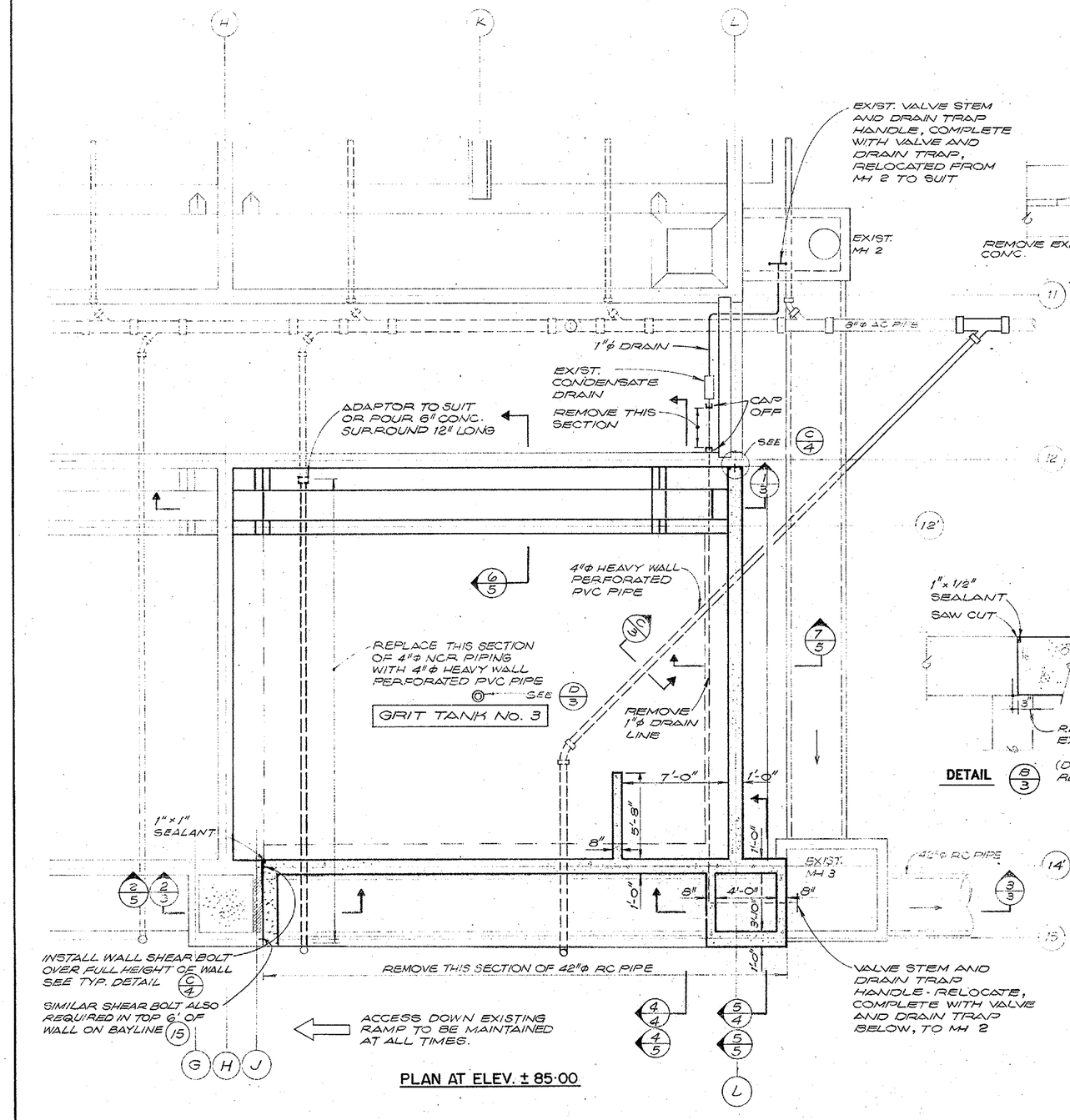
DESIGNED J.S.
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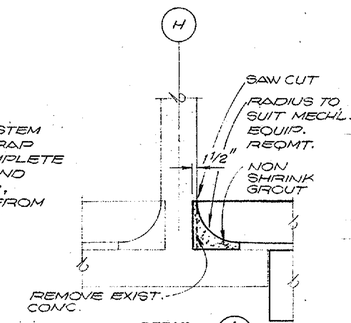
DAYTON & KNIGHT LTD.
CONSULTING ENGINEERS
Dayton Sept. 1973

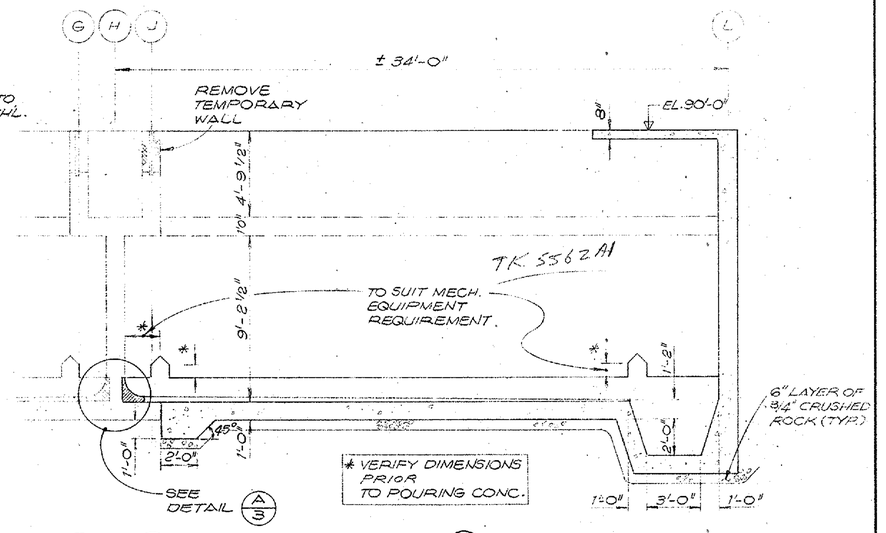
NANAIMO REGIONAL SEWER AUTHORITY
GREATER NANAIMO WATER POLLUTION CONTROL CENTRE
GRIT AND SEDIMENTATION TANKS - CONCRETE OUTLINE

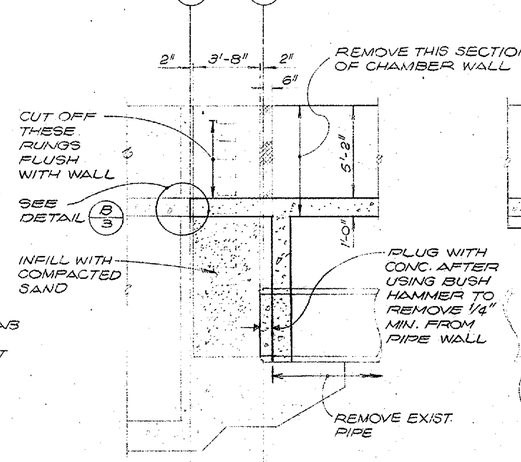
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SHEET 522 OF 68 ISSUE A
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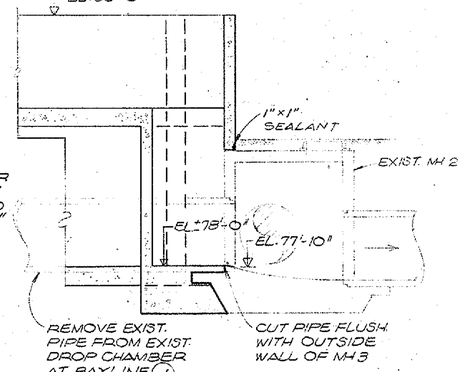
N-INT-211

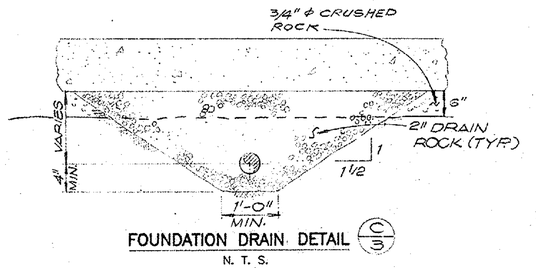


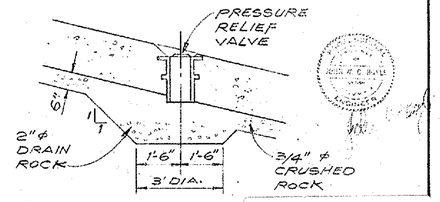












N-INT-211

REVISIONS	ISSUE	DATE	DR'N	CH'D	APP'D	DESCRIPTION	ISSUE	DATE	DR'N	CH'D	APP'D	DESCRIPTION

W.S.I. 112205

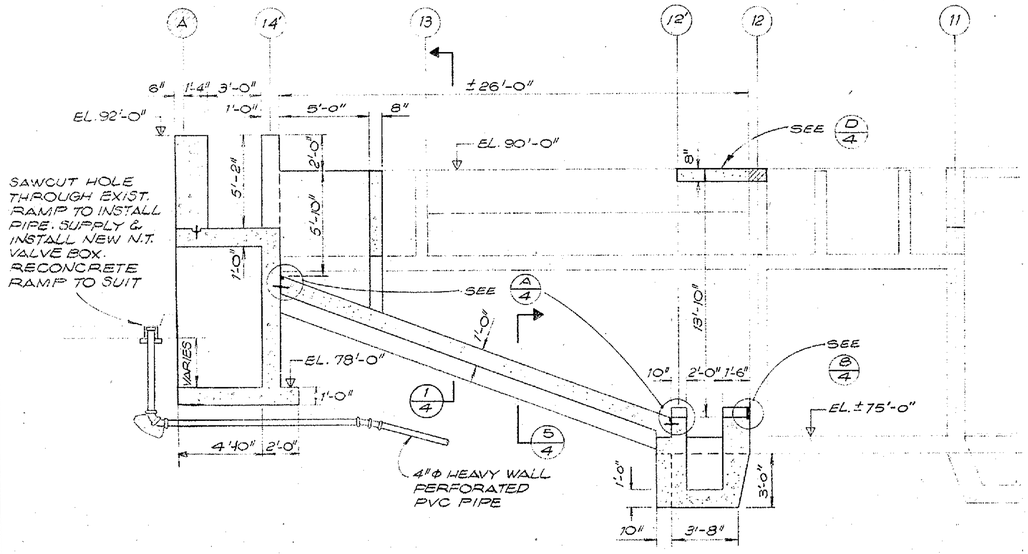
DESIGNED JWCB
DRAWN VB
CHECKED BW BW

DAYTON & KNIGHT LTD.
CONSULTING ENGINEERS
B Welkin 4 July 89

REGIONAL DISTRICT OF NANAIMO
GREATER NANAIMO W.P.C.C.
CONSTRUCTION OF STAGE II EXPANSION – PHASE II
GRIT TANK No.3 DETAILS

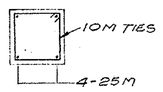
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DRAWING No. 92.72.4
SHEET 3 OF 21 ISSUE A

N-INT-212



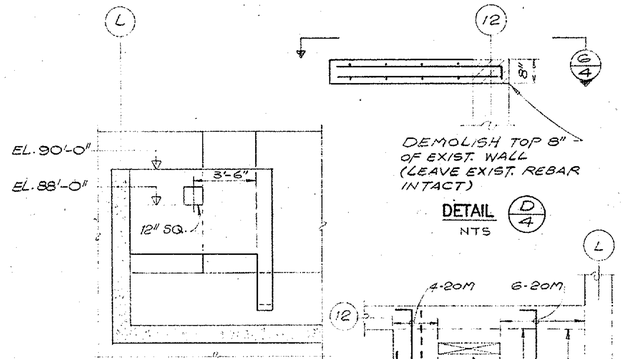
SECTION 4/3

1/4" = 1'-0"

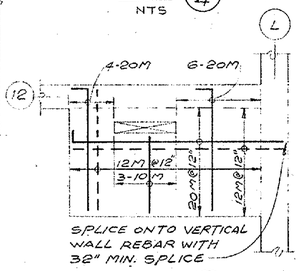


SECTION 2/4

3/4" = 1'-0"

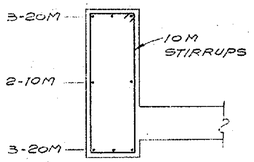


SECTION 1/4



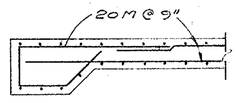
SECTION 6/4

NTS



SECTION 3/4

3/4" = 1'-0"



SECTION 5/4

GENERAL STRUCTURAL NOTES

CONCRETE

1. APPLICABLE SPECIFICATIONS AND CODES: CONCRETE CONSTRUCTION SHALL CONFORM TO CSA, CAN.3-A23.1-M77 AND CAN.3-A23.2-M77.

2. REINFORCING STEEL DETAILS: ALL DETAILING, FABRICATING AND ERECTION OF STEEL REINFORCING BARS, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH THE "METRIC SUPPLEMENT" IN CONJUNCTION WITH THE "REINFORCING STEEL MANUAL OF STANDARD PRACTICE" AS AVAILABLE FROM THE WESTERN REINFORCING CONTRACTORS ASSOCIATION.

3. MINIMUM REINFORCEMENT: CONCRETE CONSTRUCTION SHALL BE REINFORCED CONCRETE EXCEPT WHERE PLAIN CONCRETE (P/C) IS SPECIFIED ON THE DRAWINGS, IN WHICH CASE NO REINFORCEMENT SHALL BE USED. CONCRETE THAT IS NOT DESIGNATED P/C AND HAS NO REINFORCEMENT INDICATED SHALL BE REINFORCED ACCORDING TO THE FOLLOWING SCHEDULES:

A) STEEL FOR WALLS AND SLABS

REINFORCEMENT EACH WAY

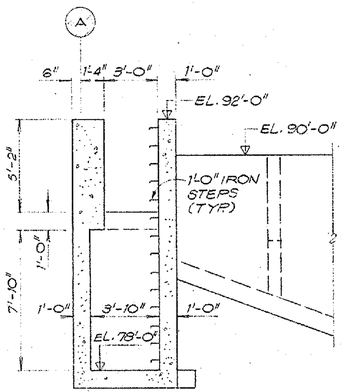
THICKNESS	SIZE	SPACING	POSITION
6	10M	12 C/C	ON ℄
8	15M	12 C/C	ON ℄
10	15M	12 C/C	EF
12	15M	12 C/C	EF
14	15M	12 C/C	EF
16	20M	12 C/C	EF
18	20M	12 C/C	EF
20	20M	12 C/C	EF

MASS CONCRETE SHALL BE REINFORCED WITH 15M BARS AT 12" MINIMUM IN ALL FACES.

B) 10M @ 18" SHALL BE USED AS TRANSVERSE TIES IF NO OTHER REINFORCING IS NOTED.

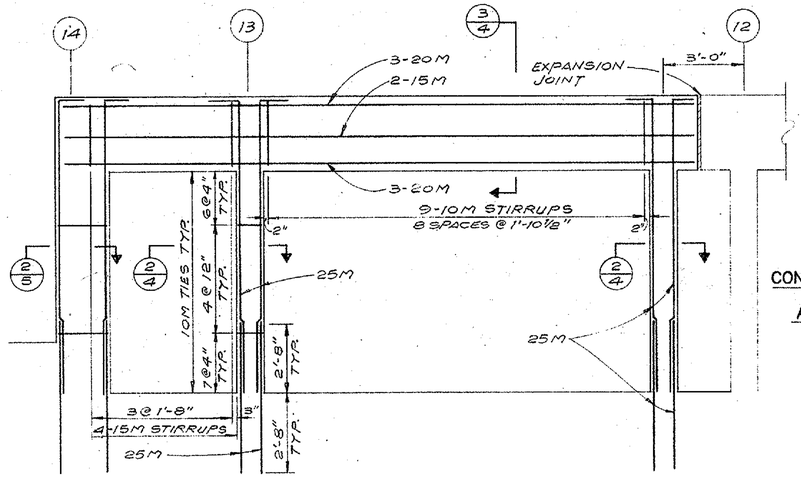
4. CONCRETE COVER: CONCRETE COVER OF REINFORCING BARS, IF NOT SPECIFIED ON THE DRAWINGS, SHALL BE AS FOLLOWS OR SHALL BE EQUAL TO THE DIAMETER OF THE MAIN REINFORCING BAR IT COVERS, WHICHEVER IS LARGER:

	CONDITION	SPECIFIED COVER (inches)
A)	CONCRETE CAST AGAINST GROUND	3
B)	CONCRETE EXPOSED TO EARTH, LIQUIDS OR WEATHER	
	i 20M BARS OR LARGER	2
	ii 10M AND 15M BARS	1½
C)	CONCRETE SLABS OR WALLS NOT EXPOSED TO EARTH, LIQUIDS OR WEATHER	¾
D)	CONCRETE BEAMS OR COLUMNS	2



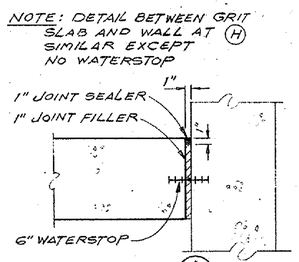
SECTION 5/3

1/4" = 1'-0"



BEAM AND COLUMNS AT LINE (L)

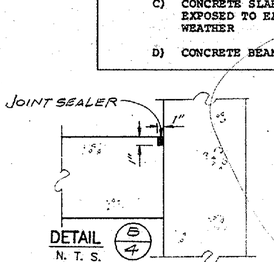
3/8" = 1'-0"



DETAIL A/4

N. T. S.

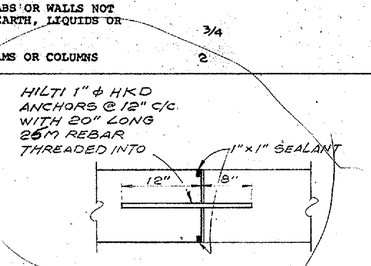
CONTROL JOINT BETWEEN GRIT TANK BOTTOM SLAB AND WALLS AT BAYLINE 14' 12' & L



DETAIL B/4

N. T. S.

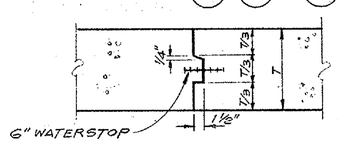
CONSTRUCTION JOINT BETWEEN GRIT TANK COLLECTOR TROUGH AND WALLS AT 12 & J



WALL SHEAR BOLT

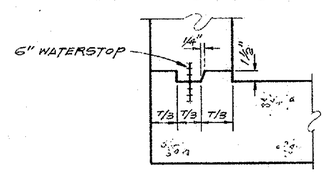
DETAIL C/3 C/5

N. T. S.



VERTICAL CONSTRUCTION JOINT FOR WALLS

N. T. S.



HORIZONTAL CONSTRUCTION JOINT FOR WALL ON SLAB

N. T. S.

N-INT-212

W.S.B. 112225 REVISIONS	ISSUE	DATE	DR'N	CH'D	APP'D	DESCRIPTION	ISSUE	DATE	DR'N	CH'D	APP'D	DESCRIPTION

DESIGNED JWCB
DRAWN VB/R.S.
CHECKED JWK BW

DAYTON & KNIGHT LTD.
CONSULTING ENGINEERS
B Walker 4 July 89

REGIONAL DISTRICT OF NANAIMO
GREATER NANAIMO W.P.C.C.
CONSTRUCTION OF STAGE II EXPANSION – PHASE II
GRIT TANK No.3 DETAILS

SCALE: AS SHOWN S
DRAWING No. 122.72.4
SHEET 4 OF 21 ISSUE A

N-INT-214

CONTROL JOINT

PRIMARY SEDIMENTATION TANK NO.1

PRIMARY SEDIMENTATION TANK NO.2

4'-6" (TYP.)

TO SUIT MECHANICAL EQUIP REQUIREMENTS (TYP) *

EXIST. CHLORINE CONTACT TANK

(NEW PRIMARY SEDIMENTATION TANK NO. 3)

WALL TO WALL 144'-0"

TEMPORARY 6"Ø HOLE, INV. FLUSH WITH CHANNEL SLAB

OPENINGS TO SUIT MECHANICAL EQUIP. REQUIREMENTS (TYP)*

1/8" / FOOT (TYP)

CONC. WALL SEE TYP. DETAIL 4/12

EXIST. MH 2

GATE No 4 — GATE No 13 — GATE No 14 — GATE No 5

GATE NO. C

REMOVE EXIST. TEMPORARY WALL

GATE No 6

PLUG EXIST. DRAIN PIPE WITH CONC.

CORE HOLE THROUGH WALL AND GROUT WITH QUICK SETTING GROUT

1/8" / FT.

GR. EL. 85'-2 1/2" (TYP)

GRATING (TYP.)

10'4 OPENING

12"x12" COLUMN

10"Ø OPENING FOR CLEANOUT - SEE 3/8

OPENING TO SUIT* MECH. EQUIPMENT

EXIST. WEIR WALL

REMOVE THIS TEMPORARY CONC. WALL. LEAVE STEEL BEAM INTACT

GRIT TANK NO. 1

GRIT TANK NO. 2

GRIT TANK NO.3

GATE No25
GATE No26

GATE No.23
GATE No.24

1/8" FT.

GR. EL. 85'-2 1/2

CONTROL JOINT

KEY, BITUMINUS PAINT AND IGAS JOINT FILLER ALL AROUND (TYP.)

CONTROL JOINT

1" JOINT FILLER

GATE No 2
GATE No 1

UTILITY STATION (TYP FOR 2) MOUNTED ON HANDRAIL - SEE DETAIL J/14

REMOVE EXIST. TIMBER FLAP GATE AND RELOCATE TO EAST END OF CHANNEL

2" PROCESS WATER (LOCATE 12" BELOW TOP OF WALL AND SECURE TO WALL WITH PIPE BRACKETS TO SUIT)

NEW GRATING, SEE F/14

2" RWL

REMOVE THIS SECTION OF WALL

12"x12" COLUMNS FOR STEEL STEPS THIS AREA SEE SHEET 14

GATE NO. A
GATE NO. B

EXIST. MH 3

12"x18" COLUMNS

12"x18" COLUMNS

WALKWAY CLADDING AND HANDRAIL DETAILS OMITTED TO PRESERVE CLARITY - SEE SHEET 14

LEGEND

▨ - TEMPORARY CONC. WALLS.

* - VERIFY DIMENSIONS PRIOR TO POURING CONCRETE.

PLAN

ISSUE	DATE	DR'N	CH'D	APP'D	DESCRIPTION

ISSUE	DATE	DR'N	CH'D	APP'D	DESCRIPTION

DESIGNED JWCB
DRAWN VB
CHECKED TWB PW

DAYTON & KNIGHT LTD.
CONSULTING ENGINEERS
RWalton 4 July 93

REGIONAL DISTRICT OF NANAIMO
GREATER NANAIMO W.P.C.C.
CONSTRUCTION OF STAGE II EXPANSION – PHASE II
GRIT TANK No.3 DETAILS

SCALE: 1/4" = 1'-0" M
DRAWING No. 122.72.4
SHEET 6 OF 21 ISSUE A

N-INT-214

APPENDIX B

EXISTING PLANT REFERENCE PHOTOS



1. GNPCC grit tanks, looking southeast – No. 1 Grit Tank in foreground.



2.GNPCC grit tanks, looking east – No. 1 Grit Tank in foreground.



3. GNPCC grit tanks, looking northeast – No. 1 Grit Tank in foreground.



4. GNPCC No. 3 Grit Tank, looking northwest.



5. GNPCC grit tanks, looking northwest – No. 3 Grit Tank in foreground.



6. GNPCC grit tanks, looking southwest – No. 3 Grit Tank in foreground



7. No. 1 Grit Tank primary drive.



8. No. 2 Grit Tank primary drive.



9. No. 3 Grit Tank primary drive.



10. No. 3 Grit Tank primary drive - closeup.



11. No. 2 Grit Tank open for inspection – view looking southeast.



12. No. 2 Grit Tank open for inspection – view looking southwest.



13. No. 2 Grit Tank cross collector, looking west.



14. No. 2 Grit Tank cross collector closeup, east (tailshaft) end.



15. No. 2 Grit Tank cross collector closeup, looking west.



16. No. 2 Grit Tank cross collector closeup, looking west.



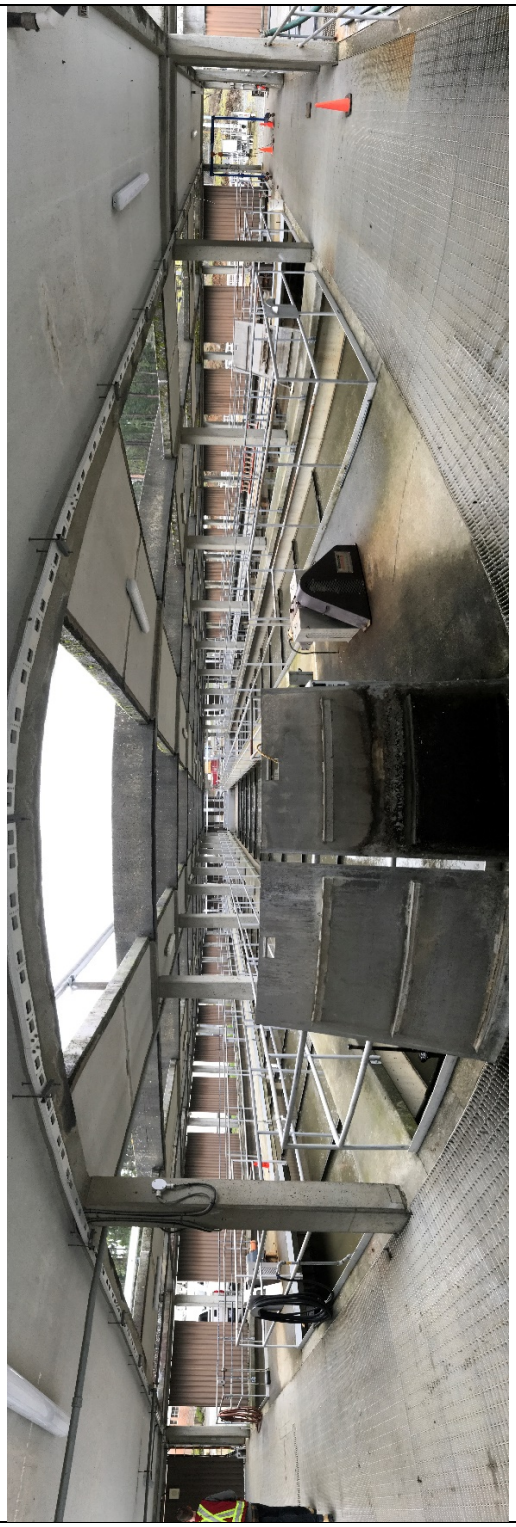
17. No. 2 Grit Tank cross collector closeup, west (headshaft) end.



18. No. 2 Grit Tank cross collector, looking east from headshaft end.



19. No. 2 Grit Tank cross collector, looking east.



1. Panorama view over inlet end of No's 1, 2 & 3 Primary Sedimentation Tanks, looking north (No. 1 at far left, No. 3 at far right).



2. Panorama view over discharge end of No's 1, 2 & 3 Primary Sedimentation Tanks, looking south (No. 1 at far right, No. 3 at far left).



3. View over discharge end of No. 1 Primary Sedimentation Tank looking southeast.



4. View over discharge end of No. 3 Primary Sedimentation Tank looking southwest.



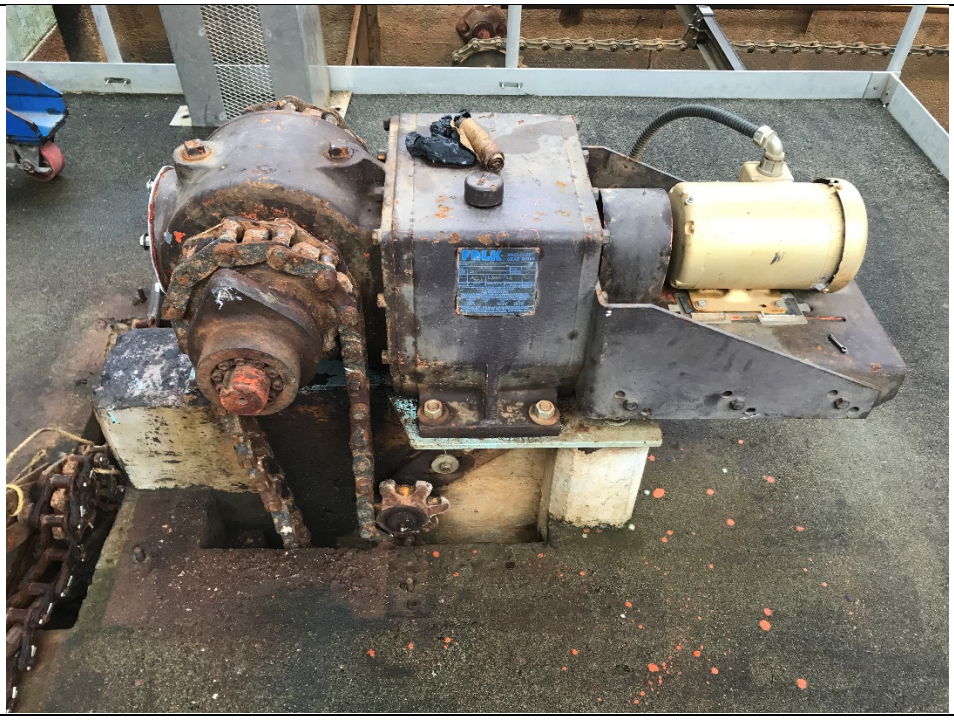
5. No. 1 Primary Sedimentation Tank drive.



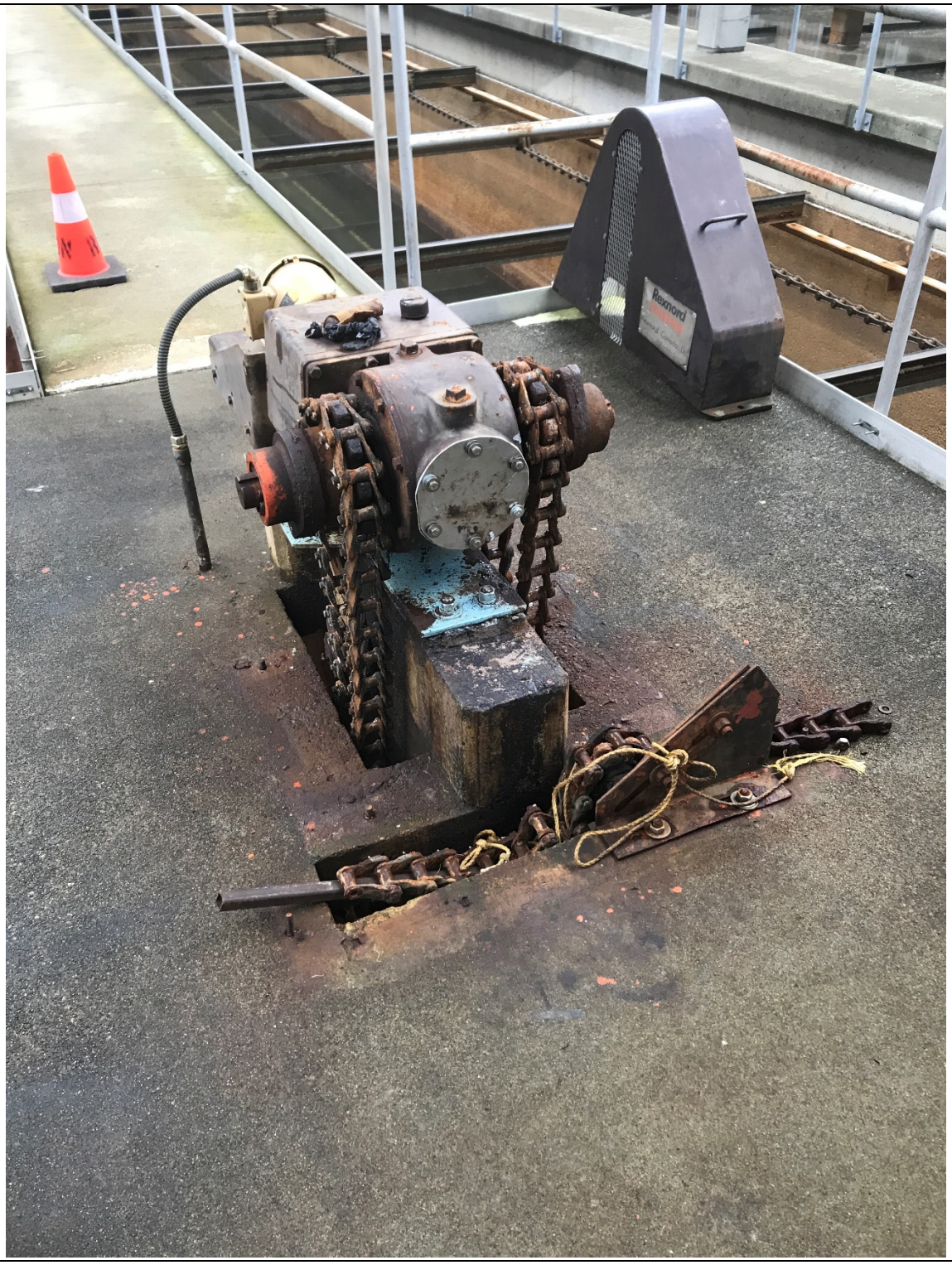
6. No. 1 Primary Sedimentation Tank drive closeup.



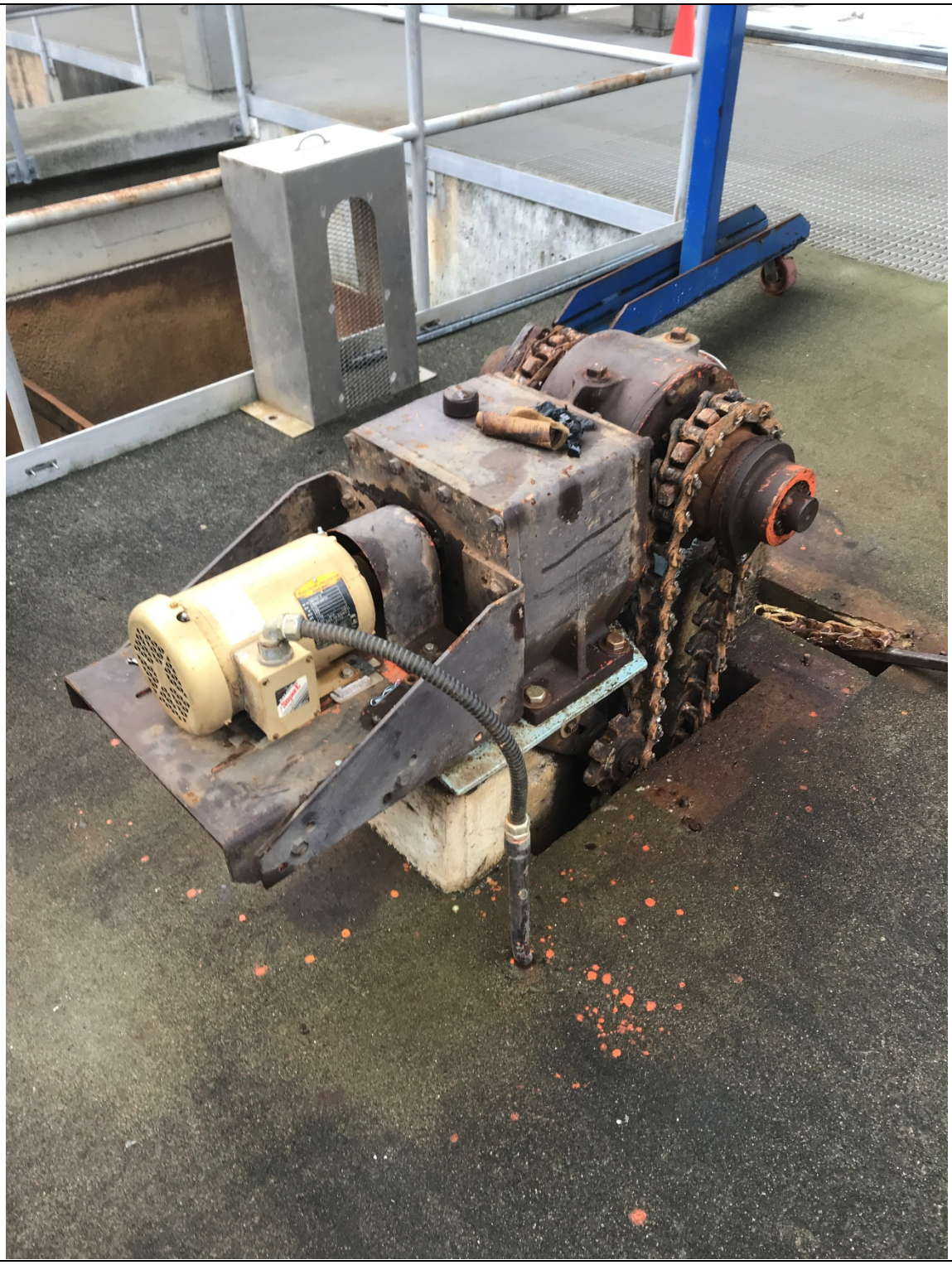
7. No. 2 Primary Sedimentation Tank drive



8. No. 2 Primary Sedimentation Tank drive closeup, looking west (cross collector drive shaft/sprocket removed for maintenance).



9. No. 2 Primary Sedimentation Tank drive closeup, looking northeast (cross collector drive shaft/sprocket removed for maintenance).



10. No. 2 Primary Sedimentation Tank drive closeup, looking southeast (cross collector drive shaft/sprocket removed for maintenance).



11. No. 3 Primary Sedimentation Tank drive.



12. No. 3 Primary Sedimentation Tank drive closeup



13. No. 2 Primary Sedimentation Tank cross collector (east end).



14. No. 2 Primary Sedimentation Tank cross collector (east end).



15. No. 2 Primary Sedimentation Tank cross collector (west end).



16. No. 2 Primary Sedimentation Tank cross collector (west end).



17. No. 2 Primary Sedimentation Tank east longitudinal sludge collector.



18. No. 2 Primary Sedimentation Tank west longitudinal sludge collector.



19. No. 2 Primary Sedimentation Tank east longitudinal sludge collector headshaft end.



20. No. 2 Primary Sedimentation Tank west longitudinal sludge collector headshaft end.



21. No. 2 Primary Sedimentation Tank east longitudinal sludge collector tailshaft end.



22. No. 2 Primary Sedimentation Tank west longitudinal sludge collector tailshaft end.



23. No. 2 Primary Sedimentation Tank east longitudinal sludge collector - tailshaft visible below discharge weir box.



24. No. 2 Primary Sedimentation Tank west longitudinal sludge collector - tailshaft visible below discharge weir box.



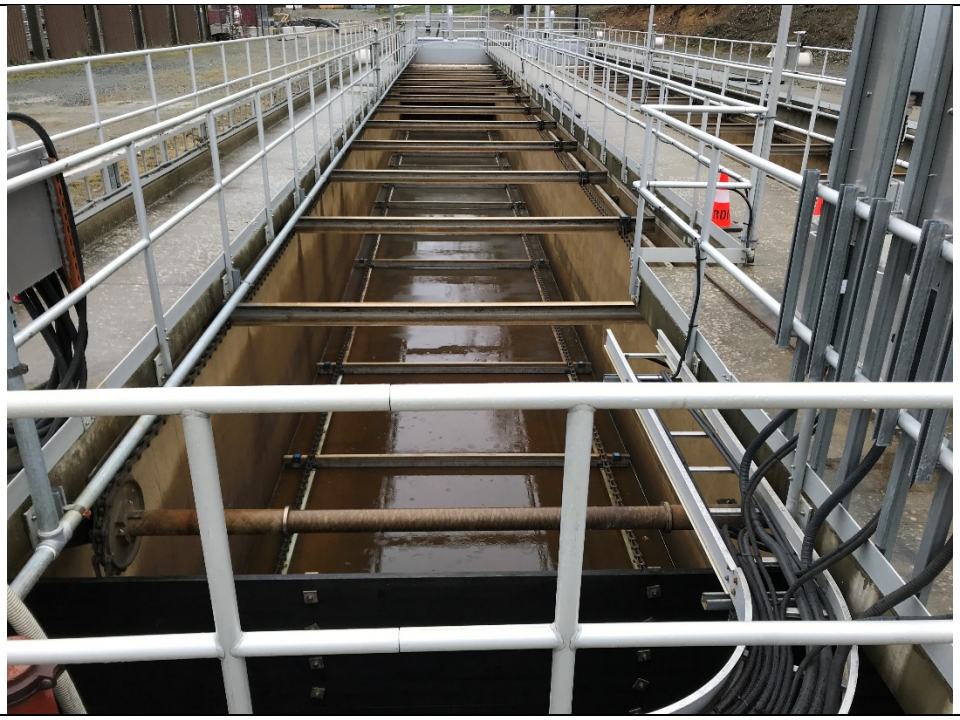
25. No. 4 Primary Sedimentation Tank east longitudinal sludge collector.



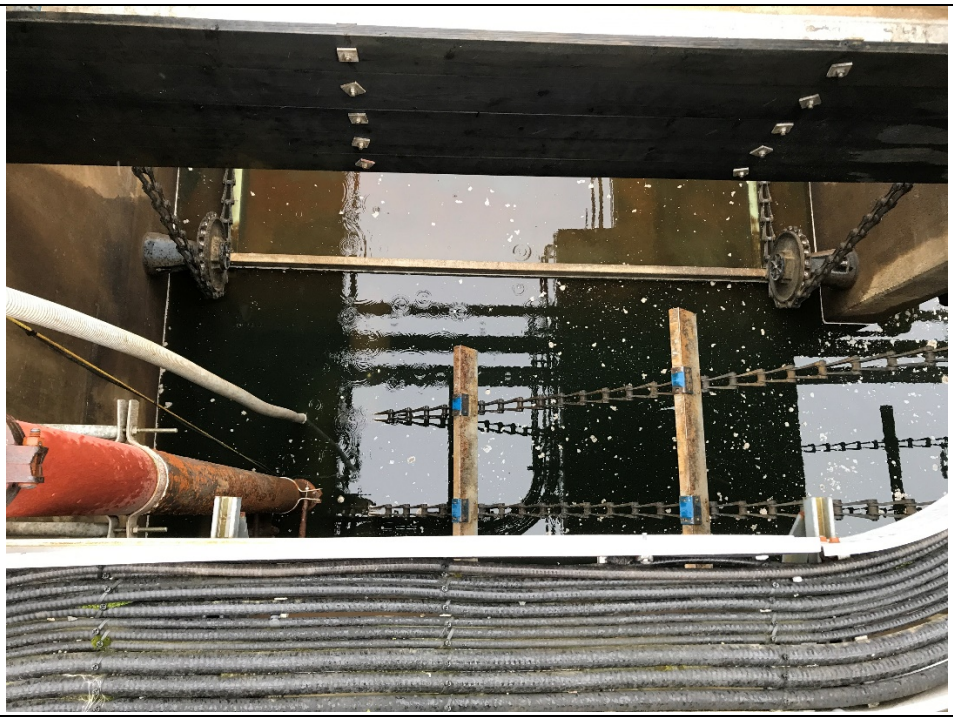
26. No. 4 Primary Sedimentation Tank cross collector (east end).



27. No. 4 Primary Sedimentation Tank east longitudinal sludge collector headshaft end.



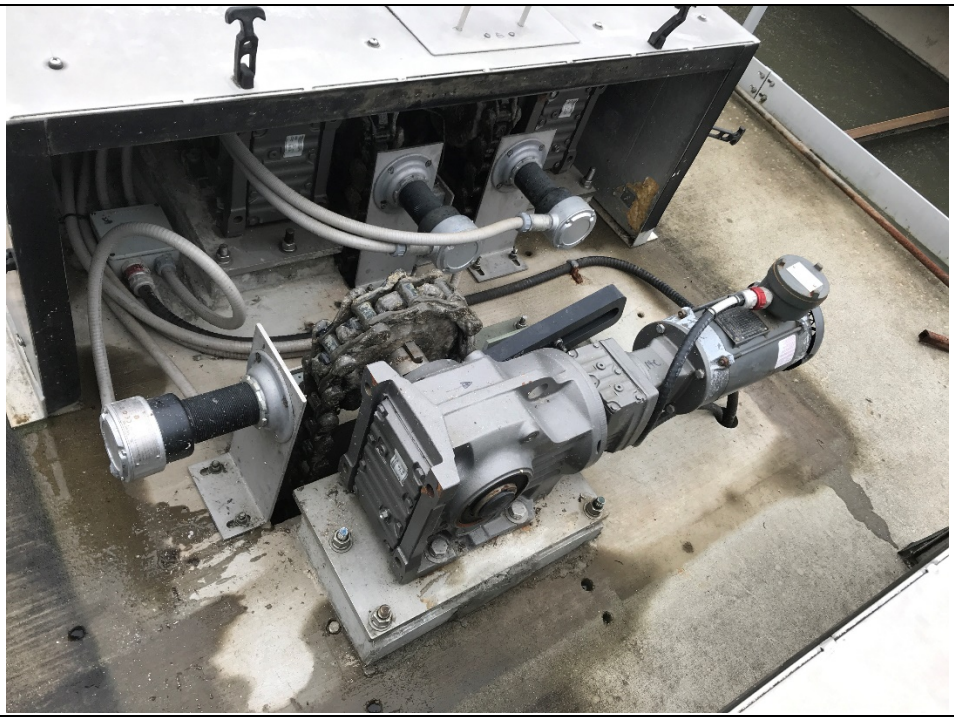
28. No. 4 Primary Sedimentation Tank west longitudinal sludge collector.



29. No. 4 Primary Sedimentation Tank cross collector (west end).



30. No. 4 Primary Sedimentation Tank west longitudinal sludge collector headshaft end.



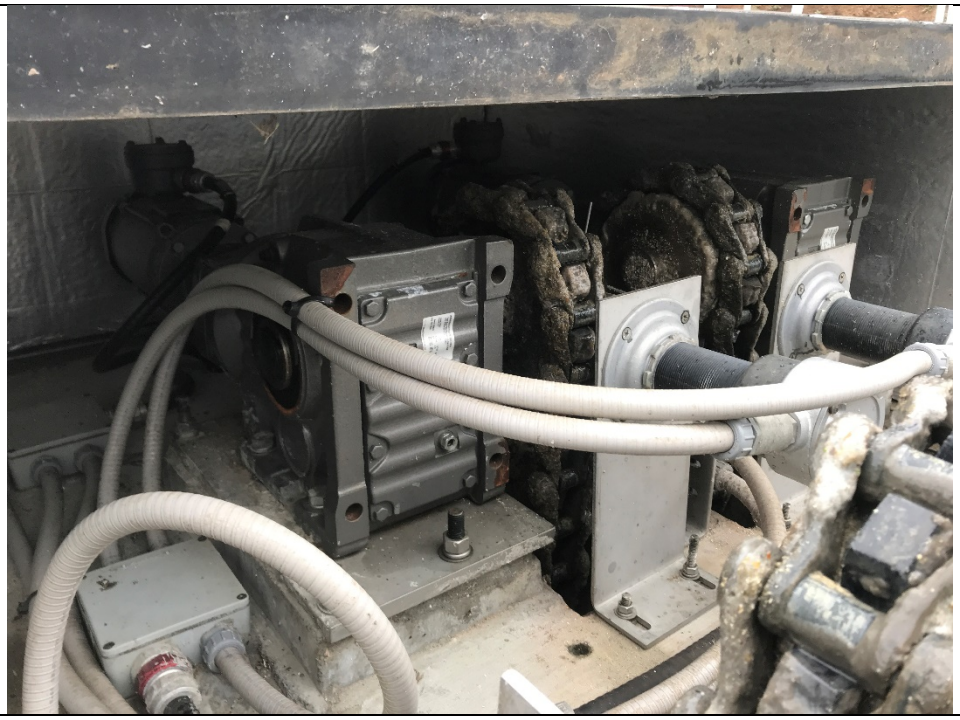
31. No. 4 Primary Sedimentation Tank collector drives (1 crossflow and 2 longitudinal = 3 total).



32. No. 4 Primary Sedimentation Tank cross collector drive gearmotor.



33. No. 4 Primary Sedimentation Tank cross collector drive gearmotor name plate.



34. No. 4 Primary Sedimentation Tank longitudinal collector drive gearmotors.



35. No. 4 Primary Sedimentation Tank east longitudinal collector drive gearmotor name plate.

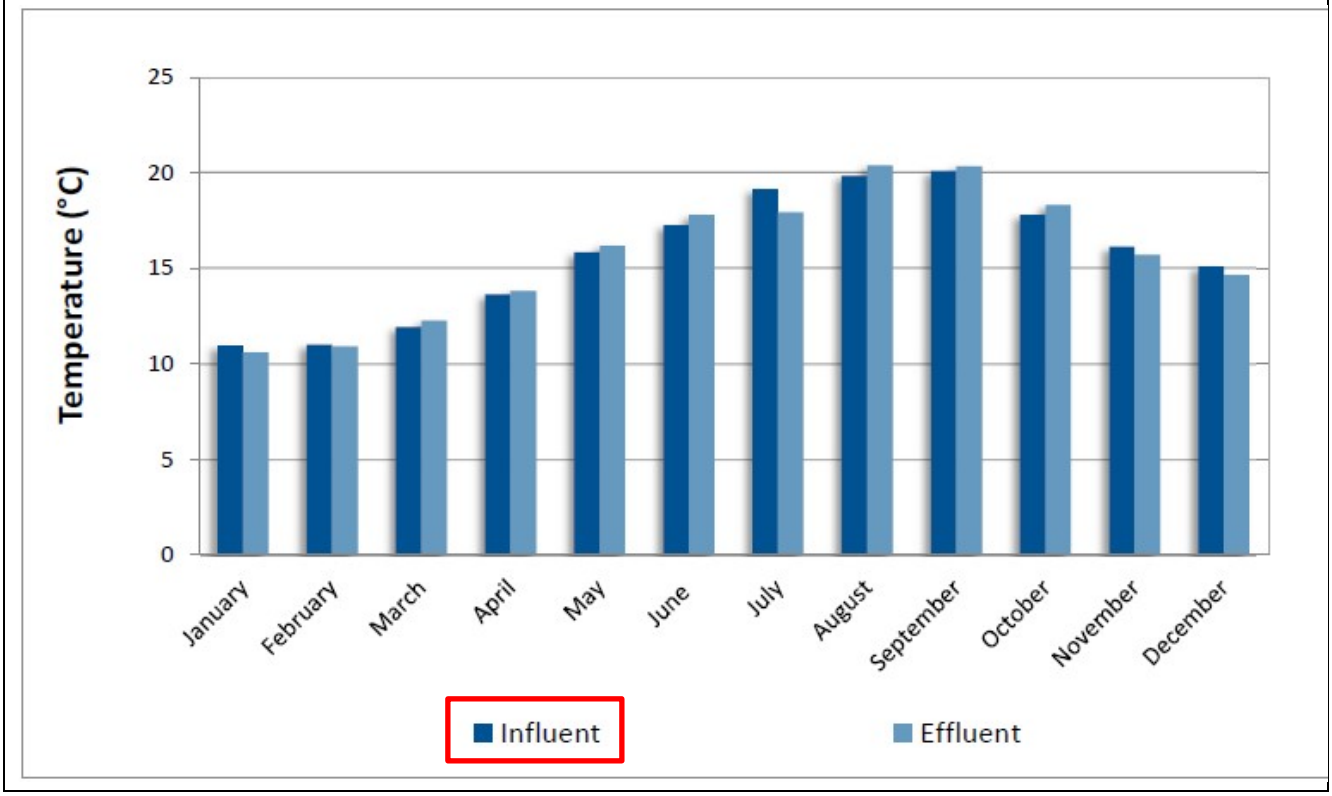
APPENDIX C

FLUID DESIGN CRITERIA

GNPCC Maintenance Job: Grit & Sedimentation Tanks Refurbishment

Screened Raw Sewage Design Criteria – January 27, 2022 – Rev1

General Criteria			
Fluid description	Screened raw sewage - influent (SRS)		
Primary chemical parameters:	See list page 2		
Trace elements/compounds:	See list page 3		
Process chemicals:	Ferrous chloride, 0.022 millilitre/litre SRS (added to influent flow before screens)		
Detailed Criteria	**Design Average**	**Minimum**	**Maximum**
Fluid flow rate (m3 per day)	29,500	21,100	92,200
Fluid specific gravity	1.01	1.0	1.02
Fluid pH	7.4	6.2	7.5
cBOD5 (mg/litre)	250	100	400
Ammonia Nitrogen (mg/litre)	42	15	60
Fluid solids* (mg/litre)	405	100	1,400
* Total suspended solids (“soft” and “hard”)			
Fluid temperature* (deg. C)	16.5	10	23
* See monthly averages below			



Primary Chemical Parameters of SRS Influent to GNPCC (historical trends)											
Parameter	**Units**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
pH	-	7.38	7.56	7.36	7.16	7.17	7.63	7.29	7.22	7.22	7.51
Total Alkalinity	mg/L	181.5	133	172	176	133	153	153	128	214	157
Dissolved Chloride	mg/L	135	131	183	277	158	165	150	133	220	104
Total Kjeldahl Nitrogen	mg/L	37.5	34.5	48.0	28.6	36.5	45.6	37.3	40.4	45.7	35.7
Total Oil and Grease	mg/L	8	7.5	16.2	35.0	19.5	8.1	7.9	4.9	14.8	<9.6
Dissolved Sulphate	mg/L	35.8	43.4	60.0	67.0	45.7	51.7	48.3	52.8	69.7	42
Dissolved Sulphide (total)	mg/L	0.062	0.0447	0.1528	<0.05	0.08	0.059	0.082	0.064	0.100	0.053
Total Cyanide	mg/L	0.0036	0.0092	0.0080	0.0060	0.0040	0.0017	0.0015	<0.0050	0.0058	<1.86
Dissolved Fluoride	mg/L	0.05	0.044	0.094	0.100	0.105	0.051	0.043	0.037	0.109	<0.085
Total Organic Carbon	mg/L	36	41	52	63	64	33	47	33	35	25
Total Phosphorus	µg/L	3,075	2,745	2,140	3,500	2,415	2,845	3,125	2,770	2,680	2,510

Trace Elements/Compounds in SRS Influent to GNPCC cont'd (at June 2, 2020)

2020 GNPCC INFLUENT		
Parameter	Unit	02-Jun-20
pH	pH Units	6.20
Chloride	mg/L	136
Total Kjeldahl Nitrogen / TKN	mg/L	61.7
Oil and Grease (total)	mg/L	49.7
Sulphate	mg/L	26.6
Fluoride	mg/L	0.10
Nirate (as N)	mg/L	<0.010
Nitrite (as N)	mg/L	0.164
Total Organic Carbon / TOC	mg/L	39.8
Phosphorus (total)	mg/L	8.86
Sulphide (total)	mg/L	0.15
Cyanide (total)	mg/L	0.0234
Polychlorinated Biphenyls / PCBs	ug/L	<0.210
Total Phenols (tested June 16, 2020)	mg/L	0.23
METALS Scan by ICP		
Aluminum (total)	ug/L	467
Arsenic (total)	ug/L	0.83
Barium (dissolved)	ug/L	<5.0
Boron (dissolved)	ug/L	181
Cadmium (dissolved)	ug/L	0.023
Chromium (total)	ug/L	6.65
Cobalt (dissolved)	ug/L	0.67
Copper (dissolved)	ug/L	17.4
Iron (dissolved)	ug/L	1,090
Lead (total)	ug/L	4.43
Manganese (dissolved)	ug/L	59.7
Mercury (total)	ug/L	<0.010
Molybdenum (total)	ug/L	2.95
Nickel (dissolved)	ug/L	3.05
Selenium (total)	ug/L	0.67
Silver (total)	ug/L	0.395
Tin (total)	ug/L	1.26
Zinc (total)	ug/L	181
VOC Scan		
Chloroform	ug/L	2.6
Dichloromethane	ug/L	<3.0
Chloromethane	ug/L	<6.0
Tetrachloroethylene	ug/L	<1.0
1,1,1-Trichloroethane	ug/L	<1.0
1,1,2-Trichloroethane	ug/L	<1.0
Trichloroethylene	ug/L	<1.0
Benzene	ug/L	<0.5
Toluene	ug/L	<1.1
Ethylbenzene	ug/L	<1.-0
Naphthalene	ug/L	<5.0
Phthalate Esters		
Di(2-ethylhexyl)phthalate	ug/L	NT
Di-n-Butylphthalate	ug/L	NT

APPENDIX D

STRUCTURAL STEEL COATING SPECIFICATION

REGIONAL DISTRICT OF NANAIMO

STRUCTURAL STEEL COATING SPECIFICATION

Indoor Wastewater Service Applications

Revision 0

December 30, 2021

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1. Part One - General

1.1. Summary

This document serves as the governing specification for the surface preparation, shop coating application and field touch up repair for indoor carbon steel structures in immersed, semi-immersed and intermittently immersed wastewater service.

1.1.1. All material product data sheets and manufacturers' recommended procedures and application specifications shall also form part of the requirements of this specification.

1.1.2. Approved coating system alternatives are summarized in Appendix 1. The work will generally include the following:

- Performing initial surface preparation operations.
- Performing surface finishing to welds, edges, and appurtenances.
- Performing final surface preparation operations
- Removal of spent abrasive media & debris from surfaces prior to coating application.
- Application of coating materials, including touch-up where necessary.
- Performing and documenting all Quality Control Inspections.

1.2. References

The latest approved editions of the following codes and standards shall form an integral part of this specification. It is the responsibility of the Vendor to obtain the most recent revisions of the documents listed below, unless specified otherwise.

American Society for Testing and Materials

- ASTM D4285: Standard Test Method for Indicating Oil or Water in Compressed Air
- ASTM D4414: Standard Test Method for Measurement of Wet Film Thickness using Notch Gages
- ASTM D4417: Standard Test Method for Field Measurement of Surface Profile of Blast Cleaned Steel

Association for Materials Protection and Performance (AAMP)

Note: AAMP is formerly Steel Structural Painting Council / Society for Protective Coatings (SSPC) and National Association of Corrosion Engineers (NACE) / NACE International, The Corrosion Society)

- NACE SP0178: Standard Practice Fabrication Details, Surface Finish Requirements, and Proper Design Considerations for Tanks and Vessels to Be Lined for Immersion Service
- NACE SP0188: Standard Practice Discontinuity (Holiday) Testing of New Protective Coatings on Conductive Substrates
- SSPC-AB 1: Abrasive Standard No. 1 - Mineral and Slag Abrasives
- SSPC-AB 2: Abrasive Standard No. 2 - Cleanliness of Recycled Ferrous Metallic Abrasives
- SSPC-AB 3: Abrasive Standard No. 3 - Ferrous Metallic Abrasive
- SSPC-VIS 1: Guide and Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning
- SSPC-SP 1: Surface Preparation Specification No. 1 - Solvent Cleaning

- SSPC-SP 2: Surface Preparation Specification No. 2 - Hand Tool Cleaning
- SSPC-SP 3: Surface Preparation Specification No. 3 - Power Tool Cleaning
- SSPC-SP 10/NACE No. 2: Joint Surface Preparation Standard - Near-White Metal Blast Cleaning
- SSPC-SP 11: Surface Preparation Specification No. 11 - Power Tool Cleaning to Bare Metal
- SSPC-PA 1: Paint Application Specification No. 1 - Shop, Field and Maintenance Coating of Metals
- SSPC-PA 2: Paint Application Specification No. 2 - Procedure for Determining Conformance to Dry Coating Thickness Requirements
- SSPC-PA 11: Paint Application Guide No. 11 - Protecting Corners, Edges, Crevices, and Irregular Steel Geometries by Stripe Coating
- SSPC-PA Guide 10: Paint Application Guide No. 10 - Guide to Safety and Health Requirements for Industrial Painting Projects

1.3. Definitions

1.3.1. The term Coating is used in this specification to mean the material provided by the coating manufacturer, to be applied to the service outlined in Part 1 above.

1.3.2. Coating Manufacturer shall mean the Manufacturer of the Coating (preferred) or their authorized technical representatives (Coating Supplier and or Distributor).

1.3.3. Quality Assurance Inspector shall mean a NACE Certified Coating Inspector Level 3 retained by RDN.

1.3.4. Quality Control Inspector shall mean a NACE Certified Coating Inspector Level 1 or 2 retained by the Vendor.

1.3.5. RDN shall mean the representative or agent of the Regional District of Nanaimo authorized with responsibility for the work being performed under the project named in the contract documents.

1.3.6. Vendor shall mean a company or individual contracted to perform specific work or services for RDN.

1.4. Submittals

1.4.1. The selected Vendor must supply the following submittals within 14 calendar days after contract award:

1.4.1.1. An Inspection and Testing Plan (ITP) indicating the quality control measures to be performed, the test methods used, frequency at which the testing will be performed and acceptance criteria. Refer to the quality control requirements in this specification outlined below.

1.4.2. The Vendor shall not commence work until the ITP has been developed, approved the RDN, and reviewed with the Vendor by the Quality Assurance Inspector.

1.4.3. Prior to receiving payment, the Vendor shall provide RDN with completed, signed and dated set of Quality Control Reports. Section 1.5 describes Quality Control Reporting requirements.

1.5. Quality Control

1.5.1. The Vendor is responsible for the quality of all work performed and for assuring compliance with these specifications. Vendor is responsible to stop operations and promptly notify RDN when conditions develop which could adversely affect the quality of the work.

1.5.2. The Vendor shall follow the project-specific Inspection and Test Plan (ITP) as described in Section 1.4.1.1.

1.5.3. The Vendor shall maintain Quality Control Reports and allow RDN to view any such documentation at any time during the project, as well as provide copies to RDN on a weekly basis at a minimum.

1.5.4. The Vendor will perform and document the following Quality Control Inspections at a minimum. Additional testing may be requested at the discretion of RDN.

1.5.4.1. Prior to commencement of abrasive blast cleaning, all areas to receive coating shall be inspected and if necessary, be prepared in accordance with NACE SP0178 Condition D. Sharp edges shall have a smooth radius of at least 3.2 mm (1/8 in).

1.5.4.2. Prior to commencement of abrasive blast cleaning, all areas to receive coating shall be prepared in accordance with SSPC-SP 1. Solvent in this definition is inclusive of water as well as chemical-based products.

1.5.4.3. The steel surface temperature, ambient air temperature, humidity and dew point shall be verified at a minimum of every 4 hours and always immediately before coating application.

1.5.4.4. Compressor air supply shall be tested for cleanliness daily in accordance with ASTM D4285.

1.5.4.5. Surface cleanliness shall be evaluated prior to coating application. SSPC-VIS 1 may be used to assist in evaluation of the prepared surfaces; however, the written surface preparation standards shall prevail.

1.5.4.6. Surface profile depth shall be verified prior to the application of coating in accordance with ASTM D4417, Method C.

1.5.4.7. The Vendor shall monitor and record coating material batch numbers and material temperatures immediately prior to mixing any coating materials. Any induction times required by the coating products shall be documented, including length of time mixing and quantity of material mixed.

1.5.4.8. Wet Film Thickness (WFT) shall be performed during application in accordance with ASTM D4414 as required to achieve acceptable Dry Film Thickness.

1.5.4.9. Dry Film Thickness (DFT) verification shall be performed accordance with SSPC-PA 2. The Vendor shall make adjustment accordingly to ensure the final DFT meets SSPC-PA 2 restriction level 2. DFT shall not exceed the maximum limits as per the Coating Manufacturer's recommendations.

1.5.4.10. Discontinuity (holiday) testing shall be performed after cure of the topcoat in accordance with NACE SP0188 (High-Voltage), Voltage Selection per Section 4, Table 1. Any holidays shall be repaired and re-tested.

1.6. Quality Assurance

1.6.1. In addition to the Vendor's inspections, RDN or their designated representative(s) may perform any inspection necessary to verify compliance with this specification.

1.6.1.1. Inspection may include all work, equipment, inspection equipment, materials, or procedures and may be conducted at the discretion of RDN.

1.6.2. The Vendor shall provide RDN or their designated representative(s) safe access to all work areas for purpose of inspection.

1.6.3. The Vendor shall provide RDN or their designated representative(s) sufficient time within the work schedule to perform inspections identified on the ITP as described in Section 1.4.1.1.

1.6.4. The Vendor shall correct any work that RDN has determined to be in non-compliance with the requirements of this specification. Corrections shall be made without additional cost to RDN.

1.6.5. The failure of RDN or the Quality Assurance Inspector to discover or reject defective work or materials does not constitute acceptance of such work or materials by RDN.

1.6.6. The provisions of this specification shall also apply to any work performed by subcontractors to the Vendor.

1.7. Delivery, Storage and Handling

1.7.1. Coating materials shall be delivered in the original, sealed and undamaged containers bearing the product name, date of manufacture, date of expiration and batch numbers.

1.7.2. Store all project materials in their original containers with their original labels visible and readable. All coating materials shall be stored in a clean, dry, well-ventilated area, protected from sparks, flame, direct rays of the sun and heat or cold. If stored on a concrete floor the material shall be elevated (e.g. on a pallet) while being stored. Storage conditions shall be as specified by the Coating Manufacturer's recommendations.

1.7.3. Do not use materials which have exceeded their shelf life or which have deteriorated in storage.

1.7.4. The Vendor shall have latest copies of the Coating Manufacturer's product data sheet and SDS for all materials on-site. In accordance with WHMIS regulations, suitable labelling of coating and solvent containers must be provided.

1.8. Sequencing and Scheduling

1.8.1. The Vendor shall complete all work within the schedule as provided by RDN.

2 Part Two - Products

2.1. Cleaning Materials

2.1.1. Supply all abrasive and any abrasive additives required.

2.1.2. Provide RDN with certificates indicating compliance with SSPC-AB 1 or AB 3 for the abrasive media prior to project start.

2.1.3. The abrasive selected shall be capable of imparting a sharp and angular profile.

2.1.4. The abrasive supplied shall be of sufficient size to achieve the cleanliness and surface profile requirements of the surface preparation specification.

2.1.5. All abrasives selected shall have <1% free silica (Class A) and shall not contain any hazardous toxic materials, or foreign matter.

2.1.6. Any recycling of ferrous abrasives shall satisfy the requirements of SSPC-AB 2.

2.2. Coating and Materials

2.2.1. The Vendor shall supply all cleaning materials, coating materials, curing agents and thinners.

2.2.2. Coating systems or products from one manufacturer shall not be mixed with coating systems or products from another manufacturer.

2.2.3. Substitution of materials is not permitted. All coating materials shall be as specified by Coating Manufacturer's Recommendations for the coating system, including equipment wash, tool cleaner and any internal storage lubricants that may be required.

2.2.4. Each coat in a multi-coat system shall be of a different colour when supported by manufacturer's product line.

2.2.5. Final finish colour must be approved by RDN prior to application.

2.3. Labour, Supervision and Equipment

2.3.1. The Vendor shall furnish all labour, materials, supervision and equipment necessary to complete the work. This includes but is not limited to providing safe access to all work areas, containment, pre cleaning; surface preparation, coating application, heating, dehumidification, ventilation, and curing of applied materials.

2.3.2. It is the responsibility of the Vendor to meet the requirements of this specification in its entirety, to use equipment capable of meeting these requirements, supply adequately trained and experienced staff to perform the requirements, and to perform all inspections necessary to ensure compliance prior to inspection by RDN.

2.3.3. It is the responsibility of the Vendor to perform all work in a manner meeting the requirements of all local, provincial and federal regulations applicable to each activity.

3 Part Three - Execution

3.1 Pre-Job Conference

3.1.1. A Pre-Job conference shall be held prior to commencing any work on the project. Mandatory attendance is required of the Vendor, the Quality Assurance Inspector, the Quality Control Inspector and RDN's representative or agent.

3.1.1.1. The Pre-Job conference, location, date & time shall be established by RDN after receipt of Vendor submittals as required in Section 1.4.

3.2 Field Work

3.2.1. The Vendor shall notify RDN immediately if there are any as-found defects or if the configuration of the application area will prevent the requirements of this specification from being satisfied.

3.2.2. The Vendor is responsible for preventing damage to the local application area, surrounding structure and environment while conducting operations as required under the specification.

3.2.2.1. Areas within or outside of the work scope that receive damage from the Vendor's installation, or field repair activities shall be repaired at the Vendor's expense.

3.3 Conflicting Information

3.3.1. In the event of conflict between the Specification, purchase order, Coating Manufacturer's product data sheets, or any other supplemental specifications or standards, the Vendor shall notify RDN in writing of the basis of the conflict.

The Vendor shall follow the more stringent requirements of the conflict until clarification is provided by RDN.

3.4 Coating Manufacturer Requirements

3.4.1. The Coating Manufacturer is required to provide on-site evaluations of the work being done, at RDN's request. The Coating Manufacturer may be required to provide the following technical assistance:

3.4.1.1. Be on site when coating application begins and visit the site periodically during application.

3.4.1.2. Respond to any technical requests or application problems, in writing, as requested by RDN.

3.5 Pre-Surface Preparation

3.5.1. Prior to surface preparation, the Vendor shall perform surface finishing of welds, edges, and surface irregularities to ensure all welds meet or exceed NACE SP0178 Condition D surface finish. Sharp edges shall be ground to a smooth radius of at least 3.2 mm ($^1/_8$ in).

3.6 Surface Preparation – General

3.6.1. All foreign material and debris generated during or deposited after completion of surface preparation and cleaning shall be removed prior to applying any coating materials.

3.6.2. All air supply used during surface preparation activities or in the cleaning of surfaces of debris and spent abrasive prior to coating must be clean, dry and free from oil per ASTM D4285. The Vendor is responsible to provide all necessary equipment to ensure air quality meets this requirement.

3.6.3. All areas cleaned to the surface preparation requirements shall be coated within 8 hours or the prepared surface deteriorates.

3.6.3.1. Regardless of any time limits, all surfaces to receive coating are meet the requirements of Section 3.7.2 immediately prior to coating application.

3.7 Surface Preparation – Specific, Shop Work

3.7.1. The surface profile shall be dense, sharp and angular, with a depth as specified on the Coating Manufacturer's product data sheet.

3.7.1.1. The Vendor shall correct any surface profile found to be in non-compliance with the requirements of this specification. Corrections shall be made without additional cost to RDN.

3.7.2. The degree of surface cleanliness shall be SSPC-SP 10/NACE No. 2 or as specified on the Coating Manufacturer's product data sheet. The more-stringent surface cleanliness requirement shall apply.

3.8 Surface Preparation – Specific, Field Work

3.8.1. All existing coating surrounding a repair area shall be abraded to roughen and de-gloss using SSPC-SP 2 or SSPC-SP 3 methods. The transition overlap area shall extend for a nominal radius of 50 mm (2 in.) beyond the repair.

3.8.2. Shop coated areas that have become damaged shall be prepared in accordance with SSPC-SP 11 with a surface profile depth as specified on the Coating Manufacturer's product data sheet.

3.8.3. Threaded fasteners shall be prepared in accordance with SSPC-SP 2 or SSPC-SP 3 as a minimum. SSPC-SP 11 shall be performed whenever practicable.

3.9 Temperature, Humidity, and Moisture Limitations

3.9.1. Coating application shall not be permitted to proceed when the air temperature, surface temperature, material temperature, or relative humidity is below or above that specifically permitted in the Coating Manufacturer's instructions.

3.9.1.1. At a minimum, surface preparation or coating application shall not be performed when the substrate temperature is less than 3°C above the dew point or when the relative humidity is greater than 85%.

3.9.1.2. The Vendor shall maintain the specified ambient conditions and ventilation after application to ensure cure of the coating system. The cure period shall be as recommended by the Coating Manufacturer, based on time and temperature.

3.10 Mixing

3.10.1. All mixing shall be performed in strict accordance with the Coating Manufacturer's instructions.

3.10.2. Induction times shall comply with the Coating Manufacturer's instructions.

3.10.3. Do not use any material which has reached its pot life as specified by the Coating Manufacturer's product data sheet.

3.11 Application - General

3.11.1. All surfaces not to receive coating are to be adequately protected against drips, spatter, spills and over-spray. The Vendor will be responsible for removing any over-spray at his own expense.

3.11.2. Coatings shall be applied as specified in Appendix 1, in accordance with SSPC-PA 1, the Coating Manufacturer's instructions and including, but is not limited to: application methods, application equipment, and minimum/maximum recoat times.

3.11.3. Coated surfaces that have become contaminated and are to receive additional coating materials shall have the coated surface cleaned using a procedure that is compliant with SSPC-SP 1 and in accordance with the Coating Manufacturer's instructions.

3.11.4. All coating materials shall be applied to achieve a smooth, uniform appearing, continuous film that is free of visual defects. Defects include, but are not limited to; debris inclusions, runs, drips, sags, blisters, pinholes, blushing, craters, hazing, lack of opacity, dry spray, overspray, discontinuities, crazing, bubbling and lack of adhesion.

3.11.5. Edge and weld Stripe coat: The Vendor shall apply a stripe coat via brush and brushed in in accordance with SSPC-PA 11 prior to the application of the primer coat.

3.11.6. Allow each coat to cure as specified on the Coating Manufacturer's printed instructions prior to application of successive coats.

3.11.7. Materials shall not be applied if it is anticipated that environmental conditions will not meet the Coating Manufacturer's minimum criteria during cure.

3.11.8. The Vendor shall repair damage to any coat before application of additional coats.

3.11.9. The Vendor shall repair all deficiencies identified in Section 3.11.4 in accordance with the Coating Manufacturer's written repair procedure.

3.12 Environmental

3.12.1. The Vendor shall ensure that all surface preparation and application is performed in a manner that prevents the release of cleaning materials, coatings or other potentially deleterious substances into the aquatic or terrestrial environments.

3.12.2. The Vendor shall provide any containment required for cleaning, surface preparation and coating application operations.

3.12.3. All waste abrasive, coating materials, solvents, containment materials, filters, containers, packaging and all other debris generated during the cleaning, surface preparation and coating operation shall be disposed of by the Vendor in accordance with all local, provincial and federal regulations.

3.13 Safety

3.13.1. The Vendor shall provide all safe work procedures, personal protective equipment, personal hygiene requirements and workspace ventilation necessary to comply with local, provincial and federal regulations.

3.13.2. All cleaning, surface preparation and coating operations shall be performed in accordance with, SSPC-PA Guide 10 and WorkSafeBC requirements.

APPENDIX 1 - APPROVED COATING SYSTEM ALTERNATIVES

Manufacturer	Product	Chemistry	Volume Solids	# Coats	Total DFT (mils)
1. Sherwin-Williams	Sher-Glass FF	Reinforced Amine Epoxy	76% ± 2%	2	16-24
2. SPC	SP-9888 Stripe Coating	Novolac Epoxy	100%	2+	16-20
3. Tnemec	Perma-Glaze Series G435	Modified Polyamine Epoxy	100%	1+	15-25

Note: The above systems are single product systems (e.g. same coating material for primer coat, stripe coat and topcoat)

BETWEEN: _____ (the "Supply Contractor")

AND: Regional District of Nanaimo (the "Corporation")

THIS AGREEMENT WITNESSES that the Supply Contractor and the Corporation agree as follows:

1. The Supply Contractor shall provide all labour, Supply Contractor's Plant and Equipment and materials required to supply the Goods within the required time, as required by the Contract Documents further defined in the Standard Form Supply Contract General Conditions.

2. The Corporation shall pay the Supply Contractor the Contract Price, as required by the Contract Documents.

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

   (a) $_____ and

   (b) any payments made on account of changes, as may be required by the Contract Documents.

   The Contract Price shall be the entire compensation owing to the Supply Contractor by the Corporation for the Goods and shall cover and include necessary costs including but not limited to all supervision, labour, materials, Supply Contractor's Plant and Equipment, overhead, profit, financing costs, duty, shipping charges, fabrication and finishing, conveyance and delivery, packing, crating, freight, cartage, drafting charges, tariffs, warranty and all other costs and expenses whatsoever incurred in supplying the Goods (Incoterms 2020 DDP applies).

   Except for the amounts which the RDN in good faith is disputing and except for any set off which the RDN may claim and except for invoices (or portions of invoices) in respect of which the RDN has requested and not received supporting evidence, the RDN shall pay invoices submitted to it for the Goods, within 30 days' receipt thereof.

4. Payment terms for the Goods shall be as follows:

   (a) __% of the Contract Price upon completion of certified shop drawings;

   (b) __% of the Contract Price upon receipt of all materials required for fabrication;

   (c) __% of the Contract Price upon shipping;

   (d) 10% of the Contract Price upon delivery and acceptance to the Delivery Point.

SAMPLE

5. The Supply Contractor shall supply all Goods to the Delivery Point on _____, plus or minus one week.

6. The Contract Documents shall form a part of this Agreement as though recited in full.

7. The Contract supersedes all prior negotiations, representations, or agreements, whether written or oral and is the entire agreement between the Corporation and the Supply Contractor with respect to the subject matter of this Agreement.

8. The Supply Contractor shall not assign the Contract, or any portion of the Contract, or any payments due or to become due under the Contract, without the express written consent of the Corporation which will not be unreasonably withheld.

9. No action or failure to act by the Corporation or an authorized representative of the Corporation shall constitute a waiver of any right or duty afforded any of them under the Contract or constitute an approval or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

10. This Agreement shall enure to the benefit of and be binding upon the Corporation and the Supply Contractor and their respective heirs, executors, legal representatives, successors and permitted assigns. In the event of more than one person being the Supply Contractor, the grants, covenants, provisos and claims, rights, powers, privileges, and liabilities shall be construed and held to be several as well as joint.

11. Time shall be of the essence of this Agreement.

12. 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.

SAMPLE

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

REGIONAL DISTRICT OF NANAIMO

by its authorized signatory on _____ day of _____, 2022 (the date of Agreement):

SIGNED on behalf of the Corporation by:

Signature: _____

Name: _____

Title: _____

Signature: _____

Name: _____

Title: _____

THE SUPPLY CONTRACTOR

by its authorized signatory on _____ day of _____, 2022:

SIGNED on behalf of the Supply Contractor by:

Signature: _____

Name: _____

Title: _____

Signature: _____

Name: _____

Title: _____

SAMPLE

GENERAL

1.1 DEFINITIONS

The following words and terms, unless the context otherwise requires, in all Contract Documents, shall have the meanings set out below. Words importing the male gender include the female gender and either includes the neuter and vice versa and words importing the singular number includes the plural number and vice versa.

"Addenda" means the supplemental written conditions issued prior to execution of the Agreement which modify or interpret the Contract Documents by addition, deletion, clarification, or corrections;

"Agreement" means the Standard Form Supply Contract Form of Agreement;

"Contract" means the agreement formed by the Corporation's acceptance of the Proposal for the supply and delivery of the Goods as set out in the Contract Documents;

"Contract Documents" means the following documents:

(1) the executed Supply Agreement
(2) the General Conditions
(3) any Addenda (attached Schedule 1)
(4) the Supply Contractor Proposal (attached Schedule 2)
(5) the original Supply Contractor Supporting Information, if any (attached Schedule 3)
(6) the Specifications (attached Schedule 4)
(7) other relevant documents such as but not limited to letters of clarification and any reports or the like included by reference (attached Schedule 5);

"Contract Price" has the meaning set out in the supply form of agreement;

"Corporation" means the Regional District of Nanaimo;

"Day" means calendar day;

"Delivery Date" has the meaning set out in the supply form of agreement;

"Delivery Point" means the Greater Nanaimo Pollution Control Centre at 4600 Hammond Bay Road, Nanaimo, BC, V9T 5A8 Canada;

SAMPLE

"Goods" means all material and non-material things to be provided by the Supply Contractor under the terms of the Contract;

"Person" includes an individual, corporation, partnership, and joint venture;
"Specifications" means that part of the Contract Documents consisting of general requirements and written descriptions of the technical features of materials, equipment, construction systems, standards and workmanship;

"Supply Contractor" means the person who or which execute the Agreement;

"Supply Contractor's Plant and Equipment" means the equipment, material, supplies and all other items (except labour) brought onto the Delivery Point by the Supply Contractor, but not to be incorporated in the Goods;

CONTRACT REQUIREMENTS

1.1.1 Successors' Obligations

The Contract shall enure to the benefit of and is binding upon not only the parties hereto but also their respective successors and permitted assigns.

1.1.2 Assignment of Contract

The Supply Contractor shall not assign the Contract in whole or in part, nor any payments due or to become due under the Contract without the prior written consent of the Corporation. No assignment of the Contract shall relieve the Supply Contractor from any obligation under the Contract or impose any liability on the Corporation. Involuntary assignment of the Contract as a result of, inter alia, bankruptcy, assignment of the Contract for the benefit of creditors or appointment of a receiver, or insolvency shall be deemed default under the Contract entitling the Corporation to terminate the Contract as hereinafter provided.

1.1.3 Waiver of Rights

Except as herein provided, no act or failure to act by the Supply Contractor or the Corporation at any time with respect to the exercise of any right or remedies conferred upon them under this Contract shall be deemed to be a waiver on the part of the Supply Contractor or the Corporation, as the case may be, of any of their rights or remedies. No waiver shall be effective except in writing. No waiver of one right or remedy shall act as a waiver of any other right or remedy or as a subsequent waiver of the same right or remedy.

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1.1.4 Amendment of Contract Documents

The Contract Documents shall not be amended except as specifically agreed in writing signed by both the Corporation and the Supply Contractor.

1.2 LAWS, REGULATIONS AND PERMITS

1.2.1 The Contract shall be construed under and according to the laws of the Province of British Columbia and subject to an agreement to refer a dispute to mediation as per clause 2.3 Dispute Resolution. The parties agree to irrevocably attorn to the jurisdiction of the Courts of the Province of British Columbia.

1.2.2 The Supply Contractor shall give all notices required by law and shall comply with all laws, acts, ordinances, rules and regulations relating to or affecting the Goods. If any permits, authorizations, approvals or licences from any government or governmental agencies are necessary or desirable for the prosecution of the work they shall be obtained by the Supply Contractor at its expense, provided that the Supply Contractor shall not make application for any such permit, authorization, approval or licence without first obtaining the written consent of the Corporation.

1.2.3 Patents, Royalties and Copyright
The Supply Contractor shall pay all fees, royalties or claims for any patented invention, article, process or method that may be used upon or in a manner connected with the Goods or with the use of the Goods by the Corporation. Before final payment is made on the account of this Contract, the Supply Contractor shall, if requested by the Corporation, furnish acceptable proof of a proper release from all such fees or claims.

1.2.4 All references to money in the Contract Documents shall be interpreted as meaning lawful currency of Canada.

PART 2 CORPORATION-SUPPLY CONTRACTOR RELATIONS

2.1 AUTHORITY OF CORPORATION

2.1.1 Acceptability of Goods

The Corporation shall make the final determination of the acceptability of the Goods.

2.1.2 Appointment and Authority of Inspector

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2.1.2.1 The Corporation may appoint an Inspector for the Goods at any time before or after award of the Contract. If the Corporation appoints an Inspector, the Inspector shall represent the Corporation, at any time during the supply process, up to and including the Delivery Point. The Inspector shall have the authority set out in the Contract Documents and such other authority as may be delegated in writing by the Corporation including but not limited to the following:

(a) to make decisions regarding the Goods;

(b) to make decisions regarding the manner of performance of the Goods;

(c) to make determinations regarding deficiencies;

2.2 RESPONSIBILITIES OF THE SUPPLY CONTRACTOR

2.2.1 Attention to the Goods

The Supply Contractor shall diligently attend to the supply of the Goods so that they are delivered faithfully, expeditiously and in accordance with the Contract Documents.

2.2.2 Authorized Representative

The Supply Contractor shall advise the Corporation in writing of the name of the Supply Contractor's authorized representative.

2.2.3 Off-loading of Goods

The Supply Contractor shall provide all necessary instructions to ensure satisfactory off-loading of the Goods.

2.2.4 Shipment

The Supply Contractor shall properly package all Goods for safe shipment to the Delivery Point and a Notice of Shipment shall be sent by the Supply Contractor to the Corporation in advance of final delivery. The Notice of Shipment shall state the delivery date, the Purchase Order number, description of the Goods, the Supply Contractor's name, and the carrier by which the shipment is being made. Clear title to the Equipment, free of all charges, liens and encumbrances shall pass to RDN when the Goods are received, inspected, deficiencies rectified, and accepted by the RDN at the

SAMPLE

Delivery Point. Until such time as title of the Goods is accepted by the RDN, the Supply Contractor shall be responsible for insurance claims related to the Goods and the RDN shall not be considered to have breached any Contract if there is a fire, damage or other cause which entitles an insurance company to seize or take possession of the Goods or part thereof.

The passing of title to the RDN shall not affect any of the Supply Contractor's obligations.

2.2.5 Errors and Omissions

If the Supply Contractor discovers that there are any errors or omissions in the Contract Documents, it shall immediately notify the Corporation in writing. The Corporation will review the matter and if it concludes that there is an error or omission, it shall determine the corrective actions to be taken and will advise the Supply Contractor accordingly. If the corrective work associated with an error or omission increases or decreases the amount of work called for in the Contract, the Corporation shall issue an appropriate change order. After discovery by the Supply Contractor of an error or omission in the Contract Documents any work thereafter performed by the Supply Contractor shall be done at its risk unless otherwise agreed by the Corporation.

2.3 DISPUTE RESOLUTION

2.3.1 Disputes

A dispute occurs between the Corporation and the Supply Contractor where there is a difference between the parties as to the interpretation, application, or administration of the Contract.

2.3.2 Dispute/Claim Resolution

(1) All matters in dispute under this Agreement which is not first resolved between the parties acting reasonably may, with the concurrence of both the Corporation and the Supply Contractor be submitted to mediation to a single mediator appointed jointly by them.

(2) No one shall be nominated to act as a mediator who is in any way financially interested in the business affairs of either the Corporation or the Supply Contractor.

(3) If the parties cannot agree on the choice of a mediator, each party shall select a nominee and the nominees shall jointly appoint a mediator.

SAMPLE

(4) The mediation shall take place in Nanaimo, British Columbia, unless agreed otherwise. Parties will be responsible for their own costs.

PART 3 MATERIAL, EQUIPMENT AND WORKMANSHIP

3.1 GENERAL

The Goods shall be of the quality specified or better. All work related to the Contract Documents shall be done with equipment and workmanship of the best quality and description and by employment of properly skilled workers and in strict conformity with and as required by the Contract Documents. Materials and equipment shall be the product of suppliers or manufacturers of established good reputation, regularly engaged in the supply or manufacture of such materials or equipment.

3.2 DEMONSTRATION OF COMPLIANCE WITH CONTRACT REQUIREMENTS

3.2.1 Inspection

Inspections and testing shall not in any way relieve the Supply Contractor from any of its obligations or responsibilities under the Contract Documents, and shall not in any way prejudice or constitute a waiver of any rights or remedies of the Corporation or any guarantees, warranties or covenants in favour of the Corporation, and the Corporation shall be entitled to rely on the expertise and obligations of the Supply Contractor and its subcontractors and their consultants and engineers to the same extent as if such inspections and testing by the Corporation or any inspector or agent had not taken place.

If the Contract Documents, laws, ordinances, or any public regulatory authority requires parts of the Goods to be specially inspected, tested or approved, the Supply Contractor agrees that the Goods shall comply.

The Goods are subject to inspection and acceptance by the RDN within a reasonable time after receipt. The RDN will notify the Supply Contractor in writing of the rejection of any of the Goods which are not in accordance with the Contract Documents, and the Goods will be held subject to disposition by the Supply Contractor at the Supply Contractor's risk and subject to all charges accruing as a result of such rejection.

Notwithstanding any prior payment therefor, all Goods are subject to inspection and testing by the Corporation, at any time during the supply process, up to and including the Delivery Point.

3.2.2 Certification

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The Goods must be certified by the Supply Contractor in accordance with the local authorities with jurisdiction. Where compliance of the Goods with the Contract Documents is not readily determinable through inspection and tests, the RDN may require that the Supply Contractor provide, at the Supply Contractor's expense, properly authenticated documents, certificates, or other satisfactory proof of compliance. These documents, certificates or other proof shall include performance characteristics, materials of construction and the physical or chemical characteristics of materials.

3.2.3 Electrical

Electrical products that plug into an electrical outlet must meet Canadian national safety standards and be certified by an accredited certification body such as CSA, cUL or cETL.

3.3 DEFECTIVE OR IMPROPER GOODS

3.3.1 Correction of Defective Goods

If upon inspection, testing or otherwise the Goods or any portion thereof are found to be non-conforming, unsatisfactory, defective, or inferior quality or workmanship, or fail to meet any guarantee of operating or other specifications contained herein, or any other requirements of the Contract Documents, then without prejudice to any other rights or remedies, the RDN may give notice of its dissatisfaction to the Supply Contractor in writing and the Supply Contractor shall immediately upon receipt of such notice do all things that are required to satisfy the RDN. If the Supply Contractor refuses or neglects to do all things that are required to satisfy the RDN within one week from the receipt of notice, the Corporation may employ some other person to do so and all expenses and costs consequent thereon or incidental thereto shall be charged to the Supply Contractor. The employment of such other person or the doing of the said work by the Corporation itself shall not affect the Supply Contractor's duties and liabilities hereunder or relieve the Supply Contractor from the performance and fulfilment of any or all of the Supply Contractor's warranties, covenants, undertakings, obligations and duties under the Contract.

3.3.2 If upon inspection, testing or otherwise the Goods or any portion thereof are found to be non-conforming, unsatisfactory, defective, or inferior quality or workmanship, or fail to meet any guarantee of operating or other specifications contained herein, or any other requirements of the Contract Documents, then without prejudice to any other rights or remedies, the

SAMPLE

Corporation may return the Goods or any part thereof to the Supply Contractor at the Supply Contractor's sole cost and all amounts theretofore paid by the Corporation to the Supply Contractor on account of the Contract Price of such returned Goods, shall be repaid to the Corporation by the Supply Contractor. The Supply Contractor shall advise the Corporation in writing, where to return the Goods, and failing such advice from the Supply Contractor, the Supply Contractor agrees to accept the returned Goods at the Supply Contractor's registered office. Neither the inspection nor failure to make inspection, nor acceptance of Goods shall release the Supply Contractor from any warranties or other provisions of this Contract nor impair the Corporation's right to reject non-conforming Goods. The Corporation reserves the right even after it has paid for and accepted Goods to make a claim against the Supply Contractor on account of any Goods which do not prove to be satisfactory or are defective irrespective of the Corporation's failure to notify the Supply Contractor of a rejection of non-conforming Goods or revocation of acceptance thereof, or to specify with particularity any defect in non-conforming Goods after rejection or acceptance thereof.

3.3.3 Retention of Defective Goods

If in the opinion of the Corporation any portion of the Goods supplied under the Contract is defective or not in accordance with the Contract Documents and if the defect or imperfection in the same is not of sufficient magnitude or importance to make the Goods dangerous or undesirable, or if the removal of such Goods is impracticable, or will create conditions which are dangerous or undesirable, the Corporation shall have the right and authority to retain such Goods instead of requiring the defective or imperfect Goods to be removed and reconstructed, but the Corporation shall be entitled to make such deductions from the payments due or to become due to the Supply Contractor as are just and reasonable.

3.3.4 No Implied Approval

The fact that the Corporation has not disapproved of or rejected any part of the Goods shall not be deemed or be construed to be an acceptance of any such part of the Goods or any such materials.

3.4 WARRANTY AND GUARANTEE

3.4.1 The Supply Contractor agrees that the Goods manufacturer's warranty as outlined in the Supply Contractor's Proposal is to the benefit of the Corporation and that the Goods are free from all defects arising from faulty

SAMPLE

construction, manufacturing, materials, equipment or workmanship for the period of the Supply Contractor's warranty period.

3.4.2 During the warranty period, the Supply Contractor, upon the receipt of notice in writing from the Corporation, shall promptly make all repairs arising out of the defects. The Corporation shall be entitled to make such repairs, if 10 Days after the giving of such notice to the Supply Contractor, the Supply Contractor has failed to make or undertake with due diligence the repairs. In case of an emergency, where, in the opinion of the Corporation, delay could cause serious loss or damage, or inconvenience to the public, repairs may be made without notice being sent to the Supply Contractor, only after all reasonable attempts have been made to contact the Supply Contractor. The costs of any repair made by the Corporation in connection with this clause shall be charged to the Supply Contractor and the Supply Contractor shall reimburse the Corporation for such costs. All covenants and agreements shall continue to be binding on the Supply Contractor until they have been fulfilled.

3.4.3 The Corporation is relying on Supply Contractor's skill and judgment in selecting and providing the proper Goods and any applicable services for the Corporation's particular use. The Supply Contractor warrants to the Corporation and its successors in interest that the Goods and any services covered hereby will correspond with the description of the same in the Contract Documents, will conform to all applicable Specifications, will be of the best quality and, unless otherwise specified, will be fit for the purpose for which they are to be used and will conform in all aspects, both in the manufacture and use thereof, with all applicable safety orders or regulations of the Province of British Columbia. The Supply Contractor also warrants that the Goods are free and clear of all liens and encumbrances whatsoever and that the Supply Contractor has a good and marketable title to the same.

3.4.4 The Supply Contractor warrants and guarantees that the Goods are free from all defects arising at any time from faulty design in any part of the Goods.

3.4.5 The Supply Contractor represents that it has read the contract terms and the Specifications and has satisfied itself that the Goods can be supplied in accordance with the Specifications free of defects and fit for the purpose for which they are to be used.

3.4.6 The warranty period shall commence once the Corporation puts the Goods into operation, the operational date being no later than October 31, 2024.

3.4.7 The warranty should be made out to the Regional District of Nanaimo, 6300 Hammond Bay Road, Nanaimo, B.C. V9T 6N2

SAMPLE

PART 4 INDEMNIFICATION AND INSURANCE

4.1 INDEMNIFICATION AND RELEASE

4.1.1 The Supply Contractor shall save harmless and indemnify the Corporation and its directors, officers, servants, employees and agents (the "Indemnified Parties") from and against all actions, claims, demands, proceedings, suits, losses, damages, costs and expenses of whatsoever kind or nature (including but not limiting the generality of the foregoing, in respect of death, injury, loss or damage to any person or property) arising in any way out of or connected with the Goods or the supply, off-loading or delivery of the Goods by the Supply Contractor under this agreement, except to the proportionate extent that such actions, claims, demands, proceedings, suits, losses, damages, costs and expenses were caused by the Indemnified Parties or any of them.

4.1.2 Unless otherwise specified in the Contract, the Supply Contractor shall save harmless and indemnify the Indemnified Parties from and against all actions, claims, demands, proceedings, suits, losses, damages, costs and expenses of whatsoever kind or nature arising in any way from liability of any nature or kind for or on account of any copyrighted or uncopyrighted composition, secret or other process, patented or unpatented invention, articles or appliances manufactured, supplied or used in the Goods, and/or used or to be used by the Corporation before or after supply of the Goods as a result of work performed by the Supply Contractor, and if the Supply Contractor shall fail to save harmless and indemnify in manner aforesaid, any money collected from the Indemnified Parties shall be charged to the Supply Contractor.

4.1.3 The Supply Contractor shall release and discharge the Corporation and its directors, officers, servants, employees and agents (the "Released Parties") from and against all actions, claims, demands, proceedings, suits, losses, damages, costs and expenses of whatsoever kind or nature (including but not limiting the generality of the foregoing, in respect of death, injury, loss or damage to any person or property) which the Supply Contractor or its servants or employees might have in any manner arising in any way out of or connected with the Goods or the supply, off-loading or delivery of the Goods by the Supply Contractor under this agreement except to the proportionate extent that such actions, claims, demands, proceedings, suits, losses, damages, costs and expenses were caused by the Released Parties or any of them.

SAMPLE

4.1.4 The indemnity provided in this clause by the Supply Contractor to the Indemnified Parties shall not in any way be limited or restricted by any insurance or by limitations on the amount or type of damages, compensation or benefits payable under the Workers' Compensation Act or any other similar statute.

4.2 INSURANCE

4.2.1 General

The Supply Contractor and subcontractors shall provide at their own cost any insurance which they are required by law to provide or which they consider necessary to protect their own interests.

4.2.2 Indemnity Not Restricted by Insurance

The provisions for insurance shown above shall not in any way limit the indemnity granted by the Supply Contractor to the Indemnified Parties elsewhere in this section.

4.3 PATENT, TRADEMARK OR COPYRIGHT

4.3.1 The Supply Contractor represents that it has fully investigated all Specifications, including any furnished by the Corporation, in connection with the Goods and based on such investigation and its past experience and superior knowledge with respect to such Goods has determined that the production and supply thereof will not infringe any patent, trademark or copyright.

PART 5 SHIPMENT OF GOODS/DAMAGE TO GOODS

5.1 SHIPMENT OF GOODS

5.1.1 Delivery of Goods

The Supply Contractor must deliver the Goods to the Delivery Point. Delivery of the Goods to a carrier for transmission to the Delivery Site does not constitute delivery of the Goods to the Corporation. Any such carrier is deemed to be the Supply Contractor's agent and not the Corporation's agent.

5.1.2 Delivery Costs

The Supply Contractor is responsible for all costs and expenses whatsoever in relation to the supply and delivery of the Goods to the Delivery Point,

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including without limitations, all shipping, carrier, transportation, freight, insurance, storage and handling costs, as well as any customs or excise charges or duties.

5.1.3 Supply Contractor to Bear Risk

The Supply Contractor shall bear all risks and shall assume all responsibility for the Goods, including, without limitation, any loss or damage to the Goods from any cause whatsoever, up to and including the delivery at the Delivery Point.

5.1.4 Loss or Damage

If loss or damage to the Goods occurs for which the Supply Contractor is responsible, the Supply Contractor shall immediately effect repairs or replace any property as necessary to make good any such loss or damage. If the Supply Contractor refuses or neglects to do so, the Corporation may make good any such loss or damage, either by itself or by employing some other person, and the expense of doing so shall be charged to the Supply Contractor. If any repair or replacement of property is performed on the Goods as a result of loss or damage to the Goods for which the Supply Contractor is responsible the Supply Contractor represents and warrants that the warranty provided shall not be affected or changed to any manner or respect whatsoever.

5.1.5 Acceptance of Delivery of Goods by Corporation

Notwithstanding any other provision in the Contract Documents, the Corporation is not deemed to have accepted the Goods until the Goods have been delivered to and off-loaded at the Delivery Point and the Corporation has had a reasonable opportunity of examining them for the purpose of ascertaining whether they are in conformity with the Contract. The Corporation's acceptance or deemed acceptance of the Goods shall not prejudice any rights or remedies the Corporation may have hereunder relating to Goods that are found to be non-conforming, unsatisfactory, defective, of inferior quality or workmanship, or which fail to meet any specifications or requirements of the Contract Documents.

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PART 6 PROGRESS AND COMPLETION

6.1 CONTRACT TIME

6.1.1 Prosecution of the Goods

Time shall be strictly of the essence. The Supply Contractor shall supply the Goods in accordance with the Contract Documents. The Supply Contractor acknowledges that the schedule for supply of the Goods as set out in the Contract Documents is reasonable.

6.1.2 Schedule

The Supply Contractor shall provide a schedule and periodic updates co-ordinating the supply of Goods within the prescribed time. Contract time extensions, if any, shall be incorporated into updated schedules. The failure of the Supply Contractor to comply with this requirement may entitle the Corporation to terminate the Supply Contractor's right to continue with the supply of Goods or to delay progress payments.

6.2 TERMINATION

6.2.1 The Corporation may terminate the Contract if the Supply Contractor at any time becomes bankrupt, makes an assignment of his property for the benefit of his creditors, or if a receiver or liquidator should be appointed. Such termination shall be effective upon the Corporation giving notice thereof.

6.2.2 The Corporation may terminate the Contract if at any time the Corporation forms the opinion that the Supply Contractor is in default under this Contract because the Supply Contractor:

(1) has breached a fundamental term of the Contract or is in substantial breach of the terms of the Contract;

(2) has failed to supply the Goods, within the time specified in the Contract Documents or extensions mutually agreed between the parties in writing;

(3) has failed or is failing to furnish or to maintain a detailed Goods supply coordination schedule;

(4) has become in any way unable to supply the Goods or any part thereof;

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(5) has repeatedly failed to make prompt payments to subcontractors, suppliers or others for labour, materials or equipment; then the Corporation may give notice in writing to the Supply Contractor of such opinion and require that such default or defaults be remedied forthwith. If, within five Days of such notice, such default or defaults are not remedied to the satisfaction of the Corporation, the Corporation may terminate the Contract. Such termination shall be effective immediately.

6.2.3 The Corporation may terminate the Agreement, without any cost or penalty or consequence whatsoever, if it concludes, acting reasonably on the information available to it, that the Contractor is in material non-compliance with, or has been convicted of a material offence or violation of, health, safety, labour or environmental laws.

6.3 NO CLAIM

Except as herein before provided, the Supply Contractor shall have no claim against the Corporation for any reason whatsoever by reason of the termination of the Contract.

PART 7 PAYMENT

7.1 PAYMENTS TO SUPPLY CONTRACTOR

7.1.1 Payments to the Supply Contractor will be made as per the Supply Agreement

7.1.2 Notwithstanding Clause 7.1.1 the Corporation may withhold from payment:

(2) Any deduction the Corporation may be entitled to under the Contract;

(3) Such reasonable amount as the Corporation determines appropriate with respect to any part of the Goods otherwise not in compliance with the Contract Documents.

7.1.3 Payments may be withheld until the relevant operating manuals and all installation, operating and maintenance materials together with all warranties have been delivered to the Corporation.

7.1.4 In addition to any other remedy the Corporation may have in the Contract or law, the Corporation may refuse to make payment because of subsequently discovered evidence or test results, and shall be compensated for any payment previously made to the Supply Contractor to such extent as may be necessary to protect the Corporation from loss as a result of:

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(1) Defective or damaged Goods;

(2) A deductive change order;

(3) Failure of the Supply Contractor to supply the Goods in accordance with the Contract Documents, including failure to maintain the supply of the Goods in accordance with the schedule;

(4) Disregard by the Supply Contractor of the authority of the laws of any public body having jurisdiction.

The Corporation may refuse to make payment of the full amount because of claims made against the Corporation on account of the Supply Contractor's performance or supply of Goods. In such case, the Corporation shall give the Supply Contractor prompt written notice stating the reasons for each action.

7.1.5 The Corporation may withhold from payment to the Supply Contractor:

(1) Any set-off the Corporation may be entitled to under the Contract;

(2) The amount of any bona fide builder's lien claim asserted against the Corporation or which the Corporation acting reasonably anticipates will be made against the Corporation.

7.1.6 Prior to payment to the Supply Contractor, if requested by the Corporation, the Supply Contractor shall deliver to the Corporation a statutory declaration in form satisfactory to the Corporation declaring that all subcontractors, labour and accounts for material and equipment have been paid and that no persons, firms or corporations have any lien against the lands comprising the Delivery Point or the work together with such other documentation as the Corporation, acting reasonably, determines is necessary or desirable.

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SCHEDULE 1 – ADDENDA

SCHEDULE 2 – SUPPLY CONTRACTOR PROPOSAL

SCHEDULE 3 – SUPPLY CONTRACTOR SUPPORTING INFORMATION

SCHEDULE 4 - SPECIFICATIONS

Title	Ref.No.	Date	Rev
Grit & Sedimentation Tanks Mechanism Purchase Specification	N/A		0

SCHEDULE 5 – OTHER RELEVANT DOCUMENTS