PORT of vancouver

December 24, 2019

Mr. Casey McCawley
Fraser Grain Terminal Ltd.
FGT Vancouver Office
#640 – 355 Burrard Street
Vancouver, BC, V6C 2G8

Dear Mr. McCawley:

Re: Vancouver Fraser Port Authority Project Permit No. 15-041-3 - Amendment
Fraser Grain Terminal Ltd. – Fraser Grain Terminal - Grain Export Facility

On behalf of the Vancouver Fraser Port Authority (VFPA), I am pleased to advise that the permit for the above-noted work has been amended.

Reference is made to the recent request from FWS made on behalf of Fraser Grain Terminal Ltd. (the Permit Holder) to amend Project Permit 15-041-2. The amendment requested is an update to the Project Description as a result of additional works and activities now proposed to be undertaken as part of the Project.

The Vancouver Fraser Port Authority (VFPA) understands that the Permit Holder has increased the scope of works being undertaken as part of this Project to now include extending the existing drainage ditch along the south side of Robson Road. This added component will involve the following works:

- Removal of the existing headwall;
- Infilling a portion of the existing drainage ditch;
- Installation of a new manhole; and
- Installation of a new 300 millimetre reinforced concrete pipe storm line, extending the existing line by 31 metres to the north.

VFPA has reviewed the request and all additional information provided in the following supporting documents:

- Letter from FWS Group of Companies – Permit # 15-041-2 – Permit Amendment 3, December 11, 2019
- Drawing No. 32022-C-07-07 Rev5 – South Drainage Plan, ISL Engineering and Land Services
- Drawing No. 32022-C-07-10 Rev10 – South Drainage Plan, ISL Engineering and Land Services

VFPA has reviewed the proposed works and determined that adverse impacts to Aboriginal or Treaty rights are not expected. To meet requirements of section 86 of the *Impact Assessment Act*, VFPA posted a description of the Project and notice of public participation to the Canadian Impact Assessment Registry to provide the public 30 calendar days to comment on the project and provide community knowledge. No public comments were received regarding this proposed project.

In completing the project and environmental review on the proposed project amendment, the port authority has reviewed and taken into account relevant information available on the proposed project and

has considered any adverse impact that the project may have on the rights of Indigenous peoples, Indigenous knowledge, community knowledge, comments received from the public, and measures that would mitigate any significant adverse environmental effects of the project. We conclude that with the implementation of proposed mitigation measures and adherence to all of the Permit conditions outlined in Project Permit 15-041, the Project is not likely to cause significant adverse environmental effects.

Pursuant to the Port Authorities Operations Regulations under the *Canada Marine Act* and, as applicable, Section 82 of the *Impact Assessment Act.*, by way of this letter, the proposed modifications are authorized to proceed provided that all of the Conditions outlined in Project Permit 15-041 are adhered to. As a result of the approval of this permit amendment, the project permit number has been amended to PER No. 15-041-3. Please quote this updated reference number in all future correspondence.

Thank you for your cooperation throughout our review. Should you have any questions regarding this approval, please contact Jessica Mehigan at 604-665-9627 or jessica.mehigan@portvancouver.com.

Yours truly,

VANCOUVER FRASER PORT AUTHORITY

ORIGINAL COPY SIGNED

Peter Xotta
Vice President, Planning & Operations

ORIGINAL COPY SIGNED

Carrie Brown
Director, Environmental Programs

cc Greg Yeomans, Director, Planning & Development, VFPA
Chris Bishop, Manager, Planning, VFPA
Jessica Mehigan, Supervisor, Planning, VFPA
Donna Hargreaves, Compliance Monitoring and Enforcement Specialist, VFPA
Catherine MacInnis, Senior Property Administrator, VFPA

encl (1) Project Permit No. 15-041

11 December 2019

JESSICA MEHIGAN
Vancouver Fraser Port Authority
100 The Pointe, 999 Canada Place
Vancouver, BC
V6C 3T4

RE: Permit No. 15-041-2: Proposed Permit Amendment 3

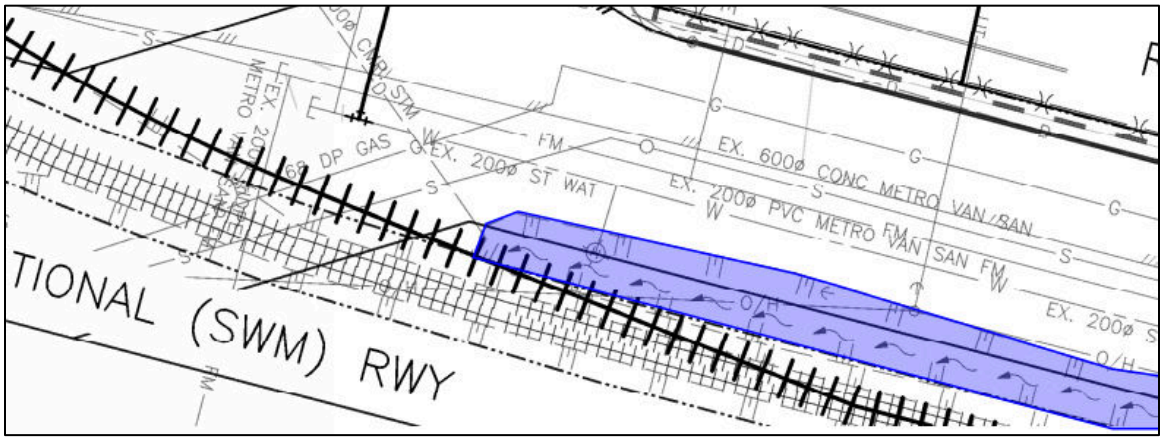
Jessica,

FWS Western Ltd, acting on behalf of Parrish & Heimbecker Limited, is issuing an amendment request to Permit # 15-041-1 issued by VFPA on November 9th, 2018 and subsequently amended on May 15th, 2019 and July 15th, 2019 for the FGT Project.

The design change covered under this amendment is necessary to provide protection/reinforcement to the existing drainage ditch located within the footprint of the future FGT rail line and switch near the intersection of Robson Road and the FGT Access Road.

Background – Drainage Ditch

The proximity of the new FGT rail to the existing drainage ditch was not considered when submitting the original PER civil design package. After reviewing on site with the civil engineer of record it was determined that to prevent the new FGT rail bed from collapsing and sloughing in, a portion of the existing ditch would need be infilled and replaced with a new manhole and 300mm concrete class V storm line to reinforce the stability of the future rail line foundation. See attached ISL drawing 32022 C-07 R5 and below for original civil design.

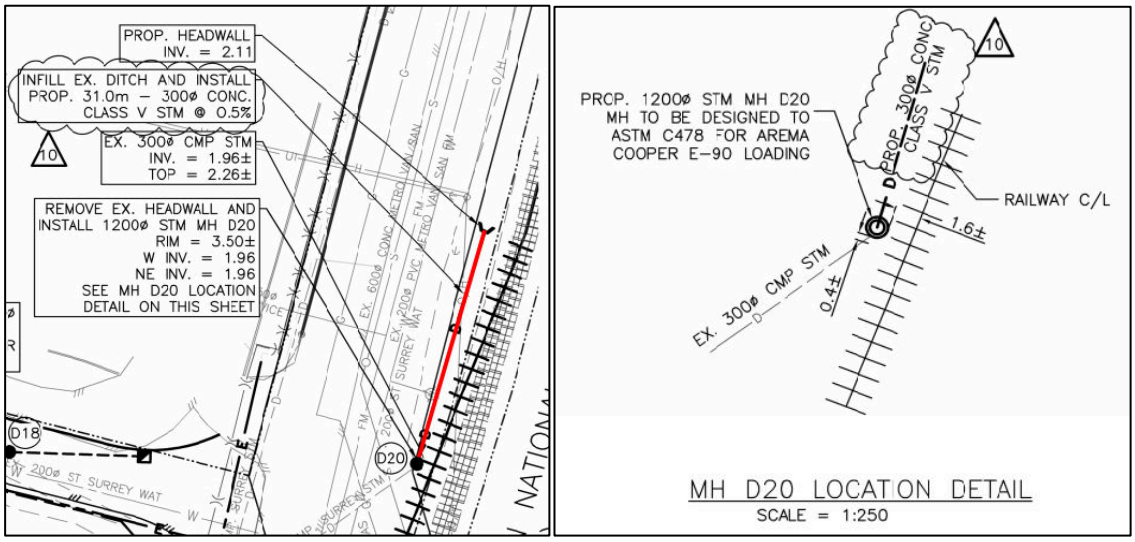


CANADA BEST MANAGED COMPANIES

Summary of Changes

Minor modifications to the existing culverts by Robson Road are required to build and tie-in the new FGT rail track to the existing Canadian National (SWM) Railway. As it stands, the current layout would not be able to support the new rail loading and could result in the line sloughing into the ditch

Modifications include removing the existing headwall and installing a new 1200mm storm line D20 manhole design to ASTM C478 for AREMA Cooper E-90 loading and extending the existing 300mm corrugated metal pipe (CMP) storm line approximately 31m North. See below for the proposed storm line extension and new MH D20 location detail. See attached ISL drawing 32022 C-07 R10 for details



FWS has engaged Triton Environmental to file a Notificatrion under Section 11 of the Water Sustainability Act for Changes in and about a Steram under Part 3 of the Water Sustainability Regulation. This notification was submitted and received by the Province of BC on September 17th, 2019. See attached correspondence for details.

Closing

We trust this notification will satisfy the VFPA to move forward with the proposed works.

Please contact the undersign in case you require any additional information.

Sincerely,

Ian Dueck, EIT
Project Coordinator
FWS Group of Companies
D: (204) 928-8763
C: (431) 996-6905

cc: Anika Calder – VFPA

cc: Donna Hargreaves – VFPA

cc: Catherine MacInnis – VFPA

cc: Amy Lamb – VFPA

cc: VFPA Project and Environmental Review – VFPA

cc: Tanya Hayes – FGT

cc: Andrew Smith – FWS

cc: Diego Orozco – FWS

Enclosed:

ISL DWG 32022 C-07 Sheet 07 South Drainage Plan R5

ISL DWG 32022 C-07 Sheet 10 South Drainage Plan R10

Section 11 Notification Correspondence

CANADA BEST MANAGED COMPANIES

MATCH LINE SEE SHEET 06 FOR CONTINUATION

MATCH LINE SEE SHEET 06 FOR CONTINUATION

PROP. 1050ø MH D8
RIM = 5.00
NE INV. = 3.65

PROP. RETAINING WALL

PROP. RAIL TRACK CENTER

PROP. 87.1m – 300ø PVC STM @ 0.25%

PROP. 69.3m – 375ø CONC. STM @ 0.25%

PROP. 1050ø MH D12
RIM = 4.90
NE INV. = 3.22

REMOVE EX. 750ø CULVERT

PROP. CONCRETE SLAB TO PROTECT EX. METRO VAN WATERMAIN UNDER PROP. ASPHALT PAVEMENT. SEE METRO VAN WAT SOUTH CROSSING DETAIL ON SHEET 12

PROP. 1050ø MH D7
RIM = 5.00
S INV. = 3.40
NE INV. = 3.43

PROP. 10.3m – 300ø PVC STM @ 0.25%

PROP. 80.0m – 300ø PVC STM @ 0.25%

PROP. 1050ø MH D6
RIM = 4.98
SE INV. = 3.34
N INV. = 3.37

PROP. 300ø PVC STM CROSSING EX. 1200ø STEEL MTRO VAN WATERMAIN
METRO VAN WAT TOP = 2.77
STM INV = 3.20
0.43m CLEARANCE

PROP. 150ø PVC PERFORATED PIPE

PROP. FUEL STATION

PROP. 85.0m – 675ø CONC. STM @ 0.1%

EX. 750ø STM TO REMAIN LOCATION AND ELEVATION TO BE CONFIRMED PRIOR TO CONSTRUCTION

PROP. 1350ø MH D2
RIM = 5.05
SE INV. = 2.10
NW INV. = 2.10
NE INV. = 2.70±

REMOVE EX. HEADWALL AND TIE–IN EX. 600ø STM TO PROP. MH D2

PROP. 17.3m – 750ø CONC. STM @ 0.17%

PROP. OIL & SEDIMENT CONTROL DEVICE STORMCEPTOR STC9000 OR APPROVED EQUIVALENT D1
RIM = 5.07
SE INV. = 2.04
NW INV. = 2.07
SEE WATER QUALITY TREATMENT DEVICE NOTES ON THIS SHEET

PROP. 23.5m 750ø CONC. STM @ 0.17%

PROP. 15.5m – 750ø CONC. STM @ 0.15%

PROP. HEADWALL INV. 2.00

PROP. 1350ø MH D3
RIM = 4.94
SE INV. = 2.12
NE INV. = 2.20
W INV. = 2.50

TIE–IN PROP. SWALE TO EX. DITCH

REGRADE 70m EX. DITCH TO 0.1% SLOPE

EX. INV.=1.93 @ 900ø CULVERT

PROP. 56.9m – 300ø PVC STM @ 1.1%

REMOVE EX. CULVERT AND EXTEND 900ø CMP STM BY 3.0m
EX. CULVERT INV. = 1.11

PROP. 1050ø MH D4
RIM = 5.12
E INV. = 3.11
SW INV. = 3.22
NW INV. = 3.14

PROP. 1500ø MH D17
RIM = 3.80
NE INV. = 1.10
W INV. = 1.10

PROP. 27.5m 900ø CMP STM @0.4%

PROP. 35.0m – 250ø PVC STM @ 0.5%

INFILL / REGRADE EX. DITCH TO SUIT

PROP. HEADWALL INV. = 0.99

PROP. OIL INTERCEPTOR D5
RIM = 5.08
NE INV. = 3.40
SEE SHEET 12 FOR OIL INTERCEPTOR DETAILS

3:1 MAX SLOPE TO MATCH EXISTING GROUND (TYP.)

OUTLET TO PROP. SWALE

PROP. DRAINAGE SWALE

TIE–IN PROP. SWALE TO EX. DITCH

1 – PROTECT AND MAINTAIN EX. CATCH BASIN / STM MH

2 – REMOVE EX. CATCH BASIN / STM MH

ROBSON ROAD

CANADIAN NATIONAL (SWM) RWY

BURL NORTH (SWM) RWY

NOTES:

1. ALL PVC PIPES TO BE PVC DR35.
2. ALL CONCRETE PIPES TO BE C76 CL III.
3. ALL MANHOLES AND CATCH BASINS TO BE OCEAN CLASS HD525 OR EQUIVALENT.

WATER QUALITY TREATMENT DEVICE NOTES: (SEE EXAMPLE DETAIL ON SHEET 12)

1. THE OIL & SEDIMENT CONTROL DEVICE SHALL HAVE A MIN. ANNUAL TSS REMOVAL RATE OF 85% FOR PARTICLE SIZES 50 MICROMETER AND GREATER FOR EACH AND EVERY YEAR. DURING HIGH FLOWS THE SYSTEM INTERNALLY BYPASS SO THAT PREVIOUSLY CAPTURED SEDIMENT IS SEPARATED FROM THE HIGH FLOW.

2. SUPPLY TO PROVIDE (STORMCEPTOR STC/OR EQUAL):
a) A PERFORMANCE TABLE SHOWING AVERAGE ANNUAL REMOVAL RATES, TOTAL RUNOFF VOLUMES, TREATED VOLUMES AND SEDIMENT DEPOSITION VOLUMES FOR ALL AVAILABLE YEARS OF LOCAL METEOROLOGICAL RAINFALL DATA. INCLUDE A SUMMARY OF TOTAL RUNOFF VOLUME TREATED OVER THE PERIOD OF RECORD.
b) CALCUATIONS/INFORMATION SHOWING HOW AVERAGE ANNUAL REMOVAL RATES (85% FOR PARTICLE SIZES 50 MICROMETER OR GREATER) WERE ACHIEVED OR MODELED.
c) CALCUATIONS/INFORMATION DEMONSTRATING HOW THE ONE YEAR OF SEDIMENT STORAGE CAPACITY WAS DERIVED.
d) SUBMISSION TO BE SIGNED AND SEALED BY ENGINEER REGISTERED IN BRITISH COLUMBIA.
e) AN OPERATION AND MAINTENANCE (O&M) MANUAL AND SAMPLE MAINTENANCE LOG ARE TO BE PROVIDED TO THE OWNER.

No.	DESCRIPTION	BY	DATE
5	UPDATE PROJECT TITLE FOR DP AMENDMENT	DWF	MAY29/18
4	RE–ISSUED FOR DP AMENDMENT	DWF	MAY11/18
3	ISSUED FOR DP AMENDMENT	DWF	MAY03/18
2	REVISED CONCEPT DESIGN	DWF	APR17/18
1	CONCEPT DESIGN	DWF	MAR29/18

REVISIONS

P.Eng.

ISL Engineering and Land Services
#201, 8506 – 200 STREET
Langley, B.C. V2Y 0M1
Office: (604) 371–0091
Fax: (604) 371–0098
www.islengineering.com

Scale
1:500

FRASER GRAIN TERMINAL

NEW GRAIN EXPORT FACILITY
11041 ELEVATOR ROAD, SURREY

Drawn: DWF | Design Checked: SJV | Date: MAR 2018
Designed: DWF | Discipline Review: SJV | Date: MAR 2018

SOUTH DRAINAGE PLAN

Drawing No.
32022
C–07

Sheet No.
07

MATCH LINE SEE SHEET C-06 FOR CONTINUATION

MATCH LINE SEE SHEET C-06 FOR CONTINUATION

DESIGNED TO MEET THE NATIONAL BUILDING CODE 2015

EXISTING STORM

1 – PROTECT AND MAINTAIN EX. CATCH BASIN / STM MH

2 – REMOVE EX. CATCH BASIN / STM MH

PROTECT EX. METRO VAN WATER MH AND AIR VALVE

MV WAT TOP ELEV. 2.98

PROP. 1050ø MH D8 RIM = 5.00 NE INV. = 3.70

PROP. RAIL TRACK CENTER

PROP. 87.1m – 300ø PVC STM @ 0.3%

NEW FGT BOUNDARY (TYP.)

PROP. RETAINING WALL SEE WALL DESIGN BY OTHERS

PROP. 69.3m – 375ø CONC. STM @ 0.27%

PROP. 1050ø MH D14 RIM = 4.90 NE INV. = 3.33

PROP. 375ø CONC. STM CROSSING EX. 1200ø STEEL MTRO VAN WATERMAIN METRO VAN WAT TOP = 2.77 STM INV = 3.16 0.33m CLEARANCE

REMOVE EX. 750ø CULVERT

MV WAT TOP ELEV. 2.78

PROP. CONCRETE SLAB TO PROTECT EX. METRO VAN WATERMAIN UNDER PROP. ASPHALT PAVEMENT. SEE METRO VAN WAT SOUTH CROSSING DETAIL ON SHEET C-12

PROP. 1500ø MH D2 c/w BYPASS WEIR RIM = 5.05 SE INV. = 2.10 NW INV. = 2.10 NE INV. = 2.70± SW INV. = 2.10 SEE NOTE 4 ON THIS SHEET FOR BYPASS WEIR DETAIL

PROP. 15.5m – 750ø CONC. STM @ 0.13%

PROP. 85.0m – 675ø CONC. C76 CL V STM @ 0.11%

EX. 750ø STM TO REMAIN LOCATION AND ELEVATION TO BE CONFIRMED PRIOR TO CONSTRUCTION

REMOVE EX. HEADWALL AND TIE–IN EX. 750ø STM TO PROP. MH D2

PROP. 11.8m – 750ø CONC. STM @ 0.17%

PROP. 1350ø MH D1 RIM = 5.05 SE INV. = 2.05 NW INV. = 2.08 SW INV. =2.05

PROP. 4.2m – 600ø CONC. STM @ 0.23%

PROP. OIL & SEDIMENT CONTROL DEVICE VORTECHS MODEL 4000 OR APPROVED EQUIVALENT SEE WATER QUALITY TREATMENT DEVICE NOTES ON THIS SHEET

PROP. 90.0m – 300ø CONC. STM @ 0.25% SEE SHEET C–7A FOR DESIGN DETAILS

PROP. HEADWALL INV. = 2.11

INFILL EX. DITCH AND INSTALL PROP. 31.0m – 300ø CONC. CLASS V STM @ 0.5%

EX. 300ø CMP STM INV. = 1.96± TOP = 2.26±

REMOVE EX. HEADWALL AND INSTALL 1200ø STM MH D20 RIM = 3.50± W INV. = 1.96 NE INV. = 1.96 SEE MH D20 LOCATION DETAIL ON THIS SHEET

PROP. 8.6m – 600ø CONC. STM @ 0.23%

PROP. 5.7m – 600ø CONC. STM @ 0.17%

PROP. 1200ø MH RIM = 5.13 NE INV. = 2.09 SE INV. = 2.08

REGRADE 70m EX. DITCH TO 0.1% SLOPE

PROP. HEADWALL AE CONCRETE 14–15 OUTLET OR APPROVED EQUIVALENT INV. 2.00 SEE OUTFALL DETAIL ON SHEET C–12

EX. INV.=1.93 @ 900ø CULVERT

PROP. 1350ø MH D3 RIM = 4.94 SE INV. = 2.12 NE INV. = 2.18 W INV. = 2.43

PROP. 56.9m – 375ø CONC C76 CL V STM @ 1.1%

PROP. 1050ø MH D4 RIM = 5.12 E INV. = 3.03 SW INV. = 3.22 NW INV. = 3.10

PROP. 35.0m – 250ø PVC STM @ 0.5%

PROP. 1050ø MH D5 RIM = 5.08 NE INV. = 3.40

TIE–IN PROP. SWALE TO EX. DITCH

REMOVE EX. HEADWALL AND EXTEND 900ø CMP STM BY 3.0m EX. CULVERT INV. = 1.11

PROP. 29.1m 750ø CONC. STM @ 0.17%

PROP. 1500ø MH D17 RIM = 3.80 NE INV. = 1.10 W INV. = 1.10

PROP. 27.5m 900ø CMP STM @0.4%

INFILL / REGRADE EX. DITCH TO SUIT

PROP. HEADWALL INV. = 0.99

TIE–IN PROP. SWALE TO EX. DITCH

PROP. 80.0m – 375ø CONC. C76 CL V STM @ 0.25%

PROP. 10.3m – 300ø PVC STM @ 0.29%

PROP. 1050ø MH D7 RIM = 5.00 S INV. = 3.40 NE INV. = 3.43

PROP. 1050ø MH D6 RIM = 4.98 SE INV. = 3.30 N INV. = 3.37

PROP. ELECTRICAL SWITCH STATION

PROP. 150ø PVC PERFORATED PIPE SEE RAIL DESIGN BY OTHERS

MV WAT TOP ELEV. 2.72

OUTLET TO PROP. SWALE

PROP. DRAINAGE SWALE SEE RAIL DESIGN BY OTHERS

3:1 MAX SLOPE TO MATCH EXISTING GROUND (TYP.)

EX. 2.4m x 1.5m STM MH NW INV. = 1.77± NE INV. = 1.50± S INV. = 1.36± E INV. = 1.49±

ROBSON ROAD

CANADIAN NATIONAL (SWM) RWY

BURL NORTH (SWM) RWY

PROP. 1200ø STM MH D20 MH TO BE DESIGNED TO ASTM C478 FOR AREMA COOPER E–90 LOADING

PROP. 300ø CONC CLASS V STM

RAILWAY C/L

1.6±

0.4±

EX. 300ø CMP STM

MH D20 LOCATION DETAIL

SCALE = 1:250

NOTES:

1. ALL PVC PIPES TO BE PVC DR35.
2. ALL CONCRETE PIPES TO BE C76 CL III OR C76 CL V WHERE SHOWN.
3. ALL MANHOLES AND CATCH BASINS WITHIN 5m OF HEAVY LOADED PAVEMENT AREA AS INDICATED ON THE SHEET 02 AND 03 TO BE RATED FOR 965kN AXLE LOADING.
4. MH 2 BYPASS WEIR TO BE PRE–FABRICATED 300mm HIGH, 25mm THICK 316 STAINLESS STEEL PLATE ANCHORED TO MANHOLE WALL WITH STAINLESS STEEL HARDWARE TO DIVERT FLOWS UP TO 170l/s TO VORTECHS STORM WATER TREATMENT SYSTEM. PROVIDE SHOP DRAWINGS IN ADVANCE OF FABRICATION.
5. ALL 600V AND 120V ELECTRICAL CROSSINGS TO HAVE A MINIMUM OF 400mm CLEARANCE ACROSS MV AN3 WATER LINE.

WATER QUALITY TREATMENT DEVICE NOTES: (SEE EXAMPLE DETAIL ON SHEET C–12)

1. THE OIL & SEDIMENT CONTROL DEVICE SHALL HAVE A MIN. ANNUAL TSS REMOVAL RATE OF 85% FOR PARTICLE SIZES 50 MICROMETER AND GREATER FOR EACH AND EVERY YEAR. DURING HIGH FLOWS THE SYSTEM INTERNALLY BYPASS SO THAT PREVIOUSLY CAPTURED SEDIMENT IS SEPARATED FROM THE HIGH FLOW.

2. SUPPLY TO PROVIDE (STORMCEPTOR STC/OR EQUAL):

a) A PERFORMANCE TABLE SHOWING AVERAGE ANNUAL REMOVAL RATES, TOTAL RUNOFF VOLUMES, TREATED VOLUMES AND SEDIMENT DEPOSITION VOLUMES FOR ALL AVAILABLE YEARS OF LOCAL METEOROLOGICAL RAINFALL DATA PLUS 21% FOR CLIMATE CHANGE. INCLUDE A SUMMARY OF TOTAL RUNOFF VOLUME TREATED OVER THE PERIOD OF RECORD.

b) CALCUATIONS/INFORMATION SHOWING HOW AVERAGE ANNUAL REMOVAL RATES (85% FOR PARTICLE SIZES 50 MICROMETER OR GREATER) WERE ACHIEVED OR MODELED.

c) CALCUATIONS/INFORMATION DEMONSTRATING HOW THE ONE YEAR OF SEDIMENT STORAGE CAPACITY WAS DERIVED.

d) SUBMISSION TO BE SIGNED AND SEALED BY ENGINEER REGISTERED IN BRITISH COLUMBIA.

e) AN OPERATION AND MAINTENANCE (O&M) MANUAL AND SAMPLE MAINTENANCE LOG ARE TO BE PROVIDED TO THE OWNER.

No.	DESCRIPTION	BY	DATE
10	300ø STM PIPE MATERIAL REVISED	SMC	OCT31/19
9	CONC. PROTECTION SLAB REMOVED	DWF	OCT11/19
8	MH D20 AND 300ø STM PIPE ADDED	DWF	AUG08/19
7	ISSUED FOR BUILDING PERMIT	DWF	APR02/19
6	ISSUED FOR CONSTRUCTION	DWF	JAN30/19
5	REVISED NOTE	KFT	DEC 21/18

REVISIONS

P.Eng.

ISL Engineering and Land Services
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Fax: (604) 371-0098
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Scale 1:500

FRASER GRAIN TERMINAL

NEW GRAIN EXPORT FACILITY
11041 ELEVATOR ROAD, SURREY

Drawn:	DWF	Design Checked:	SJV	Date:	JUL 2019
Designed:	DWF	Discipline Review:	SJV	Date:	JUL 2019

SOUTH DRAINAGE PLAN

Drawing No. 32022 C–07

Sheet No. 10