CORPORATION OF THE
TOWNSHIP OF EDWARDSBURGH CARDINAL

BY-LAW NO. 2020-76

"BEING A BY-LAW TO AUTHORIZE THE EXECUTION OF A SITE PLAN CONTROL AGREEMENT WITH SHORELINE RAIL GROUP INC."

WHEREAS the Council of the Corporation of the Township of Edwardsburgh Cardinal deems it advisable to enter into a Site Plan Control Agreement with ShoreLine Rail Group Inc. respecting development of a property described as:

3518 County Road 2
Con 1, Pt Lot 34, 35
RP 15R9747 Parts 1, 7 and 8
TOWNSHIP OF EDWARDSBURGH/CARDINAL
Property Roll #0701 701 050 11501
Identified as Part of PIN 68155-0792 (LT)

WHEREAS Authority is granted under Section 41 of the Planning Act, RSO 1990, c.P. 13, as amended to the Council of the Corporation of the Township of Edwardsburgh/Cardinal to enter into and amend such agreements; and

NOW THEREFORE BE IT RESOLVED THAT the Council of the Corporation of the Township of Edwardsburgh Cardinal enacts as follows:

1. That the Mayor and Clerk are hereby authorized to execute an agreement with ShoreLine Rail Group Inc. and that a signed copy of said agreement is attached hereto as Schedule "A".

2. That the following by-law to authorize execution of a site plan control previously passed is hereby repealed: By-law 2019-55, GC61216 registered on December 16, 2019.

3. That this by-law shall come into force and effect upon passing.

Read a first and second time in open Council this 23 day of November, 2020.

Read a third and final time, passed, signed and sealed in open Council this 23 day of November, 2020.

Mayor **Clerk**

SITE PLAN AGREEMENT

3518 County Road 2;

Con 1, Pt Lot 34, 35

RP 15R9747 Parts 1, 7 and 8

TOWNSHIP OF EDWARDSBURGH/CARDINAL

Property Roll #0701 701 050 11501

Identified as Part of PIN 68155-0792 (LT)

BETWEEN

SHORE LINE RAIL GROUP INC.

AND

THE CORPORATION OF THE TOWNSHIP OF EDWARDSBURGH/CARDINAL

November 23, 2020

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Schedule "A" - Legal Description

Schedule "B" - Plans

Schedule "C" - Additional Township Conditions

THIS AGREEMENT MADE BETWEEN: SHORE LINE RAIL GROUP INC.

HEREINAFTER CALLED THE "OWNER"

OF THE FIRST PART

AND: THE CORPORATION OF THE TOWNSHIP OF EDWARDSBURGH/CARDINAL

HEREINAFTER CALLED THE "TOWNSHIP"

OF THE SECOND PART

WHEREAS the Township of Edwardsburgh/Cardinal has enacted Site Plan Control By-law 2002-31 pursuant to the provisions of Section 41 of the Planning Act R.S.O. 1990, Chapter P.13, as amended;

AND WHEREAS the Owner is the Owner of the lands, more particularly described in Schedule "A" attached, and which are hereinafter referred to as the "Site";

AND WHEREAS the Owner and the Township have previously agreed to certain matters under Site Plan Control Agreement adopted by Bylaw 2018-46 duly registered on title of the lands;

AND WHEREAS the Owner and Township wish to amend said Agreement by adding certain matters to said Site Plan Control Agreement hereinafter expressed relating to the development of the lands pursuant to the Township's Site Plan Control By-law:

NOW THEREFORE THIS AGREEMENT WITNESSETH that in consideration of the approval of the plans for the development on the subject parcel of land by the Township and the sum of One Dollar ($1.00) of lawful money of Canada paid by the Township to the Owner the receipt whereof is hereby acknowledged by the Owner, the Owner and the Township agree as follows:

1. DEFINITIONS

In this Agreement:

"ACCEPTANCE" - means the date on which the Township accepts that all works and obligations which are constructed, installed, supplied or performed by the Owner pursuant to this Agreement and further referred to in this Agreement;

"AGREEMENT" - shall mean this Agreement and the Schedules which Schedules shall also be deemed to be covenants as though specifically set out therein;

"APPROVAL" - means the Township is satisfied that certain works have been constructed, installed or performed to the satisfaction of the Township, and as required in this Agreement;

"TOWNSHIP" - shall mean the Corporation of the Township of Edwardsburgh/Cardinal and shall include its successor and assigns and its officers, employees, agents, and contractors;

"TOWNSHIP ENGINEER" - Means the Director of Operations of the Corporation of the Township of Edwardsburgh/Cardinal or such other person or persons designated;

"CHIEF BUILDING OFFICIAL" - shall mean the person appointed by the Township as the Chief Building Official, or his/her designate;

"TOWNSHIP TREASURER" - shall mean the Treasurer of the Corporation of the Township of Edwardsburgh/Cardinal or such other person or persons so designated;

"MAINTAIN" - includes repair, replace, and/or keep operational;

"PLAN(S)" OR "SITE PLAN" - means the Site Plan and all associated plans approved by Council and includes the land described in Schedule "A";

"ROAD" - shall mean those public roads or any part thereof, any daylighting triangles, and areas of road widening shown or laid out on the Site Plan. The use of "Street" or "Public Highway" shall be synonymous with "Road";

"WORKS" - shall mean the whole works, materials, matters and things required by this Agreement to be supplied, performed, or constructed.

2. LANDS

The Owner agrees that the lands affected by this Agreement shall be those described in Schedule "A". The Owner warrants that it is the Owner in fee simple of the lands described in Schedule "A".

3. SCOPE OF WORKS AND CONFORMITY

The Owner agrees to construct and maintain the proposed development in conformity with this Agreement and Schedules attached hereto. No works shall be erected on the lands other than those erected in conformity with the said Schedules. It is understood and agreed that written approval of the Township, in a form determined solely by the Township, is required prior to any departure from the specifications of the Schedules being undertaken.

4. GENERAL

a) The Owner shall not call into question, directly or indirectly, in any proceeding whatsoever, in law or in equity, or before any administrative tribunal, the right of the Township to

enter into this Agreement and to enforce each and every term, covenant and condition herein contained.

b) The Owner covenants and agrees with the Township that if the Owner sells or conveys the lands herein described as the "Site" or any part thereof; that each transfer of an interest in land shall contain a covenant on the part of the Grantee in such Deed binding itself, its heirs, executors administrators, successors and assigns to the terms of this Agreement. Furthermore, the carrying out of the Works and obligations of the Owner under this Agreement shall include a similar covenant in all subsequent Deeds of Grant of the said lands until the Works and obligations of the Owner under this Agreement have been fully performed. All covenants and Agreements herein contained, assumed by, or imposed upon the Owner are deemed to be covenants which run with and bind the lands herein described and every part thereof.

c) The Owner agrees that there will be no subdivision of the lands herein described on Schedule "A" except by application pursuant to the provisions of the Planning Act, R.S.O. 1990, Chapter P13, as amended.

d) The Owner shall provide, in addition, digital copies of plans included in the Schedules of this Agreement in a pdf format.

e) The Owner shall supply to the Township, one set of "as-constructed" road, grading and service drawings including the location of all works, certified under seal by a Professional Engineer, for Township records, upon completion of the Works. Furthermore, the Owner may be required to provide the "as-constructed" information and attribute data for the works in an electronic form that is compatible with the Township's computer systems.

f) The Owner covenants and agrees to satisfy all conditions of approval and abide by all municipal by-laws, statutes and regulations, including those of the United Counties of Leeds & Grenville.

g) The Owner further covenants and agrees to satisfy all conditions of approval and abide by all Federal and Provincial statutes and regulations.

5. BUILDING AND PLANNING REQUIREMENTS

a) The Owner shall not commence or permit the commencement of any building or structure before the issuance to the Owner by the Township of a building permit, as required.

b) The Owner further agrees that the proposed Works including lot grading detail specified in the Schedules attached hereto shall be erected in conformity with the said Schedules to the satisfaction of the Township. No buildings or other Works shall be erected on the said lands other than those in conformity with Schedules. It is understood and agreed that written authority of the Township shall be obtained prior to any alterations being made which would in any way represent a departure from the specifications detailed in the said Schedules.

c) Nothing in this Agreement shall restrict the Owner from applying at any time in the future for building permits to construct extensions and/or additional buildings as may be permitted from

time to time by the By-Laws of the Township, subject to the requirement by the Township of a new Site Plan Approval.

d) The property and buildings subject to this Agreement shall be maintained per the provisions of this Agreement as well as being in compliance with any Property Standards By-law adopted by the Township of Edwardsburgh/Cardinal Council. The Owner shall repair and maintain at all times and to the satisfaction of the Township, all buildings located on the subject property together with all other on-site works.

e) The Owner covenants and agrees to pay to the Township any applicable fees which are established by By-Law of the Council of the Township and said charges shall be those in effect on the date of issue of a building permit for which an application has been made.

f) The Owner shall separately arrange for the removal of all construction waste and recycling material from the Site, and shall dispose of such garbage and waste at its own expense in accordance with Township By-Laws.

g) Until all Works have been completed to the satisfaction of the Township, the Owner shall immediately remove at its expense any mud or debris deposited on any public road(s) used for access to the Site which mud or debris has been deposited as a consequence of any Works carried out under the terms of this Agreement.

h) The Owner shall provide adequate parking facilities on-site or other approved locations where workers employed on the Site shall be required to park their vehicles, except for those times when reasonable access to the Site is not available due to services or street construction in the public street or except as may be authorized in writing by the Township.

i) Where any road has been used for the provision of access to a construction site and has been damaged by the Owner, or any employees or authorized agents of the Owner as a result of such use, the Owner shall restore or reconstruct it to its former state to the satisfaction of the Township or appropriate road authority.

j) The Owner shall not dump or permit to be dumped any fill or debris on adjacent lands, except as approved by the Township.

k) All exterior lighting shall be directed to shine away and down from abutting residential zones and public highways. All exterior lighting proposed for the subject lands shall be installed only in the locations and in accordance with specifications shown on the approved plans attached hereto, unless otherwise approved in writing by the Chief Building Official.

l) The Owner shall comply with those additional planning and engineering requirements set out in Schedule “C” hereto attached.

6. REGISTRATION

The Township shall require this Agreement to be registered against the lands to which it applies immediately following the execution by the parties hereto and the Owner agrees not to register any other instrument against the subject lands until this has been accomplished.

7. FAILURE TO COMPLY

The Owner acknowledges and agrees that failure to comply with any term or condition herein may result in the Township taking such action to enforce compliance, as deemed appropriate by the Township.

8. SERVICING AND EASEMENT REQUIREMENTS

a) The Owner shall provide, dedicate, and register such easements to the Township which may be required for water, sewer, drainage or other purposes related to the development of the Owner's lands. Copies of any and all plans and registration documents shall be provided to the Township by the Owner

b) The Owner agrees to clean out and remove solids accumulated in the sumps of catch basins. Township shall be permitted lawful entry onto the Site in order to examine and adjust, at the Owner's expense, all storm water management devices that do not then conform to the requirements of this Agreement. If the Township determines that the devices are not in conformance with this Agreement, the Township shall not enter to complete the adjustments aforesaid unless it has given prior written notice to the Owner and an opportunity to rectify the defect, all in accordance with the default provisions for this agreement. If, in the opinion of the Township, the non-conformance presents an emergency, the Township may, without notice to the Owner enter upon the Site to complete the required adjustments at the Owner's expense.

c) The Owner shall arrange at its own expense with Hydro One, Bell Canada, Union Gas, the local cable company or any other similar utility company for the installation of such services to the Site and for the provision of any easements with respect to such installations and in accordance with the terms, conditions and specifications laid down by said company. If in relation to the development of the Site the Owner is required, it shall also arrange for the relocation of any existing installation at no cost to the Township. Notwithstanding the aforementioned, the location of all boxes, lines or other works proposed to be installed in connection with the provisions of any service shall be submitted for approval to the Township before installation.

d) Water and sanitary services are to be provided on site by the owner and are subject to the approval of the District Health Unit or Ministry of Environment Conservation and Parks, as appropriate.

9. IMPLEMENTATION OF REPORTS AND STUDIES

All reports and/or studies required as a result of the Works in this Agreement shall be implemented to the Township's satisfaction at the sole expense of the Owner. The studies shall be identified in Schedule "C" Additional Township Conditions.

10. COMPLETION TIME LIMIT

Failure by the Owner to complete all Works required by this Agreement within the time limit specified by the Township or as extended, in writing at its sole discretion, shall constitute a default, in which case the Township may avail itself of the remedies hereinafter prescribed or available to it in law.

11. FINANCIAL REQUIREMENTS

a) Payment

The Owner shall pay to the Township, by cash or certified cheque, the charges and fees, as set out in this Agreement and other financial requirements including but not limited to reasonable administrative, legal, planning and engineering fees, development charges and building permit fees that may be required of the Township as established by by-law or resolution of the Council of the Township in effect at the time of application for a building permit.

b) Default

In the event of a default by the Owner or its assigns in the provision and maintenance of all matters and things required to be done by the Owner pursuant to this Agreement, the Township may at the expense of the Owner, enter upon the lands and do all such matters and things as are in default. Any costs incurred by the Township pursuant to this clause shall be paid by the Owner to the Township within thirty (30) days of the mailing of an invoice by the Township addressed to the Owner at its last known address. "Cost" and "expense of the Owner" in this Clause shall be actual cost incurred by the Township plus twenty-five percent (25 %) of such cost as a charge for overhead and administration fees. Any costs referred to in this clause may be recovered by the Township in like manner as municipal taxes pursuant to the provisions of Section 427 of the Municipal Act, 2001, S.O. 2001, c.25 as amended.

c) Taxes

The Owner shall pay all arrears of taxes outstanding against the lands prior to the execution of this Agreement. The Owner shall pay all taxes levied or to be levied on the lands on the basis of and in accordance with assessment and the collector's roll entries until such time as the lands have been reassessed and re-entered on the tax roll.

12. INSURANCE

a) The Owner shall provide before the execution of this Agreement, and continue in force until such time as all obligations under this Agreement are satisfied, a comprehensive policy of public liability and property damage insurance acceptable to the Township, providing insurance coverage in respect of any one occurrence to the limit of at least Five Million Dollars ($5,000,000.00) per occurrence, exclusive of interest and costs against loss or damage resulting from bodily injury to, or death of one or more persons and loss of or damage to property. Such policy shall designate the Township as a named additional insured thereunder.

b) The policy shall provide coverage against all claims for all damage or injury including death to any person or persons, for damage to any property of the Township or any other public or private property resulting from or arising out of any act or omission on the part of the Owner or any of its servants or agents or contractors during the construction or installation or maintenance of any Works to be performed pursuant to this Agreement. The policy shall include completed operations coverage and shall be maintained in effect until all obligations under this Agreement are satisfied.

c) The policy shall include blanket written contractual liability, cross liability, contingent employer's liability, personal injury endorsement, liability with respect to non-owned licensed vehicles. In the event that the Owner intends to carry out any shoring, blasting, excavating, underpinning, demolition, pile driving, caisson works and works below ground surface including tunnelling and grading on the lands, it shall first provide the Township with the Certificate of Public Liability Insurance covering such operations in a format satisfactory to the Township, in which the Township is named as additional insured prior to undertaking any such operations.

d) The Owner shall forward to the Township, prior to the signing of this Agreement by the Township, a Certificate of Liability Insurance. This Certificate of Insurance shall be signed by an authorized employee of the Insurance Company providing the insurance. Such insurance policy shall contain an endorsement to provide the Township and the Owner with not less than thirty (30) days written notice of cancellation.

e) The Owner shall furnish, prior to commencement of any construction, and at such other times as the Township may require, a certified copy of the policy together with proof of payment of the premiums for same.

13. RELEASE OF PLANS

The Owner hereby releases to the Township its rights to any approved drawings that form part of this Agreement, for the purposes of tendering the construction upon any default of this Agreement. The Owner shall also ensure that appropriate releases to the Township are obtained from the Owner's consultants, if required.

14. INDEMNITY

The Owner, on behalf of himself, his heirs, executors, administrators and assigns, including his successors in title; covenants and agrees to indemnify and save harmless the Township from all actions, causes of actions, suits, claims or demands whatsoever which arise directly or by reason of the development of the Site Plan and the construction and maintenance or the improper or inadequate construction and/or maintenance of Works.

15. GENERAL CONDITIONS

a) If required, the Owner shall at its own cost submit to the Ministry of the Environment Conservation and Parks for approval all plans required by the said Ministry and shall be responsible for obtaining any subsequent approvals from the Ministry of the Environment Conservation and Parks for the proposed site works, facility or any addition thereto and shall supply the Township with copies of all approvals or conditions enforced or set by the Ministry.

b) If required, the Owner shall at its own cost submit to the Technical Standards and Safety Authority (T.S.S.A.) for approval all plans required by said Authority and shall be responsible for obtaining any subsequent approvals from the T.S.S.A. for proposed site works, facility or any addition thereto and shall supply the Township with copies of all approvals or conditions enforced or set by the Authority.

c) Any notice required or permitted by this Agreement to be given by the parties hereto shall be in writing and shall be conclusively deemed to have been delivered on the date of mailing of such notice.

d) Any such notice required to be given herein shall be in writing and shall be delivered in person or by prepaid registered mail, to the attention of the Owner and/or the Township as follows:

TO THE OWNER:

Shore Line Rail Group
1044 Hunters Lane
Oxford Station, ON K0G 1T0
Attention: Clayton Jones

or such other address as the Owner has notified the Chief Administrative Officer of the Township in writing.

TO THE TOWNSHIP:

THE CORPORATION OF THE TOWNSHIP OF EDWARDSBURGH/CARDINAL
18 Centre Street
P.O. Box 129
Spencerville, ON K0E 1X0

e) All clause headings are for ease of reference only and shall not affect the construction or interpretation of this Agreement.

16. BINDING EFFECT; ASSIGNMENT

This Agreement shall ensure to the benefit of and be binding upon the parties hereto and their respective successors and assigns, and all covenant and agreements herein contained, assumed by, or imposed upon the Owner are deemed to be covenants which run with and bind the lands and every part thereof. This agreement may not be assigned without the prior written consent of each party.

17. SEVERABILITY

The invalidity or unenforceability of any particular provision of this agreement will not affect or limit the validity or enforceability of the remaining provisions.

18. EFFECTIVE DATE

This agreement is effective as of the date shown at the bottom of the first page, even if any signatures are made after that date.

19. COUNTERPARTS

This agreement may be signed in any number of counterparts, each of which is an original, and all of which taken together, constitute one single document. Counterparts may be transmitted by fax or in electronically scanned form. Parties transmitting by fax or electronically will also deliver the original counterpart to the other parties, but failure to do so does not invalidate this agreement.

20. INTERPRETATION

In construing this agreement, words in the singular shall include the plural and vice versa and words importing the masculine shall include the feminine, and the neuter and vice versa, and words importing persons shall include corporations and vice versa.

21. DISPUTE RESOLUTION

All matters in dispute between the parties, unless otherwise herein provided shall be determined by arbitration conducted by a single arbitrator in accordance with a submission made by either party under the Arbitration Act, 1991 S.O. 1991, CHAPTER 17. The decision of any such arbitrator shall be final and binding upon the parties, and any such arbitrator shall have the power to award costs in his or her discretion.

IN WITNESS WHEREOF the Owner hereunto set his Hand and Seal or affixed its Seal duly attested to by its proper officers in that behalf.

DATED AT THE TOWNSHIP OF EDWARDSBURGH CARDINAL

THIS 27TH DAY OF November, 2019.

SIGNED, SEALED AND DELIVERED in the presence of:

Clayton Jones

per:

Title: President

per:

Title:

I/We have the authority to bind the Corporation

DATED AT THE TOWNSHIP OF EDWARDSBURGH/CARDINAL

THIS 11TH DAY OF DECEMBER, 2020.

SIGNED, SEALED AND DELIVERED in the presence of:

Patrick Sayeau, Mayor

Dave S Grant, CAO

SCHEDULE "A"

DESCRIPTION OF THE LANDS TO WHICH THIS AGREEMENT APPLIES:

3518 County Road 2;

Con 1, Pt Lot 34, 35

RP 15R9747 Parts 1, 7 and 8

TOWNSHIP OF EDWARDSBURGH/CARDINAL

Property Roll #0701 701 050 11501

Identified as Part of PIN 68155-0792 (LT)

SCHEDULE "B1" to “B7” INCLUSIVE

Being the approved drawings and plans:

Schedule “B1” - Overall Site Plan, Existing & Proposed Conditions October 2020

Schedule “B2” - Stormwater Management Brief, Overall Site

Schedule “B3” - Site Plan, Greenergy Site

Schedule “B4” - Stormwater Management Report, Greenergy Site

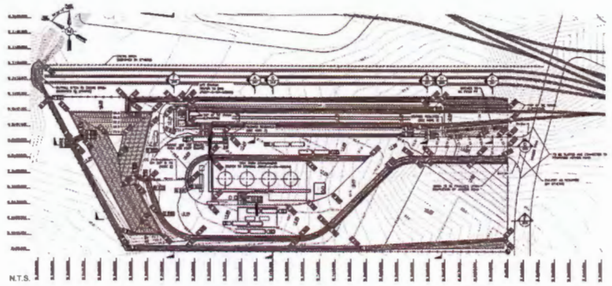
Schedule “B5” - Elevations

Schedule “B6” - County Road 2 Main Entrance Taper

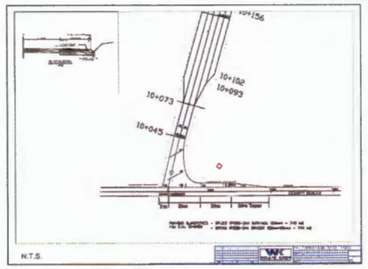
Schedule “B7” - Fire Suppression Infrastructure

Schedule “B8” - Site Plan, Propane Loading Facility

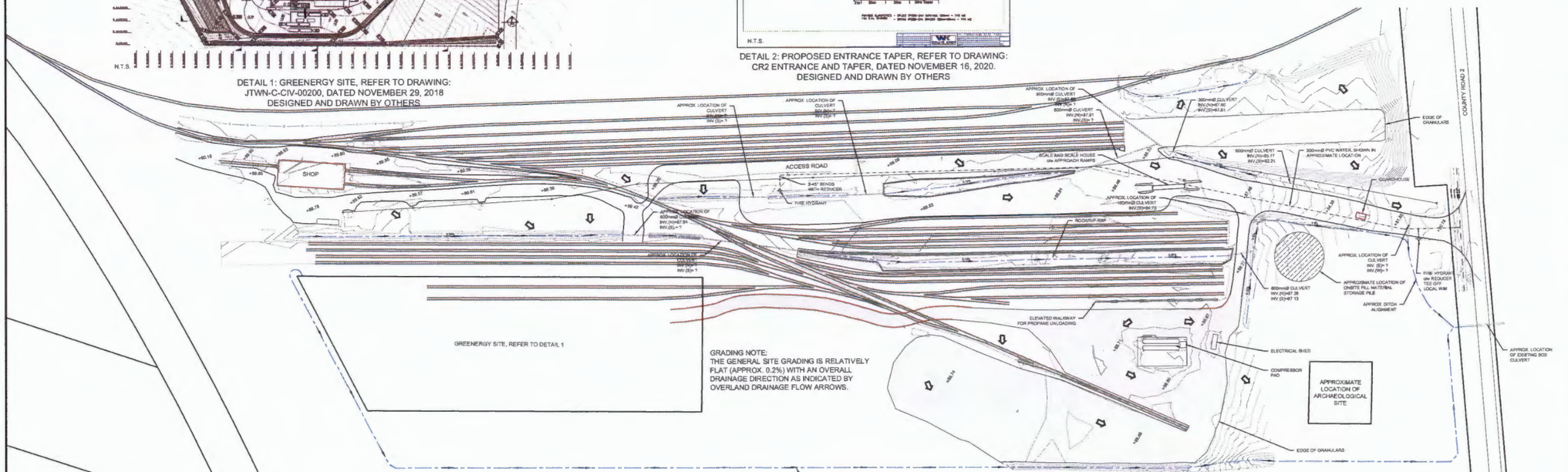
SCHEDULE B1



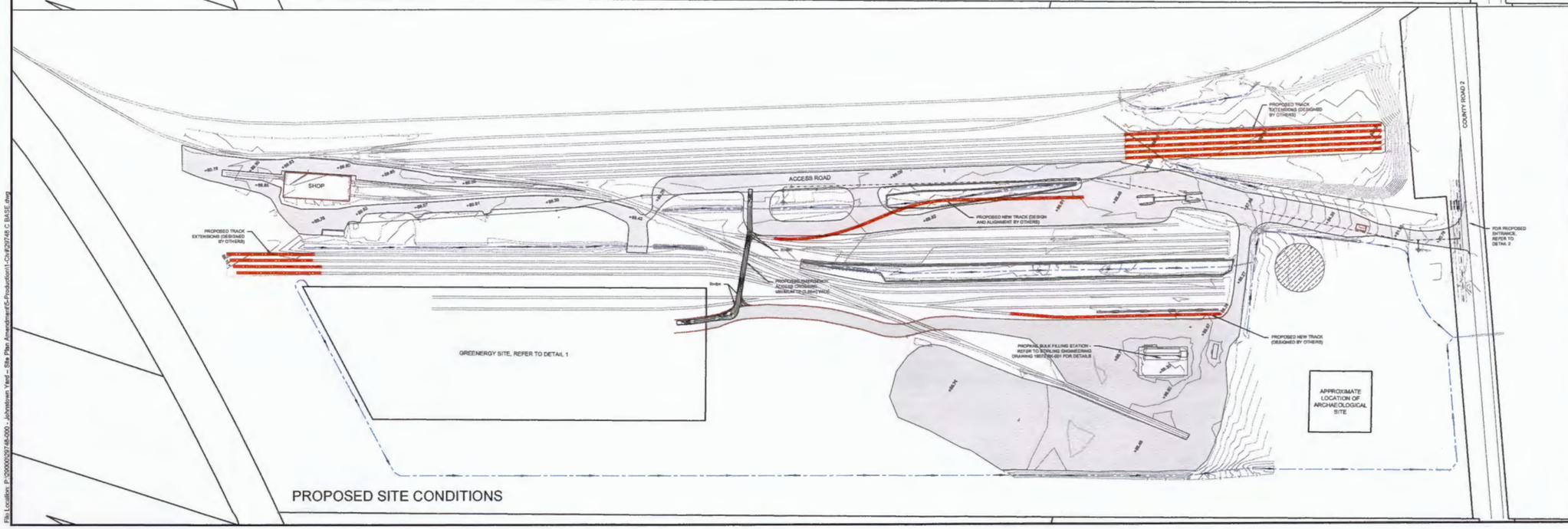
DETAIL 1: GREENERGY SITE, REFER TO DRAWING:
JTWN-C-CIV-00200, DATED NOVEMBER 29, 2018
DESIGNED AND DRAWN BY OTHERS



DETAIL 2: PROPOSED ENTRANCE TAPER, REFER TO DRAWING:
CR2 ENTRANCE AND TAPER, DATED NOVEMBER 16, 2020.
DESIGNED AND DRAWN BY OTHERS



EXISTING SITE CONDITIONS



PROPOSED SITE CONDITIONS

PROJECT NORTH

LEGEND

- EXISTING DITCH
- EXISTING WATERMAIN
- EXISTING CULVERT
- EXISTING RAIL TRACKS
- PROPOSED RAIL TRACKS
- +88.15 PROPOSED GRADES
- TOP OF SLOPE
- EXISTING MATERIAL STOCKPILE
- ACCESS ROAD
- EMERGENCY CROSSING
- OVERLAND DRAINAGE FLOW DIRECTION

These drawings have been prepared by J.L. Richards and Associates Limited ("JLR") for Canadian Rail Equipment Works & Services Inc. (the "Client") for the purpose of providing a site plan for submittal to the municipality as part of site plan amendment process (the "Project") under the terms of the agreement between LCI Engineering and CREWS dated September 8, 2020 (the "Contract"). These drawings were prepared exclusively for the Project and the uses contemplated in the Contract. Information identified as "approximate" has not been confirmed. Any other, use, reuse or modification of these drawings is not permitted without the prior written authorization of JLR. JLR makes no warranties, either express or implied, of the suitability or fitness of these drawings for any other project or purposes, except as set out in the Contract. Any party which seeking to use, reuse, modify, or otherwise rely on these drawings beyond the scope of the Contract must retain professional engineers to advise them on their intended use thereof, and does so at their sole risk and without liability or legal exposure to JLR. Any party that uses these drawings shall be deemed to have read and accepted the foregoing limitations and exclusions.

No.	ISSUE / REVISION	DD/MM/YY
4	ISSUED FOR RE-REVISED ACCESS CONFIGURATION & SURFACE DRAINAGE GRADES	18/11/20
3	ADDITION OF REVISED ACCESS CONFIGURATION & SURFACE DRAINAGE GRADES	10/11/20
2	ADDITION OF EMERGENCY ACCESS FOR GREENERGY SITE	26/10/20
1	ISSUED FOR SITE PLAN AMENDMENT	23/10/20

VERIFY SHEET SIZE AND SCALES. BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING. 0 25mm

SCALE: 1:1500

CLIENT: CREWS Canadian Rail Equipment Works & Services Inc.

CONSULTANT: www.jlrichards.ca
J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

CONSULTANT:

PROFESSIONAL STAMP
LICENSED PROFESSIONAL ENGINEER
S. E. DATTENBERGER
100185516
2020-11-18
PROVINCE OF ONTARIO

PROFESSIONAL STAMP

PROJECT:
JOHNSTOWN RAIL YARD
3518 COUNTY ROAD 2

DRAWING:
EXISTING AND PROPOSED SITE CONDITIONS

DESIGN: S.D.	
DRAWN: S.C.	DRAWING #:
CHECKED: L.J.	C01
JUR #: 29748	

File Location: P:\29000\29748-000 - Johnstown Yard — Site Plan Amendment\5-Production\1-Civil\29748 C BASE.dwg

PLOT DATE: Wednesday, November 18, 2020 2:00:23 PM

SCHEDULE B2

EASTERN ENGINEERING GROUP INC.
CONSULTING ENGINEERS

Apex Building
100 Strowger Blvd., Suite 207
Brockville, Ontario K6V 5J9
Tel: (613) 345-0400 Fax: (613) 345-0008
Web Site: www.EastEng.com

File: 7916

CREWS JOHNSTOWN RAIL YARD
JOHNSTOWN, ONTARIO
TOWNSHIP OF EDWARDSBURGH-CARDINAL

STORMWATER MANAGEMENT BRIEF

PROJECT

The project involves several phases of development on a former crop field which has been left unattended for many years. The site has areas of woodland, open space, wet area caused by beaver dams and exposed bedrock. The development will create a railway siding and loading area for CREWS which will service the CN Rail main line on an existing spur line to the Port of Johnstown. The site will have an asphalt truck lane which will loop around the property to give access for each phase of construction. There will be several rail lines and loading areas throughout the site. The loading areas will be stone base. There is potential for up to 3-4 additional phases on the site including a separate developed area by a separate company in the north west corner of the site. Phase 3 is unknown and assumed to be a gravel loading area for rail cars. There will be multiple small buildings on the site.

AREA

The size of the site is 25.78 ha. This currently consists of rail lines, woodland, rock outcrops and wet areas. The site's natural drainage is to the south towards the roadside ditch on County Road 2, then to the St. Lawrence River via overland flow.

The post development flow will be surface drained to the ditches and collected in storm basins around the site. The water will be controlled by elevated outlet storm pipes and subdrains. The outlet will be to the ditch on County Road 2.

The propsosed asphalt area is 3.51 ha. The storm basins and ditches will be approximately 0.95 ha. The gravel loading areas for the rail cars and railway lines is 8.94 ha. The untouched green space is 9.30 ha and the unknown Phase 3-5 of the development incorporates 3.08 ha.

QUALITY CONTROL

During construction, erosion and sediment is to be contained by the installation and maintenance of a silt fence along the south portion of the site. Sediment from the runoff of the gravel areas will be

collected in the storm basins. The removal of sediment will be part of the maintenance of the stormwater measures. A treatment train will be incorporated into the stormwater management design to treat the water before reaching the outlet from the site. The current site is uncontrolled from quality and quantity aspects. All disturbed grass areas are to be reinstated with topsoil and sod in the Township right of ways.

LOT GRADING AND DRAINAGE

The Lot Grading and Drainage Plan shows the existing ground contours and the proposed grades. Proposed grades at the borders of the property match to existing ground. Lot grading is directed to swales/ditches on the site between the railway lines. The railway lines are constructed with ballast which allows for natural drainage back into the earth. The basins will also be constructed to allow water to infiltrate back into the subsoils. The asphalt area will be sloped to ditches.

RUNOFF COEFFICIENT AND STORMWATER FLOW

The existing site is not developed and has the following characteristics.

Area: 25.78 ha
Field 15.05 ha @ 0.45
Woodland 8.43 ha @ 0.25
Other 2.3 ha @ 0.3
Pre Runoff Coefficient: 0.372

The proposed site will consist of asphalt, gravel, green space and buildings along with green space and will have the following characteristics.

Area: 25.78 ha
Asphalt Area 3.51 ha @ 0.9
Storm Basins 0.95 ha @ 0.35
Gravel/Ballast 8.94 ha @ 0.45 (C for railway yards)
Natural/Landscaped 9.30 ha @ 0.35
Phase 3-5 unknow 3.08 ha @ 0.45 (railyard)
Post Runoff Coefficient: 0.47

The runoff from the site for a 5 year storm event prior to the development using City of Brockville rainfall intensities is calculated using the Modified Rationale method. We use an estimated time of concentration of 15 minutes. Rainfall intensity for 5 year storm is 84.9 mm/hr

Qpre = 2.78 x C x I x A = 2.78*.372*25.78*84.9 = 2,251.3 L/s

Qpost = 2.78 x C x I x A = 2.78*.47*25.78*84.9 = 2,859.8 L/s

There is a slight increase in runoff with the developed site and the excess storage to release at the 5 year allowable rate will be stored in the 3 storm basins. The three basins shown on the site in the preliminary design allows for up to 6,656 m3 of stormwater storage. This can be increased if necessary in final design.

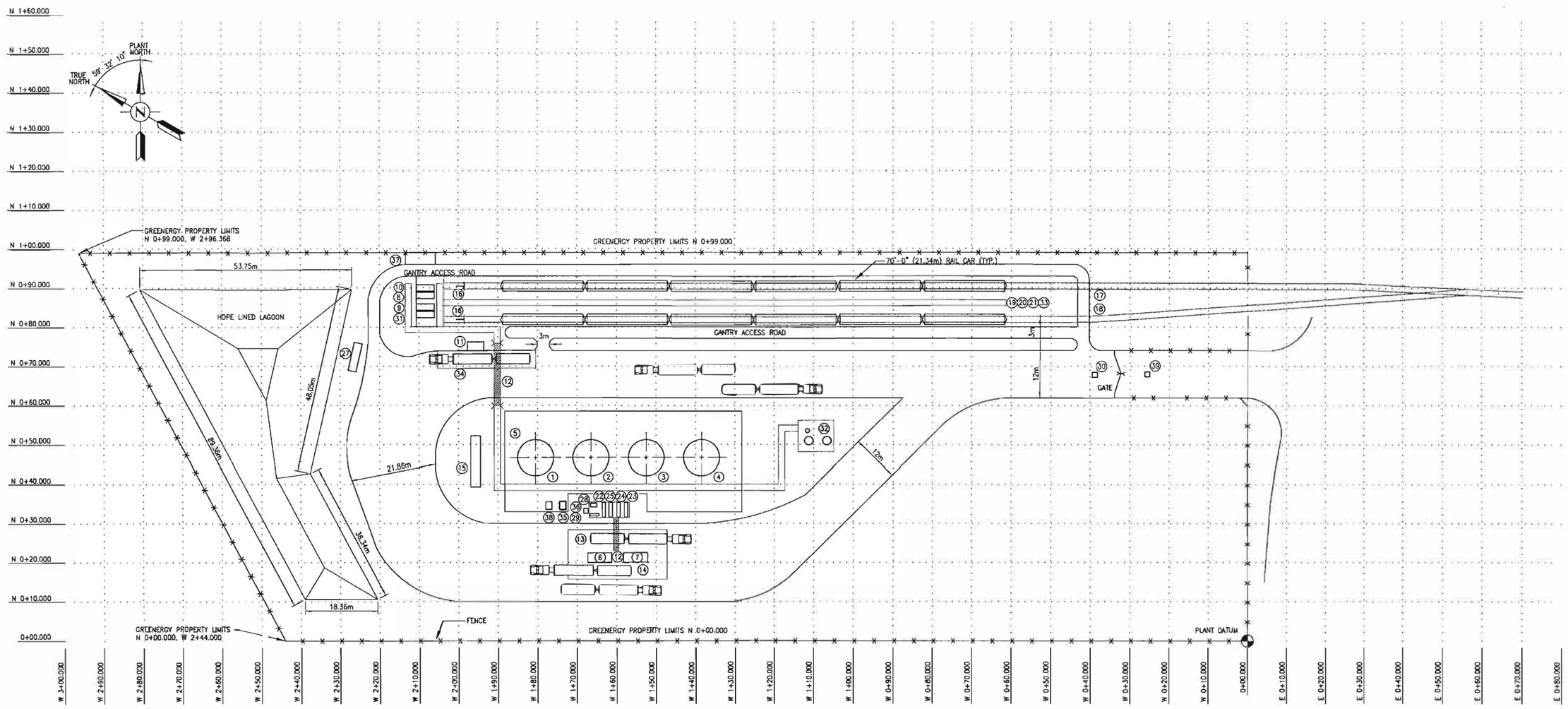
The site will be designed to accommodate the 100 year storm on site and release to the pre-development 5 year rate.

EROSION AND SEDIMENT CONTROL

The silt fence and all other ESC measures required will be installed by the contractor as the facilities are constructed and shall remain in place with daily monitoring and maintenance until vegetative cover of disturbed areas has been re-established.

All disturbed areas are to be reinstated with topsoil and sod.

Prepared by:
Eastern Engineering Group Inc.
Consulting Engineers
Colin Jardine, P. Eng
June 15, 2018



DATUM POINT (UTM, ZONE 18, NAD83)			
	NORTHING	EASTING	ELEVATION
SITE (B)	4951891.245	460696.840	78.943
PLANT	4952398.005	460455.693	91.477
PLANT LOCAL	0+00.000	0+00.000	100.000

EQUIPMENT LIST

1. STORAGE TANK – PREMIUM UNLEADED GASOLINE (PUL) (TK-200) 9.144mø
2. STORAGE TANK – CBOB (TK-210) 9.144mø
3. STORAGE TANK – ETHANOL (TK-220) 9.144mø
4. STORAGE TANK – DIESEL (TK-230) 9.144mø
5. TANK FARM (60m x 25.5m x 1.2m) CONCRETE CONTAINMENT
6. TRUCK LOADING SKID #1 (Z-400)
7. TRUCK LOADING SKID #2 (Z-410)
8. ETHANOL OFFLOAD SKID (Z-120)
9. CBOB OFFLOAD SKID (Z-110)
10. DIESEL OFFLOAD SKID (Z-130)
11. TRUCK OFFLOAD SKID (ALL PRODUCTS)
12. PIPE BRIDGE (5.33m CLEAR ABOVE ROADWAY)
13. LOADOUT CONCRETE PAD (12.19m x 24.38m)
14. LOADOUT ARMS (TYP)
15. MCC (BU-800) WITH DRIVER TICKET STATION
16. TRACK BUMP STOP (TYP 2)
17. TRACK 1 (6 TANK CARS)
18. TRACK 2 (6 TANK CARS)
19. ETHANOL UNLOAD HEADER
20. CBOB UNLOAD HEADER
21. DIESEL UNLOAD HEADER
22. PREMIUM UNLEADED GASOLINE (PUL) TRANSFER SKID (Z-300)
23. DIESEL TRANSFER SKID (Z-330)
24. ETHANOL TRANSFER SKID (Z-320)
25. CBOB TRANSFER SKID (Z-310)
26. TRANSFORMER
27. OIL WATER SEPARATOR
28. RED DYE ADDITIVE SKID (Z-430)
29. CBOB ADDITIVE SKID (Z-420)
30. DRIVER SCAN OUT/IN STATION
31. PUL OFFLOAD SKID (Z-100)
32. VAPOUR RECOVERY UNIT (VRU) PACKAGE (Z-700)
33. PUL UNLOAD HEADER
34. TRUCK UNLOADING CONCRETE PAD
35. RED DYE TANK (FENCED) (T-430)
36. ADDITIVE TOTE (T-420)
37. LIFT STATION
38. SLOP TANK

NOTES:

REFERENCE DRAWING NO.	REFERENCE DRAWING	REV.	REVISION DESCRIPTION	BY	DATE	CHD	APPD
.	.	0	ISSUED FOR CONSTRUCTION	KGR	2018-10-12	JG	KLF
.	.	1	ISSUED FOR CONSTRUCTION	KGR	2019-05-09	JG	KLF
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ENGINEER'S STAMP
LICENSED PROFESSIONAL ENGINEER
K. L. FINDLAY
100500466
09/05/2019
PROVINCE OF ONTARIO

TRI INNOVATIONS CONSULTING LTD ENGINEERING • DESIGN
KINLEY CONSTRUCTION OF CANADA

PROJECT NO.: 12.008.01

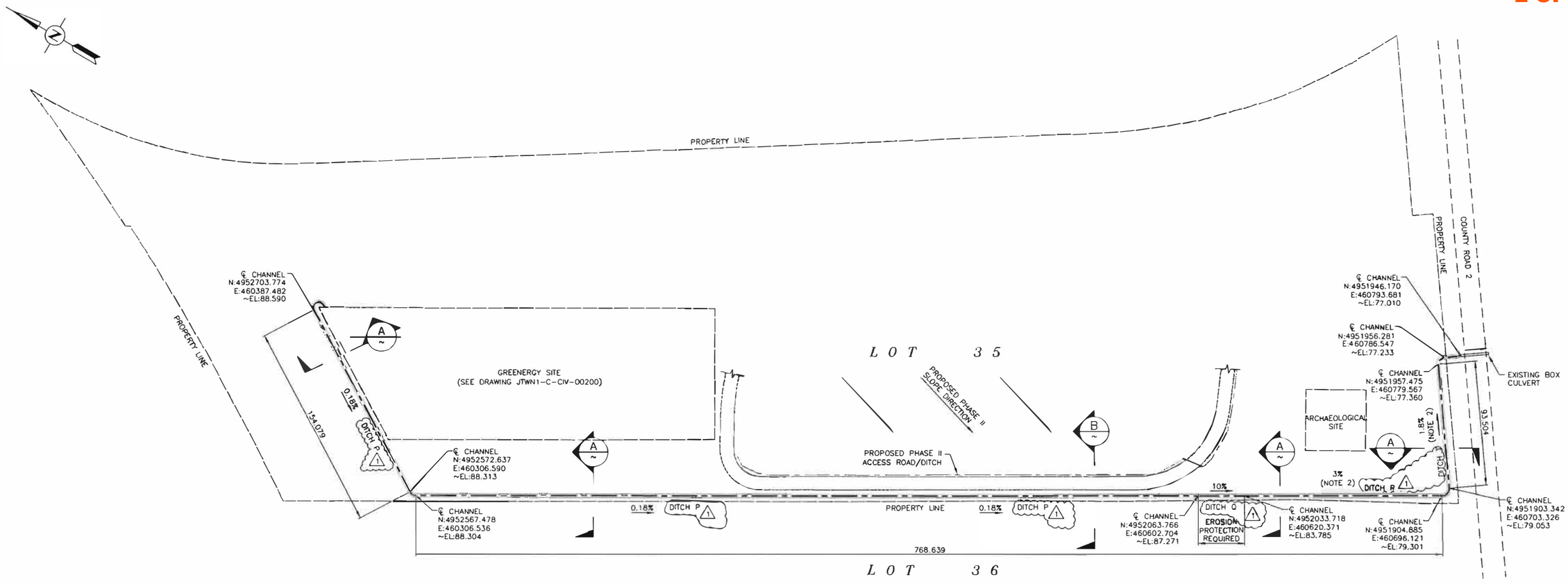
	DRAWN	CHECKED	DESIGN	APPROVED
BY	GC	IS	JG	KLF
DATE	2018-06-04	2018-10-12	2018-10-12	2018-10-12

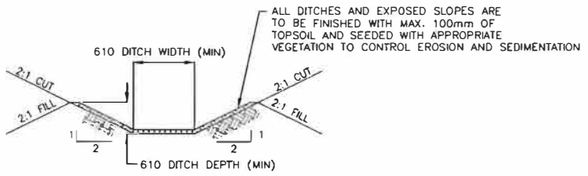
Greenergy

JOHNSTOWN FUEL DISTRIBUTION TERMINAL

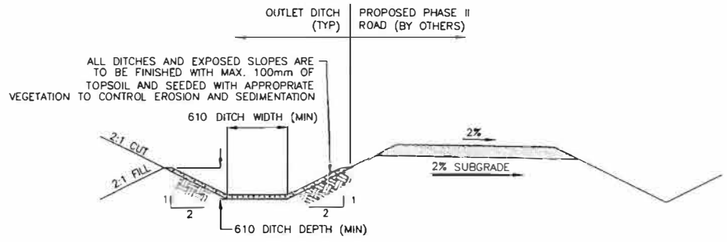
PLOT PLAN

SCALE	DRAWING NUMBER	SHEET	REV.
1:500	JTWN1-G-PP-00100	.	1





TYPICAL OUTLET DITCH SECTION (A)
NTS



TYPICAL OUTLET DITCH SECTION (ALONG FUTURE ACCESS ROAD) (B)
NTS

NOTES:
1. COORDINATES ARE IN METERS AND UTM, ZONE 18, NAD83 (CSRS)
2. VELOCITY CHECK DAMS REQUIRED FOR CHANNEL SLOPES GREATER THAN 0.5% FOR DAM SPACING SEE DRAWING JTWN1-C-CIV-00209 (1)
3. FINAL CHANNEL SLOPE AND ROUTING SHALL BE FIELD CONFIRMED.
4. DRAINAGE OF SURROUNDING AREA TO BE MAINTAINED AND NOT IMPACTED.
5. FUTURE SITE DEVELOPMENT CANNOT DRAIN INTO THIS CHANNEL WITHOUT APPROVAL FROM THE ENGINEER.
6. OUTFLOW CHANNEL HAS BEEN SIZED FOR ADDITIONAL TEMPORARY CATCHMENT CAPACITY (APPROX. 2 HECTARES) UNTIL PHASE II WORK IS COMPLETED.
7. LOT 35 AND LOT 36 GENERALLY SLOPE STRAIGHT SOUTH ALONG DIVIDING PROPERTY BOUNDARY.

LEGEND:
0.18% DIRECTION AND SLOPE OF DRAINAGE

REFERENCE DRAWING NO.	REFERENCE DRAWING	REV.	REVISION DESCRIPTION	BY	DATE	CHD	APPD
		0	ISSUED FOR CONSTUCTION	CC	2018-12-21	JG	DB
		1	RE-ISSUED FOR CONSTRUCTION	SH	2019-02-20	JG	DB

ENGINEER'S STAMP
LICENSED PROFESSIONAL ENGINEER
D.A. BLUM
100509705
PROVINCE OF ONTARIO
FEBRUARY 21, 2019
PERMIT NO.: 100504705

TRI INNOVATIONS CONSULTING LTD ENGINEERING • DESIGN
KINLEY CONSTRUCTION OF CANADA

12.008.01

	DRAWN	CHECKED	DESIGN	APPROVED
BY	CC	JG	DB	DB
DATE	2018-12-19	2018-12-19	2018-12-19	2018-12-19

Greenergy

JOHNSTOWN FUEL DISTRIBUTION TERMINAL

OUTLET DITCH – ROUTING PLAN

SCALE	DRAWING NUMBER	SHEET	REV.
1:1500	JTWN1-C-CIV-00208	1	1

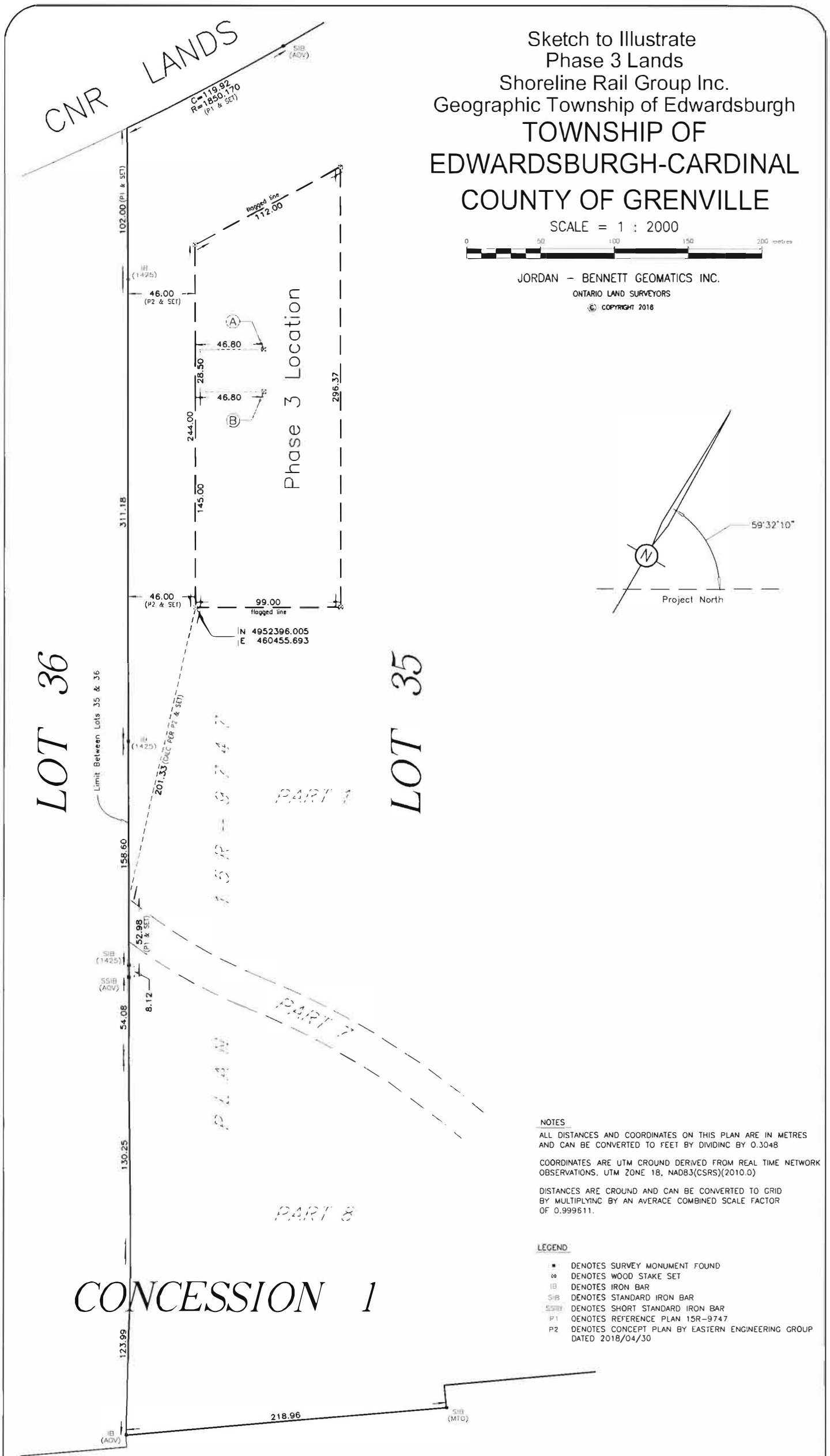
M:\12 KINLEY CONSTRUCTION\008 JOHNSTOWN\JTWN-C (CIVIL)\JTWN1-C-CIV-00208.DWG
LAST SAVED DATE: 2019-02-21 11:32:24 AM BY: TRI DESIGN 9
PLOTTED DATE: 2019-02-21 11:32:37 AM BY: TRI DESIGN 9
TRI_PLOT_TITLEBLO

Sketch to Illustrate Phase 3 Lands Shoreline Rail Group Inc. Geographic Township of Edwardsburgh TOWNSHIP OF EDWARDSBURGH-CARDINAL COUNTY OF GRENVILLE

SCALE = 1 : 2000

0 50 100 150 200 metres

JORDAN – BENNETT GEOMATICS INC.
ONTARIO LAND SURVEYORS



NOTES

ALL DISTANCES AND COORDINATES ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDINC BY 0.3048

COORDINATES ARE UTM CROUND DERIVED FROM REAL TIME NETWORK OBSERVATIONS. UTM ZONE 18, NAD83(CSRS)(2010.0)

DISTANCES ARE CROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYINC BY AN AVERACE COMBINED SCALE FACTOR OF 0.999611.

LEGEND

- ■ DENOTES SURVEY MONUMENT FOUND
- ⊗ DENOTES WOOD STAKE SET
- IB DENOTES IRON BAR
- SIB DENOTES STANDARD IRON BAR
- SSIB DENOTES SHORT STANDARD IRON BAR
- P1 DENOTES REFERENCE PLAN 15R-9747
- P2 DENOTES CONCEPT PLAN BY EASTERN ENGINEERING GROUP DATED 2018/04/30

CAUTION

THIS IS NOT A PLAN OF SURVEY AND SHALL NOT BE USED EXCEPT FOR THE PURPOSE INDICATED IN THE TITLE BLOCK.

THIS SKETCH IS NOT A VALID COPY UNLESS EMBOSSED WITH SURVEYOR'S SEAL

COMPLETION DATE: Sept. 10, 2018.

Jordan-Bennett Geomatics Inc.
Ontario Land Surveyors
P.O. Box 485
33 Perth Street
Brockville, Ontario
K6V-5V7
Phone: 613-342-7525
Fax: 613-342-9513

Drawn By:	Party Chief:	Checked By:	File No.:
R.J.J.	B.K.	R.J.J.	180172_01

Greenergy

FUEL DISTRIBUTION FACILITY
JOHNSTOWN, ON

STORMWATER MANAGEMENT REPORT
PHASE III SCOPE OF WORK

PROJECT NO.: 12.008.01

KINLEY CONSTRUCTION OF CANADA

Prepared By:

TRI INNOVATIONS CONSULTING LTD

Rev	Description	Created By	Date	Reviewed By	Date	Client Rep	Date
H	Issued for Review	Dallin Blum	20-Feb-19	Jon Glaser	20-Feb-19		
G	Issued for Review	Dallin Blum	29-Jan-19	Jon Glaser	29-Jan-19		
F	Issued for Review	Dallin Blum	22-Jan-19	Jon Glaser	22-Jan-19		
E	Issued for Review	Dallin Blum	21-Dec-18	Jon Glaser	21-Dec-18		
D	Issued for Review	Dallin Blum	26-Nov-18	Jon Glaser	02-Dec-18		
C	Issued for Review	Dallin Blum	25-Oct-18	Jon Glaser	25-Oct-18		
B	Issued for Review	Dallin Blum	14-Oct-18	Jon Glaser	15-Oct-18		
A	Issued for Review	Dallin Blum	14-Sep-18	Jon Glaser	14-Sep-18		

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1. Scope

1.1. Project Description

Shoreline Rail is planning to expand their fuel distribution capacity in the southern Ontario area with Phase III of their Fuel Distribution Terminal near Johnstown, Ontario, Canada. This document/design is for Phase III only, Phases I and II have been addressed in previous applications. The Phase III expansion will be designed to accommodate railcars with various products inbound and truck traffic with the same products or a blended product outbound. Kinley Construction of Canada (Kinley) will provide a turnkey solution for the construction of this project. Tri Innovations Consulting Ltd. (Tri Innovations) has been contracted to prepare the detailed engineering design. The terminal will be operated for Shoreline Rail by Canadian Rail Equipment Works & Services Inc. (CREWS).

The fuel distribution terminal will have the capability to offload Conventional Blendstock for Oxygenate Blending (CBOB), Diesel Fuel Oil (DFO), Premium Unleaded Gasoline (PUL), and Ethanol (E100) from both railcars or tanker trucks. Railcars will be unloaded via six (6) dual sided rail car unloading stations, located on two (2) new rail spur lines, for a total of twelve (12) railcar unloading spots. Trucks will be unloaded via one (1) truck offloading station. All products will be offloaded into dedicated storage tanks located on site. From the storage tanks the product will either be blended and loaded or directly loaded into trucks for local distribution, via two (2) truck loading stations.

1.2. Background

This study has been prepared on behalf of Kinley to address the stormwater management requirements for the proposed development. This is a Green Field Facility. The purpose of this report is to outline how the drainage design will not adversely impact the overall drainage of the site and surroundings.

1.3. Objectives

1) Detect any potential impacts the development runoff may have on downstream watercourses.
2) Meet the requirements of the review agencies regarding both quantity and quality of the surface runoff.
3) Create a safe, reliable, and effective overall drainage strategy for the facility.

2. Site Drainage Summary

2.1. Existing Site Drainage

The current Phase III site (Fig 1 - shown in white below) is green field and is approximately 2.65 hectares and has a composite runoff coefficient of 0.3 (for rolling meadows/pasture land).

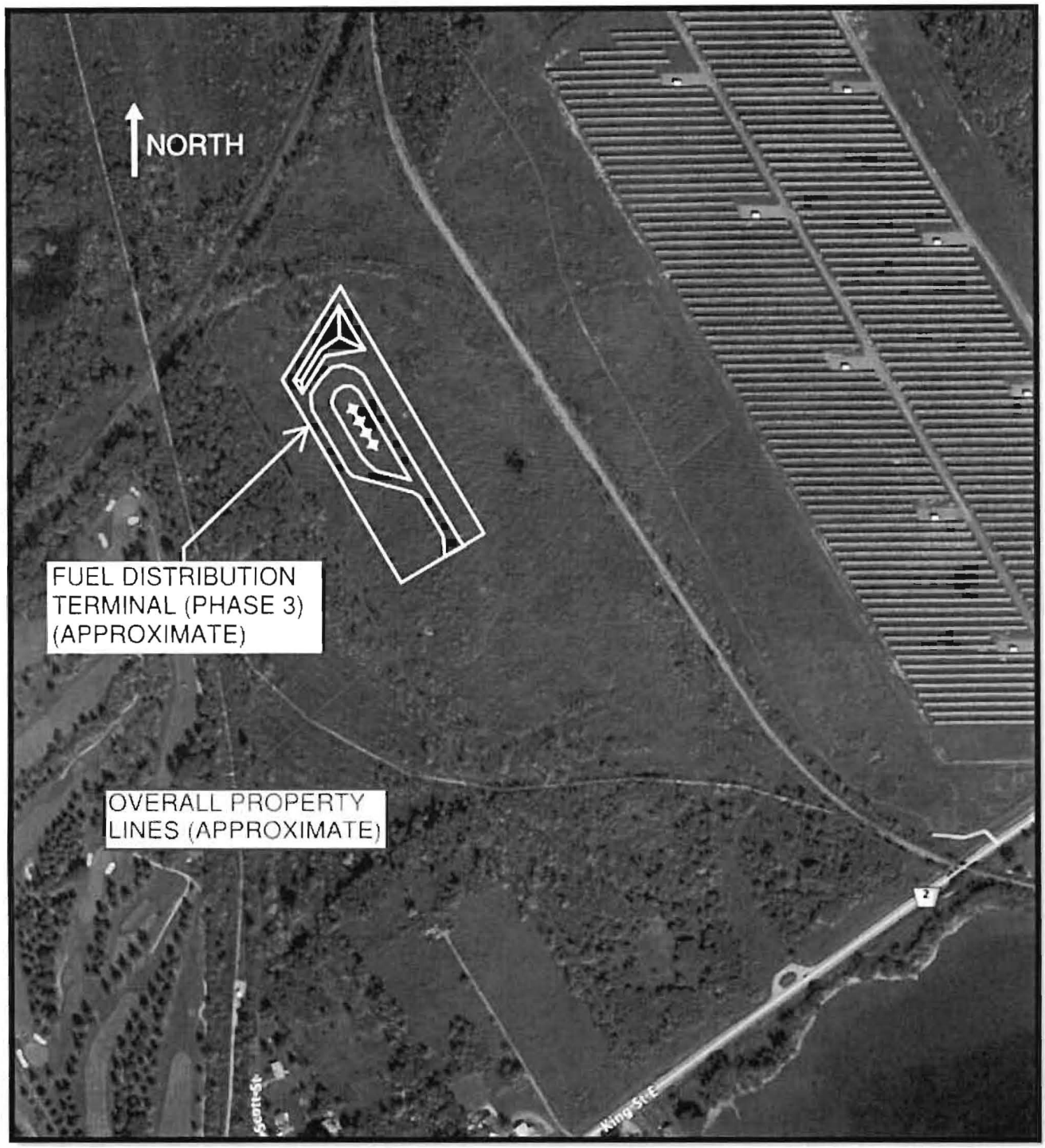


Figure 1 – Site Overview

2.2. Proposed Site Drainage

The Owner plans to develop the property based on the description in Section 1. There is no municipal stormwater sewer on the property, so all surface runoff will be managed on site with the proposed infrastructure in this report. The site will have a synthetically lined surface runoff pond on lease, located at the natural low point of the site. This pond will be owned by Shoreline Rail Group and operated by CREWS as stated in Section 1. All the developed space on the lease will drain to this pond. Any undeveloped areas (currently total approximately 0.4 hectares) will be permitted to bypass this pond and enter the downstream ditch unimpeded. The pond is however adequately sized to manage these areas if they are developed in the future and directed toward the pond. No off-lease surface runoff is permitted to enter the pond catchment area. To ensure this, a collector ditch has been placed along the South and West site boundaries that intercept any off-site water and direct it around the facility. Additionally, the site is locally higher in elevation than its surroundings and this naturally prevents any off-site water from running onto the lease.

A series of ditches and culverts will collect stormwater from the developed lease and deliver it to the pond.

Any stormwater that falls in more spill sensitive locations will be directed through one of two oil water separators (OWS) before entering the pond. The following areas (Fig 2 - highlighted in red) will pass through the OWS with the current design:

1) Track pan footprint
2) Asphalt housekeeping pad between rail tracks
3) Truck loadout slabs
4) Equipment slabs
5) Secondary containment area

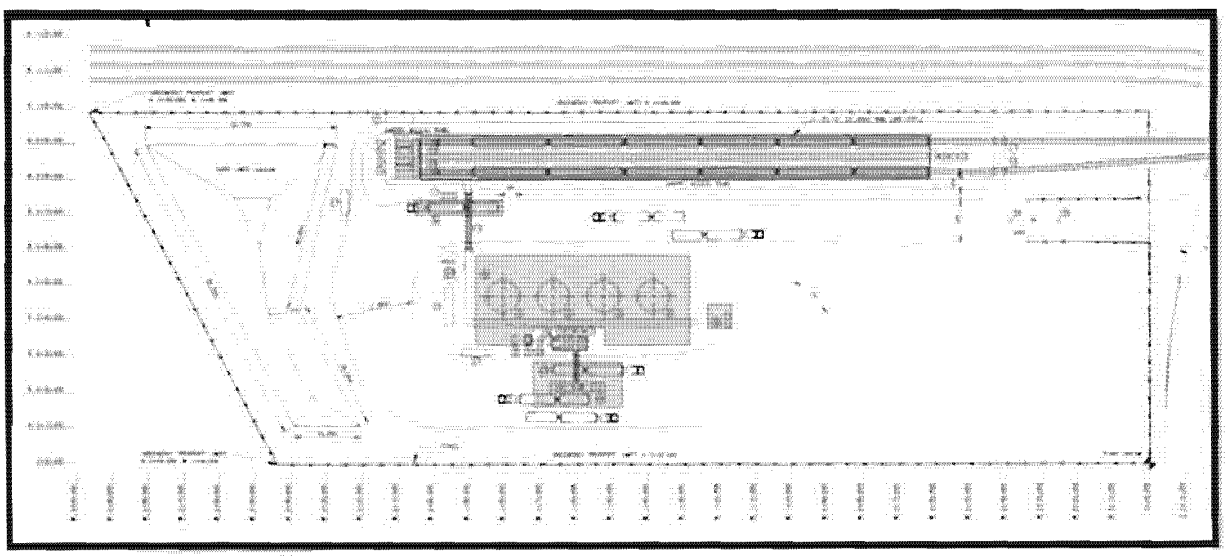


Figure 2

The rail area access roads are too low in elevation to gravity drain to the pond. Any surface runoff from that area will be directed to an open ditch then flows to a small lift station that will direct the water into the pond. The pump is adequately sized (minimum flow rate of 0.003 m^3/s or 48 GPM) to meet the 1:25 year, 15 minute rainfall event in conjunction with the available ditch storage upstream. In the event of pump failure, the ditch is adequately sized to hold the entire volume of the rainfall event.

The pond will be equipped with both an overflow pipe and a contingency overflow ditch that enters the bypass ditch which carries the non-developed runoff to the main site outlet. The outlet of this site enters directly into an outflow channel that flows directly to an existing box culvert at the South end of the property. The collection ditch will be owned by Shoreline Rail Group and operated by CREWS as stated in Section 1. The outflow channel is oversized to carry the site pump out flow rates mentioned below in Section 3. The outflow channel will not be required during design rainfall events and will only receive flow during pond pump out, which will not coincide with rainfall events (refer to dwg # JWTN1-C-CIV-00208). It should be noted that the high-level overflow pipe chokes the flow rate exiting the pond to less than the calculated pre-development flow rate for the site as will be further explained below. The contingency overflow channel is not meant for use in normal operation and its only purpose is to control the location of an overflow in the event all of the design flow rates and storage capacities are exceeded.

3. Site Drainage Calculations

The Short Duration Rainfall IDF data was obtained for Johnstown, Ontario (Appendix F). The following pre-development flow rates were calculated based on the lease area of 2.65 ha, and a runoff coefficient of 0.3 (for rolling meadows/pasture land).

Pre-Development Runoff Data					
Return Period (years)	Duration (min)	Rainfall Intensity (mm/hr)	Multiplier (Factor)	Peak Flow Rate (m^3/s)	Volume (m^3)
2	5	114.7	1.00	0.254	76
	1440	2.2	1.00	0.005	420
5	5	152.8	1.00	0.338	101
	1440	2.9	1.00	0.006	554
10	5	177.2	1.00	0.392	118
	1440	3.4	1.00	0.008	650
25	5	209.0	1.10	0.508	152
	1440	4.0	1.10	0.010	841
50	5	231.7	1.20	0.615	184
	1440	4.4	1.20	0.012	1009
100	5	255.0	1.25	0.705	211
	1440	4.9	1.25	0.014	1170

The following post-development flow rates were calculated based on the 2.65 ha, and a composite runoff coefficient of 0.84 (based on the developed lease surface finishes).

Post-Development Runoff Data (Into Pond)					
Return Period (years)	Duration (min)	Rainfall Intensity (mm/hr)	Multiplier (Factor)	Peak Flow Rate (m^3/s)	Volume (m^3)
2	5	114.7	1.00	0.710	213
	1440	2.2	1.00	0.014	1177
5	5	152.8	1.00	0.946	284
	1440	2.9	1.00	0.018	1551
10	5	177.2	1.00	1.097	329
	1440	3.4	1.00	0.021	1819
25	5	209.0	1.10	1.423	427
	1440	4.0	1.10	0.027	2353
50	5	231.7	1.20	1.721	516
	1440	4.4	1.20	0.033	2824
100	5	255.0	1.25	1.973	592
	1440	4.9	1.25	0.038	3276

Because the post-development runoff flow rates are greater than the pre-development flow rates, the surface runoff pond captures all the runoff for the developed site. The post-development runoff flow rate leaving the pond will be equal to 0.00 m^3/s for any storm of less than 3,160 m^3 (which is the design capacity of the pond). In addition, because of the overflow design, any storm with total volume greater than 3,160 m^3 and less than 3,680 m^3 will be choked back to a flow rate of 0.013 m^3/s as it leaves the pond. This can be illustrated in the table below:

Return Period (years)	Duration (min)	Peak Flow Rate into Pond (m^3/s)	Volume into Pond (m^3)	Peak Flow Rate Out of Pond (m^3/s)	Volume Out of Pond (m^3)
2	5	0.710	213	0.000	0
	1440	0.014	1177	0.000	0
5	5	0.946	284	0.000	0
	1440	0.018	1551	0.000	0
10	5	1.097	329	0.000	0
	1440	0.021	1819	0.000	0
25	5	1.423	427	0.000	0
	1440	0.027	2353	0.000	0
50	5	1.721	516	0.000	0
	1440	0.033	2824	0.000	0
100	5	1.973	592	0.000	0
	1440	0.038	3276	0.013	116

The surface runoff will all be contained within the pond (described below) and the runoff will be tested prior to release. As shown above, the rate of release from the pond during a rainfall event will be kept to less than the 2, 5, and 100-year pre-development flow rates.

The facility operational procedure will stipulate a maximum flow rate for the portable pump that is used during facility operations of 0.045 m^3/s, however the pump will not be operated in conjunction with a rainfall event. Additionally, the pond outfall pipe flow rate is choked back to 0.013 m^3/s so under no normal operational circumstances will the pre-development runoff rates be exceeded during post-development conditions.

The approximate rainfall intensity, from the Johnstown Short Duration Rainfall IDF data, is 117.6 mm/24hr (4.9 mm/hour) for the 1:100 year return design storm (IDF data was downloaded from Ministry of Transportation website and can be found in Appendix E). Using the Modified Rational Method for calculating the maximum stormwater run-off rate for the outfall, for the 1:100 year storm, we obtain the following:

$$Q = Cf \times C \times I \times A$$

Where:

- Cf = Run-Off Coefficient Adjustment Factor:
    - 1.0 (for the 1:2, 1:5, & 1:10 year storm events)
    - 1.1 (for the 1:25 year storm event)
    - 1.2 (for the 1:50 year storm event)
    - 1.25 (for the 1:100 year storm event)

- C = Rational Method Runoff Coefficients = 0.8 for graveled area, 0.9 for building roof, 0.9 for asphalt, 0.9 for containment areas, 1.0 for the pond footprint, and 0.8 for unimproved area (weighted composite value for this site is 0.84, note that a value of 0.8 was carried for the unimproved areas of the site to account for the possibility of future development)
- I = Intensity of Rainfall for Johnstown = 117.6mm/24hours (4.9 mm/hour) (average rainfall intensity for 1:100 year 24-hour storm)
- A = Total Drainage Area = 2.65 ha

Total volume to be contained on site (Q applied over 24 hour period) = 3276 m^3

The actual pond has been designed to hold a volume of 2,824 m^3 (1:50 year 24 hour storm, this value is actually 3,160 m^3 including freeboard and sediment allowance). Once the 1:50 year, 24 hour capacity is exceeded and the freeboard/sediment allowance used up, the operating water level will reach the choked HDPE pipe overflow designed to limit the overflow rate to 0.013 m3/s, which is less than the 1:100 year, 24 hour pre-development flow rate listed in the above table. The pond is also equipped with a controlled contingency overflow sized for a 1:100 year 15 minute rainfall event. This contingency outfall is above the 1:100 year, 24 hour water level and is only in place to control the overflow location in the event that a 1:100 year 24 hour volume is exceeded.

The flow rate through this contingency overflow would exceed any pre-development flow rates listed above and is not meant for use during normal facility operation.

The correct operational procedure for the pond is to test accumulated runoff and release (if test results are acceptable) immediately after the operating water level in the pond reaches 1.5m deep. At this depth, the pond can still accept a 1:50 year, 24 hour rain event without releasing any runoff. As mentioned earlier, a portable pump will be used to empty the pond by the facility operators.

All site ditches and culverts are designed to a 1:25 year, 15 minute rainfall event.

The sub-grade drain headers and oil water separators are designed to a 1:10 year, 60 minute rainfall event. The North OWS will be sized for a minimum flow rate of 0.015 m^3/s. The South OWS will be sized for a minimum flow rate of .014 m^3/s (ZCL model # COWS-1630 have been selected for this application. Refer to product datasheet in Appendix I).

4. Flow Velocity Summary

The flow velocity calculations are summarized in Appendix H.

The ditch flow velocities within the Phase III area range from 0.5 m/s to 2.7 m/s. All these ditches will be seeded. Because of the low flow velocities, erosion control measures (check dams) are only necessary in ditches C & F.

The ditch flow velocities in the outfall channel between the Phase III area and the discharge location range from 0.7 m/s to 5.0 m/s. All of these ditches will be seeded. Open ditches with a flow rate greater than 1.2 m/s will be equipped with velocity check dams as shown on the project drawings. The exception is ditch Q (slope of 10%), which will have a full RIPRAP layer to prevent erosion.

5. TSS (Total Suspended Solids) Removal

The normal operation of this facility will not be a contributor to TSS aside from the standard dust and granular material that would be expected at a facility of this nature. The main risks associated with the facility operations are mitigated by the oil water separators strategically located on the site. The primary water quality treatment plan for TSS removal is a combination of prevention and sedimentation/settling. The proposed water quality treatment will remove 80% TSS (Total Suspended Solids) by implementing the following design features:

1) The entire site will have at least one of the following surface treatments, no areas will be stripped and left expose post-construction:

a. Compacted gravel driving surface
b. Synthetically lined pond
c. Cast-in-place concrete to low point drain
d. Seeded/mulched

2) Catch basins will be installed upstream of sediment sensitive equipment (oil water separators) and will be regularly maintain by the facility operations group.
3) All ditches and exposed cut/fill slope will be seeded/mulched after construction
4) Synthetically lined surface runoff pond acts as final layer of protection against suspended solids leaving the site. The pond outlet is on the opposite side as the inlets and the water will be tested prior to controlled release. The detention time in the pond will be increased if the test results show higher than acceptable TSS. If the test results continue to be outside of acceptable limits, the water will be treated on site or hauled away to be treated offsite. If the test results are acceptable, the operational procedure will be to draw from near the water surface, preventing the settled solids from being drawn up through the pump and discharged downstream.

6. Sediment and Erosion Control Plan

The sediment and erosion control plan on the site will be managed in the following ways:

- Silt fences will be installed around all soil stockpiles (OPSD 219.130).
- Seed and mulch application will be applied on stockpiles and exposed slopes once final grades are met.
- Exposed ditches will be seeded to control erosion. Where ditch flow velocities are to high, check dams will be installed.
- RIPRAP all culverts inverts and ditch direction changes > 45°(OPSD 810.020).
- Catch basins upstream of both oil water separators (OPSD 701.010).

During construction, the contractor (Kinley Construction of Canada) will adhere to their maintenance and inspection plan, which involves daily visual inspections and weekly written inspections for the equipment and work areas. Equipment will be kept clean and will be washed regularly, and prior to removal from site. For regular facility operations (post-construction), the operator will produce a maintenance and inspection plan. It will be written into the operational procedure for the facility to perform daily inspections and weekly written inspections, similar to those performed during construction. These will be performed by CREWS (refer to Section 1).

In addition to the measures listed above, please refer to attached Erosion Control and Sedimentation Plan (drawing # JWTN1-C-CIV-00207, Sheet 1 & 2, located in Appendix D). Please note this is considered a "living document" which may be modified in the event that the control measures are or become insufficient.

7. Conclusion

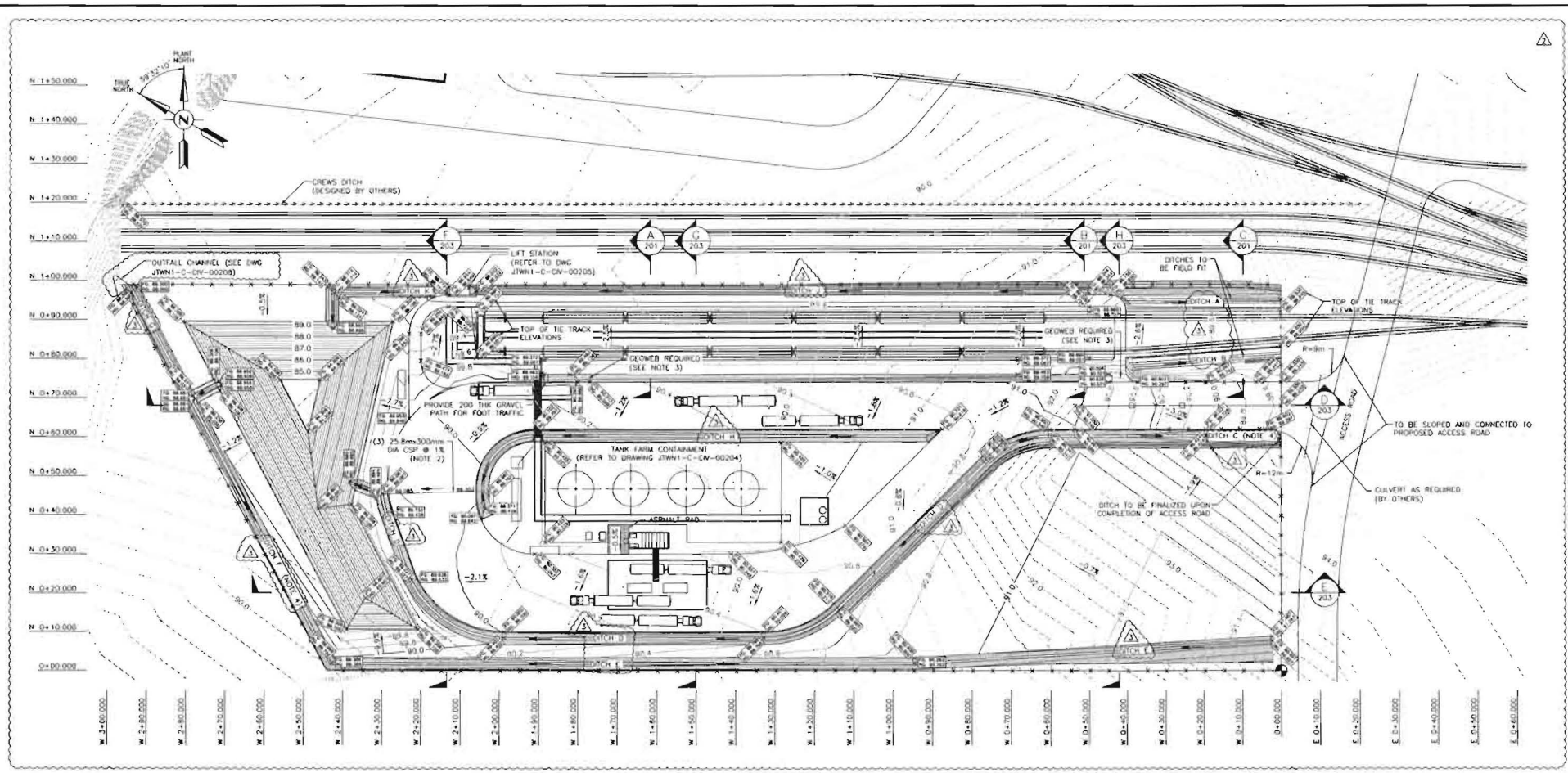
The post-development runoff for the facility is less than the pre-development runoff and all site runoff is directed into a synthetically lined surface runoff pond on lease that has been sized to store a 1:50 year, 24 hour rainfall event based on the IDF curve data for Johnstown, ON. The pond is also designed to manage a 1:100 year, 24 hour rainfall event without exceeding the pre-development runoff conditions. All drainage infrastructure, both surface and subsurface, has been designed to meet the appropriate flow rates. Any areas on site where a product spill potential exists are contained on concrete slabs and directed through an OWS via impermeable piping systems.

We trust this report satisfies the requirements for managing stormwater and erosion/sediment control for the authorities having jurisdiction.

FEBRUARY 21, 2019
PERMIT NO.: 100504705

Appendix A – Overall Grading Plan

Tri Innovations Drawing JTWN1-C-CIV-00200



DATUM POINT (UTM, ZONE 18, NAD83)			
	NORTHING	EASTING	ELEVATION
PLANT UTM	4952396.005	460455.693	91.477
PLANT LOCAL	0+00.000	0+00.000	100.000

LEGEND:
- -2.5% DESIGN SLOPE
- FINAL & ROUGH GRADE
- 89.0 DESIGN CONTOURS 0.2m INTERVAL
- EXISTING CONTOURS 0.2m INTERVAL

NOTES:
1. ALL ELEVATIONS ARE IN METERS AND GEODETIC.
2. REDUCE CULVERT TO DOUBLE 9 NON-CORRUGATED CULVERT IS USED.
3. BOTTOM LIFT OF APPROACHES TO BE 150 THK PRESTO GEOWEB (OR APPROVED ALTERNATE). CELLS FILLED WITH COMPACTED SUBBALLAST MATERIAL FOR SLOPE STABILIZATION (ONLY REQUIRED ON STEEP GANTRY ACCESS ROAD APPROACHES) (3-LOC-TYP).
4. VELOCITY CHECK DAMS REQUIRED FOR DITCHES C & F. FOR DAM SPACING SEE DRAWING JTWN1-C-CIV-00209.

REFERENCE DRAWING NO.	REFERENCE DRAWING	REV.	REVISION DESCRIPTION	BY	DATE	CHD	APPD
		0	ISSUED FOR CONSTRUCTION	CC	2018-10-14	JG	DB
		1	RE-ISSUED FOR CONSTRUCTION	CC	2018-10-25	JG	DB
		2	RE-ISSUED FOR CONSTRUCTION	CC	2018-11-29	JG	DB
		3	RE-ISSUED FOR CONSTRUCTION	SH	2019-02-20	JG	DB

ENGINEER'S STAMP
FEBRUARY 21, 2019
PERMIT NO.: 100504705

TRI INNOVATIONS CONSULTING LTD. ENGINEERING • DESIGN
KINLEY CONSTRUCTION

12.008.01

	DRAWN	CHECKED	DESIGN	APPROVED
BY	BT	JG	DB	DB
DATE	2018-09-07	2018-09-07	2018-09-07	2018-09-07

Greenergy

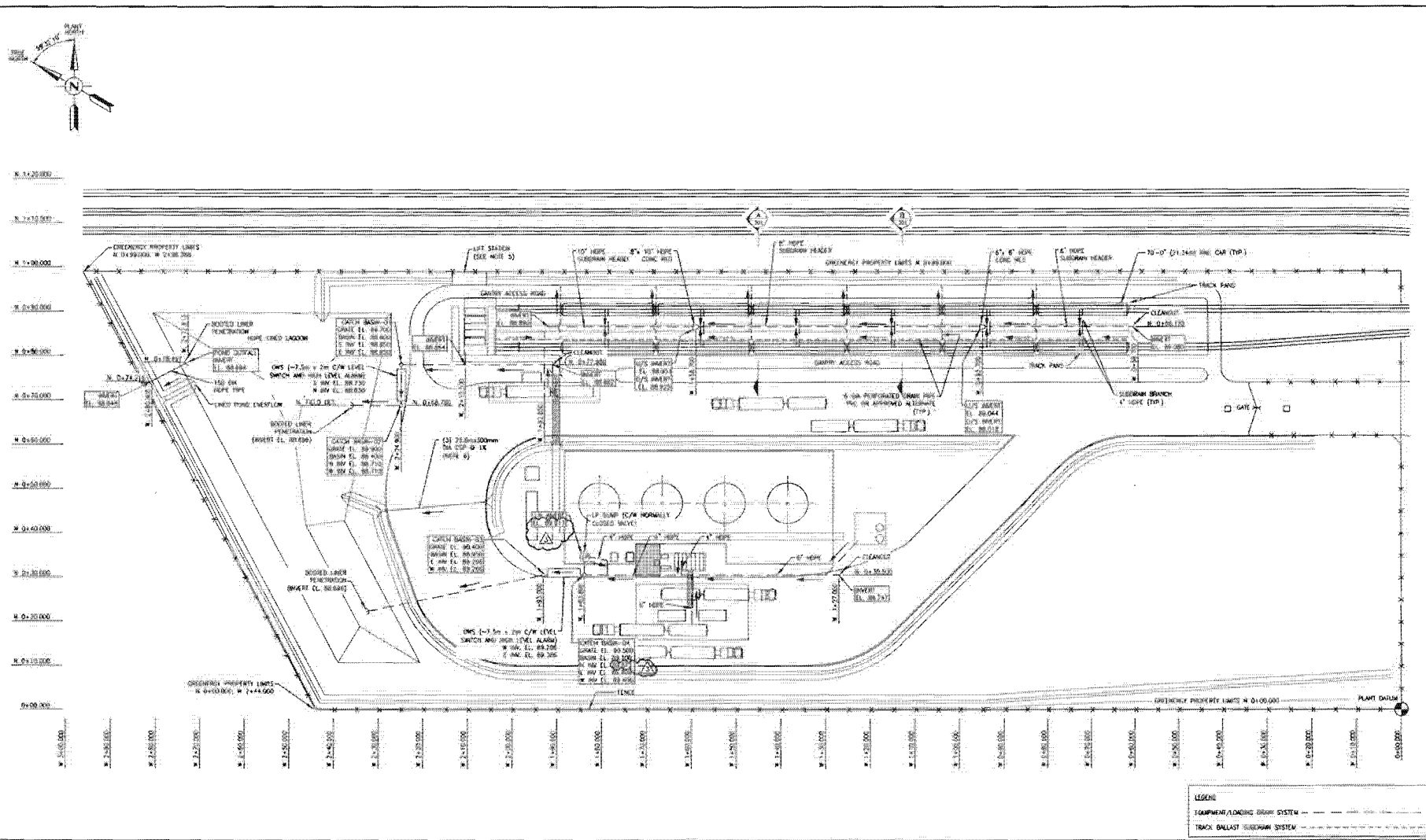
JOHNSTOWN FUEL DISTRIBUTION TERMINAL

OVERALL GRADING PLAN

SCALE	DRAWING NUMBER	SHEET	REV.
1:500	JTWN1-C-CIV-00200	1	3

Appendix B – Underground Drainage Plan

Tri Innovations Drawing JTWN1-C-CIV-00300



NOTES:
1. OIL WATER SEPARATORS AND SUBDRAIN SYSTEM FLOW RATE CAPACITY SIZED FOR 1:10 YEAR, 60 MINUTE STORM, MINIMUM REQUIRED FLOW RATE OF 0.0135M³/S, ZOK MODEL # CWS-1620 (OR APPROVED ALTERNATE).
2. POND STORAGE CAPACITY SIZED FOR 1:100 YEAR, 24 HOUR STORM.
3. POND OVERFLOW/OUTFALL SIZED FOR 1:100 YEAR, 15 MINUTE STORM.
4. DITCHES AND CULVERTS SIZED FOR 1:25 YEAR, 15 MINUTE STORM.
5. CATCHING UPSTREAM OF LIFT STATION IS SIZED TO HOLD A 1:25 YEAR, 15 MINUTE STORM IN CASE OF PUMP FAILURE. FOR DETAILS REFER TO DWG JTWN1-C-CIV-00305.
6. REFLACE CULVERTS TO DOUBLE 6" NON-CORRUGATED CULVERT IS USED
7. ALL ELEVATIONS ARE IN METERS AND GEODETIC.

REFERENCE DRAWING NO.	REFERENCE DRAWING	REV.	REVISION DESCRIPTION	BY	DATE	CHD	APPD
		0	ISSUED FOR CONSTRUCTION	CC	2018-10-19	JG	DB
		1	RE-ISSUED FOR CONSTRUCTION	CC	2018-11-20	JG	DB
		2	RE-ISSUED FOR CONSTRUCTION	CC	2018-11-29	JG	DB
		3	RE-ISSUED FOR CONSTRUCTION	WW	2019-01-21	MC	DB

ENGINEER'S STAMP
JANUARY 21, 2019

TRI INNOVATIONS CONSULTING LTD.
KINLEY CONSTRUCTION

PROJECT NO.: 12.008.01

	DRAWN	CHECKED	DESIGN	APPROVED
BY	MC	JG	DB	DB
DATE	2018-09-24	2018-09-24	2018-09-24	2018-09-24

Greenergy

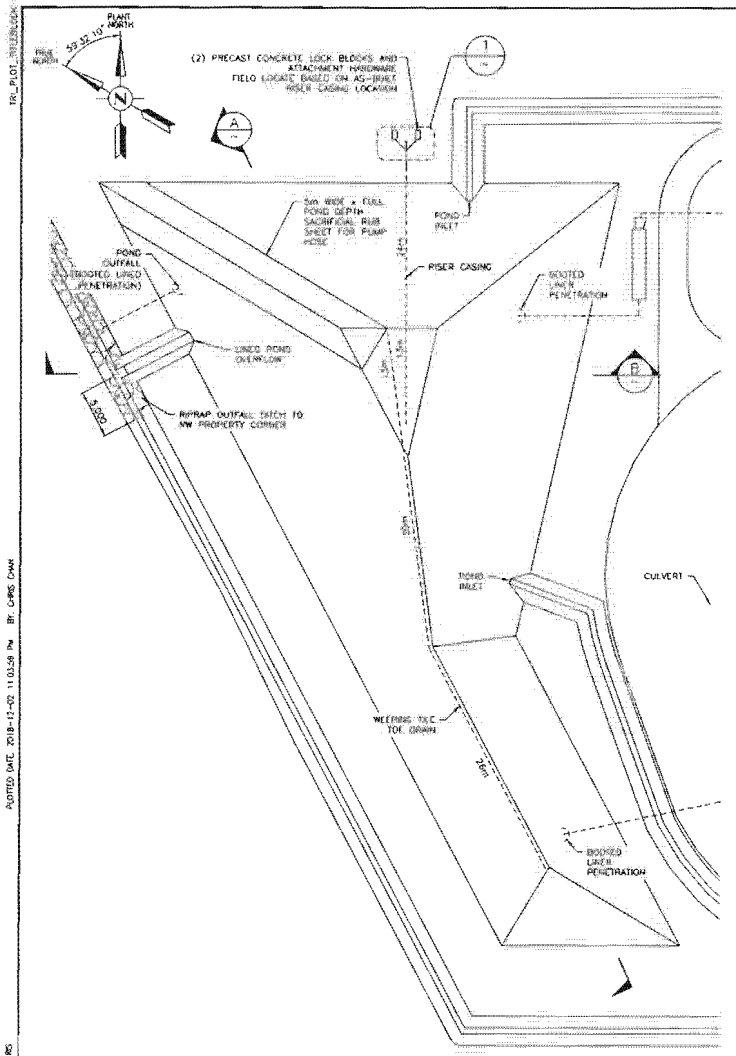
JOHNSTOWN FUEL DISTRIBUTION TERMINAL

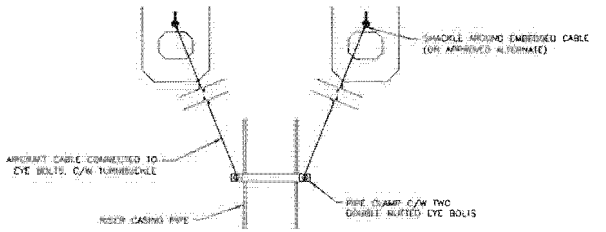
UNDERGROUND DRAINAGE PLAN

SCALE	DRAWING NUMBER	SHEET	REV.
1:400	JTWN1-C-CIV-00300	1	3

Appendix C – Pond Sections and Details

Tri Innovations Drawing JTWN1-C-CIV-00202

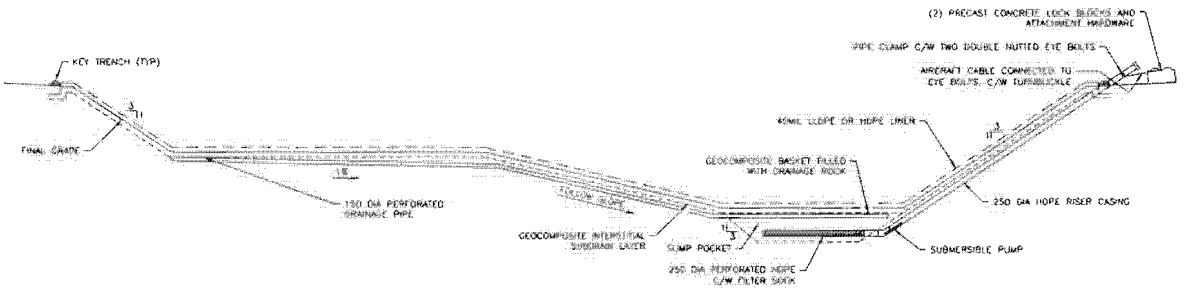




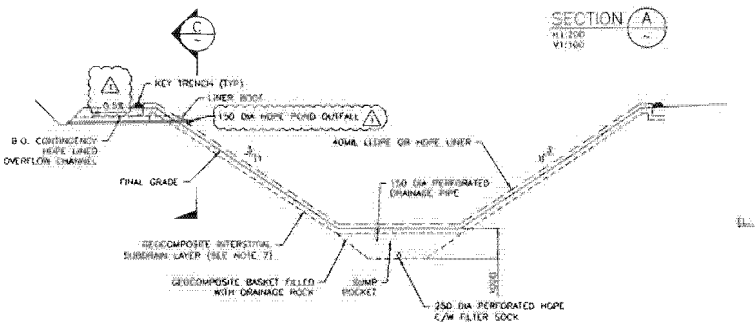
DETAIL 1 NTS

CONSTRUCTION NOTES:

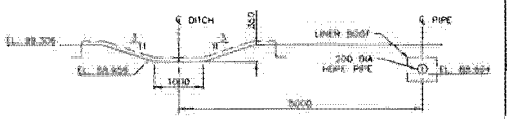
1. CONTRACTOR SHALL EXCAVATE AND RELOCATE ALL TOPSOIL, ORGANIC AND UNSUITABLE MATERIALS TO APPROVED LOCATION.
2. ALL CONSTRUCTION MATERIALS SHALL BE FREE OF FROST, SNOW, ORGANIC OR OTHER UNSUITABLE MATERIAL.
3. SUBGRADE PREPARATION:
   - 3.1 SCARIFY BOTTOM OF POND EXCAVATION TO MAXIMUM DEPTH OF 200mm AND RECOMPACT TO 95% STANDARD PROCTOR DRY DENSITY.
   - 3.2 PROOF ROLL IN 2 DIRECTIONS. ANY SOFT SPOTS DETECTED IN THE EXPOSED SUBGRADE SHALL BE OVER EXCAVATED AND BACKFILLED WITH CLEAN CRUSHED GRAVEL AND COMPACTED TO A SIMILAR DENSITY AS THE ADJACENT SUBGRADE. OVERLAY ANY CRUSHED GRAVEL USED WITH MINIMUM 300mm OF COMPACTED CLAY TO PROTECT LINER.
   - 3.3 ENSURE THERE ARE NO EXPOSED STONES ON SUB GRADE PRIOR TO PLACING THE NON WOVEN GEOTEXTILE.
4. EARTHWORKS CONTRACTOR IS RESPONSIBLE TO PROVIDE SUPPORT TO POND LINER CONTRACTOR.
5. AFTER EXCAVATION OF THE POND IS COMPLETED, CONTRACTOR SHALL ENSURE GEOTECHNICAL ENGINEER PERFORMS ON SITE REVIEW AND APPROVAL OF DEPTH OF EXCAVATION AND SUITABILITY OF THE BASE MATERIAL FOR THE POND.
6. ALL NATIVE CLAY FILL MATERIAL USED FOR CONSTRUCTION OF POND BERMS SHALL BE COMPACTED TO 98% SPMDD IN MAX 200mm L/FTS.
7. GEOCOMPOSITE SUBDRAIN SHALL BE SIZED BY THE SUPPLIER FOR A WETTED AREA OF 1,450m² AND SOIL PERMEABILITY/HYDRAULIC CONDUCTIVITY OF 1.00×10^{-7} m/s. SEASONALLY HIGH GROUND WATER LEVEL IS EXPECTED AT 1.5m BELOW SURFACE ELEVATION.



SECTION A 1:200 V1:100



SECTION B 1:200 V1:100



SECTION C NTS

NOTES:

REFERENCE DRAWING NO.	REFERENCE DRAWING	REV.	REVISION DESCRIPTION	BY	DATE	CHD	APPD
		0	ISSUED FOR CONSTRUCTION	CD	2018-10-14	JG	DB
		1	RE-ISSUED FOR CONSTRUCTION	CD	2018-11-29	JG	DB

ENGINEER'S STAMP
NOVEMBER 29, 2018
PERMIT NO.: 100034705

TRI INNOVATIONS CONSULTING LTD. ENGINEERING • DESIGN
KINLEY CONSTRUCTION

12.008.01

	DRAWN	CHECKED	DESIGN	APPROVED
BY	CD	JG	DB	DB
DATE	2018-09-30	2018-09-30	2018-09-30	2018-09-30

Greenergy

JOHNSTOWN FUEL DISTRIBUTION TERMINAL

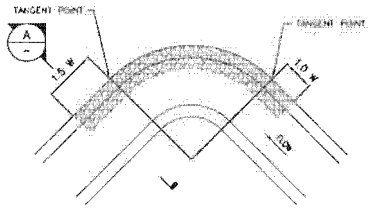
POND SECTIONS AND DETAILS

SCALE	DRAWING NUMBER	SHEET	REV.
1:250	JTWN1-C-CIV-00202	1	1

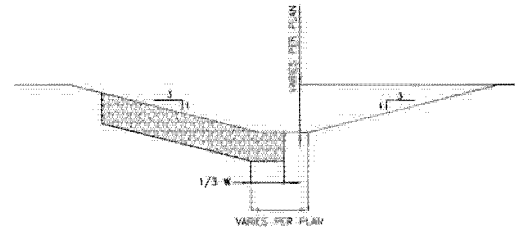
Appendix D – Erosion Control and Sedimentation Plan

Tri Innovations Drawing JTWN1-C-CIV-00205
Tri Innovations Drawing JTWN1-C-CIV-00207 SHEET 1
Tri Innovations Drawing JTWN1-C-CIV-00207 SHEET 2
Tri Innovations Drawing JTWN1-C-CIV-00209

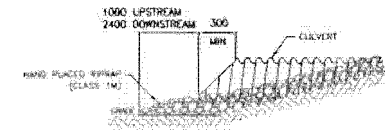
NOTE:
- REQUIRED FOR ALL BENDS IN DITCHES ≥ 45°



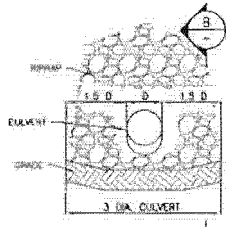
DITCH BEND RIPRAP PLAN DETAIL



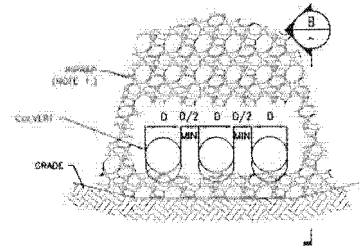
SECTION A



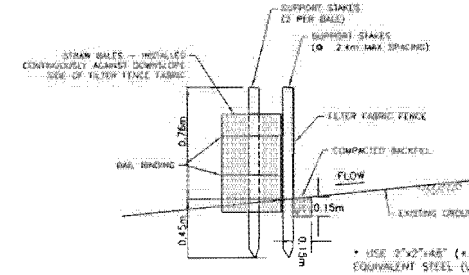
SECTION B



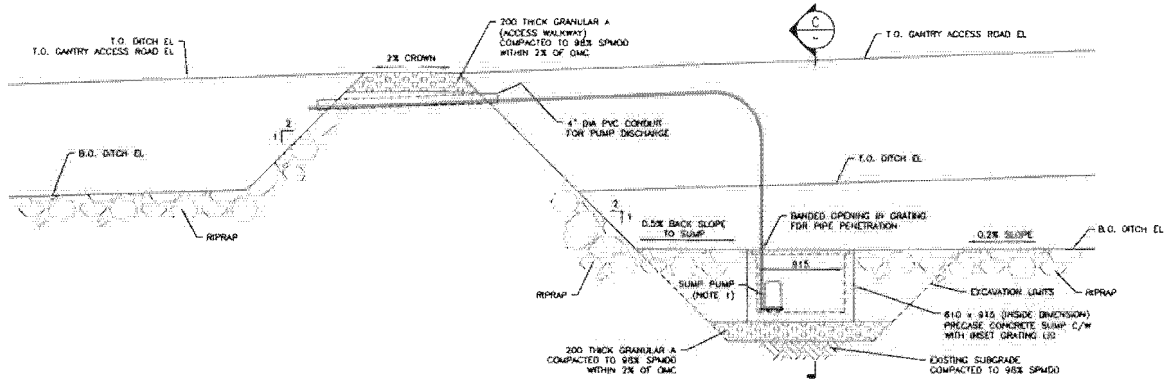
TYPICAL CULVERT INLET/DISCHARGE RIPRAP DETAIL
N.T.S.



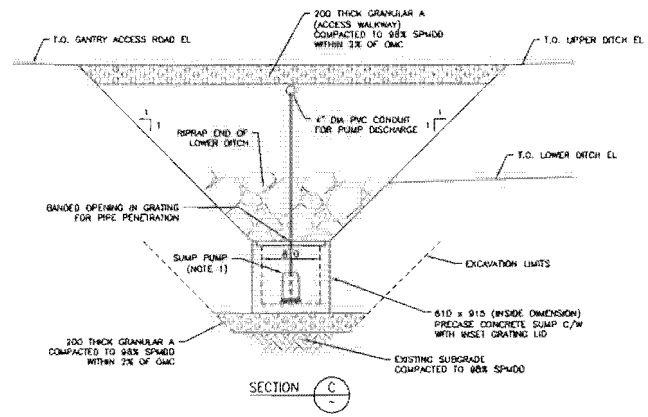
CULVERT SPACING FOR DOUBLE/TRIPLE
N.T.S.



SILT FENCE DETAIL



LIFT STATION DETAIL
N.T.S.



SECTION C

NOTES:
1. SUMP PUMP TO HAVE A MINIMUM FLOW RATE OF 0.003m³/s (48 GPM)

REFERENCE DRAWING NO.	REFERENCE DRAWING	REV.	REVISION DESCRIPTION	BY	DATE	CHD	APPD
		0	ISSUED FOR CONSTRUCTION	CC	2018-10-14	JG	DB

ENGINEER'S STAMP
DECEMBER 19, 2018
PERMIT NO.: 100004705

TRI INNOVATIONS CONSULTING LTD. | KINLEY CONSTRUCTION

12.008.01

	DRAWN	CHECKED	DESIGN	APPROVED
BY	CC	JG	DB	DB
DATE	2018-10-01	2018-10-01	2018-10-01	2018-10-01

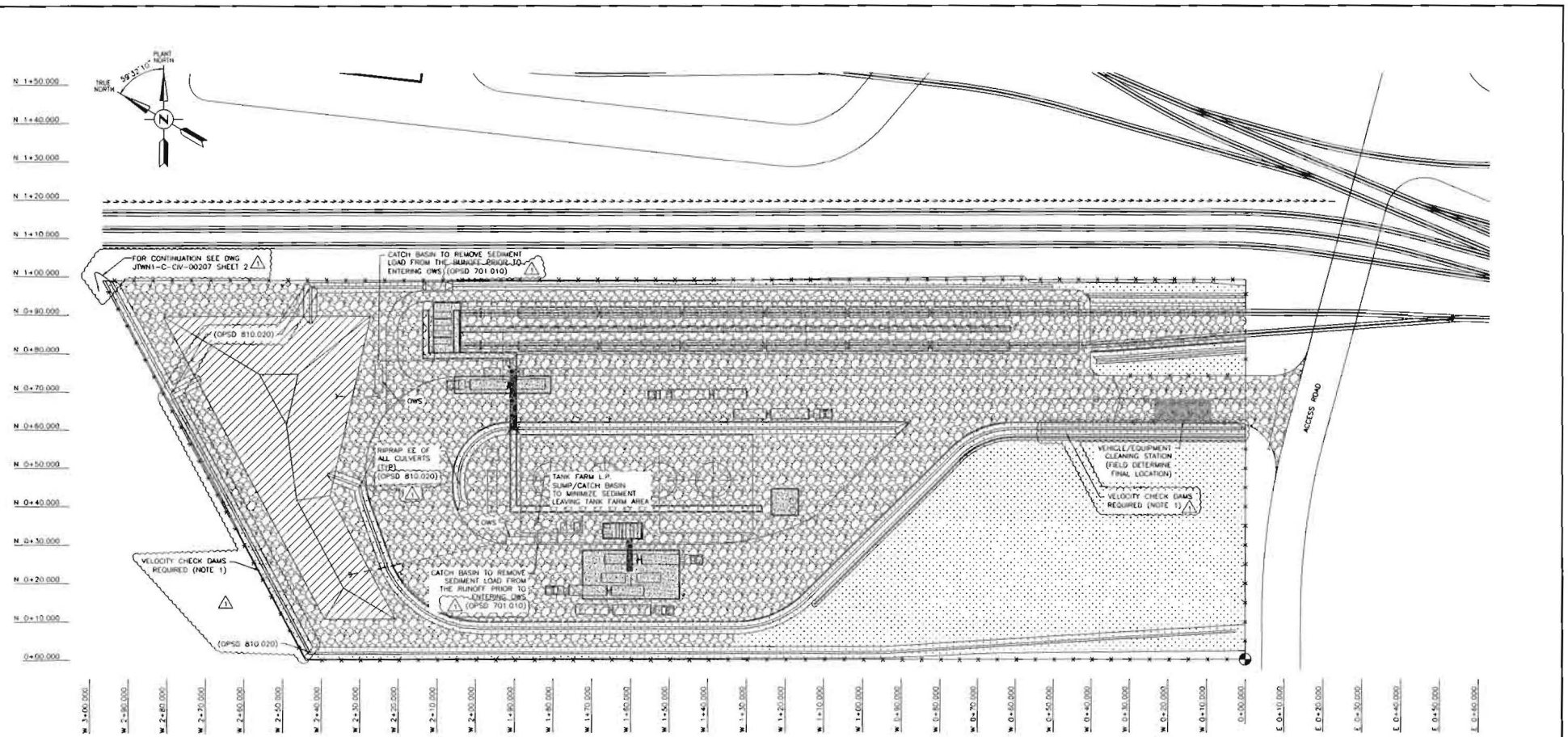
Greenergy

JOHNSTOWN FUEL DISTRIBUTION TERMINAL

EROSION CONTROL DETAILS

SCALE	DRAWING NUMBER	SHEET	REV.
1:30	JTWN1-C-CIV-00205	1	0

PLOTTED DATE: 2018-10-13 10:10:35 PM BY: CHRIS COWN
LAST SAVED DATE: 2018-10-13 10:10:18 PM BY: CHRIS
Z:\12 KINLEY CONSTRUCTION\008 JOHNSTOWN\JTWN1-C-CIV\JTWN1-C-CIV-00205.DWG



DATUM POINT (UTM, ZONE 18, NAD83)			
	NORTHING	EASTING	ELEVATION
PLANT UTM	4952396.005	460455.693	91.477
PLANT LOCAL	0+00.000	0+00.000	100.000

LEGEND

- COMPACTED GRANULAR FINISH
- SEEDED FOR EROSION PREVENTION
- SYNTHETICALLY LINED POND
- CAST-IN-PLACE CONCRETE
- VELOCITY CHECK DAMS REQUIRED

NOTES:
1. EROSION CONTROL & SEDIMENTATION GENERAL NOTES CAN BE FOUND ON DRAWING JTWN1-C-CIV-00207 SHEET 2.
2. CATCH BASINS UPSTREAM OF BOTH OIL WATER SEPARATORS (OPSD 701.010).

REFERENCE DRAWING NO.	REFERENCE DRAWING	REV.	REVISION DESCRIPTION	BY	DATE	CHD	APPD
		0	ISSUED FOR CONSTRUCTION	CC	2018-11-29	JG	DB
		1	RE-ISSUED FOR CONSTRUCTION	SH	2019-02-20	JG	DB

ENGINEER'S STAMP

PROFESSIONAL ENGINEER
PROVINCE OF ONTARIO

FEBRUARY 21, 2019
PERMIT NO.: 100504705

TRI INNOVATIONS CONSULTING LTD. ENGINEERING + DESIGN

KINLEY CONSTRUCTION OF CANADA

12.008.01

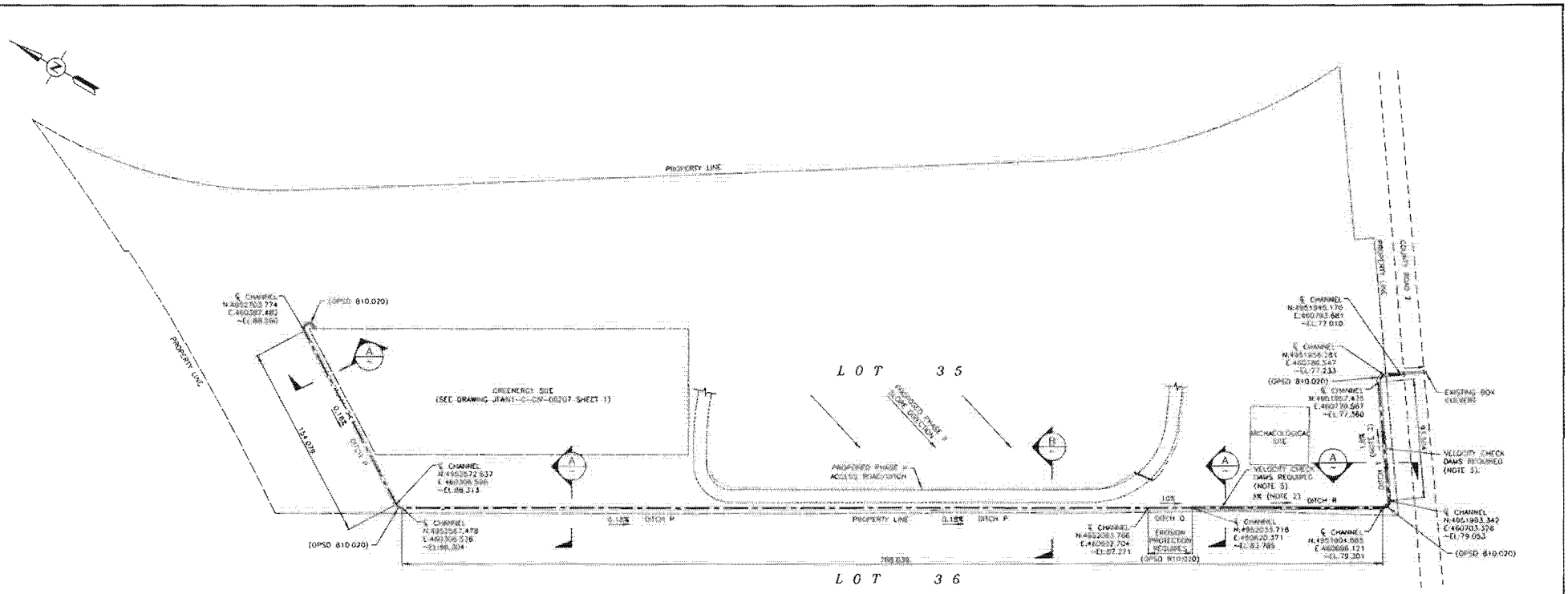
	DRAWN	CHECKED	DESIGN	APPROVED
BY	CC	JG	DB	DB
DATE	2018-11-26	2018-11-26	2018-11-26	2018-11-26

Greenergy

JOHNSTOWN FUEL DISTRIBUTION TERMINAL

EROSION CONTROL AND SEDIMENTATION PLAN

SCALE	DRAWING NUMBER	SHEET	REV.
1:500	JTWN1-C-CIV-00207	1	1



NOTES:
1. COORDINATES ARE IN METERS AND UTM, ZONE 18, NAD83 (CSRS)
2. SILT FENCES AROUND ANY STOCKPILES (OPSD 219.150). STOCKPILES WILL BE FIELD LOCATED DURING CONSTRUCTION.
3. RIPRAP ALL CULVERTS AND DITCH DIRECTION CHANGES > 45 DEGREES (OPSD 810.020).
4. CATCH BASINS UPSTREAM OF BOTH WATER SEPARATORS (OPSD 701.010).
5. VELOCITY CHECK DAMS REQUIRED FOR THESE DITCHES. FOR DAM SPACING SEE DRAWING JTWN1-C-CIV-00209.
6. ALL EXPOSED DITCHES AND DAYLIGHTING SLOPES WILL BE SEEDED TO CONTROL EROSION.
7. THIS DRAWING IS CONSIDERED A LIVING DOCUMENT WHAT MAY BE MODIFIED IN THE EVENT THAT THE CONTROL MEASURES ARE OR BECOME INSUFFICIENT.
8. DURING CONSTRUCTION, THE CONTRACTOR (KINLEY CONSTRUCTION OF CANADA) WILL ADHERE TO THEIR MAINTENANCE AND INSPECTION PLANS WHICH INVOLVES DAILY VISUAL INSPECTIONS AND WEEKLY WRITTEN INSPECTIONS FOR THE EQUIPMENT AND WORK AREAS. EQUIPMENT WILL BE KEPT CLEAN AND WILL BE WASHED REGULARLY, AND PRIOR TO REMOVAL FROM SITE.
9. FOR REGULAR FACILITY OPERATIONS (POST CONSTRUCTION), THE OPERATOR WILL PRODUCE A MAINTENANCE AND INSPECTION PLAN. IT WILL BE WRITTEN INTO THE OPERATIONAL PROCEDURE FOR THE FACILITY TO PERFORM DAILY INSPECTIONS AND WEEKLY WRITTEN INSPECTIONS, SIMILAR TO THOSE PREFORMED DURING CONSTRUCTION. THESE WILL BE PERFORMED BY CREWS.
10. IN ADDITION TO THE MEASURES LISTED ON THE DRAWINGS, PLEASE REFER TO THE STORMWATER MANAGEMENT REPORT ISSUED BY TRI INNOVATIONS CONSULTING LTD.

NOTES:

LEGEND:
0.15% DIRECTION AND SLOPE OF DRAINAGE
VELOCITY CHECK DAMS REQUIRED

REFERENCE DRAWING NO.	REFERENCE DRAWING	REV.	REVISION DESCRIPTION	BY	DATE	CHD	APPD
		0	ISSUED FOR CONSTRUCTION	SH	2019-02-20	JC	DB

ENGINEER'S STAMP
FEBRUARY 21, 2019
PERMIT NO.: 100504705

TRI INNOVATIONS CONSULTING LTD
KINLEY CONSTRUCTION

12.008.01

	DRAWN	CHECKED	DESIGN	APPROVED
BY	SH	JC	DB	DB
DATE	2019-02-20	2019-02-20	2019-02-20	2019-02-20

Greenergy

JOHNSTOWN FUEL DISTRIBUTION TERMINAL

EROSION CONTROL AND SEDIMENTATION PLAN

SCALE	DRAWING NUMBER	SHEET	REV.
1:1500	JTWN1-C-CIV-00207	2	0

PLOTTED DATE: 2019-02-21 11:45:30 AM BY: DB VERSION: 9
LAST SAVED DATE: 2019-02-20 4:04:28 PM BY: SH VERSION: 9
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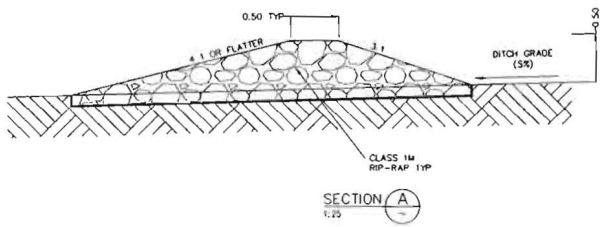
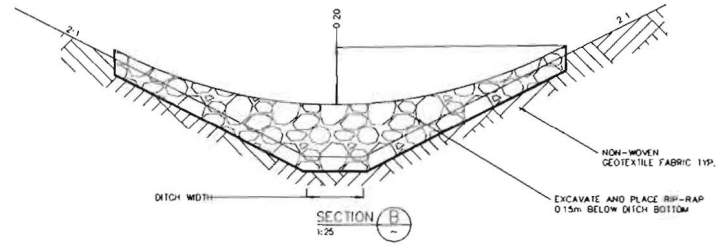
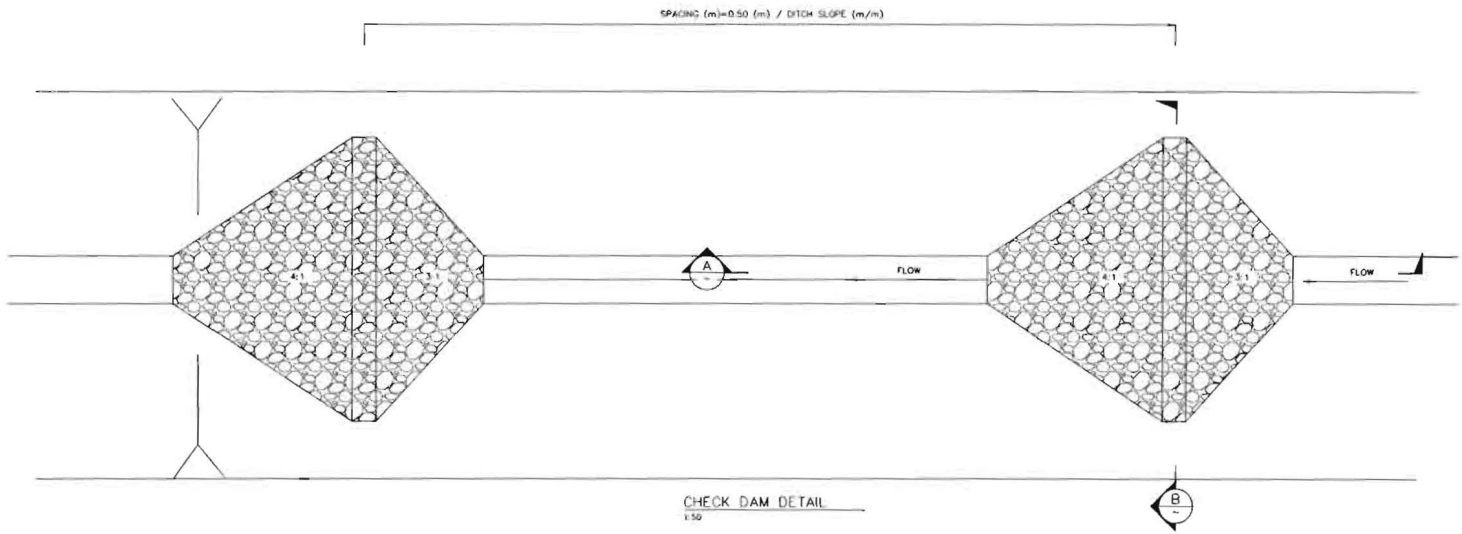
TRI_PLOT_TEMPLATE.CTB



SECTION A
1:25



SECTION B
1:25



CHECK DAM DETAIL
1:50

NOTES:

REFERENCE DRAWING NO.	REFERENCE DRAWING	REV.	REVISION DESCRIPTION	BY	DATE	CHD	APPD
		0	ISSUED FOR CONSTRUCTION	SH	2019-02-20	JG	DB

ENGINEER'S STAMP

LICENCED PROFESSIONAL ENGINEER
PROVINCE OF ONTARIO

FEBRUARY 21, 2019
PERMIT NO. 100504705

TRI INNOVATIONS CONSULTING LTD
ENGINEERING • DESIGN

KINLEY CONSTRUCTION OF CANADA

12.008.01

	DRAWN	CHECKED	DESIGN	APPROVED
BY	SH	JG	DB	DB
DATE	2019-02-20	2018-12-19	2018-12-19	2018-12-19

Greenergy

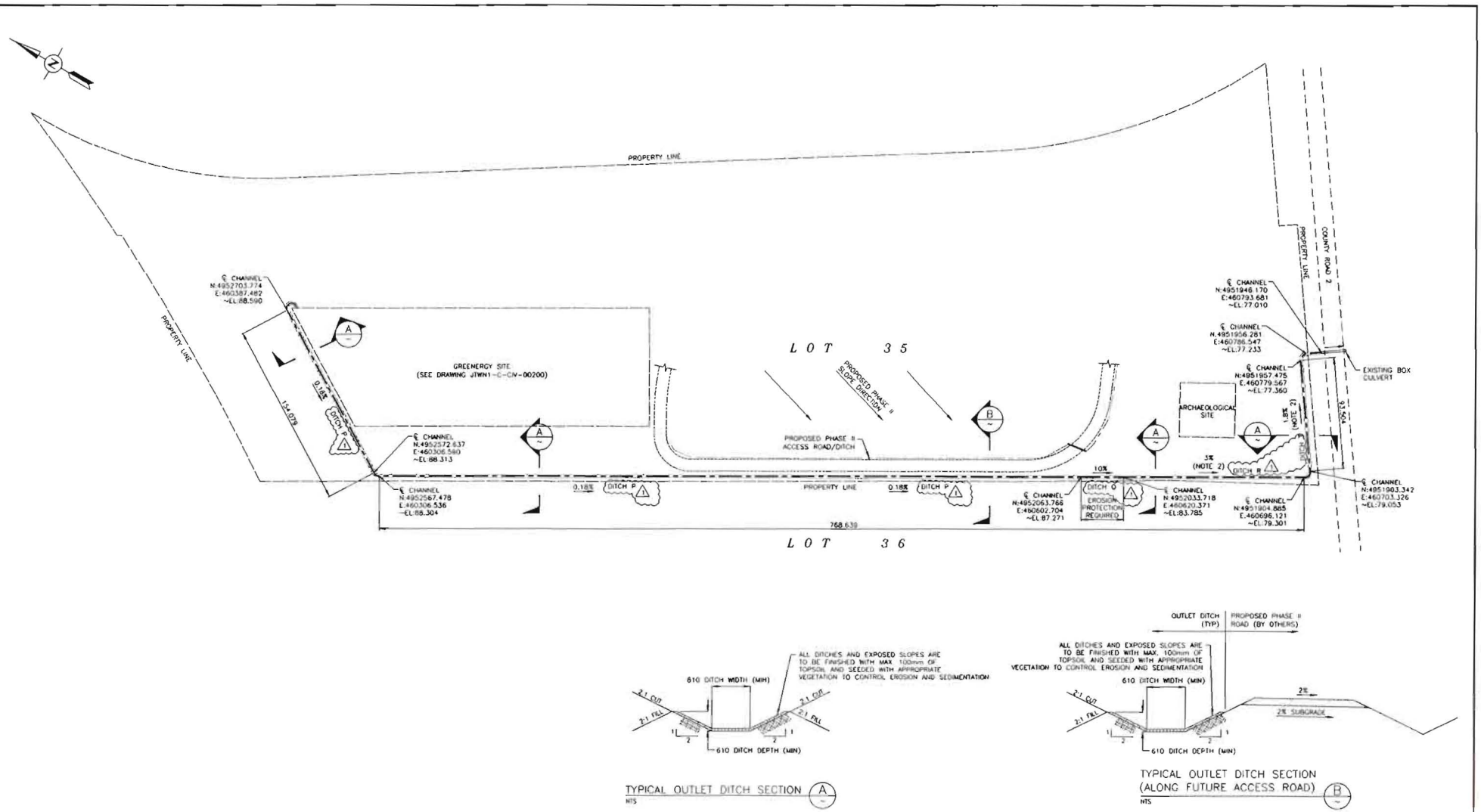
JOHNSTOWN FUEL DISTRIBUTION TERMINAL

CHECK DAM SETION AND DETAILS

SCALE	DRAWING NUMBER	SHEET	REV.
1:1500	JTWN1-C-CIV-00209	1	0

Appendix E – Outlet Ditch Routing Plan

Tri Innovations Drawing JTWN1-C-CIV-00208



TYPICAL OUTLET DITCH SECTION (A)
NTS

TYPICAL OUTLET DITCH SECTION (ALONG FUTURE ACCESS ROAD) (B)
NTS

NOTES:

1. COORDINATES ARE IN METERS AND UTM, ZONE 18, NAD83 (CSRS)
2. VELOCITY CHECK DAMS REQUIRED FOR CHANNEL SLOPES GREATER THAN 0.5% FOR DAM SPACING SEE DRAWING JTWN1-C-CIV-00209 (1)
3. FINAL CHANNEL SLOPE AND ROUTING SHALL BE FIELD CONFIRMED
4. DRAINAGE OF SURROUNDING AREA TO BE MAINTAINED AND NOT IMPACTED
5. FUTURE SITE DEVELOPMENT CANNOT DRAIN INTO THIS CHANNEL WITHOUT APPROVAL FROM THE ENGINEER.
6. OUTFLOW CHANNEL HAS BEEN SIZED FOR ADDITIONAL TEMPORARY CATCHMENT CAPACITY (APPROX. 2 HECTARES) UNTIL PHASE II WORK IS COMPLETED
7. LOT 35 AND LOT 36 GENERALLY SLOPE STRAIGHT SOUTH ALONG DIVIDING PROPERTY BOUNDARY.

LEGEND:

0.18% DIRECTION AND SLOPE OF DRAINAGE

REFERENCE DRAWING NO.	REFERENCE DRAWING

REV.	REVISION DESCRIPTION	BY	DATE	CHD	APPD
0	ISSUED FOR CONSTUCTION	CC	2018-12-21	JG	DB
1	RE-ISSUED FOR CONSTRUCTION	SH	2019-02-20	JG	DB

ENGINEER'S STAMP

LICENSED PROFESSIONAL ENGINEER
PROVINCE OF ONTARIO

FEBRUARY 21, 2019
PERMIT NO.: 100504705

TRI INNOVATIONS CONSULTING LTD. ENGINEERING & DESIGN

KINLEY CONSTRUCTION OF CANADA

12.008.01

	DRAWN	CHECKED	DESIGN	APPROVED
BY	CC	JG	DB	DB
DATE	2018-12-19	2018-12-19	2018-12-19	2018-12-19

Greenergy

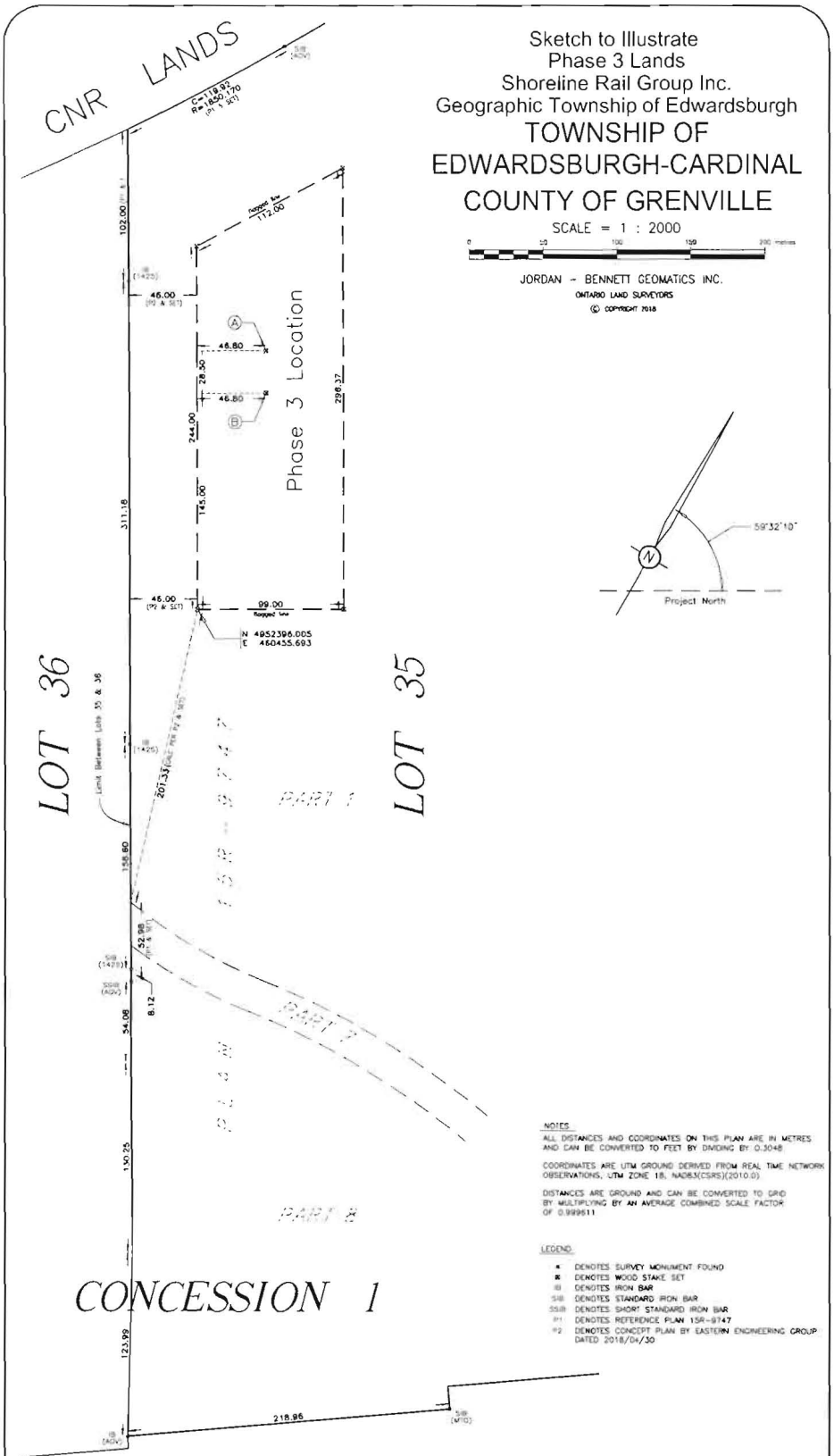
JOHNSTOWN FUEL DISTRIBUTION TERMINAL

OUTLET DITCH – ROUTING PLAN

SCALE	DRAWING NUMBER	SHEET	REV.
1:1500	JTWN1-C-CIV-00208	1	1

Appendix F – Survey of Surrounding Area

Jordan-Bennett Geomatics Survey 180172-01



Sketch to Illustrate
Phase 3 Lands
Shoreline Rail Group Inc.
Geographic Township of Edwardsburgh

TOWNSHIP OF EDWARDSBURGH-CARDINAL
COUNTY OF GRENVILLE

SCALE = 1 : 2000

0 50 100 150 200 metres

JORDAN - BENNETT GEOMATICS INC.
ONTARIO LAND SURVEYORS

NOTES

ALL DISTANCES AND COORDINATES ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

COORDINATES ARE UTM GROUND DERIVED FROM REAL TIME NETWORK OBSERVATIONS, UTM ZONE 18, NAD83(CSRS)(2010.0).

DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY AN AVERAGE COMBINED SCALE FACTOR OF 0.999611

LEGEND

- ● DENOTES SURVEY MONUMENT FOUND
- ⊠ DENOTES WOOD STAKE SET
- IB DENOTES IRON BAR
- SIB DENOTES STANDARD IRON BAR
- SSIB DENOTES SHORT STANDARD IRON BAR
- #1 DENOTES REFERENCE PLAN 15R-9747
- #2 DENOTES CONCEPT PLAN BY EASTERN ENGINEERING GROUP DATED 2018/04/30

CAUTION

THIS IS NOT A PLAN OF SURVEY AND SHALL NOT BE USED EXCEPT FOR THE PURPOSE INDICATED IN THE TITLE BLOCK.

THIS SKETCH IS NOT A VALID COPY UNLESS EMBOSSED WITH SURVEYOR'S SEAL

COMPLETION DATE: Sept. 10, 2018.

Jordan-Bennett Geomatics Inc.
Ontario Land Surveyors
P.O. Box 485
33 Perth Street
Brockville, Ontario
K6V-5V7
Phone: 613-342-7525
Fax: 613-342-9513

Drawn By:	Party Chief:	Checked By:	File No.:
R.J.J.	B.K.	R.J.J.	180172_01

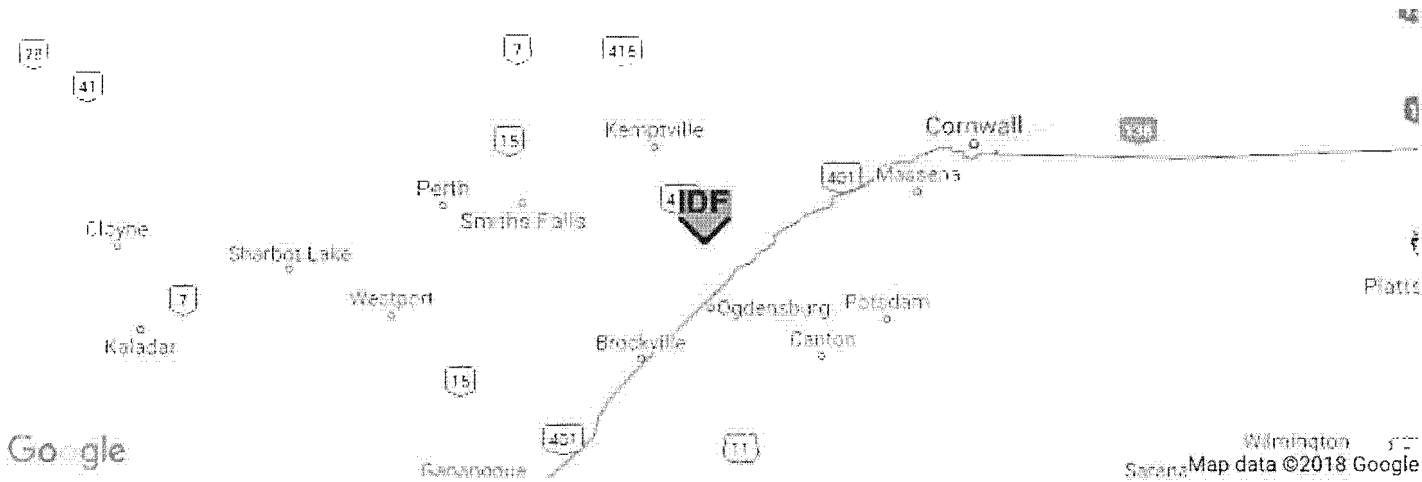
Appendix G – IDF Curve Data

Ontario IDF CURVE LOOKUP

Active coordinate

44° 49' 15" N, 75° 30' 14" W (44.820833,-75.504167)

Retrieved: Wed, 13 Jun 2018 17:15:51 GMT



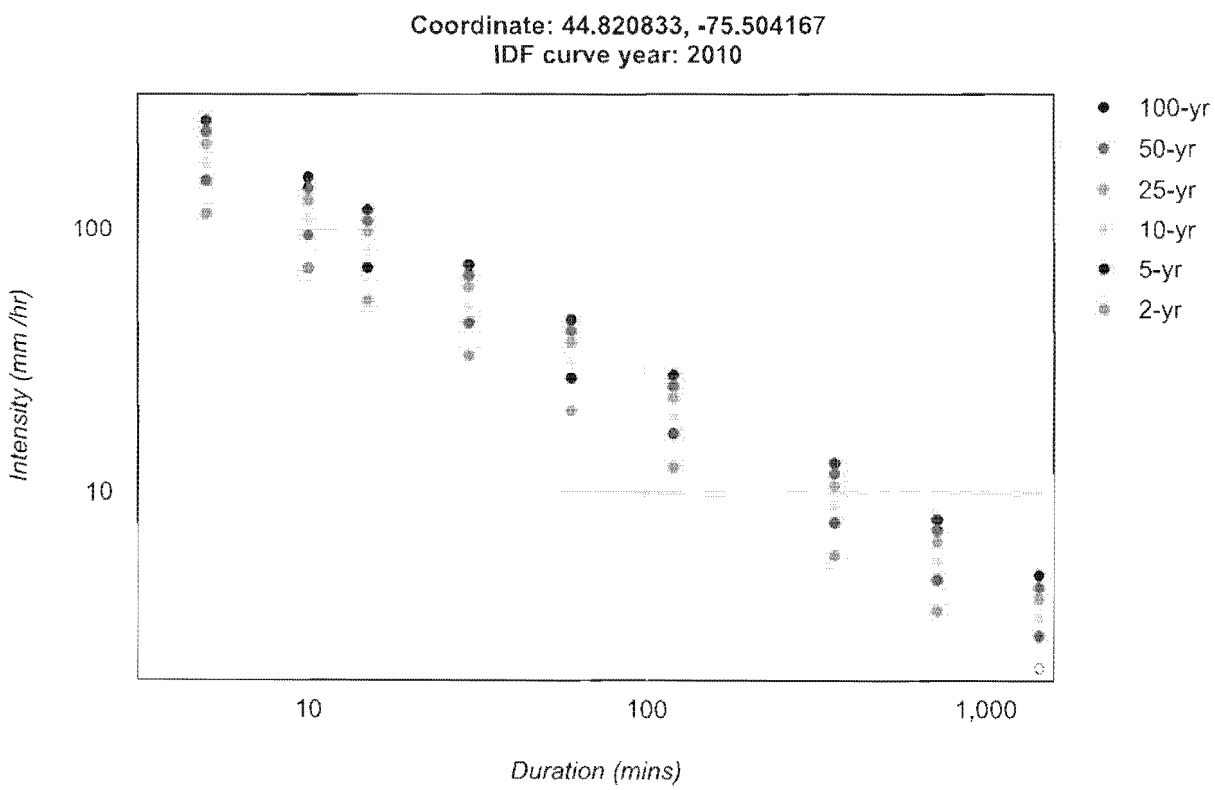
Location summary

These are the locations in the selection.

IDF Curve: 44° 49' 15" N, 75° 30' 14" W (44.820833,-75.504167)

Results

An IDF curve was found.



Coefficient summary

IDF Curve: 44° 49' 15" N, 75° 30' 14" W (44.820833,-75.504167)

Retrieved: Wed, 13 Jun 2018 17:15:51 GMT

Data year: 2010
IDF curve year: 2010

Return period	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
A	20.2	26.9	31.2	36.8	40.8	44.9
B	-0.699	-0.699	-0.699	-0.699	-0.699	-0.699

Statistics

Rainfall intensity (mm hr^{-1})

Duration	5-min	10-min	15-min	30-min	1-hr	2-hr	6-hr	12-hr	24-hr
2-yr	114.7	70.7	53.2	32.8	20.2	12.4	5.8	3.6	2.2
5-yr	152.8	94.1	70.9	43.7	26.9	16.6	7.7	4.7	2.9
10-yr	177.2	109.2	82.2	50.6	31.2	19.2	8.9	5.5	3.4
25-yr	209.0	128.8	97.0	59.7	36.8	22.7	10.5	6.5	4.0
50-yr	231.7	142.8	107.5	66.2	40.8	25.1	11.7	7.2	4.4
100-yr	255.0	157.1	118.3	72.9	44.9	27.7	12.8	7.9	4.9

Rainfall depth (mm)

Duration	5-min	10-min	15-min	30-min	1-hr	2-hr	6-hr	12-hr	24-hr
2-yr	9.6	11.8	13.3	16.4	20.2	24.9	34.6	42.7	52.6
5-yr	12.7	15.7	17.7	21.8	26.9	33.1	46.1	56.8	70.0
10-yr	14.8	18.2	20.6	25.3	31.2	38.4	53.5	65.9	81.2
25-yr	17.4	21.5	24.2	29.9	36.8	45.3	63.1	77.7	95.8
50-yr	19.3	23.8	26.9	33.1	40.8	50.3	70.0	86.2	106.2
100-yr	21.3	26.2	29.6	36.4	44.9	55.3	77.0	94.9	116.9

Terms of Use

Appendix H – Ditch Flow Velocity Summary

Phase III Area:					
Ditch ID# (Appendix A)	Slope (%)	Flow Velocity (m/s)	Flow Velocity (ft/s)	Surface Treatment	Velocity Control
A	0.0028	0.8	2.8	Seeded	Not Required
B	0.0028	0.8	2.8	Seeded	Not Required
C	0.0028	2.7	8.7	Seeded	Check Dams
D	0.006	1.2	4.0	Seeded	Not Required
E	0.006	1.2	4.0	Seeded	Not Required
F	0.01	1.6	5.2	Seeded	Check Dams
G	0.0011	0.5	1.7	Seeded	Not Required
H	0.006	1.2	4.0	Seeded	Not Required
J	0.002	0.7	2.3	Seeded	Not Required
K	0.002	0.7	2.3	Seeded	Not Required

Outfall Channel from Phase III Area to Discharge Location:					
Ditch ID# (Appendix B)	Slope (%)	Flow Velocity (m/s)	Flow Velocity (ft/s)	Surface Treatment	Velocity Control
P	0.0018	0.7	2.2	Seeded	Not Required
Q	0.1	5.0	16.5	RIPRAP	Not Required
R	0.0300	2.8	9.0	Seeded	Check Dams
T	0.018	2.1	7.0	Seeded	Check Dams

3.80

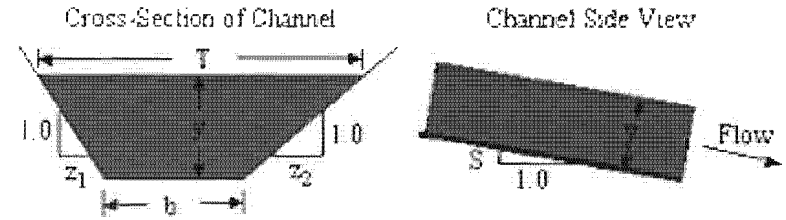
Grassed Channels

Permissible Velocities for Channels Lined with Grass (SCS, 1941)

Cover	Slope range, %	Permissible velocity, ft/s: Erosion resistant soils	Easily eroded soils
Bermuda grass	0 - 5	8	6
	5 - 10	7	5
	> 10	6	4
Buffalo grass, Kentucky bluegrass, smooth brome, blue grama	0 - 5	7	5
	5 - 10	6	4
	> 10	5	3
Grass mixture	0 - 5	5	4
	5 - 10	4	3
	Do not use on slopes steeper than 10%		
Lespedeza sericea, weeping love grass, ischaemum (yellow bluestem), kudzu, alfalfa, crabgrass	0 - 5	3.5	2.5
	Do not use on slopes steeper than 5% except for side slopes in a combination channel		
Annuals - used on mild slopes or as tempory protection until permanent covers established, common lespedeza, Sudan grass	0 - 5	3.5	2.5
	Use on slopes steeper than 5% is not recommended		

WB, Table 9.3 (from Chow, 1959)

Material	Manning n
Excavated Earth Channels	
Clean	0.022
Gravelly	0.025
Weedy	0.030
Stony, Cobbles	0.035



Variables [ ] indicates dimensions. [L]=Length, [T]=Time. To calculation

A = Flow cross-sectional area, determined normal (perpendicular) to the bottom surface [L^2].

b = Channel bottom width [L].

F = Froude number. F is a non-dimensional parameter indicating the relative effect of inertial effects to gravity effects. River flows with $F<1$ are low velocity flows called subcritical. $F>1$ are high velocity flows called supercritical. Subcritical flows are controlled by downstream obstructions while supercritical flows are affected by upstream controls. $F=1$ flows are called critical.

g = acceleration due to gravity = 32.174 ft/s^2 = 9.8066 m/s^2. g is used in the equation for Froude number.

k = unit conversion factor = 1.49 if English units = 1.0 if metric units. Our software converts all inputs to SI units (meters and seconds), performs the computations using $k=1.0$, then converts the computed quantities to units specified by the user.

n = Manning coefficient. n is a function of the channel material, such as grass, concrete, earth, etc. Values for n can be found in the table of Manning's n coefficients shown below.

P = Wetted perimeter [L]. P is the contact length between the water and the channel bottom and sides.

Q = Discharge or flow rate [L^3/T].

R = Hydraulic radius of the flow cross-section [L].

S = Slope of channel bottom or water surface [L/L]. Vertical distance divided by horizontal distance.

T = Top width of the flowing water [L].

V = Average velocity of the water [L/T].

y = Water depth measured normal (perpendicular) to the bottom of the channel [L]. If the channel has a small slope (S), then using the vertical depth introduces only minimal error.

z_1, z_2 = Side slopes of each bank of the channel. These slopes are computed as horizontal distance divided by vertical distance.

θ = Angle formed by S.

$$Q=VA \qquad V=\frac{k}{n}R^{2/3}S^{1/2} \qquad R=\frac{A}{P} \qquad A=\frac{y}{2}(b+T)$$

$$P=b+y\left(\sqrt{1+z_1^2}+\sqrt{1+z_2^2}\right) \qquad T=b+y(z_1+z_2)$$

$$F=V\sqrt{\frac{T}{gA\cos\theta}} \qquad \theta=Tan^{-1}(S)$$

Ditch ID#	A	
Inputs		
A	1.08	m^2
b	0.6	m
F	0.06	N/A
g	9.81	m/s^2
k	1	N/A
n	0.03	N/A
P	3.28	m
Q	**0.91**	**m^3/s**
R	0.33	m
S	0.0028	m/m
T	3	m
V	0.8	m/s
V	2.8	ft/s
y	0.6	m
z1	2	m/m
z2	2	m/m
Θ	0.16	deg

Ditch ID#	B	
Inputs		
A	1.08	m^2
b	0.6	m
F	0.06	N/A
g	9.81	m/s^2
k	1	N/A
n	0.03	N/A
P	3.28	m
Q	**0.91**	**m^3/s**
R	0.33	m
S	0.0028	m/m
T	3	m
V	0.8	m/s
V	2.8	ft/s
y	0.6	m
z1	2	m/m
z2	2	m/m
Θ	0.16	deg

Ditch ID#	C	
Inputs		
A	1.08	m^2
b	0.6	m
F	#NUM!	N/A
g	9.81	m/s^2
k	1	N/A
n	0.03	N/A
P	3.28	m
Q	**2.87**	**m^3/s**
R	0.33	m
S	0.0279	m/m
T	3	m
V	2.7	m/s
V	8.7	ft/s
y	0.6	m
z1	2	m/m
z2	2	m/m
Θ	1.60	deg

Ditch ID#	D	
Inputs		
A	1.08	m^2
b	0.6	m
F	0.09	N/A
g	9.81	m/s^2
k	1	N/A
n	0.03	N/A
P	3.28	m
Q	**1.33**	**m^3/s**
R	0.33	m
S	0.0060	m/m
T	3	m
V	1.2	m/s
V	4.0	ft/s
y	0.6	m
z1	2	m/m
z2	2	m/m
Θ	0.34	deg

Ditch ID#	E	
Inputs		
A	1.08	m^2
b	0.6	m
F	0.09	N/A
g	9.81	m/s^2
k	1	N/A
n	0.03	N/A
P	3.28	m
Q	**1.33**	**m^3/s**
R	0.33	m
S	0.0060	m/m
T	3	m
V	1.2	m/s
V	4.0	ft/s
y	0.6	m
z1	2	m/m
z2	2	m/m
Θ	0.34	deg

Ditch ID#	F	
Inputs		
A	1.08	m^2
b	0.6	m
F	0.12	N/A
g	9.81	m/s^2
k	1	N/A
n	0.03	N/A
P	3.28	m
Q	**1.71**	**m^3/s**
R	0.33	m
S	0.0100	m/m
T	3	m
V	1.6	m/s
V	5.2	ft/s
y	0.6	m
z1	2	m/m
z2	2	m/m
Θ	0.57	deg

Ditch ID#	G	
Inputs		
A	1.08	m^2
b	0.6	m
F	0.04	N/A
g	9.81	m/s^2
k	1	N/A
n	0.03	N/A
P	3.28	m
Q	**0.56**	**m^3/s**
R	0.33	m
S	0.0011	m/m
T	3	m
V	0.5	m/s
V	1.7	ft/s
y	0.6	m
z1	2	m/m
z2	2	m/m
Θ	0.06	deg

Ditch ID#	H	
Inputs		
A	1.08	m^2
b	0.6	m
F	0.09	N/A
g	9.81	m/s^2
k	1	N/A
n	0.03	N/A
P	3.28	m
Q	**1.33**	**m^3/s**
R	0.33	m
S	0.0060	m/m
T	3	m
V	1.2	m/s
V	4.0	ft/s
y	0.6	m
z1	2	m/m
z2	2	m/m
Θ	0.34	deg

Ditch ID#	J	
Inputs		
A	1.08	m^2
b	0.6	m
F	0.05	N/A
g	9.81	m/s^2
k	1	N/A
n	0.03	N/A
P	3.28	m
Q	**0.77**	**m^3/s**
R	0.33	m
S	0.0020	m/m
T	3	m
V	0.7	m/s
V	2.3	ft/s
y	0.6	m
z1	2	m/m
z2	2	m/m
Θ	0.11	deg

Ditch ID#	K	
Inputs		
A	1.08	m^2
b	0.6	m
F	0.05	N/A
g	9.81	m/s^2
k	1	N/A
n	0.03	N/A
P	3.28	m
Q	**0.77**	**m^3/s**
R	0.33	m
S	0.0020	m/m
T	3	m
V	0.7	m/s
V	2.3	ft/s
y	0.6	m
z1	2	m/m
z2	2	m/m
Θ	0.11	deg

Ditch ID#	P	
Inputs		
A	1.08	m^2
b	0.6	m
F	0.05	N/A
g	9.81	m/s^2
k	1	N/A
n	0.03	N/A
P	3.28	m
Q	**0.73**	**m^3/s**
R	0.33	m
S	0.0018	m/m
T	3	m
V	0.7	m/s
V	2.2	ft/s
y	0.6	m
z1	2	m/m
z2	2	m/m
Θ	0.10	deg

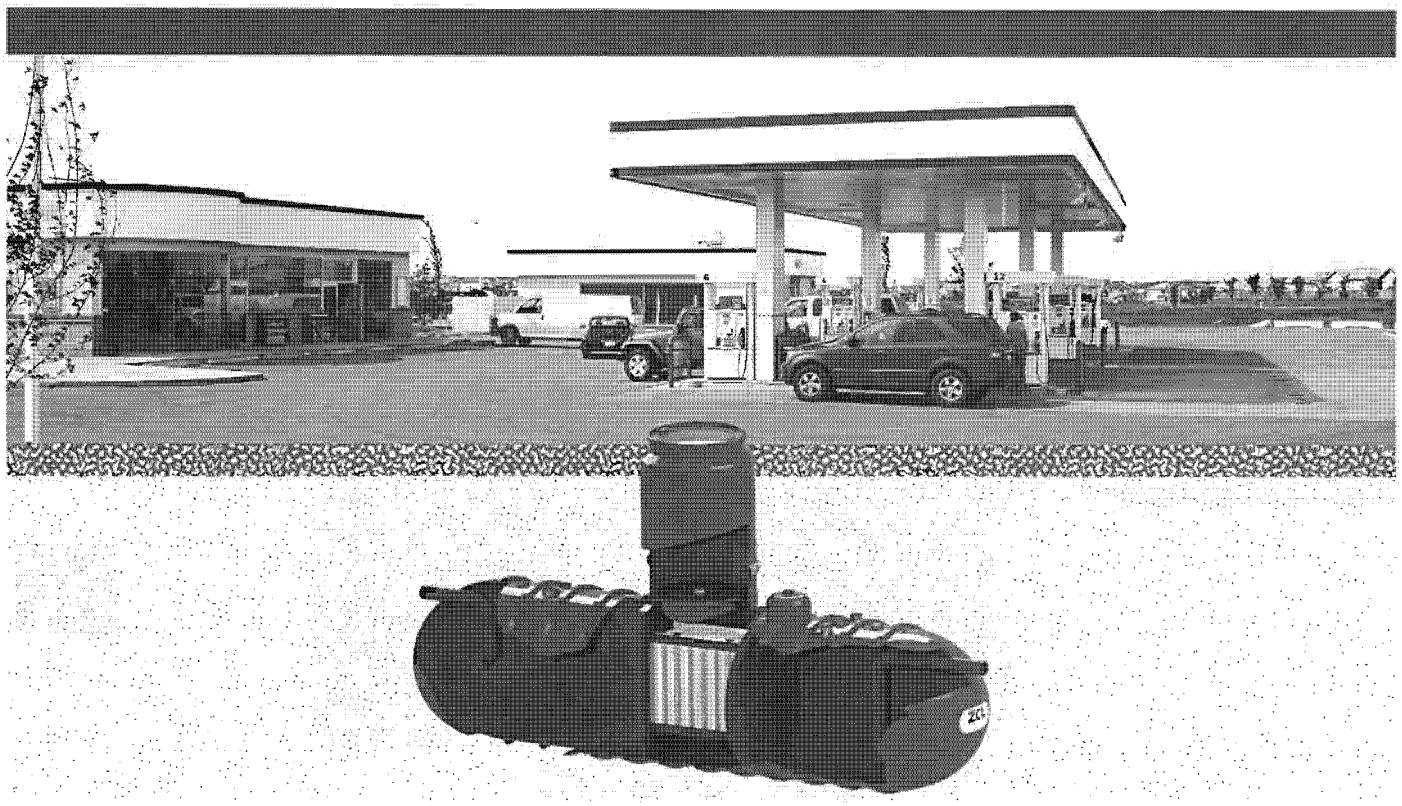
Ditch ID#	Q	
Inputs		
A	1.08	m^2
b	0.6	m
F	0.39	N/A
g	9.81	m/s^2
k	1	N/A
n	0.03	N/A
P	3.28	m
Q	**5.42**	**m^3/s**
R	0.33	m
S	0.1000	m/m
T	3	m
V	5.0	m/s
V	16.5	ft/s
y	0.6	m
z1	2	m/m
z2	2	m/m
Θ	5.71	deg

Ditch ID#	R	
Inputs		
A	1.08	m^2
b	0.6	m
F	#NUM!	N/A
g	9.81	m/s^2
k	1	N/A
n	0.03	N/A
P	3.28	m
Q	**2.97**	**m^3/s**
R	0.33	m
S	0.0300	m/m
T	3	m
V	2.8	m/s
V	9.0	ft/s
y	0.6	m
z1	2	m/m
z2	2	m/m
Θ	1.72	deg

Ditch ID#	T	
Inputs		
A	1.08	m^2
b	0.6	m
F	0.21	N/A
g	9.81	m/s^2
k	1	N/A
n	0.03	N/A
P	3.28	m
Q	**2.30**	**m^3/s**
R	0.33	m
S	0.0180	m/m
T	3	m
V	2.1	m/s
V	7.0	ft/s
y	0.6	m
z1	2	m/m
z2	2	m/m
Θ	1.03	deg

Appendix I – Oil Water Separator Datasheet

ZCL® | Coalescing
Oil/Water Separator



Efficiently Removes Free Oil and Settleable Solids**

ZCL uses multiple angle plates that are virtually self cleaning. Oil contamination can be reduced to less than ten milligrams per litre.

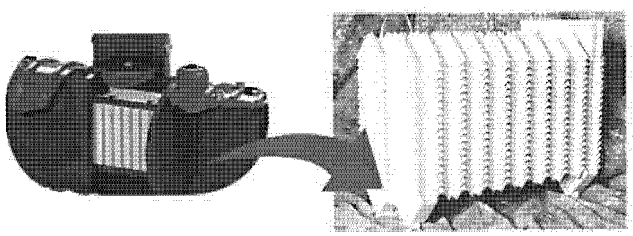
Corrosion Resistant

ZCL oil/water separators are manufactured with premium grade fibreglass reinforced plastic. They have no moving parts, require only minimal maintenance and are engineered for long term underground service.

**Not chemically or mechanically emulsified or dissolved hydrocarbons.

Vessels Are Designed And Constructed With Reference To:

✓ The API Manual on Disposal of Refinery Wastes
✓ API Publication N° 421
✓ ULC S615 - 98
✓ ZCL Coalescing Oil-Water Separators are certified by Underwriters Laboratories for Canada to the standard ULC-S656-14



Separation is enhanced with multiple angle coalescing plates

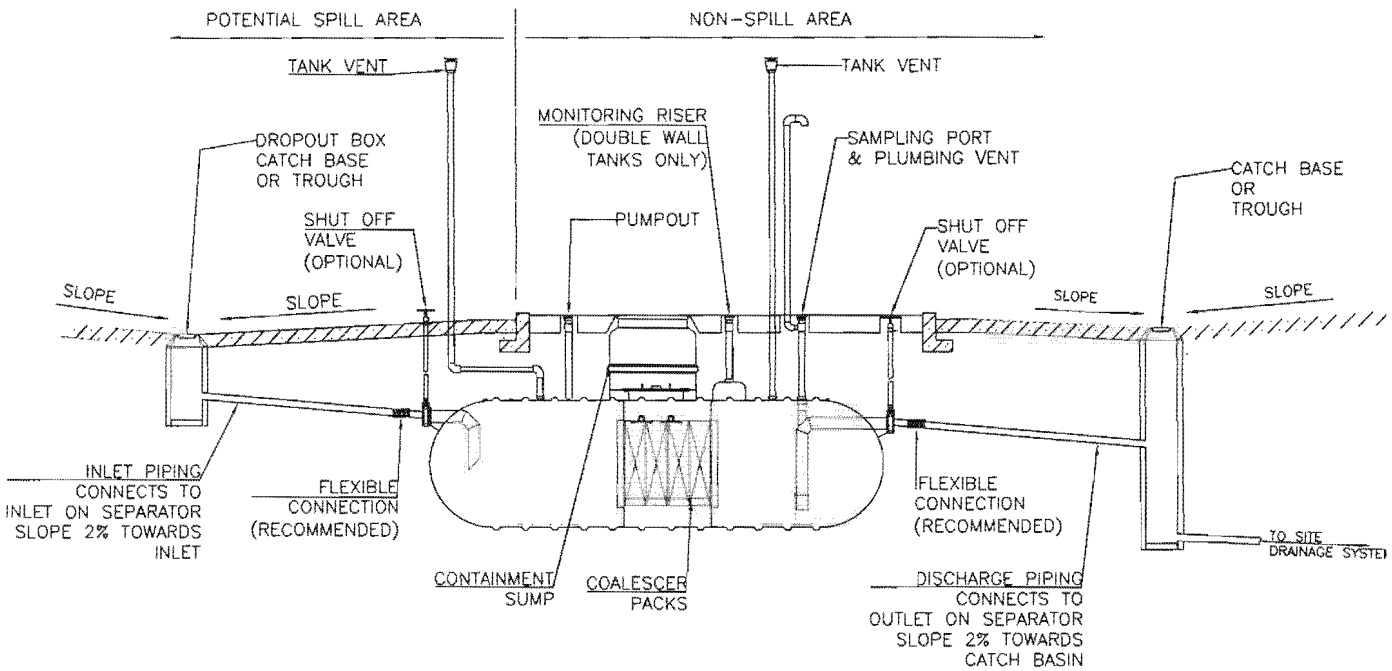
Better Flow, Better Separation

ZCL coalescing separators provide substantially better separation and higher design flows than differential gravity separators with the same footprint.

Technical Features

- Available in single wall or double wall construction.
- Corrosion resistant internal and external components.
- The multiple angle plates are self cleaning. Solids are separated to the bottom; oil is separated to the top.
- No moving parts; minimal maintenance requirements.
- The coalescing system can be cleaned in place and is designed for easy removal of plate packs for full maintenance.
- Optional shut off valve is available as an option – either manual or automatic.

Typical Coalescing Oil/Water Separator



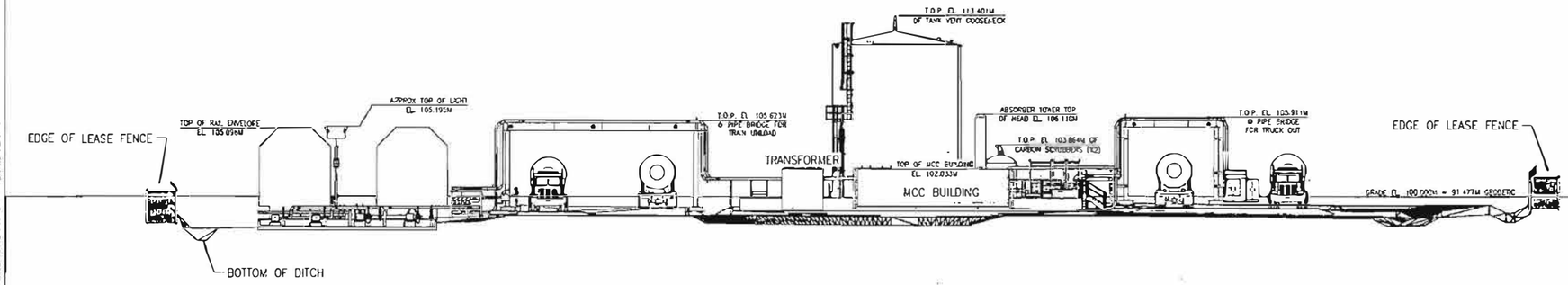
Separator Model Specifications - SW & DW

					Based on 0.85 SG oil/4.5°C/ storm water inlet free oil concentration 400 mg/L		Based on ULC-S656-14 test criteria 0.85 SG oil/ 5°C/ storm water inlet free oil concentration 2000 mg/L	
Model Number COWS- (L)	Nominal Diameter (mm)	Overall Length (mm) SW	Overall Length (mm) DW	Emergency Spill Capacity V (L)	Flow Rate for 15 mg/L (L/minute)	Flow Rate for 10 mg/L (L/minute)	ULC S656 Rated Flow Rate (L/minute)	ULC S656 Rated Free Oil Cap (L)
190 - 5,000	1327	4368	4380	1240	190	130	37	740
380 - 5,000	1327	4368	4380	1240	380	260	74	740
620 - 15,000	1910	6528	6604	8400	620	440	164	1400
830 - 15,000	1910	6528	6604	8400	830	590	219	1400
1670 - 20,000	1910	8426	8465	10900	1670	1170	439	1870
1630 - 30,000	2590	7214	7264	17300	1630	1140	446	2300
2730 - 40,000	2590	9341	9392	22800	2730	1890	744	3040
4900 - 50,000	2590	11259	11328	27800	4900	3400	1339	3720

ZCL COMPOSITES INC.

1420 Parsons Road SW • Edmonton • Alberta • Canada • T6X 1M5

SCHEDULE B5
1 OF 2



ELEVATION PLAN – LOOKING EAST
1:150

NOTES:

REFERENCE DRAWING NO.	REFERENCE DRAWING	REV.	REVISION DESCRIPTION	BY	DATE	CHD	APPD
-	-	A	ISSUED FOR REFORMATION	WK	2018.10.11	JG	JG

ENGINEER'S STAMP

PERMIT NO.:

TRI INNOVATIONS CONSULTING LTD
KINLEY CONSTRUCTION

PROJECT NO.: 12.008.01

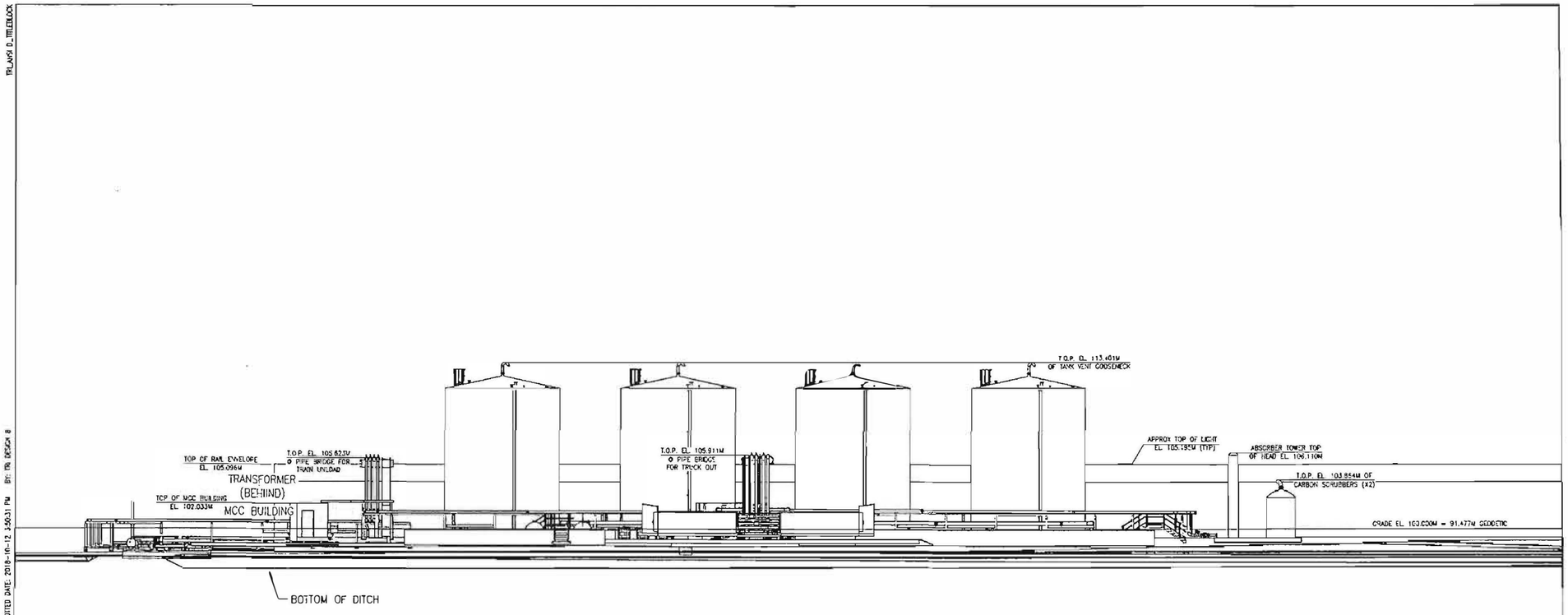
	DRAWN	CHECKED	DESIGN	APPROVED
BY	WK	JG	-	-
DATE	2018.10.11	2018.10.11	-	-

Greenergy

JOHNSTOWN FUEL DISTRIBUTION TERMINAL
ELEVATION VIEW
SECTION LOOKING EAST

SCALE	DRAWING NUMBER	SHEET	REV.
1:150	JTWN1-M-GA-00100	-	A

W:\12 KINLEY CONSTRUCTION\008 JOHNSTOWN\JTWN1-A (SITE MODEL)\JTWN1-AA-MST-00000.DWG
LAST SAVED DATE: 2018-10-12 2:53:58 PM BY: TB DESIGN 8
PLOTTED DATE: 2018-10-12 3:02:56 PM BY: TB DESIGN 8
TRI_ARCH B_TITLEBLOCK



ELEVATION PLAN - LOOKING NORTH
1:150

NOTES:

REFERENCE DRAWING NO.	REFERENCE DRAWING	REV.	REVISION DESCRIPTION	BY	DATE	CHD	APPD
-	-	A	ISSUED FOR INFORMATION	WH	2018.10.11	JG	JG

ENGINEER'S STAMP

PERMIT NO.:

TRI INNOVATIONS CONSULTING LTD
KINLEY CONSTRUCTION

PROJECT NO.: 12.008.01

	DRAWN	CHECKED	DESIGN	APPROVED
BY	WH	JG	-	-
DATE	2018.10.11	2018.10.11	-	-

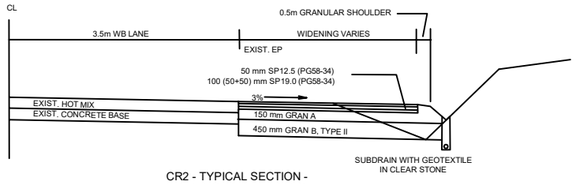
Greenergy

JOHNSTOWN FUEL DISTRIBUTION TERMINAL
ELEVATION VIEW
SECTION LOOKING north

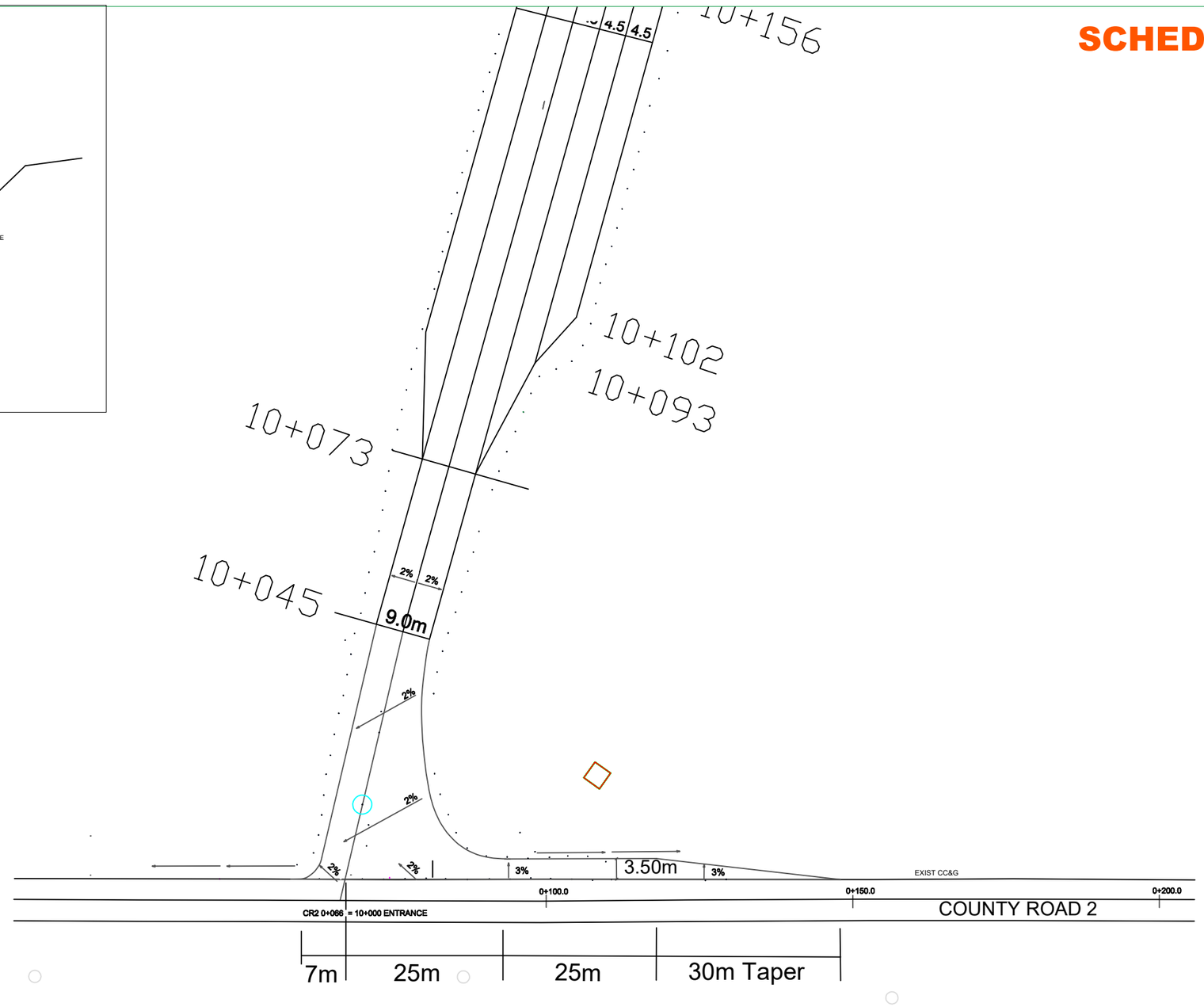
SCALE	DRAWING NUMBER	SHEET	REV.
1:150	JTWN1-M-GA-00101	-	A

PLOTTED DATE: 2018-10-12 3:50:31 PM BY: PN, DCH
LAST SAVED DATE: 2018-10-12 2:32:56 PM BY: TRI DESIGN 8
M:\13 KINLEY CONSTRUCTION\008 JOHNSTOWN\JTWN1-A (SITE MODEL)\JTWN1-A-MCL-00800.DWG
TRI_ANSI D_TITLEBLOCK

SCHEDULE B6



CR2 - TYPICAL SECTION -
WIDENING AND ENTRANCE
(NTS)



PAVING QUANTITIES (to Sta. 10+045)
- SP12.5 (PG58-34) SURFACE (50mm) - 740 m2
- SP19.0 (PG58-34) BINDER (50mm+50mm) - 740 m2

REVISION	DATE
△	

WILLIS KERR CONTRACTING LTD

PROJECT: JOHNSTOWN RAIL YARD
TITLE: CR2 MAIN ENTRANCE
SCALE: NTS
DRAWN BY: / DATE: WJM 16-11-2020
CHECKED BY: / DATE:
EMISION:
STRUCTURE #
SHEET D1

Greenergy

August 8 2019

Dear Ms. McKinstry,

As part of our ongoing discussions with Edwardsburgh/Cardinal regarding the development and construction of the Greenergy Johnstown Terminal, Greenergy Fuels Canada Inc had committed to provide an overview of the fire suppression infrastructure that will be included as part of the terminal design.

After many discussions with local stakeholders, it was decided that the best option for fire suppression infrastructure would include the addition of two fire hydrants on the property. Appended to this letter is a design of the property which illustrates the location of the two hydrants. The two hydrants are indicated with 'FH' on the drawing:

- First hydrant located at property entrance on County Road 2
- Second hydrant located 1,500 ft inside the property

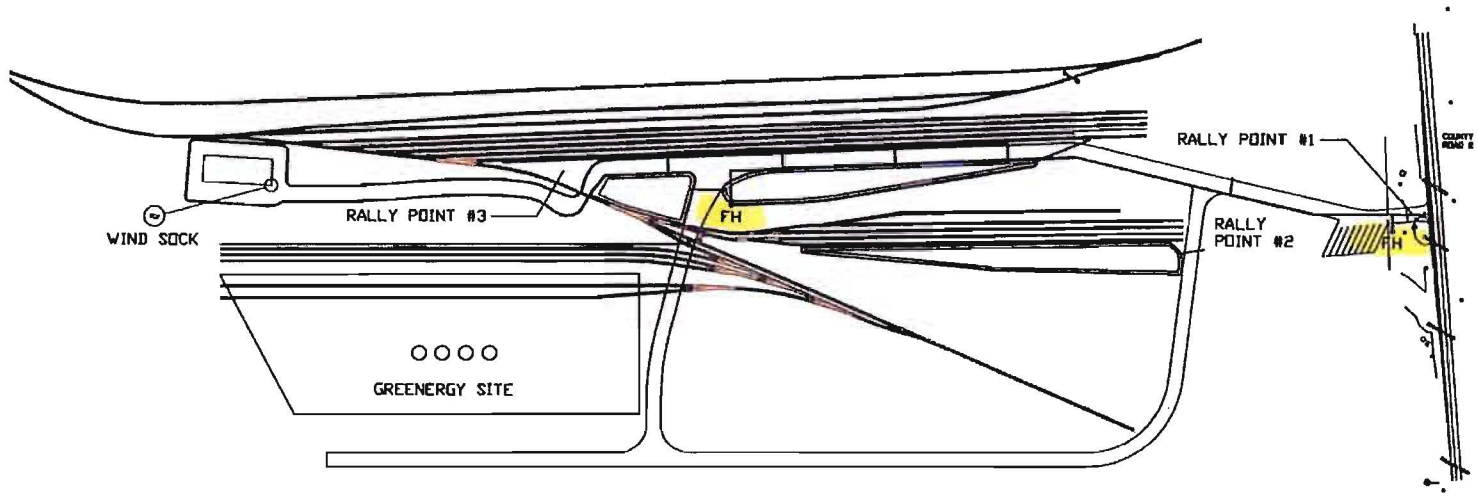
The addition of these two hydrants will provide local responders the necessary water access in the unlikely event of a fire. The technical specifications of the hydrants have also been appended to this letter.

Sincerely,

Zac Scott

Senior VP Operations

107 Germain Street, Suite 300, Saint John, New Brunswick, E2L 2E9 Canada
P +1 506 632 1650 E mail@greenergy.com
Greenergy Fuels Canada Inc



JOHNSTOWN RAIL YARD

EP1

CLOW CANADA - M-67 HERITAGE BRIGADIER FIRE HYDRANT SPECIFICATION

TESTING AND DESIGN SPECIFICATIONS (PER AWWA C502 / NSF /ULC & FM)

1. Hydrant shall be manufactured in accordance with AWWA C502 latest revision
2. Hydrant Has been certified by **UL** in accordance with the **ANSI/NSF 61 and ANSI/NSF 372** (LEAD CONTENT VERIFICATION OF PRODUCTS INCONTACT WITH POTABLE WATER)
3. Hydrant shall be designed for 250 *PSI* working pressure and tested to 500 *PSI* hydrostatic pressure.
4. Hydrant shall be rated for 250 *PSI*. **FM** working pressure and 200 *PSI*. **ULC** working pressure.
5. Hydrant shall be a compression type, dry barrel design with centre operating stem construction.
6. The O-ring seating surface on the upper stem shall be constructed of stainless steel.
7. Epoxy coating to be applied to interior and exterior of hydrant shoe for corrosion protection.
8. Hydrant shall be manufactured with operating nut and integral thrust collar made of bronze. A Delrin washer bearing shall be located above thrust collar for ease of hydrant operation.
9. Hydrant shall have a lower valve assembly that fully encapsulates the lower operating rod threads. This allows for increased corrosion resistance and ease of disassembly.
10. Intermediate section shall be ductile iron. (AWWA C110 – 08)

STANDARD HYDRANT FEATURES

1. Body style: **Octagon** with **Octagon** nozzle caps
2. Hydrant shall have an internally lubricated bronze operating nut with O-ring seals. Operating nut shall be of the Hydra-lubeTM design to ensure self lubrication during operation.
3. Hydrant hose nozzles shall be mechanically locked into place by an external allen screw, and have O-ring seals.
4. Hydrant Lower rod shall be 1-1/4" in sq.
5. Hydrant shall have a main valve opening of 5-1/4".
6. Hydrant shall be a traffic model, complete with safety flanges and stem coupling. Upper body can be rotated 360 degrees to adjust pumper direction.
7. Hydrant shall be manufactured with a lower valve plate that bottoms out in the shoe for maximum opening.
8. Hydrant shall be backed by manufacturer's 12 year limited warranty
9. Hydrant shall be the Clow Canada Brigadier as manufactured by Clow Canada.

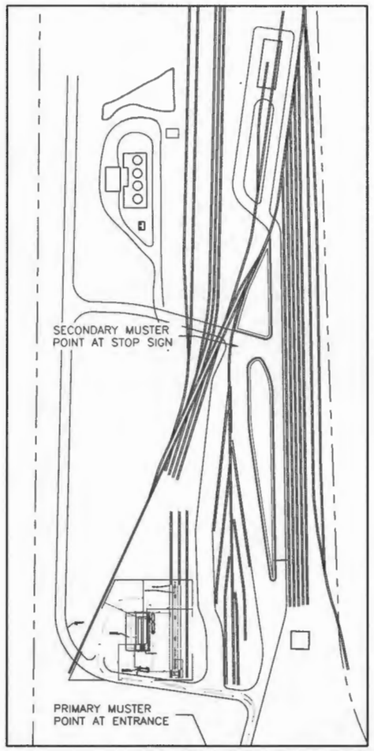
McAvity CLOW CONCORD

A division of Canada Pipe Company Ltd.

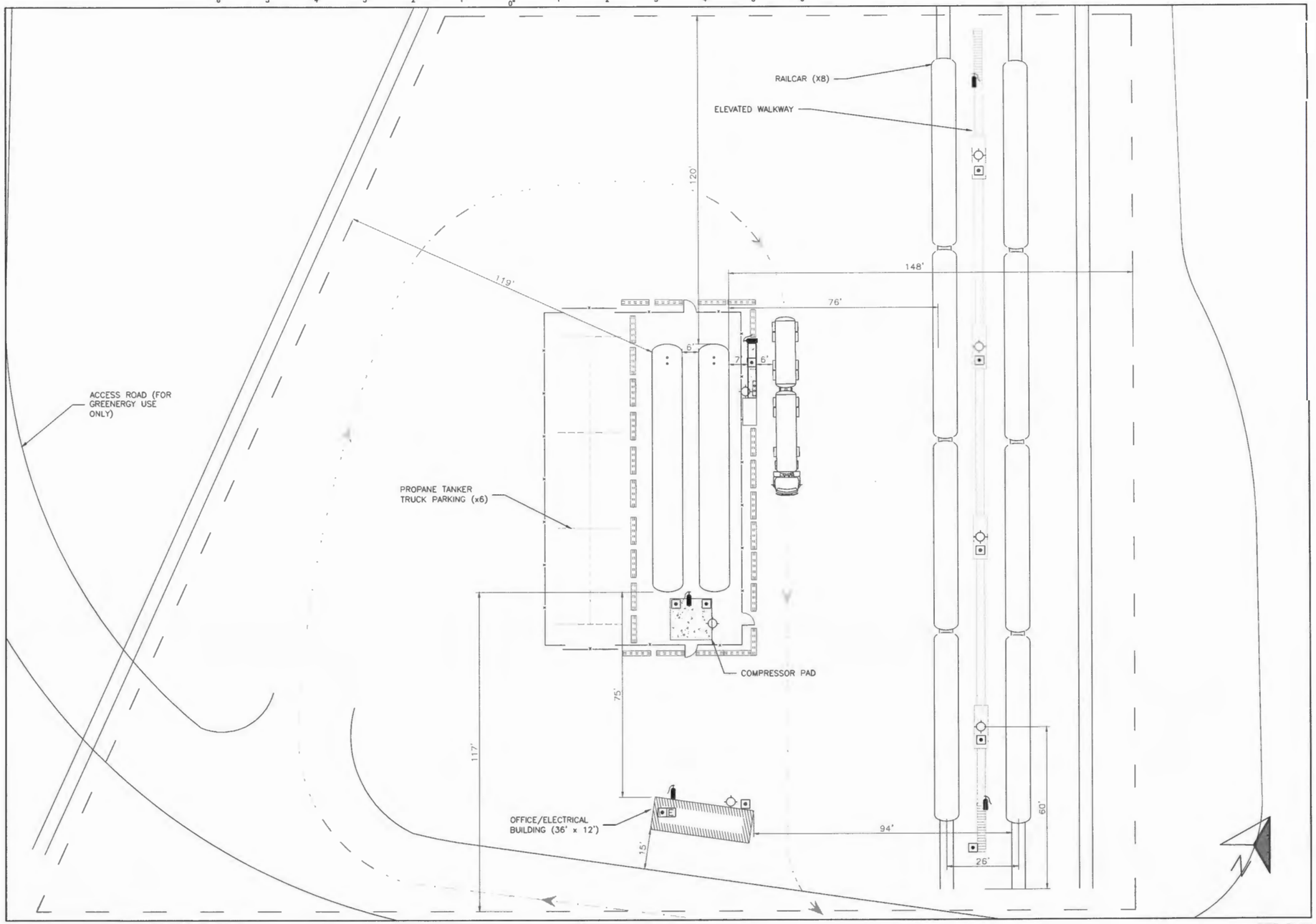
SCHEDULE B8

PROPERTY BOUNDARY
PROPANE FILLING PLANT AREA
TRUCK PATH
FENCE
JERSEY STYLE CONCRETE BARRIER
BUILDING/STRUCTURE
CONCRETE PAD
SLIDING GATE
SWINGING GATE
PROPANE TRANSFER BULKHEAD
EMERGENCY SHUTDOWN BUTTON
ELECTRICAL SHUTDOWN
LIGHT STANDARD
FIRE EXTINGUISHER
PROPANE TANKER TRUCK PARKING

LEGEND



KEY PLAN AND MUSTER AREAS



SITE PLAN

DRAWING STATISTICS: REVISION 0, DATED SEPTEMBER 9, 2020 ISSUED FOR RSMP

DATE	No.	REVISION
SEPT 9/20	0	ISSUED FOR RSMP

NOTES

THIS DRAWING IS DIAGRAMMATIC IN NATURE AND INTENDED TO SHOW ONLY SITE FEATURES ASSOCIATED WITH PROPANE SAFETY. CONTRACTORS TO VERIFY ALL DIMENSIONS.

NOT FOR CONSTRUCTION

PROFESSIONAL SEAL

LICENSED PROFESSIONAL ENGINEER
R. S. WILSON
PROVINCE OF ONTARIO

PROJECT MGR:	R. WILSON
DESIGNED:	T. MCRAE
DRAWN:	T. MCRAE
CHECKED:	R. TROUTMAN
APPROVED:	R. WILSON
SHEET SIZE:	ARCH D
SCALE:	1:200
UNITS:	IMPERIAL

PROJECT
LEVEL 2 RISK AND SAFETY MANAGEMENT PLAN – ENGINEERING LGP ENERGY INC.

JOHNSTOWN, ONTARIO

DRAWING TITLE
BULK FILLING PLANT: SITE PLAN

DRAWING NUMBER
19072-SK-001

SHEET NUMBER
1 OF 1

Stirling Engineering Inc.
P.O. BOX 313
INGLESIDE, ONTARIO K0C 1M0
TEL: 613.362.7847 FAX: 613.537.8523
WWW.STIRLINGENGINEERING.CA

SCHEDULE “C”

ADDITIONAL TOWNSHIP CONDITIONS

1. The Owner shall provide revised plans and reports that address the questions of the Township prior to the Agreement being executed.
2. The Owner agrees to implement the recommendations of the reports submitted, and approved as revised, with this application for Site Plan Approval, including:
    a. Stormwater Management Brief as described in schedule B2;
    b. Stormwater Management Report as described in schedule B4;
    c. Fire Suppression Infrastructure Plan as described in schedule B7,
3. The Owner shall be responsible for all approvals from the United Counties of Leeds and Grenville, and subsequent improvements to their satisfaction, regarding improvements that may be required within the County Road 2 right-of-way to service this development.
4. The Owner shall be responsible for any temporary services required for this development, including electrical services.
5. The Owner shall obtain such permits as may be required from Municipal or Provincial authorities including the Ministry of Transportation, Ministry of Environment, Conservation and Parks, the South Nation Conservation, and the United Counties of Leeds & Grenville and all other Federal, Provincial, or regulatory agencies. The Owner shall file copies thereof with the Township. This includes all necessary approvals with regard to the installation of storm sewers, and the provision of sewage treatment facilities where required. The Owner shall also obtain all necessary approvals from the Township regarding the provision and installation of required fire hydrants.
6. The Owner shall provide adequate water supply for firefighting. A report from their consultant shall confirm that the municipal system will have proper capacity to serve this site, and that the design for the site will meet the requirements of the Technical Standards and Safety Authority (TSSA), Ontario Building Code and any other applicable Codes or Regulations and shall be in accordance with the Township’s Agreement with the Town of Prescott, barring which the owner shall be responsible for any required amendments to this agreement.
7. The final plans shall show that access routes for firefighting are designed and constructed in accordance with the TSSA and/or Ontario Building Code Act and Regulations. The approved access routes shall be maintained in accordance with the Fire Protection and Prevention Act, 1997. The Owner agrees to provide, maintain, and post signs designating fire lanes. The Owner further agrees to abide by any Township By-law relating to the maintenance and signage of such access routes. The location of any fire hydrants and shall be in accordance with the TSSA and/or Ontario Building Code. The required fire hydrants shall be installed and in service prior to the commencement of any storage or trans-loading of flammable material on the site.
8. Hydrants shall be maintained in operating condition, free of snow and ice accumulations and readily available and unobstructed for use at all times in accordance with the Ontario Fire Code and the requirements of the Township. No person shall obstruct the

free access to any fire hydrant. Vegetation or other objects shall neither be planted nor placed within a 1.5 metre radius beside or behind a hydrant without the express written consent of the Township.

9. The Owner shall submit a certificate of insurance in a form satisfactory to the Township. The certificate of insurance must be issued in favor of the Township in an amount not less than five million dollars per occurrence, must contain an endorsement naming the Township as an additional insured and an unconditional thirty days' notice of any material change or cancellation of the policy.
10. The Owner shall contact all utilities, including but not limited to Hydro One, Bell Canada and Union Gas Distribution for service and meter installation details.
11. The Owner acknowledges and agrees that if easement(s) are required to service this development, the Owner shall provide the easement(s).
12. The Township will have no responsibility to install any extension to municipal services which may be required in order for the Owner to comply with this Agreement or with any Provincial or Municipal laws or by-laws. In cases where such an extension of municipal services is required, the Work shall be undertaken by and at the expense of the Owner and construction shall be to the standards established by the Township for the installation of such municipal services. The owner shall provide public liability insurance in a form acceptable to the Township for any Works involving the extension of municipal services and obtain any required approvals and permits from the Township.
13. The Owner shall be responsible to maintain all infrastructure relating to the fire suppression system and storm sewer networks on the property. The Owner shall be required to maintain, clean, and/or repair all infrastructure within the Site.
14. Where the owner is proposing manholes, the maintenance of such manholes is required and it shall be the responsibility of the Owner to perform a regular removal of any trapped material (minimum once per 6 months). All materials arising from any spill shall be remediated immediately in accordance with Provincial or Federal Laws and Regulations at the sole expense and responsibility of the owner. These facilities are not to be dismantled or removed unless approval has been granted by the Township.
15. The Owner agrees to implement the erosion and sediment control plan as outlined in schedule B4 to provide for the protection of the receiving storm sewer or watercourse during construction activities. This plan to be used during construction is intended to ensure that no sediment and/or associated pollutants are discharged to a receiving water course which could degrade water quality and/or impair fish or other aquatic habitat. The methods used should be regularly maintained to ensure effectiveness of the methods and compliance with Provincial/Federal legislation pertaining to water quality and habitat.
16. The Owner shall require the storm water management calculations to be submitted in writing by a professional engineer to the Township for approval. Upon completion of the Works, a written certification from a professional engineer and as-built plans must be submitted to the Township confirming that the storm water measures have been implemented as per the approved design. The owner shall be responsible for the repair and maintenance of the storm water control facilities.

17. The Owner shall conduct any blasting in accordance with the most recent Ontario Provincial Standard Specifications (OPSS), and must include a pre-blast survey by a qualified consultant. A copy of this survey shall be provided to the Township.
18. The Owner shall maintain all streets within the area on a continuous basis during construction, in order that they are clear of mud, dust, and other material, resulting from vehicles involved in construction, to the satisfaction of the Township. The Owner shall prevent the “flushing” of dirt and debris associated with construction work into any municipal ditch. Upon any default by the Owner to maintain the streets, the Township may, at his/her discretion, arrange for the required cleaning to be performed and the cost incurred by the Township in doing so shall be recovered from the Owner.
19. The Owner shall ensure that the performance of Works required as a result of the Agreement, whether by the Owner or its employees, servants or agents or its contractors or subcontractors, shall be performed so as to not constitute a nuisance or disturbance to abutting or nearby properties or to the owners thereof. The Owner shall comply with and shall ensure that all of its contractors and subcontractors shall comply with any written instructions issued by the Township concerning any such nuisance or disturbance regardless of whether such instructions require positive action or discontinuance of action.
20. CCTV Inspection - The Owner shall be responsible, at his expense, to provide all necessary CCTV inspection for storm sewer works on the Site. If the inspection is not satisfactory to the Township, the Owner shall rectify the works at his sole expense.
21. Video Examination - Video examination of storm sewers, 200 mm or larger in diameter shall be required by the Township, at the Owner’s expense, before final release of the Works.
22. Test Results - All necessary and mandatory test results, conditions 20 and 21, must be submitted to the Township for approval prior to receiving a request from the owner to reduce any applicable security deposits.
23. Any portion of the lands which is intended to be used for snow storage shall be shown on the approved Site Plan or as otherwise approved by the Township. The grading and drainage Plan shall not be compromised by the storage of snow. Snow storage areas shall be setback from property lines, foundations, fencing and/or landscaping requirements a minimum of 1.5 metres. Snow storage areas shall not occupy driveways, aisles, required parking spaces or any portion of a road allowance.