ST. MICHAELS DRAIN & BRANCH

Repair and Improvement

Geographic Township of Sandwich West

TOWN OF LASALLE

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REI Project 2018D003
July 26th, 2023

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Mayor and Municipal Council
Corporation of the Town of LaSalle
5950 Malden Road
LaSalle, Ontario
N9H 1S4

Mayor Meloche and Members of Council:

ST. MICHAELS DRAIN & BRANCH
Repair and Improvement
Geographic Twp. of Sandwich West
Project REI2018D003
Town of LaSalle, County of Essex

I. INTRODUCTION

In accordance with the instructions provided at your December 13th, 2017 meeting and received from the Town by letter dated February 17th, 2018, from Jonathan Osborne, P.Eng. your former Manager of Engineering, we have prepared the following report that provides for repair and improvements of the open drains, along with bridge repairs and improvements along the drains from Malden Road to its outlet into Turkey Creek together with ancillary work. The St. Michaels Drain comprises of an open drain generally running west through Lot 33, Concession 1 from Malden Road to a point west of Matchette Road, then turning northwesterly, draining to its outlet in Turkey Creek, with the Branch Drain running through Lot 32 from Malden Road westerly and then turning northerly and connecting to the main drain in Lot 33 at Station 1+862 of the main drain east of St. Michaels Drive in the geographic township of Sandwich West, Town of LaSalle. Plans showing the St. Michaels Drain and Branch Drain, as well as the general location of the bridges along the drain, is included herein as part of the report.

Our appointment and the works relative to the repair and improvements to the St. Michaels Drain and Branch Drain, proposed under this report, is in accordance with Section 78 of the "Drainage Act, R.S.O. 1990, Chapter D.17, as amended 2021". We have performed all of the necessary survey, investigations, etcetera, for the proposed repairs and improvements to the bridges and drains, and we report thereon as follows.

II. BACKGROUND

From our review of the information provided from the Town's drainage files we have established the following reports that we utilized as reference for carrying out this project:

1)	May 19th, 1987	St. Michaels Drain Memo	R.D. Hayes, P.Eng.
2)	May 19th, 1987 St. Michaels Drain Memo	Recommendations of the LaSalle Drainage Study	Ed LaFontaine, P.Eng.

The report extracts from the study by Ed LaFontaine, P.Eng. that were included in the St. Michaels Drain Memo provided general information on the watershed and drain locations.

We arranged with the Town to provide us with the updated assessment roll information for the affected parcels. We also reviewed reports for the abutting drains and spoke to the owners during the on-site meeting to help in establishing the current watershed limit for the St. Michaels Drain.

III. PRELIMINARY EXAMINATION AND ON-SITE MEETING

After reviewing all of the drainage information provided by the Town, we arranged with the former Manager of Engineering Jonathan Osborne, P.Eng., to schedule an on-site meeting for March 9th, 2018. The following people were in attendance at said meeting: Moe Veldhuizen, Mike Graff, David Malian, David Higgins, Carolyn Matis, Onorio & Judy Tersigni, Pat Thorpe, John & Marie Guthrie, Giovanna Medres, Jim Tofflemire, Rachel Tousignant, Kristin Milec, Stacey Soos-King, Liz Maskery, Diane Picard, David Deschamps, Louie Masse, Giovanni Pellegrini, Sara & Levi Steele, Murray Sinnot, Carolyn Robinson, Joyce Soos, Bruce Clarke, Paul Sobol, Freda Belisle, Ana Trifan, Bob Outram, Duane Mousseau, Maurice & Cecilia Seeger, Ivan Pratt, Bob Lucier, Garry Morris, Patrick Rocheleau, M. Hanafy, Alberto Iannetta, Devon Shepley, Paul & Shelley Fazekas, Brent Reaume, Michele Gagliano, Marc Renaud, Robert Isley, Ron Quaggiotto, Pat McNamara, Melanie Kish-Lewis, Sue Shuttleworth, Ralph Bailey, Matt Bondy, Colleen Kehl, Stacey Graziano, Angelo Cerchie, Walter Riggi, Mario Pratt, Peter Marra (Director of Public Works), Jonathan Osborne (Manager of Engineering), Kory Snelgrove (Rood Engineering), and Gerard Rood (Rood Engineering). Mr. Osborne did an introduction of the project and that this meeting was to gather information. He advised that owners can provide concerns or questions. Mr. Rood went through the procedure for drainage reports. An owner asked why the project is being done and Mr. Osborne explained that the Town was initiating the works. There are some areas that are okay but some areas that require work to be done. The Town has adopted use of the Drainage Act. There have been assessment problems and works are falling behind and the Town needs to catch up on needed works. The Town has to deal with the E.S.A. (Endangered Species Act) and it is more efficient to go through the Drainage Act for doing maintenance.

An owner asked who is affected and Mr. Osborne outlined the draft limits for the watershed on the projected map and noted that it will be adjusted if needed. An owner noted that the Legacy Estates has caused backyard flooding. An owner asked about the ratio of open to covered drain. Mr. Osborne advised that most of the drain is open but closed near Matchette. An owner noted that some dredging was done in the 1970's but the drain is now choked up from the railroad to Matchette. There was an owner question on why they are paying. Mr. Osborne explained that the Town pays for roads and lands that they own and there are 17 other projects on the go. The intent is to assess the cost of the work fairly to owners that are affected by the works. The watershed boundary will be looked at to only include lands that have water going to the drain. An owner asked if St. Michaels Drive subdivision paid for work done and Mr. Osborne responded yes, they did and there may be some pipe cleaning required now. An owner asked if the clean up is done first and then charged out. Mr. Rood explained the Drainage Act process with no assessments until all work has been completed and actual cost established. Peter Marra confirmed that there is no billing until the work is done and the drainage report process is a lengthy one. The engineer can be asked to go out and view problems. There will be a Public Information Centre (P.I.C.) meeting to review a draft report for the work and get owner input. That meeting may be more than a year in the future with the process being lengthy overall. He outlined the tender process and the billing process that will follow after the works are all completed. The works have to address Ministry of Natural Resources and Forestry (M.N.R.F.), Department of Fisheries and Oceans (D.F.O.) and Essex Region Conservation Authority (E.R.C.A.) requirements.

Mr. Murray Sinnot stated that they have never had a problem and asked if the drain will be moved. Mr. Osborne replied that this is not part of the development process. Mr. Marra noted that an owner can request a relocation, but they pay for it. Mr. Osborne noted that this is completely separate form the development and there has been no mention to move it. A lady owner has been following up with the Town for maintenance because the drain needs to be cleaned and they are out of adequate drainage with the storm sewer not working. Mr. Osborne replied that this report will allow for the necessary maintenance whenever it is required. She can call him after the meeting to discuss her concerns. An owner asked if the sewer on St. Michaels Drive goes to the open drain and Mr. Osborne responded that it does. Mr. Mousseau advised that water runs to him now since the road was done and Mr. Marra told him that he can address road grading concerns with him after the meeting. An owner asked who pays and do they have to pay to keep it dry. Mr. Osborne explained that the Drainage Act requires inviting owners and there will be more meetings to review the work. Rood Engineering will be looking into environmental concerns.

An owner asked if amortization was available, and Mr. Marra advised that owners can choose that option when the bill goes out and that there would be some interest charges for the debenture of the cost. An owner asked if there was any estimate of cost and Mr. Osborne replied that this was not yet available, and they cannot clean the drain until the report is done. Mr. Marra noted that there are permit problems and compensation costs to be met and some trees will be removed. An owner of Laurier Drive advised that the road is high, and the drain was never

repaired, and he would like to know how the problem can be fixed. Mr. Osborne advised that they would look at the sewer separately and there will be two separate processes to address concerns that may exist, and he would like owners to provide him with information on the drainage directions. The owner suggested going door to door for information and Mr. Osborne responded that this was too costly, and all costs would be paid by the community of affected owners. There was a request from an owner on how to contact Rood Engineering and Mr. Osborne provided them with the contact information. Mr. Marra noted that owners can just contact the Town through Mr. Osborne with any questions or concerns. An owner asked about notification of the survey work and Mr. Rood responded with the Drainage Act rights to enter lands for the work and if an owner gives us information, we can contact them when we know the schedule. An owner advised that he was selling his house and asked if they have to notify the buyer of the works. Mr. Marra stated that the buyers lawyer needs to contact the Town for any charges to the property and because there are no charges to the property at this time there will be no information to provide.

A lady owner asked if she wants us to come out to her property if it will be at her cost and Mr. Rood replied that investigations are just part of the project cost. Mr. Marra noted that 941 letters were sent out to possible affected owners and the owners can contact them at any time. The Town is responsible for costs to their roads and their lands. There was a question if the engineering costs are part of the report and Mr. Osborne advised that they are part of the total cost for the project. A lady asked if they could be paying $6,000.00 and Mr. Marra replied that costs are not expected to be that high, but they cannot give figures at these on-site meetings. There was a question whether the Town would do the work and Mr. Osborne responded that Council would need to decide on this, and it is likely that this project will be tendered out. With the E.S.A. escalation the Drainage Act is the best course. A lady asked if there would only be some sections of the drain done and Mr. Osborne replied that the Town wants the entire drain done using the Ontario legislation and everyone in the watershed will share in the costs. Mr. Marra discussed that the Turkey Creek work includes 2/3 of the flow from the City of Windsor and they therefore want the drainage report to fairly allocate the costs including charges to other Municipalities if they are using a drain. He noted that the St. Michaels Drain outlets into Turkey Creek and there may be possible backwater concerns and they want the drain to provide a regular level of service. The location of phragmites near the railroad was mentioned by an owner. Mr. Osborne responded that this is a province wide issue that is being worked on and the outlet to Turkey Creek will be looked into. The owner noted that it used to be open water and now the channel is choked. Mr. Osborne asked him to contact him, and he will investigate the situation.

There was a question on how Benefit and Outlet are established. Mr. Rood outlined the Drainage Act definitions and process and how the cost sharing was done noting that upstream owners have a higher outlet rate due to the length of drain that their flows have to use to get to the sufficient outlet that they have to achieve. An owner inquired if future development was being considered and Mr. Osborne advised that there are no provisions for future development. In response to a question from an owner regarding the rates for local parcels, Mr. Osborne outlined the basis for assessment for the drainage work. There was a question about whether E.R.C.A. was involved and Mr. Osborne replied that they are for the regulations that have to be met but he

did not know if they had any lands that were affected in the watershed. There was an owner question about flows and Mr. Osborne responded that he thinks flows along Bouffard run west with the map only showing the drain and not the sewers or ditches.

Survey work will go upstream from the drain outlet. There are two 36" diameter culverts under Reaume. An owner mentioned that he had to do a 72" culvert and a neighbor did a 48" culvert north of Reaume. The project will look at the Turkey Creek water levels and possible need for a backwater gate. Pike fish migration will be protected. There will be cost sharing for the existing bridges. The drainage report will have appendices that provide the biology information. Bob Lucier and Louis Masse provided their contact information for notification of the survey work. Robert Isley lives on Disputed Road, and he has walked the drain along several portions and noted a culvert at Miranda. It was established that the Branch Drain needs to be checked. There is a grate at Bouffard by Miranda for surface drainage. The owners were advised that there is a subsequent connection charge if there is a new development. Mr. Osborne noted that the unopened right-of-way may be hard to locate.

IV. FIELD SURVEY AND INVESTIGATIONS

Subsequent to the on-site meeting we arranged for a topographic survey of the drains and bridges to be completed. We further arranged to get updated assessment roll information from the Town and obtained information on the tax class of each of the properties affected by the Municipal Drain.

The Town made initial submissions to the Essex Region Conservation Authority (E.R.C.A.) regarding their requirements and the Town provided information for any D.F.O. (Department of Fisheries and Oceans) requirements for work that would be proposed to be carried out on the Drain. A response from the Conservation Authority was received by email on December 18th, 2018, and indicated that the Town must apply for a permit and follow standard mitigation requirements. We also reviewed the Town maps for fish and mussel species at risk and find that there are no species indicated in the vicinity of this project, but D.F.O. mapping indicates Northern Sunfish. A copy of the concerns and requirements to satisfy E.R.C.A. and D.F.O. is included in **Appendix "REI-A"** of this report.

We also arranged to review the Ministry of Natural Resources & Forestry (M.N.R.F.) Species at Risk (S.A.R.) former agreement made with the Town pursuant to the Endangered Species Act, 2007 and the report prepared by Dillon Consulting for the Town. The former Town agreement with M.N.R.F. pursuant to Section 23 of the "Endangered Species Act, 2007" expired as of June 30th, 2015, with the former agreements being replaced with new legislation provisions under Ontario Regulation 242/08, administered by the Ministry of Environment, Conservation and Parks (M.E.C.P.), and Section 23.9 which allows repairs, maintenance and improvements to be conducted by the Town within existing municipal drains. These works are exempt from Sections 9 and 10 of the Endangered Species Act provided that the rules in the regulations are followed. When eligible, the new regulations allow Municipalities to give notice to M.N.R.F. by registering

their drainage activities through an online registry system. The Town has also arranged for a report from Dillon Consulting titled "Species at Risk Mitigation Plan for Drainage Works" to address requirements for conducting drainage works and the mitigation requirements in that report are included in this Appendix for reference by the Contractor, Owners, and Town staff when works are being conducted on the drain. The Agreement and report plans indicate that snake species are a concern for this work area and although turtles are not indicated, they are mobile and could be encountered. The Agreement includes mitigation measures to be followed as outlined in "Schedule C Mitigation Measures" of the former agreement document and a copy of same and the Dillon Consulting report as it relates to turtles and snakes is included herein in **Appendix "REI-B"**. The Endangered Species Act is now administered by the Ministry of Environment, Conservation and Parks (M.E.C.P.) and pursuant to Section 23.9 the Town may proceed with works to a municipal drain provided that they follow the rules and regulations in the Act. The M.E.C.P. mapping website was checked, and a list of the species of concern are included in the **Appendix "REI-B"**. The Contractor for the works will be responsible for monitoring the site for any species concerns as per the list and applying the required mitigation measures.

V. BRIDGES REVIEW

As part of our investigations, we made detailed inspections of all of the bridges along the open drain. Their condition and proposed works if any are summarized as follows with the first 14 and Bridge 13A located along the main drain and the balance along the Branch drain:

1. This bridge serves parcel 080-26800 and comprises of 6.7 metres of 1800mm diameter corrugated steel pipe (C.S.P.) at Station 0+336.7. It was found to be in fair condition and will be left for now. The report and plans will provide the Town with the details needed for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
2. This bridge serves parcel 080-26900 and comprises of 6.0 metres of 2100mm diameter C.S.P. at Station 0+438.9. The bridge is in fair condition and will be left for now. The report and plans will provide the Town with the details needed for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
3. This bridge serves Reaume Road and comprises of 57.7 metres of 1000mm diameter C.S.P. at Station 0+498.8. The pipe is in good condition. The Town plans to construct a pathway along the north side of the roadway. The C.S.P. will be extended with the same size pipe at the same slope as the drain to provide for the pathway crossing. The report and plans will provide the Town with the details needed for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
4. This bridge also serves Reaume Road and comprises of 60.9 metres of 1000mm diameter C.S.P. at Station 0+487.6. The pipe is in good condition. The Town plans to construct a pathway along the north side of the roadway. The C.S.P. will be extended with the same size pipe at the same slope as the drain to provide for the pathway crossing. The report and plans will provide the Town with the details needed for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.

5. This bridge serves the unopened right-of-way between parcels 090-05600 and 090-07400 and comprises of 5.8 metres of 1000mm diameter C.S.P. at Station 0+878.4. The bridge is in poor condition with rotted invert and some crushing and damage at the end and would need to be replaced. The report and plans will provide for the replacement of the bridge and the details for the Town that they need for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
6. This bridge serves Matchette Road and comprises of 28.2 metres of 1050mm diameter concrete pipe. The bridge is in good condition and no work is required at this time. The report and plans will provide the Town with the details needed for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
7. This bridge enclosure serves parcels 060-59800, 060-59700 and 060-59600 along Matchette Road as an enclosure along the front of the parcels and comprises of 54.0 metres of 900mm diameter C.S.P. from Station 1+069.3 to Station 1+123.3. The enclosure is in poor condition with rotted invert and requires work at this time. The report and plans will provide for the replacement of the bridge enclosure and with the details needed for the Town to carry out future work on the bridge enclosure pursuant to the maintenance provisions of the Drainage Act.
8. This bridge serves parcel 060-59400 and comprises of 6.4 metres of 1500mm diameter C.S.P. at Station 1+166.8. The bridge is in fair condition and requires no work at this time. The report and plans will provide the Town with the details needed for future work on the bridge enclosure pursuant to the maintenance provisions of the Drainage Act.
9. This bridge serves parcel 060-59400 and comprises of 5.9 metres of 1600mm diameter C.S.P. at Station 1+323.9. This bridge is in fair condition and does not require any work at this time. The report and plans will provide the Town with the details needed for future work on the bridge pursuant to the maintenance provisions of the Drainage Act. As this is a second access to the parcel, all future costs for work to the bridge will be borne 100% by the owners of the parcel. This bridge is considered the Secondary access to this parcel. As a Secondary access to the parcel, all of the cost for same when maintained in the future will be borne by the owner.
10. This bridge serves parcels 060-59400 and 060-58500 centred on the property line with a chainlink fence going across the bridge. The bridge comprises of 11.0 metres of 1200mm diameter C.S.P. at Station 1+402.0. This bridge is in fair condition and does not require any work at this time. The report and plans will provide the Town with the details needed for future work on the bridge pursuant to the maintenance provisions of the Drainage Act. The east half of the bridge is considered to be a secondary access to parcel 060-59400 and the 50% share of the work will be assessed 100% to that parcel. The west half serves parcel 060-58500 and the 50% share of the future work will be assessed to this parcel and shared with the upstream lands and roads.
11. This bridge enclosure serves Miranda Court and St. Michaels Drive and the property line between parcels 060-58215 and 060-58220 and allows for driveways to parcels 060-58360 and 060-58365 and comprises of 182.5 metres of 800mm diameter C.S.P. from Station 1+462.8 to Station 1+645.3. The bridge is in good condition and no work is required at this time. The report and plans will provide the Town with the details needed for future work on the bridge enclosure pursuant to the maintenance provisions of the

Drainage Act. The pipe section from the east R.O.W. limit of St. Michaels Drive to the rear property line of the two parcels 060-58215 and 060-58220 shall be maintained by the Town with 100% of the cost for said work along these two parcels assessed to each of the two parcels that benefit from the enclosure on a 50% and 50% basis. The bridge enclosure from St. Michaels Drive and easterly along Miranda Court and the adjacent lots to its outlet shall be shared between the roadways and the parcels that benefit from having driveways across the drain.

12. This bridge serves parcel 060-58100 and comprises of 4.1 metres of 500mm diameter high density poly ethylene (H.D.P.E.) pipe at Station 1+676.4. This bridge is in fair condition and does not require any work at this time. The report and plans will provide the Town with the details needed for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
13. This bridge serves parcel 060-57900 and comprises of 5.7 metres of 900mm diameter C.S.P. at Station 1+782.5. This bridge is in fair condition and does not require any work at this time. The report and plans will provide the Town with the details needed for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
14. This bridge serves the unopened right-of-way north of parcels 060-48700 and 060-49700 and comprises of 2.2 metres of 600mm diameter C.S.P. at Station 2+062.3. The bridge is in fair condition and would be left for now. The report and plans will provide the Town with the details needed for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
15. This bridge serves parcels 060-57500 and 060-57600 centred on the property line between the parcels. The bridge comprises of 4.9 metres of 900mm diameter C.S.P. at Station 3+058.8. This bridge is in fair condition and does not require any work at this time. The report and plans will provide the Town with the details needed for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
16. This bridge serves Bouffard Road and comprises of 14.5 metres of 1050mm diameter concrete pipe. The bridge is in good condition and no work is required at this time. The report and plans will provide the Town with the details needed for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
17. This bridge serves parcels 060-44100 and 060-44200 going across the property line between the parcels. The bridge comprises of 23.7 metres of 900mm diameter C.S.P. from Station 3+142.3 to Station 3+166.0. This bridge is in fair condition and does not require any work at this time. The report and plans will provide the Town with the details needed for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
18. This bridge serves parcel 060-44200 and comprises of 2.8 metres of 700mm diameter C.S.P. at Station 3+181.0 for access from the parcel to the unopened R.O.W. along the rear of the parcel. This bridge is in fair condition and does not require any work at this time. The report and plans will provide the Town with the details needed for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.
19. This pipe enclosure serves the unopened R.O.W. from the top end of the open drain to a catch basin on the west side of Malden Road and is located along the south side of Huron Street on Parcel 060-01680 owned by the Town and comprises of approximately 78.0

metres of 300mm diameter buried C.S.P. from Station 4+005.5 to Station 4+083.5. The enclosure appears to be in good condition and no work is required at this time, but it appears that the west end needs to be cleared to restore a connection to the top end of the open drain. The report and plans will provide the Town with the details needed for future work on the pipe enclosure pursuant to the maintenance provisions of the Drainage Act.

20. This pipe enclosure is located in the Malden Road R.O.W. providing a connection from the catch basin on the west side of the roadway to a storm sewer in the roadway comprising approximately 6.1 metres of 200mm diameter P.V.C. pipe from Station 4+083.5 to Station 4+090.1. The enclosure appears to be in good condition and no work is required at this time. The report and plans will provide the Town with the details needed for future work on the pipe enclosure pursuant to the maintenance provisions of the Drainage Act.

13A. At Station 1+924 the Town of LaSalle has requested a new access bridge for a proposed 3.0 metre wide asphalt pathway trail crossing of the drain. The report will provide for the construction of the requested access bridge and the report and plans will provide the Town with the details needed for future work on the bridge pursuant to the maintenance provisions of the Drainage Act.

Some small wooden foot bridges were observed along the length of the drains. The owners that installed these bridges will be responsible for the upkeep and maintenance of them. Should they become an obstruction to the drainage system, they will need to be removed. If the Town has to conduct the removal of the obstruction, the cost for same will be assessed to the abutting owner that installed the structure as provided for under Section 80 of the Drainage Act.

VI. PUBLIC INFORMATION CENTRE AND THE DRAINAGE ACT

Arrangements will be made to meet with the Manager of Engineering and interested owners to discuss this Draft drainage report for this project. The procedures under the Drainage Act will be reviewed and the next steps will be detailed. Owners are advised that they have the opportunity to debenture their assessed costs for 5 years and pay the assessment with their taxes as outlined in the on-site meeting. Owners are advised that they only pay a share of the cost for work adjacent to their lands and for downstream works to the drain. The Town is aware of concerns with the drain, and they are obliged to act in accordance with the requirements of the Drainage Act.

Benefit and Outlet liability assessments will be discussed as defined below. Establishment of pipe lengths is based on the minimum standard top width of 6.1m (20') for road entrances, the depth of the drain and the type of end treatment provided. The cost of additional top width requested by an owner is fully borne by that owner. The drainage report provides estimates of costs, and the owners will only pay the actual cost shared on the basis of the assessment schedule. Lands eligible for the farm property tax class will be eligible for a grant in the amount of 1/3 of their total cost assessment.

The Town hopes to have the project approved by the end of the year. If the work is started before March 15th, it will likely be completed in the spring. If any delay occurs, the fish protection timing window from March 15 to July 15th will come into effect and the work will have to be done after July 15th. Bridge cost sharing will be reviewed with the owners. Existing pipes are normally cleaned by flushing them with a high pressure nozzle and the material is removed at the end of the pipe. The owners are advised that they can have their tile ends repaired by a qualified contractor. The tiles are inspected during the course of the work and only those in disrepair will be fixed up as part of the work.

It should be noted that the Public Information Centre (P.I.C.) is not a requirement under the Drainage Act but the Town holds these meetings to address questions and concerns and to solicit comments from the affected owners for preparation of the final report that will go to Council.

Owners are reminded that they have the opportunity to present their concerns to Council regarding the report details at the Consideration meeting and assessment questions at the Court of Revision meeting, along with appeal rights to the Ontario Ministry of Agriculture, Food and Rural Affairs (O.M.A.F.R.A.) Appeals Tribunal and to the Drainage Referee as provided for in the Drainage Act.

The Drainage Act definitions and applicable clarifications are as follows:

“Benefit” means the advantages to any lands, roads, buildings or other structures from the construction, improvement, repair, or maintenance of a drainage works such as will result in a higher market value or increased crop production or improved appearance or better control of surface or subsurface water, or any other advantages relating to the betterment of lands, roads, buildings, or other structures.

“Outlet liability” means the part of the cost of the construction, improvement or maintenance of a drainage works that is required to provide such outlet or improved outlet. Lands and roads that use a drainage works as an outlet, or for which, when the drainage works is constructed or improved, an improved outlet is provided either directly or indirectly through the medium of any other drainage works or of a swale, ravine, creek, or watercourse, may be assessed for outlet liability. The assessment for outlet liability shall be based upon the volume and rate of flow of the water artificially caused to flow upon the injured land or road or into the drainage works from the lands and roads liable for such assessments. Every drainage works constructed under this Act shall be continued to a sufficient outlet.

Owners are advised that they have a legal responsibility to convey their drainage to a sufficient outlet. For this reason, they have a share in the cost for upkeep of the drain downstream of their lands and this obligation is reflected in the assessment for Outlet Liability. Owners are reminded that the responsibility for carrying out maintenance on a Municipal drain resides with the Town as set out in the Drainage Act. Any owner can notify the Town that the drain requires maintenance, and the Town has to take action pursuant to the Act. This system is generally reactive and requires the property owners to raise their concerns and issues to the Town. Owners

are reminded that keeping brush clear along their portion of the drain and having buffer strips provides them with a direct benefit of improved crop yield and preservation of topsoil on their lands. Owners have an Outlet Liability for the downstream portion of the drain. The owners are reminded that Municipal drainage is a communal project and basically a user pay system. As an example, when work is carried out on the Drain downstream of the Drain outlet, the owners in the watershed that are outletting to the Drain will be responsible for a portion of the cost, along with the other owners in the Drain watershed upstream of the work that is conducted. Owners are advised of the 1/3 grant available to agricultural lands that qualify for the Farm Property Tax Class and should be aware that the Town administers the grant process and reflects any available grant on the final billing to each qualified parcel owner.

Owners may appeal their assessment as set out in the drainage report. They are advised that they should submit their appeal to the Court of Revision 10 days before the scheduled date of the meeting; however, the Court of Revision can agree to hear appeals presented at the meeting. If owners are still dissatisfied with the report after that meeting, they may submit an appeal to the O.M.A.F.R.A. Appeals Tribunal through the Town Clerk within 21 days of the closing of the Court of Revision pursuant to Section 54 of the Drainage Act.

The cost sharing for bridges is based on the location of same along the overall length of the drainage system. Each owner has the right for one access across each Municipal drain. The owner generally pays 100% of the cost for the first bridge installation and it becomes part of the drain when included in an engineer's report and is then to be maintained by the drain with costs shared as set out in the drainage report.

Owners should be aware that existing grass buffers and accesses will be protected and maintained as set out in the report specifications. Allowances as set out in the report are to offset damage to lands from the construction work and excavated material disposal. Owners are advised that the Contractor is responsible to remove any sticks and rocks (cobbles) etcetera from the spread materials and the Contractor is responsible to guarantee the work performed on the drain with a maintenance period of one year from the date of substantial completion.

VII. FINDINGS AND RECOMMENDATIONS

We find that the profile included in the attached plans that we prepared provides a good fit to the existing profile of the open portions and culverts of the drains. Said profile provides for improvements to the open drain that appear to suit the current conditions of the watershed. The drain profile was set to accommodate the hard bottom shots and the tile and pipe outlets into the drain with a standard 300mm minimum freeboard from the invert of the tile outlets to the drain bottom and allow for embedment of major pipes below the drain bottom to satisfy D.F.O. standard requirements.

Based on our detailed survey, investigations, examinations, and discussions with the affected Owners and governing Authorities, we would recommend that drain improvement works be carried out as follows:

a) We recommend that all drain improvements, be carried out in accordance with the requirements established by E.R.C.A. and D.F.O. as set out in the documents within **Appendix "REI-A"** attached to this report.

b) As this is an existing Municipal drain, and conditions have not changed and there is no information to indicate any new species concerns, the repair and improvement can be carried out based on the provisions included within the former Agreement that the Municipality had with M.N.R.F. and the mitigation measures included within same along with the Dillon Consulting report. A copy of said mitigation measures is included in **Appendix "REI-B"** within this report. We recommend that any work being completed shall be carried out in accordance with the **Schedule "C" Mitigation Plan** of the former agreement and the Dillon Consulting report extract as included in **Appendix "REI-B"** for reference by the land owners, the Town of LaSalle, and the Contractor who will be conducting the works. The Contractor will also have to monitor the works for the species shown by the N.H.I.C. mapping and carry out mitigation as required.

c) We find that portions of the open drain have significant accumulation of silt and debris and we recommend that these be cleaned out as set out further in this report.

d) As provided for by Section 18 of the Drainage Act, we recommend that the bridges along the drain be repaired and improved as outlined further in this report including the specifications and the plans that form part of the report.

e) The existing drain has some buffer strips and grass areas along the Municipal drain that reduce the amount of erosion and the sediment entering the drain and enhance water quality. We recommend that the existing grass areas and buffer strips be protected as part of this project and suggest that new buffer strips be constructed by the owners in all areas where no current grass buffer exists.

We recommend that the St. Michaels Drain and Branch be repaired and improved, in accordance with this report, the attached specifications and the accompanying drawings, and that all works associated with same be carried out pursuant to Section 78 of the "Drainage Act, R.S.O. 1990, Chapter D.17 as amended 2021".

VIII. ALLOWANCES

We have provided that all of the work will generally be completed from the south and west side of the drain and the east side on the outlet of the drain north of Reaume Road. The Contractor will be required to restore any existing grassed buffer and driveway areas damaged by the work.

We recommend that any materials removed from the open drain or existing bridges, be loaded up and hauled away for disposal by the Contractor in accordance with the Excess Soil Regulations. Based on all of the above we find that no allowances for damages are payable pursuant to Sections 29 and 30 of the Drainage Act.

The Contractor will have access for the work on a strip of land parallel to and immediately adjacent to the drain or grassed buffer and driveway and roadways with full restoration required for any damages that are caused.

IX. ESTIMATE OF COST

Our estimate of the Total Cost of this work, including all incidental expenses, is the sum of **THREE HUNDRED SEVENTY FOUR THOUSAND DOLLARS ($374,000.00)**, made up as follows:

CONSTRUCTION

Item 1)	**Station 0+000 to Station 2+603.1 of Main Drain**; Carry out excavation of the drain to remove accumulated sediment and restore the drain to the profile grade shown on the plans, including all loading, hauling and disposal of material, approximately 2603.1 metres (approximately 1110 cubic metres).	Lump Sum	$	54,000.00
Item 2)	**Station 3+000 to Station 4+005.5 of Branch Drain**; Carry out excavation of the drain to remove accumulated sediment and restore the drain to the profile grade shown on the plans, including all loading, hauling and disposal of material, approximately 1005.5 metres (approximately 110 cubic metres).	Lump Sum	$	16,500.00
Item 3)	**Station 0+487.6 Reaume Road Bridges 3 & 4;** Supply and install approximately 4 metres of 1000mm diameter 2.0mm thick aluminized corrugated steel pipe to each of the northerly ends of the two existing 1000mm diameter C.S.P., including excavation, connect each new 4m section with aluminized 9C bolted coupler, granular backfill, compaction, and quarried limestone on filter cloth erosion protection on disturbed bank, complete.	Lump Sum	$	15,600.00
Item 4)	**Main Drain and Branch Drain;** Supply and install new heavy duty H.D.P.E. plastic tile main extensions, including connections, rodent grate, removal of any deleterious			

	materials, excavation, backfill, compaction and restoration, complete:			
	a) 3.0 metres (10') of 150mm (6") diameter pipe for 150mm diameter tiles: 2 required at $200.00 each		$	400.00
Item 5)	**Main Drain and Branch Drain;** Supply and install approximately 11 lateral tile drain extensions to outlet end of damaged existing 100mm diameter lateral tiles entering the drain, including excavation, rodent grate, backfill, compaction, topsoil placement and seed and mulch, complete at $150.00 each.		$	1,650.00
Item 6)	**Main Drain and Branch Drain;** Supply and install approximately 60 tonnes of quarried limestone rip rap for rock chute spillways and general erosion protection, complete at $85.00 per tonne.		$	5,100.00
Item 7)	**Main Drain and Branch Drain;** Supply and install approximately 120 square metres of synthetic filter mat for rock chute spillways and general erosion protection, complete at $5.00 per square metre.		$	600.00
Item 8)	Brushing and grubbing including all disposal and clean up (approximately 3608 lineal metres), removing and restoring fences, complete.	Lump Sum	$	72,160.00
Item 9)	Spread scavenged topsoil; carry out seeding and mulching on all newly excavated side slopes including all harrowing, raking, preparation and clean up, complete.	Lump Sum	$	18,040.00
Item 10)	**Station 0+878.4 Bridge No. 5**; Provide all labour, equipment and materials to replace the existing 1000mm diameter C.S.P. with rotted invert and crushed pipe ends with 9 metres of new 1000mm diameter 2.0mm thick aluminized C.S.P.; including excavation, disposal of old pipe and deleterious materials; placement of new pipe with granular bedding and backfill, compaction, grading; 305mm thick quarried limestone on filter cloth sloped end protection; topsoil placement, seeding and mulching, and restoration and clean up, complete.	Lump Sum	$	12,900.00

Item 11)	**Station 1+069.3 to 1+123.3 Matchette Road Bridge No. 7**; Provide all labour, equipment and materials to replace the existing 900mm diameter C.S.P. with rotted invert with 56 metres of new 900mm diameter 2.0mm thick aluminized C.S.P. including a new aluminized 800mm diameter aluminized C.S.P. catch basin inlet with grate; including excavation, disposal of old pipe and deleterious materials; placement of new pipe with granular bedding and backfill, compaction, grading; asphalt driveway restoration; 305mm thick quarried limestone on filter cloth sloped end protection; topsoil placement, seeding and mulching, and restoration and clean up, complete.	Lump Sum	$	63,900.00
Item 12)	**Station 1+924 Bridge No. 13A**; Provide all labour, equipment and materials to install 9 metres of new 750mm diameter Boss 2000 320kPa H.D.P.E. smooth wall pipe; including excavation, disposal of deleterious materials; placement of new pipe with granular bedding and backfill, compaction, grading; 305mm thick quarried limestone on filter cloth sloped end protection; topsoil placement, seeding and mulching, and restoration and clean up, complete.	Lump Sum	$	10,000.00
Item 13)	**Main Drain and Branch**; Flush and clean all culvert pipes and enclosures including the maintenance holes and catch basins, including loading up and hauling away and disposal of all removed materials and restoration and clean up, complete.	Lump Sum	$	6,000.00
Item 14)	Estimated net Harmonized Sales Tax (1.76% H.S.T.) on construction items above.	Lump Sum	$	4,873.00
Item 15)	Contingency amount for construction.	Lump Sum	$	3,277.00
	TOTAL FOR CONSTRUCTION		**$**	**285,000.00**

INCIDENTALS

1)	Report, Estimate, & Specifications	$	14,000.00
2)	Survey, Assistants, Expenses, and Drawings	$	60,000.00
3)	Duplication Cost of Report and Drawings	$	1,500.00
4)	Estimated Cost of Letting Contract	$	1,000.00
5)	Estimated Cost of Layout and Staking	$	1,200.00
6)	Estimated Cost of Part-Time Supervision and Inspection During Construction (based on 5 day duration)	$	5,000.00
7)	Estimated Net H.S.T. on Incidental Items Above (1.76%)	$	1,420.00
8)	Estimated Cost of E.R.C.A. Permit	$	800.00
9)	Estimated Cost of Interim Financing	$	2,000.00
10)	Contingency Allowance	$	2,080.00
	TOTAL FOR INCIDENTALS	**$**	**89,000.00**
	TOTAL FOR CONSTRUCTION (brought forward)	**$**	**285,000.00**
	TOTAL ESTIMATE	**$**	**374,000.00**

X. DRAWINGS AND SPECIFICATIONS

As part of this report, we have attached design drawings for the construction of the drain improvements. The design drawings show the subject improvement locations and the details of the work, as well as the approximate location within the watershed area. The drain design drawings are attached to the back of this report and are labelled **Appendix "REI-E"**.

Also attached, we have prepared Specifications which set out the required construction details for the drain repair and improvements, which also include Standard Specifications labelled therein as **Appendix "REI-C".**

XI. SCHEDULE OF ASSESSMENT

We would recommend that the Total Cost for construction of this project, including incidental costs, be charged against the lands and roads affected in accordance with the attached Schedule of Assessment. On September 22nd, 2005, the Ontario Ministry of Agriculture, Food and Rural Affairs (O.M.A.F.R.A.) issued Administrative Policies for the Agricultural Drainage Infrastructure Program (A.D.I.P.). This program has re-instated financial assistance for eligible costs and assessed lands pursuant to the Drainage Act. Sections 85 to 90 of the Drainage Act allow the Minister to provide grants for various activities under said Act. Sections 85 and 87 make it very clear that grants are provided at the discretion of the Minister. Based on the current A.D.I.P., "lands used for agricultural purposes" may be eligible for a grant in the amount of 1/3 of their total assessment. The new policies define "lands used for agricultural purposes" as those lands eligible for the "Farm Property Class Tax Rate". The Town provides this information to the Engineer from the current property tax roll. Properties that do not meet the criteria are not eligible for grants. In accordance with same we expect that this project will be qualified for the grant normally available for agricultural lands. However, the Ministry is continually reviewing their policy for grants, and we recommend that the Town monitor the policies, and make application to the Ministry for any grant should same become available through the A.D.I.P. program or other available funds.

XII. FUTURE MAINTENANCE

When maintenance work is carried out in the future on the open drain portion, the cost for said future maintenance shall be assessed in accordance with the attached Schedule of Assessment excluding any Special Benefit. When future maintenance work is carried out, the assessment to the affected Owners shall be based on the actual future maintenance cost shared on a pro-rata basis with the values shown in this assessment schedule.

When maintenance work is carried out on any bridges in the future, we recommend that part of the cost be assessed as a Benefit to the abutting parcel served by the access bridge, and the remainder shall be assessed pro-rata to the upstream lands and roads based on their affected area and outlet assessments as set out in the attached Schedule of Assessment. The share for Benefit and Outlet Liability shall be as set out in the Bridge Cost Sharing table below. Bridge 9 serves Parcel 060-59400 and is a secondary access to the parcel. Since this is a secondary access, we recommend that 100% of the future maintenance costs be assessed to Parcel 060-59400. Bridge 10 serves Parcel 060-59400 and 060-58500 and the bridge provides a secondary access for Parcel 060-59400. When future maintenance is carried out on the bridge, we recommend that 50% of the cost be assessed as full Benefit to that parcel with no cost sharing. We recommend that the remaining 50% of the future cost will be shared between Parcel 060-58500 as Benefit and as Outlet to the upstream lands and roads as set out in the Sharing Table below. Bridge 11 serves Miranda Court and St. Michaels Drive and has a segment east of St. Michaels Drive on the property line between Parcel 060-58215 and Parcel 060-58220. We recommend that

the west portion and road segment be assessed as set out below with Benefit to the Town and to the properties that have access driveways over the drain and Outlet to the upstream lands and roads and that the enclosure segment on the property line between the two parcels east of St. Michaels Drive be assessed 50% to each of the two parcels as Benefit as set out below with no assessment upstream. For Bridge 15 that serves Parcel 060 57500 and Parcel 060 57600, we recommend that the Benefit assessment shall be split equally between the two parcels served by the structure and the Outlet portion of future maintenance cost shared to all the upstream lands and roads on a pro rata basis with their Outlet values in the Schedule of Assessment. Since Bridge 17 serves as a connection between Parcel 060 44100 and Parcel 060 44200, we recommend that 100% of the cost of future maintenance to the bridge be assessed as 50% Benefit to each of the abutting parcels served by the bridge with no assessment upstream.

BRIDGE COST SHARING

Bridge	Owners	Benefit to Owner	Outlet Upstream
1	Parcel 080 26800 Town of LaSalle	35.2%	64.8%
2	Parcel 080 26900	36.7%	63.3%
3	Reaume Road Town of LaSalle	98%	2%
4	Reaume Road Town of LaSalle	98%	2%
5	Unopened R.O.W. Trail Town of LaSalle	98%	2%
6	Matchette Road Town of LaSalle	98%	2%
7	Matchette Road Town of LaSalle	98%	2%
8	Parcel 060 59400	47.9%	52.1%
9	Parcel 060 59400	100%	0%

10	Parcel 060 59400	50%	
	Parcel 060 58500	26.4%	23.6%
11	Miranda Court Town of LaSalle	59.2%	1.4%
	St. Michaels Drive Town of LaSalle	10.8%	
	Parcel 060 58360	4.0%	
	Parcel 060 58365	4.0%	
	Parcel 060 58215	10.3%	
	Parcel 060 58220	10.3%	
12	Parcel 060 58100	100%	0%
13	Parcel 060 57900	62.9%	37.1%
14	Unopened R.O.W. Trail Town of LaSalle	98%	2%
15	Parcel 060 57500	50%	0%
	Parcel 060 57600	50%	
16	Bouffard Road Town of LaSalle	98%	2%
17	Parcel 060 44100	50%	0%
	Parcel 060 44200	50%	
18	Parcel 060 44200	100%	0%

19	Huron Street Town of LaSalle	98%	2%
20	Malden Road Town of LaSalle	98%	2%
13A	Unopened R.O.W. Trail Town of LaSalle	98%	2%

We recommend that the bridge structures as identified herein, be maintained in the future as part of the drainage works. We would also recommend that the access bridges in the drain, for which the future maintenance costs are to be borne by the abutting affected landowners and upstream lands and roads, be maintained by the Town and that said maintenance would include works to the bridge culvert, bedding, backfill and end treatment. Where concrete, asphalt or other decorative driveway surfaces over the bridge culverts require removal as part of the maintenance works, these surfaces should also be repaired or replaced as part of the works. Likewise, if any fencing, gate, decorative walls, guard rails or other special features exist that will be impacted by the maintenance work, they are also to be removed and restored or replaced as part of the bridge maintenance work. However, the cost of the supply and installation of any surface material other than Granular "A" material, and the cost of removal and restoration or replacement, if necessary, of any special features, shall be totally assessed to the benefiting adjoining parcel served by said access bridge.

We further recommend that the maintenance cost sharing as set out above shall remain as aforesaid until otherwise determined and re established under the provisions of the "Drainage Act, R.S.O. 1990, Chapter D.17 as amended 2021".

All of which is respectfully submitted.

Rood Engineering Inc.

Gerard Rood

Gerard Rood, P.Eng.

att.

Rood Engineering Inc.
Consulting Engineers
9 Nelson Street
LEAMINGTON, Ontario N8H 1G6

SCHEDULE OF ASSESSMENT
ST. MICHAELS DRAIN & BRANCH
Town of LaSalle

3. MUNICIPAL LANDS:

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
		Bouffard Rd.		9.29	3.760	16	Town of LaSalle	$ 2,454.00	$ 6,267.00	$ -	$ 8,721.00
		Cervi Blvd.		3.41	1.380		Town of LaSalle	$ 901.00	$ 2,300.00	$ -	$ 3,201.00
		Deerview Cr.		2.73	1.105		Town of LaSalle	$ 721.00	$ 1,841.00	$ -	$ 2,562.00
		Huron St.		8.86	3.585	19	Town of LaSalle	$ 2,339.00	$ 5,975.00	$ -	$ 8,314.00
		Lafferty Ave.		8.77	3.547		Town of LaSalle	$ 2,315.00	$ 5,912.00	$ -	$ 8,227.00
		Laurier Dr.		1.20	0.485		Town of LaSalle	$ 316.00	$ 808.00	$ -	$ 1,124.00
		Marquette St.		0.44	0.177		Town of LaSalle	$ 116.00	$ 295.00	$ -	$ 411.00
		Matchette Rd.		6.24	2.527	6 & 7	Town of LaSalle	$ 1,649.00	$ 4,211.00	$ 82,178.00	$ 88,038.00
		Menomine St.		0.67	0.272		Town of LaSalle	$ 177.00	$ 453.00	$ -	$ 630.00
		Miranda Ct.		0.87	0.352	11	Town of LaSalle	$ 230.00	$ 587.00	$ -	$ 817.00
		Piruzza Pl.		0.54	0.219		Town of LaSalle	$ 143.00	$ 365.00	$ -	$ 508.00
		Reaume Rd.		2.19	0.885	3 & 4	Town of LaSalle	$ 578.00	$ 1,475.00	$ 20,062.00	$ 22,115.00
		St. Michaels Dr.		1.36	0.551	11	Town of LaSalle	$ 360.00	$ 919.00	$ -	$ 1,279.00
		Superior St.		1.51	0.612		Town of LaSalle	$ 399.00	$ 1,019.00	$ -	$ 1,418.00
		Trails & Unopened Roads		43.62	17.652	5 & 13A	Town of LaSalle	$ 11,539.00	$ 29,422.00	$ 29,450.00	$ 70,411.00
		Total on Municipal Lands.....						**$ 24,237.00**	**$ 61,849.00**	**$ 131,690.00**	**$ 217,776.00**

4. PRIVATELY OWNED - NON-AGRICULTURAL LANDS:

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
040-02500	1017	LOT 8	0.18	0.18	0.073			$ 24.00	$ 104.00	$ -	$ 128.00
040-02507	1017	LOTS 5 AND 6	0.18	0.18	0.073			$ 24.00	$ 104.00	$ -	$ 128.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
040-02508	1017	LOT 3	0.18	0.18	0.073			$ 24.00	$ 104.00	$ -	$ 128.00
040-02509	1017	LOT 1 PT LOT 2	0.19	0.19	0.077			$ 25.00	$ 105.00	$ -	$ 130.00
040-06625	1017	LOT 159 PT LOT 160	0.15	0.15	0.061			$ 20.00	$ 90.00	$ -	$ 110.00
040-06650	1017	LOTS 161	0.18	0.18	0.073			$ 24.00	$ 104.00	$ -	$ 128.00
040-06700	1017	LOTS 163 & 164	0.13	0.13	0.053			$ 17.00	$ 81.00	$ -	$ 98.00
040-06800	1017	LOTS 165 TO 167	0.20	0.20	0.081			$ 26.00	$ 110.00	$ -	$ 136.00
050-02402	12M-548	LOT 1 BLK 18	0.27	0.27	0.109			$ 36.00	$ 139.00	$ -	$ 175.00
050-02403	12M-548	LOT 2 BLK 19	0.27	0.27	0.109			$ 36.00	$ 139.00	$ -	$ 175.00
050-02404	12M-548	LOT 3 BLK 20	0.27	0.27	0.109			$ 36.00	$ 139.00	$ -	$ 175.00
050-02405	12M-548	LOT 4 BLK 21	0.27	0.27	0.109			$ 36.00	$ 139.00	$ -	$ 175.00
050-02406	12M-548	LOT 5 BLK 22	0.24	0.24	0.097			$ 32.00	$ 127.00	$ -	$ 159.00
050-02407	12M-548	LOT 6 BLK 23	0.38	0.38	0.154			$ 50.00	$ 177.00	$ -	$ 227.00
050-02408	12M-548	LOT 7 BLK 24	0.67	0.67	0.271			$ 88.00	$ 271.00	$ -	$ 359.00
050-02409	12M-548	LOT 8	0.91	0.91	0.368			$ 120.00	$ 335.00	$ -	$ 455.00
050-02410	12M-548	LOT 9	0.28	0.28	0.113			$ 37.00	$ 141.00	$ -	$ 178.00
050-02411	12M-548	LOT 10	0.23	0.23	0.093			$ 30.00	$ 124.00	$ -	$ 154.00
050-02412	12M-548	LOT 11	0.22	0.22	0.089			$ 29.00	$ 119.00	$ -	$ 148.00
050-02413	12M-548	LOT 12	0.24	0.24	0.097			$ 32.00	$ 127.00	$ -	$ 159.00
050-02414	12M-548	LOTS 13 & 14	0.47	0.47	0.190			$ 62.00	$ 207.00	$ -	$ 269.00
050-02925	1	PT LOT 35	0.45	0.45	0.182			$ 59.00	$ 204.00	$ -	$ 263.00
050-02940	1	PT LOT 35	0.33	0.33	0.134			$ 44.00	$ 158.00	$ -	$ 202.00
050-03000	1	PT LOT 35	0.30	0.30	0.121			$ 40.00	$ 147.00	$ -	$ 187.00
050-03100	1	PT LOT 35	0.37	0.37	0.150			$ 49.00	$ 172.00	$ -	$ 221.00
050-03200	1	PT LOT 35	0.52	0.52	0.210			$ 69.00	$ 217.00	$ -	$ 286.00
050-03300	1	PT LOT 35	0.45	0.45	0.182			$ 59.00	$ 204.00	$ -	$ 263.00
050-03400	1	PT LOT 35	0.47	0.47	0.190			$ 62.00	$ 207.00	$ -	$ 269.00
050-03500	1	PT LOT 35	0.28	0.28	0.113			$ 37.00	$ 141.00	$ -	$ 178.00
050-03900	1	PT LOT 35	0.33	0.33	0.134			$ 44.00	$ 158.00	$ -	$ 202.00
050-04000	1	PT LOT 35	0.40	0.40	0.162			$ 53.00	$ 186.00	$ -	$ 239.00
050-04100	1	PT LOT 35	0.32	0.32	0.130			$ 42.00	$ 157.00	$ -	$ 199.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
050-04200	1	PT LOT 35	0.50	0.50	0.202			$ 66.00	$ 215.00	$ -	$ 281.00
050-04300	1	PT LOT 35	0.45	0.45	0.182			$ 59.00	$ 204.00	$ -	$ 263.00
050-04400	1	PT LOT 35	0.36	0.36	0.146			$ 48.00	$ 172.00	$ -	$ 220.00
050-04500	1	PT LOT 35	0.38	0.38	0.154			$ 50.00	$ 177.00	$ -	$ 227.00
050-04600	1	PT LOT 35	0.46	0.46	0.186			$ 61.00	$ 209.00	$ -	$ 270.00
050-04700	1	PT LOT 35	0.26	0.26	0.105			$ 34.00	$ 137.00	$ -	$ 171.00
050-04800	1	PT LOT 35	0.26	0.26	0.105			$ 34.00	$ 137.00	$ -	$ 171.00
050-04900	1	PT LOT 35	0.21	0.21	0.085			$ 28.00	$ 116.00	$ -	$ 144.00
050-05000	1	PT LOT 35	0.21	0.21	0.085			$ 28.00	$ 116.00	$ -	$ 144.00
050-05100	1	PT LOT 35	0.21	0.21	0.085			$ 28.00	$ 116.00	$ -	$ 144.00
050-05150	1	PT LOT 35	0.18	0.18	0.073			$ 24.00	$ 104.00	$ -	$ 128.00
050-05170	1	PT LOT 35	0.18	0.18	0.073			$ 24.00	$ 104.00	$ -	$ 128.00
050-05200	1	PT LOT 35	0.23	0.23	0.093			$ 30.00	$ 124.00	$ -	$ 154.00
050-05250	1	PT LOT 35	0.12	0.12	0.050			$ 16.00	$ 77.00	$ -	$ 93.00
050-05252	12M-531	LOT 2	0.27	0.27	0.109			$ 36.00	$ 139.00	$ -	$ 175.00
050-05254	12M-531	LOT 3	0.26	0.26	0.105			$ 34.00	$ 137.00	$ -	$ 171.00
050-05256	12M-531	LOT 4	0.26	0.26	0.105			$ 34.00	$ 137.00	$ -	$ 171.00
050-05258	12M-531	LOT 5	0.22	0.22	0.089			$ 29.00	$ 119.00	$ -	$ 148.00
050-05260	12M-531	LOT 6	0.24	0.24	0.097			$ 32.00	$ 127.00	$ -	$ 159.00
050-05262	12M-531	LOT 7	0.24	0.24	0.097			$ 32.00	$ 127.00	$ -	$ 159.00
050-05264	12M-531	LOT 8	0.26	0.26	0.105			$ 34.00	$ 137.00	$ -	$ 171.00
050-05266	12M-531	LOT 9	0.26	0.26	0.105			$ 34.00	$ 137.00	$ -	$ 171.00
050-05268	12M-531	LOT 10	0.26	0.26	0.105			$ 34.00	$ 137.00	$ -	$ 171.00
050-05270	12M-531	LOT 11	0.26	0.26	0.105			$ 34.00	$ 137.00	$ -	$ 171.00
050-05272	12M-531	LOT 12	0.20	0.20	0.081			$ 26.00	$ 110.00	$ -	$ 136.00
050-05274	12M-531	LOT 13	0.20	0.20	0.081			$ 26.00	$ 110.00	$ -	$ 136.00
050-05276	12M-531	LOT 14	0.23	0.23	0.093			$ 30.00	$ 124.00	$ -	$ 154.00
050-05278	12M-531	LOT 15	0.26	0.26	0.105			$ 34.00	$ 137.00	$ -	$ 171.00
050-05280	12M-531	LOT 16	0.26	0.26	0.105			$ 34.00	$ 137.00	$ -	$ 171.00
050-05282	12M-531	LOT 17	0.26	0.26	0.105			$ 34.00	$ 137.00	$ -	$ 171.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
050-05284	12M-531	LOT 18	0.26	0.26	0.105			$ 34.00	$ 137.00	$ -	$ 171.00
050-05286	12M-531	LOT 19	0.26	0.26	0.105			$ 34.00	$ 137.00	$ -	$ 171.00
050-05288	12M-531	LOT 20	0.26	0.26	0.105			$ 34.00	$ 137.00	$ -	$ 171.00
050-05290	12M-531	LOT 21	0.26	0.26	0.105			$ 34.00	$ 137.00	$ -	$ 171.00
050-05292	12M-531	LOT 22	0.28	0.28	0.112			$ 36.00	$ 139.00	$ -	$ 175.00
050-05294	12M-531	LOT 23	0.26	0.26	0.105			$ 34.00	$ 137.00	$ -	$ 171.00
050-05296	12M-531	LOT 24	0.26	0.26	0.105			$ 34.00	$ 137.00	$ -	$ 171.00
050-05298	12M-531	LOT 25	0.24	0.24	0.097			$ 32.00	$ 127.00	$ -	$ 159.00
050-05300	12M-531	LOT 26	0.28	0.28	0.113			$ 37.00	$ 141.00	$ -	$ 178.00
050-05302	12M-531	LOT 27 PT LOT 28	0.67	0.67	0.271			$ 88.00	$ 271.00	$ -	$ 359.00
050-05304	12M-531	PT LOT 28	0.25	0.25	0.101			$ 33.00	$ 132.00	$ -	$ 165.00
050-05306	12M-531	LOT 29	0.25	0.25	0.101			$ 33.00	$ 132.00	$ -	$ 165.00
050-05308	12M-531	BLK 30	0.08	0.08	0.032			$ 11.00	$ 54.00	$ -	$ 65.00
050-05310	12M-531	LOT 31	0.24	0.24	0.097			$ 32.00	$ 127.00	$ -	$ 159.00
050-05312	12M-531	LOT 32	0.23	0.23	0.093			$ 30.00	$ 124.00	$ -	$ 154.00
050-05314	12M-531	LOT 33	0.77	0.77	0.312			$ 102.00	$ 302.00	$ -	$ 404.00
050-05316	12M-531	LOT 34	0.34	0.34	0.138			$ 45.00	$ 163.00	$ -	$ 208.00
050-05318	12M-531	LOT 35	0.32	0.32	0.130			$ 42.00	$ 157.00	$ -	$ 199.00
050-05320	12M-531	LOT 36	0.20	0.20	0.081			$ 26.00	$ 110.00	$ -	$ 136.00
050-05322	12M-531	LOT 37	0.20	0.20	0.081			$ 26.00	$ 110.00	$ -	$ 136.00
050-05324	12M-531	LOT 38	0.23	0.23	0.093			$ 30.00	$ 124.00	$ -	$ 154.00
050-05348	12M-531	BLK 42	0.07	0.07	0.030			$ 10.00	$ 50.00	$ -	$ 60.00
050-05352	12M-531	BLK 44	0.40	0.40	0.163			$ 53.00	$ 188.00	$ -	$ 241.00
050-05400	1	PT LOT 35	2.06	2.06	0.834			$ 272.00	$ 556.00	$ -	$ 828.00
050-05500	1	PT LOT 35	1.04	1.04	0.421			$ 137.00	$ 370.00	$ -	$ 507.00
050-05600	1	PT LOT 35	0.52	0.52	0.210			$ 69.00	$ 217.00	$ -	$ 286.00
050-05700	1	PT LOT 35	0.26	0.26	0.105			$ 34.00	$ 137.00	$ -	$ 171.00
050-05800	1	PT LOT 35	0.93	0.93	0.376			$ 123.00	$ 342.00	$ -	$ 465.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
050-05900	1	PT LOT 35	0.93	0.93	0.376			$ 123.00	$ 342.00	$ -	$ 465.00
050-05950	1	PT LOT 35	0.18	0.18	0.073			$ 24.00	$ 104.00	$ -	$ 128.00
050-05970	1	PT LOT 35	0.19	0.19	0.077			$ 25.00	$ 105.00	$ -	$ 130.00
050-06100	1649	LOT 32	0.26	0.26	0.105			$ 34.00	$ 137.00	$ -	$ 171.00
050-06200	1649	LOT 27	1.36	0.36	0.147			$ 48.00	$ 120.00	$ -	$ 168.00
050-06300	1649	LOT 26	1.32	0.32	0.130			$ 42.00	$ 106.00	$ -	$ 148.00
050-06400	1649	PT LOT 25	1.06	0.23	0.093			$ 30.00	$ 81.00	$ -	$ 111.00
050-06636	12M-553	BLK 35	3.10	3.10	1.254			$ 409.00	$ 722.00	$ -	$ 1,131.00
060-00850	979	LOTS 68 TO 70	0.23	0.23	0.093			$ 30.00	$ 124.00	$ -	$ 154.00
060-00900	979	LOT 67	0.22	0.22	0.089			$ 29.00	$ 119.00	$ -	$ 148.00
060-01000	1	PT LOT 32	0.38	0.24	0.098			$ 32.00	$ 113.00	$ -	$ 145.00
060-01100	1	PT LOT 32	0.56	0.10	0.041			$ 14.00	$ 43.00	$ -	$ 57.00
060-01680	1	PT LOT 32	2.96	2.96	1.198	19		$ 391.00	$ 762.00	$ -	$ 1,153.00
060-12900	793	LOTS 348 TO 350	0.21	0.15	0.060			$ 20.00	$ 82.00	$ -	$ 102.00
060-13000	793	LOTS 345 TO 347	0.42	0.35	0.140			$ 46.00	$ 162.00	$ -	$ 208.00
060-13100	793	LOTS 343 & 344	0.18	0.11	0.044			$ 14.00	$ 63.00	$ -	$ 77.00
060-13200	793	LOTS 340 & 341	0.18	0.12	0.047			$ 15.00	$ 67.00	$ -	$ 82.00
060-13300	793	LOTS 338 & 339	0.35	0.28	0.115			$ 37.00	$ 136.00	$ -	$ 173.00
060-13400	793	LOTS 335 & 336	0.18	0.11	0.046			$ 15.00	$ 66.00	$ -	$ 81.00
060-13500	793	LOTS 333 & 334	0.18	0.17	0.070			$ 23.00	$ 100.00	$ -	$ 123.00
060-13600	793	LOTS 330 & 331	0.38	0.32	0.128			$ 42.00	$ 147.00	$ -	$ 189.00
060-13700	793	LOTS 327 TO 329	0.21	0.13	0.052			$ 17.00	$ 70.00	$ -	$ 87.00
060-13800	793	LOTS 325 & 326	0.32	0.24	0.099			$ 32.00	$ 120.00	$ -	$ 152.00
060-13900	793	LOTS 322 & 323	0.38	0.32	0.129			$ 42.00	$ 149.00	$ -	$ 191.00
060-14000	793	LOTS 320 & 321	0.35	0.28	0.114			$ 37.00	$ 134.00	$ -	$ 171.00
060-14100	793	LOTS 317, 318	0.35	0.28	0.113			$ 37.00	$ 134.00	$ -	$ 171.00
060-14200	793	LOTS 315, 316	0.35	0.27	0.108			$ 35.00	$ 128.00	$ -	$ 163.00
060-14300	793	LOTS 312, 313	0.38	0.31	0.124			$ 40.00	$ 143.00	$ -	$ 183.00
060-14400	793	LOT 311	0.07	0.04	0.018			$ 6.00	$ 30.00	$ -	$ 36.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
060-14500	793	LOTS 308 TO 310	0.45	0.38	0.154			$ 50.00	$ 173.00	$ -	$ 223.00
060-14600	793	LOTS 305 TO 307	0.50	0.39	0.159			$ 52.00	$ 168.00	$ -	$ 220.00
060-14700	793	LOTS 301 TO 303	0.55	0.44	0.176			$ 57.00	$ 182.00	$ -	$ 239.00
060-14800	793	LOT 298, 299	0.35	0.28	0.112			$ 36.00	$ 132.00	$ -	$ 168.00
060-14900	793	LOTS 296 & 297	0.25	0.19	0.078			$ 26.00	$ 102.00	$ -	$ 128.00
060-15000	793	LOTS 293 TO 295	0.45	0.36	0.145			$ 47.00	$ 163.00	$ -	$ 210.00
060-15100	793	LOTS 290 TO 292	0.41	0.32	0.129			$ 42.00	$ 149.00	$ -	$ 191.00
060-15200	793	LOTS 288 & 289	0.18	0.10	0.041			$ 13.00	$ 58.00	$ -	$ 71.00
060-15300	793	LOTS 285 & 286	0.18	0.10	0.042			$ 14.00	$ 60.00	$ -	$ 74.00
060-15400	793	LOTS 283 & 284	0.18	0.10	0.039			$ 13.00	$ 56.00	$ -	$ 69.00
060-15500	793	LOTS 280 & 281	0.18	0.10	0.041			$ 13.00	$ 58.00	$ -	$ 71.00
060-15600	793	LOT 279	0.07	0.04	0.016			$ 5.00	$ 26.00	$ -	$ 31.00
060-15700	793	LOTS 276 TO 278	0.31	0.20	0.082			$ 27.00	$ 99.00	$ -	$ 126.00
060-15800	793	LOT 273 & 274	0.40	0.30	0.123			$ 40.00	$ 142.00	$ -	$ 182.00
060-15900	793	LOTS 269 TO 271	0.54	0.44	0.179			$ 58.00	$ 184.00	$ -	$ 242.00
060-16000	793	LOTS 267 & 268	0.19	0.10	0.041			$ 13.00	$ 56.00	$ -	$ 69.00
060-16100	793	LOTS 264 TO 266	0.21	0.11	0.046			$ 15.00	$ 63.00	$ -	$ 78.00
060-16200	793	LOTS 261 TO 263	0.21	0.12	0.048			$ 16.00	$ 65.00	$ -	$ 81.00
060-16300	793	LOTS 258 TO 260	0.21	0.12	0.049			$ 16.00	$ 66.00	$ -	$ 82.00
060-16400	793	LOTS 255 TO 257	0.21	0.12	0.047			$ 15.00	$ 64.00	$ -	$ 79.00
060-16500	793	LOTS 252 TO 254	0.26	0.15	0.061			$ 20.00	$ 79.00	$ -	$ 99.00
060-16600	793	LOTS 249 TO 251	0.21	0.10	0.041			$ 14.00	$ 56.00	$ -	$ 70.00
060-16700	793	LOTS 246 TO 248	0.21	0.13	0.051			$ 17.00	$ 70.00	$ -	$ 87.00
060-16800	793	LOTS 244 & 245	0.18	0.10	0.039			$ 13.00	$ 56.00	$ -	$ 69.00
060-16900	793	LOTS 241 & 242	0.18	0.09	0.037			$ 12.00	$ 52.00	$ -	$ 64.00
060-17000	793	LOTS 239 & 240	0.18	0.09	0.037			$ 12.00	$ 52.00	$ -	$ 64.00
060-17100	793	LOTS 236 & 237	0.18	0.09	0.037			$ 12.00	$ 53.00	$ -	$ 65.00
060-17200	793	LOTS 234 & 235	0.14	0.08	0.031			$ 10.00	$ 47.00	$ -	$ 57.00
060-17300	793	LOTS 232 & 233	0.18	0.11	0.045			$ 15.00	$ 64.00	$ -	$ 79.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
060-17400	793	LOTS 229 TO 231	0.20	0.10	0.039			$ 13.00	$ 53.00	$ -	$ 66.00
060-17500	793	LOT 228	0.07	0.03	0.014			$ 4.00	$ 23.00	$ -	$ 27.00
060-17600	793	LOTS 224 TO 227	0.56	0.42	0.170			$ 55.00	$ 175.00	$ -	$ 230.00
060-17700	793	LOTS 222, 223	0.28	0.21	0.086			$ 28.00	$ 107.00	$ -	$ 135.00
060-17800	793	LOTS 218 TO 221	0.51	0.38	0.153			$ 50.00	$ 158.00	$ -	$ 208.00
060-17900	793	LOTS 216 & 217	0.17	0.05	0.020			$ 7.00	$ 29.00	$ -	$ 36.00
060-18000	793	LOTS 214 & 498	0.17	0.17	0.069			$ 22.00	$ 98.00	$ -	$ 120.00
060-18300	793	LOTS 496, 497, 500	0.35	0.35	0.142			$ 46.00	$ 167.00	$ -	$ 213.00
060-18900	793	LOTS 484 TO 486	0.20	0.20	0.081			$ 26.00	$ 110.00	$ -	$ 136.00
060-19000	793	LOT 480 TO LOT 483	0.24	0.24	0.097			$ 32.00	$ 127.00	$ -	$ 159.00
060-19100	793	LOTS 476 TO 479	0.28	0.28	0.112			$ 37.00	$ 139.00	$ -	$ 176.00
060-19200	793	LOTS 472 TO 475	0.28	0.28	0.113			$ 37.00	$ 141.00	$ -	$ 178.00
060-19300	793	LOTS 464 TO 471	0.35	0.35	0.142			$ 46.00	$ 167.00	$ -	$ 213.00
060-19500	793	LOTS 459 TO 463	0.33	0.33	0.134			$ 44.00	$ 158.00	$ -	$ 202.00
060-19600	793	LOTS 456 TO 458	0.21	0.21	0.085			$ 28.00	$ 116.00	$ -	$ 144.00
060-19700	793	LOTS 453 TO 455	0.21	0.21	0.085			$ 28.00	$ 116.00	$ -	$ 144.00
060-19800	793	LOTS 451 & 452	0.14	0.14	0.057			$ 18.00	$ 88.00	$ -	$ 106.00
060-19900	793	LOTS 446 TO 450	0.39	0.39	0.158			$ 51.00	$ 182.00	$ -	$ 233.00
060-20400	793	LOT 438	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
060-20500	793	LOTS 436 & 437	0.14	0.14	0.057			$ 18.00	$ 88.00	$ -	$ 106.00
060-20700	793	LOT 434	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
060-20800	793	LOTS 431 TO 433	0.21	0.21	0.085			$ 28.00	$ 116.00	$ -	$ 144.00
060-20900	793	LOT 430	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
060-20910	793	LOT 429	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
060-21000	793	LOTS 424 TO 428	0.35	0.35	0.142			$ 46.00	$ 167.00	$ -	$ 213.00
060-22000	793	LOTS 384 TO 386	0.20	0.20	0.081			$ 26.00	$ 110.00	$ -	$ 136.00
060-22300	793	LOTS 379 & 380	0.14	0.14	0.057			$ 18.00	$ 88.00	$ -	$ 106.00
060-22400	793	LOTS 377 & 378	0.17	0.17	0.069			$ 22.00	$ 98.00	$ -	$ 120.00
060-22600	793	LOTS 371 TO 373	0.21	0.21	0.085			$ 28.00	$ 116.00	$ -	$ 144.00
060-22700	793	LOTS 369 & 370	0.14	0.14	0.057			$ 18.00	$ 88.00	$ -	$ 106.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
060-22800	793	LOTS 363 TO 365	0.21	0.21	0.085			$ 28.00	$ 116.00	$ -	$ 144.00
060-22900	793	LOTS 1050 TO 1055	0.43	0.43	0.174			$ 57.00	$ 195.00	$ -	$ 252.00
060-23000	793	LOTS 1045 TO 1049	0.35	0.35	0.142			$ 46.00	$ 167.00	$ -	$ 213.00
060-23100	793	LOT 1044	0.07	0.07	0.029			$ 9.00	$ 48.00	$ -	$ 57.00
060-23200	793	LOT 1043	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
060-23300	793	LOTS 1041 & 1042	0.13	0.13	0.055			$ 18.00	$ 84.00	$ -	$ 102.00
060-23400	793	LOT 1040	0.07	0.07	0.029			$ 9.00	$ 48.00	$ -	$ 57.00
060-23500	793	LOT 1039	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
060-23600	793	LOTS 1033 TO 1038	0.43	0.43	0.174			$ 57.00	$ 195.00	$ -	$ 252.00
060-23700	793	LOTS 1028 TO 1032	0.35	0.35	0.142			$ 46.00	$ 167.00	$ -	$ 213.00
060-23800	793	LOTS 1025 TO 1027	0.21	0.21	0.086			$ 28.00	$ 115.00	$ -	$ 143.00
060-23900	793	LOTS 1014 TO 1024	0.78	0.78	0.316			$ 103.00	$ 306.00	$ -	$ 409.00
060-24000	793	LOTS 1006 TO 1013	0.57	0.57	0.231			$ 75.00	$ 238.00	$ -	$ 313.00
060-24200	793	LOTS 1003 TO 1005	0.21	0.21	0.085			$ 28.00	$ 116.00	$ -	$ 144.00
060-24300	793	LOTS 999 TO 1002	0.28	0.28	0.113			$ 37.00	$ 141.00	$ -	$ 178.00
060-24400	793	LOTS 997 & 998	0.14	0.14	0.057			$ 18.00	$ 88.00	$ -	$ 106.00
060-24500	793	LOTS 993 TO 996	0.28	0.28	0.113			$ 37.00	$ 141.00	$ -	$ 178.00
060-24600	793	LOTS 991 & 992	0.14	0.14	0.057			$ 18.00	$ 88.00	$ -	$ 106.00
060-24700	793	LOTS 980 TO 990	0.82	0.82	0.332			$ 108.00	$ 312.00	$ -	$ 420.00
060-24800	793	LOTS 971 TO 979	0.64	0.64	0.259			$ 84.00	$ 259.00	$ -	$ 343.00
060-25000	793	LOTS 968 TO 970	0.21	0.21	0.085			$ 28.00	$ 116.00	$ -	$ 144.00
060-25100	793	LOT 967	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
060-25200	793	LOTS 963 TO 966	0.28	0.28	0.113			$ 37.00	$ 141.00	$ -	$ 178.00
060-25500	793	LOTS 961 & 962	0.13	0.13	0.053			$ 17.00	$ 82.00	$ -	$ 99.00
060-25600	793	LOTS 959 & 960	0.20	0.20	0.081			$ 26.00	$ 110.00	$ -	$ 136.00
060-25700	793	LOT 958	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
060-25800	793	LOTS 953 TO 957	0.35	0.35	0.142			$ 46.00	$ 167.00	$ -	$ 213.00
060-25900	793	LOTS 948 TO 952	0.35	0.35	0.144			$ 47.00	$ 170.00	$ -	$ 217.00
060-26000	793	LOTS 946 & 947	0.14	0.14	0.057			$ 18.00	$ 88.00	$ -	$ 106.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
060-26100	793	LOTS 944 & 945	0.14	0.14	0.057			$ 18.00	$ 88.00	$ -	$ 106.00
060-26200	793	LOTS 942 & 943	0.15	0.15	0.061			$ 20.00	$ 90.00	$ -	$ 110.00
060-26300	793	LOT 941	0.09	0.09	0.036			$ 12.00	$ 61.00	$ -	$ 73.00
060-26400	793	LOT 940	0.07	0.07	0.029			$ 9.00	$ 48.00	$ -	$ 57.00
060-26500	793	LOT 939	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
060-26600	793	LOTS 937 & 938	0.14	0.14	0.057			$ 18.00	$ 88.00	$ -	$ 106.00
060-26700	793	LOT 936	0.07	0.07	0.029			$ 9.00	$ 48.00	$ -	$ 57.00
060-26800	793	LOTS 931 TO 935	0.35	0.35	0.142			$ 46.00	$ 167.00	$ -	$ 213.00
060-26900	793	LOT 930	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
060-27000	793	LOTS 928 & 929	0.20	0.20	0.081			$ 26.00	$ 110.00	$ -	$ 136.00
060-27100	793	LOTS 924 TO 927	0.25	0.25	0.101			$ 33.00	$ 132.00	$ -	$ 165.00
060-27200	793	LOTS 1206 TO 1209	0.25	0.25	0.101			$ 33.00	$ 132.00	$ -	$ 165.00
060-27300	793	LOT 1205	0.10	0.10	0.040			$ 13.00	$ 67.00	$ -	$ 80.00
060-27400	793	LOTS 1203 & 1204	0.16	0.16	0.063			$ 21.00	$ 94.00	$ -	$ 115.00
060-27500	793	LOT 1202	0.08	0.08	0.032			$ 11.00	$ 54.00	$ -	$ 65.00
060-27700	793	LOTS 1197 TO 1201	0.39	0.39	0.158			$ 51.00	$ 182.00	$ -	$ 233.00
060-27800	793	LOT 1196	0.08	0.08	0.032			$ 11.00	$ 54.00	$ -	$ 65.00
060-28100	793	LOTS 1191 TO 1195	0.40	0.40	0.162			$ 53.00	$ 186.00	$ -	$ 239.00
060-28400	793	LOTS 1189, 1190	0.17	0.17	0.069			$ 22.00	$ 98.00	$ -	$ 120.00
060-28500	793	LOTS 1187, 1188	0.16	0.16	0.065			$ 21.00	$ 96.00	$ -	$ 117.00
060-28600	793	LOTS 1185, 1186	0.16	0.16	0.065			$ 21.00	$ 96.00	$ -	$ 117.00
060-28700	793	LOTS 1180 TO 1184	0.39	0.39	0.158			$ 51.00	$ 182.00	$ -	$ 233.00
060-28800	793	LOTS 1178, 1179	0.16	0.16	0.065			$ 21.00	$ 96.00	$ -	$ 117.00
060-28900	793	LOT 1177	0.08	0.08	0.031			$ 10.00	$ 52.00	$ -	$ 62.00
060-29000	793	LOTS 1172 TO 1176	0.43	0.43	0.174			$ 57.00	$ 195.00	$ -	$ 252.00
060-29050	793	LOTS 1168 TO 1171	0.24	0.24	0.097			$ 32.00	$ 127.00	$ -	$ 159.00
060-29700	793	LOTS 1156 TO 1167	1.01	1.01	0.409			$ 133.00	$ 359.00	$ -	$ 492.00
060-30300	793	LOTS 1153 TO 1155	0.23	0.23	0.093			$ 30.00	$ 124.00	$ -	$ 154.00
060-30400	793	LOT 1152	0.13	0.13	0.053			$ 17.00	$ 82.00	$ -	$ 99.00
060-30500	793	LOTS 1142 TO 1151	0.78	0.78	0.316			$ 103.00	$ 306.00	$ -	$ 409.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
060-30600	793	LOT 1141	0.08	0.08	0.032			$ 10.00	$ 53.00	$ -	$ 63.00
060-30700	793	LOTS 1136 TO 1140	0.39	0.39	0.158			$ 51.00	$ 182.00	$ -	$ 233.00
060-30800	793	LOT 1135	0.08	0.08	0.032			$ 10.00	$ 53.00	$ -	$ 63.00
060-30900	793	LOT 1134	0.08	0.08	0.032			$ 11.00	$ 54.00	$ -	$ 65.00
060-31000	793	LOTS 1129 TO 1133	0.39	0.39	0.158			$ 51.00	$ 182.00	$ -	$ 233.00
060-31200	793	LOTS 1119 TO 1128	0.77	0.77	0.312			$ 102.00	$ 302.00	$ -	$ 404.00
060-31400	793	LOT 1118	0.08	0.08	0.031			$ 10.00	$ 52.00	$ -	$ 62.00
060-31500	793	LOT 1117	0.08	0.08	0.032			$ 11.00	$ 54.00	$ -	$ 65.00
060-31600	793	LOT 1116	0.08	0.08	0.032			$ 11.00	$ 54.00	$ -	$ 65.00
060-31700	793	LOT 1115	0.08	0.08	0.032			$ 11.00	$ 54.00	$ -	$ 65.00
060-31800	793	PLAN 793 LOT 1114	0.08	0.08	0.032			$ 11.00	$ 54.00	$ -	$ 65.00
060-31900	793	LOTS 1110 TO 1113	0.31	0.31	0.125			$ 41.00	$ 152.00	$ -	$ 193.00
060-32100	793	LOTS 1102 TO 1109	0.62	0.62	0.251			$ 82.00	$ 251.00	$ -	$ 333.00
060-32300	793	LOTS 1096 TO 1101	0.47	0.47	0.190			$ 62.00	$ 207.00	$ -	$ 269.00
060-32500	793	LOT 1095	0.08	0.08	0.031			$ 10.00	$ 52.00	$ -	$ 62.00
060-32600	793	LOTS 1090 TO 1094	0.39	0.39	0.158			$ 51.00	$ 182.00	$ -	$ 233.00
060-32700	793	LOT 1089	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
060-32800	793	LOTS 1087, 1088	0.16	0.16	0.065			$ 21.00	$ 96.00	$ -	$ 117.00
060-32900	793	LOTS 1085, 1086	0.16	0.16	0.065			$ 21.00	$ 96.00	$ -	$ 117.00
060-34000	793	LOTS 1078 TO 1084	0.54	0.54	0.219			$ 71.00	$ 225.00	$ -	$ 296.00
060-34200	650	LOTS 320 TO 331	0.82	0.82	0.332			$ 108.00	$ 312.00	$ -	$ 420.00
060-34300	650	LOTS 332 & 333	0.14	0.14	0.057			$ 18.00	$ 88.00	$ -	$ 106.00
060-34400	650	LOTS 334 TO 342	0.62	0.62	0.251			$ 82.00	$ 251.00	$ -	$ 333.00
060-34500	650	LOTS 343 TO 345	0.22	0.22	0.089			$ 29.00	$ 119.00	$ -	$ 148.00
060-34600	650	LOTS 346 TO 356	0.75	0.75	0.304			$ 99.00	$ 294.00	$ -	$ 393.00
060-34700	650	LOT 357	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
060-34800	650	LOTS 358 TO 365	0.56	0.56	0.227			$ 74.00	$ 233.00	$ -	$ 307.00
060-34900	650	LOTS 366 TO 368	0.24	0.24	0.097			$ 32.00	$ 127.00	$ -	$ 159.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
060-35000	650	LOTS 369 TO 379	0.76	0.76	0.308			$ 100.00	$ 298.00	$ -	$ 398.00
060-35100	650	LOTS 380 TO 382	0.21	0.21	0.085			$ 28.00	$ 116.00	$ -	$ 144.00
060-35200	650	LOTS 383 TO 385	0.21	0.21	0.085			$ 28.00	$ 116.00	$ -	$ 144.00
060-35300	650	LOTS 386 & 387	0.11	0.11	0.045			$ 15.00	$ 71.00	$ -	$ 86.00
060-35400	650	LOTS 388 TO 392	0.34	0.34	0.138			$ 45.00	$ 163.00	$ -	$ 208.00
060-35500	650	LOT 393	0.07	0.07	0.028			$ 9.00	$ 46.00	$ -	$ 55.00
060-35600	650	LOTS 394 & 395	0.14	0.14	0.057			$ 18.00	$ 88.00	$ -	$ 106.00
060-35700	650	LOT 396	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
060-35800	650	LOTS 397 TO 400	0.30	0.30	0.121			$ 40.00	$ 147.00	$ -	$ 187.00
060-35900	650	LOTS 66 TO 68	0.26	0.26	0.105			$ 34.00	$ 137.00	$ -	$ 171.00
060-36000	650	LOTS 69 & 70	0.17	0.17	0.069			$ 22.00	$ 98.00	$ -	$ 120.00
060-36100	650	LOTS 71 & 72	0.19	0.19	0.077			$ 25.00	$ 105.00	$ -	$ 130.00
060-36600	650	LOTS 240 TO 254	1.04	1.04	0.421			$ 137.00	$ 370.00	$ -	$ 507.00
060-36700	650	LOTS 255 TO 257	0.20	0.20	0.081			$ 26.00	$ 110.00	$ -	$ 136.00
060-36800	650	LOTS 258 TO 260	0.21	0.21	0.085			$ 28.00	$ 116.00	$ -	$ 144.00
060-36900	650	LOTS 261 TO 263	0.21	0.21	0.085			$ 28.00	$ 116.00	$ -	$ 144.00
060-37000	650	LOTS 264 TO 266	0.21	0.21	0.085			$ 28.00	$ 116.00	$ -	$ 144.00
060-37100	650	LOTS 267 & 268	0.14	0.14	0.057			$ 18.00	$ 88.00	$ -	$ 106.00
060-37200	650	LOTS 269 TO 271	0.21	0.21	0.085			$ 28.00	$ 116.00	$ -	$ 144.00
060-37300	650	LOTS 272 TO 274	0.24	0.24	0.097			$ 32.00	$ 127.00	$ -	$ 159.00
060-37400	650	LOTS 275 TO 282	0.54	0.54	0.219			$ 71.00	$ 225.00	$ -	$ 296.00
060-37500	650	LOT 283	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
060-37600	650	LOTS 284 & 285	0.14	0.14	0.057			$ 18.00	$ 88.00	$ -	$ 106.00
060-37700	650	LOT 286	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
060-37800	650	LOTS 287 TO 294	0.56	0.56	0.227			$ 74.00	$ 233.00	$ -	$ 307.00
060-37900	650	LOTS 295 TO 299	0.33	0.33	0.134			$ 44.00	$ 158.00	$ -	$ 202.00
060-38000	650	LOTS 300 & 301	0.14	0.14	0.056			$ 18.00	$ 86.00	$ -	$ 104.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
060-38100	650	LOT 302	0.07	0.07	0.028			$ 9.00	$ 46.00	$ -	$ 55.00
060-38200	650	LOTS 303 TO 305	0.21	0.21	0.085			$ 28.00	$ 116.00	$ -	$ 144.00
060-38300	650	LOT 306	0.07	0.07	0.028			$ 9.00	$ 46.00	$ -	$ 55.00
060-38400	650	LOTS 307 TO 319	0.96	0.96	0.389			$ 127.00	$ 353.00	$ -	$ 480.00
060-38500	650	LOTS 160 TO 163	0.32	0.32	0.130			$ 42.00	$ 157.00	$ -	$ 199.00
060-38600	650	LOT 164	0.07	0.07	0.028			$ 9.00	$ 46.00	$ -	$ 55.00
060-38700	650	LOTS 165 TO 171	0.52	0.52	0.210			$ 69.00	$ 217.00	$ -	$ 286.00
060-38800	650	LOT 172	0.07	0.07	0.028			$ 9.00	$ 46.00	$ -	$ 55.00
060-38900	650	LOTS 173 & 174	0.15	0.15	0.061			$ 20.00	$ 90.00	$ -	$ 110.00
060-39000	650	LOTS 175 & 176	0.14	0.14	0.057			$ 18.00	$ 88.00	$ -	$ 106.00
060-39100	650	LOTS 177 TO 180	0.28	0.28	0.113			$ 37.00	$ 141.00	$ -	$ 178.00
060-39200	650	LOT 181	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
060-39300	650	LOTS 182 TO 184	0.25	0.25	0.101			$ 33.00	$ 132.00	$ -	$ 165.00
060-39400	650	LOTS 185 TO 187	0.20	0.20	0.081			$ 26.00	$ 110.00	$ -	$ 136.00
060-39500	650	LOTS 188 TO 195	0.55	0.55	0.223			$ 73.00	$ 229.00	$ -	$ 302.00
060-39570	650	LOTS 196 TO 198	0.21	0.21	0.085			$ 28.00	$ 116.00	$ -	$ 144.00
060-39590	650	LOTS 199 & 200	0.14	0.14	0.057			$ 18.00	$ 88.00	$ -	$ 106.00
060-39600	650	LOT 201	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
060-39700	650	LOT 202	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
060-39800	650	LOTS 203 & 204	0.15	0.15	0.061			$ 20.00	$ 90.00	$ -	$ 110.00
060-39850	650	LOTS 205 TO 207	0.21	0.21	0.085			$ 28.00	$ 116.00	$ -	$ 144.00
060-39900	650	LOTS 208 & 209	0.14	0.14	0.057			$ 18.00	$ 88.00	$ -	$ 106.00
060-40000	650	LOTS 210 & 211	0.14	0.14	0.057			$ 18.00	$ 88.00	$ -	$ 106.00
060-40100	650	LOT 212	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
060-40200	650	LOTS 213 & 214	0.14	0.14	0.057			$ 18.00	$ 88.00	$ -	$ 106.00
060-40300	650	LOT 215	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
060-40400	650	LOTS 216 TO 218	0.21	0.21	0.085			$ 28.00	$ 116.00	$ -	$ 144.00
060-40600	650	LOTS 219 TO 221	0.21	0.21	0.085			$ 28.00	$ 116.00	$ -	$ 144.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
060-40700	650	LOTS 222 & 223	0.21	0.21	0.085			$ 28.00	$ 116.00	$ -	$ 144.00
060-40800	650	LOTS 225 TO 227	0.19	0.19	0.078			$ 25.00	$ 106.00	$ -	$ 131.00
060-40900	650	LOT 228	0.07	0.07	0.028			$ 9.00	$ 46.00	$ -	$ 55.00
060-41000	650	LOTS 229 TO 231	0.21	0.21	0.084			$ 27.00	$ 114.00	$ -	$ 141.00
060-41300	650	LOTS 232 TO 235	0.28	0.28	0.113			$ 37.00	$ 141.00	$ -	$ 178.00
060-41400	650	LOTS 236 TO 239	0.30	0.30	0.121			$ 40.00	$ 147.00	$ -	$ 187.00
060-41500	650	LOTS 73 TO 75	0.27	0.27	0.109			$ 36.00	$ 139.00	$ -	$ 175.00
060-41600	650	LOTS 76 & 77	0.17	0.17	0.069			$ 22.00	$ 98.00	$ -	$ 120.00
060-41700	650	LOTS 78 & 79	0.19	0.19	0.077			$ 25.00	$ 105.00	$ -	$ 130.00
060-41800	650	LOTS 80 & 81	0.14	0.14	0.057			$ 18.00	$ 88.00	$ -	$ 106.00
060-41900	650	LOTS 82 TO 84	0.22	0.22	0.089			$ 29.00	$ 119.00	$ -	$ 148.00
060-42000	650	LOTS 85 & 86	0.18	0.18	0.073			$ 24.00	$ 104.00	$ -	$ 128.00
060-42100	650	LOTS 88 & 89	0.18	0.18	0.073			$ 24.00	$ 104.00	$ -	$ 128.00
060-42150	650	LOTS 90 & 91	0.17	0.17	0.069			$ 22.00	$ 98.00	$ -	$ 120.00
060-42200	650	LOTS 93 & 94	0.23	0.23	0.093			$ 30.00	$ 124.00	$ -	$ 154.00
060-42300	650	LOTS 96 TO 98	0.32	0.32	0.130			$ 42.00	$ 157.00	$ -	$ 199.00
060-42400	650	LOTS 99 TO 101	0.22	0.22	0.089			$ 29.00	$ 119.00	$ -	$ 148.00
060-42500	650	LOTS 102 TO 104	0.22	0.22	0.089			$ 29.00	$ 119.00	$ -	$ 148.00
060-42600	650	LOTS 105 TO 107	0.22	0.22	0.089			$ 29.00	$ 119.00	$ -	$ 148.00
060-42700	650	LOTS 108 TO 110	0.22	0.22	0.089			$ 29.00	$ 119.00	$ -	$ 148.00
060-42800	650	LOTS 111 TO 114	0.31	0.31	0.125			$ 41.00	$ 152.00	$ -	$ 193.00
060-42900	650	LOTS 115 & 116	0.16	0.16	0.065			$ 21.00	$ 96.00	$ -	$ 117.00
060-43000	650	LOT 118	0.18	0.18	0.073			$ 24.00	$ 104.00	$ -	$ 128.00
060-43100	650	LOTS 120 & 121	0.18	0.18	0.073			$ 24.00	$ 104.00	$ -	$ 128.00
060-43200	650	LOT 123 & 122	0.20	0.20	0.081			$ 26.00	$ 110.00	$ -	$ 136.00
060-43300	650	LOTS 125 & 126	0.17	0.17	0.069			$ 22.00	$ 98.00	$ -	$ 120.00
060-43400	650	LOTS 127 & 128	0.18	0.18	0.073			$ 24.00	$ 104.00	$ -	$ 128.00
060-43600	650	LOTS 130 & 131	0.18	0.18	0.073			$ 24.00	$ 104.00	$ -	$ 128.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
060-43800	650	LOTS 132 TO 134	0.23	0.23	0.093			$ 30.00	$ 124.00	$ -	$ 154.00
060-43900	650	LOTS 135 TO 138	0.28	0.28	0.113			$ 37.00	$ 141.00	$ -	$ 178.00
060-44100	650	LOTS 139 TO 141	0.25	0.25	0.101	17		$ 33.00	$ 132.00	$ -	$ 165.00
060-44200	650	LOTS 142 & 143	0.17	0.17	0.069	17, 18		$ 22.00	$ 98.00	$ -	$ 120.00
060-44300	650	LOTS 144 TO 146	0.24	0.24	0.097			$ 32.00	$ 127.00	$ -	$ 159.00
060-44400	650	LOTS 147 & 148	0.20	0.20	0.081			$ 26.00	$ 110.00	$ -	$ 136.00
060-44500	650	LOTS 150 & 151	0.20	0.20	0.081			$ 26.00	$ 110.00	$ -	$ 136.00
060-44600	650	LOT 153	0.20	0.20	0.081			$ 26.00	$ 110.00	$ -	$ 136.00
060-44700	650	LOTS 155 & 156	0.20	0.20	0.081			$ 26.00	$ 110.00	$ -	$ 136.00
060-44800	650	LOTS 158 & 159	0.25	0.25	0.101			$ 33.00	$ 132.00	$ -	$ 165.00
060-44900	1	PT LOT 32	0.24	0.24	0.096			$ 31.00	$ 125.00	$ -	$ 156.00
060-45000	1	PT LOT 32	0.27	0.27	0.111			$ 36.00	$ 137.00	$ -	$ 173.00
060-45100	1	PT LOT 32	0.27	0.27	0.111			$ 36.00	$ 137.00	$ -	$ 173.00
060-45200	1	PT LOT 32	0.25	0.25	0.103			$ 33.00	$ 134.00	$ -	$ 167.00
060-45300	1	PT LOT 32	0.35	0.35	0.142			$ 46.00	$ 168.00	$ -	$ 214.00
060-45400	1	PT LOT 32	2.76	2.76	1.117			$ 364.00	$ 711.00	$ -	$ 1,075.00
060-45500	1	PT LOT 32	2.65	2.65	1.070			$ 349.00	$ 681.00	$ -	$ 1,030.00
060-45510	1	PT LOT 32	0.19	0.19	0.077			$ 25.00	$ 105.00	$ -	$ 130.00
060-45520	1	PT LOT 32	0.27	0.27	0.107			$ 35.00	$ 137.00	$ -	$ 172.00
060-45530	1	PT LOT 32	0.17	0.17	0.067			$ 22.00	$ 96.00	$ -	$ 118.00
060-45540	1	PT LOT 32	0.19	0.19	0.076			$ 25.00	$ 104.00	$ -	$ 129.00
060-45550	1	PT LOT 32	0.20	0.20	0.081			$ 26.00	$ 110.00	$ -	$ 136.00
060-45600	1	PT LOT 32	0.29	0.29	0.116			$ 38.00	$ 141.00	$ -	$ 179.00
060-45700	1	PT LOT 32	0.19	0.19	0.079			$ 26.00	$ 108.00	$ -	$ 134.00
060-45800	1	PT LOT 32	0.21	0.21	0.084			$ 27.00	$ 115.00	$ -	$ 142.00
060-45900	1	PT LOT 32	0.21	0.21	0.084			$ 27.00	$ 115.00	$ -	$ 142.00
060-46000	1	PT LOT 32	0.21	0.21	0.084			$ 27.00	$ 115.00	$ -	$ 142.00
060-46100	1	PT LOT 32	0.21	0.21	0.084			$ 27.00	$ 115.00	$ -	$ 142.00
060-46110	1	PT LOT 32	5.88	5.88	2.381			$ 777.00	$ 1,082.00	$ -	$ 1,859.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
060-46200	1	PT LOT 32	0.21	0.21	0.084			$ 27.00	$ 115.00	$ -	$ 142.00
060-46300	1	PT LOT 32	0.21	0.21	0.084			$ 27.00	$ 115.00	$ -	$ 142.00
060-46400	1	PT LOT 32	0.21	0.21	0.084			$ 27.00	$ 115.00	$ -	$ 142.00
060-46500	1	PT LOT 32	0.21	0.21	0.084			$ 27.00	$ 115.00	$ -	$ 142.00
060-46600	1	PT LOT 32	0.21	0.21	0.084			$ 27.00	$ 115.00	$ -	$ 142.00
060-46700	1	PT LOT 32	0.28	0.28	0.112			$ 37.00	$ 140.00	$ -	$ 177.00
060-46750	979	LOT 64	0.19	0.19	0.078			$ 26.00	$ 107.00	$ -	$ 133.00
060-46770	979	LOTS 61 TO 63	0.26	0.26	0.105			$ 34.00	$ 134.00	$ -	$ 168.00
060-46800	979	LOTS 58 TO 60	0.29	0.29	0.119			$ 39.00	$ 144.00	$ -	$ 183.00
060-46900	979	LOTS 54 TO 56	0.29	0.29	0.119			$ 39.00	$ 144.00	$ -	$ 183.00
060-47000	979	LOTS 51 TO 53	0.25	0.25	0.102			$ 33.00	$ 133.00	$ -	$ 166.00
060-47100	979	LOTS 49 & 50	0.17	0.17	0.068			$ 22.00	$ 97.00	$ -	$ 119.00
060-47200	979	LOTS 47 & 48	0.17	0.17	0.068			$ 22.00	$ 97.00	$ -	$ 119.00
060-47300	979	LOTS 45 & 46	0.20	0.20	0.079			$ 26.00	$ 108.00	$ -	$ 134.00
060-47400	979	LOTS 42 & 43	0.21	0.21	0.085			$ 28.00	$ 113.00	$ -	$ 141.00
060-47500	979	LOTS 39 TO 41	0.47	0.47	0.191			$ 62.00	$ 208.00	$ -	$ 270.00
060-47600	979	LOTS 35 TO 38	0.63	0.63	0.254			$ 83.00	$ 254.00	$ -	$ 337.00
060-47750	979	LOTS 33 & 34	0.16	0.16	0.064			$ 21.00	$ 94.00	$ -	$ 115.00
060-47800	979	LOTS 31 & 32	0.16	0.16	0.064			$ 21.00	$ 94.00	$ -	$ 115.00
060-48000	979	LOTS 28 TO 30	0.51	0.51	0.207			$ 67.00	$ 213.00	$ -	$ 280.00
060-48100	979	LOTS 25 & 26	0.20	0.20	0.079			$ 26.00	$ 108.00	$ -	$ 134.00
060-48200	979	LOTS 22 TO 24	0.55	0.55	0.222			$ 73.00	$ 229.00	$ -	$ 302.00
060-48300	979	LOTS 20 & 21	0.17	0.17	0.068			$ 22.00	$ 97.00	$ -	$ 119.00
060-48400	979	LOTS 18 & 19	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00
060-48500	979	LOTS 16 & 17	0.17	0.17	0.068			$ 22.00	$ 97.00	$ -	$ 119.00
060-48600	979	LOTS 13 TO 15	0.26	0.26	0.103			$ 34.00	$ 135.00	$ -	$ 169.00
060-48700	979	LOTS 9 TO 11	0.26	0.26	0.103			$ 34.00	$ 135.00	$ -	$ 169.00
060-48800	979	LOTS 7 & 8	0.30	0.30	0.121			$ 40.00	$ 147.00	$ -	$ 187.00
060-48900	979	LOTS 5 & 6	0.16	0.16	0.064			$ 21.00	$ 94.00	$ -	$ 115.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
060-49000	979	LOTS 2 TO 4	0.25	0.25	0.102			$ 33.00	$ 133.00	$ -	$ 166.00
060-49100	979	LOT 1	0.08	0.08	0.033			$ 11.00	$ 55.00	$ -	$ 66.00
060-49200	979	LOTS 134 TO 136	0.22	0.22	0.090			$ 29.00	$ 120.00	$ -	$ 149.00
060-49300	979	LOTS 131 TO 133	0.22	0.22	0.089			$ 29.00	$ 118.00	$ -	$ 147.00
060-49400	979	LOTS 129 & 130	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00
060-49700	979	LOTS 120 TO 122	0.26	0.26	0.103			$ 34.00	$ 135.00	$ -	$ 169.00
060-49800	979	LOTS 118 & 119	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00
060-49900	979	LOTS 116 & 117	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00
060-50000	979	LOTS 114 & 115	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00
060-50300	979	LOTS 101 TO 105	0.39	0.39	0.159			$ 52.00	$ 183.00	$ -	$ 235.00
060-50400	979	LOTS 92 & 93	0.18	0.18	0.074			$ 24.00	$ 101.00	$ -	$ 125.00
060-50500	979	LOTS 89 & 90	0.20	0.20	0.079			$ 26.00	$ 108.00	$ -	$ 134.00
060-50600	979	LOTS 87 & 88	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00
060-50700	979	LOTS 85 & 86	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00
060-50800	979	LOTS 82 TO 84	0.22	0.22	0.089			$ 29.00	$ 118.00	$ -	$ 147.00
060-50900	979	LOTS 79 TO 81	0.26	0.26	0.103			$ 34.00	$ 135.00	$ -	$ 169.00
060-51000	979	LOTS 75 TO 77	0.26	0.26	0.103			$ 34.00	$ 135.00	$ -	$ 169.00
060-51100	979	LOTS 73 & 74	0.27	0.27	0.110			$ 36.00	$ 136.00	$ -	$ 172.00
060-51200	979	LOTS 182 TO 200	1.45	1.45	0.586			$ 191.00	$ 461.00	$ -	$ 652.00
060-51300	979	LOTS 176 TO 181	0.44	0.44	0.177			$ 58.00	$ 199.00	$ -	$ 257.00
060-51400	979	LOT 175	0.07	0.07	0.030			$ 10.00	$ 49.00	$ -	$ 59.00
060-51500	979	LOTS 162 TO 174	0.95	0.95	0.384			$ 125.00	$ 349.00	$ -	$ 474.00
060-51600	979	LOTS 156 TO 161	0.44	0.44	0.177			$ 58.00	$ 199.00	$ -	$ 257.00
060-51700	979	LOTS 149 TO 155	0.51	0.51	0.207	14		$ 67.00	$ 213.00	$ -	$ 280.00
060-51800	979	LOTS 145 TO 148	0.29	0.29	0.118			$ 39.00	$ 143.00	$ -	$ 182.00
060-51900	979	LOT 144	0.07	0.07	0.030			$ 10.00	$ 49.00	$ -	$ 59.00
060-52000	979	LOTS 137 TO 143	0.57	0.57	0.229			$ 75.00	$ 236.00	$ -	$ 311.00
060-52100	979	LOT 272	0.12	0.12	0.049			$ 16.00	$ 76.00	$ -	$ 92.00
060-52200	979	LOT 271	0.07	0.07	0.030			$ 10.00	$ 49.00	$ -	$ 59.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
060-52300	979	LOTS 269 & 270	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00
060-52400	979	LOTS 266 TO 268	0.22	0.22	0.089			$ 29.00	$ 118.00	$ -	$ 147.00
060-52500	979	LOT 265	0.07	0.07	0.030			$ 10.00	$ 49.00	$ -	$ 59.00
060-52600	979	LOTS 263 & 264	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00
060-52700	979	LOTS 261 & 262	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00
060-52800	979	LOTS 259 TO 260	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00
060-52900	979	LOTS 252 TO 258	0.51	0.51	0.207			$ 67.00	$ 213.00	$ -	$ 280.00
060-53000	979	LOTS 246 TO 251	0.44	0.44	0.177			$ 58.00	$ 199.00	$ -	$ 257.00
060-53100	979	LOTS 242 TO 245	0.29	0.29	0.118			$ 39.00	$ 143.00	$ -	$ 182.00
060-53200	979	LOTS 226 TO 241	1.17	1.17	0.473			$ 154.00	$ 415.00	$ -	$ 569.00
060-53300	979	LOTS 224 & 225	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00
060-53400	979	LOTS 220 TO 223	0.29	0.29	0.118			$ 39.00	$ 143.00	$ -	$ 182.00
060-53500	979	LOT 219	0.07	0.07	0.030			$ 10.00	$ 49.00	$ -	$ 59.00
060-53600	979	LOTS 217 & 218	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00
060-53700	979	LOTS 210 TO 216	0.51	0.51	0.207			$ 67.00	$ 213.00	$ -	$ 280.00
060-53800	979	LOT 209	0.14	0.14	0.055			$ 18.00	$ 86.00	$ -	$ 104.00
060-54000	979	LOTS 326 TO 335	0.73	0.73	0.295			$ 96.00	$ 286.00	$ -	$ 382.00
060-54100	979	LOTS 323 TO 325	0.22	0.22	0.089			$ 29.00	$ 118.00	$ -	$ 147.00
060-54200	979	LOTS 319 TO 322	0.29	0.29	0.118			$ 39.00	$ 143.00	$ -	$ 182.00
060-54390	979	LOT 318	0.07	0.07	0.030			$ 10.00	$ 49.00	$ -	$ 59.00
060-54400	979	LOT 317	0.07	0.07	0.030			$ 10.00	$ 49.00	$ -	$ 59.00
060-54500	979	LOTS 313 TO 316	0.29	0.29	0.118			$ 39.00	$ 143.00	$ -	$ 182.00
060-54600	979	LOTS 310 TO 312	0.22	0.22	0.089			$ 29.00	$ 118.00	$ -	$ 147.00
060-54700	979	LOTS 307 TO 309	0.22	0.22	0.089			$ 29.00	$ 118.00	$ -	$ 147.00
060-54794	979	LOTS 303 TO 305	0.22	0.22	0.089			$ 29.00	$ 118.00	$ -	$ 147.00
060-54800	979	LOT 306	0.07	0.07	0.030			$ 10.00	$ 49.00	$ -	$ 59.00
060-54900	979	LOTS 300 TO 302	0.22	0.22	0.089			$ 29.00	$ 118.00	$ -	$ 147.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
060-54950	979	LOTS 297 TO 299	0.22	0.22	0.089			$ 29.00	$ 118.00	$ -	$ 147.00
060-55000	979	LOTS 290 TO 296	0.51	0.51	0.207			$ 67.00	$ 213.00	$ -	$ 280.00
060-55100	979	LOTS 287 TO 289	0.22	0.22	0.089			$ 29.00	$ 118.00	$ -	$ 147.00
060-55200	979	LOT 286	0.07	0.07	0.030			$ 10.00	$ 49.00	$ -	$ 59.00
060-55300	979	LOTS 273 TO 285	0.98	0.98	0.395			$ 129.00	$ 359.00	$ -	$ 488.00
060-55400	979	LOTS 391 TO 409	1.41	1.41	0.570			$ 186.00	$ 449.00	$ -	$ 635.00
060-55500	979	LOTS 389 & 390	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00
060-55600	979	LOT 388	0.07	0.07	0.030			$ 10.00	$ 49.00	$ -	$ 59.00
060-55700	979	LOTS 384 TO 387	0.29	0.29	0.118			$ 39.00	$ 143.00	$ -	$ 182.00
060-55800	979	LOTS 381 TO 383	0.22	0.22	0.089			$ 29.00	$ 118.00	$ -	$ 147.00
060-55900	979	LOTS 378 TO 380	0.22	0.22	0.089			$ 29.00	$ 118.00	$ -	$ 147.00
060-56000	979	LOT 377	0.07	0.07	0.030			$ 10.00	$ 49.00	$ -	$ 59.00
060-56100	979	LOT 376	0.07	0.07	0.030			$ 10.00	$ 49.00	$ -	$ 59.00
060-56200	979	LOT 375	0.07	0.07	0.030			$ 10.00	$ 49.00	$ -	$ 59.00
060-56300	979	LOT 374	0.07	0.07	0.030			$ 10.00	$ 49.00	$ -	$ 59.00
060-56400	979	LOTS 369 TO 373	0.37	0.37	0.148			$ 48.00	$ 170.00	$ -	$ 218.00
060-56500	979	LOT 368	0.07	0.07	0.030			$ 10.00	$ 49.00	$ -	$ 59.00
060-56700	979	LOTS 366 & 367	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00
060-56710	979	LOTS 362 TO 365	0.29	0.29	0.118			$ 39.00	$ 143.00	$ -	$ 182.00
060-56800	979	LOTS 358 TO 361	0.29	0.29	0.118			$ 39.00	$ 143.00	$ -	$ 182.00
060-56900	979	LOT 357	0.07	0.07	0.030			$ 10.00	$ 49.00	$ -	$ 59.00
060-57000	979	LOT 356	0.07	0.07	0.030			$ 10.00	$ 49.00	$ -	$ 59.00
060-57100	979	LOTS 354 TO 355	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00
060-57188	979	LOTS 348 TO 353	0.44	0.44	0.177			$ 58.00	$ 199.00	$ -	$ 257.00
060-57200	979	LOT 347	0.07	0.07	0.030			$ 10.00	$ 49.00	$ -	$ 59.00
060-57202	979	LOT 346	0.07	0.07	0.030			$ 10.00	$ 49.00	$ -	$ 59.00
060-57500	1	PT LOT 33	0.39	0.39	0.157	15		$ 51.00	$ 181.00	$ -	$ 232.00
060-57600	1	PT LOTS 33 & 34	0.77	0.77	0.311	15		$ 101.00	$ 301.00	$ -	$ 402.00
060-57650	1	PT LOT 33	0.37	0.37	0.148			$ 48.00	$ 171.00	$ -	$ 219.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
060-57700	1	PT LOT 33	0.72	0.72	0.293			$ 96.00	$ 284.00	$ -	$ 380.00
060-57715	1	PT LOTS 33 & 34	0.86	0.86	0.349			$ 114.00	$ 328.00	$ -	$ 442.00
060-57800	1	PT LOT 33 & 34	1.33	1.33	0.538			$ 175.00	$ 440.00	$ -	$ 615.00
060-57900	1	PT LOT 33 & 34	1.39	1.39	0.562	13		$ 184.00	$ 460.00	$ -	$ 644.00
060-58000	1	PT LOT 33	0.48	0.48	0.192			$ 63.00	$ 210.00	$ -	$ 273.00
060-58002	1	PT LOT 33	0.55	0.55	0.224			$ 73.00	$ 231.00	$ -	$ 304.00
060-58004	1	PT LOT 33	0.55	0.55	0.224			$ 73.00	$ 231.00	$ -	$ 304.00
060-58010	1	PT LOTS 33 TO 35	2.44	2.44	0.989			$ 323.00	$ 659.00	$ -	$ 982.00
060-58100	1	PT LOTS 33 TO 35	4.03	4.03	1.630	12		$ 532.00	$ 839.00	$ -	$ 1,371.00
060-58200	1	PT LOT 33	0.56	0.56	0.226			$ 74.00	$ 233.00	$ -	$ 307.00
060-58205	12M-288	LOT 1	0.18	0.18	0.074			$ 24.00	$ 101.00	$ -	$ 125.00
060-58210	12M-288	LOT 2	0.18	0.18	0.074			$ 24.00	$ 101.00	$ -	$ 125.00
060-58215	12M-288	LOT 3	0.21	0.21	0.084	11		$ 27.00	$ 114.00	$ -	$ 141.00
060-58220	12M-288	LOT 4	0.22	0.22	0.091	11		$ 30.00	$ 121.00	$ -	$ 151.00
060-58225	12M-288	LOT 5	0.19	0.19	0.078			$ 26.00	$ 107.00	$ -	$ 133.00
060-58230	12M-288	LOT 6	0.19	0.19	0.078			$ 26.00	$ 107.00	$ -	$ 133.00
060-58235	12M-288	LOT 7	0.19	0.19	0.078			$ 26.00	$ 107.00	$ -	$ 133.00
060-58240	12M-288	LOT 8	0.19	0.19	0.079			$ 26.00	$ 107.00	$ -	$ 133.00
060-58245	12M-288	LOT 9	0.19	0.19	0.079			$ 26.00	$ 107.00	$ -	$ 133.00
060-58250	12M-288	LOT 10	0.19	0.19	0.078			$ 26.00	$ 107.00	$ -	$ 133.00
060-58270	12M-288	LOT 11	0.18	0.18	0.073			$ 24.00	$ 103.00	$ -	$ 127.00
060-58275	12M-288	LOT 12	0.18	0.18	0.074			$ 24.00	$ 100.00	$ -	$ 124.00
060-58280	12M-288	LOT 13	0.18	0.18	0.074			$ 24.00	$ 100.00	$ -	$ 124.00
060-58285	12M-288	LOT 14 PT LOT 15	0.27	0.27	0.110			$ 36.00	$ 137.00	$ -	$ 173.00
060-58295	12M-288	LOT 16	0.27	0.27	0.110			$ 36.00	$ 137.00	$ -	$ 173.00
060-58300	12M-288	LOT 17	0.18	0.18	0.074			$ 24.00	$ 101.00	$ -	$ 125.00
060-58305	12M-288	LOT 18	0.18	0.18	0.074			$ 24.00	$ 101.00	$ -	$ 125.00
060-58310	12M-288	LOT 19	0.18	0.18	0.074			$ 24.00	$ 101.00	$ -	$ 125.00
060-58315	12M-288	LOT 20	0.21	0.21	0.087			$ 28.00	$ 116.00	$ -	$ 144.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
060-58320	12M-288	LOT 21	0.33	0.33	0.132			$ 43.00	$ 157.00	$ -	$ 200.00
060-58325	12M-288	PT LOT 35	0.67	0.67	0.272			$ 89.00	$ 271.00	$ -	$ 360.00
060-58330	12M-288	LOT 23	0.30	0.30	0.122			$ 40.00	$ 148.00	$ -	$ 188.00
060-58335	12M-288	LOT 24	0.18	0.18	0.074			$ 24.00	$ 101.00	$ -	$ 125.00
060-58340	12M-288	LOT 25	0.18	0.18	0.074			$ 24.00	$ 101.00	$ -	$ 125.00
060-58345	12M-288	LOTS 26 & 27	0.41	0.41	0.166			$ 54.00	$ 191.00	$ -	$ 245.00
060-58355	12M-288	LOTS 33 & 34	0.27	0.27	0.110	11		$ 36.00	$ 137.00	$ -	$ 173.00
060-58360	12M-288	LOT 28	0.18	0.18	0.074			$ 24.00	$ 101.00	$ -	$ 125.00
060-58365	12M-288	LOT 29	0.18	0.18	0.074	11		$ 24.00	$ 101.00	$ -	$ 125.00
060-58370	12M-288	LOT 30	0.20	0.20	0.082			$ 27.00	$ 112.00	$ -	$ 139.00
060-58375	12M-288	LOT 31	0.39	0.39	0.159			$ 52.00	$ 183.00	$ -	$ 235.00
060-58380	1	PT LOT 33	0.49	0.49	0.198			$ 65.00	$ 210.00	$ -	$ 275.00
060-58390	1	PT LOT 33	0.45	0.45	0.182			$ 60.00	$ 205.00	$ -	$ 265.00
060-58400	1	PT LOTS 33 & 34	0.64	0.64	0.259			$ 85.00	$ 259.00	$ -	$ 344.00
060-58450	1	PT LOTS 33 TO 35	0.91	0.91	0.369			$ 121.00	$ 336.00	$ -	$ 457.00
060-58500	1	PT LOTS 33 TO 35	4.03	4.03	1.629	10		$ 531.00	$ 839.00	$ -	$ 1,370.00
060-58600	1	PT LOT 33	0.65	0.65	0.262			$ 86.00	$ 262.00	$ -	$ 348.00
060-58700	1	PT LOT 33	0.65	0.65	0.262			$ 86.00	$ 262.00	$ -	$ 348.00
060-58800	1	PT LOT 33	0.65	0.65	0.262			$ 86.00	$ 262.00	$ -	$ 348.00
060-58900	1	PT LOT 33	0.65	0.65	0.262			$ 86.00	$ 262.00	$ -	$ 348.00
060-59000	1	PT LOT 33	0.65	0.65	0.262			$ 86.00	$ 262.00	$ -	$ 348.00
060-59100	1	PT LOT 33	0.25	0.25	0.102			$ 33.00	$ 133.00	$ -	$ 166.00
060-59200	1	PT LOT 33	0.28	0.28	0.113			$ 37.00	$ 137.00	$ -	$ 174.00
060-59300	1	PT LOT 33	0.33	0.33	0.136			$ 44.00	$ 160.00	$ -	$ 204.00
060-59400	1	PT LOTS 33 & 34	6.42	6.42	2.598	8, 9, 10		$ 848.00	$ 1,102.00	$ -	$ 1,950.00
060-59800	12M-346	LOT 25	0.24	0.24	0.096			$ 31.00	$ 125.00	$ -	$ 156.00
060-59900	12M-346	LOT 24	0.18	0.18	0.071			$ 23.00	$ 102.00	$ -	$ 125.00
060-60000	12M-346	LOT 23	0.18	0.18	0.071			$ 23.00	$ 102.00	$ -	$ 125.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
060-60100	12M-346	LOT 22	0.18	0.18	0.071			$ 23.00	$ 102.00	$ -	$ 125.00
060-60200	12M-346	LOT 21	0.18	0.18	0.071			$ 23.00	$ 102.00	$ -	$ 125.00
060-60300	12M-346	LOT 20	0.18	0.18	0.071			$ 23.00	$ 102.00	$ -	$ 125.00
060-60400	12M-346	LOT 19	0.18	0.18	0.071			$ 23.00	$ 102.00	$ -	$ 125.00
060-60500	12M-346	LOT 18	0.18	0.18	0.071			$ 23.00	$ 101.00	$ -	$ 124.00
060-60600	12M-346	LOT 17	0.18	0.18	0.071			$ 23.00	$ 101.00	$ -	$ 124.00
060-60700	12M-346	LOT 16	0.18	0.18	0.071			$ 23.00	$ 101.00	$ -	$ 124.00
060-60800	12M-346	LOT 15	0.18	0.18	0.071			$ 23.00	$ 101.00	$ -	$ 124.00
060-60900	12M-346	LOT 14	0.18	0.18	0.071			$ 23.00	$ 101.00	$ -	$ 124.00
060-61000	12M-346	LOT 13	0.19	0.19	0.078			$ 25.00	$ 106.00	$ -	$ 131.00
060-62000	12M-346	LOT 12	0.17	0.17	0.069			$ 22.00	$ 98.00	$ -	$ 120.00
060-62100	12M-346	LOT 11	0.17	0.17	0.069			$ 22.00	$ 98.00	$ -	$ 120.00
060-62200	12M-346	LOT 10	0.17	0.17	0.069			$ 22.00	$ 98.00	$ -	$ 120.00
060-62300	12M-346	LOT 9	0.17	0.17	0.069			$ 22.00	$ 98.00	$ -	$ 120.00
060-62400	12M-346	LOT 8	0.17	0.17	0.069			$ 22.00	$ 98.00	$ -	$ 120.00
060-62500	12M-346	LOT 7	0.17	0.17	0.069			$ 22.00	$ 98.00	$ -	$ 120.00
060-62600	12M-346	LOT 6	0.17	0.17	0.069			$ 22.00	$ 98.00	$ -	$ 120.00
060-62700	12M-346	LOT 5	0.17	0.17	0.069			$ 22.00	$ 98.00	$ -	$ 120.00
060-62800	12M-346	LOT 4	0.17	0.17	0.069			$ 22.00	$ 98.00	$ -	$ 120.00
060-62900	12M-346	LOT 3	0.17	0.17	0.069			$ 22.00	$ 98.00	$ -	$ 120.00
060-63000	12M-346	LOT 2	0.16	0.16	0.063			$ 21.00	$ 94.00	$ -	$ 115.00
060-63100	12M-346	LOT 1	0.39	0.39	0.157			$ 51.00	$ 181.00	$ -	$ 232.00
080-00100	849	LOT 135	0.10	0.10	0.039			$ 13.00	$ 64.00	$ -	$ 77.00
080-00200	849	LOT 29 TO 43	1.00	1.00	0.406			$ 132.00	$ 357.00	$ -	$ 489.00
080-00300	749	LOTS 51 & 52	0.15	0.15	0.060			$ 19.00	$ 88.00	$ -	$ 107.00
080-00400	749	LOTS 53 & 54	0.14	0.14	0.056			$ 18.00	$ 86.00	$ -	$ 104.00
080-00500	749	LOTS 55 & 56	0.14	0.14	0.058			$ 19.00	$ 85.00	$ -	$ 104.00
080-00600	749	LOTS 57 TO 59	0.34	0.34	0.138			$ 45.00	$ 163.00	$ -	$ 208.00
080-00700	749	LOTS 60 & 61	0.21	0.21	0.083			$ 27.00	$ 114.00	$ -	$ 141.00
080-00800	749	LOTS 161 & 162	0.18	0.18	0.074			$ 24.00	$ 101.00	$ -	$ 125.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
080-00900	749	LOTS 164 TO 166	0.25	0.25	0.102			$ 33.00	$ 133.00	$ -	$ 166.00
080-01100	749	LOT 167	0.07	0.07	0.029			$ 10.00	$ 49.00	$ -	$ 59.00
080-01200	749	LOTS 249 TO 252	0.32	0.32	0.130			$ 42.00	$ 154.00	$ -	$ 196.00
080-01300	749	LOTS 253 TO 255	0.24	0.24	0.098			$ 32.00	$ 128.00	$ -	$ 160.00
080-26800	1650	LOT 22	7.11	7.11	2.878	1		$ 939.00	$ 1,047.00	$ -	$ 1,986.00
080-26900	1650	LOT 23	2.41	2.41	0.973	2		$ 318.00	$ 649.00	$ -	$ 967.00
080-27000	1650	LOT 24	0.53	0.53	0.215			$ 70.00	$ 221.00	$ -	$ 291.00
080-27100	1650	LOT 25	0.54	0.54	0.219			$ 71.00	$ 225.00	$ -	$ 296.00
080-27200	1650	LOT 26	0.54	0.54	0.219			$ 71.00	$ 225.00	$ -	$ 296.00
080-27300	1650	LOT 27	0.22	0.22	0.089			$ 29.00	$ 119.00	$ -	$ 148.00
080-27400	1650	LOT 28	0.22	0.22	0.089			$ 29.00	$ 119.00	$ -	$ 148.00
080-27500	1650	LOT 29	0.22	0.22	0.089			$ 29.00	$ 119.00	$ -	$ 148.00
080-27600	1650	LOT 30	0.22	0.22	0.089			$ 29.00	$ 119.00	$ -	$ 148.00
080-27700	1650	LOT 31	0.22	0.22	0.089			$ 29.00	$ 119.00	$ -	$ 148.00
080-27800	1650	LOT 32	0.19	0.19	0.078			$ 26.00	$ 107.00	$ -	$ 133.00
080-27900	1650	PT LOT 32 & 32	0.19	0.19	0.078			$ 26.00	$ 107.00	$ -	$ 133.00
080-28000	1650	PT LOT 32 & 33	0.22	0.22	0.087			$ 28.00	$ 116.00	$ -	$ 144.00
080-28100	1650	PT LOT 33	1.93	1.93	0.780			$ 254.00	$ 543.00	$ -	$ 797.00
080-28200	1650	LOT 25	3.03	3.03	1.226			$ 400.00	$ 706.00	$ -	$ 1,106.00
080-28300	1650	PT LOT 35	0.14	0.14	0.058			$ 19.00	$ 86.00	$ -	$ 105.00
080-28774	1650	LOT 22	5.54	2.14	0.864			$ 282.00	$ 393.00	$ -	$ 675.00
090-00100	849	LOTS 132 TO 134	0.21	0.21	0.084			$ 27.00	$ 114.00	$ -	$ 141.00
090-00200	849	LOTS 128 TO 131	0.28	0.28	0.111			$ 36.00	$ 139.00	$ -	$ 175.00
090-00300	849	LOT 125 TO LOT 127	0.21	0.21	0.084			$ 27.00	$ 114.00	$ -	$ 141.00
090-00400	849	LOTS 122 TO 124	0.21	0.21	0.084			$ 27.00	$ 114.00	$ -	$ 141.00
090-00500	849	LOTS 119 TO 121	0.21	0.21	0.084			$ 27.00	$ 114.00	$ -	$ 141.00
090-00700	849	S PT LOT 115	0.24	0.24	0.098			$ 32.00	$ 127.00	$ -	$ 159.00
090-00800	849	LOT 113 TO 114	0.17	0.17	0.070			$ 23.00	$ 99.00	$ -	$ 122.00
090-00850	849	LOTS 111 & 112	0.19	0.19	0.076			$ 25.00	$ 103.00	$ -	$ 128.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
090-00900	849	LOTS 109 & 110	0.15	0.15	0.060			$ 20.00	$ 89.00	$ -	$ 109.00
090-01000	849	LOTS 107 & 108	0.19	0.19	0.078			$ 25.00	$ 106.00	$ -	$ 131.00
090-01100	849	LOTS 104 TO 106	0.24	0.24	0.098			$ 32.00	$ 127.00	$ -	$ 159.00
090-01200	849	LOTS 101 & 102	0.17	0.17	0.070			$ 23.00	$ 99.00	$ -	$ 122.00
090-01300	849	LOTS 99 & 100	0.17	0.17	0.070			$ 23.00	$ 99.00	$ -	$ 122.00
090-01400	849	LOTS 95 TO 97	0.24	0.24	0.098			$ 32.00	$ 127.00	$ -	$ 159.00
090-01500	849	LOTS 91 TO 94	0.28	0.28	0.111			$ 36.00	$ 139.00	$ -	$ 175.00
090-01700	849	LOTS 88, 89 & 90	0.24	0.24	0.098			$ 32.00	$ 127.00	$ -	$ 159.00
090-01900	849	LOTS 85 TO 87	0.25	0.25	0.100			$ 32.00	$ 130.00	$ -	$ 162.00
090-02000	849	LOTS 82 TO 84	0.21	0.21	0.086			$ 28.00	$ 115.00	$ -	$ 143.00
090-02200	849	LOTS 79 TO 81	0.26	0.26	0.107			$ 35.00	$ 136.00	$ -	$ 171.00
090-02400	849	LOT 78	0.12	0.12	0.050			$ 16.00	$ 77.00	$ -	$ 93.00
090-02500	849	LOTS 71 TO 77	0.48	0.48	0.195			$ 64.00	$ 207.00	$ -	$ 271.00
090-02600	849	LOT 68 TO 70	0.21	0.21	0.084			$ 27.00	$ 114.00	$ -	$ 141.00
090-02700	849	LOT 62 TO LOT 67	0.41	0.41	0.167			$ 55.00	$ 193.00	$ -	$ 248.00
090-02800	849	LOT 60 & LOT 61	0.14	0.14	0.056			$ 18.00	$ 86.00	$ -	$ 104.00
090-02900	849	LOT 58 TO 59	0.14	0.14	0.056			$ 18.00	$ 86.00	$ -	$ 104.00
090-03000	849	LOTS 56 & 57	0.14	0.14	0.055			$ 18.00	$ 85.00	$ -	$ 103.00
090-03100	849	LOTS 54 & 55	0.21	0.21	0.083			$ 27.00	$ 113.00	$ -	$ 140.00
090-03200	849	LOTS 52 & 53	0.17	0.17	0.069			$ 23.00	$ 98.00	$ -	$ 121.00
090-03300	849	LOTS 48 TO 50	0.24	0.24	0.098			$ 32.00	$ 128.00	$ -	$ 160.00
090-03400	849	LOTS 44 TO 47	0.28	0.28	0.111			$ 36.00	$ 139.00	$ -	$ 175.00
090-03600	849	LOTS 27 & 28 LOTS	0.57	0.57	0.232			$ 76.00	$ 239.00	$ -	$ 315.00
090-03700	849	LOTS 14 TO 26	0.85	0.85	0.343			$ 112.00	$ 322.00	$ -	$ 434.00
090-03800	849	LOTS 10 TO 13	0.29	0.29	0.116			$ 38.00	$ 141.00	$ -	$ 179.00
090-03900	849	LOT 9	0.08	0.08	0.031			$ 10.00	$ 51.00	$ -	$ 61.00
090-04000	849	LOT 8	0.08	0.08	0.031			$ 10.00	$ 52.00	$ -	$ 62.00
090-04100	849	LOT 7	0.08	0.08	0.032			$ 10.00	$ 53.00	$ -	$ 63.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
090-04400	849	LOTS 1 TO 4	0.29	0.29	0.119			$ 39.00	$ 144.00	$ -	$ 183.00
090-04500	749	LOTS 1 TO 3	0.21	0.21	0.083			$ 27.00	$ 113.00	$ -	$ 140.00
090-04600	749	LOT 4	0.07	0.07	0.028			$ 9.00	$ 46.00	$ -	$ 55.00
090-04700	749	LOT 6 PT LOT 5	0.16	0.16	0.067			$ 22.00	$ 95.00	$ -	$ 117.00
090-04800	749	LOTS 7 & 8	0.14	0.14	0.056			$ 18.00	$ 87.00	$ -	$ 105.00
090-04900	749	LOTS 9 TO 13	0.35	0.35	0.141			$ 46.00	$ 166.00	$ -	$ 212.00
090-05000	749	LOT 14	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
090-05100	749	LOTS 15 TO 17	0.21	0.21	0.084			$ 28.00	$ 115.00	$ -	$ 143.00
090-05200	749	LOTS 18 & 19	0.14	0.14	0.056			$ 18.00	$ 87.00	$ -	$ 105.00
090-05300	749	LOTS 20 & 21	0.14	0.14	0.056			$ 18.00	$ 87.00	$ -	$ 105.00
090-05400	749	LOT 22	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
090-05500	749	LOTS 23 TO 27	0.35	0.35	0.140			$ 46.00	$ 165.00	$ -	$ 211.00
090-05600	749	LOTS 28 & 29	0.16	0.16	0.067			$ 22.00	$ 95.00	$ -	$ 117.00
090-05700	749	LOT 30	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
090-05800	749	LOTS 31 TO 39	0.63	0.63	0.253			$ 83.00	$ 253.00	$ -	$ 336.00
090-05900	749	LOTS 40 & 41	0.14	0.14	0.056			$ 18.00	$ 87.00	$ -	$ 105.00
090-06000	749	LOTS 42 & 43	0.14	0.14	0.056			$ 18.00	$ 87.00	$ -	$ 105.00
090-06100	749	LOTS 44 & 45	0.14	0.14	0.056			$ 18.00	$ 87.00	$ -	$ 105.00
090-06200	749	LOT 46	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
090-06300	749	LOTS 47 TO 49	0.27	0.27	0.109			$ 35.00	$ 138.00	$ -	$ 173.00
090-06500	749	PT LOT 62	0.05	0.05	0.018			$ 6.00	$ 31.00	$ -	$ 37.00
090-06605	749	LOTS 63 TO 65	0.21	0.21	0.084			$ 28.00	$ 115.00	$ -	$ 143.00
090-06700	749	LOTS 66 TO 72	0.49	0.49	0.197			$ 64.00	$ 209.00	$ -	$ 273.00
090-06800	749	LOT 73	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
090-06900	749	LOTS 74 & 75	0.14	0.14	0.056			$ 18.00	$ 87.00	$ -	$ 105.00
090-07000	749	LOT 76	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
090-07100	749	LOTS 77 & 78	0.14	0.14	0.056			$ 18.00	$ 87.00	$ -	$ 105.00
090-07200	749	LOTS 79 TO 82	0.28	0.28	0.113			$ 37.00	$ 140.00	$ -	$ 177.00
090-07300	749	LOT 83	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
090-07400	749	LOT 84	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
090-07500	749	LOTS 85 TO 88	0.29	0.29	0.117			$ 38.00	$ 141.00	$ -	$ 179.00
090-07600	749	LOT 89	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
090-07700	749	LOTS 90 TO 95	0.42	0.42	0.169			$ 55.00	$ 194.00	$ -	$ 249.00
090-07800	749	LOT 96	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
090-07900	749	LOTS 97 & 98	0.14	0.14	0.056			$ 18.00	$ 87.00	$ -	$ 105.00
090-08300	749	LOTS 99 TO 106	0.64	0.64	0.259			$ 84.00	$ 259.00	$ -	$ 343.00
090-08500	749	LOT 108	0.07	0.07	0.029			$ 10.00	$ 49.00	$ -	$ 59.00
090-08600	749	LOTS 109 & 110	0.15	0.15	0.062			$ 20.00	$ 92.00	$ -	$ 112.00
090-08700	749	LOTS 111 & 112	0.15	0.15	0.062			$ 20.00	$ 92.00	$ -	$ 112.00
090-08800	749	LOTS 113 & 114	0.15	0.15	0.062			$ 20.00	$ 92.00	$ -	$ 112.00
090-08900	749	LOT 116 PT LOT 115	0.16	0.16	0.067			$ 22.00	$ 95.00	$ -	$ 117.00
090-09100	749	LOTS 117 TO 121	0.35	0.35	0.141			$ 46.00	$ 166.00	$ -	$ 212.00
090-09200	749	LOT 122	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
090-09300	749	LOTS 123 TO 132	0.70	0.70	0.282			$ 92.00	$ 281.00	$ -	$ 373.00
090-09400	749	LOT 133	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
090-09500	749	LOTS 134 TO 137	0.28	0.28	0.112			$ 37.00	$ 139.00	$ -	$ 176.00
090-09600	749	LOTS 138 TO 152	1.07	1.07	0.433			$ 141.00	$ 380.00	$ -	$ 521.00
090-09700	749	LOT 153	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
090-09800	749	LOT 154	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
090-09900	749	LOTS 155 TO 157	0.21	0.21	0.084			$ 28.00	$ 115.00	$ -	$ 143.00
090-10000	749	LOT 158	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
090-10103	749	PT LOT 159	0.04	0.04	0.016			$ 5.00	$ 27.00	$ -	$ 32.00
090-10300	749	LOTS 169 TO 172	0.36	0.36	0.145			$ 47.00	$ 171.00	$ -	$ 218.00
090-10400	749	LOTS 173 TO 181	0.68	0.68	0.274			$ 89.00	$ 274.00	$ -	$ 363.00
090-10500	749	LOT 183	0.07	0.07	0.029			$ 10.00	$ 49.00	$ -	$ 59.00
090-10600	749	LOT 184	0.07	0.07	0.029			$ 10.00	$ 49.00	$ -	$ 59.00
090-10800	749	LOTS 231 TO 233	0.36	0.36	0.146			$ 48.00	$ 168.00	$ -	$ 216.00
090-10900	749	LASALLE PARK	1.01	1.01	0.410			$ 134.00	$ 360.00	$ -	$ 494.00
090-11000	749	LOTS 187 TO 190	0.51	0.51	0.205			$ 67.00	$ 211.00	$ -	$ 278.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
090-11100	749	LOTS 192 & 193	0.23	0.23	0.095			$ 31.00	$ 123.00	$ -	$ 154.00
090-11200	749	LOT 194	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
090-11300	749	LOTS 195 TO 204	0.73	0.73	0.295			$ 96.00	$ 286.00	$ -	$ 382.00
090-11400	749	LOTS 206 & 207	0.17	0.17	0.069			$ 23.00	$ 98.00	$ -	$ 121.00
090-11500	749	LOTS 208 TO 210	0.25	0.25	0.103			$ 34.00	$ 134.00	$ -	$ 168.00
090-11600	749	LOTS 211 & 212	0.24	0.24	0.097			$ 32.00	$ 127.00	$ -	$ 159.00
090-11700	749	BLK F	0.18	0.18	0.072			$ 24.00	$ 103.00	$ -	$ 127.00
090-11800	749	LOTS 215 & 216	0.22	0.22	0.089			$ 29.00	$ 119.00	$ -	$ 148.00
090-11900	749	LOT 217	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
090-12000	749	LOTS 218 TO 226	0.67	0.67	0.273			$ 89.00	$ 273.00	$ -	$ 362.00
090-12100	749	PT LOT 234	0.10	0.10	0.040			$ 13.00	$ 67.00	$ -	$ 80.00
090-12400	749	LOTS 235 TO 247	0.94	0.94	0.380			$ 124.00	$ 346.00	$ -	$ 470.00
090-12500	749	LOTS 256 TO 264	0.65	0.65	0.262			$ 86.00	$ 262.00	$ -	$ 348.00
090-12600	749	LOTS 265 TO 267	0.21	0.21	0.084			$ 28.00	$ 115.00	$ -	$ 143.00
090-12700	749	LOT 268 TO 271	0.28	0.28	0.113			$ 37.00	$ 140.00	$ -	$ 177.00
090-12800	749	LOT 272	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
090-12900	749	LOT 273 TO 275	0.21	0.21	0.084			$ 28.00	$ 115.00	$ -	$ 143.00
090-13000	749	LOT 276	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
090-13100	749	LOT 277 LOT 278	0.14	0.14	0.056			$ 18.00	$ 87.00	$ -	$ 105.00
090-13200	749	LOT 279 TO LOT 281	0.22	0.22	0.089			$ 29.00	$ 119.00	$ -	$ 148.00
090-13300	749	LOT 282	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
090-13400	749	N PT LOT 283	0.06	0.06	0.026			$ 9.00	$ 44.00	$ -	$ 53.00
090-13500	749	S PT LOT 283	0.00	0.00	0.002			$ 1.00	$ 3.00	$ -	$ 4.00
090-13600	749	LOT 284 TO 286	0.21	0.21	0.084			$ 28.00	$ 115.00	$ -	$ 143.00
090-13700	749	LOTS 287 TO 293	0.49	0.49	0.197			$ 64.00	$ 209.00	$ -	$ 273.00
090-13900	749	LOT 294	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
090-14000	749	LOT 295	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
090-14100	749	LOT 296 TO 298	0.21	0.21	0.084			$ 28.00	$ 115.00	$ -	$ 143.00
090-14200	749	LOT 299	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
090-14300	749	LOT 300	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
090-14400	749	PT LOT 301	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
090-14500	749	LOTS 302 & 303	0.17	0.17	0.069			$ 22.00	$ 98.00	$ -	$ 120.00
090-14550	749	LOTS 304 & 305	0.17	0.17	0.068			$ 22.00	$ 97.00	$ -	$ 119.00
090-14600	749	PT LOTS 306, 307	0.17	0.17	0.068			$ 22.00	$ 97.00	$ -	$ 119.00
090-14700	749	LOT 308 PT LOT 309	0.17	0.17	0.070			$ 23.00	$ 100.00	$ -	$ 123.00
090-14800	749	LOTS 310 & 311	0.22	0.22	0.090			$ 29.00	$ 120.00	$ -	$ 149.00
090-14900	749	LOT 312	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
090-15000	749	LOT 313	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
090-15100	749	LOTS 314 & 315	0.14	0.14	0.056			$ 18.00	$ 87.00	$ -	$ 105.00
090-15200	749	LOT 316	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
090-15300	749	LOTS 317 & 318	0.14	0.14	0.056			$ 18.00	$ 87.00	$ -	$ 105.00
090-15400	749	LOTS 319 TO 328	0.70	0.70	0.282			$ 92.00	$ 281.00	$ -	$ 373.00
090-15900	749	LOT 329	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
090-16000	749	LOTS 330 & 331	0.14	0.14	0.057			$ 18.00	$ 87.00	$ -	$ 105.00
090-16100	749	LOTS 332 TO 336	0.37	0.37	0.151			$ 49.00	$ 174.00	$ -	$ 223.00
090-16400	749	LOT 337	0.07	0.07	0.028			$ 9.00	$ 47.00	$ -	$ 56.00
090-16500	749	LOTS 338 TO 351	0.97	0.97	0.394			$ 129.00	$ 358.00	$ -	$ 487.00
090-17100	749	LOTS 352 & 353	0.21	0.21	0.083			$ 27.00	$ 113.00	$ -	$ 140.00
100-25200	793	LOT 168 PT LOT 167	0.10	0.10	0.042			$ 14.00	$ 67.00	$ -	$ 81.00
100-25300	793	LOT 169 TO LOT 171	0.21	0.21	0.086			$ 28.00	$ 115.00	$ -	$ 143.00
100-25400	793	LOTS 172 & 173	0.16	0.16	0.066			$ 22.00	$ 94.00	$ -	$ 116.00
100-25500	793	LOTS 174 & 175	0.17	0.17	0.070			$ 23.00	$ 100.00	$ -	$ 123.00
100-25600	793	LOT 177 TO 178	0.17	0.17	0.070			$ 23.00	$ 100.00	$ -	$ 123.00
100-25700	793	LOTS 179 & 180	0.17	0.17	0.070			$ 23.00	$ 100.00	$ -	$ 123.00
100-25800	793	LOTS 182 & 183	0.17	0.17	0.070			$ 23.00	$ 100.00	$ -	$ 123.00
100-25900	793	LOT 184 TO 185	0.17	0.17	0.070			$ 23.00	$ 100.00	$ -	$ 123.00
100-26000	793	LOT 187 TO 188	0.17	0.17	0.070			$ 23.00	$ 100.00	$ -	$ 123.00
100-26100	793	LOTS 189 & 190	0.23	0.23	0.095			$ 31.00	$ 123.00	$ -	$ 154.00
100-26200	793	LOTS 191 TO 193	0.34	0.34	0.137			$ 45.00	$ 161.00	$ -	$ 206.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
100-26300	793	LOTS 194 TO 198	0.75	0.75	0.304			$ 99.00	$ 295.00	$ -	$ 394.00
100-26400	793	LOTS 199 & 200	0.19	0.19	0.077			$ 25.00	$ 104.00	$ -	$ 129.00
100-26500	793	LOTS 202 TO 203	0.19	0.19	0.077			$ 25.00	$ 104.00	$ -	$ 129.00
100-26600	793	LOTS 204 TO 213	1.73	1.73	0.701			$ 229.00	$ 531.00	$ -	$ 760.00
100-26700	793	LOTS 520 & 521	0.17	0.17	0.071			$ 23.00	$ 100.00	$ -	$ 123.00
100-26720	793	LOT 523	0.17	0.17	0.070			$ 23.00	$ 99.00	$ -	$ 122.00
100-26750	793	PT LOT 524	0.16	0.16	0.066			$ 21.00	$ 94.00	$ -	$ 115.00
100-26770	793	LOT 525	0.16	0.16	0.066			$ 21.00	$ 94.00	$ -	$ 115.00
100-26800	793	LOT 527	0.16	0.16	0.066			$ 21.00	$ 94.00	$ -	$ 115.00
100-26820	793	LOTS 529 & 530	0.16	0.16	0.065			$ 21.00	$ 93.00	$ -	$ 114.00
100-26850	793	LOT 532	0.16	0.16	0.066			$ 21.00	$ 94.00	$ -	$ 115.00
100-26870	793	LOT 534	0.16	0.16	0.066			$ 21.00	$ 94.00	$ -	$ 115.00
100-26900	793	LOTS 536 & 537	0.16	0.16	0.066			$ 21.00	$ 94.00	$ -	$ 115.00
100-26920	793	LOT 539	0.16	0.16	0.066			$ 21.00	$ 94.00	$ -	$ 115.00
100-26950	793	LOTS 541 & 542	0.18	0.18	0.071			$ 23.00	$ 101.00	$ -	$ 124.00
100-27000	793	LOT 544	0.32	0.32	0.129			$ 42.00	$ 156.00	$ -	$ 198.00
100-27050	793	PT LOTS 545 TO 548	0.39	0.39	0.159			$ 52.00	$ 183.00	$ -	$ 235.00
100-27100	793	PT LOTS 878 TO 883	0.34	0.34	0.137			$ 45.00	$ 162.00	$ -	$ 207.00
100-27150	793	LOT 884	0.19	0.19	0.077			$ 25.00	$ 106.00	$ -	$ 131.00
100-27200	793	LOTS 886 & 887	0.19	0.19	0.079			$ 26.00	$ 108.00	$ -	$ 134.00
100-27250	793	LOTS 888 & 889	0.19	0.19	0.079			$ 26.00	$ 107.00	$ -	$ 133.00
100-27300	793	LOTS 891 & 892	0.18	0.18	0.075			$ 24.00	$ 102.00	$ -	$ 126.00
100-27400	793	LOTS 893 & 894	0.19	0.19	0.077			$ 25.00	$ 105.00	$ -	$ 130.00
100-27500	793	LOTS 896 & 897	0.19	0.19	0.077			$ 25.00	$ 104.00	$ -	$ 129.00
100-27800	793	LOTS 898, 899, 900	0.23	0.23	0.092			$ 30.00	$ 122.00	$ -	$ 152.00
100-27900	793	LOTS 901 & 902	0.19	0.19	0.076			$ 25.00	$ 104.00	$ -	$ 129.00
100-27920	793	LOT 904	0.15	0.15	0.061			$ 20.00	$ 90.00	$ -	$ 110.00
100-27950	793	LOTS 905 & 906	0.15	0.15	0.061			$ 20.00	$ 91.00	$ -	$ 111.00
100-27970	793	LOTS 907 & 908	0.15	0.15	0.061			$ 20.00	$ 91.00	$ -	$ 111.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
100-28000	793	LOTS 909 TO 916	0.61	0.61	0.245			$ 80.00	$ 245.00	$ -	$ 325.00
100-28100	793	LOTS 917 TO 919	0.35	0.35	0.143			$ 47.00	$ 170.00	$ -	$ 217.00
100-28200	793	LOTS 920 TO 923	0.35	0.35	0.140			$ 46.00	$ 165.00	$ -	$ 211.00
100-28300	793	LOTS 1210,1211	0.21	0.21	0.086			$ 28.00	$ 115.00	$ -	$ 143.00
100-28320	793	LOTS 1215 & 1216	0.15	0.15	0.060			$ 20.00	$ 90.00	$ -	$ 110.00
100-28350	793	LOTS 1217 & 1218	0.15	0.15	0.060			$ 20.00	$ 90.00	$ -	$ 110.00
100-28370	793	LOTS 1219 & 1220	0.15	0.15	0.061			$ 20.00	$ 90.00	$ -	$ 110.00
100-28400	793	LOTS 1221 & 1222	0.15	0.15	0.061			$ 20.00	$ 90.00	$ -	$ 110.00
100-28420	793	LOTS 1223 & 1224	0.15	0.15	0.061			$ 20.00	$ 90.00	$ -	$ 110.00
100-28450	793	LOTS 1225 & 1226	0.15	0.15	0.061			$ 20.00	$ 90.00	$ -	$ 110.00
100-28470	793	LOTS 1227 & 1228	0.15	0.15	0.061			$ 20.00	$ 90.00	$ -	$ 110.00
100-28490	793	PT LOT 1230	0.19	0.19	0.076			$ 25.00	$ 103.00	$ -	$ 128.00
100-28550	793	LOTS 1231 & 1232	0.15	0.15	0.060			$ 20.00	$ 90.00	$ -	$ 110.00
100-28650	793	LOTS 1233 & 1234	0.15	0.15	0.060			$ 20.00	$ 90.00	$ -	$ 110.00
100-28750	793	LOTS 1235 & 1236	0.15	0.15	0.060			$ 20.00	$ 90.00	$ -	$ 110.00
100-28800	793	LOTS 1237 & 1238	0.15	0.15	0.060			$ 20.00	$ 89.00	$ -	$ 109.00
100-28820	793	LOTS 1239 & 1240	0.15	0.15	0.060			$ 20.00	$ 89.00	$ -	$ 109.00
100-28850	793	LOTS 1241 & 1242	0.15	0.15	0.060			$ 20.00	$ 89.00	$ -	$ 109.00
100-28870	793	LOTS 1243 & 1244	0.15	0.15	0.060			$ 20.00	$ 89.00	$ -	$ 109.00
100-29100	793	PT LOTS 1245, 1246	0.15	0.15	0.060			$ 20.00	$ 89.00	$ -	$ 109.00
100-29120	793	LOTS 1247 & 1248	0.19	0.19	0.078			$ 25.00	$ 106.00	$ -	$ 131.00
100-29150	793	PT LOT 1249	0.15	0.15	0.061			$ 20.00	$ 90.00	$ -	$ 110.00
100-29170	793	LOTS 1250 TO 1252	0.40	0.40	0.163			$ 53.00	$ 187.00	$ -	$ 240.00
100-29180	793	BLK AB	0.12	0.12	0.049			$ 16.00	$ 78.00	$ -	$ 94.00
100-29600	650	PT LOTS 436 TO 441	0.25	0.25	0.101			$ 33.00	$ 131.00	$ -	$ 164.00
100-29610	650	PT LOTS 436 TO 441	0.23	0.23	0.095			$ 31.00	$ 124.00	$ -	$ 155.00
100-29620	650	LOTS 433 & 434	0.21	0.21	0.085			$ 28.00	$ 114.00	$ -	$ 142.00
100-29650	650	LOTS 431 & 432	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00
100-29670	650	LOTS 429 & 430	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
100-29700	650	LOTS 427 & 428	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00
100-29720	650	LOTS 425 & 426	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00
100-29750	650	LOTS 423 & 424	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00
100-29770	650	LOTS 421 & 422	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00
100-29790	650	PT LOTS 419 & 420	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00
100-29800	650	LOTS 417 & 418	0.16	0.16	0.066			$ 22.00	$ 94.00	$ -	$ 116.00
100-29820	650	PT LOTS 415 & 416	0.17	0.17	0.070			$ 23.00	$ 99.00	$ -	$ 122.00
100-29850	650	LOT 414	0.17	0.17	0.070			$ 23.00	$ 99.00	$ -	$ 122.00
100-29870	650	LOTS 412 & 413	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00
100-29890	650	LOTS 410 & 411	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00
100-29900	650	LOTS 408 & 409	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00
100-29920	650	LOTS 406 & 407	0.16	0.16	0.064			$ 21.00	$ 95.00	$ -	$ 116.00
100-29950	650	LOT 404	0.16	0.16	0.064			$ 21.00	$ 95.00	$ -	$ 116.00
100-29970	650	LOTS 401 & 402	0.18	0.18	0.071			$ 23.00	$ 102.00	$ -	$ 125.00
100-30000	650	LOTS 63 TO 65	0.26	0.26	0.104			$ 34.00	$ 135.00	$ -	$ 169.00
100-30100	650	LOTS 61 & 62	0.17	0.17	0.067			$ 22.00	$ 96.00	$ -	$ 118.00
100-30200	650	LOTS 59 & 60	0.30	0.30	0.120			$ 39.00	$ 145.00	$ -	$ 184.00
100-30300	650	LOT 500	0.33	0.33	0.134			$ 44.00	$ 158.00	$ -	$ 202.00
100-30350	650	PT LOTS 495 TO 499	0.16	0.16	0.066			$ 21.00	$ 94.00	$ -	$ 115.00
100-30400	650	PT LOTS 493 TO 496	0.16	0.16	0.065			$ 21.00	$ 93.00	$ -	$ 114.00
100-30450	650	PT LOTS 491 TO 493	0.14	0.14	0.057			$ 19.00	$ 85.00	$ -	$ 104.00
100-30470	650	PT LOTS 489 TO 491	0.14	0.14	0.057			$ 19.00	$ 85.00	$ -	$ 104.00
100-30500	650	PT LOTS 487 TO 489	0.14	0.14	0.057			$ 19.00	$ 85.00	$ -	$ 104.00
100-30550	650	PT LOTS 486 & 487	0.14	0.14	0.058			$ 19.00	$ 85.00	$ -	$ 104.00
100-30600	650	PT LOT 485	0.14	0.14	0.058			$ 19.00	$ 86.00	$ -	$ 105.00
100-30650	650	PT LOTS 483 & 484	0.14	0.14	0.058			$ 19.00	$ 86.00	$ -	$ 105.00
100-30670	650	PT LOTS 481 & 482	0.14	0.14	0.058			$ 19.00	$ 85.00	$ -	$ 104.00
100-30700	650	PT LOTS 479 & 480	0.14	0.14	0.058			$ 19.00	$ 85.00	$ -	$ 104.00
100-30750	650	PT LOTS 477 & 478	0.14	0.14	0.058			$ 19.00	$ 85.00	$ -	$ 104.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
100-30800	650	PT LOTS 475 & 476	0.14	0.14	0.058			$ 19.00	$ 85.00	$ -	$ 104.00
100-30850	650	PT LOTS 473 & 474	0.14	0.14	0.058			$ 19.00	$ 85.00	$ -	$ 104.00
100-30900	650	PT LOTS 471 & 472	0.14	0.14	0.057			$ 19.00	$ 85.00	$ -	$ 104.00
100-30950	650	PT LOTS 468 TO 470	0.15	0.15	0.062			$ 20.00	$ 92.00	$ -	$ 112.00
100-31000	650	PT LOTS 466 TO 468	0.18	0.18	0.072			$ 23.00	$ 102.00	$ -	$ 125.00
100-31100	650	PT LOTS 460 TO 465	0.26	0.26	0.105			$ 34.00	$ 134.00	$ -	$ 168.00
100-31200	650	PT LOTS 459 TO 465	0.31	0.31	0.126			$ 41.00	$ 153.00	$ -	$ 194.00
100-31400	650	LOT 540 & 536	0.45	0.45	0.181			$ 59.00	$ 203.00	$ -	$ 262.00
100-31500	650	PT LOTS 536 TO 539	0.23	0.23	0.094			$ 31.00	$ 123.00	$ -	$ 154.00
100-31520	650	PT LOTS 533 TO 535	0.19	0.19	0.076			$ 25.00	$ 103.00	$ -	$ 128.00
100-31550	650	PT LOTS 531 TO 533	0.14	0.14	0.057			$ 19.00	$ 85.00	$ -	$ 104.00
100-31570	650	PT LOTS 529 TO 531	0.14	0.14	0.057			$ 19.00	$ 85.00	$ -	$ 104.00
100-31590	650	PT LOTS 527 TO 529	0.14	0.14	0.057			$ 19.00	$ 85.00	$ -	$ 104.00
100-31600	650	PT LOTS 525 TO 527	0.14	0.14	0.057			$ 19.00	$ 85.00	$ -	$ 104.00
100-31620	650	PT LOTS 523 TO 525	0.14	0.14	0.057			$ 19.00	$ 85.00	$ -	$ 104.00
100-31650	650	PT LOTS 521 TO 523	0.14	0.14	0.057			$ 19.00	$ 85.00	$ -	$ 104.00
100-31670	650	PT LOTS 519 TO 521	0.14	0.14	0.057			$ 19.00	$ 85.00	$ -	$ 104.00
100-31680	650	PT LOTS 517 TO 519	0.16	0.16	0.067			$ 22.00	$ 95.00	$ -	$ 117.00
100-31690	650	PT LOT 515	0.17	0.17	0.067			$ 22.00	$ 96.00	$ -	$ 118.00
100-31700	650	PT LOTS 513 TO 515	0.15	0.15	0.063			$ 20.00	$ 93.00	$ -	$ 113.00
100-31720	650	PT LOTS 510 TO 512	0.15	0.15	0.063			$ 20.00	$ 93.00	$ -	$ 113.00
100-31740	650	PT LOTS 508 TO 510	0.16	0.16	0.063			$ 21.00	$ 93.00	$ -	$ 114.00
100-31750	650	PT LOTS 506 TO 508	0.16	0.16	0.064			$ 21.00	$ 96.00	$ -	$ 117.00
100-31770	650	PT LOTS 503 TO 506	0.16	0.16	0.064			$ 21.00	$ 95.00	$ -	$ 116.00
100-31790	650	LOTS 501 & 502	0.24	0.24	0.098			$ 32.00	$ 128.00	$ -	$ 160.00
100-31800	650	LOTS 57 & 58	0.25	0.25	0.100			$ 33.00	$ 130.00	$ -	$ 163.00
100-32000	650	LOTS 54 & 55	0.22	0.22	0.091			$ 30.00	$ 121.00	$ -	$ 151.00
100-32100	650	PT LOTS 52 & 53	0.19	0.19	0.076			$ 25.00	$ 104.00	$ -	$ 129.00
100-32200	650	LOT 51 & 52	0.15	0.15	0.061			$ 20.00	$ 91.00	$ -	$ 111.00
100-32350	650	LOTS 48 49 & 50	0.23	0.23	0.095			$ 31.00	$ 124.00	$ -	$ 155.00

Tax Roll No.	Con. or Plan No.	Lot or Part of Lot	Acres Owned	Acres Afft'd	Hectares Afft'd	Bridge Number	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
100-32370	650	LOTS 46 & 47	0.16	0.16	0.063			$ 21.00	$ 94.00	$ -	$ 115.00
100-32400	650	LOTS 44 & 45	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00
100-32470	650	LOTS 42 & 43	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00
100-32500	650	LOTS 40 & 41	0.15	0.15	0.059			$ 19.00	$ 88.00	$ -	$ 107.00
100-32600	650	LOTS 38 & 39	0.22	0.22	0.090			$ 29.00	$ 120.00	$ -	$ 149.00
100-32650	650	LOT 35 & 36	0.17	0.17	0.069			$ 22.00	$ 98.00	$ -	$ 120.00
100-32700	650	LOTS 33 & 34	0.16	0.16	0.063			$ 21.00	$ 94.00	$ -	$ 115.00
100-32750	650	LOTS 31 & 32	0.16	0.16	0.064			$ 21.00	$ 94.00	$ -	$ 115.00
100-32800	650	LOTS 29 & 30	0.16	0.16	0.064			$ 21.00	$ 94.00	$ -	$ 115.00
100-32850	650	LOTS 27 & 28	0.16	0.16	0.064			$ 21.00	$ 94.00	$ -	$ 115.00
100-32900	650	LOTS 25 & 26	0.16	0.16	0.064			$ 21.00	$ 94.00	$ -	$ 115.00
100-33000	650	LOTS 23 & 24	0.16	0.16	0.064			$ 21.00	$ 94.00	$ -	$ 115.00
100-33200	650	LOTS 21 & 22	0.16	0.16	0.064			$ 21.00	$ 95.00	$ -	$ 116.00
100-33250	650	LOTS 19 & 20	0.16	0.16	0.064			$ 21.00	$ 95.00	$ -	$ 116.00
100-33300	650	LOTS 17 & 18	0.21	0.21	0.083			$ 27.00	$ 114.00	$ -	$ 141.00
100-33400	650	LOT 16	0.16	0.16	0.066			$ 22.00	$ 94.00	$ -	$ 116.00
100-33500	650	LOTS 14 & 15	0.16	0.16	0.063			$ 21.00	$ 94.00	$ -	$ 115.00
100-33600	650	LOTS 11, 12 & 13	0.23	0.23	0.095			$ 31.00	$ 124.00	$ -	$ 155.00
340-16500	1	PT LOT 3	16.73	3.26	1.320			$ 431.00	$ 400.00	$ -	$ 831.00
		Total on Privately Owned - Non-Agricultural Lands						**$ 36,341.00**	**$ 119,883.00**	**$ -**	**$ 156,224.00**
		TOTAL ASSESSMENT	367.12	148.57				**$ 60,578.00**	**$ 181,732.00**	**$ 131,690.00**	**$ 374,000.00**

1 Hectare = 2.471 Acres
Project No.REI2018D003
July 26th, 2023

SPECIFICATIONS

ST. MICHAELS DRAIN & BRANCH

(Geographic Township of Sandwich West)

TOWN OF LASALLE

I. GENERAL SCOPE OF WORK

The St. Michaels Drain comprises of an open drain generally running west through Lot 33, Concession 1 from Malden Road to a point west of Matchette Road, then turning northwesterly, draining to its outlet in Turkey Creek, with the Branch Drain running through Lot 32 from Malden Road westerly and then turning northerly and connecting to the main drain in Lot 33 at Station 1+862 of the main drain east of St. Michaels Drive in the geographic township of Sandwich West, Town of LaSalle. The work on the drains will extend from the outlet as noted on the plans and proceed southerly and easterly to the upstream end of the drains. The work under this project generally comprises of improvements to the open drain to provide a suitable cross section for conveyance of flows, bridge repairs and improvements, and cleaning of the other bridges along the course of the drain. Work on the drain includes excavation, supply and installation of quarried limestone on filter cloth general erosion protection and rock chute inlets and any tile end repairs. The proposed work is intended to address the repair and improvement of the open drain, any tile end improvements, and erosion protection in accordance with current standards.

All work shall be carried out in accordance with these specifications, the plans forming part of this drainage project, as well as the Standard Details included in **Appendix "REI-C"**. All work carried out under this project shall be completed to the full satisfaction of the Manager of Engineering and the Consulting Engineer.

II. E.R.C.A. AND D.F.O. CONSIDERATIONS

The Contractor will be required to implement stringent erosion and sedimentation controls during the course of the work to help minimize the amount of silt and sediment being carried downstream into the St. Michaels Drain and Turkey Creek outlet. It is intended that work on this project be carried out during relatively dry weather to ensure proper site and drain conditions and to avoid conflicts with sediment being deposited into the outlet drainage systems. All disturbed areas shall be restored as quickly as possible with grass seeding and mulching installed to ensure a protective cover and to minimize any erosion from the work site subsequent to construction. The Contractor may be required to provide temporary silt fencing and straw bales as outlined further in these specifications.

All of the work shall be carried out in accordance with any permits or authorizations issued by the Essex Region Conservation Authority (E.R.C.A.) or the Department of Fisheries and Oceans (D.F.O.), copies of which will be provided, if available, and the notes in **Appendix "REI-A"**. The Contractor is advised that no work may be carried out in the existing drain from March 15th to July 15th of any given year because the drain is directly connected to a downstream channel that is classified as sensitive to impacts on aquatic life and habitat by E.R.C.A. and D.F.O.

As part of its work, the Contractor will implement the following measures that will ensure that any potential adverse effects on fish and fish habitat will be mitigated:

a) As per standard requirements, work will not be conducted at times when flows in the drain are elevated due to local rain events, storms, or seasonal floods. Work will be done in the dry.

b) All disturbed soils on the drain banks and within the channel, including spoil, must be stabilized immediately upon completion of work. The restoration of the site must be

completed to a like or better condition to what existed prior to the works. The spoil material must be hauled away and disposed of at a suitable site or spread an appropriate distance from the top of the drain bank to ensure that it is not washed back into the drain.

c) To prevent sediment entry into the Drain, in the event of an unexpected rainfall, silt barriers and/or traps must be placed in the channel during the works and until the site has been stabilized. All sediment and erosion control measures are to be in accordance with related Ontario Provincial Standards. It is incumbent on the proponent and their Contractors to ensure that sediment and erosion control measures are functioning properly and are maintained and upgraded as required.

d) Silt or sand accumulated in the barrier traps must be removed and stabilized on land once the site is stabilized.

e) All activities including maintenance procedures should be controlled to prevent the entry of petroleum products, debris, rubble, concrete, or other deleterious substances into the water. Vehicular refuelling and maintenance should be conducted away from the water.

III. M.N.R.F. & M.E.C.P. CONSIDERATIONS

The Contractor is to note that this project has gone through the Ministry of Natural Resources and Forestry (M.N.R.F.) screening process by way of a Species at Risk (S.A.R.) Municipal Agreement review. A copy of the relevant information that was provided in the Agreement is included herein as part of **Appendix "REI-B"**. The Town also has the Dillon Consulting report for mitigation measures when working on municipal drains and these measures are also included in the **Appendix "REI-B"**.

The Contractor is to review **Appendix "REI-B"** in detail and is required to comply, in all regards, with the contents of said M.N.R.F. and Dillon Consulting report information, or any future requirements, and follow the special requirements therein included, during construction.

Notwithstanding the above, the Contractor is advised that the Town has signed an **Agreement** with the Ministry of Natural Resources and Forestry (M.N.R.F.) regarding the maintenance operations on Municipal drains and the Endangered Species Act (E.S.A.), 2007. We have also checked the Ministry of Environment, Conservation and Parks (M.E.C.P.) online mapping from the N.H.I.C. site and included the information in **Appendix "REI-B"**. The Contractor shall monitor the work site and carry out any mitigation requirements for protecting species. The Manager of Engineering has reviewed the endangered species maps and any concerns will be provided in **Appendix "REI-B"**. Certain species such as turtles and snakes are mobile and may be encountered during construction. Therefore, the "**SCHEDULE C MITIGATION PLAN"** of the **Agreement** (pages 13 through 23) has been included in **Appendix "REI-B"** in its entirety for further information and use by the Contractor.

The Contractor shall contact the Manager of Engineering if an endangered species is encountered during construction. The Contractor shall be responsible for providing the necessary equipment and materials outlined in the "**SCHEDULE C MITIGATION PLAN"** to address the handling of any endangered species encountered during the course of the construction work. The Contractor shall cooperate fully and assist the Manager of Engineering or M.N.R.F. or M.E.C.P. staff in the proper handling of the endangered species as outlined in the "**MITIGATION PLAN"**, and as may be further directed by the Manager of Engineering or the M.N.R.F. and M.E.C.P. representatives, and shall govern all its operations accordingly.

IV. ACCESS TO WORK

The Contractor is advised that the majority of the work to be carried out on this project extends along the south and west side of the St. Michaels Drain & Branch and the east side of the drain north of Reaume Road. The Contractor shall have access for a minimum width of 6 metres (20

feet) abutting the proposed drainage works. The Contractor may utilize the work area as necessary, to permit the completion of all of the work required to be carried out for this project along with an area sufficient to load up and haul away all materials for disposal at a suitable site. The Contractor shall also have access along the roadway boulevard at lawn areas and through the driveways from the Roads as necessary to access the open drain and carry out the work on the existing access bridges as set out on the plans and in these specifications, along with a sufficient area in the vicinity of the bridges to carry out the removal of the sediment, installation of the pipe extension or replacement pipe, and ancillary work.

The Contractor shall ensure that the traveling public is protected at all times while utilizing the roadway for its access. The Contractor shall provide traffic control, including signs and flag persons when required.

Throughout the course of the work, it is imperative that the Contractor protect as much landscaping and vegetation as possible when accessing along the drain. This will be of particular concern along the grass buffer and driveway areas abutting the drain. Any accesses or areas used in carrying out the works are to be fully restored to their original conditions by the Contractor at its cost, including topsoil placement and lawn restoration as directed by the Manager of Engineering and the Consulting Engineer. Restoration shall include but not be limited to all necessary levelling, grading, shaping, topsoil placement, seeding, mulching, and granular and asphalt placement required to make good any damage caused.

V. REMOVAL OF BRUSH, TREES AND RUBBISH

Where there is any brush, trees or rubbish along the course of the drainage works from top of bank to top of bank, including the full width of the work access, all such brush, trees or rubbish shall be close cut and grubbed out, and the whole shall be chipped up for recycling, burned or otherwise satisfactorily disposed of by the Contractor. The brush and trees removed along the course of the work are to be cut as close to the ground as practicable and within the drain banks parallel to the side slopes. Except as noted herein, stumps shall be left in place and shall be sprayed with a single application of stump killer (Diphenoprop BK700 or approved equal). All removed materials shall be put into piles by the Contractor in locations adjacent to the drain and within the working corridors, where they can be safely chipped and disposed of, or burned by it, or hauled away and disposed of by the Contractor to a site to be obtained by it at its expense. In all cases, trees and brush shall be stockpiled on the property on which they were cut. Prior to and during the course of any burning operations, the Contractor shall comply with the guidelines prepared by the Air Quality Branch of the Ontario Ministry of the Environment and shall ensure that the Environmental Protection Act is not violated. The Contractor shall assume all responsibility for control of the burn, obtaining all utility locates in the area of each burn site, all responsibility for liabilities related to the burning of the brush and smoke generated, and will be required to notify the local fire authorities to obtain any permits and co-operate with them in the carrying out of any work. All work shall be carried out in conformance with the Town by-laws for same. The removal of brush and trees shall be carried out in close consultation with the Manager of Engineering or Consulting Engineer to ensure that no decorative trees or shrubs are disturbed by the operations of the Contractor that can be saved. It is the intent of this project to save as many trees and bushes as practical on private lands adjacent to the drain and within the working corridors, especially mature trees beyond the drain sideslopes.

The Contractor shall protect all other trees, bushes, and shrubs located along the length of the drainage works except for those trees that are established, in consultation with the Manager of Engineering, the Consulting Engineer, and the landowners, to be removed as part of the works. The Contractor shall note that protecting and saving the trees may require the Contractor to carry out hand work around the trees, bushes, and shrubs to complete the necessary final site grading and restoration.

Following the completion of the work, the Contractor is to trim up any broken or damaged limbs on trees which are to remain standing, and it shall dispose of said branches along with other brush, thus leaving the trees in a neat and tidy condition.

The Contractor shall remove all deleterious materials and rubbish along the course of the open drain and any such materials located in the bridge culverts and enclosures while carrying out its cleaning of same. All such deleterious materials and rubbish shall be loaded up and hauled away by the Contractor to a site to be obtained by it at its cost and in accordance with Excess Soil regulations.

VI. FENCING

Where it is necessary to take down any fence to proceed with the work, the same shall be done by the Contractor across or along that portion of the work where such fence is located. The Contractor will be required to exercise extreme care in the removal of any fencing so as to cause a minimum of damage to same. The Contractor will be required to restore any fence that is taken down in order to proceed with the work, and the fence shall be re-instated in a neat and workmanlike manner. The Contractor will not be required to procure any new materials for rebuilding the fence provided that it has used reasonable care in the removal and replacement of same. When any fence is removed by the Contractor, and the Owner thereof deems it advisable and procures new material for replacing the fence so removed, the Contractor shall replace the fence using the new materials and the materials from the present fence shall remain the property of the Owner.

VII. DETAILS OF BRIDGE WORK

The Contractor shall load up and haul away all deleterious material from the bridge sites as set out further in these specifications. The drain cross section in the location of the bridges shall be restored in accordance with the profile and any exposed banks restored as noted in these specifications.

When completed, the access bridges along the centreline of the new culverts shall have a total top width, including the top width of the quarried limestone on filter cloth end walls, to match the existing top width. The quarried limestone on filter cloth end wall protection shall be installed on a slope no steeper than 1.50 horizontal to 1.00 vertical and shall extend from the end of the new Hel-Cor aluminized corrugated steel pipe (C.S.P.) or smooth wall high density poly ethylene (H.D.P.E.) pipe to the top elevation of the driveway.

The culvert and enclosure pipes to be provided for this project are to be supplied in as few lengths of pipe for the bridges and enclosures as possible and is to be coupled with the use of a 2.0mm thick, 9 corrugation aluminized corrugated steel bolted coupler for C.S.P. and wrap coupler for H.D.P.E. pipe, secured in accordance with the manufacturer's recommendations. The corrugated steel pipe and H.D.P.E. pipe to be utilized for the bridge installations must be approved by the Town Manager of Engineering or Consulting Engineer, prior to its placement in the drain.

The Contractor shall also note that the placement of these new access bridge culverts and enclosures is to be performed totally in the dry, and it shall be prepared to take whatever steps are necessary to ensure same, all to the full satisfaction of the Town Manager of Engineering or Consulting Engineer. As part of the work, the Contractor will be required to clean out the drain along the full length of the bridge and enclosure pipes and for a distance of 3.05 metres (10.0 ft.) upstream and downstream of said pipes at open drains. The design parameters of the St. Michaels Drain & Branch at the location of these new access culverts and enclosure installations shall meet the bottom widths, grades and side slopes shown on the plans. The Contractor shall be required to cut any brush and strip the existing drain sideslopes of any vegetation as part of the grubbing operation. The Contractor shall also be required to dispose of all excavated and deleterious materials, as well as any demolished unsuitable concrete and grubbed out materials, to a site to be obtained by it at its own expense. The Contractor shall note that the survey

indicates that the existing drain bottom is above the design grade at most locations. The Contractor shall be required to provide any and all labour, material and equipment to set the pipe to the required design grades. The Contractor shall also be required to supply, if necessary for a solid base, a minimum thickness of 150mm (6") of 20mm (3/4") clear stone bedding underneath the culvert or enclosure pipe, extending from the bottom of the drain to the pipe invert grade, all to the full satisfaction of the Town Manager of Engineering or Consulting Engineer.

The installation of the complete length of the access bridge or enclosure culverts, including all appurtenances, shall be completely inspected by the Town Manager of Engineering or Consulting Engineer prior to backfilling any portions of same. Under no circumstance shall the Contractor backfill same until the Town Manager of Engineering or Consulting Engineer inspects and approves said pipe installations. The Contractor shall provide a minimum notice of 2 working days to the Town Manager of Engineering or Consulting Engineer prior to the commencement of this work. The installation of these access bridges and enclosures is to be performed during the normal working hours from Monday to Friday of the Town Manager of Engineering or Consulting Engineer.

Once the new aluminized corrugated steel or H.D.P.E. pipe has been satisfactorily set in place at the site, the Contractor shall completely backfill same with granular material M.T.O. Type "B" O.P.S. Form 1010, with the exception of the top 305mm (12") of the backfill material for the full top width of the drain and the access bridge, which shall be granular material M.T.O. Type "A" O.P.S. Form 1010. The end slope of the backfill material over the corrugated steel or H.D.P.E. pipe from the invert of said pipe to the top of driveway elevation shall be quarried limestone on filter cloth erosion protection. The end wall shall be extended around onto the drain banks in line with the end of the pipe, all as shown on the plans included in **Appendix "REI-E"**.

The driveway approach from the existing edge of gravel to approximately the top of bank shall consist of a minimum of 305mm (12") of granular material M.T.O. Type "A" satisfactorily compacted in place. The gravel apron shall extend for the full width of the access culvert length, as shown on the plans. The gravel backfill shall also extend across the pipe to approximately the top of bank as shown on the plans.

Once the new corrugated steel or H.D.P.E. pipe has been set in place at its location, the Contractor shall completely backfill same with granular material, and install the quarried limestone on filter cloth protection on the end of the bridge. The installation of the endwall, as well as the backfilling of the pipe where applicable, shall be provided in compliance with Items 2), 3), and 4) of the **"Standard Specifications for Access Bridge Construction"** attached within **Appendix "REI-C"** and in total compliance and in all respects with the General Conditions included in Item 4) of said Appendix. The Contractor, in all cases, shall comply with these specifications and upon completion of the sloped quarried limestone end protection installation shall restore the adjacent areas to their original conditions.

The corrugated steel or H.D.P.E. pipe for this installation shall be provided with a depth of cover measured from the top of the corrugated steel or H.D.P.E. pipe to the top of the granular backfill of approximately 0.305m (12") for the bridges and enclosures and if the culvert is placed at its proper elevations, this should be easily achieved. If the Contractor finds that the specified cover is not being met, they shall notify the Manager of Engineering and the Consulting Engineer immediately so that steps can be taken to rectify the condition prior to the placement of any backfill. The cover requirement is **critical** and must be attained. In order for this new access bridge or enclosure culvert to properly fit the channel parameters, all of the design grade elevations provided must be strictly adhered to.

For hard surface roadway and driveway crossings, the Contractor is to ensure that no backfill exceeds 305mm (12") per lift. Additionally, the top 305mm (12") of the backfill over the pipe below the hard surface treatment shall comprise granular material M.T.O. Type "A" O.P.S.S. Form 1010 compacted to a minimum of 100% Standard Proctor Density. The Contractor shall at all times be very careful when performing its backfilling and compaction operations so that no damage is caused to the pipe. To ensure that no damage is caused to the proposed pipe, alternative methods of achieving the required backfill compaction shall be submitted to the Consulting Engineer or the Town Manager of Engineering for their approval prior to the commencement of this work. The Contractor shall restore the asphalt surface by placing a minimum of the existing thickness or a 90mm minimum thickness of Type HL-4 hot mix asphalt or SuperPave equivalent. The asphalt shall be supplied and placed in two (2) approximately equal lifts compacted to a value ranging from 92% to 96% of maximum relative density as per O.P.S.S. 310. For existing concrete driveways, the Contractor shall carefully remove the concrete to the nearest expansion joint. The concrete shall be restored to the original length and width that was removed and include 150mm thick, 30mPa concrete, with 6% ±1% air entrainment and 6x6-6/6 welded wire fabric reinforcing installed at the midpoint of the slab. All slab surfaces shall be finished to provide an appearance approximating the finish on the existing concrete abutting the replacement.

Also, for use by the Contractor, we have established a Bench Mark near the sites. As a check, all of the design grade elevations should be confirmed before commencing to the next stage of the access bridge or enclosure installation. The Contractor is also to check that the pipe invert grades are correct by referencing the Bench Mark provided for the site.

The Contractor shall also be required to provide all labour, equipment and material to provide granular fill to all gore areas at the road as noted on the plans, and native fill to all gore areas at the side of the drain. The Contractor shall protect any existing landscape features during the course of the work.

As part of the work provided for the construction of the access bridge or enclosure, the Contractor shall be required to protect or extend any existing lateral tile ends which conflict with the bridge or enclosure installation. All existing lateral tile drains, where required, shall be diverted and extended to the ends of the access bridge culvert or enclosure and shall be extended and installed in accordance with the "Standard Lateral Tile Detail" as shown in **Appendix "REI-C"**, unless otherwise noted. Connections shall be made using manufacturer's couplers wherever possible. All connections shall be completely sealed with concrete grout around the full exterior perimeter of each joint.

The Contractor is to note that the granular driveway approaches extending from the edge of roadway shoulder to the top of bank of the drain shall consist of granular material M.T.O. Type "A" O.P.S.S. Form 1010 and is to be provided to a minimum depth of 305mm (12") and be satisfactorily compacted in place. The Contractor is to also note that all granular material being placed as backfill for the bridge or enclosure installation shall be compacted in place to a minimum Standard Proctor Density of 100%, and that all native fill material to be used for the construction shall be compacted in place to a minimum Standard Proctor Density of 96%.

All of the granular backfill, native fill, and the compaction levels for same shall be provided to the full satisfaction of the Town Manager of Engineering or the Consulting Engineer. The Contractor shall also note that any sediment being removed from the drain bottom as previously specified herein, shall not be utilized for the construction of the driveway, and shall be disposed of by the Contractor to a site to be obtained by it at its own expense.

The Contractor shall be required to restore any and all drain sideslopes damaged by the access bridge or enclosure installation, utilizing the available scavenged topsoil, and shall seed and mulch over all of said areas.

The placing and grading of any topsoil shall be carefully and meticulously carried out in accordance with Ontario Provincial Standard Specifications, Form 802 dated November 2010, or as subsequently amended, or as amended by these specifications and be readied for the seeding and mulching process. The seeding and mulching of all of the above mentioned areas shall comply in all regards to Ontario Provincial Standard Specifications, Form 803 dated November 2010 and Form 804, dated November 2013, or as subsequently amended, or as amended by these specifications. The seeding mixture shall be the Standard Roadside Mix (Canada No. 1 Lawn Grass Seed Mixture) as set out in O.P.S.S. 804. All cleanup and restoration work shall be performed to the full satisfaction of the Town Manager of Engineering or Consulting Engineer.

When all of the work for this installation has been completed, the Contractor shall ensure that positive drainage is provided to all areas and shall ensure that the site is left in a neat and workmanlike manner, all to the full satisfaction of the Town Manager of Engineering or Consulting Engineer.

The Contractor shall completely remove and dispose of the sediment in all the other access bridges and enclosures along the course of the drain. Sediment shall be flushed out of the pipes with care being taken not to damage the pipes. All removed materials shall be loaded up and hauled away by the Contractor for disposal.

The existing pipes shall be removed and disposed of by the Contractor, along with any other deleterious materials that are encountered. The drain cross section in the location of the bridge or enclosure shall be restored in accordance with the profile and the new exposed banks restored as noted in these specifications.

The Contractor will be responsible to restore any damage caused to the roadways at its cost. All damaged hard surface roadway areas shall be neatly saw cut and the damaged materials removed and disposed of by the Contractor prior to carrying out any restoration work. The extent of the repairs shall be established in consultation with the Manager of Engineering, the Road Authority, and the Consulting Engineer and the repairs shall be completed to their full satisfaction.

The Contractor is to note that any intercepted tiles or pipes along the length of the existing culverts are to be extended and connected through rock protection at its cost unless otherwise noted in the accompanying drawings.

VIII. REMOVALS

In the future when maintenance work is carried out and where existing access bridges or enclosures are to be completely removed and replaced, the Contractor shall be required to excavate and completely extract the existing culvert or enclosure pipe and the existing endwalls in their entirety, as well as any other deleterious materials that may be encountered in removing same. The Contractor shall also be required to completely dispose of all removed materials to a site to be obtained by it at its own expense.

All unsuitable and deleterious materials from the excavation and removal of the existing bridge culverts and enclosures and drain cleaning shall be hauled away and disposed of by the Contractor to a site to be obtained by it at its expense. Likewise, any deleterious material excavated for removal of the headwalls shall also be hauled away and disposed of by the Contractor. All handling and disposal shall be in accordance with the Excess Soil regulations.

IX. GENERAL QUARRIED LIMESTONE EROSION PROTECTION

At all of the swale and furrow locations entering the drain from the sides, it is required that general quarried limestone erosion protection and rock chutes be provided on the drain slopes, at any locations indicated, and to the widths generally shown within the details and notes included in the accompanying drawings. The rock chutes shall be v-shaped and constructed to direct all flows through the centre portion of the rock chute. Where the drain banks are showing erosion or slumping and distress, the Contractor shall provide quarried limestone on filter cloth general erosion protection as outlined below. Protection locations shall be as established in consultation with the Manager of Engineering and the Consulting Engineer and shall include any areas noted on the profile.

The quarried limestone erosion protection shall be embedded into the sideslopes of the drain a minimum thickness of 305mm and shall be underlain in all cases with non-woven synthetic filter mat. The filter mat shall not only be laid along the flat portion of the erosion protection, but also contoured to the exterior limits of the quarried limestone and the unprotected slope. The width of the general erosion protection shall be as established in the accompanying drawings or as otherwise directed by the Manager of Engineering or the Consulting Engineer during construction. In placing the erosion protection, the Contractor shall carefully tamp the quarried limestone pieces into place with the use of the equipment bucket so that the erosion protection when completed will be consistent, uniform and tightly laid. In no instance shall the quarried limestone protrude beyond the exterior contour of the unprotected drain sideslopes along either side of said protection. The synthetic filter mat to be used shall be non-woven geotextile GMN160 conforming to O.P.S.S. 1860 Class I, as available from Armtec Construction Products, or equal. The quarried limestone to be used shall be graded in size from a minimum of 100mm to a maximum of 250mm, and is available from Walker Industries Amherstburg Quarry, in Amherstburg, Ontario, or equal.

X. BENCH MARKS

Also, for use by the Contractor, we have established Bench Marks along the course of the work as shown on the plans and noted above. The Contractor shall work with the Manager of Engineering or Consulting Engineer to transfer the bench mark as necessary to be used in setting the drain and pipe design grades.

In all cases, the Contractor is to utilize the specified bench mark and drain grade to control its work. The Contractor shall ensure that it takes note of the direction of flow and sets all grades to assure that all flows go from east to west and northerly to match the direction of flow within the drains.

XI. ANCILLARY WORK

During the course of any work to the bridges and enclosures along the course of the drain, the Contractor will be required to protect or extend any existing tile ends or swales and connect them to the drainage works to maintain the drainage from the adjacent lands. All existing tiles shall be extended utilizing solid Big 'O' "standard tile ends" or equal plastic pipe of the same diameter as the existing tile and shall be installed in accordance with the **"Standard Lateral Tile Detail"** included in the plans, unless otherwise noted. Connections shall be made using a manufactured coupling where possible. For other connections, the Contractor shall utilize a grouted connection. Grouted mortar joints shall be composed of three (3) parts of clean, sharp sand to one (1) part of Portland cement with just sufficient water added to provide a stiff plastic mix, and the mortar connection shall be performed to the full satisfaction of the Manager of Engineering or the Consulting Engineer. The mortar joint shall be of a sufficient mass around the full circumference of the joint on the exterior side to ensure a tight, solid seal. The Contractor is to note that any intercepted pipes along the length of the existing culverts are to be extended and connected to the open drain unless otherwise noted in the accompanying drawings.

The Contractor shall re-grade the existing swales to allow for the surface flows to freely enter the drain. Any disturbed grass areas shall be fully restored with topsoil, seed and mulch.

Although it is anticipated that the bridge and enclosure work at each site shall be undertaken in the dry, the Contractor shall supply and install a temporary straw bale check dam or silt curtain in the drain bottom immediately downstream of each bridge site during the time of construction. The straw bale check dam or silt curtain shall be to the satisfaction of the Manager of Engineering or the Consulting Engineer and must be removed upon completion of the construction. The straw bales and silt curtains may be reused at each site subject to their condition. All costs associated with the supply and installation of this straw bale check dam or silt curtain shall be included in the cost bid for the bridge or enclosure removal.

XII. TOPSOIL, SEED AND MULCH

The Contractor will be required to protect grass buffers and driveway accesses along the top of the drain bank where they currently exist. Where any of these are damaged, they shall be fully restored including placement of topsoil. The topsoil shall be prepared for seeding as noted further in these specifications. Should the existing topsoil be treated to prevent grass growth, the Contractor shall strip the existing topsoil material back and spread it on the adjacent field and supply 50mm thick imported topsoil, or topsoil material scavenged from the drain banks at rock protection locations, that is suitable for growing grass.

The placing and grading of any topsoil shall be carefully and meticulously carried out in accordance with Ontario Provincial Standard Specifications, Form 802 dated November 2010, or as subsequently amended, or as amended by these specifications and be readied for the seeding and mulching process. The seeding and mulching of all of the above mentioned areas shall comply in all regards to Ontario Provincial Standard Specifications, Form 803 dated November 2010 and Form 804, dated November 2013, or as subsequently amended, or as amended by these specifications. The seeding mixture shall be the Standard Roadside Mix (Canada No. 1 Lawn Grass Seed Mixture) as set out in O.P.S.S. 804. All cleanup and restoration work shall be performed to the full satisfaction of the Town Manager of Engineering and the Consulting Engineer.

All of the work relative to the placement of topsoil and the seeding and mulching operation shall be meticulously done and completed in a good and workmanlike manner all to the full satisfaction of the Manager of Engineering and the Consulting Engineer.

XIII. GENERAL CONDITIONS

a) The Manager of Engineering or Consulting Engineer shall have authority to carry out minor changes to the work where such changes do not lessen the efficiency of the work.

b) The Contractor shall satisfy itself as to the exact location, nature and extent of any existing structure, utility or other object which it may encounter during the course of the work. The Contractor shall indemnify and save harmless the Town of LaSalle, County of Essex, the Ministry of Transportation Ontario (M.T.O.), the Essex Terminal Railway, and the Consulting Engineer and their representatives for any damages which it may cause or sustain during the progress of the work. It shall not hold the Town of LaSalle, County of Essex, M.T.O., Essex Terminal Railway or the Consulting Engineer liable for any legal action arising out of any claims brought about by such damage caused by it.

c) The Contractor shall provide a sufficient number of layout stakes and grade points so that the Manager of Engineering and Consulting Engineer can review same and check that the work will generally conform to the design and project intent.

d) The Contractor will be responsible for any damage caused by it to any portion of the Municipal road system, especially to the travelled portion. When excavation work is being

carried out and the excavation equipment is placed on the travelled portion of the road, the travelled portion shall be protected by having the excavation equipment placed on satisfactory timber planks or timber pads. If any part of the travelled portion of the road is damaged by the Contractor, the Town shall have the right to have the necessary repair work done by its employees and the cost of all labour and materials used to carry out the repair work shall be deducted from the Contractor's contract and credited to the Town. The Contractor, upon completing the works, shall clean all debris and junk, etcetera, from the roadside of the drain, and leave the site in a neat and workmanlike manner. The Contractor shall be responsible for keeping all public roadways utilized for hauling materials free and clear of mud and debris.

e) The Contractor shall provide all necessary lights, signs, and barricades to protect the public. All work shall be carried out in accordance with the requirements of the Occupational Health and Safety Act, and latest amendments thereto. If traffic control is required on this project, signing is to comply with the M.T.O. Manual of Uniform Traffic Control Devices (M.U.T.C.D.) for Roadway Work Operations and Ontario Traffic Manual Book 7.

f) During the course of the work the Contractor shall be required to connect existing drainage pipes to the Municipal Drain. In the event that polluted flows are discovered, the Contractor shall delay the connection of the pipe and leave the end exposed and alert the Town, the Manager of Engineering and the Consulting Engineer so that steps can be taken by the Town to address the concern with the owner and the appropriate authorities. Where necessary the Contractor shall cooperate with the Town in providing temporary measures to divert the drain or safely barricade same. Should the connection be found acceptable by the authorities, the Contractor shall complete the connection of the drain as provided for in the specifications, at no extra cost to the project.

g) Following the completion of the work, the Contractor is to trim up any broken or damaged limbs on trees which are to remain standing, and it shall dispose of said branches along with other brush, thus leaving the trees in a neat and tidy condition.

h) The whole of the work shall be satisfactorily cleaned up, and during the course of the construction, no work shall be left in any untidy or incomplete state before subsequent portions are undertaken.

i) During the course of the project the Contractor shall deal with any excess soil management from the project in accordance with Ontario Reg 406/19 pursuant to the Environmental Protection Act, R.S.O. 1990, c. E.19 and any subsequent amendments to same.

j) All driveways, laneways and access bridges, or any other means of access on to the job site shall be fully restored to their former condition at the Contractor's expense. Before authorizing Final Payment, the Manager of Engineering and the Consulting Engineer shall inspect the work in order to be sure that the proper restoration has been performed. In the event that the Contractor fails to satisfactorily clean up any portion of these accesses, the Consulting Engineer shall order such cleanup to be carried out by others and the cost of same be deducted from any monies owing to the Contractor.

k) The Contractor will be required to submit to the Town a Certificate of Good Standing from the Workplace Safety and Insurance Board prior to the commencement of the work. The Contractor will also be required to submit to the Town a Certificate of Clearance for the project from the Workplace Safety and Insurance Board before Final Payment is made to the Contractor.

l) The Contractor shall furnish a Performance and Maintenance Bond along with a separate Labour and Material Payment Bond within ten (10) days after notification of the execution of the Agreement by the Owner. One copy of said bonds shall be bound into each of the executed sets of the Contract. Each Performance and Maintenance Bond and Labour and Material Payment Bond shall be in the amount of 100% of the total Tender Price. All Bonds shall be executed under corporate seal by the Contractor and a surety company, authorized

by law to carry out business in the Province of Ontario. The Bonds shall be acceptable to the Owner in every way and shall guarantee faithful performance of the contract during the period of the contract, including the period of guaranteed maintenance which will be in effect for twelve (12) months after substantial completion of the works.

The Tenderer shall include the cost of bonds in the unit price of the Tender items as no additional payment will be made in this regard.

m) The Contractor shall be required, as part of this Contract, to provide Comprehensive Liability Insurance coverage for not less than $5,000,000.00 on this project and shall name the Town of LaSalle and its officials, the County of Essex and its officials, M.T.O. and its officials, Essex Terminal Railway staff and the Consulting Engineer and its staff as additional insured under the policy. The Contractor must submit a copy of this policy to both the Town Clerk and the Consulting Engineer prior to the commencement of work.

n) Monthly progress orders for payment shall be furnished the Contractor by the Manager of Engineering. Said orders shall be for not more than 90% of the value of the work done and the materials furnished on the site. The paying of the full 90% does not imply that any portion of the work has been accepted. The remaining 10% will be paid 45 days after the final acceptance and completion of the work and payment shall not be authorized until the Contractor provides the following:

   i) a Certificate of Clearance for the project from the Workplace Safety and Insurance Board

   ii) proof of advertising

   iii) a Statutory Declaration, in a form satisfactory to the Consulting Engineer and the Town, that all liabilities incurred by the Contractor and its Sub-Contractors in carrying out the Contract have been discharged and that all liens in respect of the Contract and Sub-Contracts thereunder have expired or have been satisfied, discharged or provided for by payment into Court.

The Contractor shall satisfy the Consulting Engineer or Town that there are no liens or claims against the work and that all of the requirements as per the Construction Lien Act, 1983 and its subsequent amendments have been adhered to by the Contractor.

o) In the event that the Specifications, Information to Tenderers, or the Form of Agreement do not apply to a specific condition or circumstance with respect to this project, the applicable section or sections from the Canadian Construction Documents Committee CCDC2 shall govern and be used to establish the requirements of the work.

p) Should extra work be required by the Town Manager of Engineering or Consulting Engineer, and it is done on a time and material basis, the actual cost of the work will be paid to the Contractor with a 15% markup on the total actual cost of labour, equipment and materials needed to complete the extra work.

q) The Contractor shall provide shop drawings of the proposed wall for precast concrete block headwalls for approval by the Town Manager of Engineering or Consulting Engineer prior to construction.

APPENDIX “REI-A”

STANDARD E.R.C.A. AND D.F.O.
MITIGATION REQUIREMENTS

As part of its work, the Contractor will implement the following measures that will ensure that any potential adverse effects on fish and fish habitat will be mitigated:

- Work will not be conducted at times when flows are elevated due to local rain events, storms or seasonal floods. In-water works will not be undertaken between March 15th and June 30th.
- New culverts are to be installed with a minimum 10 % embedment below the existing bottom or design bottom of the drain (whichever is lower).
- All new culverts must provide for fish passage. Typically, culvert lengths that do not exceed 15.0 metres do not create an obstruction to fish passage. Depending on the proposed culvert diameter, however, longer lengths may be allowed. Concerns with longer culverts relate to velocity, loss of riparian habitat, etc. (Note: IF longer culvert lengths are proposed, we recommend that they be reviewed with this office prior to finalizing the engineer's report. Ultimately, it is the proponent's responsibility to undertake the necessary studies to confirm that the proposed length will not be a barrier to fish passage.)
- All disturbed soils on both banks and within the channel, including spoil, must be stabilized immediately upon completion of work. The restoration of the site must be completed to a like or better condition to what existed prior to the works. The spoil material must be spread an appropriate distance from the top of the drain bank to ensure that it is not washed back into the drain.
- To prevent sediment entry into the drain, in the event of an unexpected rainfall, silt barriers and/or traps must be placed in the channel during the works and until the site has been stabilized. All sediment and erosion control measures are to be in accordance with related Ontario Provincial Standards. It is incumbent on the proponent and his/her contractors to ensure that sediment and erosion control measures are functioning properly and are maintained/upgraded as required.
- Silt or sand accumulated in the barriers/traps must be removed and stabilized on land once the site is stabilized.
- All activities, including maintenance procedures, should be controlled to prevent the entry of petroleum products, debris, rubble, concrete or other deleterious substances into the water. Vehicular refueling and maintenance should be conducted away from the water.

From: Becker, Madeline [mailto:Madeline.Becker@dfo-mpo.gc.ca]
Sent: Friday, August 11, 2017 9:13 AM
To: Jonathan Osborne <josborne@lasalle.ca>
Subject: DFO File No. 17-HCAA-00870: [redacted]

Good Morning Jonathan,

Subject: Drain Maintenance, [redacted], Unrated and F, LaSalle: 17-HCAA-00870

The Fisheries Protection Program (the Program) of Fisheries and Oceans Canada received your drain maintenance proposal which has been reviewed under the *Fisheries Act* and the *Species at Risk Act*. Our review consisted of: Notification of Drain Maintenance or Repair for the Chappus Drain in the Township of LaSalle, the Agriculture Information Atlas (Drain Maps) and Species at Risk Distribution of Fish and Mussel Maps. We understand that you propose to: complete maintenance work on 2340 metres of an F drain which includes*: full clean out.*

Based on the information provided, your proposal has been identified as a project where a *Fisheries Act* authorization is not required given that serious harm to fish can be avoided by following standard measures, and a Permit under the *Species at Risk Act* is not required since there are no records of Species at Risk near the project site. Your project as proposed is not considered to need an authorization from the Program under the *Fisheries Act* in order to proceed. In order to comply with the Fisheries Act, it is recommended that you incorporate the following measures into your project proposal:

Timing

- If you are conducting in stream work during periods of low flow to further reduce the risk to fish and their habitat no in-stream work or construction activity should occur from March 15th to June 30th

- If the drain is dry, work can proceed at any time of the year

Erosion and Sediment Control

- Install effective erosion and sediment control measures before starting work to prevent sediment from entering the water body.

- Conduct regular inspections and maintain erosion and sediment control measures and structures during the course of construction.

- Repair erosion and sediment control measures and structures if damage occurs.

- Remove non-biodegradable erosion and sediment control materials once site is stabilized.

Shoreline Re-vegetation and Stabilization

- Clearing of riparian vegetation should be kept to a minimum.

- Immediately stabilize shoreline or banks disturbed by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site.

- If replacement rock reinforcement/armouring is required to stabilize eroding or exposed areas, ensure that appropriately-sized, clean rock is used; and that rock is installed at a similar slope to maintain a uniform bank/shoreline and natural stream/shoreline alignment.

- Remove all construction materials from site upon project completion.

Operation of Machinery

- Operate machinery in a manner that minimizes disturbance to the banks of the watercourse.

It remains your responsibility to meet the other requirements of federal, provincial and municipal agencies.

Should your plans change or if you have omitted some information in your proposal such that your proposal meets the criteria for a site specific review, as described on our website (http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html), you should complete and submit the request for review form that is also available on the website.

Should you have any questions or concerns about the compliance of your proposal with the *Fisheries Act*, you may wish to engage an environmental professional familiar with measures to avoid impacts to fish and fish habitat (http://www.dfo-mpo.gc.ca/pnw-ppe/fpp-ppp/index-eng.html).

Yours sincerely,

Madeline Becker

Fisheries Protection Assistant

Madeline.Becker@dfo-mpo.gc.ca

Fisheries Protection Program | Programme de Protection des Pêches
Central and Arctic Region | Région du Centre et de l'Arctique
Fisheries and Oceans Canada | 867 Lakeshore Road, Burlington ON L7S 1A1
Pêches et Océans Canada | 867, ch. Lakeshore, Burlington ON L7S 1A1
Government of Canada | Gouvernement du Canada

Fisheries and Oceans Canada has changed the way new project proposals (referrals), reports of potential Fisheries Act violations (occurrences) and information requests are managed in Central and Arctic Region (Alberta, Saskatchewan, Manitoba, Ontario, Nunavut and the Northwest Territories). Please be advised that general information regarding the management of impacts to fish and fish habitat and self-assessment tools (e.g. Measures to Avoid Harm) that enable you to determine Fisheries Act requirements are available at DFO's "Projects Near Water" website at www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html. For all occurrence reports, or project proposals where you have determined, following self-assessment, that you cannot avoid impacts to fish and fish habitat, please submit to fisheriesprotection@dfo-mpo.gc.ca. For general inquiries call 1 855 852-8320.

SECTION II

SPECIFICATIONS

FOR FISH SALVAGE

GENERAL
SECTION 201

The Work shall include the capture, salvage and release of fish that are trapped or stranded as the result of the Contractor's operations, at locations identified in the Fish Salvage Plan, and in co-operation with the Essex Region Conservation Authority (E.R.C.A.).

Fish capture shall be performed prior to dewatering, and in such manner that will minimize the injury to the fish.

MATERIALS
SECTION 202

All materials required for fish capture, salvage and release shall be supplied by the Contractor.

CONSTRUCTION
SECTION 203

The Contractor shall not commence any fish capture, salvage and release work until the Fish Salvage Plan has been accepted by the Consultant and the Conservation Authority. All work shall be performed in accordance with the Fish Salvage Plan unless otherwise determined by the Consultant or the Conservation Authority.

The Contractor shall ensure an ice-free pool is maintained throughout all fish capture and release operations.

All fish shall be captured within the area specified and released at an acceptable location in the downstream water body. Fish shall be captured by electro fishing, netting, seining, trapping, or other method acceptable to the Consultant and/or the Conservation Authority.

MEASUREMENT AND PAYMENT
SECTION 204

Payment for this Work will be included in the price bid for drainage work components or made at the lump sum price bid for "Fish Capture and Release". The lump sum price will be considered full compensation for all labour, materials, equipment, tools, and incidentals necessary to complete the Work to the satisfaction of the Consultant.

Measures to Avoid Causing Harm to Fish and Fish Habitat

If you are conducting a project near water, it is your responsibility to ensure you avoid causing serious harm to fish in compliance with the *Fisheries Act*. The following advice will help you avoid causing harm and comply with the *Act*.

PLEASE NOTE: This advice applies to all project types and replaces all "Operational Statements" previously produced by DFO for different project types in all regions.

Measures

- Time work in water to respect timing windows to protect fish, including their eggs, juveniles, spawning adults and/or the organisms upon which they feed.
- Minimize duration of in-water work.
- Conduct instream work during periods of low flow, or at low tide, to further reduce the risk to fish and their habitat or to allow work in water to be isolated from flows.
- Schedule work to avoid wet, windy and rainy periods that may increase erosion and sedimentation.

- Design and plan activities and works in waterbody such that loss or disturbance to aquatic habitat is minimized and sensitive spawning habitats are avoided.
- Design and construct approaches to the waterbody such that they are perpendicular to the watercourse to minimize loss or disturbance to riparian vegetation.
- Avoid building structures on meander bends, braided streams, alluvial fans, active floodplains or any other area that is inherently unstable and may result in erosion and scouring of the stream bed or the built structures.
- Undertake all instream activities in isolation of open or flowing water to maintain the natural flow of water downstream and avoid introducing sediment into the watercourse.

- Plan activities near water such that materials such as paint, primers, blasting abrasives, rust solvents, degreasers, grout, or other chemicals do not enter the watercourse.
- Develop a response plan that is to be implemented immediately in the event of a sediment release or spill of a deleterious substance and keep an emergency spill kit on site.
- Ensure that building material used in a watercourse has been handled and treated in a manner to prevent the release or leaching of substances into the water that may be deleterious to fish.

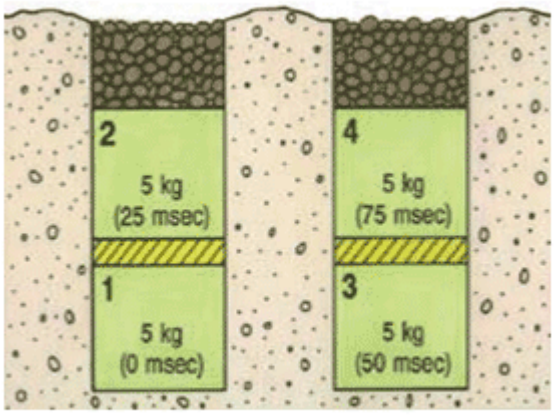
- Develop and implement an Erosion and Sediment Control Plan for the site that minimizes risk of sedimentation of the waterbody during all phases of the project. Erosion and sediment control measures should be maintained until all disturbed ground has been permanently stabilized, suspended sediment has resettled to the bed of the waterbody or settling basin and runoff water is clear. The plan should, where applicable, include:
    - Installation of effective erosion and sediment control measures before starting work to prevent sediment from entering the water body.
    - Measures for managing water flowing onto the site, as well as water being pumped/diverted from the site such that sediment is filtered out prior to the water entering a waterbody. For example, pumping/diversion of water to a vegetated area, construction of a settling basin or other filtration system.
    - Site isolation measures (e.g., silt boom or silt curtain) for containing suspended sediment where in-water work is required (e.g., dredging, underwater cable installation).
    - Measures for containing and stabilizing waste material (e.g., dredging spoils, construction waste and materials, commercial logging waste, uprooted or cut aquatic plants, accumulated debris) above the high water mark of nearby waterbodies to prevent re-entry.
    - Regular inspection and maintenance of erosion and sediment control measures and structures during the course of construction.
    - Repairs to erosion and sediment control measures and structures if damage occurs.
    - Removal of non-biodegradable erosion and sediment control materials once site is stabilized.

- Clearing of riparian vegetation should be kept to a minimum: use existing trails, roads or cut lines wherever possible to avoid disturbance to the riparian vegetation and prevent soil compaction. When practicable, prune or top the vegetation instead of grubbing/uprooting.
- Minimize the removal of natural woody debris, rocks, sand or other materials from the banks, the shoreline or the bed of the waterbody below the ordinary high water mark. If material is removed from the waterbody, set it aside and return it to the original location once construction activities are completed.
- Immediately stabilize shoreline or banks disturbed by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site.
- Restore bed and banks of the waterbody to their original contour and gradient; if the original gradient cannot be restored due to instability, a stable gradient that does not obstruct fish passage should be restored.
- If replacement rock reinforcement/armouring is required to stabilize eroding or exposed areas, then ensure that appropriately-sized, clean rock is used; and that rock is installed at a similar slope to maintain a uniform bank/shoreline and natural stream/shoreline alignment.
- Remove all construction materials from site upon project completion.

- Ensure that all in-water activities, or associated in-water structures, do not interfere with fish passage, constrict the channel width, or reduce flows.
- Retain a qualified environmental professional to ensure applicable permits for relocating fish are obtained and to capture any fish trapped within an isolated/enclosed area at the work site and safely relocate them to an appropriate location in the same waters. Fish may need to be relocated again, should flooding occur on the site.
- Screen any water intakes or outlet pipes to prevent entrainment or impingement of fish. Entrainment occurs when a fish is drawn into a water intake and cannot escape. Impingement occurs when an entrapped fish is held in contact with the intake screen and is unable to free itself.
    - In freshwater, follow these measures for design and installation of intake end of pipe fish screens to protect fish where water is extracted from fish-bearing waters:
        - Screens should be located in areas and depths of water with low concentrations of fish throughout the year.
        - Screens should be located away from natural or artificial structures that may attract fish that are migrating, spawning, or in rearing habitat.
        - The screen face should be oriented in the same direction as the flow.
        - Ensure openings in the guides and seals are less than the opening criteria to make “fish tight”.
        - Screens should be located a minimum of 300 mm (12 in.) above the bottom of the watercourse to prevent entrainment of sediment and aquatic organisms associated with the bottom area.
        - Structural support should be provided to the screen panels to prevent sagging and collapse of the screen.
        - Large cylindrical and box-type screens should have a manifold installed in them to ensure even water velocity distribution across the screen surface. The ends of the structure should be made out of solid materials and the end of the manifold capped.
        - Heavier cages or trash racks can be fabricated out of bar or grating to protect the finer fish screen, especially where there is debris loading (woody material, leaves, algae mats, etc.). A 150 mm (6 in.) spacing between bars is typical.
        - Provision should be made for the removal, inspection, and cleaning of screens.
        - Ensure regular maintenance and repair of cleaning apparatus, seals, and screens is carried out to prevent debris-fouling and impingement of fish.
        - Pumps should be shut down when fish screens are removed for inspection and cleaning.
- Avoid using explosives in or near water. Use of explosives in or near water produces shock waves that can damage a fish swim bladder and rupture internal organs. Blasting vibrations may also kill or damage fish eggs or larvae.
    - If explosives are required as part of a project (e.g., removal of structures such as piers, pilings, footings; removal of obstructions such as beaver dams; or preparation of a river or lake bottom for installation of a structure such as a dam or water intake), the potential for impacts to fish and fish habitat should be minimized by implementing the following measures:

- Time in-water work requiring the use of explosives to prevent disruption of vulnerable fish life stages, including eggs and larvae, by adhering to appropriate fisheries timing windows.
- Isolate the work site to exclude fish from within the blast area by using bubble/air curtains (i.e., a column of bubbled water extending from the substrate to the water surface as generated by forcing large volumes of air through a perforated pipe/hose), cofferdams or aquadams.
- Remove any fish trapped within the isolated area and release unharmed beyond the blast area prior to initiating blasting
- Minimize blast charge weights used and subdivide each charge into a series of smaller charges in blast holes (i.e., decking) with a minimum 25 millisecond (1/1000 seconds) delay between charge detonations (see Figure 1).
- Back-fill blast holes (stemmed) with sand or gravel to grade or to streambed/water interface to confine the blast.
- Place blasting mats over top of holes to minimize scattering of blast debris around the area.
- Do not use ammonium nitrate based explosives in or near water due to the production of toxic by-products.
- Remove all blasting debris and other associated equipment/products from the blast area.

Figure 1: Sample Blasting Arrangement



Per Fig. 1: 20 kg total weight of charge; 25 msecs delay between charges and blast holes; and decking of charges within holes.

- Ensure that machinery arrives on site in a clean condition and is maintained free of fluid leaks, invasive species and noxious weeds.

- Whenever possible, operate machinery on land above the high water mark, on ice, or from a floating barge in a manner that minimizes disturbance to the banks and bed of the waterbody.
- Limit machinery fording of the watercourse to a one-time event (i.e., over and back), and only if no alternative crossing method is available. If repeated crossings of the watercourse are required, construct a temporary crossing structure.
- Use temporary crossing structures or other practices to cross streams or waterbodies with steep and highly erodible (e.g., dominated by organic materials and silts) banks and beds. For fording equipment without a temporary crossing structure, use stream bank and bed protection methods (e.g., swamp mats, pads) if minor rutting is likely to occur during fording.
- Wash, refuel and service machinery and store fuel and other materials for the machinery in such a way as to prevent any deleterious substances from entering the water.

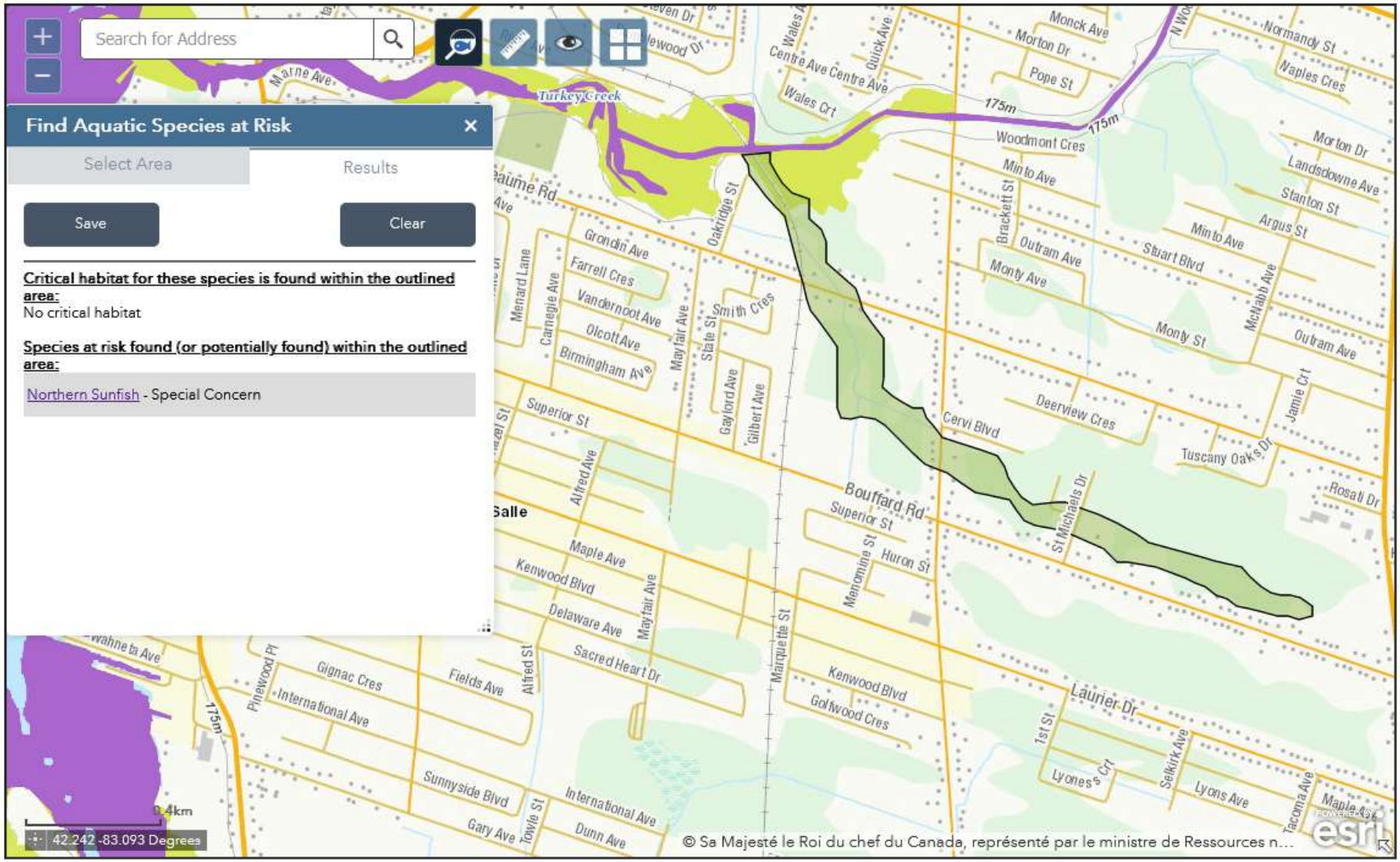
Date modified:

2013-11-25

2023-06-02

St. Michaels Drain – D.F.O. Mapping

Town of LaSalle – REI2018D003



Species summary

COSEWIC scientific name
Lepomis peltastes
Taxonomic group
Fishes (freshwater)
Range
Ontario, Quebec

Legal list

Legal common name
Northern Sunfish, Great Lakes - Upper St. Lawrence populations
Date added
August 8, 2019
Status on Schedule 1
Special Concern
SARA status history
This species was assessed for the first time in April 2016, as "Special Concern". In August 2019, the species was added to Schedule 1 with the same status.
GIC decision
Add

COSEWIC assessment

COSEWIC common name
Northern Sunfish, Great Lakes - Upper St. Lawrence populations
COSEWIC scientific name
Lepomis peltastes
Previous common names
Northern Sunfish (Great Lakes - Western St. Lawrence populations)
Last assessment date and status change
April 2016 (reassigned)
COSEWIC status
Special Concern
COSEWIC status history
The species was considered a single unit and designated Not at Risk in April 1987. When the species was split into two separate units in April 2016, the "Great Lakes - Upper St. Lawrence populations " unit was designated Special Concern.
COSEWIC reason for designation
This is a small-bodied member of the sunfish family that inhabits shallow vegetated areas of warm lakes, ponds, and slow-flowing rivers. Its spatial distribution is relatively...
Last minister's receipt date
October 13, 2016

Related Species

Species name	COSEWIC status	Schedule status
Northern Sunfish (*Lepomis peltastes*)	Non-active	No Status

Species details

On this page, you will learn about the life cycle of this wildlife species. You can access different types of information about this species and how it relates to the Species at Risk Act.

Description

Northern Sunfish is a small (length usually less than 13 cm), but otherwise typical, sunfish (Centrarchidae) with a deep, laterally compressed body. It has an upwardly angled opercular flap with a red/orange posterior margin. Breeding males are very colourful, having a reddish breast and bright blue wavy lines radiating posteriorly from the eye and opercle, often into the breast. Adult males retain juvenile characteristics including dark vertical bands and spotting on the dorsal and anal fins. A Northern Sunfish produces grunting sounds when courting. This can be an indicator of habitat quality because of its low tolerance of siltation and turbidity. (Updated 2017/06/01)

Distribution and population

In Canada, Northern Sunfish range includes northwestern Ontario, south and central Ontario, and southern Québec. In the United States, the Northern Sunfish occurs in Minnesota, eastern Wisconsin, northeastern Illinois, northern Indiana, northern Ohio, northwestern Pennsylvania, northwestern New York, and the lower peninsula of Michigan. Because Northern Sunfish is found in Canada in two National Freshwater Biogeographic Zones it is assessed as two designatable units. (Updated 2017/06/01)

Habitat

The species prefers shallow, vegetated areas of warm lakes, ponds, and slowly flowing watercourses. Northern Sunfish usually occurs in clear waters and is considered intolerant of siltation. Substrate usually consists of sand and gravel, as in the Thames River. (Updated 2017/06/01)

Biology

Northern Sunfish spawns during June and July. Eggs are deposited in a saucer-shaped depression in the substrate excavated by the male. Parental care lasts for a period of approximately 1 week and terminates when fry achieve the free swimming stage. Nesting is often colonial. The species is a generalist feeder, consuming mostly insects taken throughout the water column. It also eats small fishes and fish eggs. Northern Sunfish appears to disperse little and is considered a poor colonizer. (Updated 2017/06/01)

Threats

The most important threats, particularly for the Great Lakes – Upper St. Lawrence DU, include siltation and elevated levels of turbidity and contaminants emanating from agricultural and other forms of development. Less important and potential threats include invasive non-native species (particularly Round Goby), collection for the ornamental fish trade, and bycatch in the bait and recreational fisheries. The Saskatchewan-Nelson DU is threatened by invasive largemouth and smallmouth basses and Green Sunfish, whose ranges are expanding in northwestern Ontario. The most important limiting factor is probably the species' low dispersal capacity, which slows recovery following depopulation and diminishes potential for population rescue. Northern Sunfish is also limited by low tolerance of turbidity. (Updated 2017/06/01)

APPENDIX “REI-B”

Black Oak Wetland Complex (ER 40)
PRAIRIE REMNANTS (TITCOMBE ROAD NORTH) LIFE ANSI
Devonwood
OJIBWAY PARKWAY
MATCHETTE ROAD
SPRUCEWOOD AVENUE
DIVISION ROAD
ACADEMY DRIVE
DOMINION BOULEVARD
ROSELAWN DRIVE
DOUGALL AVENUE
HOWARD AVENUE
CABANA ROAD EAST
Oakwood Park Wetland (ER 34)
Ojibway Prairie Wetland Complex (ER 28)
CABANA ROAD WEST
TODD LANE
MORTON DRIVE
Turkey Creek Wetlands (ER 12)
MOUNT ROYAL DRIVE
DOUGALL PARKWAY
6TH CONCESSION ROAD
NORMANDY STREET
LaSalle Woods (ER 29)
HIGHWAY 3
COUSINEAU ROAD
NORTH TALBOT ROAD
Fighting Island (ER 14)
REAUME ROAD
HERITAGE DRIVE
HOWARD AVENUE
MICHIGAN AVENUE
BOUFFARD ROAD
LAURIER DRIVE
Detroit River Marshes (ER 3)
CONCESSION ROAD 6
COUNTY ROAD 9
HIGHWAY 3
BOUFFARD ROAD
LAURIER PARKWAY
HURON CHURCH LINE ROAD
SOUTH TALBOT ROAD
TOWN OF LASALLE
VICTORY STREET
FRONT ROAD
MALDEN ROAD
DISPUTED ROAD
HOWARD AVENUE
Canard River Marshes (ER 2)
NORTH TOWNLINE ROAD
COUNTY ROAD 8
FRONT ROAD NORTH
Canard River Swamp Wetland Complex (ER 37)
Canard River Mouth Marsh
Canard River Scout Camp

TOWN OF LASALLE

NATURAL FEATURES
FIGURE 1

- Lower Tier Municipality
- Tallgrass Prairie Community
- Environmentally Sensitive Area
- Provincially Significant Wetland
- ANSI, Earth Science
- ANSI, Life Science
- Municipal Drain
- Water Body
- Forest

1:40,000
0 0.5 1 2 km
N W E S

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR

MAP CREATED BY: GM
MAP CHECKED BY: KM/AB
MAP PROJECTION: NAD 1983 UTM Zone 17N

DILLON CONSULTING

PROJECT: 16-4263
STATUS: FINAL
DATE: 5/3/2017

FILE LOCATION: I:\GIS\164263 LaSalle\mxd\Figure 2 Natural Features.mxd

6.0 Species at Risk

A review of secondary source information, including Natural Heritage Information Centre (NHIC) GIS Database records (i.e. 1 km squares that overlap the Study Area) were reviewed to gather a list of the SAR that have the potential to occur within the Town's boundaries. A total of thirty-nine (39) species listed as either endangered or threatened on the SARO list (O.Reg. 230/08) were identified to occur within the Study Area (see ***Appendix C***). Fourteen (14) Restricted Species Records were also identified in the year 2010 and included in ***Appendix A*** under records reviewed.

The habitat requirements for each of the thirty-nine (39) species was crossed referenced with habitats identified within the Study Area. A total of twenty-three (23) species listed as endangered or threatened were identified as having potential habitat within the Study Area, consisting of Turtles (2 species), Snakes (3 species), Fishes (4 species), Birds (3 species), and Plants (11 species). **Table 2** lists the SAR, preferred habitat type(s) (Agricultural, Urban, Forest, Wetland or All) and water presence (requirement for some species), and the dates during the year when the species is likely to be carrying out sensitive life processes, referred to herein as the Restricted Activity Period (RAP).

Three (3) species listed in Table 1, subsection 2, Section 23.9 of O. Reg. 242/08 were identified as having the potential to occur within the Town of LaSalle drains, these species include: Pugnose Minnow (*Opsopoeodus emiliae*) (1 fish species), Heart-leaved Plantain (*Plantago cordata*) and Scarlet Ammannia (*Ammannia robusta*) (2 plant species). Since these species are listed in Table 1, subsection 2, Section 23.9 of O. Reg. 242/08 they have not been included in **Table 2** below and permitting may be required when working in specific drains. More information on species, their habitat preferences, known distribution within the area and steps that need to be taken to determine whether a permit is required are outlined in ***Appendix D***.

Table 2: Species at Risk with Potential to Occur within the Study Area

Scientific Name	Common Name	ESA[1]	Preferred Habitat Type[2]	Restricted Activity Period
Turtles				
Emydoidea blandingii	Blanding's Turtle	THR	Wetland, Forest, Water is present	November 1 to April 30 ***Important to Note: Activities that require water level reduction cannot occur in areas when and where turtles are hibernating (paragraph 6, subsection 13, under Section 23.9 of O.Reg. 242/08).***
Apalone spinifera	Spiny Softshell	THR	Wetland, Forest, Water is present	
Snakes				
Pantherophis gloydi	Eastern Foxsnake (Carolinian population)	END	All[3]	September 20 to May 31

Scientific Name	Common Name	ESA[1]	Preferred Habitat Type[2]	Restricted Activity Period
Regina septemvittata	Queensnake	END	All[3], Water is present	
Thamnophis butleri	Butler's Gartersnake	END	All[3]	
Fishes				
Notropis anogenus	Pugnose Shiner	END	Water is present	March 15 to June 30
Lepisosteus oculatus	Spotted Gar	THR		
Percina copelandi	Channel Darter	THR		
Ammocrypta pellucida	Eastern Sand Darter	END		
Birds				
Dolichonyx oryzivorus	Bobolink	THR	Agricultural	May 1 to July 15
Sturnella magna	Eastern Meadowlark	THR	Agricultural	
Icteria virens virens	Yellow-breasted Chat	END	Agricultural	
Vascular Plants				
Aletris farinosa	Colicroot	THR	Agricultural, Forest	Not Applicable
Trillium flexipes	Drooping Trillium	END	Forest, Water is present	
Liparis liliifolia	Purple Twayblade	THR	Forest, TPC[4]	
Platanthera leucophaea	Eastern Prairie Fringed-Orchid	END	Wetland, TPC[4]	
Liatris spicata	Dense Blazing Star	THR	Agricultural, TPC[4]	
Symphyotrichum praealtum	Willowleaf Aster	THR	Agricultural, TPC[4]	
Cornus florida	Eastern Flowering Dogwood	END	Forest	
Castanea dentata	American Chestnut	END	Forest	
Gentiana alba	White Prairie Gentian	END	TPC[4]	
Juglans cinerea	Butternut	END	Forest	
Morus rubra	Red Mulberry	END	Forest	

[1]Endangered Species Act – status as defined by O.Reg. 242/08 as of April 27, 2017; [2]Preferred Habitat Types – The habitat types listed are areas where a SAR has the potential to occur. It should be noted that species have the potential to occur outside of these habitats; [3]All – Structures such as culverts, rip rap and gabion baskets have the potential to provide nesting and/or hibernaculum for snake species; [4]TPC: Tallgrass Prairie Community – SAR identified are likely to be limited to this habitat type.

7.0 Mitigation Measures

Based on the types of drainage work activities outlined above and the potential for SAR and SAR habitat within and adjacent to the drainage features, the following best practices and mitigation measures are recommended for when conducting drainage works. Prior to starting drainage works, the following steps are recommended to help determine the appropriate mitigation/management measures:

Step 1
- Determine Drainage Work Activity and Timing of Works.

Step 2
- Review **Drainage Maps** ***(Appendix B)*** and/or **KMZ File** to confirm habitat(s) the activity may impact.

Step 3
- Cross-reference **Habitat Type(s)** (determined in **Step 2**) with **Table 2** (in **Section 6.0**) to confirm which species may be impacted by activity and their RAP to determine most appropriate time to conduct activity.

Step 4
- Conduct **Site Visit** to verify Habitat Type(s). Identify potential SAR Habitat/Sensitive Natural Features and distance from activities. Confirm the presence/absence of water flow.

Step 5
- Implement recommended Mitigation Measures. Review LaSalle Checklist (***Appendix E***) and provide **Contractor Information Package** (***Appendix F***) with Species Specific Mitigation Measures (**Section 7.2**), ID cards and Activity and SAR Observation Forms (***Appendix F***).

Step 6
- Upon completion of each Drainage Work Activity collect Observation/Reporting Form from Contractors and record activity in log form (***Appendix E***) for annual reporting to MNRF.

7.1 General Mitigation Measures

The following mitigation measures are recommended to avoid or minimize impacts to the natural environment when conducting drainage works. Following this section species specific mitigation measures are provided.

When planning for drainage works, activities should be planned outside of sensitive timing windows for all wildlife species wherever possible. **Table 2** in Section 6.0 indicates the Restricted Activity Periods for the different SAR having the potential to occur within the Study Area. **Table 3** indicates sensitive timing windows for various types of wildlife (including SAR) based on habitat types. This information can be used to determine what time(s) of year may be sensitive at a particular site, based on which types of habitat and wildlife are present.

Where possible, activities are recommended to be planned outside of these sensitive time(s); otherwise additional species specific mitigation measures are recommended and/or consultation with the MNRF.

Table 3: Sensitive Timing Windows for other Wildlife Species (including SAR)

Habitat Type	Wildlife	Sensitive Timing Windows
Agricultural (Hayfields and pastures)	Migratory Birds	March through July (breeding season for most species)
Wetlands/ Waterbodies	Migratory Birds (including waterfowl)	March through Mid-August
	Turtles and Amphibians	March through Mid-August; and Mid-October through March (for overwintering wildlife, including turtles).
	Mammals	March through mid-August; and Mid-October through March (overwintering wildlife)
	Fish	In-water timing restriction for warmwater fishes March 15 to June 30.
	Migratory Birds	March through mid-August
Forest	Mammals	March through mid-August; and Mid-October through March (overwintering wildlife)
	Snakes	March through mid-August; and Mid-October through March (overwintering wildlife)
Urban	Snakes	March through mid-August; and October through March (overwintering wildlife)
	Mammals	

The following list provides general measures that are recommended when conducting any drainage work activities:

- **Bats**: The work associated with drainage maintenance covered under this management plan would typically not include the removal of trees. As such, the potential for drainage work activities to impact bat SAR is low. However, if a tree that exhibits a diameter at breast height of 25 cm or greater or a tree that exhibits loose shaggy bark requires removal for drainage works, removal should be completed between November 1 and March 1, outside of the active season for bats. If the tree removal needs to occur during the active season, removal should be completed after dusk.
- Review species specific seasonal timing windows to avoid sensitive periods for species
- Where possible, abide by regulatory timing windows and setback distances and avoid regulated habitat features
- Minimize duration of in-water work (where applicable)
- Any in-stream work should be conducted during periods of low flow
- Schedule work to avoid wet, windy and rainy periods that may increase erosion and sedimentation

- Conduct wildlife sweeps prior to the commencement of drainage work activities to determine if SAR (or other wildlife) are present at the site and engaged in critical life processes (e.g. nesting, etc.)
- Following the wildlife sweep, the area of activity is to be isolated with silt fencing to keep SAR and other wildlife from entering the work space area.
- Develop and implement an erosion and sediment control plan for the site that minimizes the risk of sedimentation to the drain during all phases of an activity. Erosion and sediment control measures should be maintained until all disturbed ground has been permanently stabilized, suspended sediment has resettled to the bed of the drain of settling basin and runoff water is clear. Following the DFO's Measures to Avoid Harm (as outlined on DFO's website: http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures/measures-mesures-eng.html), an erosion and sediment control plan, where applicable, is to include the following:
    - Installation of effective erosion and sediment control measures before starting work to prevent sediment from entering the drain
    - Measures for managing water flowing onto the site, as well as water being pumped/diverted from the site such that sediment is filtered out prior to the water entering the drain
    - Site isolation measures, where required, to contain suspended sediment
    - Measures for containing and stabilizing waste materials generated from activities are stored away from any water bodies and prevent materials from re-entering water bodies
    - Erosion and sediment control measures are inspected and maintained on a regular basis during drainage works
    - Any damages to erosion and control measures are to be repaired immediately
    - Removal of non-biodegradable erosion and sediment control materials once site has been stabilized

- ***Phragmites*** is a non-native perennial grass species that has been observed throughout much of the province and LaSalle, developing tall dense stands that degrade wetlands and other features by outcompeting native vegetation and changing habitat. To further prevent the spread and introduction of this unwanted species in the province, the provincial government has regulated invasive *Phragmites* as restricted under the *Invasive Species Act*, 2015. Restricted species under the Act, prohibits i) the transport of species into any provincial park and conservation reserve and ii) the deposit or release of species in Ontario. For further information on the *Invasive Species Act*, 2015 please visit: www.ontario.ca/invasionON. It is recommended that care be taken when working in areas with *Phragmites* and efforts be taken to prevent further spread of species through equipment transfer. Methods to prevent the spread of *Phragmites* while conducting drainage works should include:
    - Inspection of vehicles, equipment and heavy machinery thoroughly inside and out for accumulation of dirt, plant material or snow/ice, including the underside of vehicles, radiators, spare tires, foot wells and bumpers before entering onto a site. Remove any guards, covers, plates or other easy to remove external equipment;
    - Inspections should be completed when: moving vehicles out of local area of operation; moving machinery between properties or sites within the same property where invasive species may be

present or known to occur; and using machinery along roadsides, in ditches and along watercourses.

- Vehicles, equipment and heavy machinery should be cleaned: before moving out of local area where invasive species has been identified or known to occur; and when accumulations of dirt, plant material or snow/ice has been observed.
- Clean vehicles, equipment and heavy machinery in an area where risk of contamination is low, ideally on a mud free hard surface, at least 30 m away from any watercourse, waterbody, wetland or other natural area, if possible. Where risk of runoff is high, cleaning stations should be contained by sediment fence as per standard erosion and sediment control specifications.
- Remove large accumulations of dirt, using a compressed air device, high pressure hose or other device as necessary. Clean the vehicle starting at the top and working down, with particular attention to the undersides, wheels, wheel arches, guards, chassis, engine bays, grills and other attachments.
- Clean inside vehicles by sweeping, vacuuming or using compressed air device including floor, foot wells, pedals, seats and under the seats.

Additional details on cleaning equipment and/or managing invasive species can be found in the Clean Equipment Protocol for Industry (J. Halloran, et al., 2013) and online at the Government of Ontario's website: https://www.ontario.ca/page/stop-spread-invasive-species.

7.2 Species Specific Mitigation Plans

In the event a SAR or SAR habitat has been identified within the proposed area for drainage work activity, the following information should be clearly conveyed to the on-site staff as part of the drainage works protocol, via notes or plans and on-site briefings with construction/personnel:

- Schedule for pre-construction activities such as wildlife inspections, silt fencing installation and contractor briefing.
- Description of wildlife mitigation measured to be used during drainage work activities, including:
  - Placement and specifications of required protection measures (e.g. fencing, signage)
  - Phasing and direction of site clearing activities
  - Any recommendations regarding access routes for equipment, vehicle parking, materials, stockpiling, etc.
- Guidance on what to do in the event of a wildlife encounter, including SAR and arrangements for dealing with injured or orphaned animals (as indicated in **Table 5** and ***Appendix F***). This guidance should be summarized in a handout suitable for quick reference by on-site staff, including truck drivers.
- SAR awareness training should be provided to all on-site staff.

In the Contractor Information Package (***Appendix F***) Dillon has provided SAR identification sheets for SAR with the potential to occur within the Study Area.

7.2.1 Species Specific Mitigation Measures for Snake Species

Snake species can be found in a variety of habitat types and most of the drainage work activities have the potential to encounter snakes. Particular attention should be given when conducting works on catch basins, culverts, rip rap and crossing structures, as snakes carry out sensitive life processes in structures such as these. **Table 4** shows the sensitive timing windows for snake species when carrying out life processes related to hibernation and staging.

Table 4: Sensitive Timing Windows for Snake Species

Month	Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sep			Oct			Nov			Dec		
Date Codes[1]	E	M	L	E	M	L	E	M	L	E	M	L	E	M	L	E	M	L	E	M	L	E	M	L	E	M	L	E	M	L	E	M	L	E	M	L
Hibernation																																				
Staging																																				

[1]Monthly intervals: E = Early (days 1-10); M = Middle (days 11-20); L = Late (days 21-31). Adapted from the Seasonal Timing Windows Chart in the MNRF Agreement under Section 23 of O.Reg. 242/08 made under ESA, 2007 (File #: AY-23D-009-10).

Table 5 below outlines the recommended mitigation measures to avoid impacts to snake species during and outside of RAP. Photographs of habitat observed within and adjacent to drains that have the potential to support SAR snakes, have been included in ***Appendix G*** (Photographs #1 - 4).

Table 5: Mitigation Measures for Snake Species

Common Name	Recommended Mitigation Measures to Avoid Impacts to SAR Snakes in Study Area

Eastern Foxsnake (Carolinian population)
 	
Queensnake
 	
Butler's Gartersnake
	• Preconstruction planning that includes review for potential habitat.
	• During site visit, verify if attributes of regulated habitat occur and delineate where possible.
	• Establish constraints for activities, where possible, that abide by timing windows and setback distances and avoid regulated habitat features
	• Narrow construction footprint if possible.
	• Flag or fence off environmentally sensitive areas prior to drainage work activity. Bury fencing minimum of 10 – 20 cm and vertical height of at least 60 cm. Note, stakes should be installed on the activity side to prevent snake use of stakes to climb fence.
	• Complete wildlife sweep within the exclusion area following fence installation to ensure no trapped wildlife.
	• Staff/workers conducting drainage works should be trained in snake species identification and procedures if encountered (review and sign off form in Contractor Information Package)
	• One staff member/worker or qualified biologist should be trained in proper snake handling procedures and protocols outlined in Section 2 of the *Ontario Species at Risk Handling Manual: For Endangered Species Act Authorization Holders* (Included in the Contractor Information Package). This person should be onsite at all times (when required) for the potential capture, temporary holding, transfer and release of any snakes encountered during construction. A minimum of two holding tubs and cotton sacks should be onsite at all times.
	• Prior to commencement of daily drainage work activity, the area should be cleared of snakes through machinery inspections (e.g. wheels, engine compartment) each morning and after machinery is left idle for more than one (1) hour if left on site during the snake active season.
	• If a nest is uncovered during drainage work activity:
	  ○ Collect any displaced or damaged eggs and transfer them to a holding tub
	  ○ Capture and transfer all injured dispersing juveniles of that species into a light-coloured drawstring cotton sack
	  ○ Place all cotton sacks with the captured injured individuals into a holding tub out of direct sunlight
	  ○ Immediately contact the MNRF to seek direction and to arrange for transfer of the injured individuals
	  ○ Immediately stop any disturbance to the next site and loosely cover exposed portions with soil or organic material to protect the integrity of the remaining individuals
	  ○ Do not drive over the nest site of conduct any activities within 5 m of the nest site
	  ○ Do not place any dredged materials removed from drainage works on top of the nest site
	  ○ Mark out the physical location of the nest site but not by any means that might increase the susceptibility of the nest to predation or poaching
	  ○ Where there are no collected eggs or captured individuals, contact the MNRF within 24 hours to provide information on the location of the nest
	• Any injured captured snakes should be stored outside of direct sunlight and the MNRF should immediately be contacted to seek direction and to arrange for transfer. MNRF may require transfer to the nearest MNRF authorized Wildlife Rehabilitator. Contact Information for Authorized Wildlife Rehabilitator can be found in ***Appendix F*** and on SAR Information Sheets (***Appendix F***).
	• If conducting drainage works during a species sensitive timing window and one or more individuals belonging to a snake species is encountered or active hibernacula is discovered:
	  ○ Trained staff/worker or qualified biologist shall capture and transfer all injured and uninjured individual snakes of that species into individual light-coloured, drawstring cotton sacks
	  ○ Place cotton sacks into a holding tub
	  ○ Ensure that the holding tub with captured individuals is stored at a cool temperature to protect snakes from freezing until the individuals can be retrieved or transferred
	  ○ If an active hibernacula is uncovered cease all work and immediately
	  ○ Contact the MNRF immediately to seek advice and arrange for transfer and/or removal
	• If conducting drainage works outside of a species sensitive timing window and one or more individuals belonging to a snake species is encountered:
	  ○ Briefly stop the activity for a reasonable period of time to allow any uninjured individual snakes of that species to leave the work area
	  ○ If the individuals do not leave the work area after the activity is briefly stopped, trained staff/worker or qualified biologist shall capture all uninjured individuals and release them in accordance with the methods outlined below
	  ○ Where circumstances do not allow for the immediate release of captured uninjured individuals, they may be transferred into individual, light-coloured, drawstring cotton sacks before placing them into a holding tub which shall be stored out of direct sunlight for a maximum of 24 hours before releasing them in accordance with the methods outlined below
	  ○ Capture and transfer any individuals injured as a result of conducting drainage works into a holding tub separate from any holding tub containing uninjured individuals
	  ○ Store all captured injured individuals out of direct sunlight and immediately contact the MNRF to seek direction and to arrange their transfer

Common Name	Recommended Mitigation Measures to Avoid Impacts to SAR Snakes in Study Area

Butler's Gartersnake *(con'd)*	• Uninjured individuals captured during drainage works, are to be released within 24 hours of capture, in an area immediately adjacent to the drainage works with natural vegetation cover within 50 m and out of harm's way (as per subsections 2.3 and 2.4 of Handling Manual included in the Contractor Information Package).
	• Where one or more individuals belonging to a snake species is killed as a result of drainage work activity, or a person finds a deceased individual of a snake species, the following measures should be followed:
	  ○ Collect and transfer any dead individuals into a holding tub outside of direct sunlight; and,
	  ○ Contact the MNRF within 72 hours to seek direction and to arrange for the transfer of the carcasses of the deal individuals.
	• If the methods of handling snakes outlined in subsection 2.3 and 2.4 of the Handling Manuals are not applicable due to a snake's injuries, use a shovel or flat object to pick up the snake, ensuring that injured areas are supported and place in a large plastic bin or bucket with a lid with air holes. Immediately transport the turtle to an MNRF authorized veterinarian or wildlife rehabilitator and contact the MNRF. Contact Information for Authorized Wildlife Rehabilitator can be found in ***Appendix F*** and on SAR Information Sheets (***Appendix F***).
	• **Complete a SAR Encounter Reporting Form included in Contractor Information Package.**

7.2.2 Species Specific Mitigation Measures for Turtle Species

Turtles can generally be found associated with large wetlands and shallow lakes with abundant aquatic vegetation. For nesting, turtles prefer moist well drained, loose soils for digging and on a gradual typically south facing slope. Species such as Blanding's Turtle hibernate underwater in permanent waterbodies. Sensitive timing windows for turtle species includes the nesting period and has been provided in **Table 6.**

When conducting drainage works where there is potential for turtle species to be hibernating, water level **cannot be reduced** as per Paragraph 6 of subsection 13 of Section 23.9 of O.Reg. 242/08.

Table 6: Restricted Activity Period for Turtle Species

Month	Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sep			Oct			Nov			Dec		
Date Codes[1]	E	M	L	E	M	L	E	M	L	E	M	L	E	M	L	E	M	L	E	M	L	E	M	L	E	M	L	E	M	L	E	M	L	E	M	L
Hibernation																																				

[1]Monthly intervals: E = Early (days 1-10); M = Middle (days 11-20); L = Late (days 21-31). Adapted from the Seasonal Timing Windows Chart in the MNRF Agreement under Section 23 of O.Reg. 242/08 made under ESA, 2007 (File #: AY-23D-009-10).

In **Table 7** below, the recommended mitigation measures to avoid impacts to turtle species during and outside sensitive timing windows and what to do when encountering turtle nests are provided. Photographs of habitat observed within and adjacent to drains that have the potential to support SAR Turtles, have been included in **Appendix G** (Photographs #5 - 6).

Table 7: Mitigation Measures for Turtle Species

Common Name	Recommended Mitigation Measures to Avoid Impacts to SAR Turtles within the Study Area
Blanding's Turtle	• Preconstruction planning that includes review for potential habitat. • During site visit, verify if attributes of regulated habitat occur and delineate where possible. • Establish constraints for activities, where possible, that abide by timing windows and setback distances and avoid regulated habitat features. • Narrow construction footprint if possible. • Flag or fence off environmentally sensitive areas prior to drainage work activity. Bury fencing minimum of 10 – 20cm and vertical height of at least 60 cm. • Complete wildlife sweep within the exclusion/construction area following fence installation to ensure no trapped wildlife. • Staff/workers conducting drainage works should be trained in turtle species identification and procedures if encountered (Review and sign off form in the Contractor Information Package). • One staff member/worker or qualified biologist should be trained in proper turtle handling procedures and protocols outlined in Section 1 of the Ontario Species at Risk Handling Manual: For Endangered Species Act Authorization Holders (provided in the Contractor Information Package). This person should be onsite at all times (when required) for the potential capture, temporary holding, transfer and release of any turtles encountered during construction. A minimum of two holding tubs and cotton sacks should be onsite at all times. • If construction is planned to commence during the turtle nesting period, prior to site preparation a turtle nesting search should be completed to identify turtle nests. If nests are encountered, the MNRF must be consulted immediately. Nests should be relocated to an appropriate facility for incubation with MNRF approval. Contact information for MNRF Authorized Wildlife Rehabilitator can be found in ***Appendix F*** and on SAR Information Sheets (***Appendix F***). • Drainage work activity related to excavation of sediment or disturbance to banks should be avoided during the sensitive timing windows for turtles. • During turtle hibernation periods, water in drains or ditches cannot be reduced. • Prior to commencement of daily activity, the area should be cleared of turtles and turtle nests by a specially trained staff member or qualified biologist.

Spiny Softshell	• Do not disturb a turtle encountered laying eggs and do not conduct activities within 20 m of the turtle while it is laying eggs.
	• If conducting drainage works during a species sensitive timing window and one or more individuals belonging to a turtle species is encountered:
	  ○ Trained staff/worker or qualified biologist shall capture and transfer all injured and uninjured individual of that species to a holding tub
	  ○ Capture and transfer all individuals injured as a result of the drainage work activity into a holding tub separate from any holding tub containing uninjured individuals
	  ○ Ensure that the holding tub with captured individuals is stored at a cool temperature to protect turtles from freezing until the individuals can be retrieved or transferred
	  ○ Contact the MNRF immediately to seek advice and arrange for transfer and/or removal
	• If a nest is uncovered during construction, immediately stop all activity near the nest. Cover the nest with soil or organic material. Do not drive within 5 m of the nest and contact the MNRF within 24 hours if no eggs or individuals were captured/collected.
	• Isolate material stockpile areas with fencing.
	• Any injured captured turtles should be stored outside of direct sunlight and the MNRF should immediately be contacted to seek direction and to arrange for transfer.
	• Machinery should be inspected each morning (e.g. under vehicles) for presence of turtles.
	• Uninjured individuals captured during drainage works, are to be released within 1 hour of capture, out of harm's way no more than 125 m of where it was found, unless absolutely necessary. If it is not possible to relocate the turtle within 125 m of the capture location, contact the MNRF for further direction. MNRF may require transport of turtle(s) to MNRF Authorized Rehabilitator or Veterinarian. Contact information can be found in ***Appendix F***.
	• If the methods of handling turtles outlined in subsection 1.3 of the Handing Protocol are not possible due to a turtle's injuries, use a shovel or flat object to pick up the turtle, ensuring that injured areas are supported and place in a large plastic bin or bucket with a lid with air holes. Immediately transport the turtle to an MNRF authorized veterinarian or wildlife rehabilitator and contact the MNRF. Contact Information for Authorized Wildlife Rehabilitator can be found in ***Appendix F*** and on SAR Information Sheets (***Appendix F***). See subsection 1.7 of the Handling Manual (included in the Contractor Information Package) for more details.
	• **Complete a SAR Encounter Reporting Form included in the Contractor Information Package.**

NHIC Data

2023-06-02

St. Michaels Drain

Town of LaSalle - REI2018D003

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
679422	SPECIES	Midland Painted Turtle	Chrysemys picta marginata	S4		SC	17LG2878	
679422	SPECIES	Wood Thrush	Hylocichla mustelina	S4B	SC	THR	17LG2878	
679422	SPECIES	Eastern Wood-pewee	Contopus virens	S4B	SC	SC	17LG2878	
679422	SPECIES	Snapping Turtle	Chelydra serpentina	S4	SC	SC	17LG2878	
679422	SPECIES	Northern Map Turtle	Graptemys geographica	S3	SC	SC	17LG2878	
679422	SPECIES	Pugnose Minnow	Opsopoeodus emiliae	S2	THR	THR	17LG2878	
679422	SPECIES	Red-headed Woodpecker	Melanerpes erythrocephalus	S3	END	END	17LG2878	
679422	SPECIES	Skinner's False Foxglove	Agalinis skinneriana	S1	END	END	17LG2878	
679422	SPECIES	Climbing Prairie Rose	Rosa setigera	S2S3	SC	SC	17LG2878	
679422	SPECIES	Purple Twayblade	Liparis liliifolia	S2S3	THR	THR	17LG2878	
679422	SPECIES	Scarlet Ammannia	Ammannia robusta	S1	END	END	17LG2878	
679422	SPECIES	Riddell's Goldenrod	Solidago riddellii	S3	SC	SC	17LG2878	
679422	SPECIES	White Colicroot	Aletris farinosa	S2	END	END	17LG2878	
679422	SPECIES	Dense Blazing-star	Liatris spicata	S2	THR	THR	17LG2878	
679422	SPECIES	Acadian Flycatcher	Empidonax virescens	S1B	END	END	17LG2878	
679422	SPECIES	Spiny Softshell	Apalone spinifera	S2	END	END	17LG2878	
679422	SPECIES	Butler's Gartersnake	Thamnophis butleri	S2	END	END	17LG2878	

APPENDIX “REI-C”

STANDARD SPECIFICATIONS
FOR ACCESS BRIDGE CONSTRUCTION

1. CONCRETE FILLED JUTE BAG HEADWALLS

After the Contractor has set the new pipe in place, it shall completely backfill same and install new concrete filled jute bag headwalls at the locations and parameters indicated on the drawing. When constructing the concrete filled jute bag headwalls, the Contractor shall place the bags so that the completed headwall will have a slope inward from the bottom of the pipe to the top of the finished headwall. The slope of the headwall shall be one unit horizontal to five units vertical. The Contractor shall completely backfill behind the new concrete filled jute bag headwalls with Granular "B" and Granular "A" material as per O.P.S.S. Form 1010 and the granular material shall be compacted in place to a Standard Proctor Density of 100%. The placing of the jute bag headwalls and the backfilling shall be performed in lifts simultaneously. The granular backfill shall be placed and compacted in lifts not to exceed 305mm (12") in thickness.

The concrete filled jute bag headwalls shall be constructed by filling jute bags with concrete. All concrete used to fill the jute bags shall have a minimum compressive strength of 25 MPa in 28 days and shall be provided and placed only as a wet mix. Under no circumstance shall the concrete to be used for filling the jute bags be placed as a dry mix. The jute bags, before being filled with concrete, shall have a dimension of 460mm (18") x 660mm (26"). The jute bags shall be filled with concrete so that when they are laid flat, they will be approximately 100mm (4") thick, 305mm (12") to 380mm (15") wide and 460mm (18") long.

The concrete jute bag headwall to be provided at the end of the bridge pipe shall be a single or double bag wall construction as set out in the specifications. The concrete filled bags shall be laid so that the 460mm (18") dimension is parallel with the length of the new pipe. The concrete filled jute bags shall be laid on a footing of plain concrete being 460mm (18") wide, extending for the full length of the wall, and 305mm (12") thick extending below the bottom of the culvert pipe.

All concrete used for the footing, cap and bags shall have a minimum compressive strength of 25 Mpa at 28 days and shall include 6% ± 1% air entrainment.

Upon completion of the jute bag headwall the Contractor shall cap the top row of concrete filled bags with a layer of plain concrete, minimum 100mm (4") thick, and hand trowelled to obtain a pleasing appearance. If the cap is made more than 100mm thick, the Contractor shall provide two (2) continuous 15M reinforcing bars set at mid-depth and equally spaced in the cap. The Contractor shall fill all voids between the concrete filled jute bags and the corrugated steel pipe with concrete, particular care being taken underneath the pipe haunches to fill all voids.

The completed jute bag headwalls shall be securely embedded into the drain bank a minimum of 500mm (20") measured perpendicular to the sideslopes of the drain.

As an alternate to constructing a concrete filled jute bag headwall, the Contractor may construct a grouted concrete rip rap headwall. The specifications for the installation of a concrete filled jute bag headwall shall be followed with the exception that broken pieces of concrete may be substituted for the jute bags. The concrete rip rap shall be approximately 460mm (18") square and 100mm (4") thick and shall have two (2) flat parallel sides. The concrete rip rap shall be fully mortared in place using a mixture composed of three (3) parts of clean sharp sand and one (1) part of Portland cement.

The complete placement and backfilling of the headwalls shall be performed to the full satisfaction of the Town Drainage Superintendent and the Engineer.

2. QUARRIED LIMESTONE ENDWALLS

The backfill over the ends of the corrugated steel pipe shall be set on a slope of 1-½ units horizontal to 1 unit vertical from the bottom of the corrugated steel pipe to the top of each end slope and between the drain banks. The top 305mm (12") in thickness of the backfill over the ends of the corrugated steel pipe shall be quarried limestone. The quarried limestone shall also be placed on a slope of 1-½ units horizontal to 1 unit vertical from the bottom of the corrugated steel pipe to the top of each bank of the drain adjacent each end slope. The quarried limestone shall have a minimum dimension of 100mm (4") and a maximum dimension of 250mm (10"). The end slope protection shall be placed with the quarried limestone pieces carefully tamped into place with the use of a shovel bucket so that, when complete, the end protection shall be consistent, uniform, and tightly laid in place.

Prior to placing the quarried limestone end protection over the granular backfill and on the drain banks, the Contractor shall lay non-woven geotextile filter fabric "GMN160" conforming to O.P.S.S. 1860 Class I or approved equal. The geotextile filter fabric shall extend from the bottom of the corrugated steel pipe to the top of each end slope of the bridge and along both banks of the drain to a point opposite the ends of the pipe.

The Contractor shall take extreme care not to damage the geotextile filter fabric when placing the quarried limestone on top of the filter fabric.

3. BRIDGE BACKFILL

After the corrugated steel pipe has been set in place, the Contractor shall backfill the pipe with Granular "B" material, O.P.S.S. Form 1010 with the exception of the top 305mm (12") of the backfill. The top 305mm (12") of the backfill for the full width of the excavated area (between each bank of the drain) and for the top width of the driveway, shall be Granular "A" material, O.P.S.S. Form 1010. The granular backfill shall be compacted in place to a Standard Proctor Density of 100% by means of mechanical compactors. All of the backfill material, equipment used, and method of compacting the backfill material shall be inspected and approved and meet with the full satisfaction of the Town Drainage Superintendent and Engineer.

4. GENERAL

Prior to the work commencing, the Town Drainage Superintendent and Engineer must be notified, and under no circumstances shall work begin without one of them being at the site. Furthermore, the grade setting of the pipe must be checked, confirmed, and approved by the Superintendent or Engineer prior to continuing on with the bridge installation.

The alignment of the new bridge culvert pipe shall be in the centreline of the existing drain, and the placing of same must be performed totally in the dry.

Prior to the installation of the new access bridge culvert, the existing sediment build-up in the drain bottom must be excavated and completely removed. This must be done not only along the drain where the bridge culvert pipe is to be installed, but also for a distance of 3.05 metres (10 ft.) both upstream and downstream of said new access bridge culvert. When setting the new bridge culvert pipe in place it must be founded on a good undisturbed base. If unsound soil is encountered, it must be totally removed and replaced with 20mm (3/4") clear stone, satisfactorily compacted in place.

When doing the excavation work or any other portion of the work relative to the bridge installation, care should be taken not to interfere with, plug up, or damage any existing surface drains, swales, and lateral or main tile ends. Where damage is encountered, repairs to correct same must be performed immediately as part of the work.

The Contractor and/or landowner performing the bridge installation shall satisfy themselves as to the exact location, nature and extent of any existing structure, utility or other object that they may encounter during the course of the work. The Contractor shall indemnify and save harmless the Town, the Engineer and their staff from any damages which it may cause or sustain during the progress of the work. It shall not hold them liable for any legal action arising out of any claims brought about by such damage caused by it.

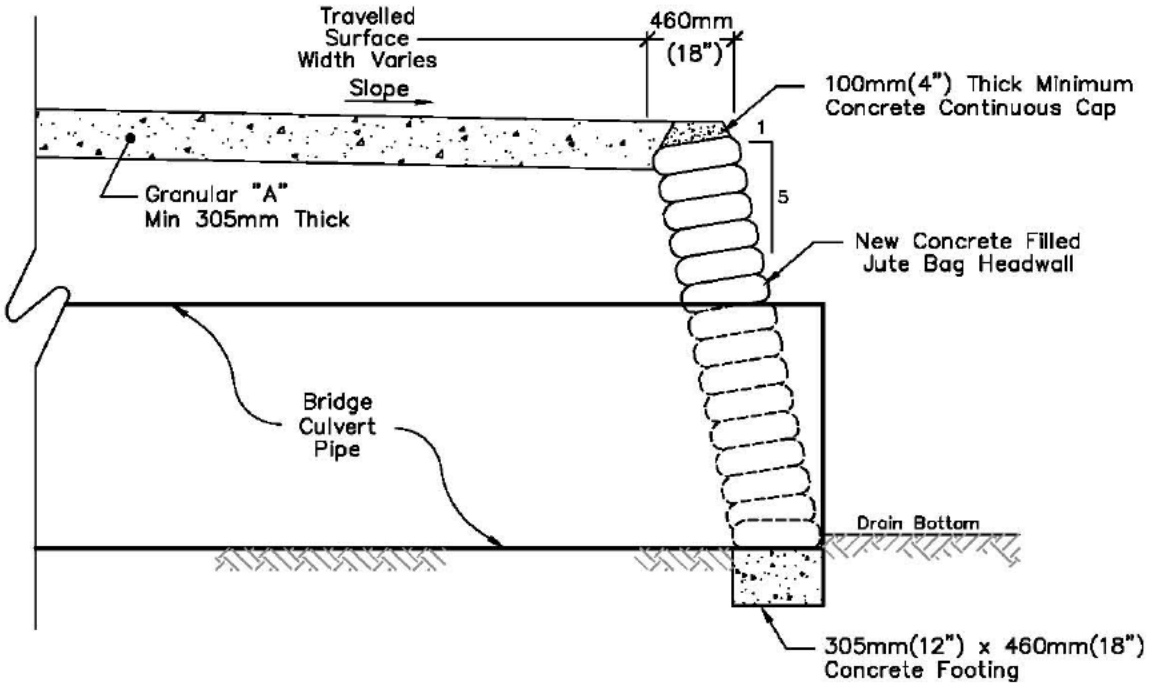
Where applicable, the Contractor and/or landowner constructing the new bridge shall be responsible for any damage caused by them to any portion of the Town road right-of-way. They shall take whatever precautions are necessary to cause a minimum of damage to same and must restore the roadway to its original condition upon completion of the works.

When working along a municipal roadway, the Contractor shall provide all necessary lights, signs, barricades and flagpersons as required to protect the public. All work shall be carried out in accordance with the requirements of the Occupational Health and Safety Act, and latest amendments thereto. If traffic control is required on this project, it is to comply with the M.T.O. Traffic Control Manual for Roadway Work Operations.

Once the bridge installation has been completed, the drain sideslopes directly adjacent the new headwalls and/or endwalls are to be completely restored including revegetation, where necessary.

All of the work required towards the installation of the bridge shall be performed in a neat and workmanlike manner. The general site shall be restored to its' original condition, and the general area shall be cleaned of all debris and junk, etc. caused by the work

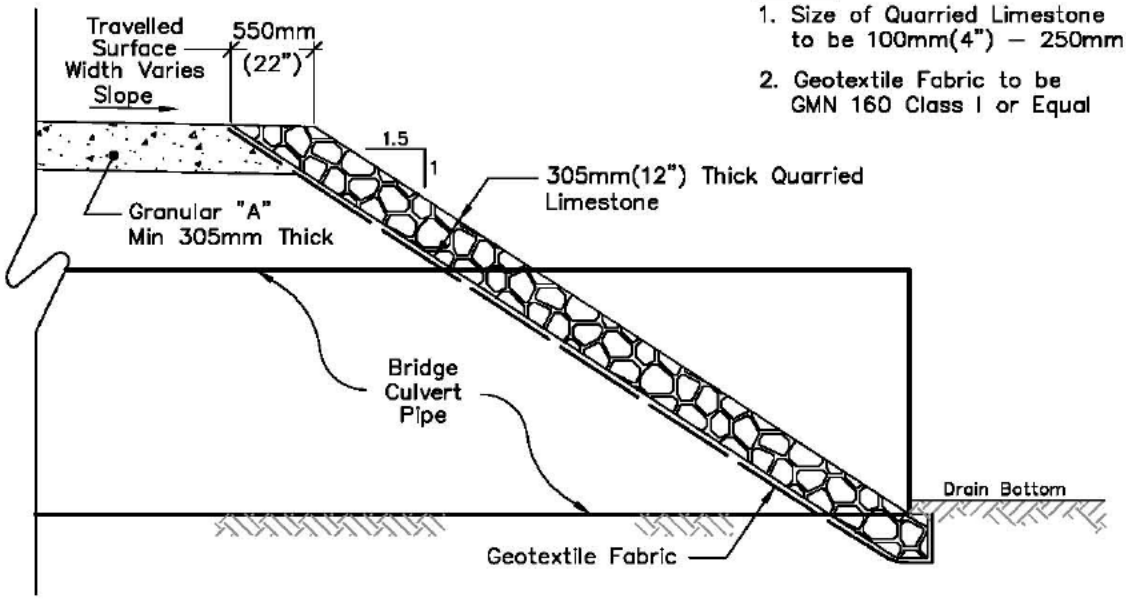
All of the excavation, installation procedures, and parameters as above mentioned are to be carried out and performed to the full satisfaction of the Town Drainage Superintendent and Engineer.



Typical Jute Bag Headwall

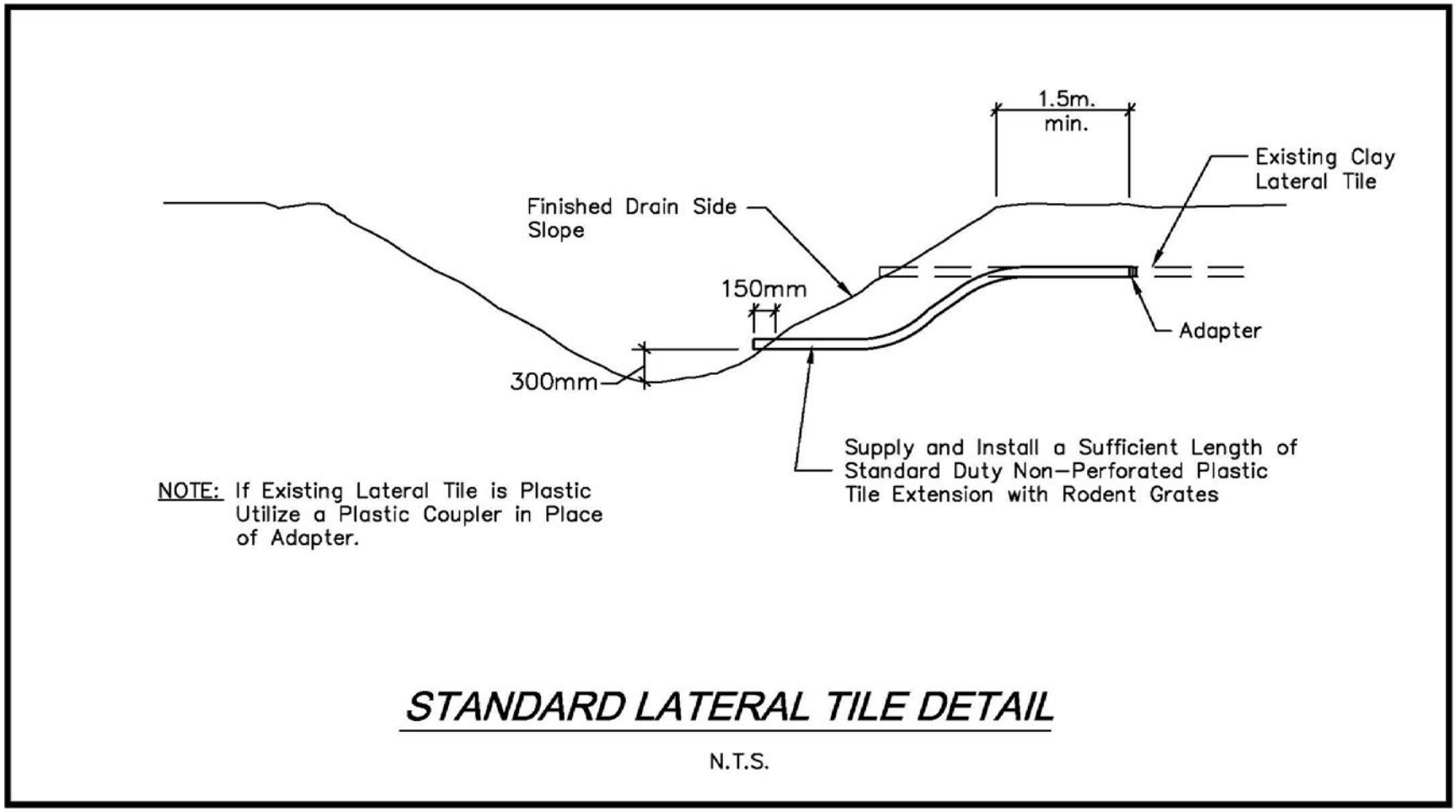
NOTE:

1. Size of Quarried Limestone to be 100mm(4") – 250mm(10")
2. Geotextile Fabric to be GMN 160 Class I or Equal



Typical Quarried Limestone End Protection

Rood Engineering Inc.
Consulting Engineers
9 Nelson Street
Leamington, Ontario N8H 1G6
519-322-1621



STANDARD LATERAL TILE DETAIL

N.T.S.

Block Headwall Installation Instructions for Culverts

1. A swift lift device will be required to place the blocks. A 75mm eye bolt will be required to place the caps.
2. The bottom course of blocks shall be founded on a firm solid base. The contractor shall provide a minimum levelling course of 150mm of compacted 3/4" Clear Stone, or a 100% compacted granular A, or lean concrete as a foundation base.
3. Ensure that the base is level and flat as this will greatly improve speed of installation.
4. On new culverts a minimum of 150mm of block wall will extend below the culvert to prevent scouring under the culvert.
5. The bottom course of blocks shall be embedded into the drain bottom to achieve the desired top elevation of the wall.
6. Blocks shall extend from the pipe invert across the full height and width of the drain and be imbedded a minimum of 300mm into the drain banks. Where possible the top of the block wall will match the height of the completed driveway.
7. Blocks shall be placed such that all joints are staggered.
8. Any excavation voids on the ends of block walls below subsequent block layers shall be filled with ¾" Clear Stone.
9. Where block walls extend beyond three blocks in height, they should be battered a minimum of 1 unit horizontal for every 10 units vertical throughout the wall's full height and width. This can be achieved using pre-battered base blocks, or by careful preparation of the base.
10. Filter cloth (270R or equivalent) should be placed behind the wall to prevent the migration of fill material through the joints.
11. The walls should be backfilled with a free draining granular fill.
12. A uni-axial geogrid (SG350 or equivalent) should be used to tie back the headwalls where walls extend beyond 1.8m in height.
13. The face of the block wall shall not extend beyond the end of the pipe culvert.
14. Any gaps between the blocks and culvert shall be sealed with non-shrink grout for the full depth of the block.

APPENDIX “REI-D”

APPENDIX “REI-E”

WATERSHED PLAN, PROFILES, DRAIN PLANS, AND SECTIONS

FOR THE

ST. MICHAELS DRAIN & BRANCH

(Geographic Township of Sandwich West)

IN THE

TOWN OF LASALLE

IN THE

COUNTY OF ESSEX • ONTARIO

Gerard Rood

GERARD ROOD, P.ENG.

ROOD ENGINEERING INC.

CONSULTING ENGINEERS
Leamington, Ontario
519–322–1621

DATE: July 26th, 2023

TOWN OF ESSEX
MAYOR: Crystal Meloche
CLERK: Jennifer Astrologo
DRAINAGE SUPERINTENDENT: Michael Cappucci, P.Eng.

BENCHMARKS:

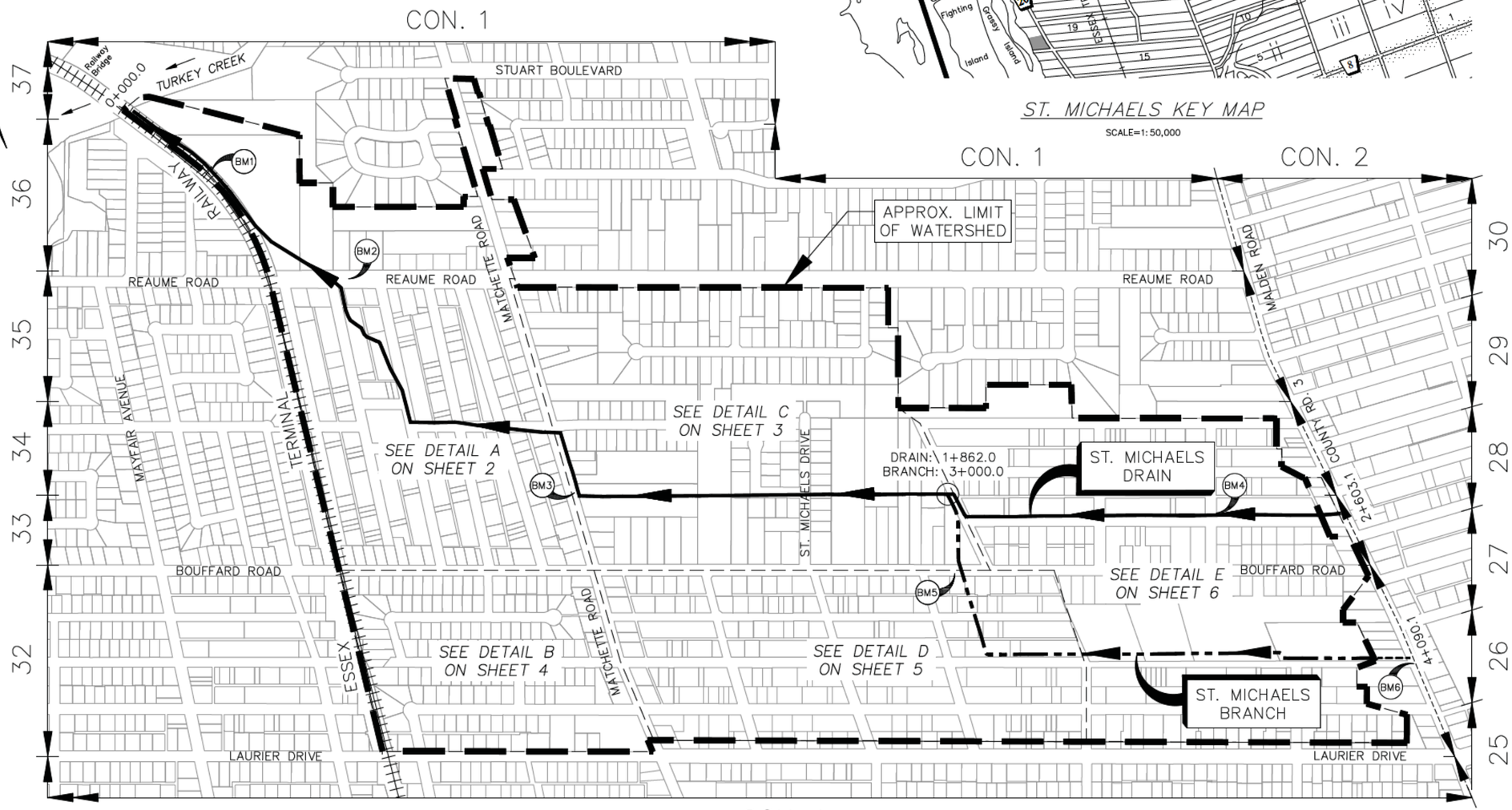
1. NAIL IN WEST FACE OF FOURTH HYDRO POLE SOUTHEAST OF TURKEY CREEK. EAST SIDE OF ESSEX TERMINAL RAILWAY AND EAST TOP BANK OF DRAIN.
   ELEV: 176.663m
2. NAIL IN WEST FACE OF HYDRO POLE ON NORTH SIDE OF REAUME ROAD. EAST OF ESSEX TERMINAL RAILWAY.
   ELEV: 177.615m
3. NAIL IN EAST FACE OF HYDRO POLE ON EAST SIDE OF MATCHETTE ROAD AND WEST SIDE OF DRAIN. APPROXIMATELY 10m NORTH OF DRAIN BEND AND DRAIN INLET.
   ELEV: 178.500m
4. STANDARD IRON BAR APPROXIMATELY 230m WEST OF MALDEN ROAD, 10m NORTH OF MAIN DRAIN, 0.5m EAST OF SWALE.
   ELEV: 177.723m
5. TOP OF 660mmø MANHOLE AT SOUTH SIDE OF BOUFFARD ROAD. WEST EDGE OF MN 1525 DRIVEWAY AND SOUTH EDGE OF SWALE.
   ELEV: 177.773m
6. TOP OF STORM MANHOLE ON WEST SIDE OF MALDEN ROAD. CENTERED TO HURON STREET.
   ELEV: 177.863m

ROAD CENTRELINE CROSSINGS:

REAUME ROAD, STA 0+487.6	ELEV: 177.410m
MATCHETTE ROAD, STA 1+054.6	ELEV: 177.862m
ST. MICHAELS DRIVE, STA 1+597.5	ELEV: 177.956m
BOUFFARD ROAD, STA 3+133.8	ELEV: 177.963m

ST. MICHAELS KEY MAP

SCALE=1:50,000



WATERSHED PLAN

SCALE=1:4,000

THESE PLANS HAVE BEEN REDUCED AND THE SCALE THEREFORE VARIES. FULL SCALE PLANS MAY BE VIEWED AT THE MUNICIPAL OFFICE.

DRAWN BY: S.H. & J.S.
PLOT CODE: 1:1
COMPUTER FILE: REI2018D003.DWG

FILE No.: REI2018D003

SHEET No.: 1 OF 27

ROLL INFORMATION:

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184. (090-17100)

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   ELEV: 177.863m

WATERSHED PLAN DETAIL A

SCALE=1:2,000

THESE PLANS HAVE BEEN REDUCED AND THE SCALE THEREFORE VARIES. FULL SCALE PLANS MAY BE VIEWED AT THE MUNICIPAL OFFICE.

DRAWN BY: S.H. & J.S.
PLOT CODE: 1:1
COMPUTER FILE: REI2018D003.DWG
FILE No.: REI2018D003
SHEET No.: 2 OF 27

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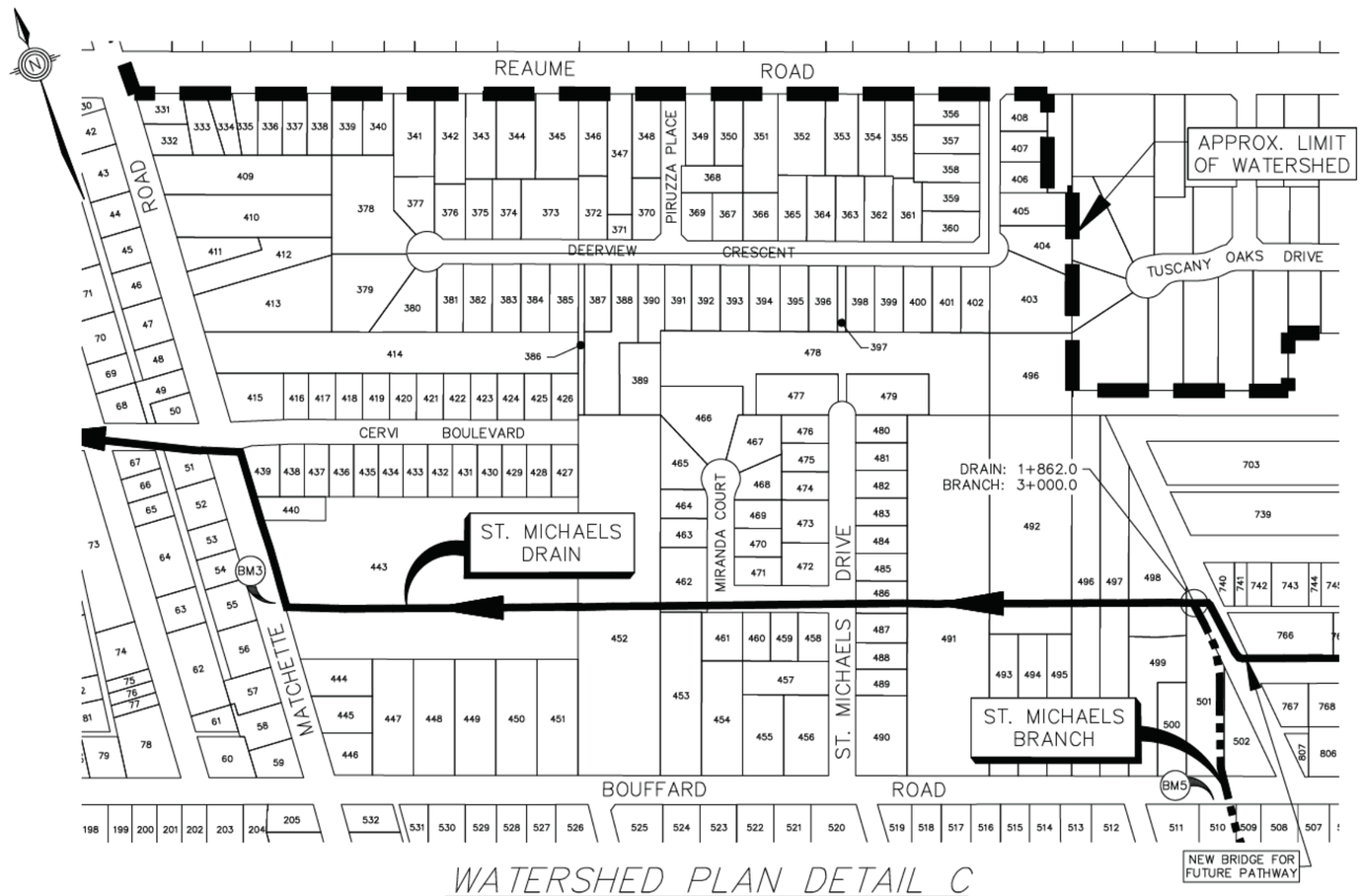

WATERSHED PLAN DETAIL C

SCALE=1:2,000

BENCHMARKS:

1. NAIL IN WEST FACE OF FOURTH HYDRO POLE SOUTHEAST OF TURKEY CREEK. EAST SIDE OF ESSEX TERMINAL RAILWAY AND EAST TOP BANK OF DRAIN.
   ELEV: 176.663m
2. NAIL IN WEST FACE OF HYDRO POLE ON NORTH SIDE OF REAUME ROAD. EAST OF ESSEX TERMINAL RAILWAY.
   ELEV: 177.615m
3. NAIL IN EAST FACE OF HYDRO POLE ON EAST SIDE OF MATCHETTE ROAD AND WEST SIDE OF DRAIN. APPROXIMATELY 10m NORTH OF DRAIN BEND AND DRAIN INLET.
   ELEV: 178.500m
4. STANDARD IRON BAR APPROXIMATELY 230m WEST OF MALDEN ROAD, 10m NORTH OF MAIN DRAIN, 0.5m EAST OF SWALE.
   ELEV: 177.723m
5. TOP OF 660mmø MANHOLE AT SOUTH SIDE OF BOUFFARD ROAD. WEST EDGE OF MN 1525 DRIVEWAY AND SOUTH EDGE OF SWALE.
   ELEV: 177.773m
6. TOP OF STORM MANHOLE ON WEST SIDE OF MALDEN ROAD. CENTERED TO HURON STREET.
   ELEV: 177.863m

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DRAWN BY: S.H. & J.S.
PLOT CODE: 1:1
COMPUTER FILE: REI2018D003.DWG

FILE No.: REI2018D003
SHEET No.: 3 OF 27

ROLL INFORMATION:

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WATERSHED PLAN DETAIL B

SCALE=1: 2,000

BENCHMARKS:

1. NAIL IN WEST FACE OF FOURTH HYDRO POLE SOUTHEAST OF TURKEY CREEK. EAST SIDE OF ESSEX TERMINAL RAILWAY AND EAST TOP BANK OF DRAIN.
   ELEV: 176.663m
2. NAIL IN WEST FACE OF HYDRO POLE ON NORTH SIDE OF REAUME ROAD. EAST OF ESSEX TERMINAL RAILWAY.
   ELEV: 177.615m
3. NAIL IN EAST FACE OF HYDRO POLE ON EAST SIDE OF MATCHETTE ROAD AND WEST SIDE OF DRAIN. APPROXIMATELY 10m NORTH OF DRAIN BEND AND DRAIN INLET.
   ELEV: 178.500m
4. STANDARD IRON BAR APPROXIMATELY 230m WEST OF MALDEN ROAD, 10m NORTH OF MAIN DRAIN, 0.5m EAST OF SWALE.
   ELEV: 177.723m
5. TOP OF 660mmø MANHOLE AT SOUTH SIDE OF BOUFFARD ROAD. WEST EDGE OF MN 1525 DRIVEWAY AND SOUTH EDGE OF SWALE.
   ELEV: 177.773m
6. TOP OF STORM MANHOLE ON WEST SIDE OF MALDEN ROAD. CENTERED TO HURON STREET.
   ELEV: 177.863m

THESE PLANS HAVE BEEN REDUCED AND THE SCALE THEREFORE VARIES. FULL SCALE PLANS MAY BE VIEWED AT THE MUNICIPAL OFFICE.

DRAWN BY: S.H. & J.S.
PLOT CODE: 1:1
COMPUTER FILE: REI2018D003.DWG
FILE No.: REI2018D003
SHEET No.: 4 OF 27

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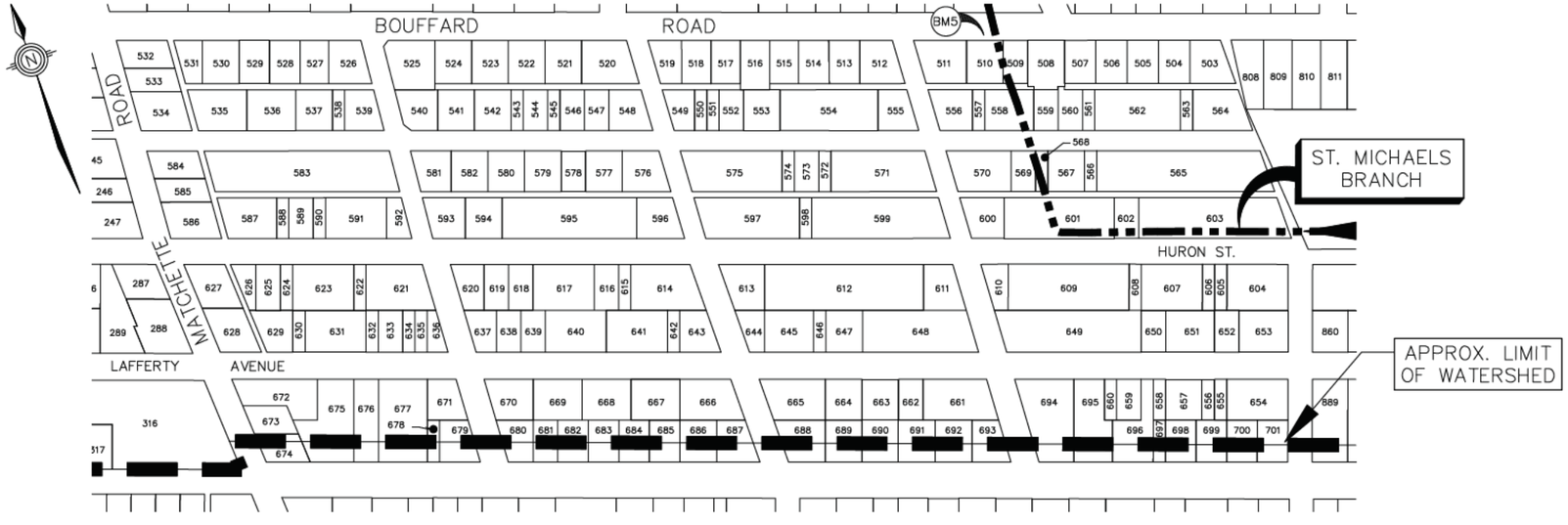

WATERSHED PLAN DETAIL D

SCALE=1:2,000

BENCHMARKS:

1. NAIL IN WEST FACE OF FOURTH HYDRO POLE SOUTHEAST OF TURKEY CREEK. EAST SIDE OF ESSEX TERMINAL RAILWAY AND EAST TOP BANK OF DRAIN.
   ELEV: 176.663m
2. NAIL IN WEST FACE OF HYDRO POLE ON NORTH SIDE OF REAUME ROAD. EAST OF ESSEX TERMINAL RAILWAY.
   ELEV: 177.615m
3. NAIL IN EAST FACE OF HYDRO POLE ON EAST SIDE OF MATCHETTE ROAD AND WEST SIDE OF DRAIN. APPROXIMATELY 10m NORTH OF DRAIN BEND AND DRAIN INLET.
   ELEV: 178.500m
4. STANDARD IRON BAR APPROXIMATELY 230m WEST OF MALDEN ROAD, 10m NORTH OF MAIN DRAIN, 0.5m EAST OF SWALE.
   ELEV: 177.723m
5. TOP OF 660mmϕ MANHOLE AT SOUTH SIDE OF BOUFFARD ROAD. WEST EDGE OF MN 1525 DRIVEWAY AND SOUTH EDGE OF SWALE.
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DRAWN BY: S.H. & J.S.
PLOT CODE: 1:1
COMPUTER FILE: REI2018D003.DWG

FILE No.: REI2018D003
SHEET No.: 5 OF 27

ROLL INFORMATION:

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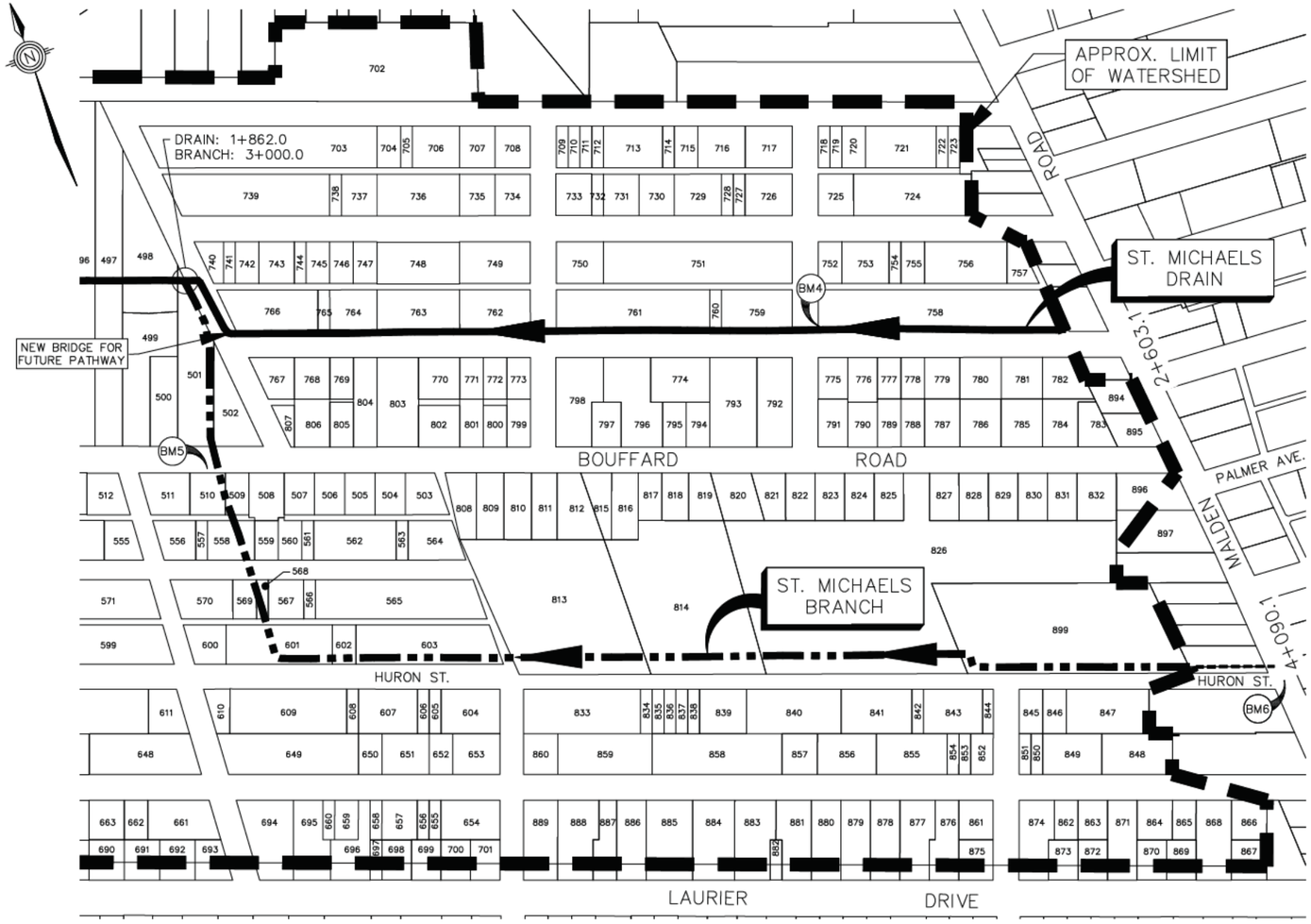
868. (060–13000), MN 1665
869. (060–13100), MN 1655
870. (060–13200), MN 1645
871. (060–13300), MN 1635
872. (060–13400), MN 1625
873. (060–13500), MN 1615
874. (060–13600), MN 1605
875. (060–13700), MN 1595
876. (060–13800), MN 1585
877. (060–13900), MN 1575
878. (060–14000), MN 1565
879. (060–14100), MN 1555
880. (060–14200)
881. (060–14300), MN 1525
882. Town of LaSalle (060–14400)
883. (060–14500), MN 1515
884. (060–14600), MN 1465
885. (060–14700), MN 1455
886. (060–14800), MN 1445
887. (060–14900), MN 1425
888. (060–15000), MN 1415
889. (060–15100), MN 1405
890. Outside Watershed
891. Outside Watershed
892. Outside Watershed
893. Outside Watershed
894. (060–00850), MN 6675
895. (060–00900), MN 6685
896. (060–01000), MN 1799
897. (060–01100), MN 6705
898. Outside Watershed
899. (060–01680)



WATERSHED PLAN DETAIL E

SCALE=1:2,000

BENCHMARKS:

1. NAIL IN WEST FACE OF FOURTH HYDRO POLE SOUTHEAST OF TURKEY CREEK, EAST SIDE OF ESSEX TERMINAL RAILWAY AND EAST TOP BANK OF DRAIN.
   ELEV: 176.663m
2. NAIL IN WEST FACE OF HYDRO POLE ON NORTH SIDE OF REAUME ROAD, EAST OF ESSEX TERMINAL RAILWAY.
   ELEV: 177.615m
3. NAIL IN EAST FACE OF HYDRO POLE ON EAST SIDE OF MATCHETTE ROAD AND WEST SIDE OF DRAIN. APPROXIMATELY 10m NORTH OF DRAIN BEND AND DRAIN INLET.
   ELEV: 178.500m
4. STANDARD IRON BAR APPROXIMATELY 230m WEST OF MALDEN ROAD, 10m NORTH OF MAIN DRAIN, 0.5m EAST OF SWALE.
   ELEV: 177.723m
5. TOP OF 660mm ø MANHOLE AT SOUTH SIDE OF BOUFFARD ROAD, WEST EDGE OF MN 1525 DRIVEWAY AND SOUTH EDGE OF SWALE.
   ELEV: 177.773m
6. TOP OF STORM MANHOLE ON WEST SIDE OF MALDEN ROAD, CENTERED TO HURON STREET.
   ELEV: 177.863m

THESE PLANS HAVE BEEN REDUCED AND THE SCALE THEREFORE VARIES. FULL SCALE PLANS MAY BE VIEWED AT THE MUNICIPAL OFFICE.

DRAWN BY: S.H. & J.S.
PLOT CODE: 1:1
COMPUTER FILE: REI2018D003.DWG

FILE No.: REI2018D003
SHEET No.: 6 OF 27

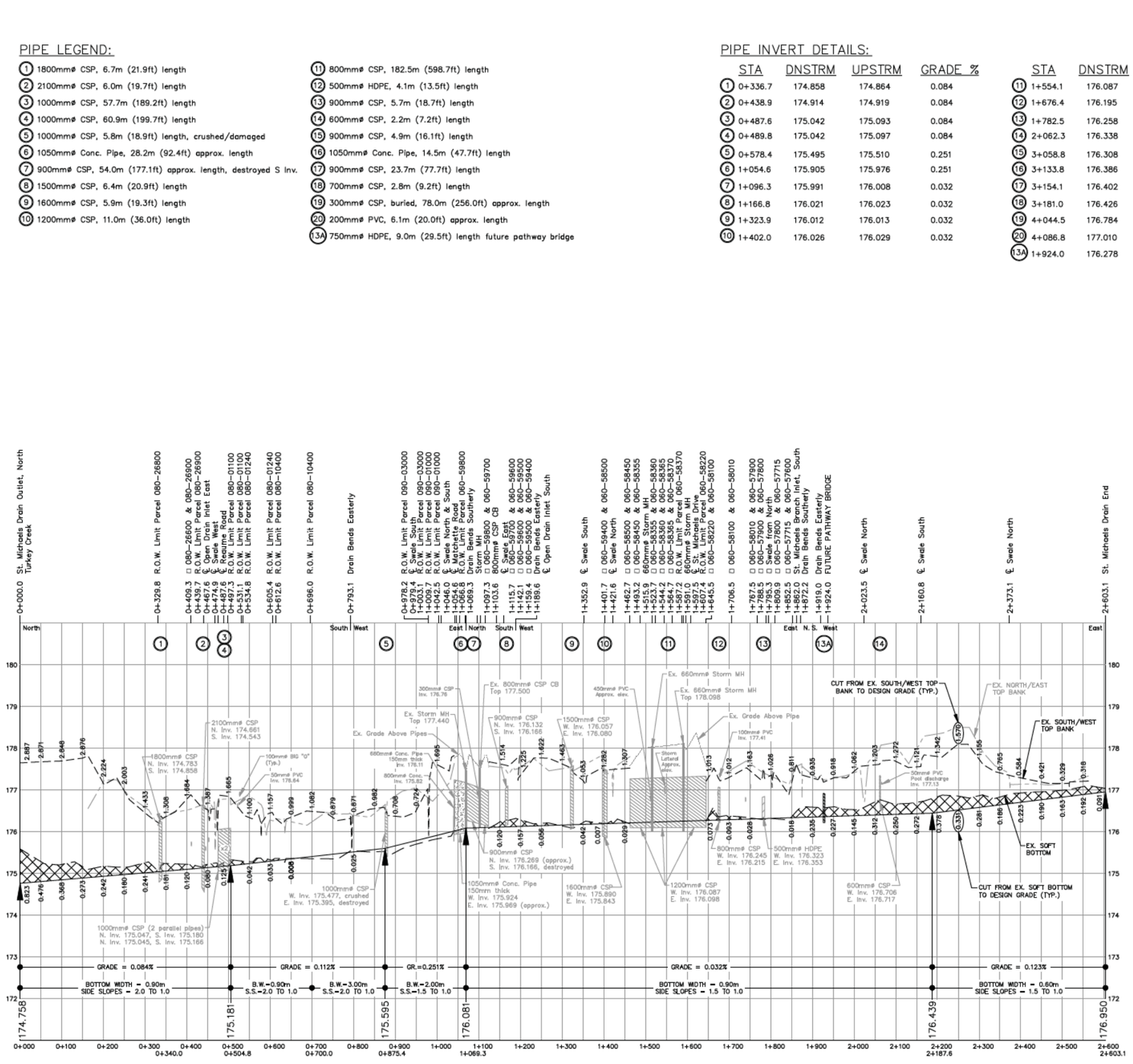
PIPE LEGEND:

1. 1800mmø CSP, 6.7m (21.9ft) length
2. 2100mmø CSP, 6.0m (19.7ft) length
3. 1000mmø CSP, 57.7m (189.2ft) length
4. 1000mmø CSP, 60.9m (199.7ft) length
5. 1000mmø CSP, 5.8m (18.9ft) length, crushed/damaged
6. 1050mmø Conc. Pipe, 28.2m (92.4ft) approx. length
7. 900mmø CSP, 54.0m (177.1ft) approx. length, destroyed S Inv.
8. 1500mmø CSP, 6.4m (20.9ft) length
9. 1600mmø CSP, 5.9m (19.3ft) length
10. 1200mmø CSP, 11.0m (36.0ft) length
11. 800mmø CSP, 182.5m (598.7ft) length
12. 500mmø HDPE, 4.1m (13.5ft) length
13. 900mmø CSP, 5.7m (18.7ft) length
14. 600mmø CSP, 2.2m (7.2ft) length
15. 900mmø CSP, 4.9m (16.1ft) length
16. 1050mmø Conc. Pipe, 14.5m (47.7ft) length
17. 900mmø CSP, 23.7m (77.7ft) length
18. 700mmø CSP, 2.8m (9.2ft) length
19. 300mmø CSP, buried, 78.0m (256.0ft) approx. length
20. 200mmø PVC, 6.1m (20.0ft) approx. length

13A. 750mmø HDPE, 9.0m (29.5ft) length future pathway bridge

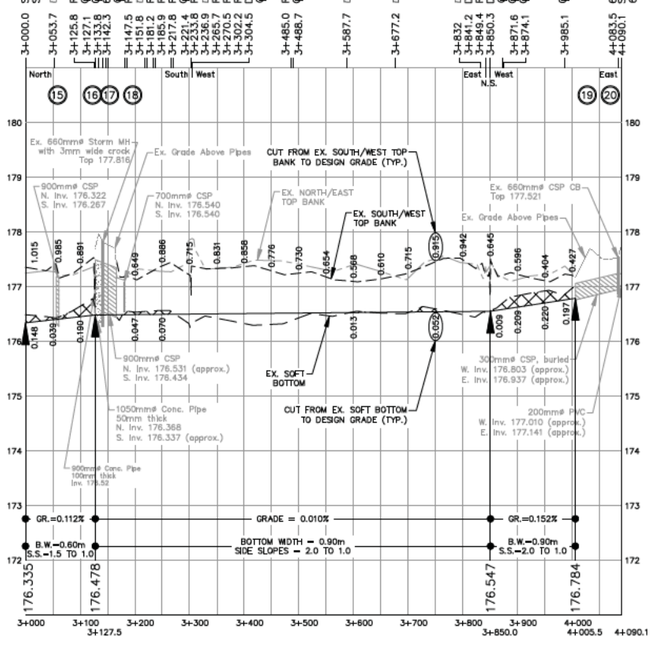
PIPE INVERT DETAILS:

	STA	DNSTRM	UPSTRM	GRADE %
1	0+336.7	174.858	174.864	0.084
2	0+438.9	174.914	174.919	0.084
3	0+487.6	175.042	175.093	0.084
4	0+489.8	175.042	175.097	0.084
5	0+578.4	175.495	175.510	0.251
6	1+054.6	175.905	175.976	0.251
7	1+096.3	175.991	176.008	0.032
8	1+166.8	176.021	176.023	0.032
9	1+323.9	176.012	176.013	0.032
10	1+402.0	176.026	176.029	0.032
11	1+554.1	176.087	176.145	0.032
12	1+676.4	176.195	176.196	0.032
13	1+782.5	176.258	176.260	0.032
14	2+062.3	176.338	176.339	0.032
15	3+058.8	176.308	176.313	0.112
16	3+133.8	176.386	176.387	0.010
17	3+154.1	176.402	176.405	0.010
18	3+181.0	176.426	176.426	0.010
19	4+044.5	176.784	176.918	0.172
20	4+086.8	177.010	177.141	0.172
13A	1+924.0	176.278	176.281	0.032



ST. MICHAELS DRAIN PROFILE

SCALE=1:5000 hor. & 1:50 vert.



ST. MICHAELS BRANCH PROFILE

SCALE=1:5000 hor. & 1:50 vert.

THESE PLANS HAVE BEEN REDUCED AND THE SCALE THEREFORE VARIES. FULL SCALE PLANS MAY BE VIEWED AT THE MUNICIPAL OFFICE.

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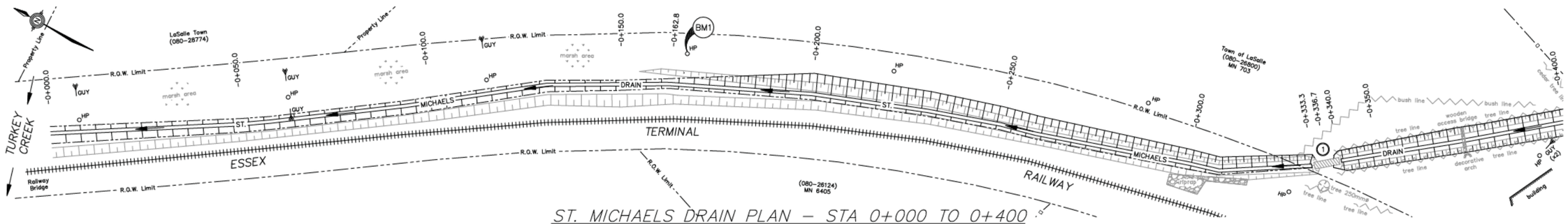
PLOT CODE: 1:1
COMPUTER FILE: REI2018D003.DWG

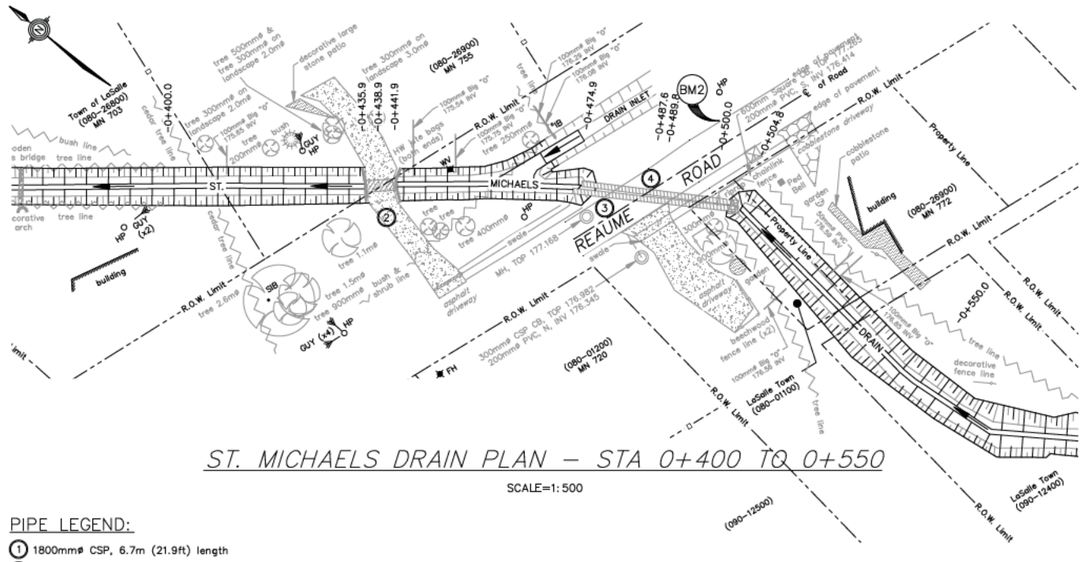
FILE No.: REI2018D003

SHEET No.: 7 OF 27



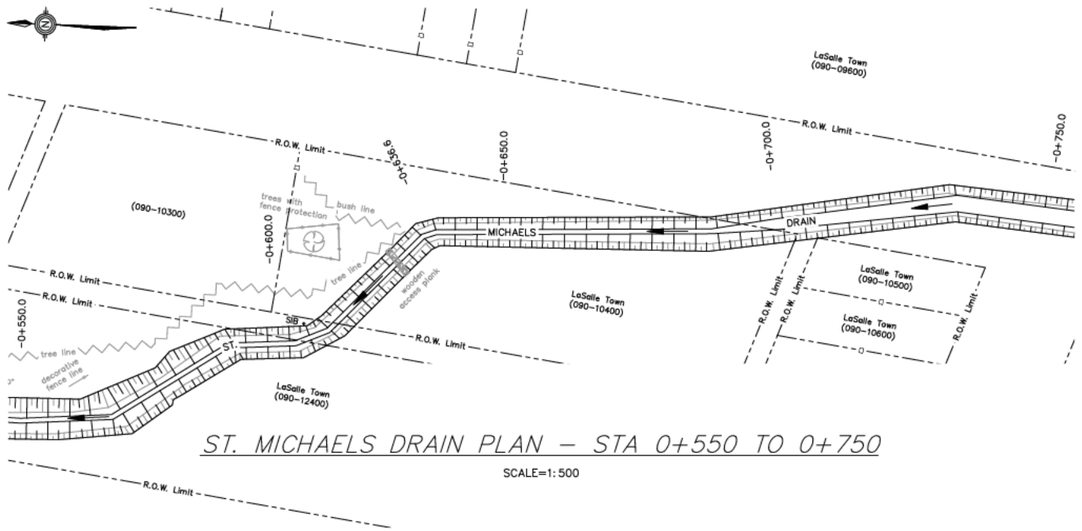
ST. MICHAELS DRAIN PLAN – STA 0+000 TO 0+400

SCALE=1:500



ST. MICHAELS DRAIN PLAN – STA 0+400 TO 0+550

SCALE=1:500



ST. MICHAELS DRAIN PLAN – STA 0+550 TO 0+750

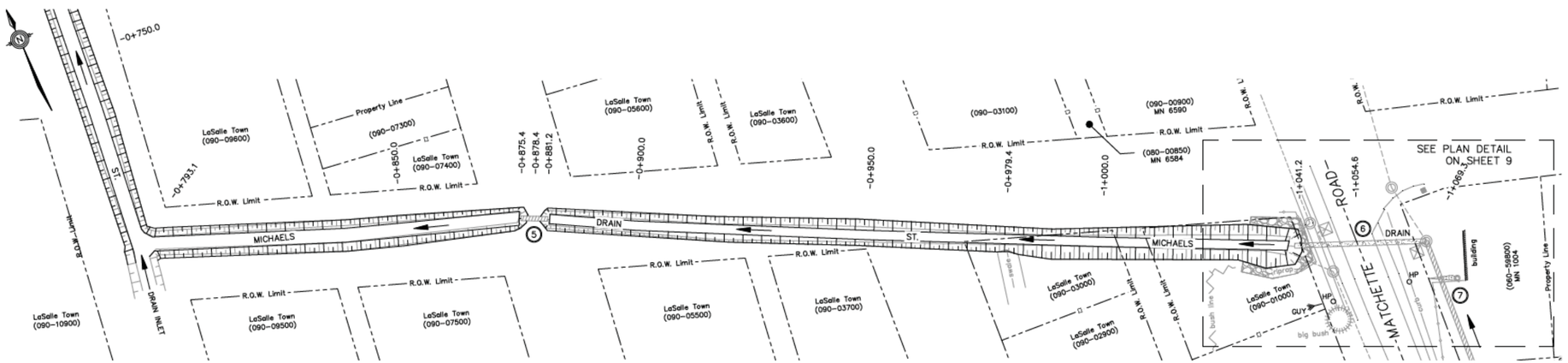
SCALE=1:500

PIPE LEGEND:

1. 1800mmø CSP, 6.7m (21.9ft) length
2. 2100mmø CSP, 6.0m (19.7ft) length
3. 1000mmø CSP, 57.7m (189.2ft) length
4. 1000mmø CSP, 60.9m (199.7ft) length
5. 1000mmø CSP, 5.8m (18.9ft) length, crushed/damaged
6. 1050mmø Conc. Pipe, 28.2m (92.4ft) approx. length
7. 900mmø CSP, 54.0m (177.1ft) approx. length, damaged E Inv.

BENCHMARKS:

1. NAIL IN WEST FACE OF FOURTH HYDRO POLE SOUTHEAST OF TURKEY CREEK, EAST SIDE OF ESSEX TERMINAL RAILWAY AND EAST TOP BANK OF DRAIN.
   ELEV: 176.663m
2. NAIL IN WEST FACE OF HYDRO POLE ON NORTH SIDE OF REAUME ROAD, EAST OF ESSEX TERMINAL RAILWAY.
   ELEV: 177.615m
3. NAIL IN EAST FACE OF HYDRO POLE ON EAST SIDE OF MATCHETTE ROAD AND WEST SIDE OF DRAIN. APPROXIMATELY 10m NORTH OF DRAIN BEND AND DRAIN INLET.
   ELEV: 178.500m
4. STANDARD IRON BAR APPROXIMATELY 230m WEST OF MALDEN ROAD, 10m NORTH OF MAIN DRAIN, 0.5m EAST OF SWALE.
   ELEV: 177.723m
5. TOP OF 660mmø MANHOLE AT SOUTH SIDE OF BOUFFARD ROAD. WEST EDGE OF MN 1525 DRIVEWAY AND SOUTH EDGE OF SWALE.
   ELEV: 177.773m
6. TOP OF STORM MANHOLE ON WEST SIDE OF MALDEN ROAD. CENTERED TO HURON STREET.
   ELEV: 177.863m



ST. MICHAELS DRAIN PLAN – STA 0+750 TO 1+050

SCALE=1:500

THESE PLANS HAVE BEEN REDUCED AND THE SCALE THEREFORE VARIES. FULL SCALE PLANS MAY BE VIEWED AT THE MUNICIPAL OFFICE.

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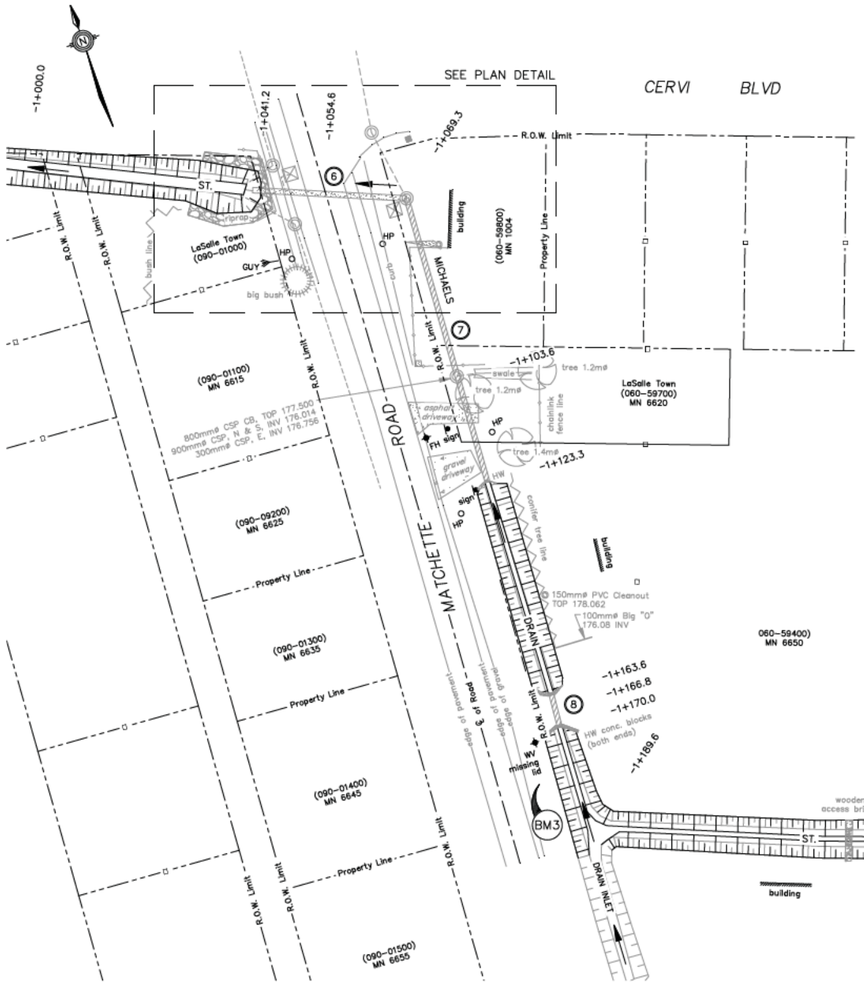
PLOT CODE: 1:1
COMPUTER FILE: REI2018D003.DWG

FILE No.: REI2018D003

SHEET No.: 8 OF 27



BENCHMARKS:

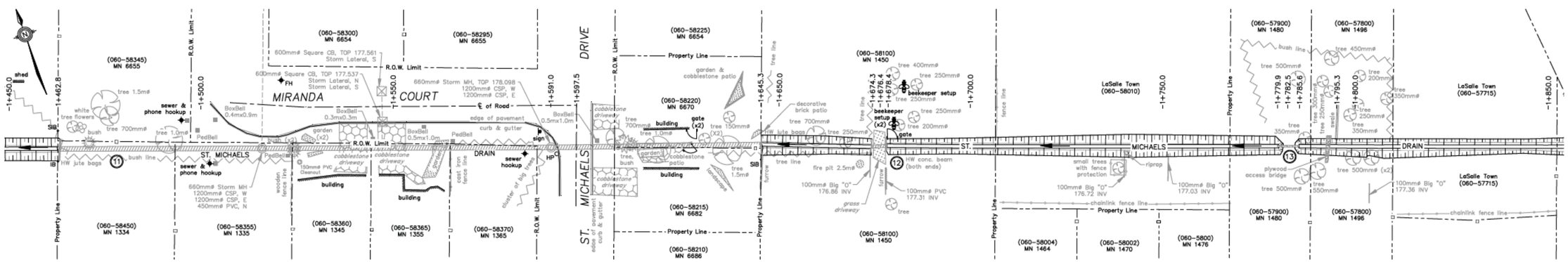
1. NAIL IN WEST FACE OF FOURTH HYDRO POLE SOUTHEAST OF TURKEY CREEK. EAST SIDE OF ESSEX TERMINAL RAILWAY AND EAST TOP BANK OF DRAIN.
   ELEV: 176.663m
2. NAIL IN WEST FACE OF HYDRO POLE ON NORTH SIDE OF REAUME ROAD. EAST OF ESSEX TERMINAL RAILWAY.
   ELEV: 177.615m
3. NAIL IN EAST FACE OF HYDRO POLE ON EAST SIDE OF MATCHETTE ROAD AND WEST SIDE OF DRAIN. APPROXIMATELY 10m NORTH OF DRAIN BEND AND DRAIN INLET.
   ELEV: 178.500m
4. STANDARD IRON BAR APPROXIMATELY 230m WEST OF MALDEN ROAD, 10m NORTH OF MAIN DRAIN, 0.5m EAST OF SWALE.
   ELEV: 177.723m
5. TOP OF 660mmø MANHOLE AT SOUTH SIDE OF BOUFFARD ROAD. WEST EDGE OF MN 1525 DRIVEWAY AND SOUTH EDGE OF SWALE.
   ELEV: 177.773m
6. TOP OF STORM MANHOLE ON WEST SIDE OF MALDEN ROAD. CENTERED TO HURON STREET.
   ELEV: 177.863m

PIPE LEGEND:

(6) 1050mmø Conc. Pipe, 28.2m (92.5ft) approx. length
(7) 900mmø CSP, 54.0m (177.1ft) approx. length
(8) 900mmø CSP, 6.4m (20.9ft) length
(9) 1500mmø CSP, 5.9m (19.3ft) length
(10) 1600mmø CSP, 11.0m (36.0ft) length
(11) 1200mmø CSP, 182.5m (598.7ft) length
(12) 800mmø CSP, 4.1m (13.5ft) length
(13) 500mmø HDPE, 5.7m (18.7ft) length

ST. MICHAELS DRAIN PLAN – STA 1+050 TO 1+450

SCALE=1:500



ST. MICHAELS DRAIN PLAN – STA 1+450 TO 1+850

SCALE=1:500

THESE PLANS HAVE BEEN REDUCED AND THE SCALE THEREFORE VARIES. FULL SCALE PLANS MAY BE VIEWED AT THE MUNICIPAL OFFICE.

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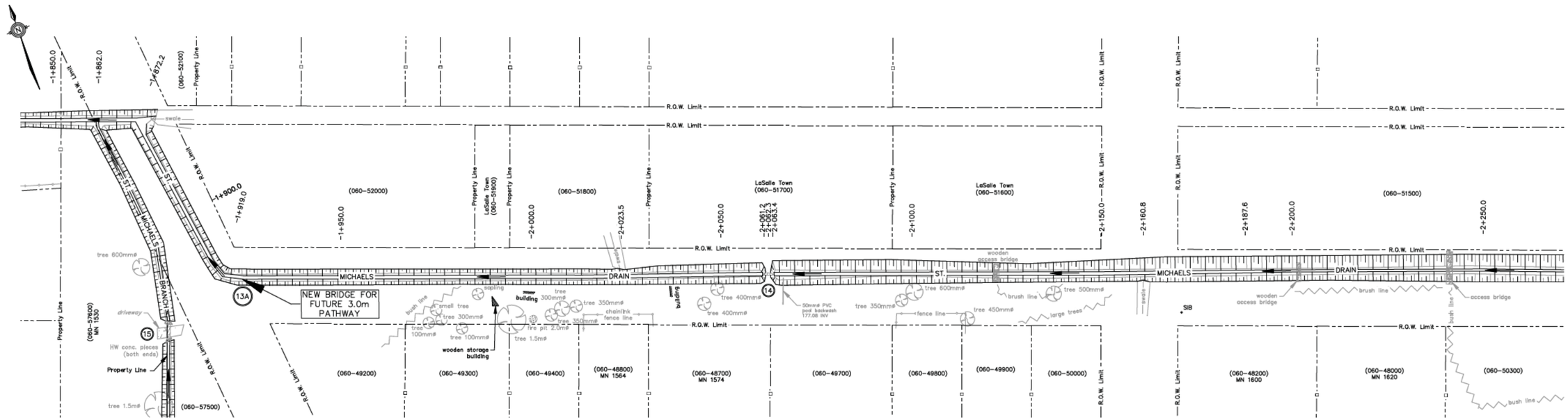
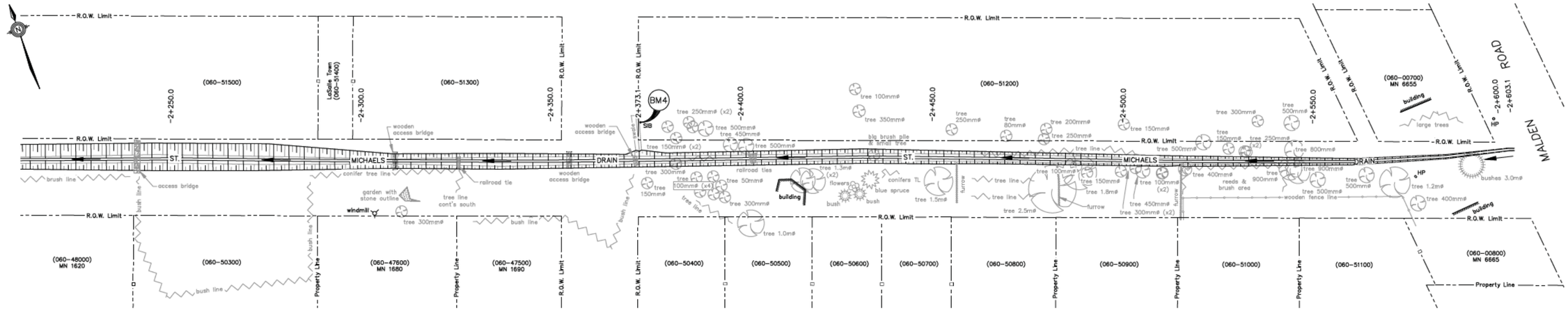
PLOT CODE: 1:1
COMPUTER FILE: REI2018D003.DWG

FILE No.: REI2018D003
SHEET No.: 9 OF 27



ST. MICHAELS DRAIN PLAN – STA 1+850 TO 2+250

SCALE=1:500



ST. MICHAELS DRAIN PLAN – STA 2+250 TO 2+603.1

SCALE=1:500

BENCHMARKS:

1. NAIL IN WEST FACE OF FOURTH HYDRO POLE SOUTHEAST OF TURKEY CREEK. EAST SIDE OF ESSEX TERMINAL RAILWAY AND EAST TOP BANK OF DRAIN.
   ELEV: 176.663m
2. NAIL IN WEST FACE OF HYDRO POLE ON NORTH SIDE OF REAUME ROAD. EAST OF ESSEX TERMINAL RAILWAY.
   ELEV: 177.615m
3. NAIL IN EAST FACE OF HYDRO POLE ON EAST SIDE OF MATCHETTE ROAD AND WEST SIDE OF DRAIN. APPROXIMATELY 10m NORTH OF DRAIN BEND AND DRAIN INLET.
   ELEV: 178.500m
4. STANDARD IRON BAR APPROXIMATELY 230m WEST OF MALDEN ROAD, 10m NORTH OF MAIN DRAIN, 0.5m EAST OF SWALE.
   ELEV: 177.723m
5. TOP OF 660mmø MANHOLE AT SOUTH SIDE OF BOUFFARD ROAD. WEST EDGE OF MN 1525 DRIVEWAY AND SOUTH EDGE OF SWALE.
   ELEV: 177.773m
6. TOP OF STORM MANHOLE ON WEST SIDE OF MALDEN ROAD. CENTERED TO HURON STREET.
   ELEV: 177.863m

PIPE LEGEND:

(14) 600mmø CSP, 2.2m (7.2ft) length
(15) 900mmø CSP, 4.9m (16.1ft) length

THESE PLANS HAVE BEEN REDUCED AND THE SCALE THEREFORE VARIES. FULL SCALE PLANS MAY BE VIEWED AT THE MUNICIPAL OFFICE.

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PLOT CODE: 1:1
COMPUTER FILE: REI2018D003.DWG

FILE No.: REI2018D003

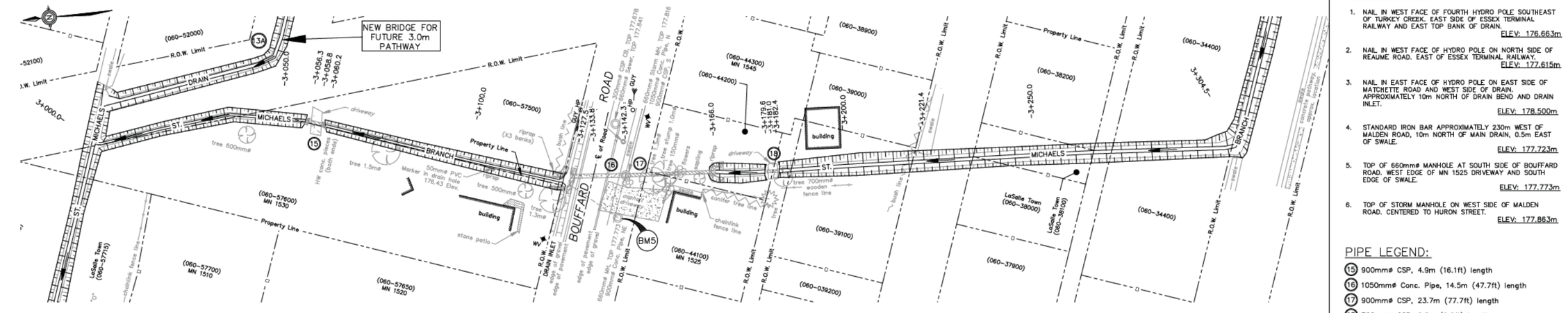
SHEET No.: 10 OF 27

BENCHMARKS:

1. NAIL IN WEST FACE OF FOURTH HYDRO POLE SOUTHEAST OF TURKEY CREEK, EAST SIDE OF ESSEX TERMINAL RAILWAY AND EAST TOP BANK OF DRAIN.
   ELEV: 176.663m
2. NAIL IN WEST FACE OF HYDRO POLE ON NORTH SIDE OF REAUME ROAD. EAST OF ESSEX TERMINAL RAILWAY.
   ELEV: 177.615m
3. NAIL IN EAST FACE OF HYDRO POLE ON EAST SIDE OF MATCHETTE ROAD AND WEST SIDE OF DRAIN. APPROXIMATELY 10m NORTH OF DRAIN BEND AND DRAIN INLET.
   ELEV: 178.500m
4. STANDARD IRON BAR APPROXIMATELY 230m WEST OF MALDEN ROAD, 10m NORTH OF MAIN DRAIN, 0.5m EAST OF SWALE.
   ELEV: 177.723m
5. TOP OF 660mmø MANHOLE AT SOUTH SIDE OF BOUFFARD ROAD. WEST EDGE OF MN 1525 DRIVEWAY AND SOUTH EDGE OF SWALE.
   ELEV: 177.773m
6. TOP OF STORM MANHOLE ON WEST SIDE OF MALDEN ROAD. CENTERED TO HURON STREET.
   ELEV: 177.863m

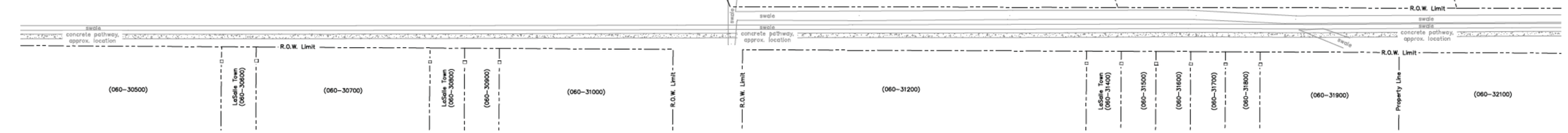
PIPE LEGEND:

15. 900mmø CSP, 4.9m (16.1ft) length
16. 1050mmø Conc. Pipe, 14.5m (47.7ft) length
17. 900mmø CSP, 23.7m (77.7ft) length
18. 700mmø CSP, 2.8m (9.2ft) length
19. 300mmø CSP, buried, 78.0m (256.0ft) approx. length
20. 200mmø PVC, 6.1m (20.0ft) approx. length



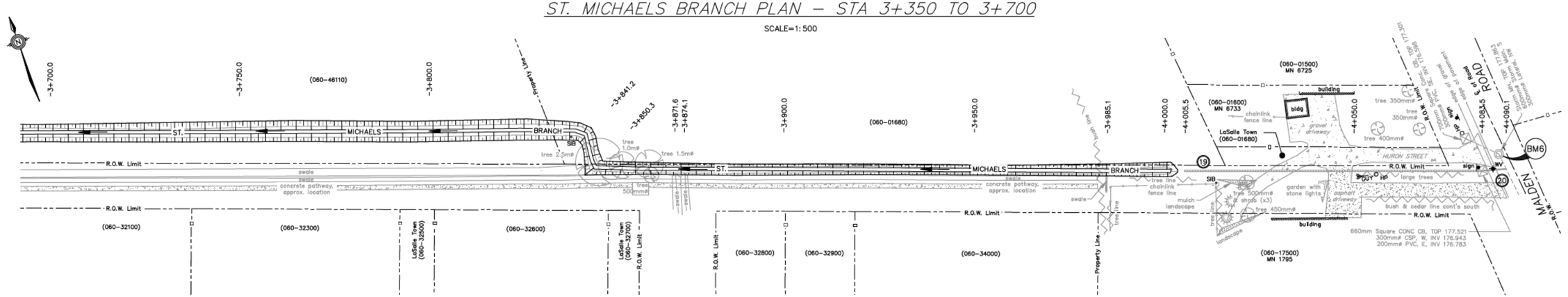
ST. MICHAELS BRANCH PLAN – STA 3+000 TO 3+350

SCALE=1:500



ST. MICHAELS BRANCH PLAN – STA 3+350 TO 3+700

SCALE=1:500



ST. MICHAELS BRANCH PLAN – STA 3+700 TO 4+090.1

SCALE=1:500

THESE PLANS HAVE BEEN REDUCED AND THE SCALE THEREFORE VARIES. FULL SCALE PLANS MAY BE VIEWED AT THE MUNICIPAL OFFICE.

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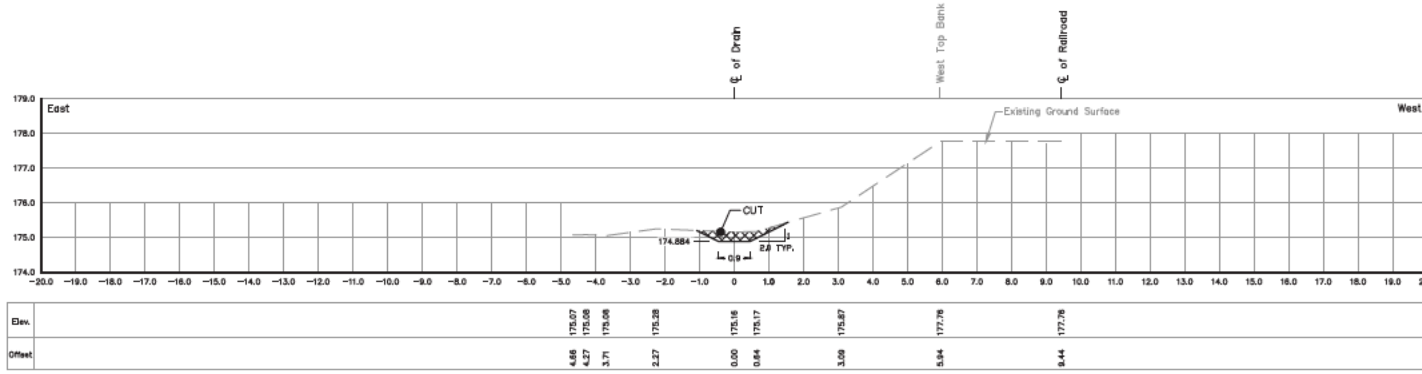
PLOT CODE: 1:1
COMPUTER FILE: REI2018D003.DWG

FILE No.: REI2018D003

SHEET No.: 11 OF 27



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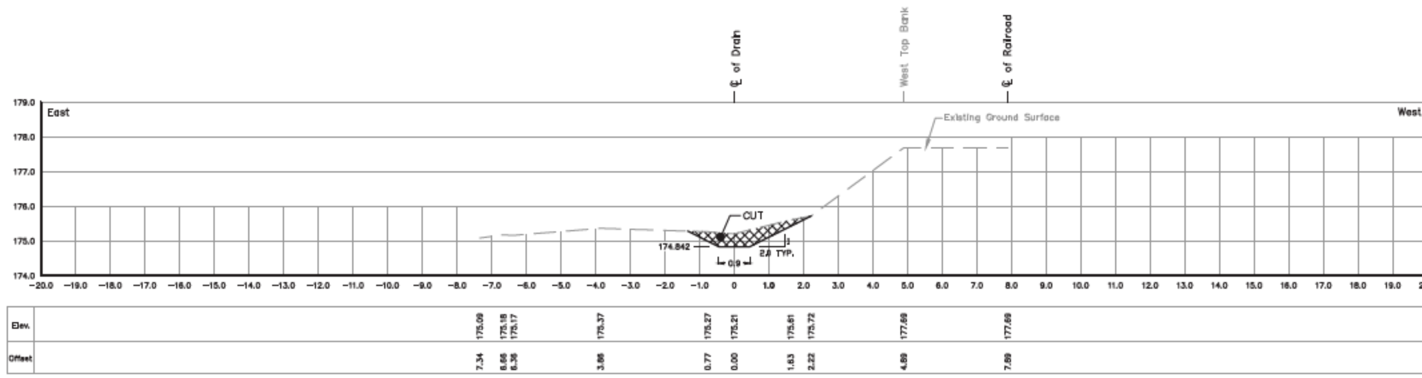

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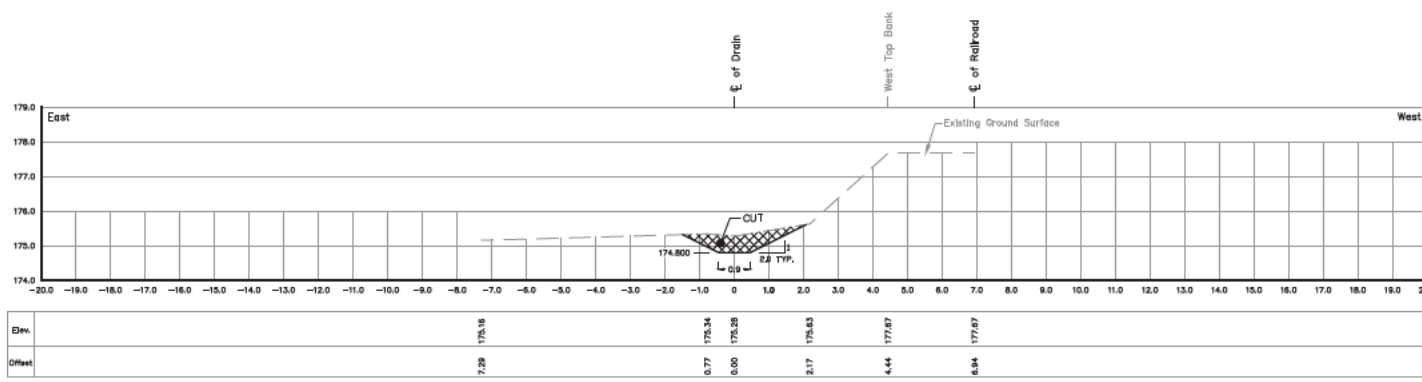

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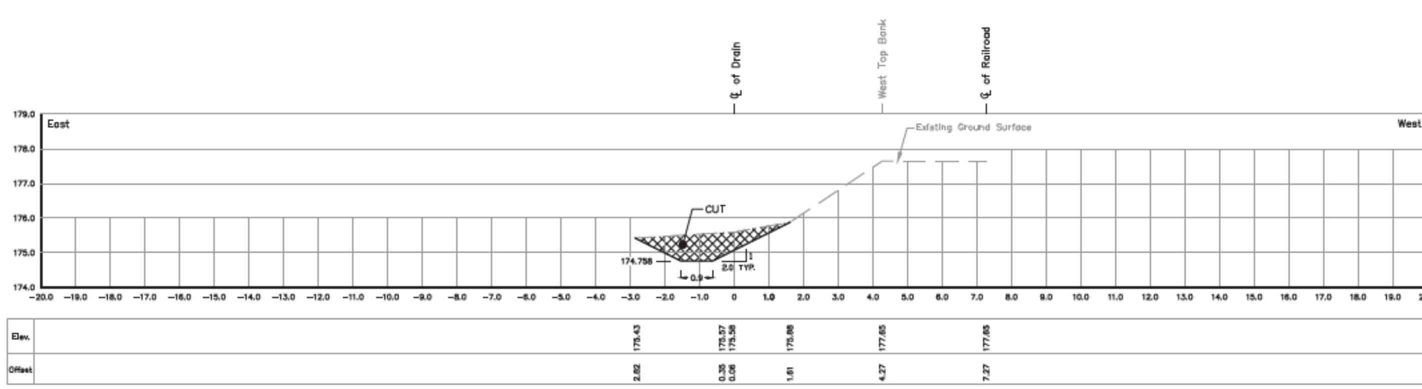

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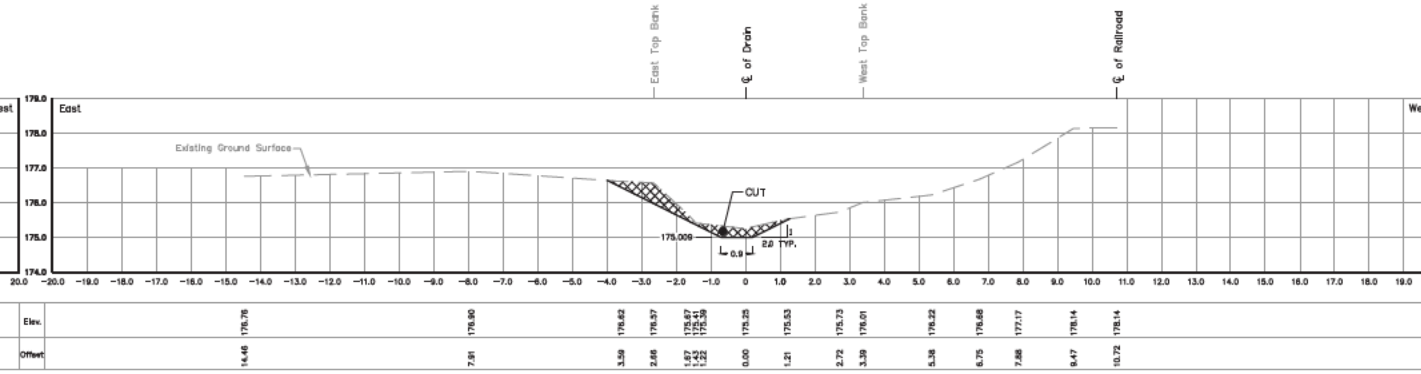

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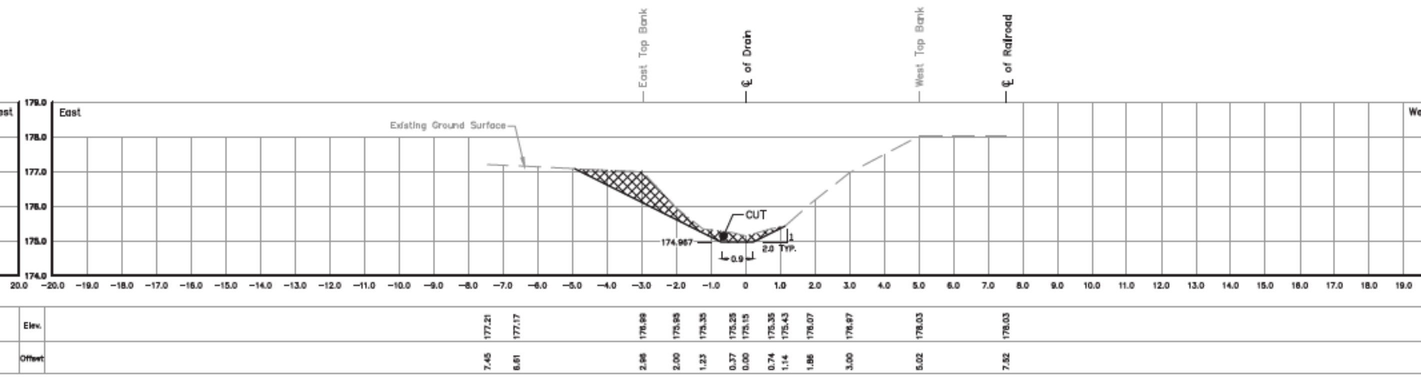

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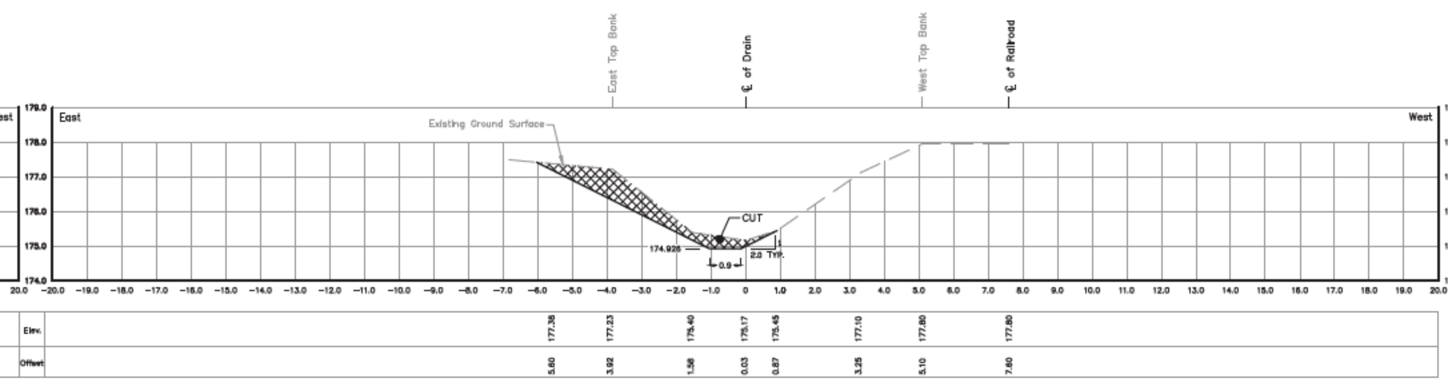

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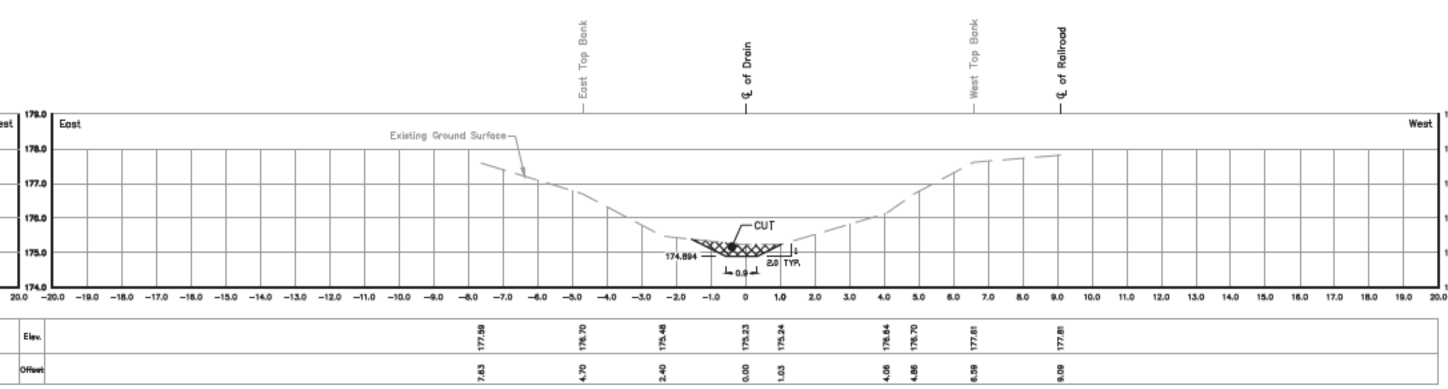

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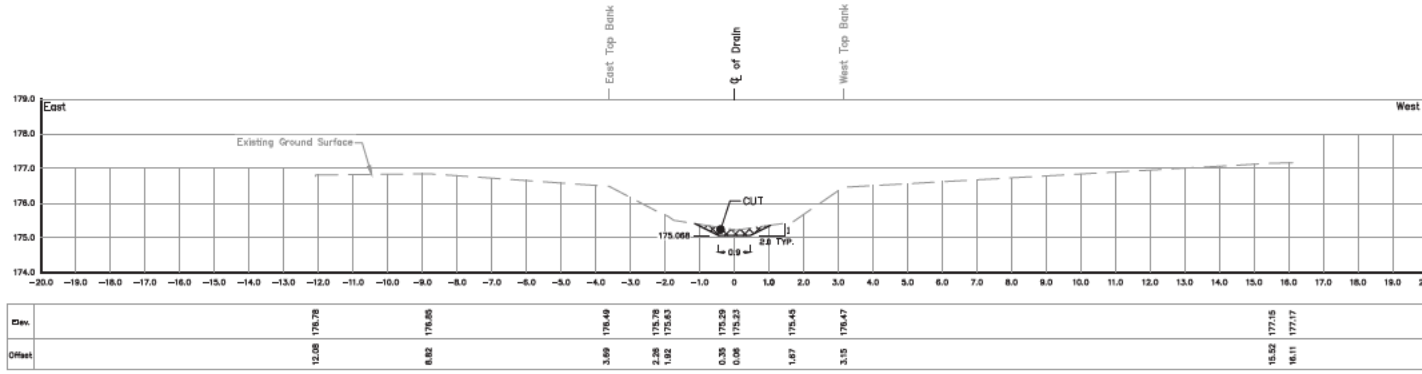
For cross-sections of St. Michaels Drain– STA 0+000.0 to 2+603.1, refer to Sheets 12 to 23.
For cross-sections of St. Michaels Branch– STA 3+000.0 to 4+090.1, refer to Sheets 23 to 27.

THESE PLANS HAVE BEEN REDUCED AND THE SCALE THEREFORE VARIES. FULL SCALE PLANS MAY BE VIEWED AT THE MUNICIPAL OFFICE.

DRAWN BY: S.H. & J.S.
PLOT CODE: 1:1
COMPUTER FILE: REI2018D003.DWG

FILE No.:	SHEET No.:
REI2018D003	12 OF 27



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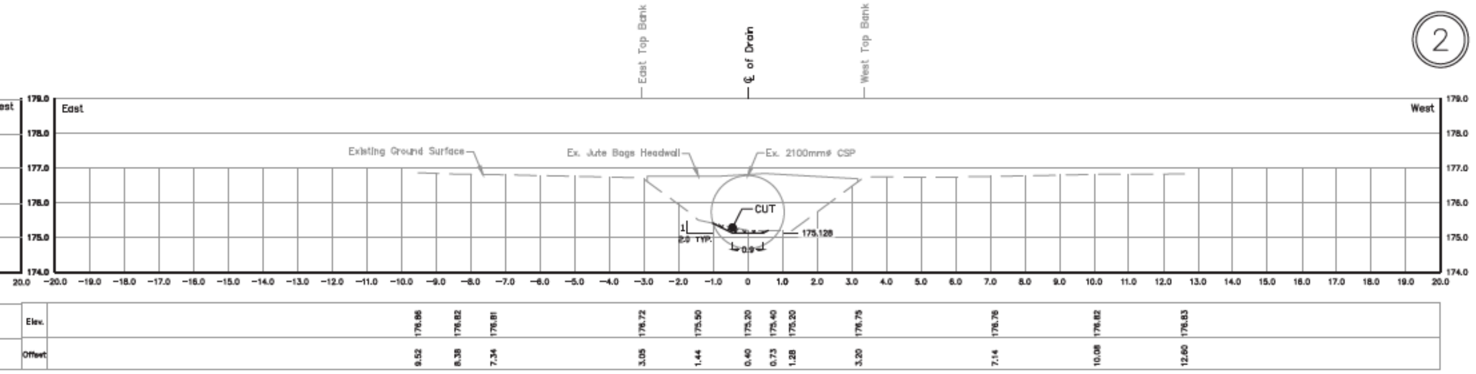

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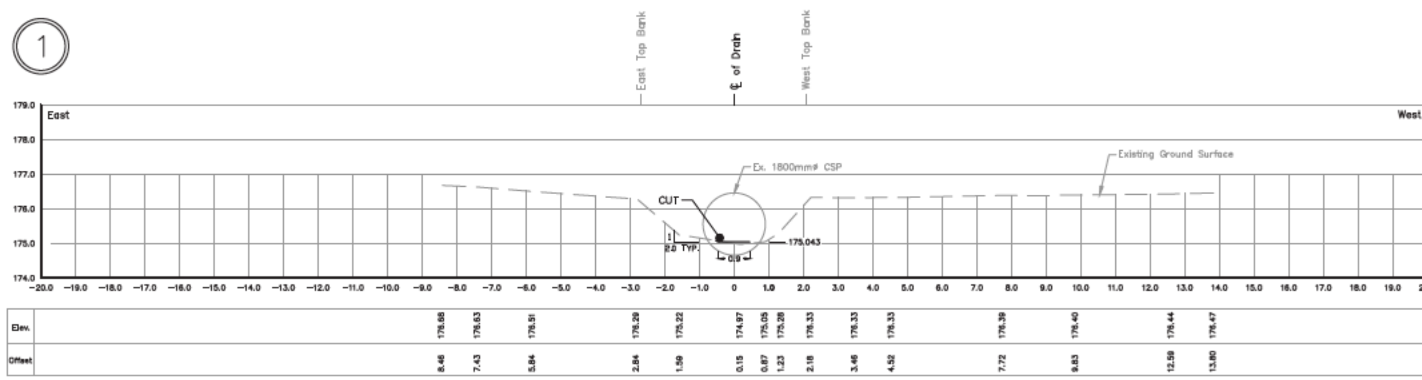

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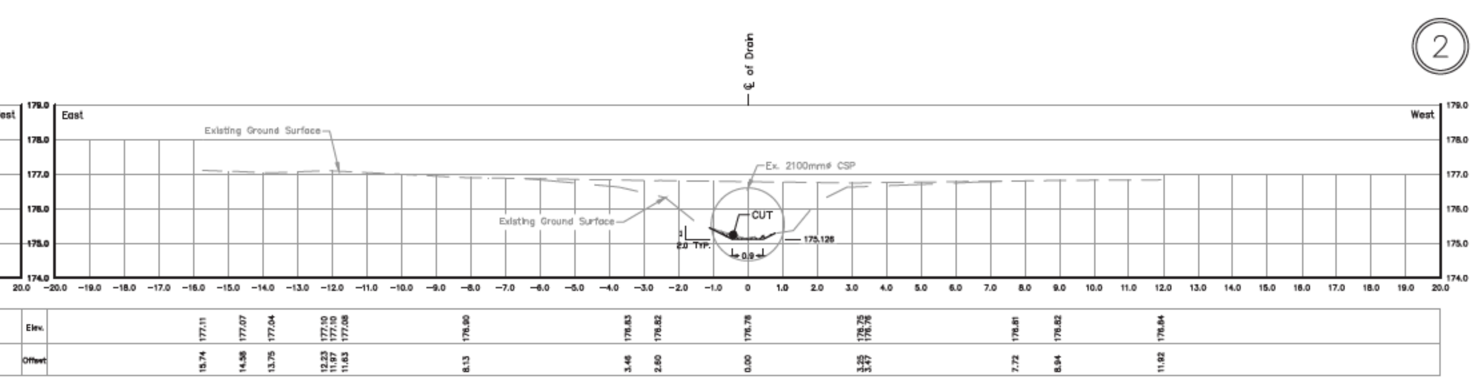

STA 0+438.9
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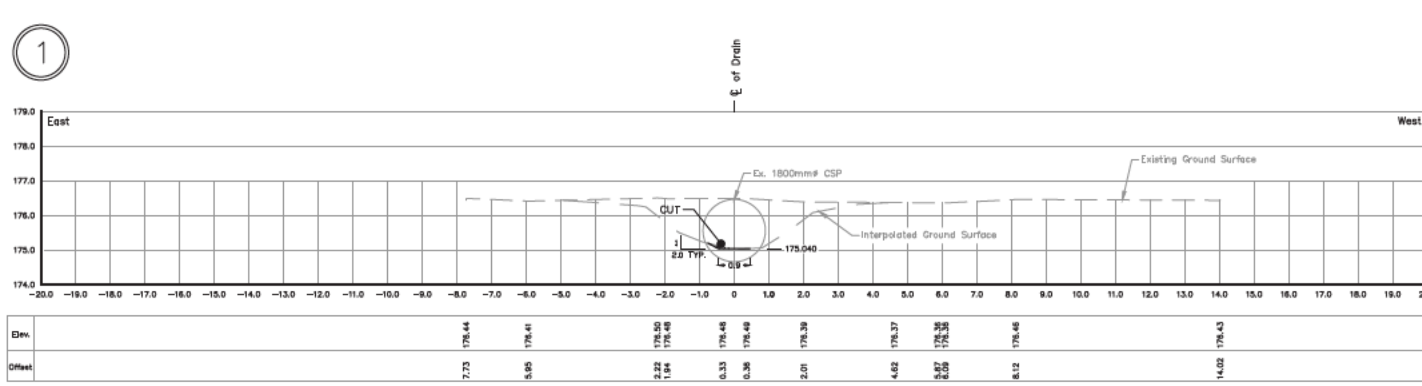
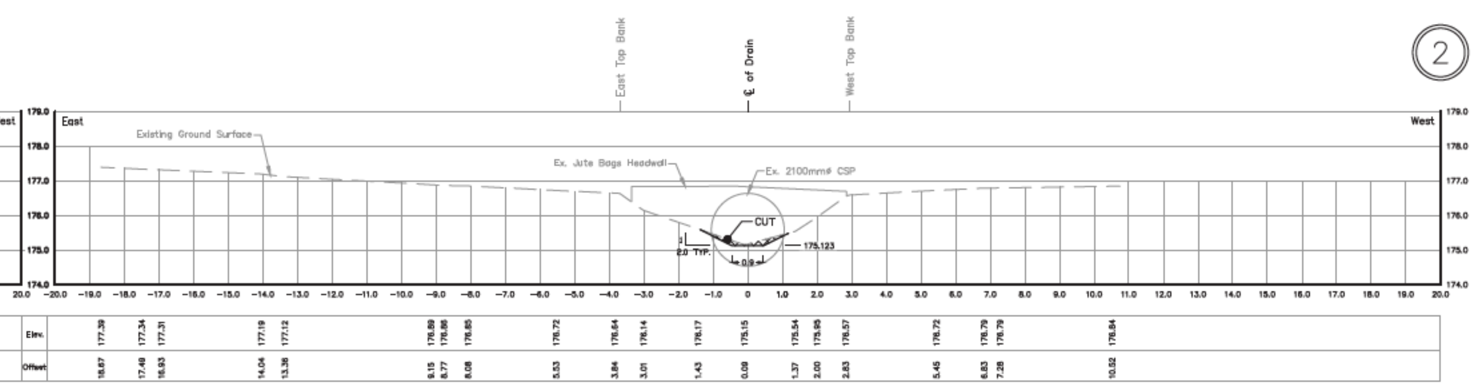
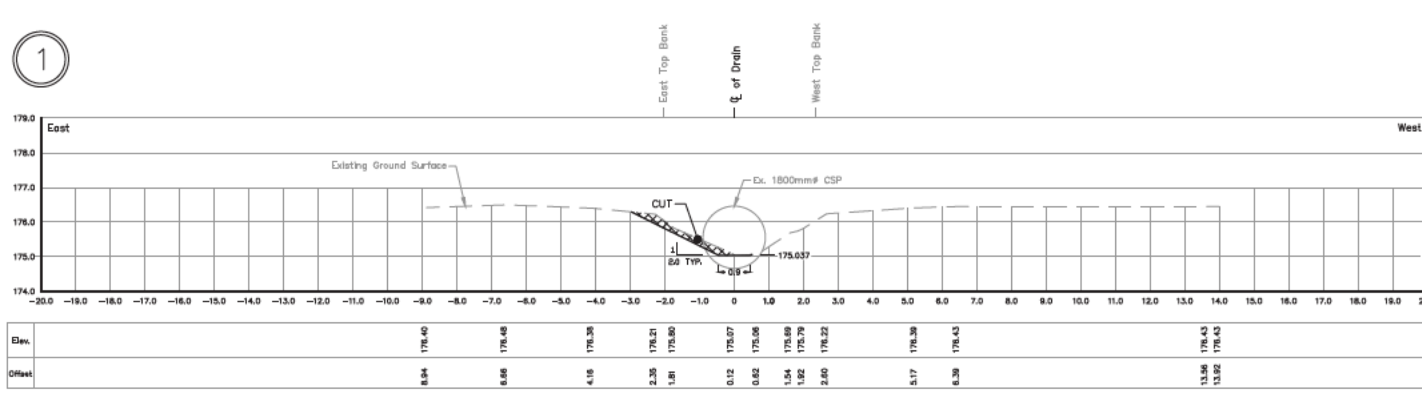


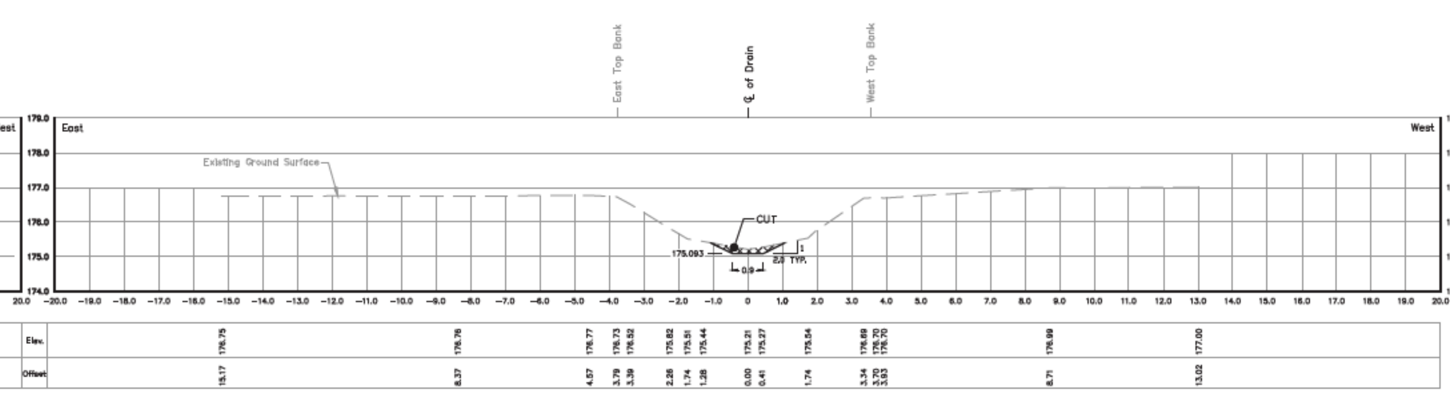
STA 0+336.7
Scale = 1:100



STA 0+435.9
Scale = 1:100



STA 0+333.3
Scale = 1:100



STA 0+400.0
Scale = 1:100

For cross–sections of St. Michaels Drain– STA 0+000.0 to 2+603.1, refer to Sheets 12 to 23.
For cross–sections of St. Michaels Branch– STA 3+000.0 to 4+090.1, refer to Sheets 23 to 27.

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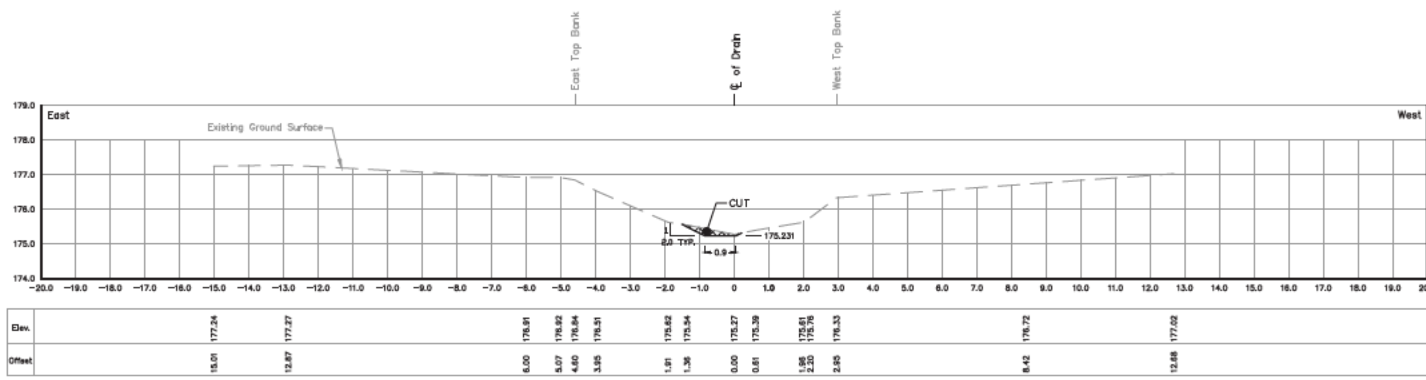
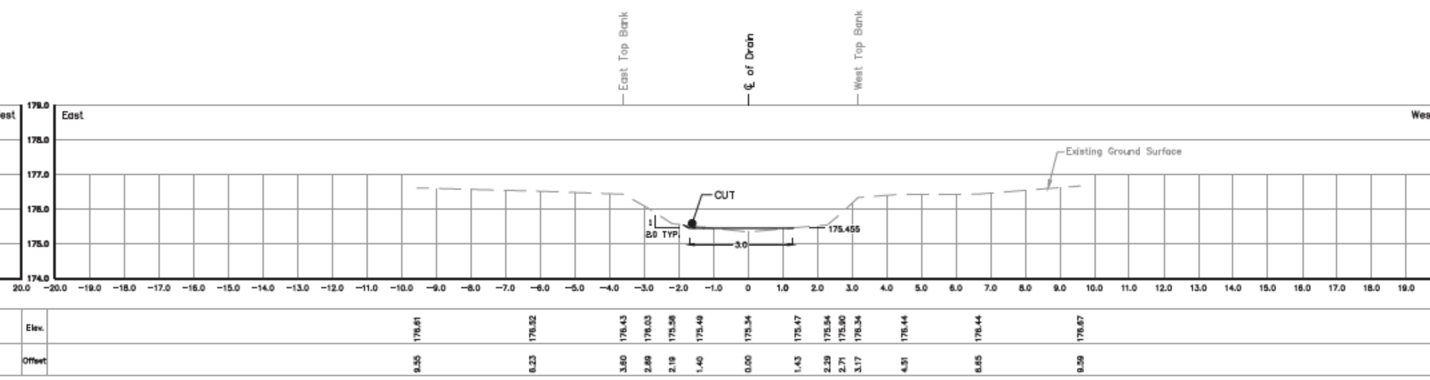
PLOT CODE: 1:1
COMPUTER FILE: REI2018D003.DWG

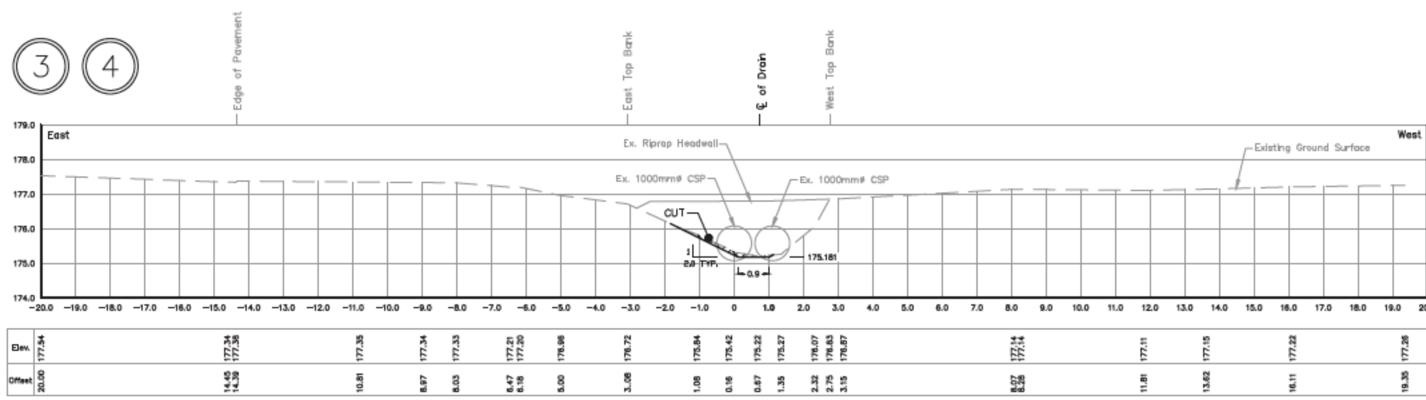
FILE No.: REI2018D003



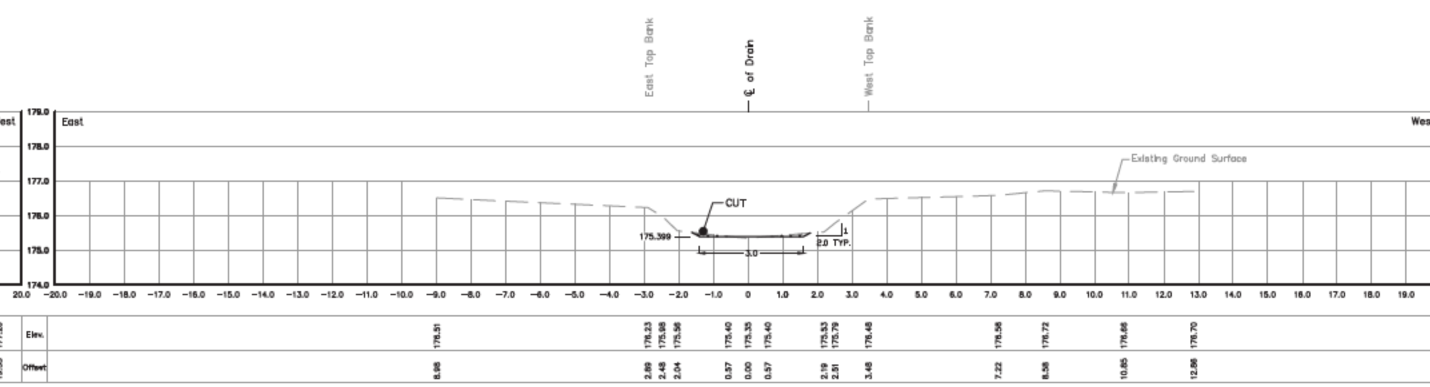
STA 0+550.0
Scale = 1:100



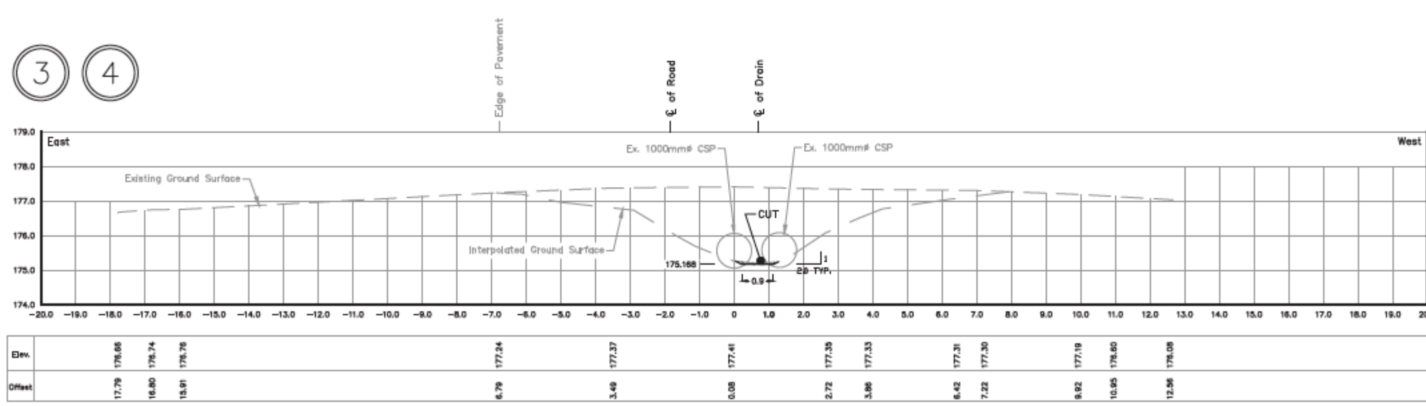
STA 0+750.0
Scale = 1:100



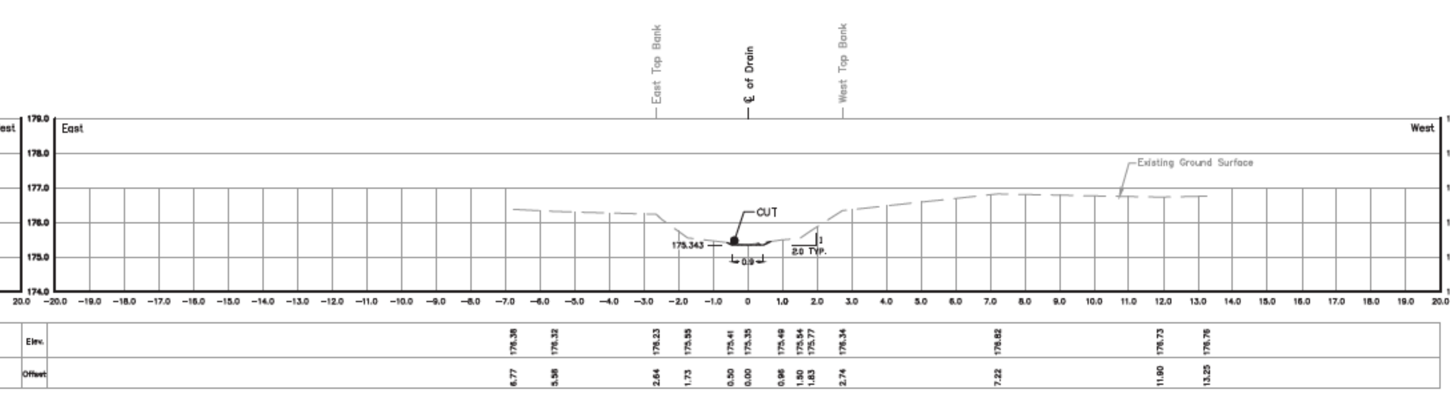
STA 0+504.8
Scale = 1:100



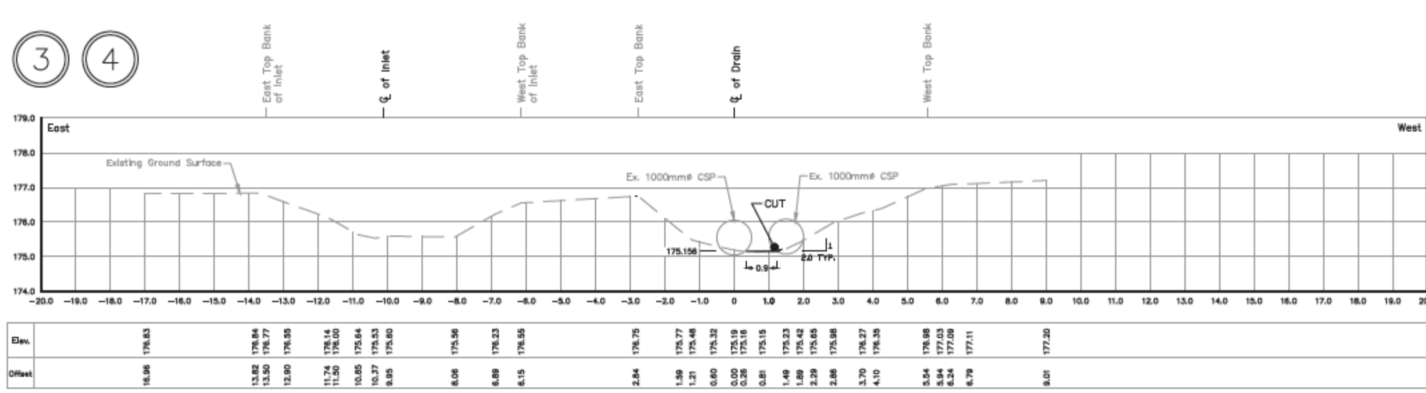
STA 0+700.0
Scale = 1:100



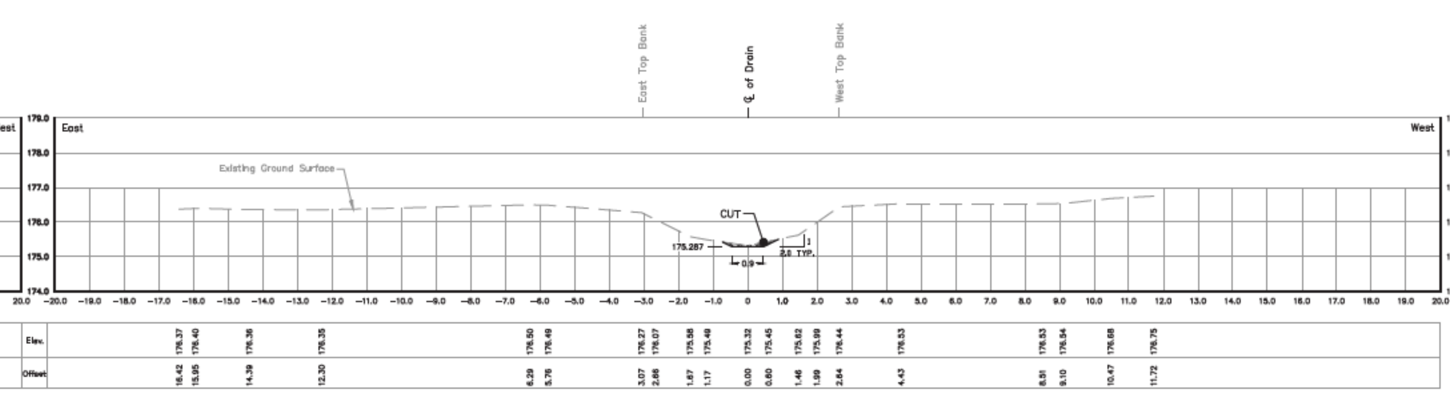
STA 0+489.8
Scale = 1:100



STA 0+650.0
Scale = 1:100



STA 0+474.9
Scale = 1:100



STA 0+600.0
Scale = 1:100

For cross–sections of St. Michaels Drain– STA 0+000.0 to 2+603.1, refer to Sheets 12 to 23.
For cross–sections of St. Michaels Branch– STA 3+000.0 to 4+090.1, refer to Sheets 23 to 27.

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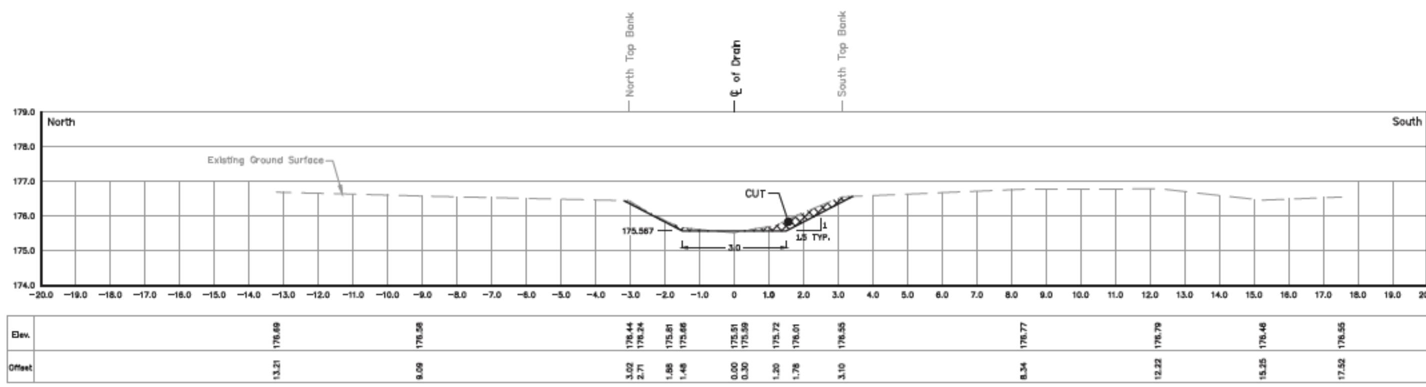
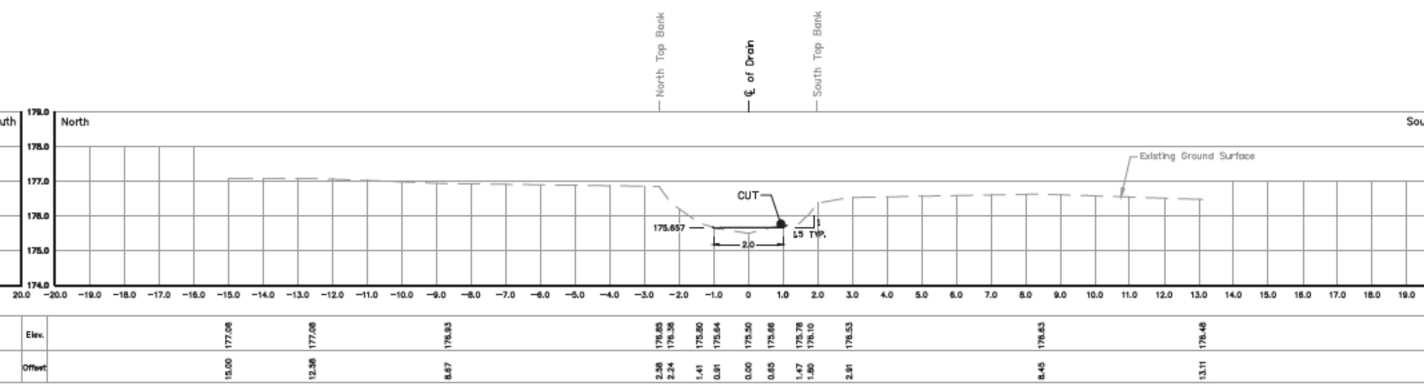
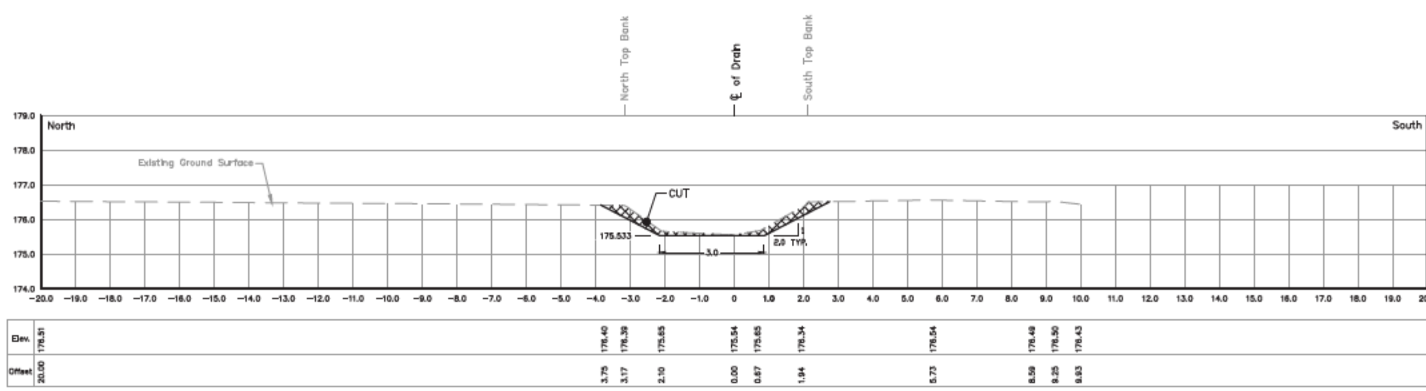
PLOT CODE: 1:1
COMPUTER FILE: REI2018D003.DWG
FILE No.: REI2018D003
SHEET No.: 14 OF 27



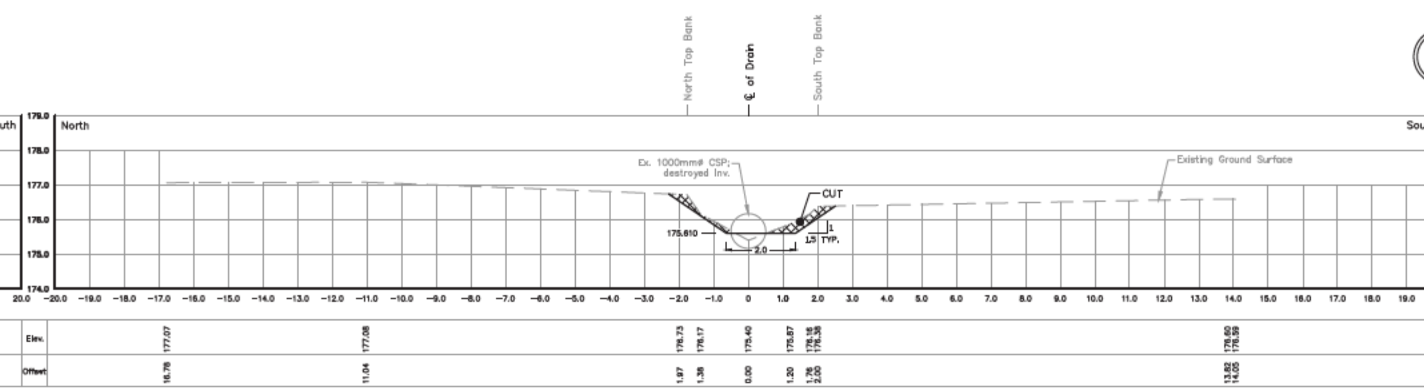
STA 0+850.0
Scale = 1:100



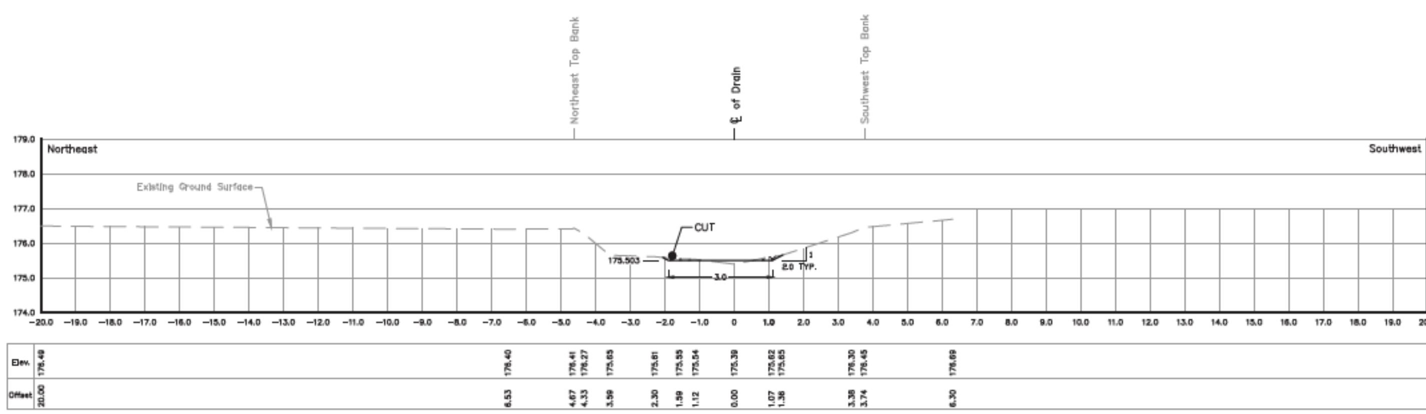
STA 0+900.0
Scale = 1:100



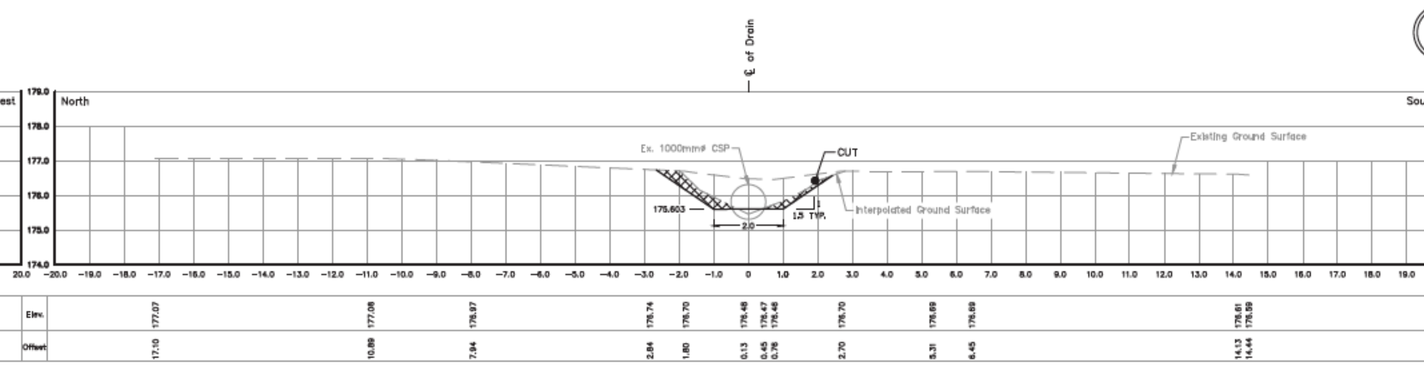
STA 0+820.0
Scale = 1:100



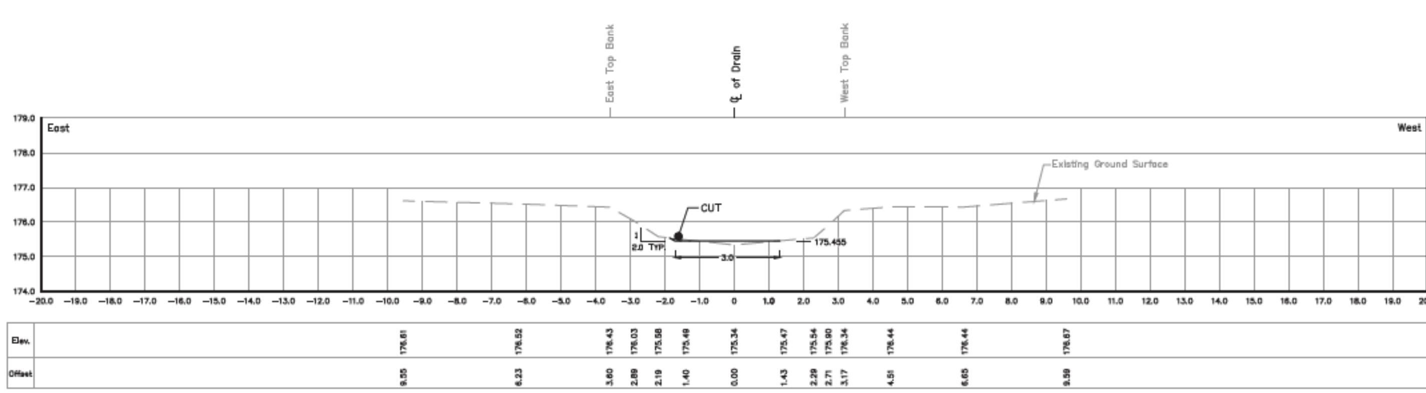
STA 0+881.2
Scale = 1:100



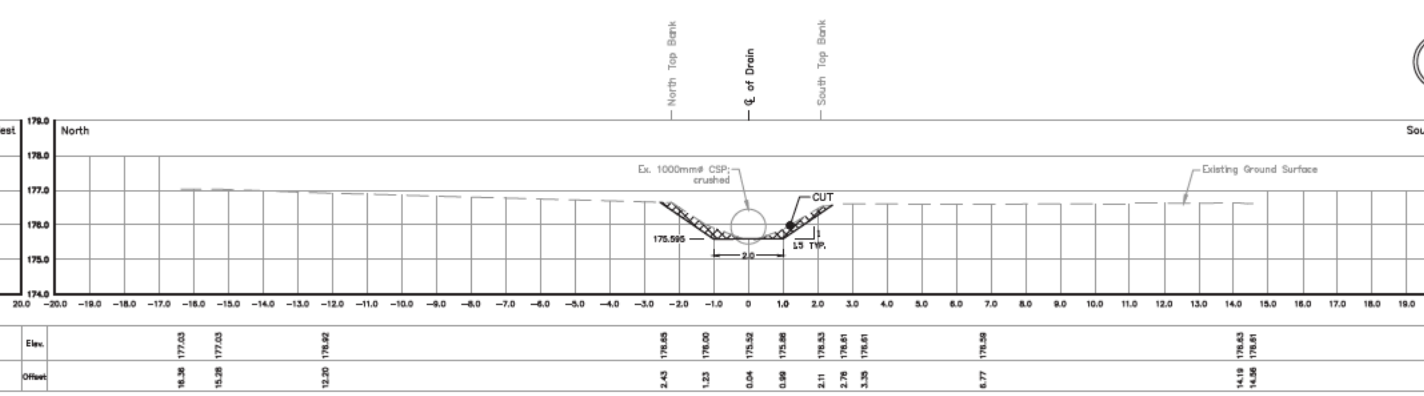
STA 0+793.1
Scale = 1:100



STA 0+878.4
Scale = 1:100



STA 0+750.0
Scale = 1:100



STA 0+875.4
Scale = 1:100

For cross-sections of St. Michaels Drain– STA 0+000.0 to 2+603.1, refer to Sheets 12 to 23.
For cross-sections of St. Michaels Branch– STA 3+000.0 to 4+090.1, refer to Sheets 23 to 27.

THESE PLANS HAVE BEEN REDUCED AND THE SCALE THEREFORE VARIES. FULL SCALE PLANS MAY BE VIEWED AT THE MUNICIPAL OFFICE.

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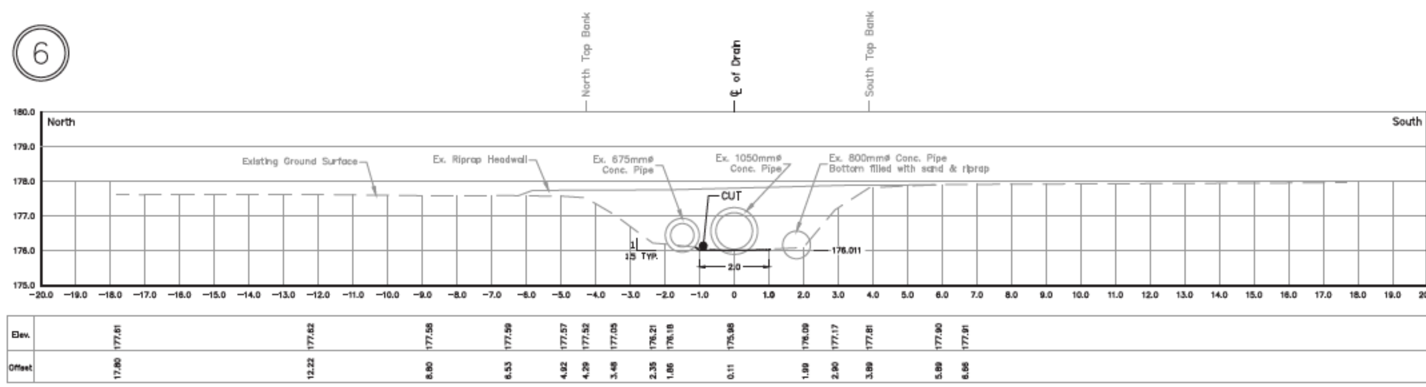
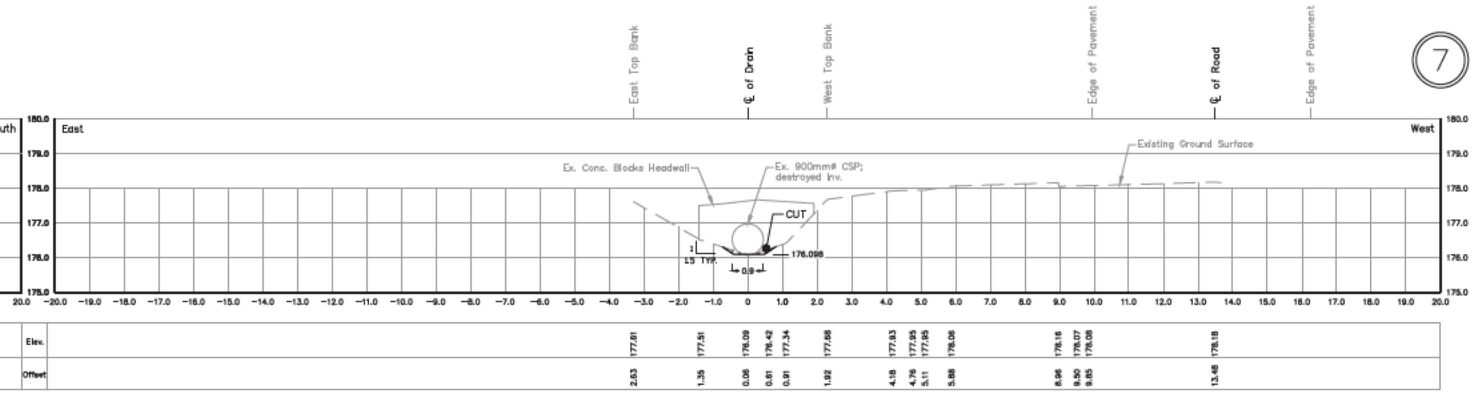
PLOT CODE: 1:1
COMPUTER FILE: REI2018D003.DWG

FILE No.: REI2018D003

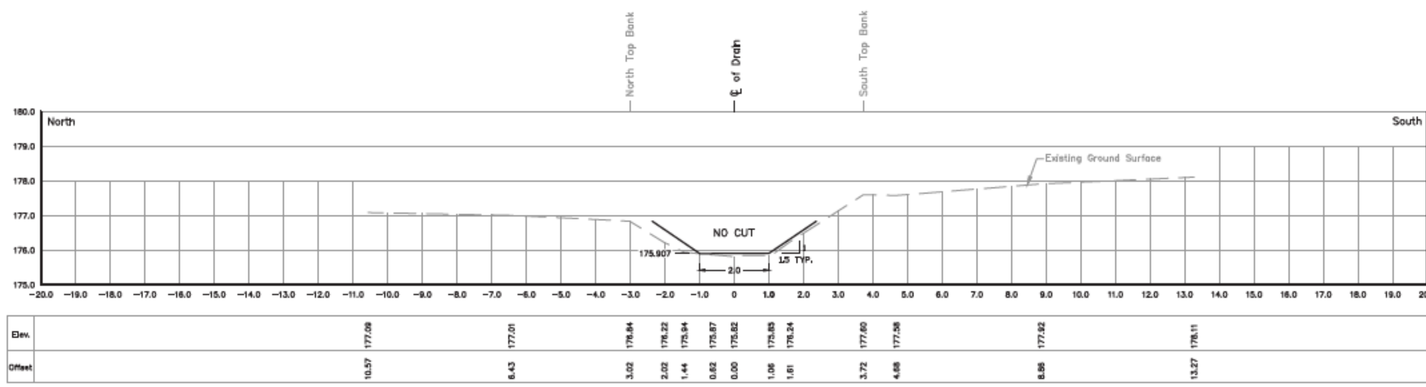
SHEET No.: 15 OF 27



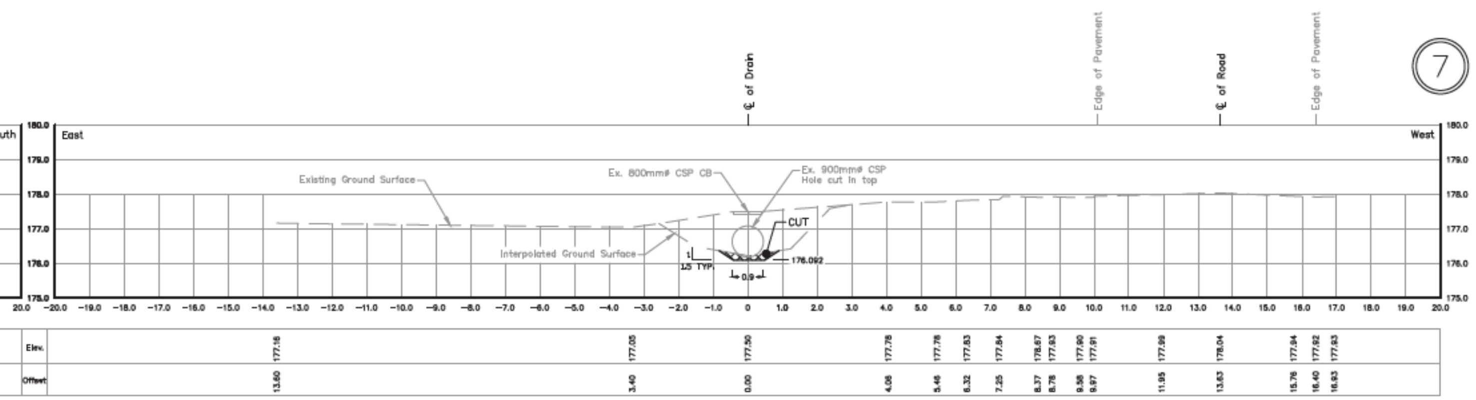
STA 1+041.2
Scale = 1:100



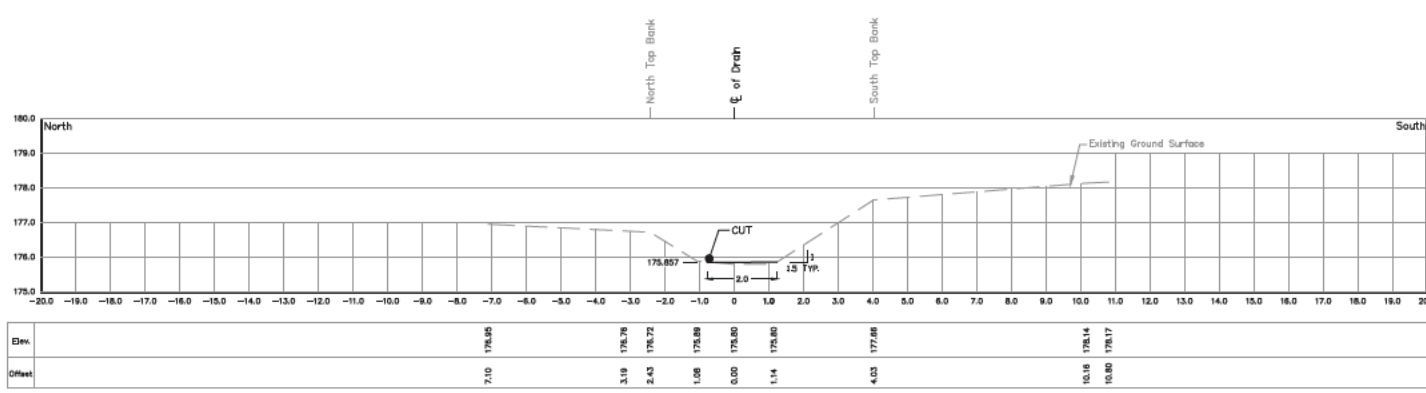
STA 1+123.3
Scale = 1:100



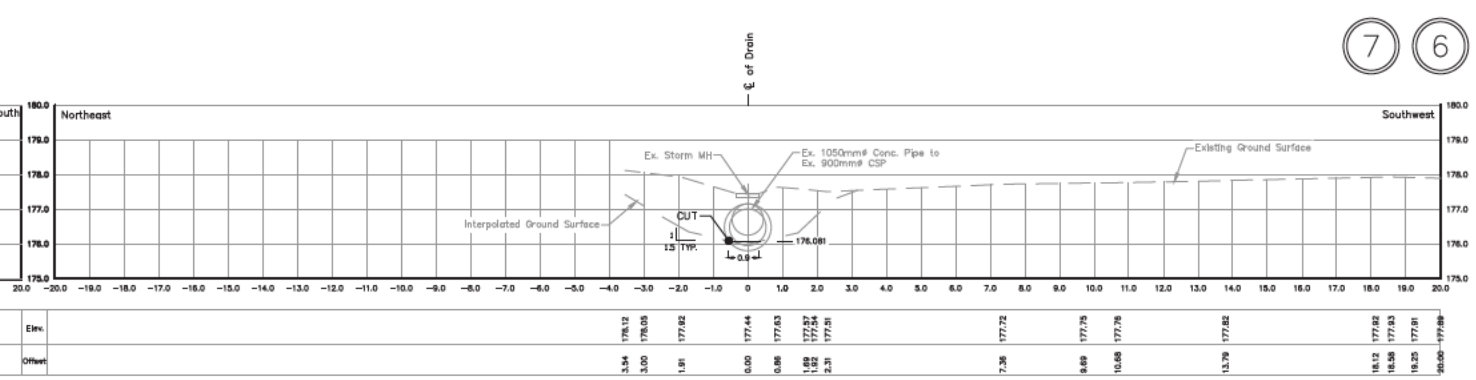
STA 1+000.0
Scale = 1:100



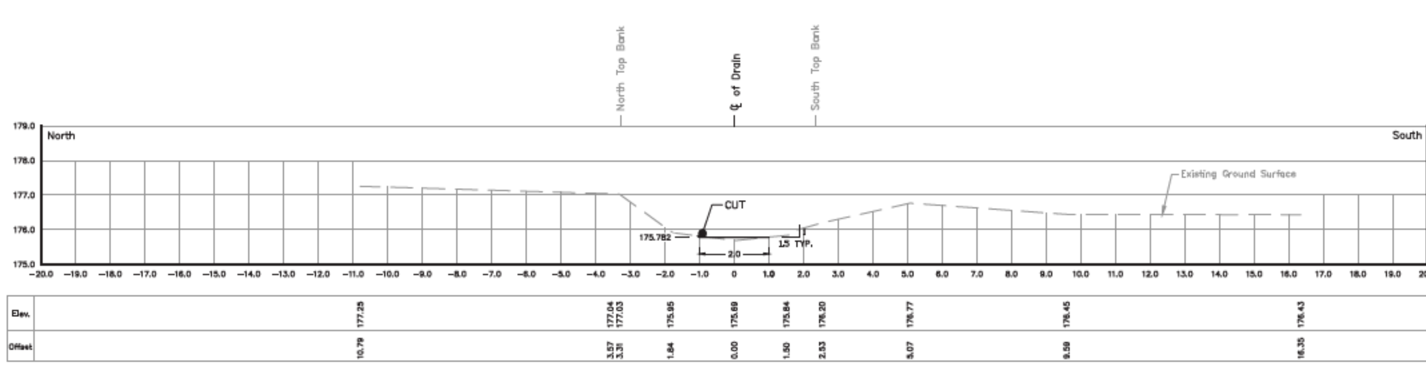
STA 1+103.6
Scale = 1:100



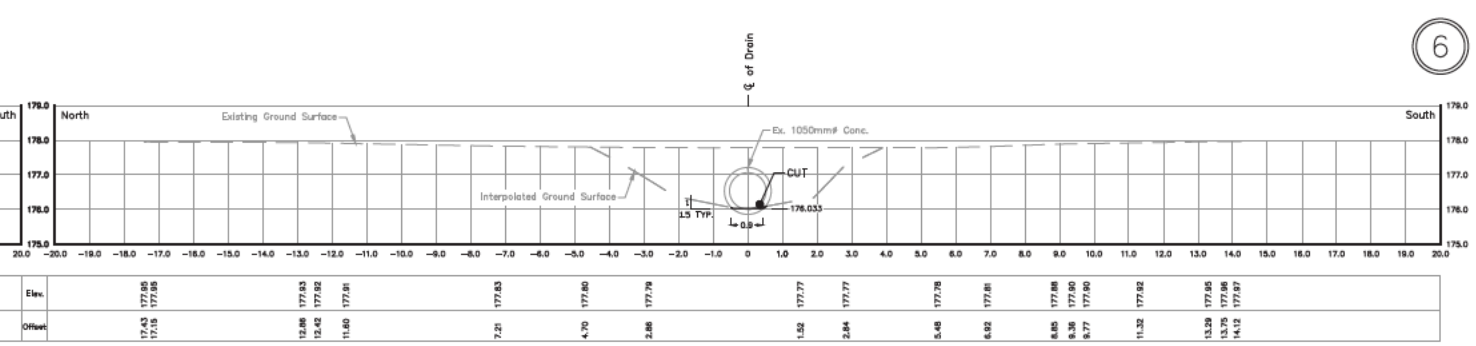
STA 0+980.0
Scale = 1:100



STA 1+069.3
Scale = 1:100



STA 0+950.0
Scale = 1:100



STA 1+050.0
Scale = 1:100

For cross-sections of St. Michaels Drain- STA 0+000.0 to 2+603.1, refer to Sheets 12 to 23.
For cross-sections of St. Michaels Branch- STA 3+000.0 to 4+090.1, refer to Sheets 23 to 27.

THESE PLANS HAVE BEEN REDUCED AND THE SCALE THEREFORE VARIES. FULL SCALE PLANS MAY BE VIEWED AT THE MUNICIPAL OFFICE.

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PLOT CODE: 1:1
COMPUTER FILE: REI2018D003.DWG

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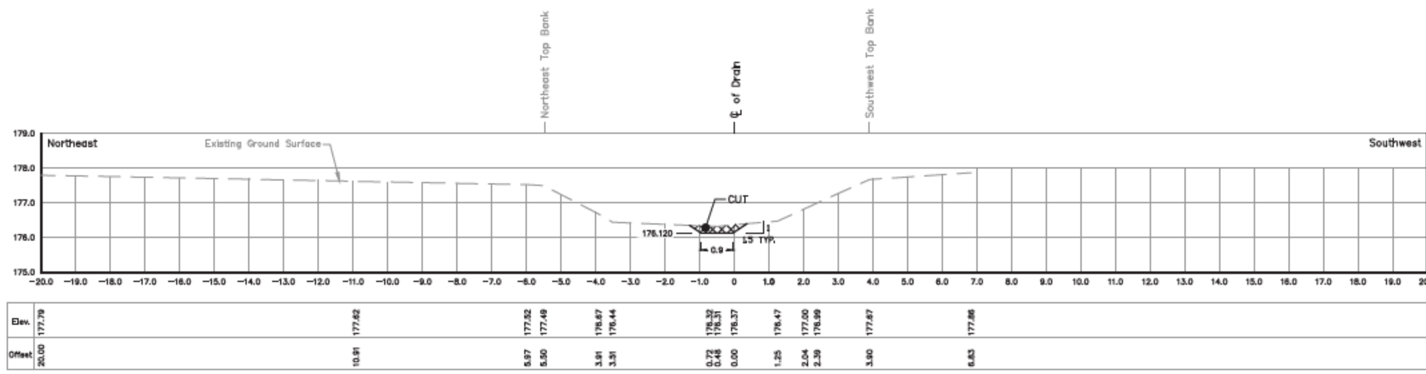
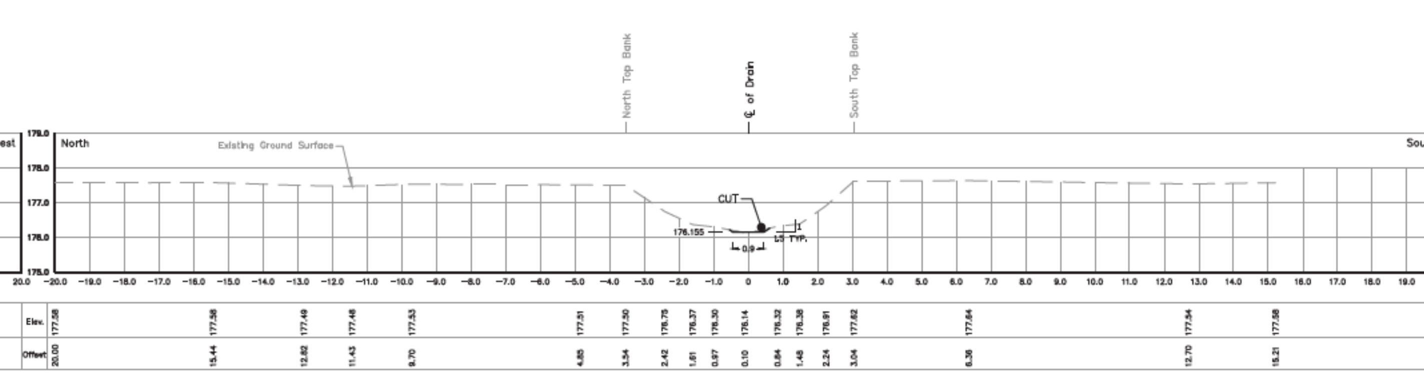
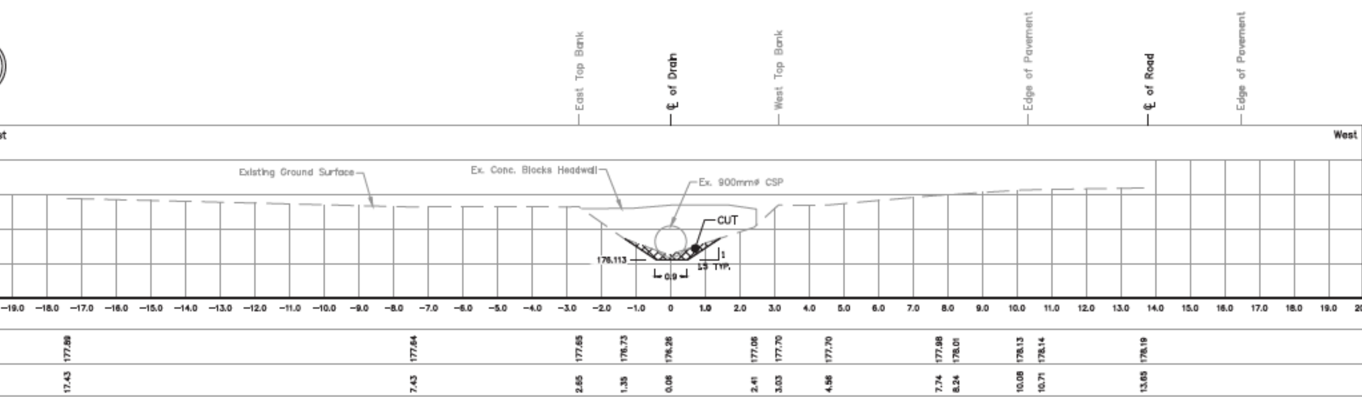


STA 1+189.6
Scale = 1:100

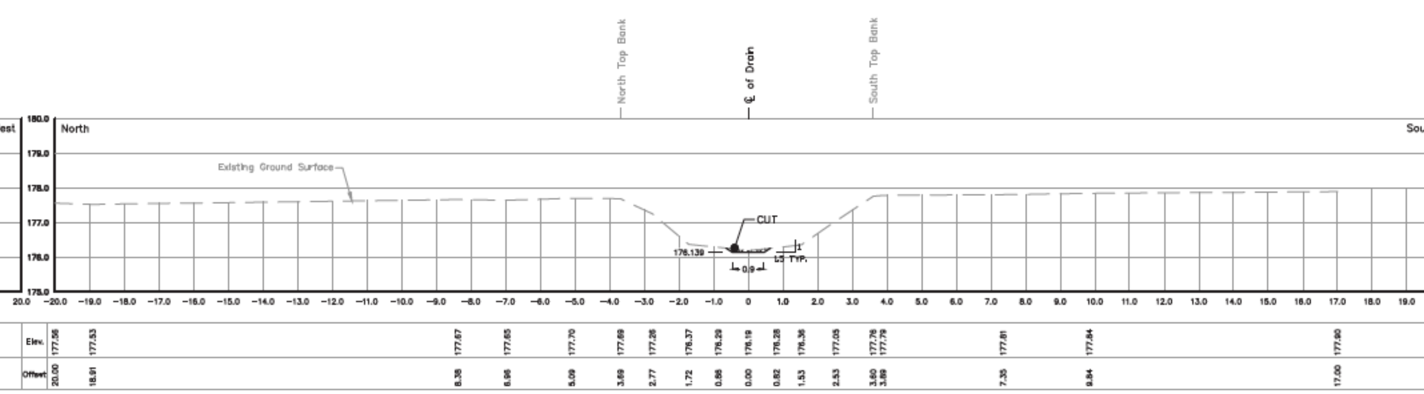


STA 1+300.0
Scale = 1:100

8

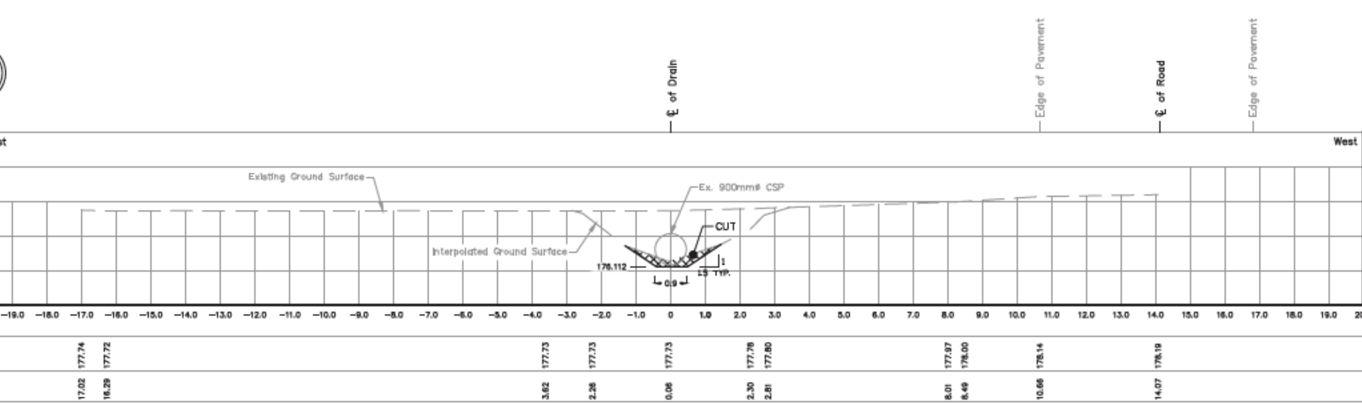


STA 1+170.0
Scale = 1:100

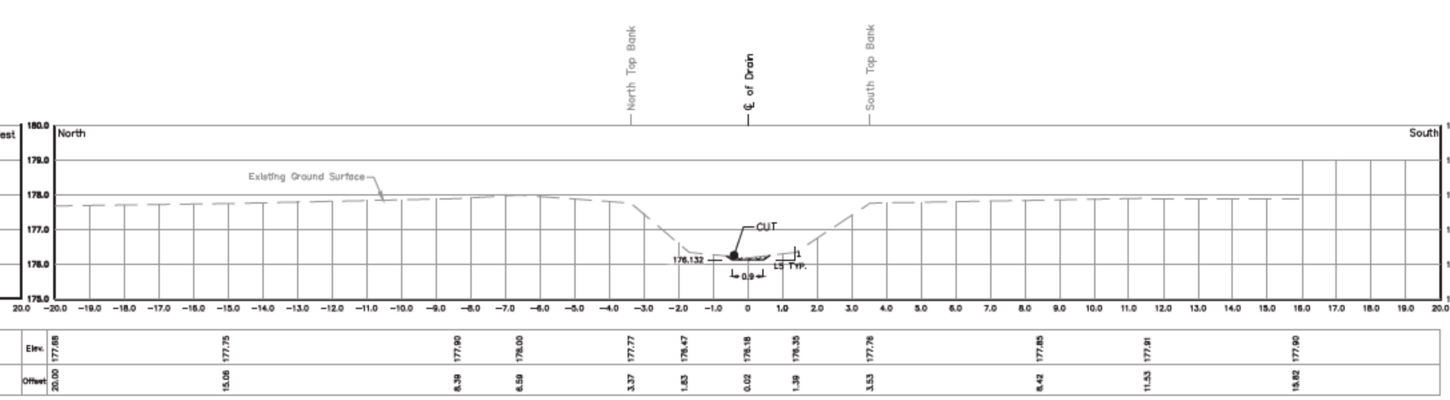


STA 1+250.0
Scale = 1:100

8

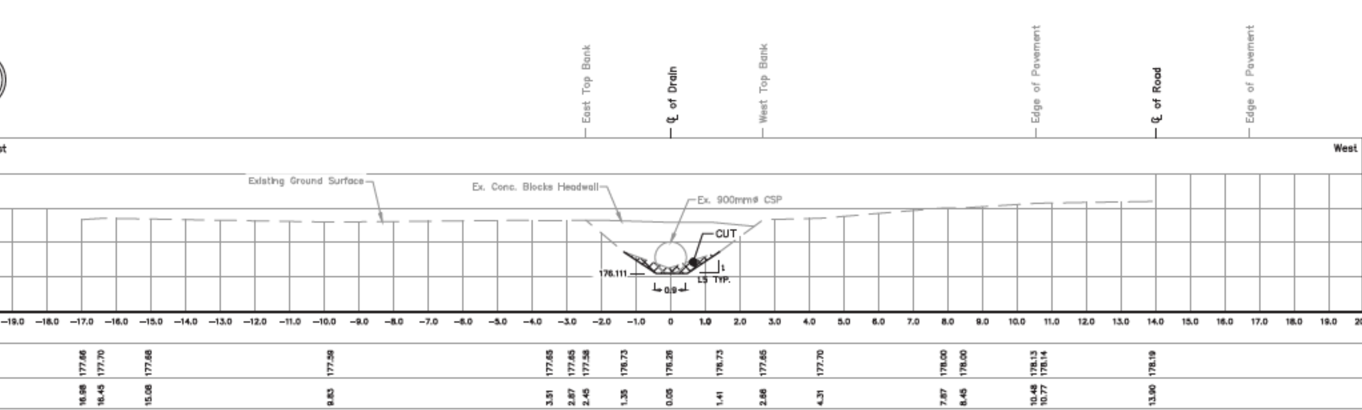


STA 1+166.8
Scale = 1:100

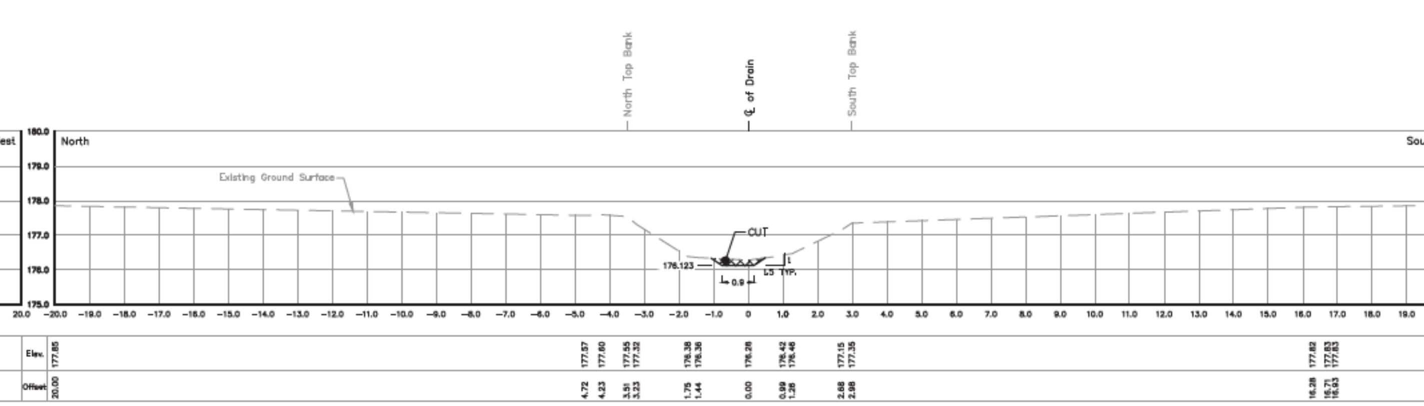


STA 1+230.0
Scale = 1:100

8



STA 1+163.6
Scale = 1:100

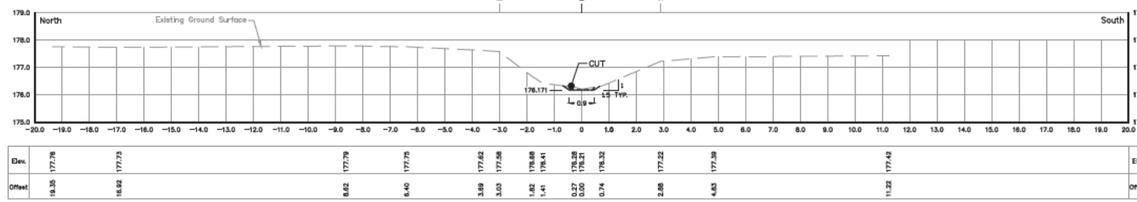


STA 1+200.0
Scale = 1:100

For cross-sections of St. Michaels Drain- STA 0+000.0 to 2+603.1, refer to Sheets 12 to 23.
For cross-sections of St. Michaels Branch- STA 3+000.0 to 4+090.1, refer to Sheets 23 to 27.

THESE PLANS HAVE BEEN REDUCED AND THE SCALE THEREFORE VARIES. FULL SCALE PLANS MAY BE VIEWED AT THE MUNICIPAL OFFICE.

DRAWN BY: S.H. & J.S. PLOT CODE: 1:1 COMPUTER FILE: REI2018D0003.DWG	
FILE No.: REI2018D003	SHEET No.: 17 OF 27



STA 1+350.0
Scale = 1:100

STA 1+450.0
Scale = 1:100

STA 1+326.8
Scale = 1:100

STA 1+407.5
Scale = 1:100

STA 1+323.9
Scale = 1:100

STA 1+402.0
Scale = 1:100

STA 1+320.9
Scale = 1:100

STA 1+396.5
Scale = 1:100

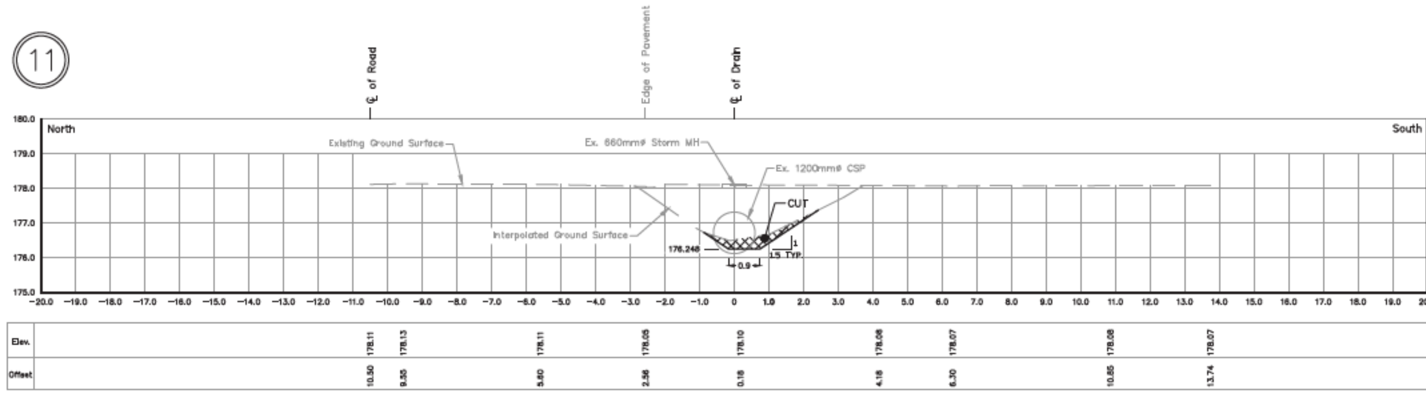
For cross-sections of St. Michaels Drain- STA 0+000.0 to 2+603.1, refer to Sheets 12 to 23.
For cross-sections of St. Michaels Branch- STA 3+000.0 to 4+090.1, refer to Sheets 23 to 27.

THESE PLANS HAVE BEEN REDUCED
AND THE SCALE THEREFORE VARIES.
FULL SCALE PLANS MAY BE VIEWED
AT THE MUNICIPAL OFFICE.

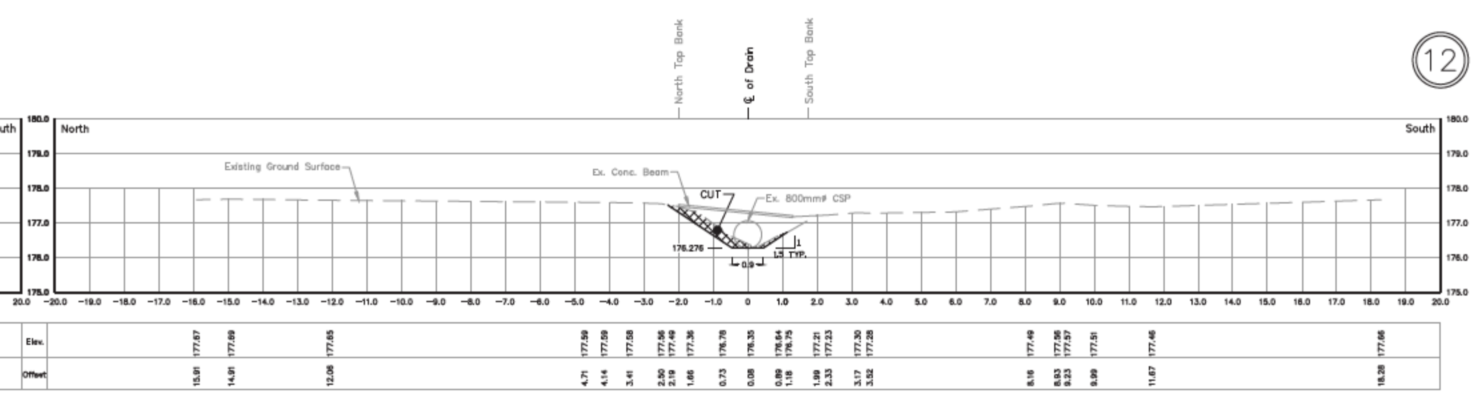
DRAWN BY: S.H. & J.S.
PLOT CODE: 1:1
COMPUTER FILE: REI2018D003.DWG

FILE No.: REI2018D003
SHEET No.: 18 OF 27

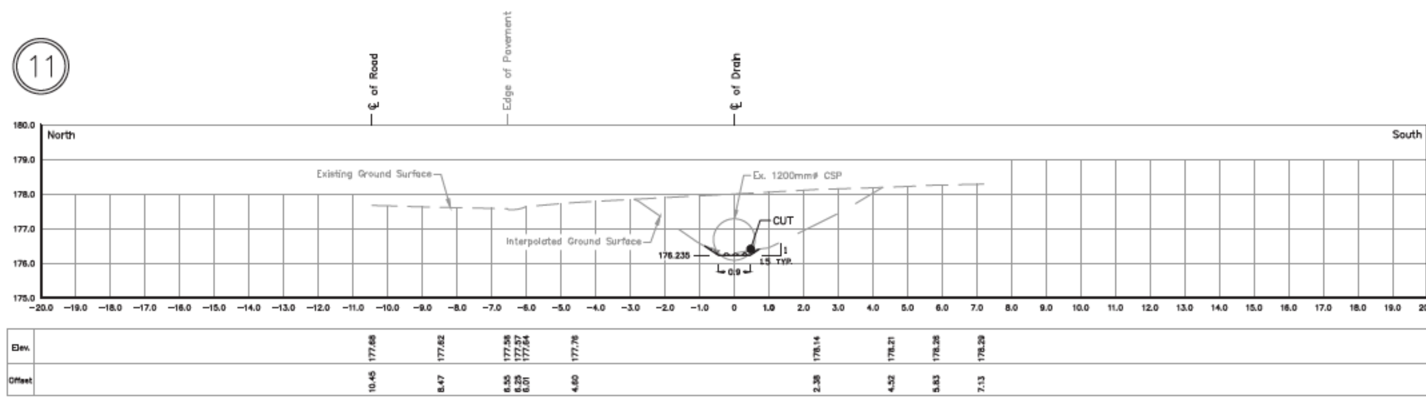
\\SERVER-2019\REI Data Server\DRAFTING\PROJECTS\Projects 2018\REI2018D003 - St.Michaels Drain\REI2018D003_Sections.dwg 2020-09-19



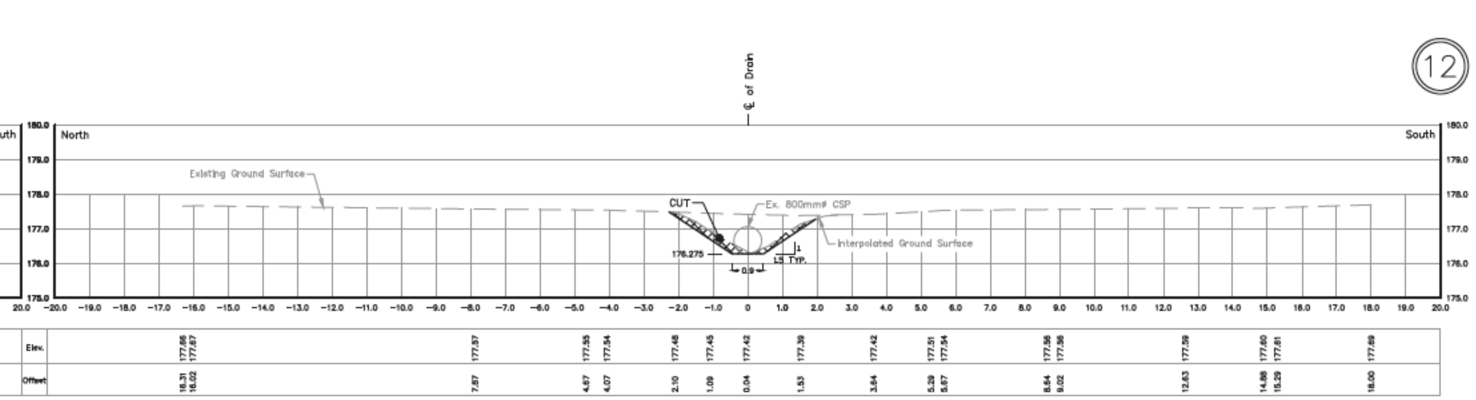
STA 1+691.0
Scale = 1:100



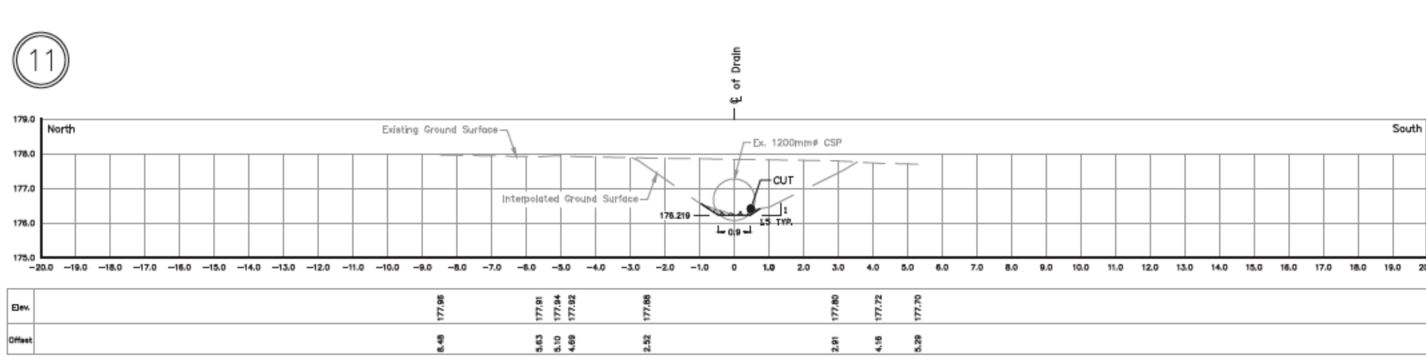
STA 1+678.4
Scale = 1:100



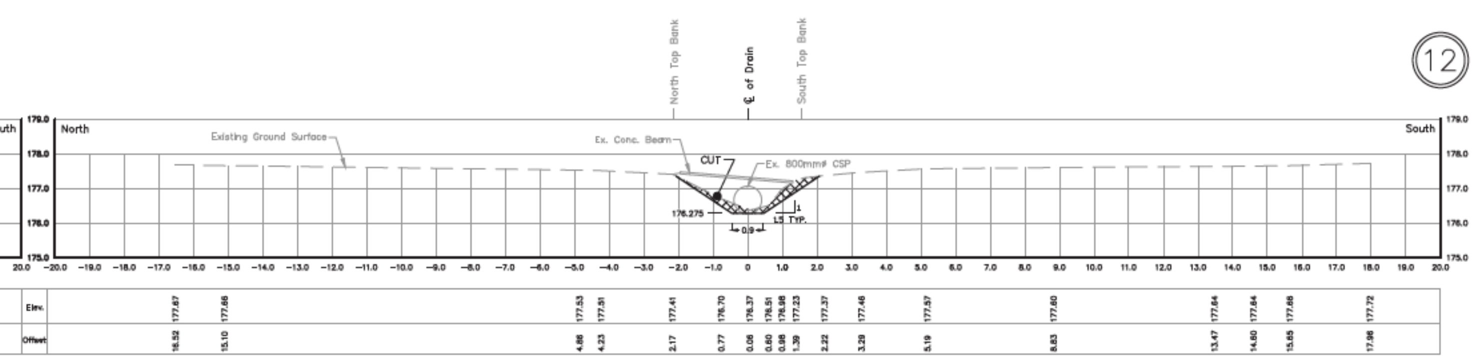
STA 1+650.0
Scale = 1:100



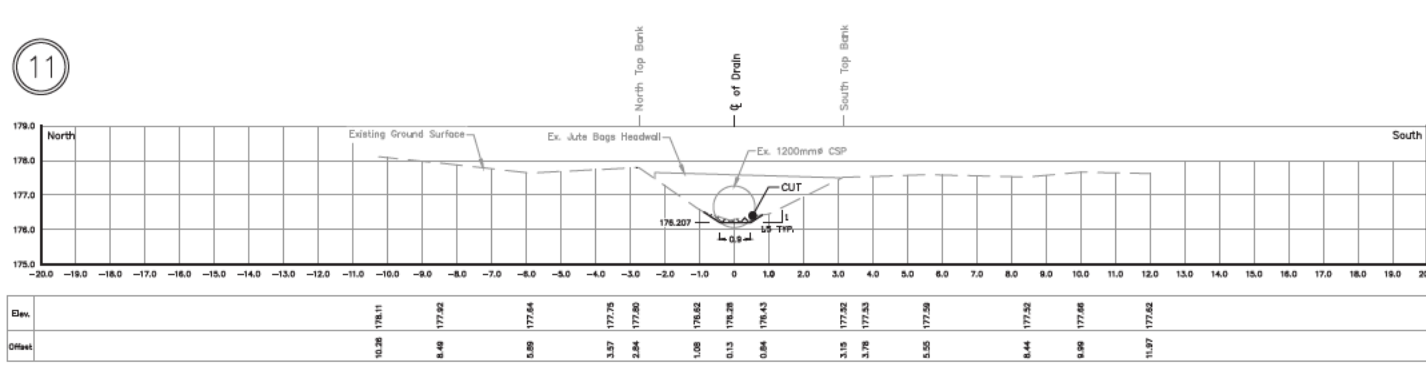
STA 1+676.4
Scale = 1:100



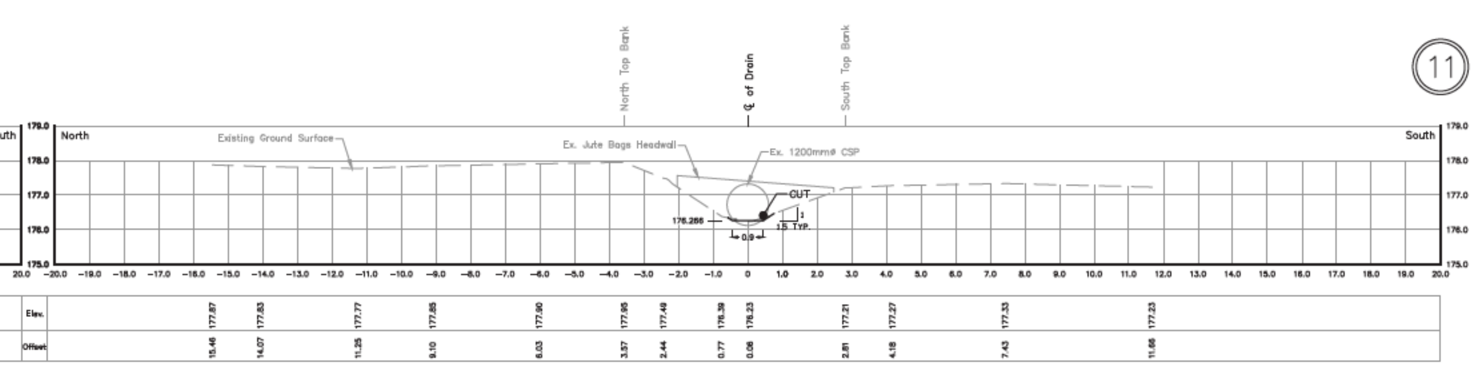
STA 1+600.0
Scale = 1:100



STA 1+674.3
Scale = 1:100



STA 1+462.8
Scale = 1:100



STA 1+645.3
Scale = 1:100

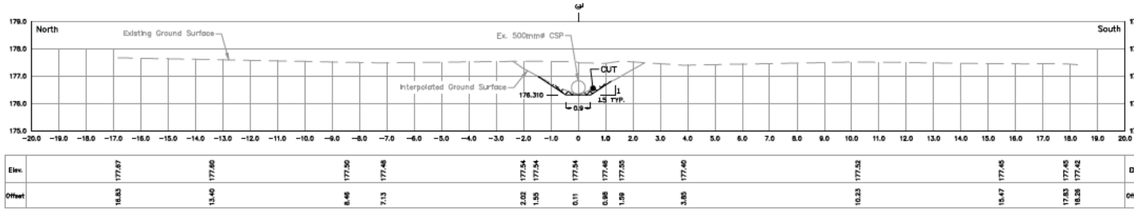
For cross–sections of St. Michaels Drain– STA 0+000.0 to 2+603.1, refer to Sheets 12 to 23.
For cross–sections of St. Michaels Branch– STA 3+000.0 to 4+090.1, refer to Sheets 23 to 27.

THESE PLANS HAVE BEEN REDUCED AND THE SCALE THEREFORE VARIES. FULL SCALE PLANS MAY BE VIEWED AT THE MUNICIPAL OFFICE.

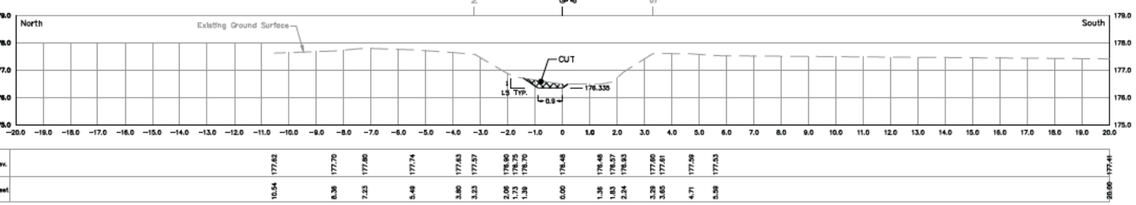
DRAWN BY: S.H. & J.S.
PLOT CODE: 1:1
COMPUTER FILE: REI2018D003.DWG

FILE No.: REI2018D003

13

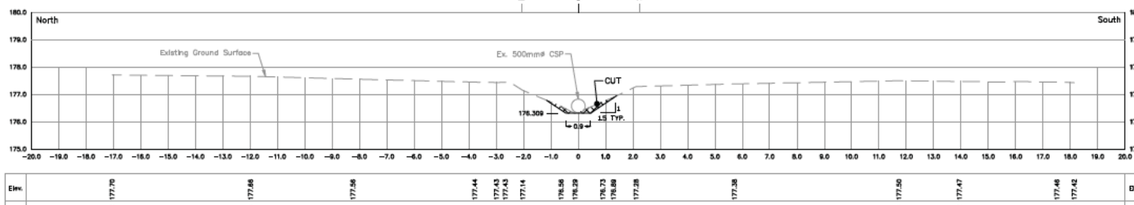


STA 1+782.5
Scale = 1:100

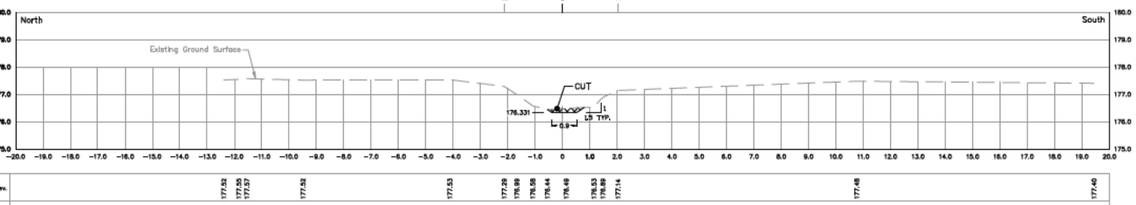


STA 1+862.0
Scale = 1:100

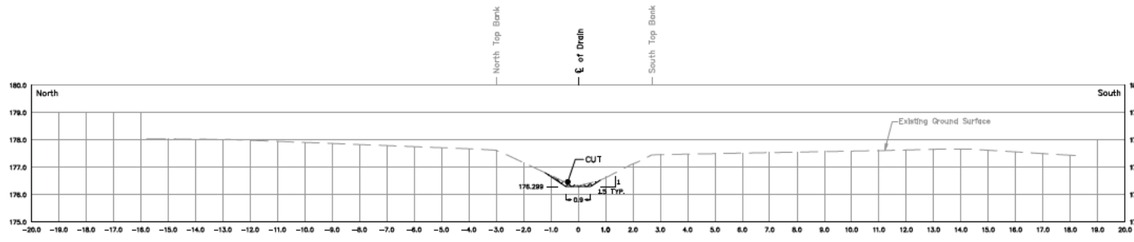
13



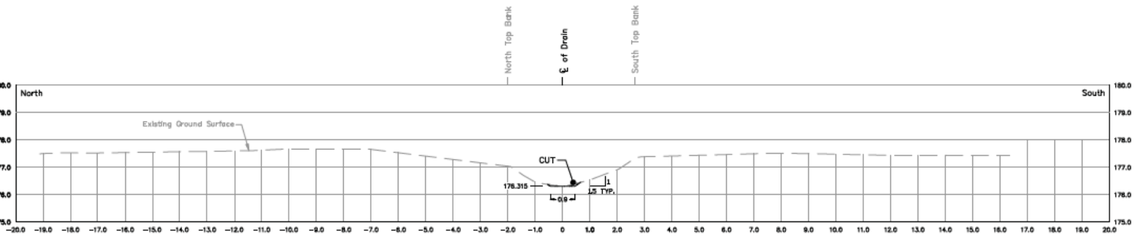
STA 1+779.9
Scale = 1:100



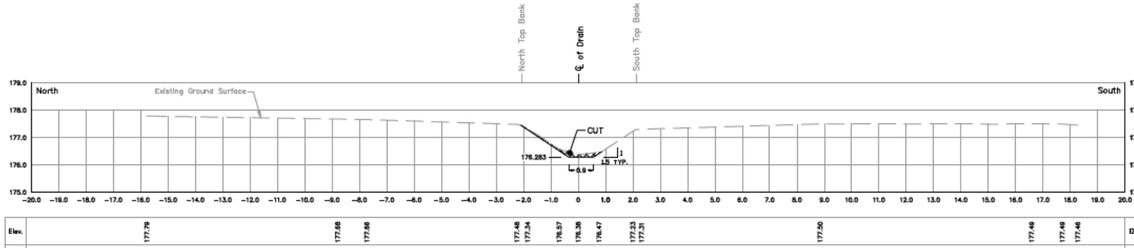
STA 1+850.0
Scale = 1:100



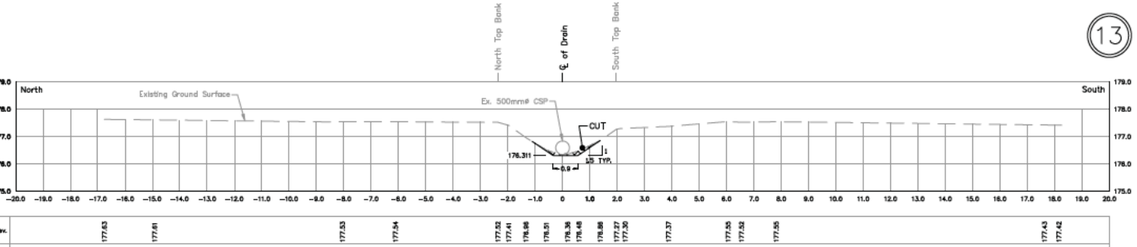
STA 1+750.0
Scale = 1:100



STA 1+800.0
Scale = 1:100



STA 1+700.0
Scale = 1:100



STA 1+785.6
Scale = 1:100

For cross-sections of St. Michaels Drain – STA 0+000.0 to 2+603.1, refer to Sheets 12 to 23.
For cross-sections of St. Michaels Branch – STA 3+000.0 to 4+090.1, refer to Sheets 23 to 27.

THESE PLANS HAVE BEEN REDUCED AND THE SCALE THEREFORE VARIES. FULL SCALE PLANS MAY BE VIEWED AT THE MUNICIPAL OFFICE.

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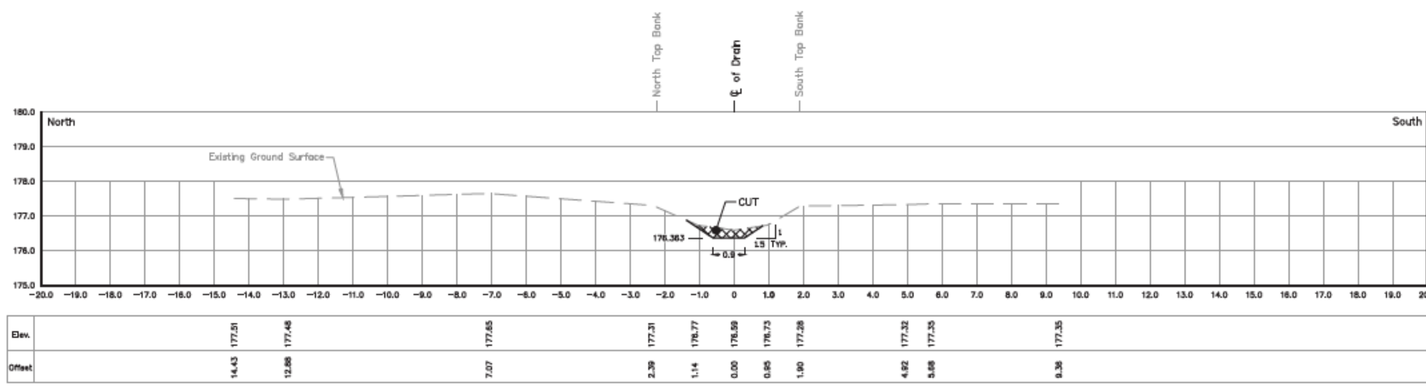
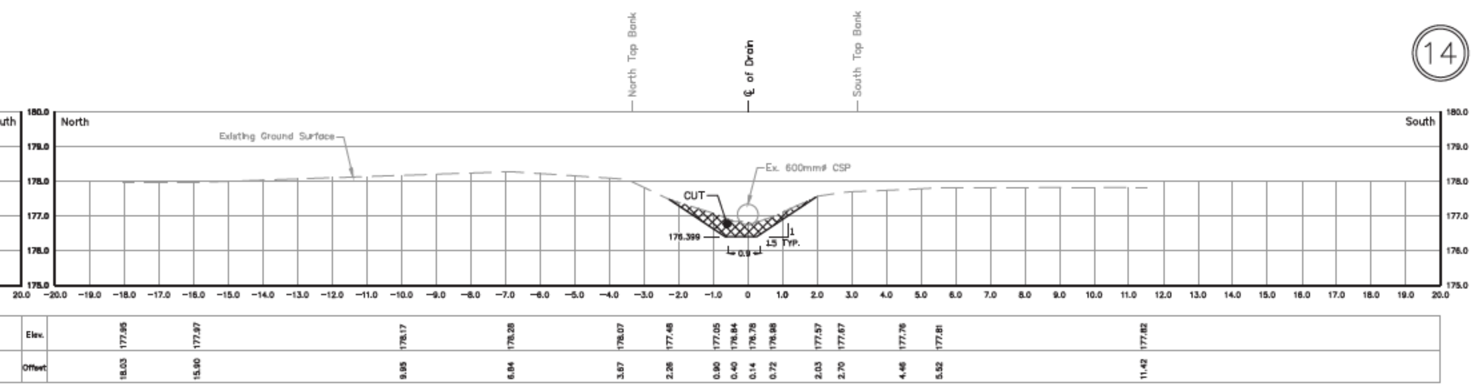
PLOT CODE: 1:1
COMPUTER FILE: REI2018D003.DWG

FILE No.: REI2018D003

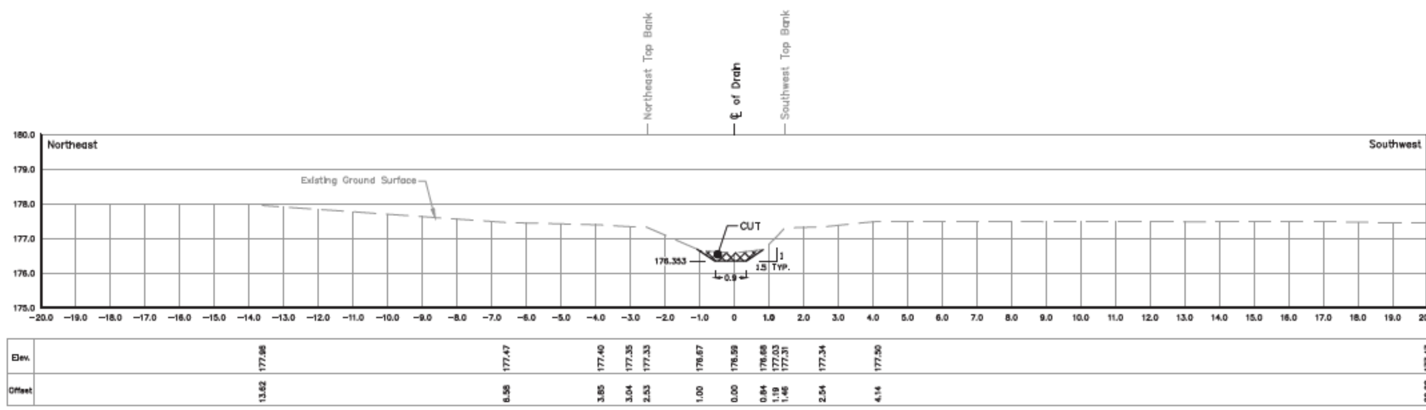
SHEET No.: 20 OF 27



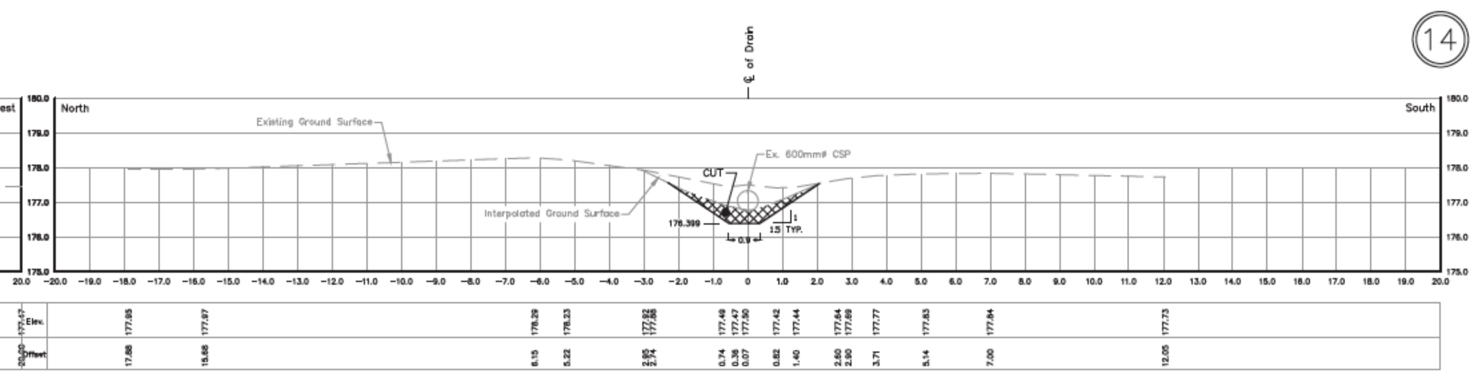
STA 1+950.0
Scale = 1:100



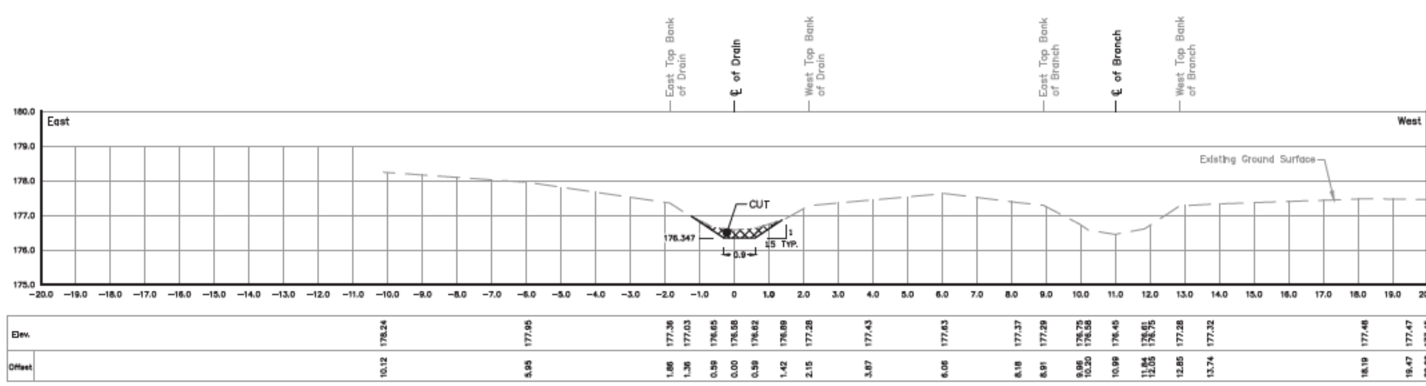
STA 2+063.4
Scale = 1:100



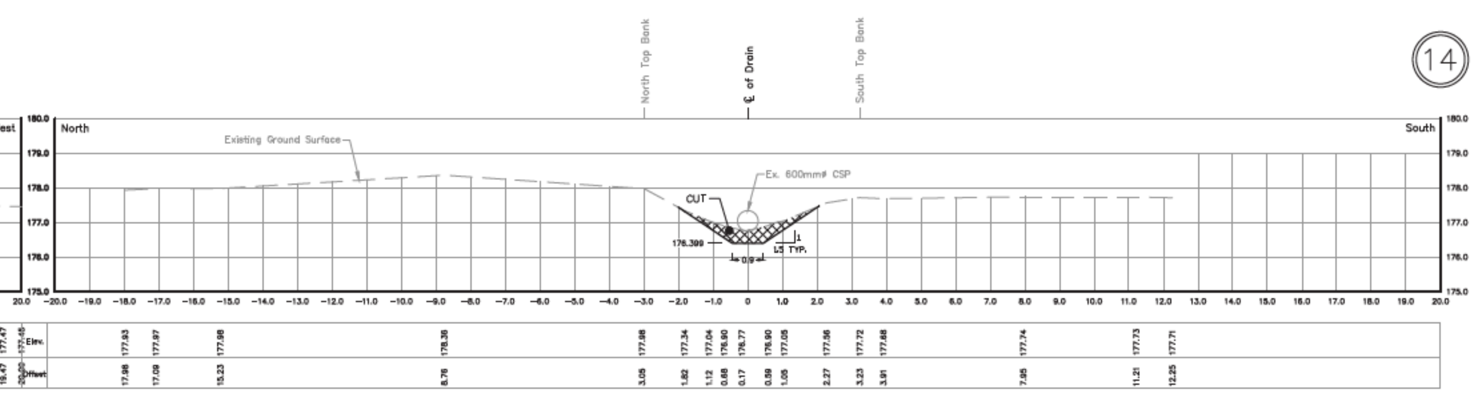
STA 1+919.0
Scale = 1:100



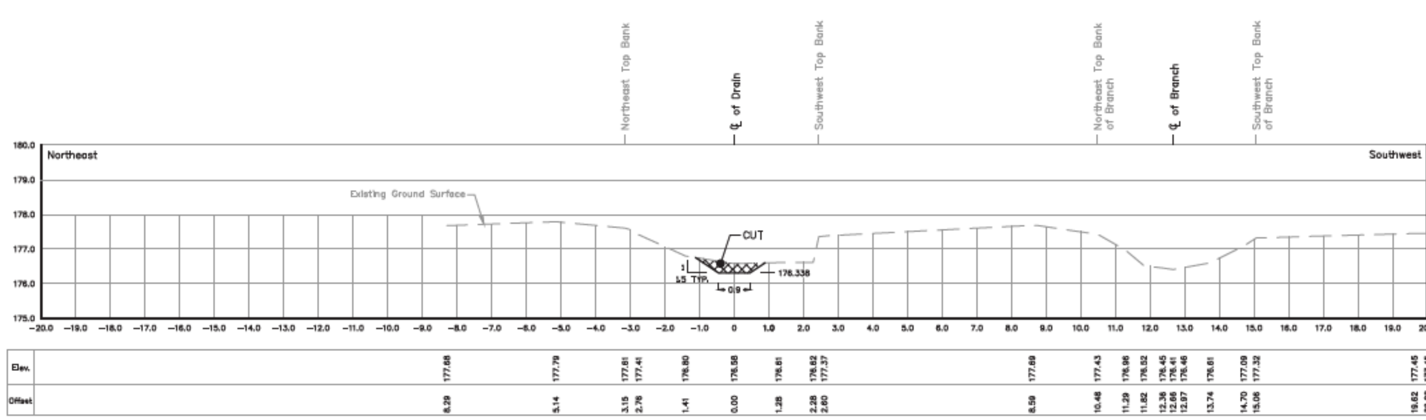
STA 2+062.3
Scale = 1:100



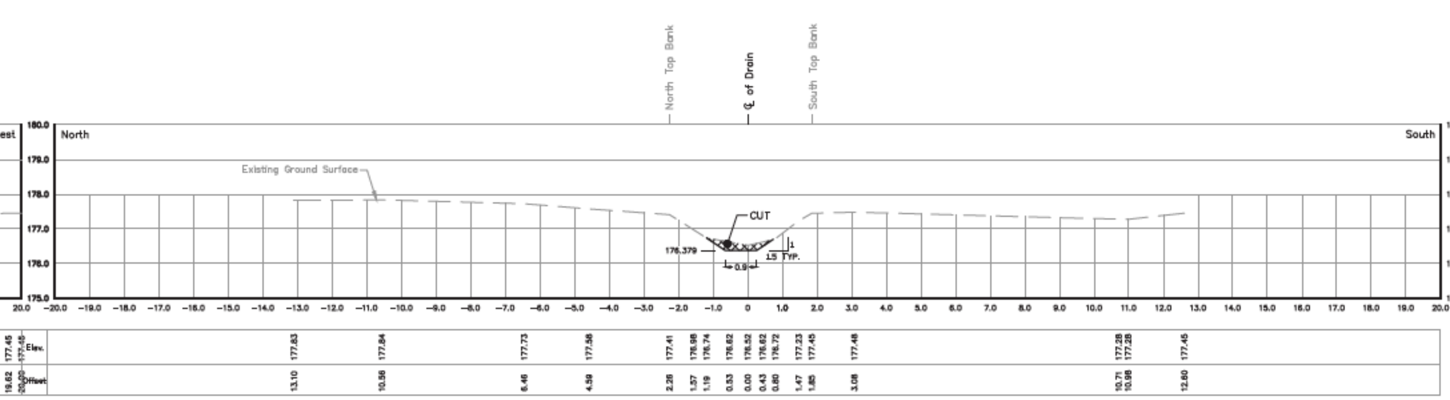
STA 1+900.0
Scale = 1:100



STA 2+061.2
Scale = 1:100



STA 1+872.2
Scale = 1:100



STA 2+000.0
Scale = 1:100

For cross–sections of St. Michaels Drain– STA 0+000.0 to 2+603.1, refer to Sheets 12 to 23.
For cross–sections of St. Michaels Branch– STA 3+000.0 to 4+090.1, refer to Sheets 23 to 27.

THESE PLANS HAVE BEEN REDUCED AND THE SCALE THEREFORE VARIES. FULL SCALE PLANS MAY BE VIEWED AT THE MUNICIPAL OFFICE.

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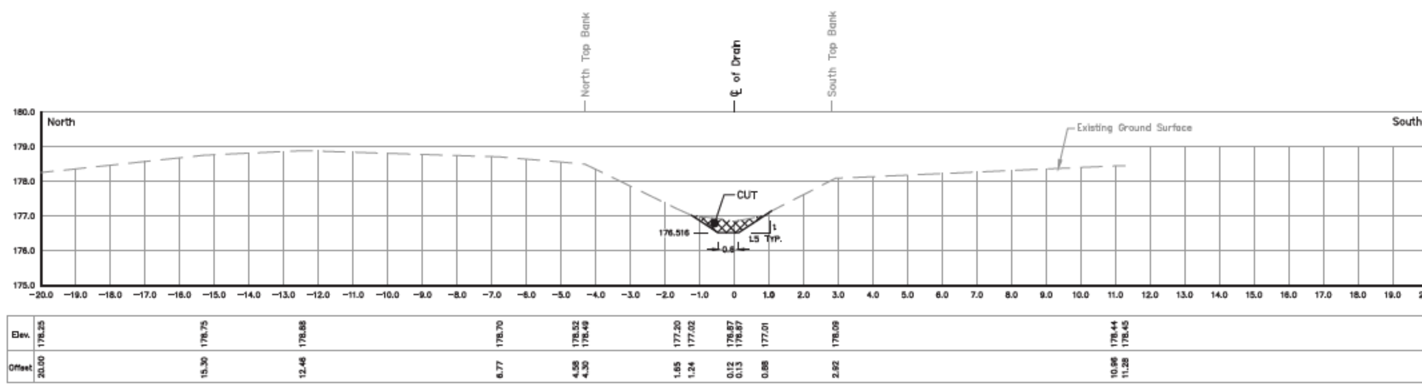
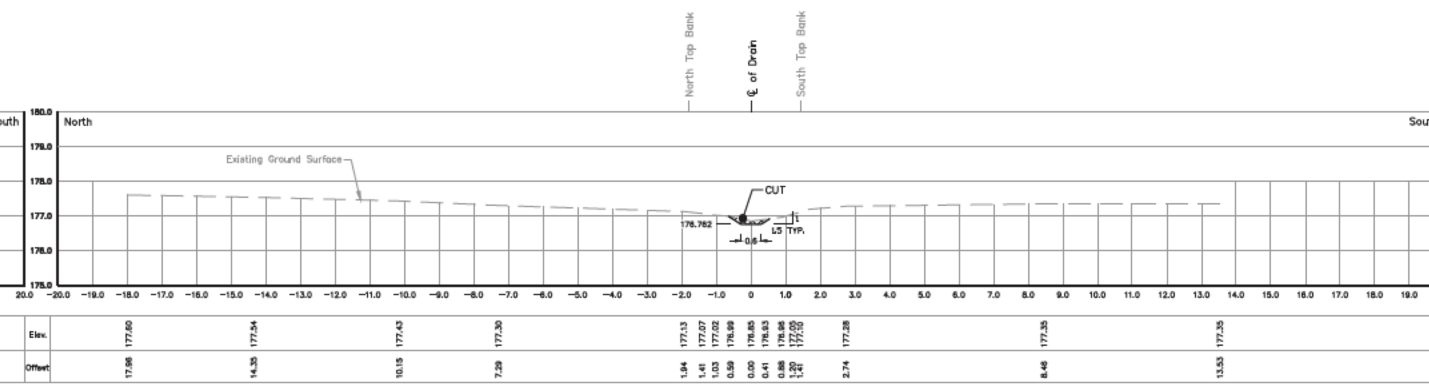
PLOT CODE: 1:1
COMPUTER FILE: REI2018D003.DWG

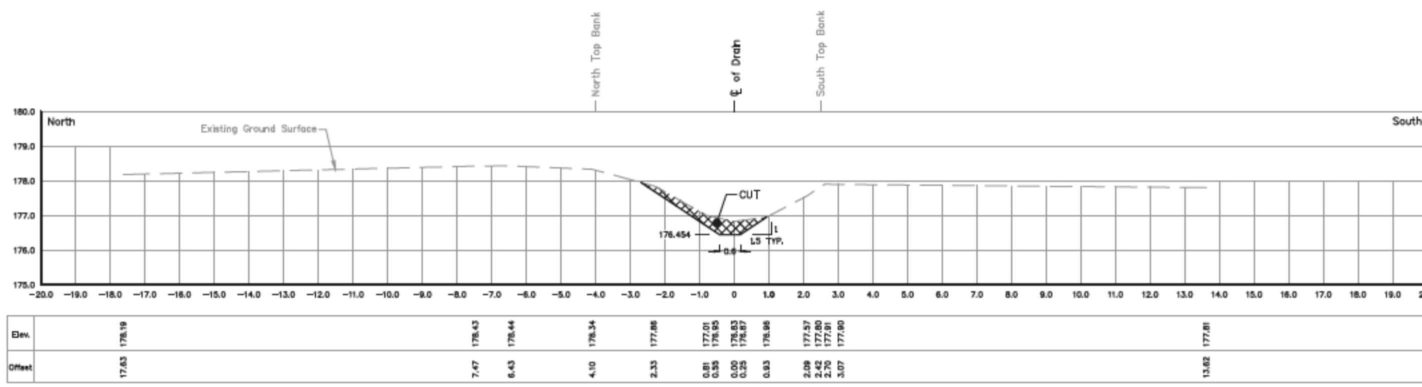
FILE No.: REI2018D003



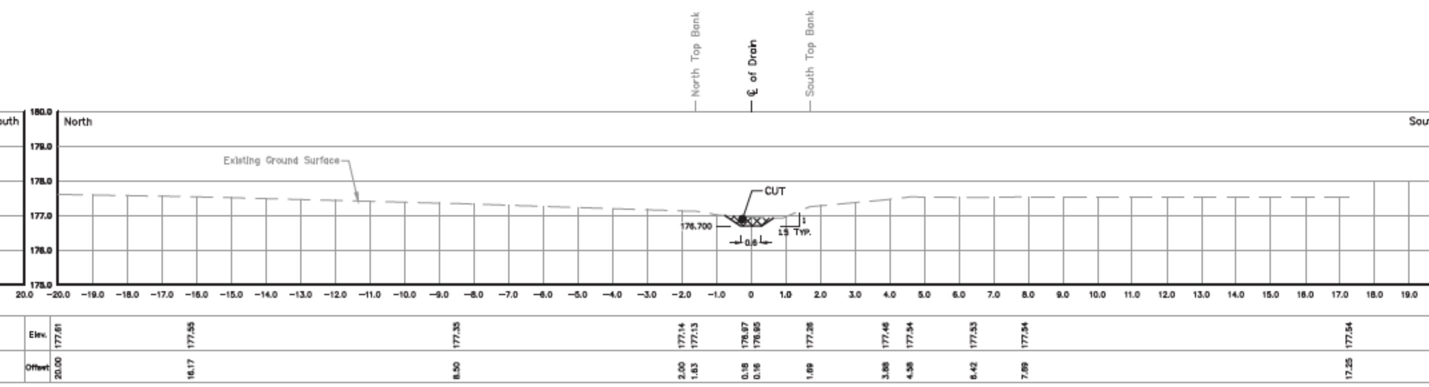
STA 2+250.0
Scale = 1:100



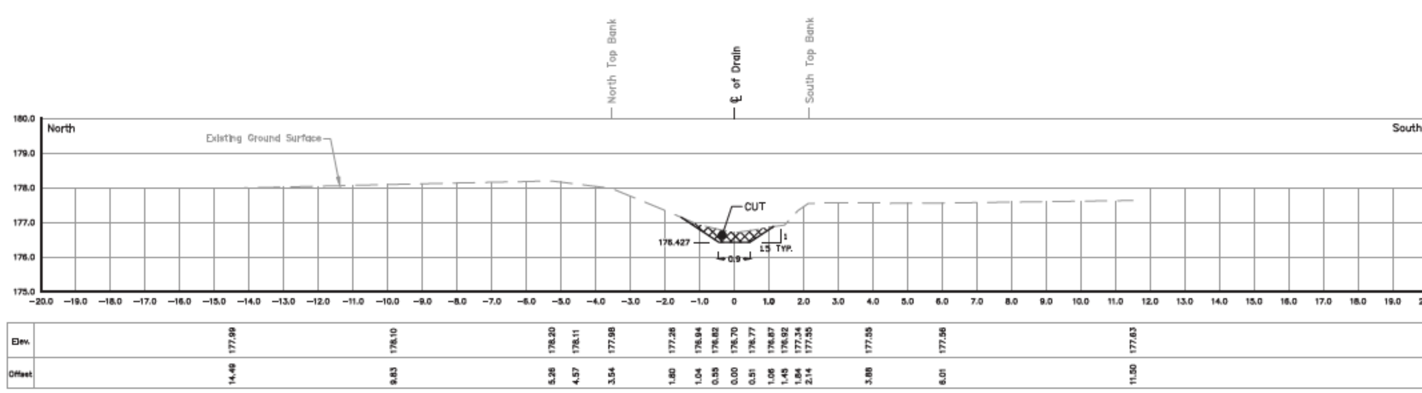
STA 2+450.0
Scale = 1:100



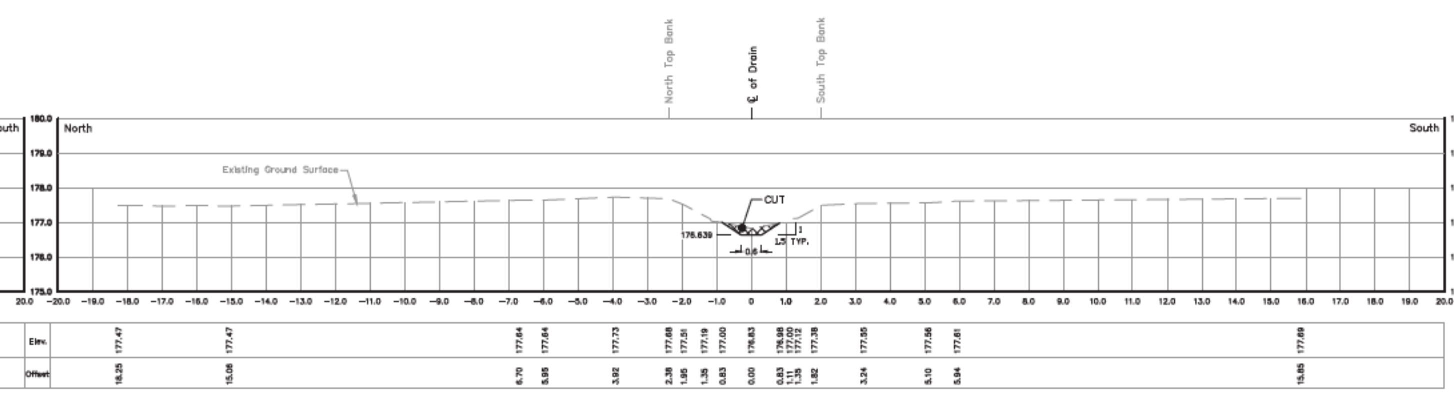
STA 2+200.0
Scale = 1:100



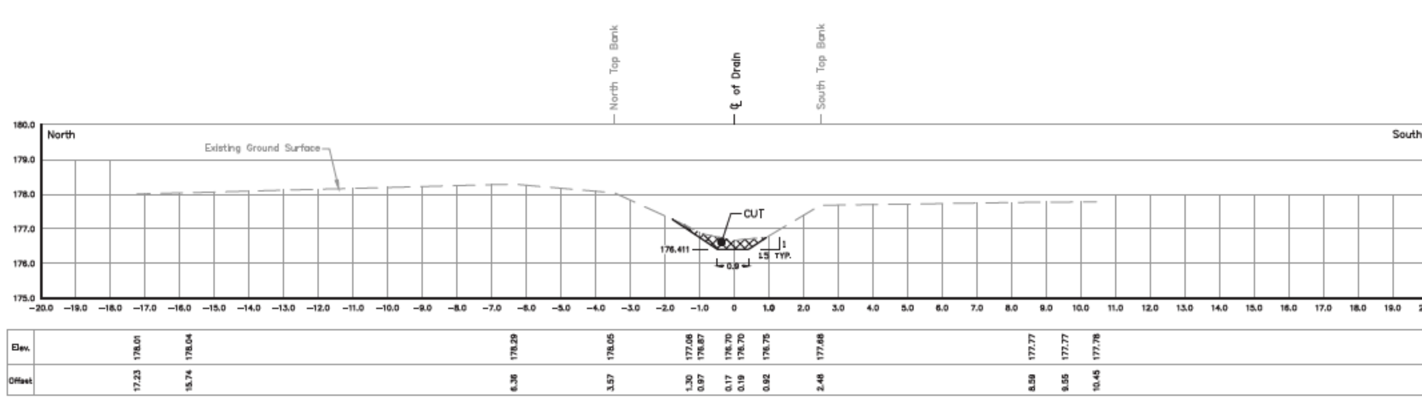
STA 2+400.0
Scale = 1:100



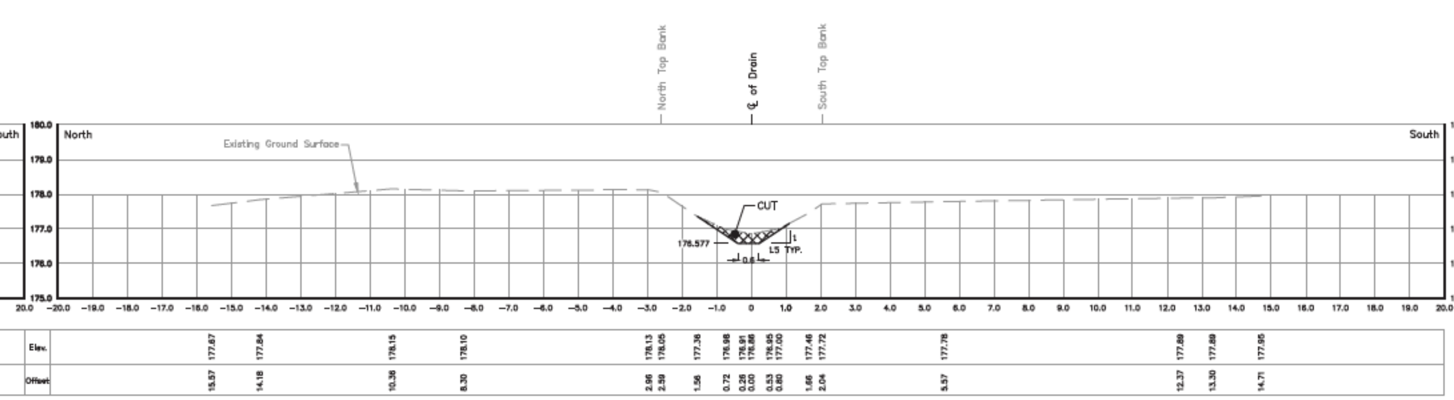
STA 2+150.0
Scale = 1:100



STA 2+350.0
Scale = 1:100



STA 2+100.0
Scale = 1:100



STA 2+300.0
Scale = 1:100

For cross-sections of St. Michaels Drain- STA 0+000.0 to 2+603.1, refer to Sheets 12 to 23.
For cross-sections of St. Michaels Branch- STA 3+000.0 to 4+090.1, refer to Sheets 23 to 27.

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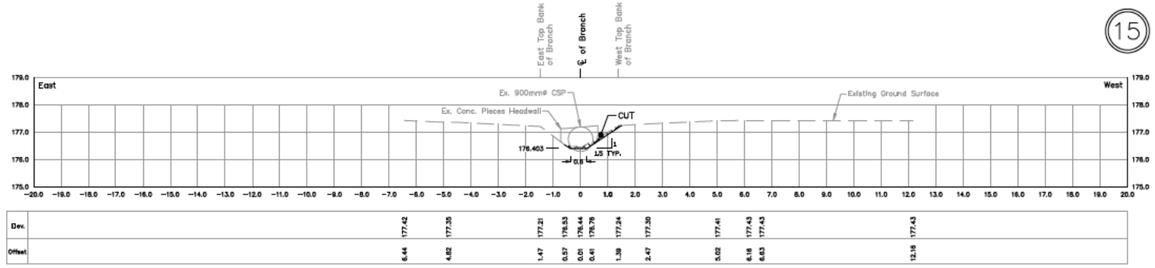
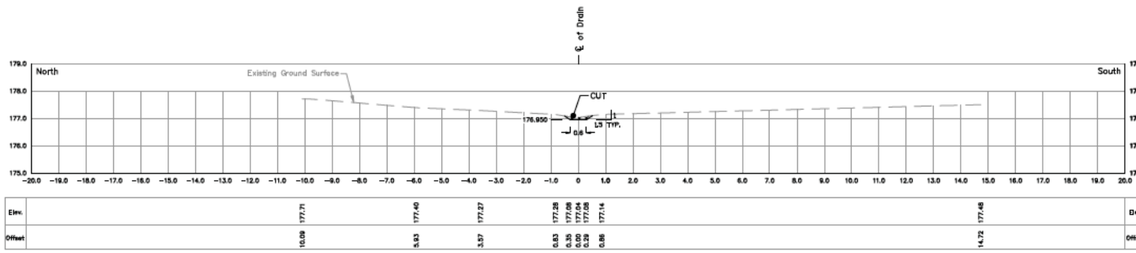
PLOT CODE: 1:1
COMPUTER FILE: REI2018D003.DWG

FILE No.: REI2018D003

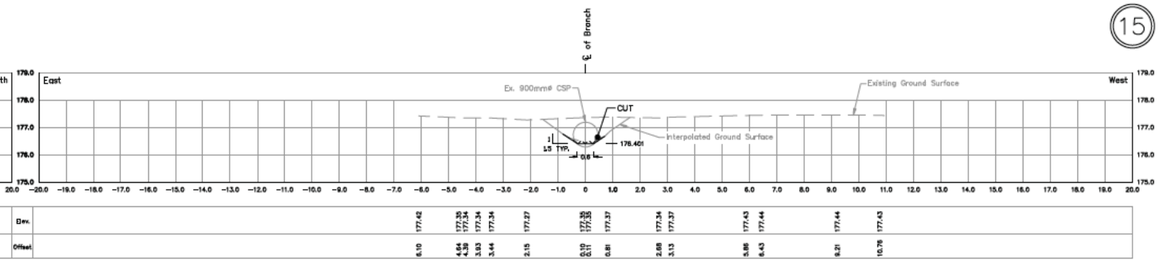
END OF MAIN DRAIN CROSS–SECTIONS



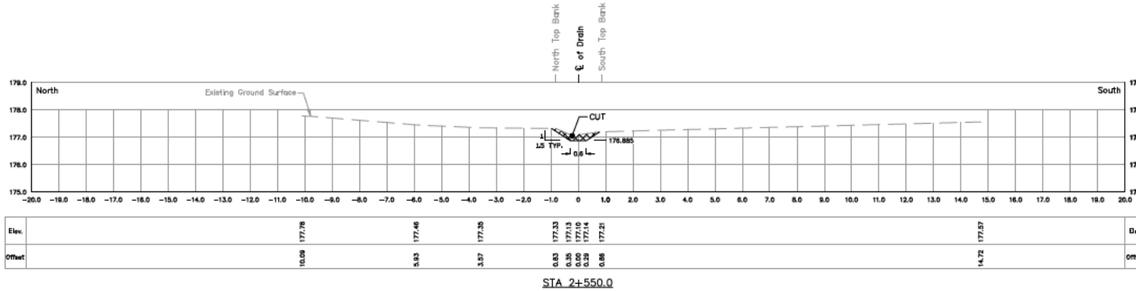
STA 3+060.2
Scale = 1:100



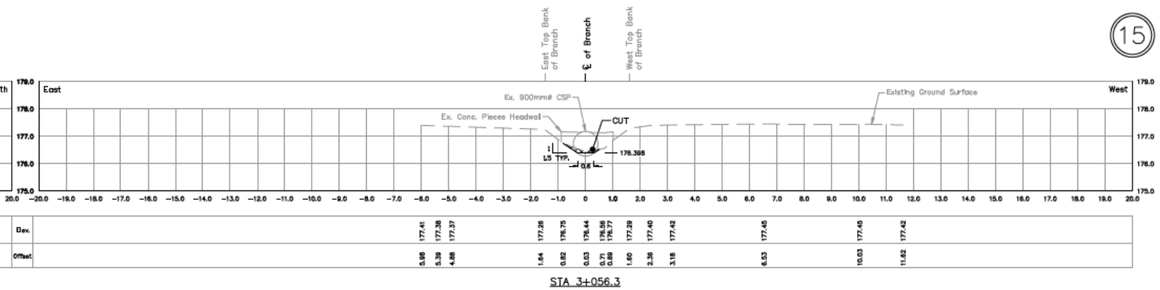
STA 2+603.1
Scale = 1:100



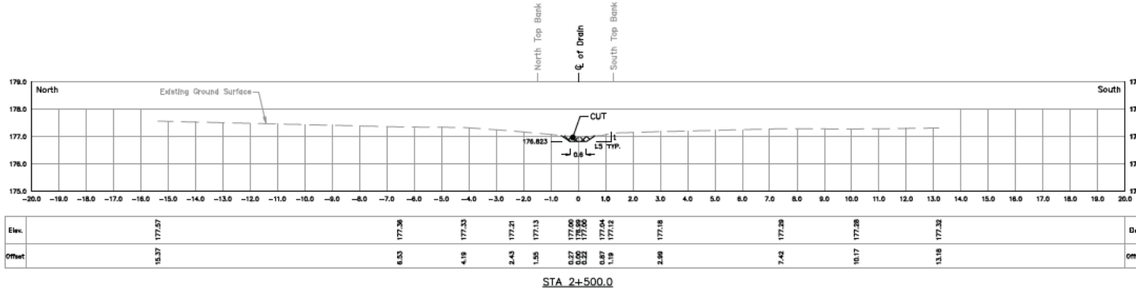
STA 3+058.8
Scale = 1:100



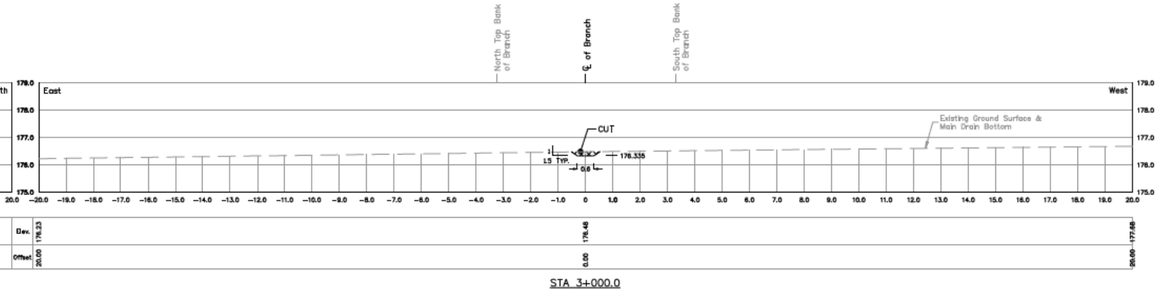
STA 2+550.0
Scale = 1:100



STA 3+056.3
Scale = 1:100



STA 2+500.0
Scale = 1:100



STA 3+000.0
Scale = 1:100

For cross–sections of St. Michaels Drain – STA 0+000.0 to 2+603.1, refer to Sheets 12 to 23.
For cross–sections of St. Michaels Branch – STA 3+000.0 to 4+090.1, refer to Sheets 23 to 27.

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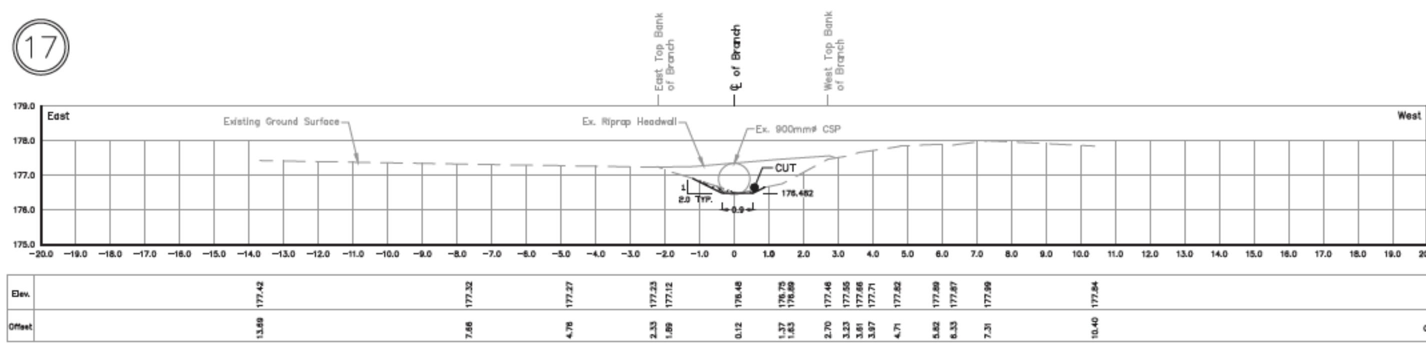
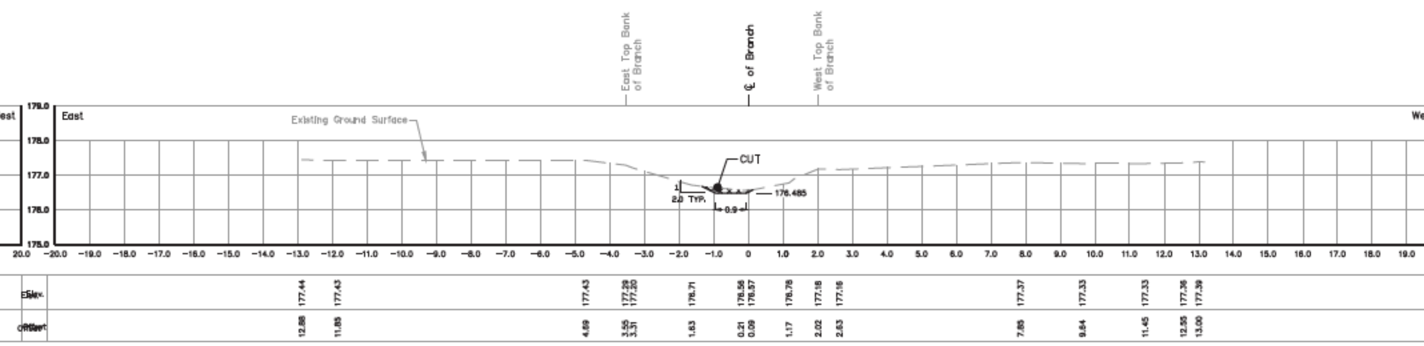
PLOT CODE: 1:1
COMPUTER FILE: REI2018D003.DWG

FILE No.: REI2018D003

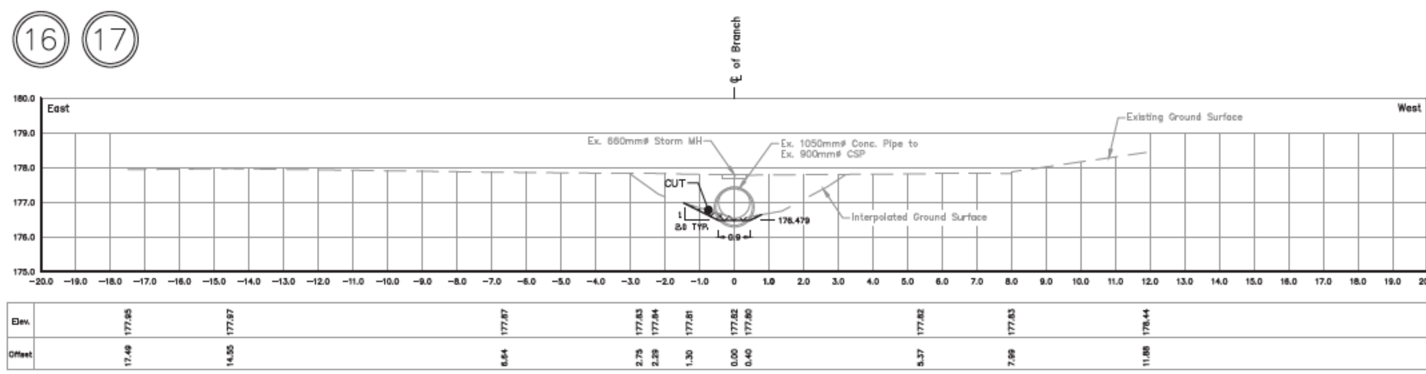
SHEET No.: 23 OF 27



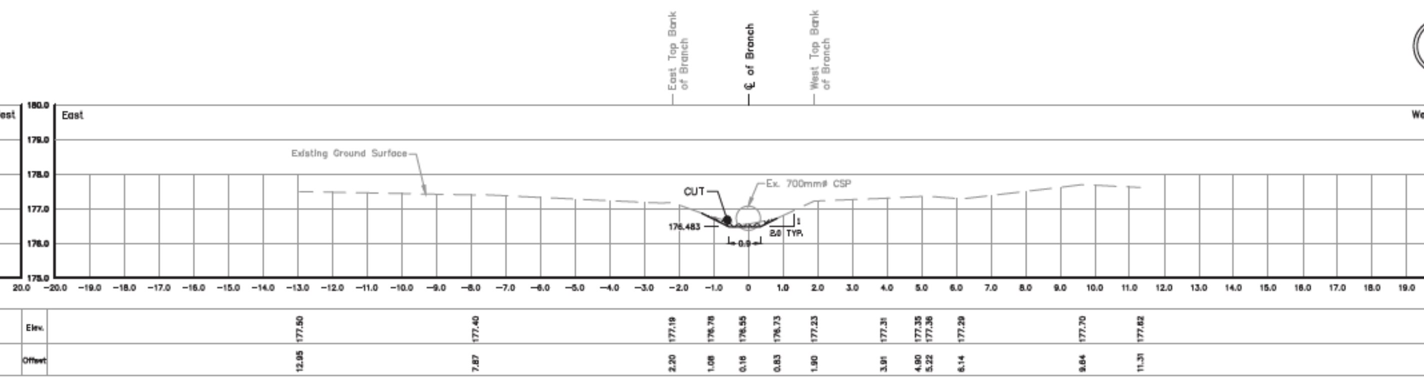
STA 3+166.0
Scale = 1:100



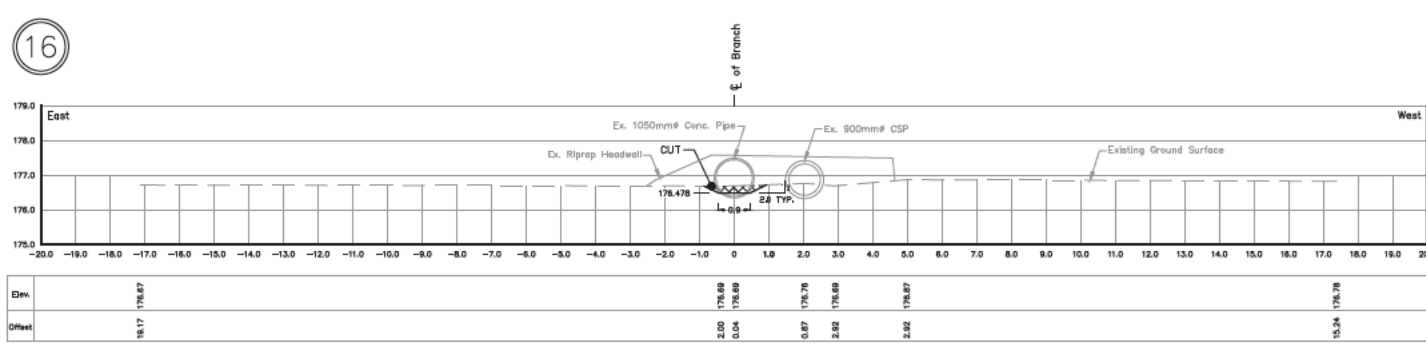
STA 3+200.0
Scale = 1:100



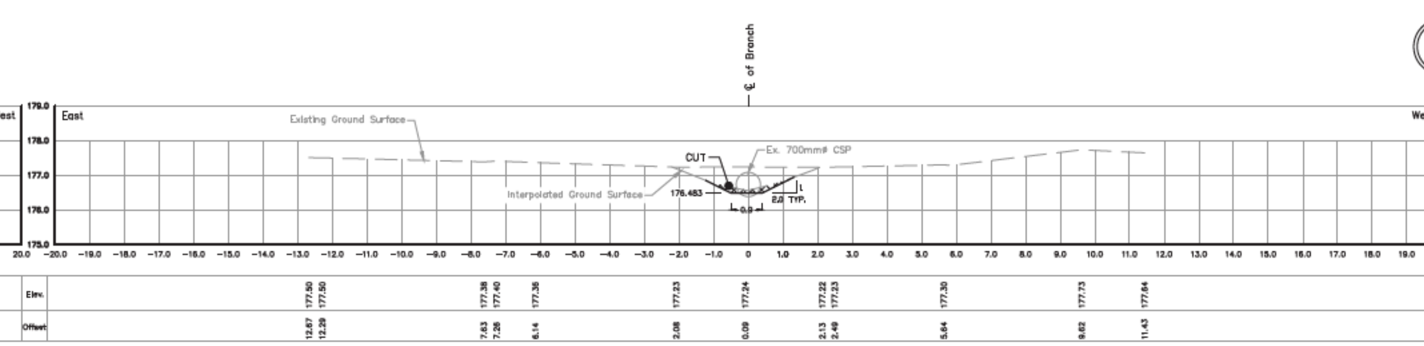
STA 3+142.3
Scale = 1:100



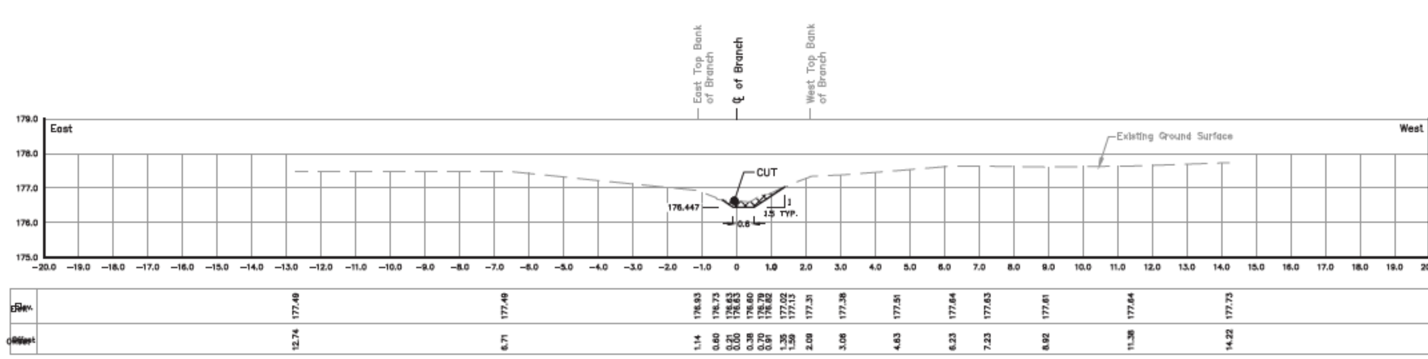
STA 3+182.4
Scale = 1:100



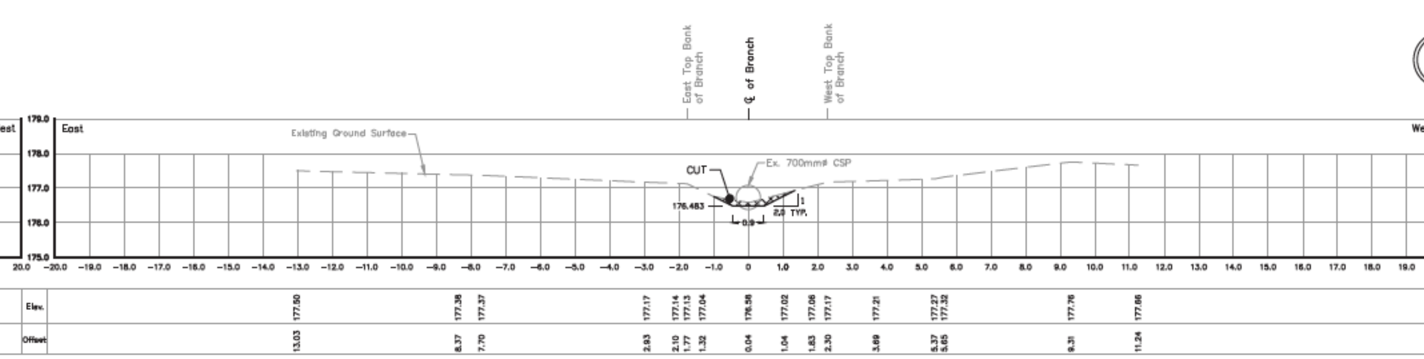
STA 3+127.5
Scale = 1:100



STA 3+181.0
Scale = 1:100



STA 3+100.0
Scale = 1:100



STA 3+179.6
Scale = 1:100

For cross-sections of St. Michaels Drain- STA 0+000.0 to 2+603.1, refer to Sheets 12 to 23.
For cross-sections of St. Michaels Branch- STA 3+000.0 to 4+090.1, refer to Sheets 23 to 27.

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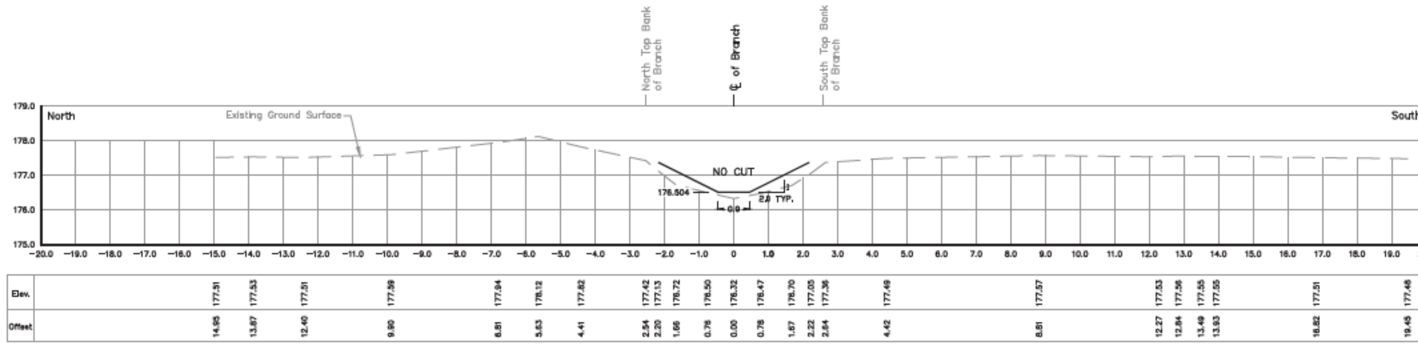
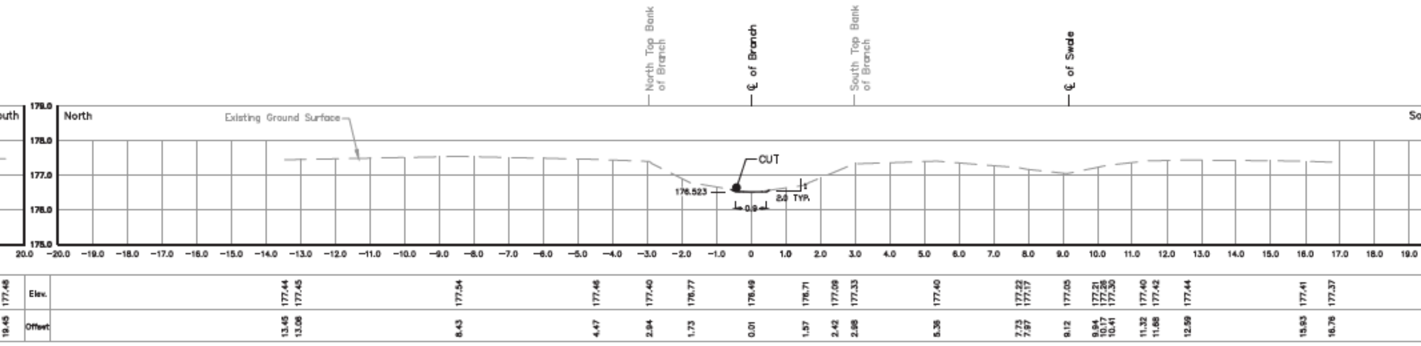
DRAWN BY: S.H. & J.S.
PLOT CODE: 1:1
COMPUTER FILE: REI2018D003.DWG

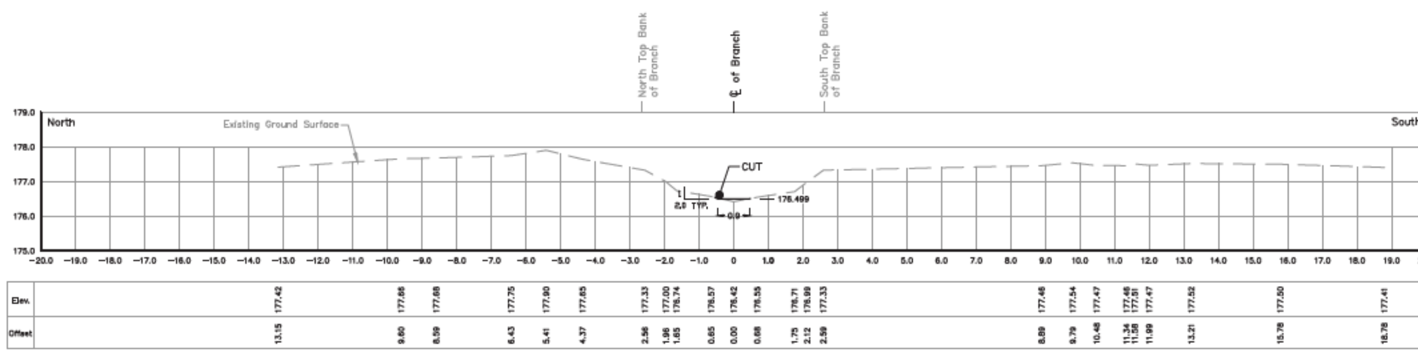
FILE No.:	SHEET No.:
REI2018D003	24 OF 27



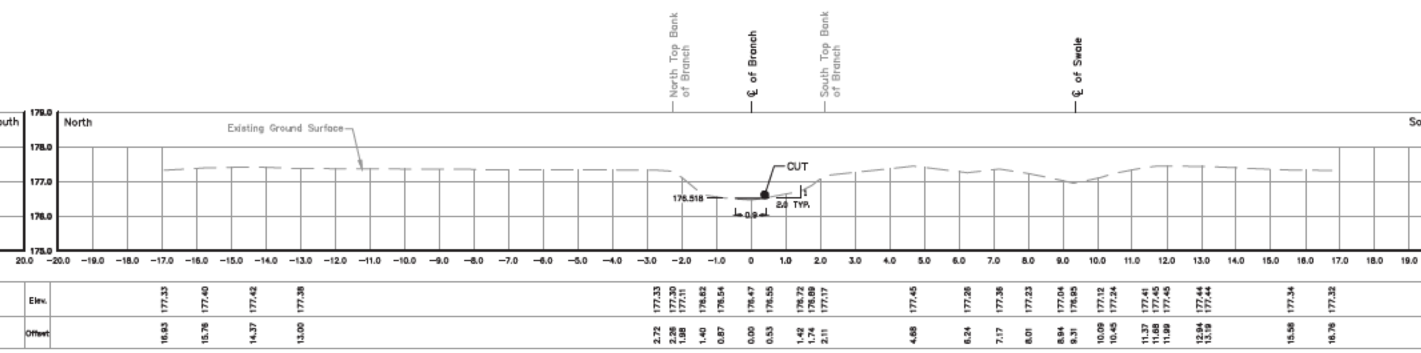
STA 3+400.0
Scale = 1:100



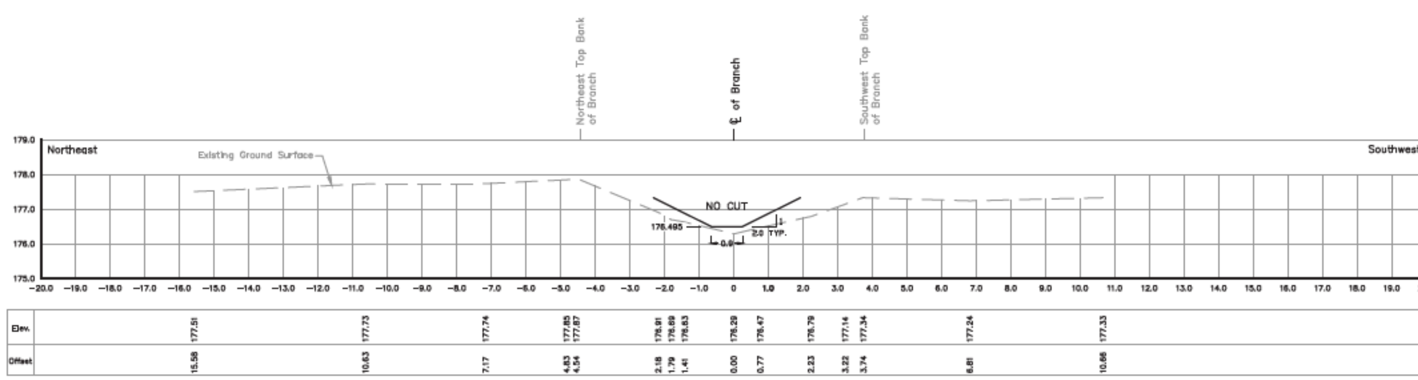
STA 3+600.0
Scale = 1:100



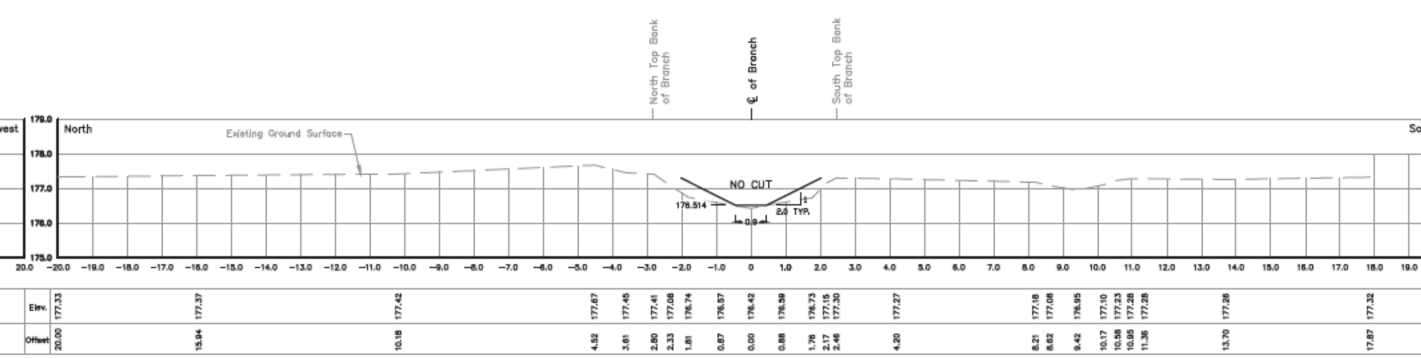
STA 3+350.0
Scale = 1:100



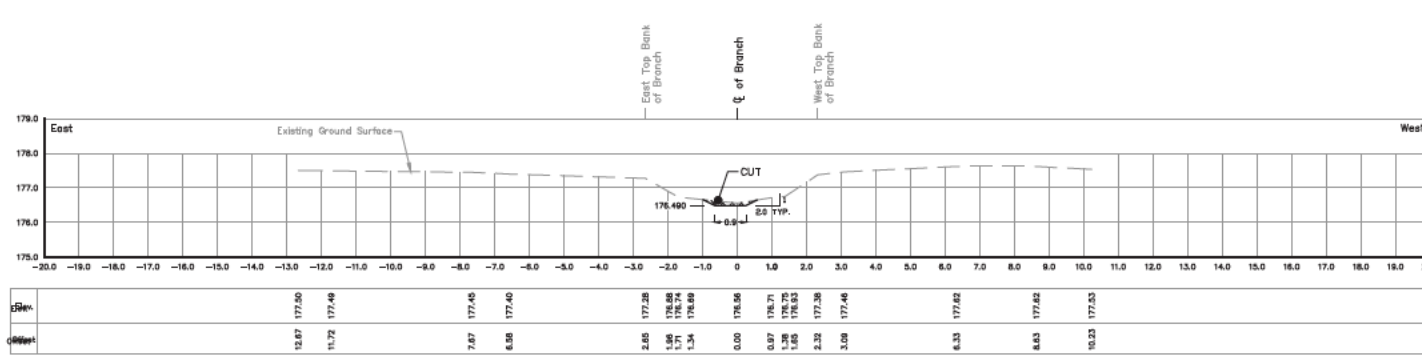
STA 3+550.0
Scale = 1:100



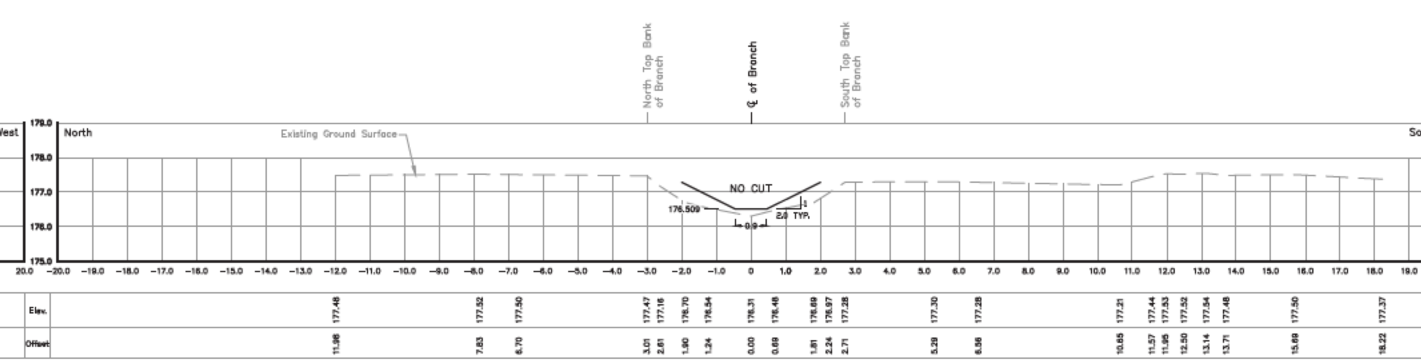
STA 3+304.5
Scale = 1:100



STA 3+500.0
Scale = 1:100



STA 3+250.0
Scale = 1:100



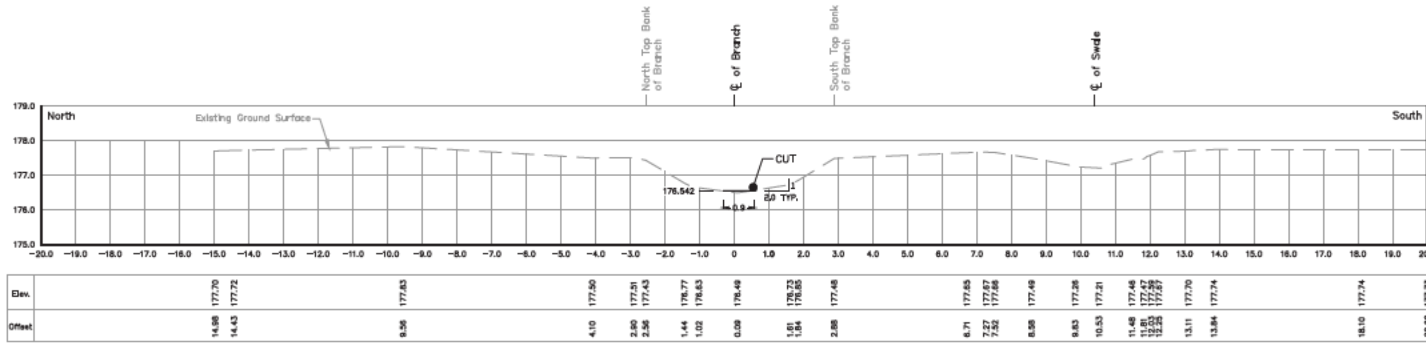
STA 3+450.0
Scale = 1:100

For cross-sections of St. Michaels Drain- STA 0+000.0 to 2+603.1, refer to Sheets 12 to 23.
For cross-sections of St. Michaels Branch- STA 3+000.0 to 4+090.1, refer to Sheets 23 to 27.

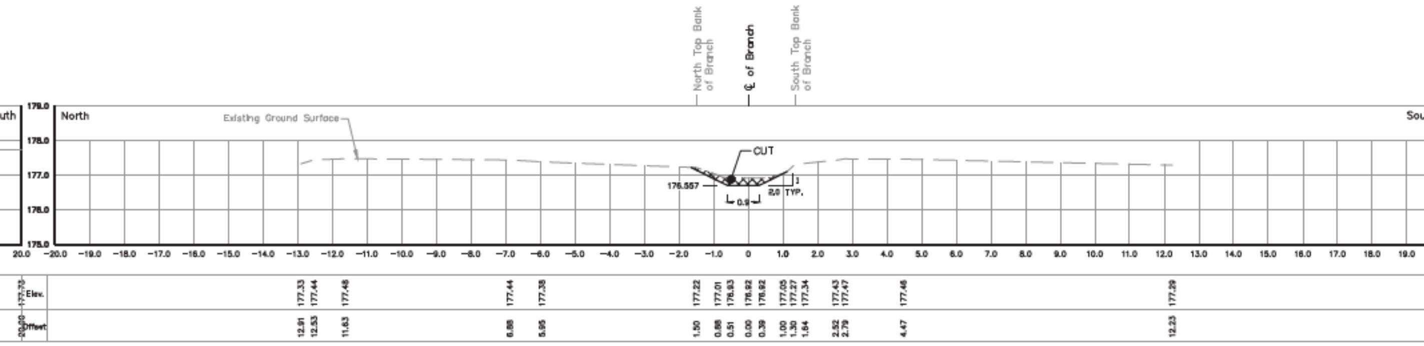
THESE PLANS HAVE BEEN REDUCED AND THE SCALE THEREFORE VARIES. FULL SCALE PLANS MAY BE VIEWED AT THE MUNICIPAL OFFICE.

DRAWN BY: S.H. & J.S.
PLOT CODE: 1:1
COMPUTER FILE: REI2018D0003.DWG

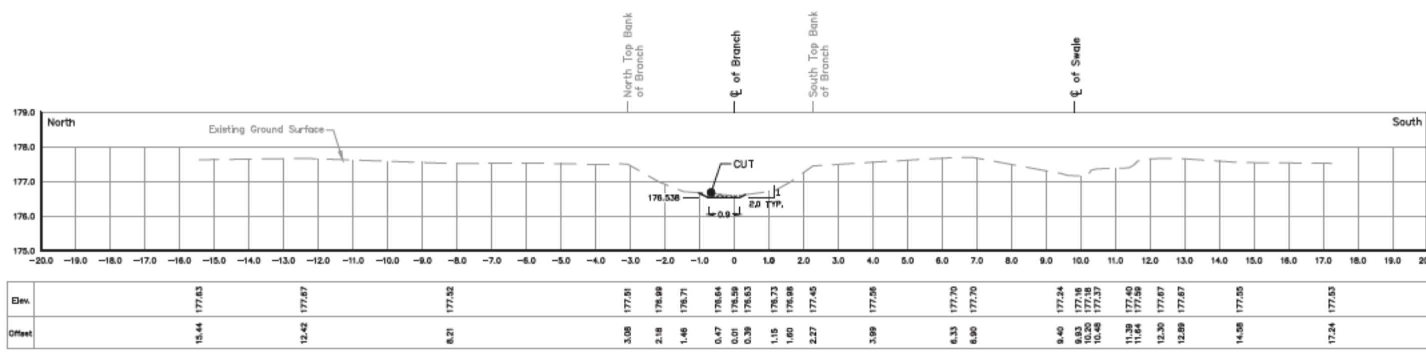
FILE No.: REI2018D003



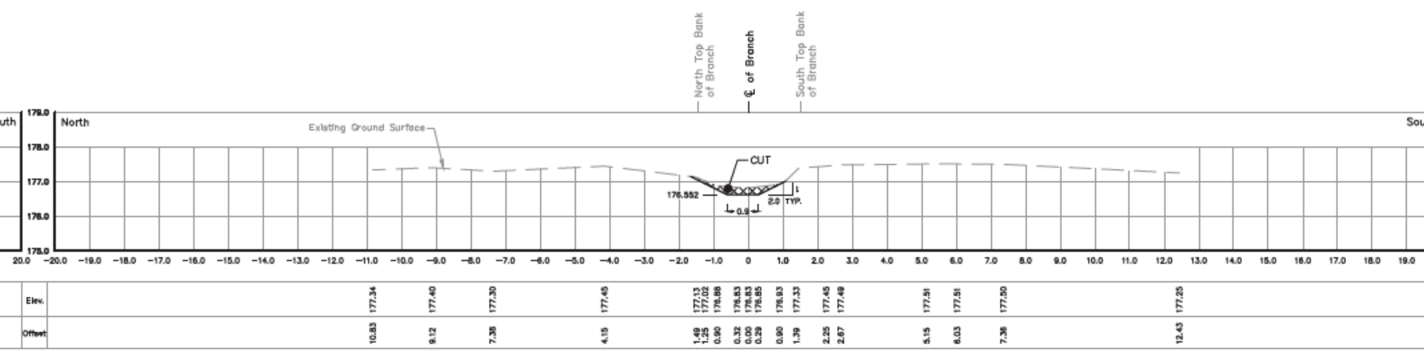
STA 3+800.0
Scale = 1:100



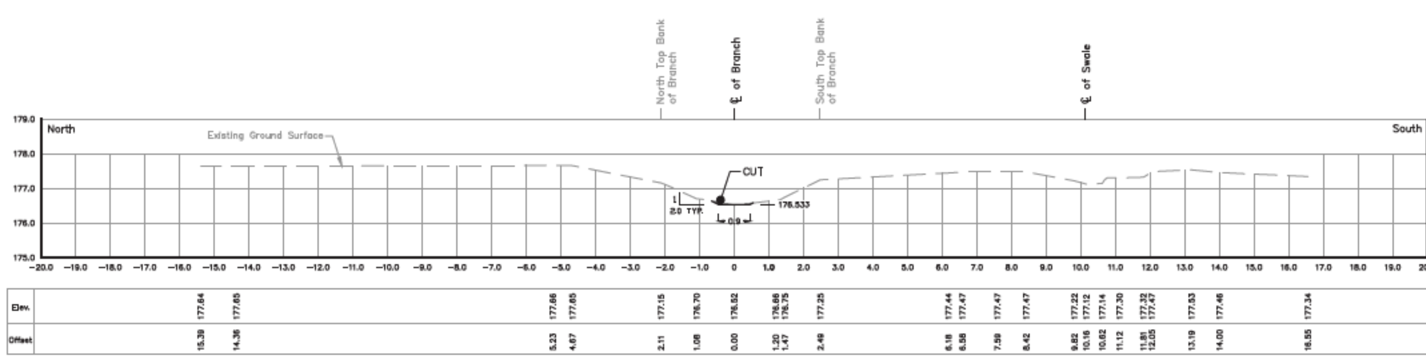
STA 3+950.0
Scale = 1:100



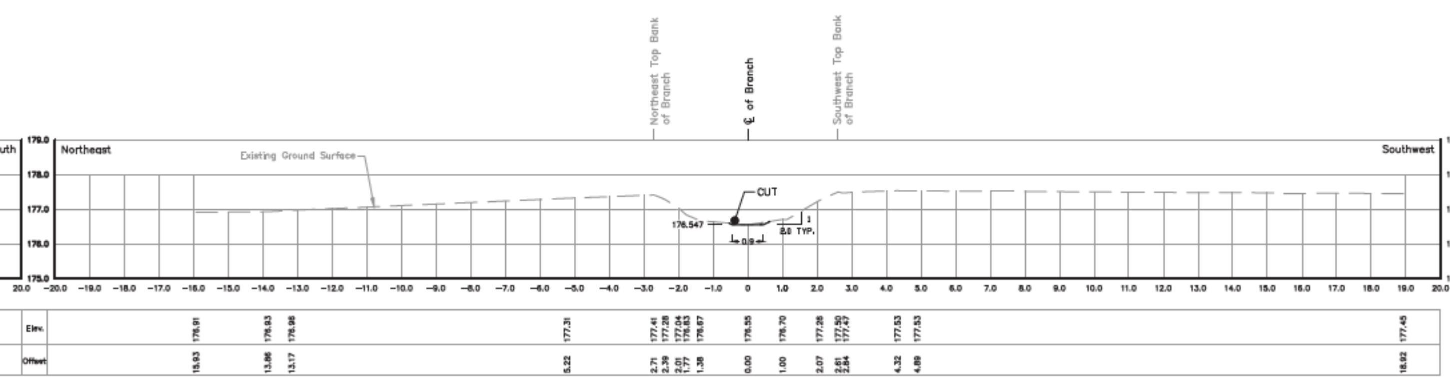
STA 3+750.0
Scale = 1:100



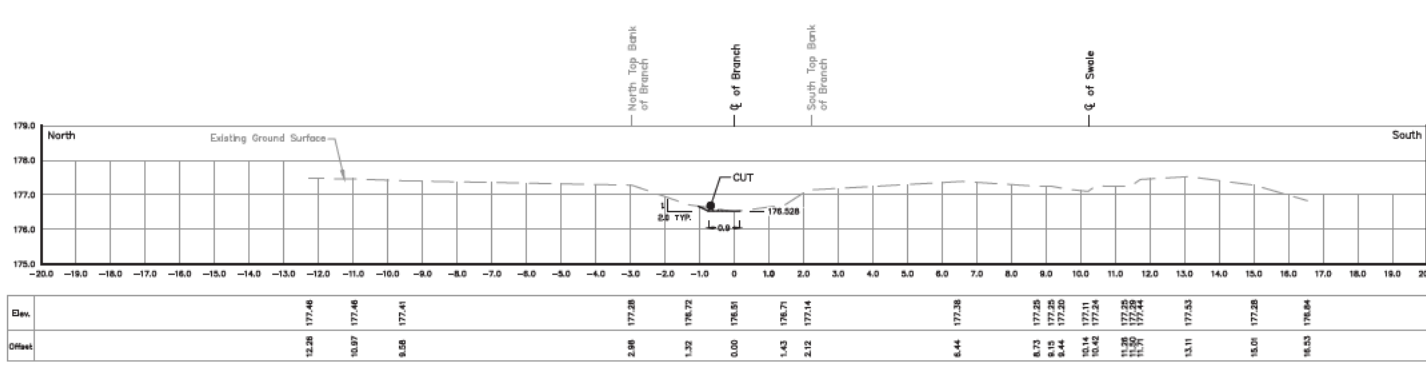
STA 3+900.0
Scale = 1:100



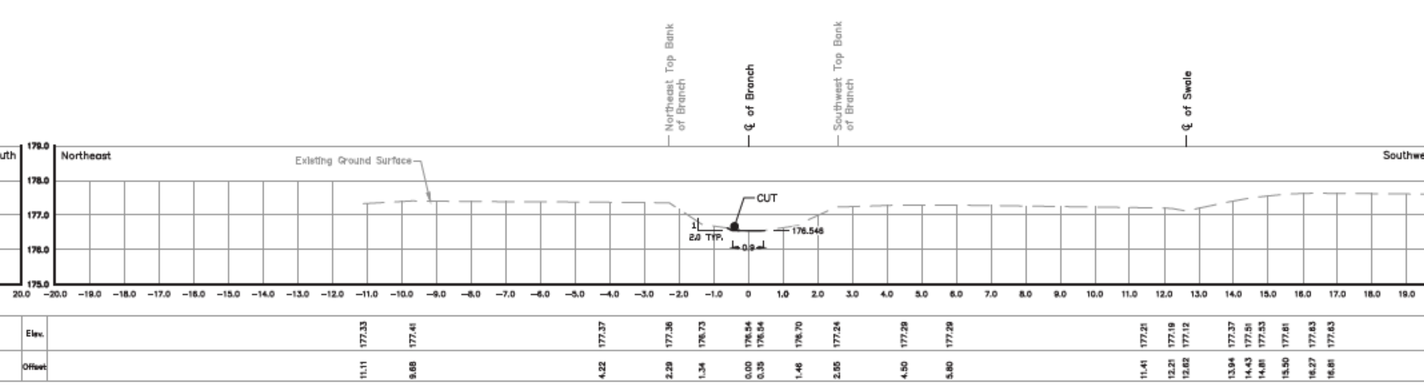
STA 3+700.0
Scale = 1:100



STA 3+850.3
Scale = 1:100



STA 3+650.0
Scale = 1:100



STA 3+841.2
Scale = 1:100

For cross-sections of St. Michaels Drain- STA 0+000.0 to 2+603.1, refer to Sheets 12 to 23.
For cross-sections of St. Michaels Branch- STA 3+000.0 to 4+090.1, refer to Sheets 23 to 27.

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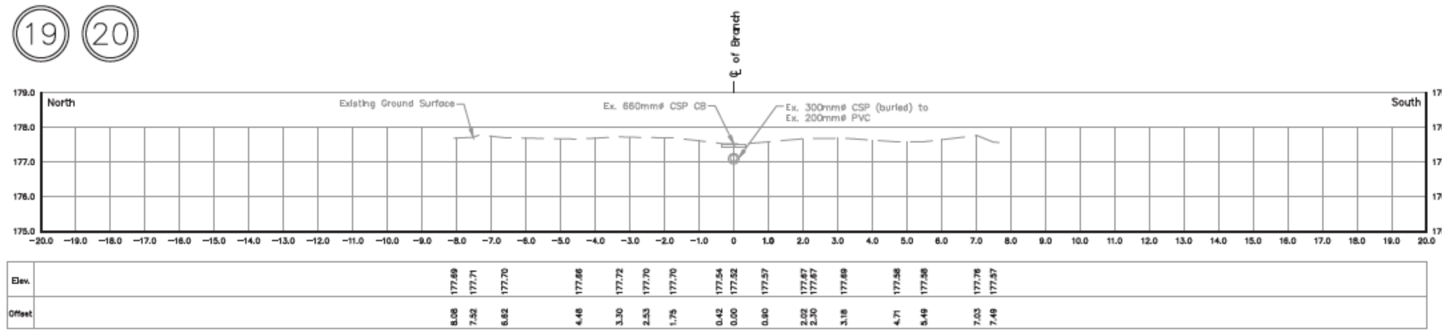
PLOT CODE: 1:1
COMPUTER FILE: REI2018D003.DWG

FILE No.: REI2018D003



STA 4+083.5
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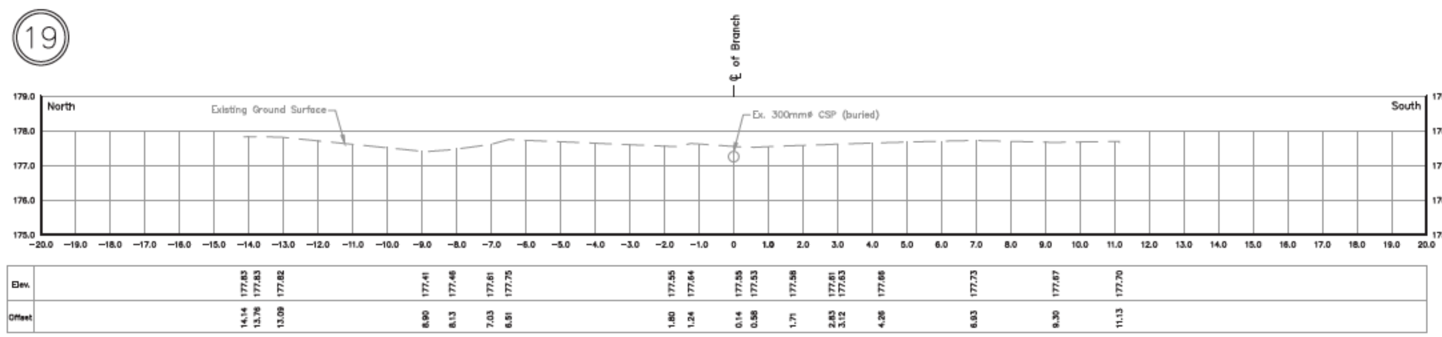
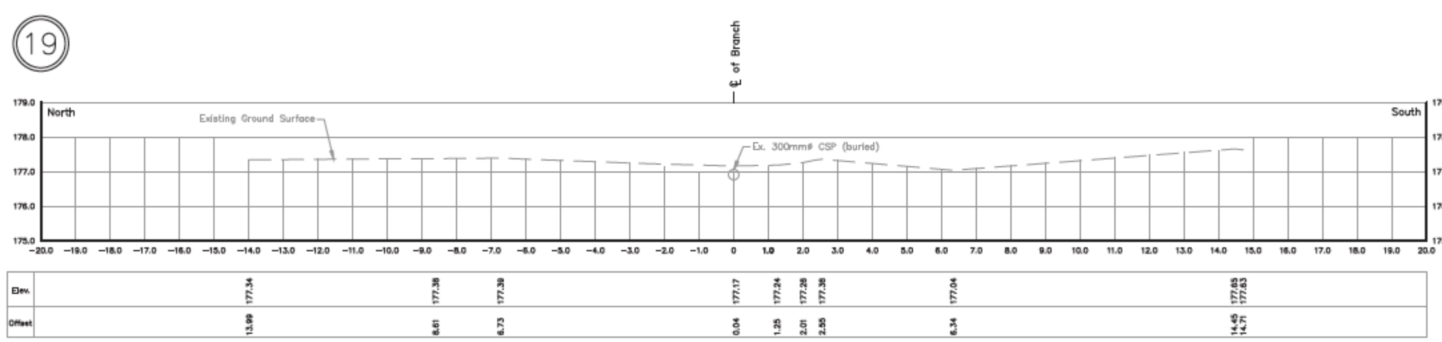


STA 4+050.0
Scale = 1:100



STA 4+005.5
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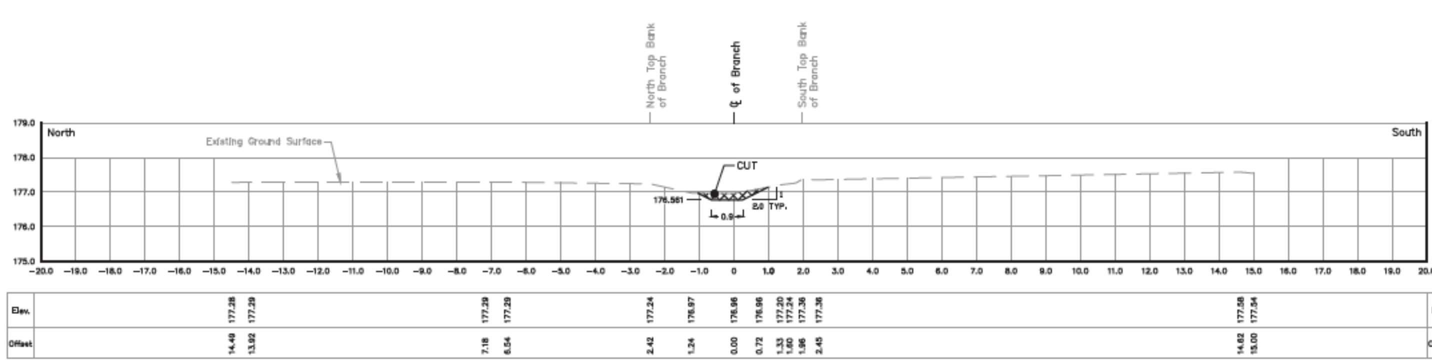
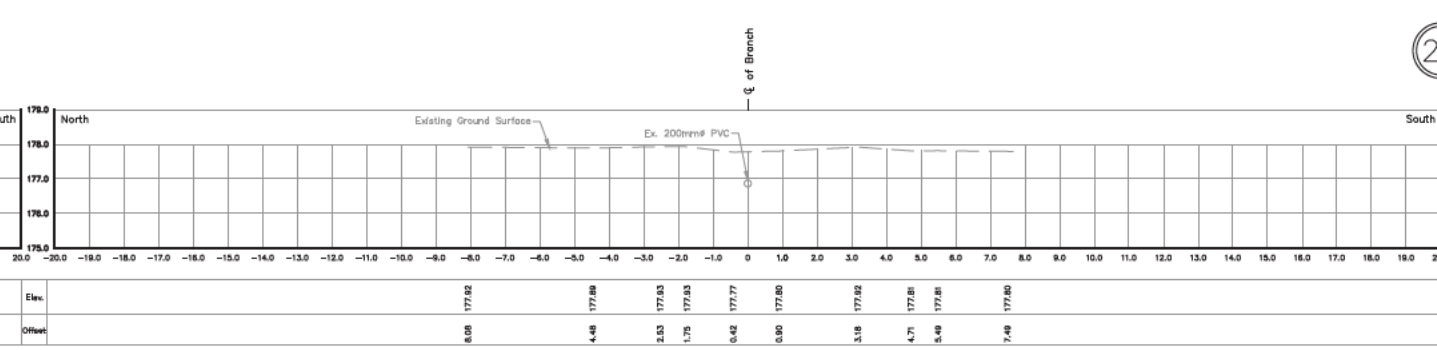


STA 4+000.0
Scale = 1:100



STA 4+090.1
Scale = 1:100

For cross-sections of St. Michaels Drain– STA 0+000.0 to 2+603.1, refer to Sheets 12 to 23.
For cross-sections of St. Michaels Branch– STA 3+000.0 to 4+090.1, refer to Sheets 23 to 27.

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DRAWN BY: S.H. & J.S.
PLOT CODE: 1:1
COMPUTER FILE: REI2018D003.DWG

FILE No.: REI2018D003