

4TH CONCESSION ROAD DRAIN RELOCATION

(for Domenic Mastronardi and Rima Mastronardi,

Part of Lot 6, Concession 3,

Geographic Township of Mersea)

MUNICIPALITY OF LEAMINGTON

N. J. Peralta Engineering Ltd.

Consulting Engineers

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Tel. (519) 733-6587

Project No. D-10-023

March 31, 2011

Mayor and Municipal Council
Corporation of the Municipality of Leamington
38 Erie Street North
Leamington, Ontario
N8H 2Z3

Mayor Patterson and Members of Council:

**SUBJECT: 4TH CONCESSION ROAD DRAIN RELOCATION EXTENSION
(for Domenic Mastronardi and Rima Mastronardi,
Part Lot 6, Concession 3,
Geographic Township of Mersea)
Municipality of Leamington, County of Essex
Project No. D-10-023**

I. INTRODUCTION

Further to instructions from Council at their December 6th, 2010 meeting and as confirmed in a letter from your Drainage Superintendent, Lu-Ann Barreto, dated January 27th, 2011, we have proceeded with an Engineer's Report for the relocation of a portion of the 4th Concession Road Drain. The drain is currently located on the residential lands of Domenic Mastronardi and Rima Mastronardi being Parcels 650-08400 and 650-08550 respectively. The drain is to be relocated to the west across the lands of Domenic and Rima Mastronardi (650-07900) and 1329606 Ontario Limited (650-08500) which is controlled by Domenic Mastronardi. The request for the relocation and improvement of this portion of the 4th Concession Road Drain was made by the affected owners Domenic and Rima Mastronardi. All of the lands are located within Lot 6, Concession 3, Geographic Township of Mersea, Municipality of Leamington.

Our appointment and the works relative to the relocation and improvement of this part of the 4th Concession Road Drain, under this report, is in accordance with Section 78 of the "Drainage Act, R.S.O. 1990, Chapter D.17, as amended 2010". We have performed all of the necessary survey, investigations, etcetera of said portion of the 4th Concession Road Drain, and we report thereon as follows.

II. BACKGROUND

From our review of the Municipality of Leamington's drainage files, we have determined that the 4th Concession Road Drain, at the location where the drain is proposed to be relocated, was last improved pursuant to an Engineer's Report prepared by William J. Settingington, P.Eng., dated October 10th, 1979. Under said report, a 675mm diameter concrete drain was installed from

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Mersea Road 4 southeasterly to Highway 77 to supplement the existing 300mm and 355mm diameter concrete tiles. The work also included the necessary maintenance holes, catch basins and connections of all of the pipes to provide a sufficient drainage system.

The design parameters within the October 10th, 1979 Engineer's Report, together with its design drawings and specifications were utilized as a minimum standard, when determining and establishing the design for the relocated drain that will now pass through the Domenic and Rima Mastronardi (650-07900) and the 1329606 Ontario Limited (650-08500) parcels.

We also worked closely with the Owner, Mr. Mastronardi, to establish the parameters for his existing underground services on the site and the location for the proposed reconnection to the existing drain extending southerly. The proposed drainage improvements will be carried out so that no conflicts or concerns with maintaining drainage occur as a result of the project.

III. PRELIMINARY EXAMINATION AND ON-SITE MEETING

After reviewing all of the proposed greenhouse development information and the past Engineer's Reports from the Municipality of Leamington, we attended at the site to visually inspect the existing alignment of the 4th Concession Road Drain through the Domenic Mastronardi and Rima Mastronardi parcels. We subsequently caused the Drainage Superintendent, Lu-Ann Barreto, to have all affected owners of lands within the 4th Concession Road Drain watershed to be notified of an on-site meeting that was held on March 1st, 2011. The following people were in attendance at said meeting: Neil Bell, Domenic Mastronardi, Lu-Ann Barreto (Municipal Drainage Superintendent), Heide Mikkelsen (N.J. Peralta Engineering) and Gerard Rood (N.J. Peralta Engineering).

The Drainage Superintendent provided a brief introduction of the purpose of the meeting. Ms. Barreto also advised that all of the costs of the proposed works will be borne by Domenic Mastronardi and Rima Mastronardi as their properties will be the ones benefitting directly from the relocation of the Drain. She outlined that the Owners have made a request to Council to have a portion of the Municipal Drain relocated and Council had appointed N.J. Peralta Engineering Ltd. to prepare the necessary report. Mr. Rood went on to explain that the intention is to relocate the covered drain westerly just beyond the back of the residential lots at Municipal Nos. 355 and 359 owned by Domenic Mastronardi and Rima Mastronardi. The proposed work is to be an extension southerly from the work carried out last year. It was explained that the portions of the existing drains being cut off

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will be plugged off and abandoned pursuant to Section 19 of the Drainage Act. It is expected that the farm parcels where the drain will be relocated will be paid a nominal allowance for the land taken to construct the new drain and to provide an access easement for future maintenance. He went on to advise that it is expected that the new 750mm diameter Big "O" pipe installed last year will be extended south and be reconnected to the existing 675mm diameter concrete pipe. He also stated that the original 300mm and 355mm diameter concrete drains will be reconnected to maintain the downstream capacity and it is anticipated that two new maintenance holes will be required in order to carry out the drain relocation.

Mr. Mastronardi outlined that he would like to proceed with the works as soon as possible. It was established that the report would be submitted no later than early April and be processed as quickly as possible at the Municipality. It is anticipated that, through careful scheduling of the meetings pursuant to the Drainage Act, the construction may be able to proceed by May.

The proposed re-alignment of the drain was reviewed on the site with Mr. Mastronardi. We established a running line for the proposed south extension of the 750mm diameter pipe including a deflection to the southeast that will connect the relocated drain to the existing 675mm diameter concrete drain. It was confirmed with Mr. Mastronardi that the new drain pipe will be crossing his underground utilities including a hydro supply line encased in concrete, along with communication cables, and a 150mm diameter water service. Mr. Mastronardi advised that the water service could be interrupted for up to one day if necessary to relocate the service higher or lower to accommodate the proposed Municipal drain improvements. In discussions with Mr. Mastronardi we established that new maintenance holes should be provided with cast iron frames and solid lids so that gravel from his unpaved driveway and parking areas will not be spilled into the maintenance holes. Mr. Mastronardi advised that he has adequate drainage with the existing drainage pipe and catch basin systems that he has in place for the driveway and parking lot.

Lu-Ann Barreto advised that the drainage report and notice of the Consideration Meeting would be circulated as soon as possible after the submission of the report by the Engineer. Mr. Rood advised the Owners that they could contact the Peralta Office at any time with questions or get in touch with the Drainage Superintendent at the Municipal Offices. Ms. Barreto confirmed that the report will be circulated to all Owners including notifications of the meetings for Consideration of the report and the Court of Revision.

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IV. FIELD SURVEY AND INVESTIGATIONS

Following the on-site meeting, we arranged to review our files from the previous work carried out on the drain as well as the greenhouse development on the site. This review provided the necessary topographic survey information and details required to prepare preliminary plans for design. We were also able to obtain information from exploratory digs previously carried out to establish the approximate locations of the hydro service and water service that go through Parcel 650-08500 to the service building. This information has been reflected on the plans in order to provide the Contractor with the best information possible for pricing and carrying out its work.

For the purposes of establishing and determining the required covered drain size for the proposed relocation being provided under this report, we investigated and reviewed the past Engineer's Report. This was done to accurately establish the watershed area upstream of the work, so that the design flows could be determined. We also referred to the May 12th, 2010 Species at Risk (S.A.R.) Screening Application that was sent to the Ministry of Natural Resources (M.N.R.), and reviewed their reply in their May 21st, 2010 letter. We reviewed the May 13th, 2010 submission to E.R.C.A. for comments on any issues or concerns that might arise pursuant to E.R.C.A. and Department of Fisheries and Oceans (D.F.O.) criteria.

We also contacted Domenic Mastronardi and discussed the proposed drain relocation alignment with him to ensure that it would not conflict with his future plans for his agricultural sites. It was made clear that extreme storm event overland flows would still be conveyed across the driveway and parking lot areas, as has been the case in the past. This will satisfy E.R.C.A. concerns regarding safe conveyance of extreme flows that exceed the covered drain capacity.

V. FINDINGS AND RECOMMENDATIONS

Based on our detailed previous survey, investigations, examinations, discussions, and determinations at the meetings held on this project, we would recommend that the portion of the 4th Concession Road Drain through the lands of Domenic Mastronardi (650-08400) and Rima Mastronardi (650-08550) be relocated to the west, outside the limits of said residential parcels, along the easterly limit of the abutting lands owned or controlled by Domenic and Rima Mastronardi being Parcels 650-07900 and 650-08500. All work is to be completed in full compliance and in total accordance with this report, the attached specifications and the accompanying drawings, all pursuant to the provisions of Section 78 of the "Drainage Act, R.S.O. 1990, Chapter D.17, as amended 2010". We would

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recommend that the relocated Municipal Drain include the proposed 750mm diameter covered drain and all appurtenances and connections to maintain the interconnection between the existing three covered drains serving as the 4th Concession Road Drain, all as provided for in this report, on the design plans and in the specifications.

We also find that the construction of the new 750mm diameter covered Municipal drain will intercept two of the existing Municipal covered drains on the section of drain between CBMH-D and CBMH-C. We recommend that the intercepted Municipal drains be connected to the new relocated drain being constructed across the driveway and parking areas of the 1329606 Ontario Limited parcel. Work will also include connection of the south end of the proposed drain relocation to the existing 675mm diameter concrete drain so that the original connection to all three covered drains is maintained and this shall ensure that the flows can be balanced between the three drains that currently serve the upstream lands and roads.

We recommend that the segments of the three existing covered Municipal drains being cut off across the Domenic Mastronardi and Rima Mastronardi Parcels 650-08400 and 650-08550 be completely abandoned pursuant to Section 19 of the "Drainage Act, R.S.O. 1990, Chapter D.17, as amended 2010", along with CBMH1. It has been established with the Owners that they will be responsible for any future removals or filling of the existing drain pipes with grout as necessary to satisfy their use of the private residential lands.

We recommend that all ancillary work required to complete the proper functionality of this covered drain relocation of the 4th Concession Road Drain be conducted and performed as part of this project. We recommend that all of the work associated with this project be provided to the full satisfaction of both the Consulting Engineer and the Municipal Drainage Superintendent.

We find that the recommendations outlined by E.R.C.A. in their discussions with us should be incorporated as part of the drainage works. We recommend that erosion protection be provided to minimize the amount of silt and sediment that may be carried downstream through the covered drainage system. We have provided in our report to satisfy their concerns and recommend that the standard mitigation measures normally associated with these drainage projects be included as part of the works as set out in the specifications, attached to and forming part of this report.

We also find that the Ministry of Natural Resources (M.N.R.) in their May 21st, 2010 response, indicated that the proposed project will likely not contravene Section 9 (species protection) of the Endangered Species Act, 2007 (E.S.A. 2007)

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for species. Their letter notes that the Eastern Foxsnake and its habitat are protected under the E.S.A. 2007 and recommend that provisions be made to safeguard and protect any incidents of the Eastern Foxsnake encountered during the course of the works. A copy of their letter and requirements is included in **Appendix "A"** for reference by the Contractor and any field staff working on the project.

In summary, we would recommend that the existing portion of the 4th Concession Road Drain located through the lands of Domenic Mastronardi (650-08400) and Rima Mastronardi (650-08550) be abandoned and capped or plugged off where intercepted by the proposed drain relocation, and that a new enclosed drain be constructed at the position shown on the plans. We recommend that the drain be improved in accordance with this Report, the attached Specifications, and the accompanying Drawings, and that all of the works associated with same be carried out in accordance with Section 78 of the "Drainage Act, R.S.O. 1990, Chapter D.17, as amended 2010".

VI. ALLOWANCES AND COMPENSATION

(a) We further find that each of the following owners is entitled to and should receive the following amounts as compensation for the Value of Land Taken, in order to construct both the covered portion of this relocated drainage system and provide for overland conveyance, and further that the land taken is to serve as an access easement for future maintenance of the drainage system, namely:

1) Domenic and Rima Mastronardi (650-07900),	Owners, Part Lot 6, Concession 3,	\$ 1.00
2) 1329606 Ontario Limited (650-08500),	Owner, Part Lot 6, Concession 3,	\$ 1.00

TOTAL FOR LAND TAKEN (RELOCATED DRAIN) \$ 2.00

The land taken for the construction and access easement over the covered portion of this relocated drain shall be composed of a strip of land 9.14 metres (30') in perpendicular width centred over the proposed new drain alignment between CMBH2 and CBMH-C. This land taken for the construction and access easement over the drain shall also serve for future maintenance and shall extend from ten

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(10) metres northerly of CBMH2 to ten (10) metres southeasterly and southerly from CBMH-C.

We have provided for this in our estimate as is provided for under Sub-section (a) of Section 29 of the "Drainage Act, R.S.O. 1990, Chapter D.17, as amended 2010".

- (b) We further find that the proposed construction works will be carried out through the driveway and parking lot areas of the affected Parcels 650-07900 and 650-08500. The schedule of items and prices and the specifications provide for the full restoration of said driveway and parking areas and accordingly we find that there is no requirement for any damages pursuant to Sub-section (b) of Section 29 and Section 30 of the "Drainage Act, R.S.O. 1990, Chapter D.17, as amended 2010".

We have used these nominal values for compensation based on the fact that there is an existing drain across the lands, all of the work is for the benefit of the two affected Owners who requested the works, and all disturbed areas are generally to be fully restored. These nominal values shall establish the rights for the construction work to be completed and to formalize the right for access for future maintenance along the course of the covered relocated drain.

VII. ESTIMATE OF COST

Our estimate of the total cost of this work, including all incidental expenses is the sum of **SIXTY TWO THOUSAND FOUR HUNDRED AND FIVE DOLLARS (\$62,405.00)** made up as follows:

CONSTRUCTION

- | | | |
|---------|--|--------------|
| Item 1) | <u>CBMH2 to CBMH-D</u> ; supply and install approximately <u>63.5</u> lineal metres of 750mm diameter solid heavy duty smooth wall plastic drain tile, including wrap couplers joints, excavation, backfill, compaction and restoration, complete at <u>\$360.00</u> per lineal metre. | \$ 22,860.00 |
| Item 2) | <u>CBMH-D to CBMH-C</u> ; supply and install approximately <u>23.0</u> lineal metres of 750mm diameter solid heavy duty smooth wall plastic drain tile, including wrap coupler joints, excavation, backfill, compaction and restoration, complete at <u>\$340.00</u> per lineal metre. | \$ 7,820.00 |

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Item 3)	<u>New CBMH-D and New CBMH-C;</u> supply and install 1800mm diameter precast concrete catch basin maintenance holes, approximately 2.7 metres deep with 600mm diameter cast iron frames and lids, including adjustment units, excavation, connections, backfill, compaction and restoration, complete, approximately <u>2</u> units at <u>\$6,800.00</u> each.	\$ 13,600.00
Item 4)	<u>Existing CBMH2;</u> Break into the manhole and connect 750mm diameter pipe and plug off abandoned pipes, including all labour, equipment and materials, complete. Lump Sum	\$ 1,000.00
Item 5)	<u>Service Connections and Clean-outs;</u> to the residential properties, including all excavation, backfill, compaction, labour, equipment and materials, complete, <u>2</u> connections at <u>\$1,000.00</u> each.	\$ 2,000.00
Item 6)	<u>New 750mm Main Drain to existing 355mm (14") Concrete Drain;</u> supply and install approximately <u>6</u> lineal metres of 375mm diameter solid heavy duty smooth wall plastic drain tile, including wrap coupler joints, 45 degree bend, excavation, backfill, compaction and restoration, complete at <u>\$100.00</u> per lineal metre.	\$ 600.00
Item 7)	<u>New 750mm Main Drain to existing 300mm (12") Concrete Drain;</u> supply and install approximately <u>6</u> lineal metres of 300mm diameter solid heavy duty smooth wall plastic drain tile, including wrap coupler joints, 45 degree bend, excavation, backfill, compaction and restoration, complete at <u>\$80.00</u> per lineal metre.	\$ 480.00
TOTAL FOR CONSTRUCTION		\$ 48,360.00

INCIDENTALS

1)	Estimated Cost for Report, Estimate and Specifications	\$ 6,000.00
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2)	Estimated Cost for Survey, Assistants, Expenses, and Drawings	\$ 2,400.00
3)	Estimated Cost for Duplication of Drawings and Report	\$ 500.00
4)	Estimated Cost of Letting Contract (no advertising)	\$ 800.00
5)	Estimated Cost of Layout and Staking	\$ 500.00
6)	Estimate for Supervision and Full-time Inspection During Construction (based on 1 week duration)	\$ 3,600.00
7)	Net H.S.T. on Items Above (1.76%)	\$ 243.00
TOTAL FOR INCIDENTALS		\$ 14,043.00
TOTAL FOR ALLOWANCES (brought forward)		\$ 2.00
TOTAL FOR CONSTRUCTION (brought forward)		\$ 48,360.00
TOTAL ESTIMATE		\$ 62,405.00

VIII. DRAWINGS AND SPECIFICATIONS

As part of this report, we have attached design drawings (Sheets 1 through 3) for the 4th Concession Road Drain Relocation Extension, located in Part of Lot 6, Concession 3, of the Geographic Township of Mersea. The design drawings show the location of the 4th Concession Road Drain and Relocation, as well as the watershed area affected, together with considerable detail with respect to the construction of the works.

Also attached, we have prepared Specifications which set out the required construction details for the proposed 4th Concession Road Drain Relocation Extension for Domenic Mastronardi and Rima Mastronardi.

IX. CONSTRUCTION ASSESSMENT

We would recommend that all of the costs associated with the construction of the 4th Concession Road Drain Relocation

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Extension, including the abandonment of the portion of the existing drain alignment, including all Engineering and Incidental expenses be assessed in accordance with the attached Construction Schedule of Assessment. This Schedule provides for all cost of the works to be charged to the Domenic Mastronardi (650-08400) and Rima Mastronardi (650-08550) parcels.

We find that the two parcels being assessed for the works are residential lands and accordingly they will not be eligible for any grants from the Ontario Ministry of Agriculture, Food and Rural Affairs (O.M.A.F.R.A.). Grants are normally provided in the amount of 1/3 of the Total Assessment of the cost to lands that are qualified for agricultural usage. It will therefore not be necessary for the Municipality to make an application for grant with respect to this project.

X. FUTURE MAINTENANCE

We would recommend that the 4th Concession Road Drain Relocation Extension, including the 750mm diameter covered drain and appurtenances, be kept up and maintained in the future, in the proportions as contained in the Schedule of Assessment included in the latest Engineer's Report of William J. Settingington, P.Eng., dated October 10th, 1979, and said proportions shall remain as aforesaid until otherwise determined or amended under the provisions of the "Drainage Act, R.S.O. 1990, Chapter D.17, as amended 2010". It is to be understood that should the driveway and parking areas ever be paved with asphalt or concrete, that the Owners of the lands will be responsible for all removal and restoration costs associated with the asphalt or concrete surfaces should it be necessary to cut through same to carry out maintenance works on the Municipal drain.

All of which is respectfully submitted.

N. J. PERALTA ENGINEERING LTD.


Gerard Rood, P.Eng.



GR/sa

att.

N. J. PERALTA ENGINEERING LTD.

Consulting Engineers
45 Division Street N.
KINGSVILLE, Ontario
N9Y 1E1

**CONSTRUCTION SCHEDULE OF ASSESSMENT
4TH CONCESSION ROAD DRAIN RELOCATION EXTENSION**

(for Domenic Mastronardi and Rima Mastronardi,
Part of Lot 6, Concession 3,
Geographic Township of Mersea)
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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	Owner's Name	Value of Benefit	Value of Outlet	Value of Special Benefit	TOTAL VALUE
650-08400	3	6	0	0.37	0.151	Domenic Mastronardi	\$ 13,490.00	\$ 13,489.00	\$ -	\$ 26,979.00
650-08550	3	6	0	0.49	0.198	Rima Mastronardi	\$ 17,713.00	\$ 17,713.00	\$ -	\$ 35,426.00
Total on Privately Owned - Non-Agricultural Lands.....							\$ 31,203.00	\$ 31,202.00	\$ -	\$ 62,405.00

TOTAL ASSESSMENT

\$ 31,203.00 \$ 31,202.00 \$ - \$ 62,405.00

1 Hectare = 2.471 Acres
Project No. D10-023
March 31st, 2011

SPECIFICATIONS

4TH CONCESSION ROAD DRAIN RELOCATION EXTENSION

(for Domenic Mastronardi and Rima Mastronardi,

Part Lot 6, Concession 3, Geographic Township of Mersea)

MUNICIPALITY OF LEAMINGTON

I. GENERAL SCOPE OF WORK

These specifications and the accompanying drawings contemplate the furnishing of all labour, materials, equipment and supplies required for the performance of all operations relating to the construction of the covered drain relocation and ancillary work. All the work shall be done in a first class and workmanlike manner, complete in all respects, and including all items specified herein, or as necessary for the accomplishment of a complete, satisfactory and approved installation. The project is located on the Domenic & Rima Mastronardi parcel (650-07900) and the 1329606 Ontario Limited parcel (650-08500) along the west side of King's Highway #77, between King's Highway #3 and County Road 18 (Mersea Road 4) all in Part of Lot 6, Concession 3, Geographic Township of Mersea, all in the Municipality of Leamington.

It is the intent of these Specifications to assign to the Contractor, the full responsibility for the complete storage, installation and protection of all the covered drainage system appurtenances, and the full responsibility for the construction of connections and water service relocation as needed, including all restoration work. The Contractor shall furnish all materials, including pipe, pipe specials, maintenance holes, frames and lids, branches, etc., and all labour, tools, equipment and machinery necessary for the construction of a covered drain system, in accordance with the plans, profiles, and specifications prepared by N. J. PERALTA ENGINEERING LTD., 45 Division Street North, KINGSVILLE, Ontario, N9Y 1E1.

The works shall include, but not necessarily be limited to the following items: all trenching, tunnelling, pumping, bailing and draining, all sheeting, shoring, bracing, supporting and forming, watching, making of all provisions necessary to maintain and to protect existing structures of whatever kind, such as mains, lateral tiles, surface drainage, water, telephone, gas, hydro and irrigation lines; to protect legal property markers or have a legal surveyor replace same; to backfill excavations as required; to clear away all rubbish, trees, stumps, and unwanted surplus and deleterious material; and to provide all labour, equipment and materials required to do all of the work necessary for the completion of the project.

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The Contractor is advised that it is intended to carry out this project as soon as possible so that the impacts to the driveway and parking areas are minimized. The Contractor shall endeavour to complete the works as quickly as possible once work commences.

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 minimize the amount of silt and sediment being carried downstream into the open drain and lake outlet. It is intended that work on this project be carried out during relatively dry conditions to ensure a minimum amount of sediment being transported and deposited into the downstream system. Further details of the silt and sediment control are specified in the following sections. The Contractor shall comply with any special requirements established by the Essex Region Conservation Authority (E.R.C.A.) and the Department of Fisheries and Oceans (D.F.O.). The Contractor shall also comply with all of the requirements set out in any permits or authorizations provided, and shall comply in all respects with any requirements that will be established by the Municipal Drainage Superintendent in consultation with the E.R.C.A. Staff prior to the work commencing.

III. M.N.R. CONSIDERATIONS

The Contractor is to note that this project has gone through the Ministry of Natural Resources (M.N.R.) screening process by way of a Species at Risk (S.A.R.) Screening Application. An email letter response has been received from the M.N.R. and a copy of the information that was provided is included herein and labelled **Appendix "A"**.

The Contractor is to review **Appendix "A"** in detail and is required to comply in all regards with the content of said M.N.R. response, or any future requirements, and follow the Special Requirements therein included during construction.

IV. ACCESS TO WORK

Primary access to the 4th Concession Road Drain for carrying out the work on this project shall be from King's Highway #77, through the lands owned by Domenic Mastronardi as 1329606

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Ontario Limited being Parcel 650-08500 at Municipal Number 353, and also the lands owned by Domenic and Rima Mastronardi being Parcel 650-07900. The Contractor shall proceed along the gravel driveway entrance and parking lot areas to the area of the work near the easterly limits of said parcels immediately behind Municipal Number 355 and Municipal Number 359. The Contractor shall take steps to protect the existing driveway entrance and gravel parking lot from damage during its use of same and shall fully restore the gravel surface upon completion of the relocated drain installation. The Contractor shall have access to the east portions of Parcel 650-07900 and Parcel 650-08500. The Contractor shall generally carry out its work within a 10.0 metre wide strip of land centred along the proposed relocated drain and extending for a distance of 10.0 metres beyond the north and southerly limits of the relocated drain installation.

All accesses and areas outside of the working areas as outlined above shall be fully restored to their pre-construction condition. Restoration shall include but not only be limited to, all necessary levelling, grading, shaping, topsoil placement, granular placement, etc. as may be required, all to the full satisfaction of the Owner, the Municipal Drainage Superintendent and the Consulting Engineer.

V. BRUSHING AND EXISTING DRAIN PREPARATION

The Contractor is advised that the Owner has previously cleared up the work areas during the construction of the gravel parking lot and driveway entrance and it is not expected that any brushing or tree removal work is required. The Contractor shall protect all of the existing decorative trees and shrubs adjacent to the work area. As part of its price for the tender items, the Contractor shall carry out exploratory digs to establish the locations of existing drains that are to be connected to the relocated drainage system, and also to establish the location of the underground utilities that will be crossed during the construction of the relocated drain. The Contractor shall be required to provide all labour and equipment to carry out these exploratory digs and further, it will be responsible to remove and dispose of any stumps or deleterious material which may be encountered during the course of the relocated covered drain installation, taking steps to protect the existing trees and hedges adjacent to the proposed work areas.

All such tree stumps, roots, etc. that are found during the course of the covered drain installation are to be grubbed out and the whole shall be chipped, burned or otherwise satisfactorily disposed of by the Contractor. If it is intended

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that tree stumps and roots removed from the drain alignment are to be chipped or burned, said materials are to be put into piles by the Contractor at locations where they can be safely chipped or burned, and they are to be chipped or burned by them. Prior to and during the course of the burning operations, the Contractor shall comply with the Guidelines prepared by the Air Quality Branch of the Ontario Ministry of Environment (M.O.E.) and shall ensure that the Environmental Protection Act is not violated. The Contractor shall also notify the local Fire Chief of its operations to avoid any false alarms and arrange for and pay for any burning permits required by the Municipality to carry out the works.

Along the course of the relocated drain, the Contractor will encounter existing tile drains and materials. The tile drains shall be hooked up as noted in the Schedule of Items and Prices and further detailed in the specifications. The Contractor will be required to remove all rocks, broken tiles, and other tile and deleterious materials along the course of the drain. All such materials shall be loaded up and hauled away and disposed of by the Contractor to a site to be obtained by it, at its own expense.

VI. COVERED DRAIN SYSTEM

From Station 0+200.5 to Station 0+287.0, the Contractor shall construct a covered drain comprising of 750mm (30") diameter Boss 2000, High Density Polyethylene (HDPE) solid smooth wall pipe with wrap coupler joints. From the Mainline drain between CBMH2 and CBMH-D, the Contractor shall provide two (2) connections to the existing private lots to the east in accordance with the detail "Typical Service Clean-out" on Sheet 3 of the plans including all fittings, pipe, caps, etc. From the Mainline drain between CBMH-C and CBMH-D, the Contractor shall provide connections to the existing drains located to the south as shown and detailed on the plans, utilizing 375mm and 300mm diameter Boss 2000, High Density Polyethylene (HDPE) solid smooth wall pipe, including 45 degree bends and couplings as necessary to make the connections. The Contractor shall also provide eccentric tee connections along the Mainline for connection of said covered drains with the teed connection matching inverts to the mainline drain.

At Station 0+264.0 and Station 0+287.0, the Contractor shall supply and install catch basin maintenance holes (CBMH-D and CBMH-C) comprising of 1800mm diameter precast concrete units, with a concrete top and cast iron frame and lid. The concrete catch basin maintenance holes shall be provided with a minimum

Specifications - 4th Concession Road Drain Relocation Extension
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450mm deep sump and concrete lid having a 600mm diameter opening. Cast iron frames and lids shall be installed utilizing a minimum of 3 riser rings, to allow for future adjustment of the top of the CBMH to changes in driveway and parking lot grades. All concrete basins, maintenance holes and cast iron frames and lids shall be as manufactured or available from Coldstream Concrete Limited, of Ilderton, Ontario or equal. All concrete units are to be founded on a good, dry, firm, undisturbed earth base for their entire bottom surface area, or a clear stone bedding if necessary. Corrections in depth of excavation, caused by the Contractor excavating to an extent greater than that required for the concrete units, shall be backfilled to the proper grade elevation by embedding the concrete unit floor area with 20mm (3/4") clear stone granular material. A sump is to be provided in each of the concrete units, which shall be a minimum of 450mm deep measured from the proposed invert of the new covered drain to the proposed concrete floor elevation of the concrete unit. The concrete catch basin maintenance holes (CBMH) shall be online. All precast unit sections shall be joined together with a bed of mortar or a standard gasket, provided by the manufacturer, and the joint shall be parged on the inside and outside of the concrete unit as part of the installation work.

The Contractor shall connect all covered drains in the concrete units with the use of a mortar joint or manufacturer installed rubber boot, which shall then be grouted or parged over. Said mortar joint or parging shall be provided at the exterior of the concrete units walls for the full circumference of the covered drain and be of a sufficient mass to produce a sealed joint, all to be performed to the full satisfaction of the Municipal Drainage Superintendent and the Consulting Engineer. All grout for the mortar joint shall be provided in unopened pre-mixed bags, or shall comprise of 3 parts of clean sharp sand to 1 part Portland cement with just sufficient water added to provide a stiff plastic mix. Where possible, the Contractor shall supply a standard factory fitting or adapter to connect between the various pipes and tiles.

The Contractor, as part of this project, is to connect all existing main tiles from the north side of CBMH2 into the new covered drainage system unless noted to be capped or plugged off and abandoned. The Contractor will provide for reconnecting an existing catch basin just north westerly of CBMH-C to the new covered drain. Between CBMH-D and CBMH-C, the Contractor shall provide manufactured eccentric tees from the pipe supplier and provide all labour, material, and equipment in order to connect said main tiles to the proposed relocated covered drainage system on the south side. The Contractor shall provide all pipe

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fittings and couplers and mortar joints as necessary to connect to the existing 355mm and 300mm diameter concrete main tiles as noted and shown in the details on the plans and in the Schedule of Items and Prices. All lateral tiles and main tiles to the east or north of the new covered drainage system shall be plugged up with concrete or capped and abandoned as part of the work. The Contractor shall also partially remove, plug off and abandon the tiles north and west of CBMH-C. The Contractor shall restore the walls of CBMH2 as necessary and block the large diameter drains that are being abandoned by using concrete bricks and grout to provide a solid barrier against any infiltration of materials that could cause future settlement. The interception of the existing main tiles and their connection and entire installation of the new covered drain shall be performed to the full satisfaction of the Municipal Drainage Superintendent and the Consulting Engineer.

The alignment of drains throughout shall be to the full satisfaction of the Municipal Drainage Superintendent and the Consulting Engineer. The whole of the work shall be done in a neat, thorough and workmanlike manner to the full satisfaction of the Municipal Drainage Superintendent and the Consulting Engineer.

The Contractor shall lay the covered drain to the lines, levels and grades as shown in the accompanying drawings or as may be otherwise laid out and established by the Consulting Engineer prior to the time of construction. The Contractor will be held responsible for said lines, levels, and grades of the drain pipe. Should the Engineer determine that the Contractor has not satisfactorily adhered to such lines, levels, and grades, the Engineer may direct the Contractor to take up and relay any portion of the drain which does not conform to such lines, levels and grades.

A laser beam shall be used to maintain line and grade, and the Contractor shall utilize a qualified operator to set up and operate the equipment.

The Contractor shall supply all material and labour in order to provide a non-woven filter cloth wrap around the full circumference of every tile joint and split coupler connection required for the covered drain installation. The drain tile filter wrap shall be a minimum of 250mm (10") wide as manufactured by Coldstream Concrete Limited, of Ilderton, Ontario, or equal, and the specific type to be utilized shall be approved by the Municipal Drainage Superintendent and the Engineer prior to its placement.

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The Contractor should note that when the covered drain is installed with an excavator, they will be required to provide approximately 150mm (6") of either sand or 20mm (3/4") clear stone bedding throughout the length of this drain pipe to ensure that a good firm base is provided under the drain pipe, and they shall provide for this item as part of their tender price.

All materials shall be stored and handled by the Contractor at its own expense. It shall be responsible for the safe storage of all materials, for obtaining storage area, for the safe transportation and distribution of all the materials at the job site, and for inspection in order to determine defects and breakage. No additional recompense will be allowed the Contractor for any loss incurred by it in the storage and handling of the materials.

Pipe, fittings, and all accessory appurtenances must be loaded and unloaded by lifting with means of a hoist or utilizing a skid so as to avoid shock or damage. Under no circumstances shall any pipe material or materials for pipe appurtenances be dropped.

Pipes shall be laid in trenches in the general location shown on the accompanying drawings or as may be specifically directed and laid out by the Engineer at the time of construction. The trench shall be located to clear all existing utilities and structures above, on, or below the ground level. The Contractor will be responsible at all times for complete investigation to determine the location of all such utilities or structures known or unknown, and it shall indemnify and save harmless the Engineer and the Municipality for any responsibility, injury, or liability arising from and damage to such utilities or structures by the Contractor.

The Contractor shall further contact or notify such utility company or commission of its intention to carry out work in the area and co-operate with such utility company or commission in the location, maintenance and preservation of all such utilities. The location of the pipes and appurtenances as shown on the drawings is approximate and may be changed by the Engineer if deemed advantageous for the progress of the work. The trenches are to be excavated where directed. If any part of the bottom of the trench is found to be unsound or in any way unsuitable to lay the pipe in the Municipal Drainage Superintendent's or the Engineer's opinion, they may direct that the location of said trench be changed if it is possible to avoid unsound soil by doing so. Should the Contractor discover any conflicts between the proposed drainage works and public utilities, said Utility will be required to make any adjustments

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to their plant and services, which work shall be done by them at the expense of the Public Utility pursuant to Section 26 of the Drainage Act.

In particular, the Contractor shall coordinate its operations with the Municipal Water Department when carrying out any lowering or raising of the existing 150mm diameter private service connection to the service building. Any work related to raising or lowering the private water service shall be carried out by the Contractor in accordance with the "Watermain Lowering Detail" shown on page 3 of the project plans. In the case of the watermain being deflected over the covered drainage system, the Contractor shall provide a minimum of 50mm separation between the pipe and the water service on a solid sand bed. Should the water service have less than 1.5 metres of cover, the Contractor shall provide Styrofoam insulation along the length of the water service comprising 50mm thick by 600mm wide Styrofoam SM materials for a minimum distance of 1.5 metres either way of the intersection of the drain with the water service. The Contractor shall coordinate any shutdown with the Owner and the Municipal Water Department. The Owner has a reservoir and is able to withstand a one (1) day shutdown, but the works should be completed by the Contractor as quickly as possible to minimize any risk of a water shortage to the greenhouse plant. The Contractor should make an exploratory dig and have a spool piece prepared for installation if the water service is to be raised or lowered to avoid conflicting with the covered drain.

All excavation shall be made in compliance with the drawings and in such a manner and at such depths and widths as will give ample room for installing the pipe, the bracing, sheeting, or otherwise supporting the sides of the excavation and for the pumping of ground water if encountered. The Contractor is fully responsible for the safety of all its people and equipment and must conform its work completely to the provisions of the "Construction Safety Act".

The bottoms of the trenches must be carefully excavated and trimmed to the elevation and shape of the bottom of the pipe. The bottom of each trench shall be recessed to receive the pipe in order to allow the pipe to be uniformly supported on firm undisturbed earth for its' entire length. Corrections in depth of excavation caused by the Contractor excavating to an extent greater than that required for the elevation of the pipe shall be made by bedding the pipe with granular material 20mm (3/4") clear stone placed at the time that the pipes are being installed.

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(for Domenic Mastronardi and Rima Mastronardi)
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The trenches shall be excavated to the depths given by the Engineer and only as far in advance of the pipe laying as permitted by the said Engineer, or the Municipal Drainage Superintendent.

If any part of the bottom of the trench is found to be unsound or in any way unsuitable in the Municipal Drainage Superintendent's or the Engineer's opinion to lay drain pipe, the Contractor shall remove as much material as may be required and shall replace same with sufficient approved granular material 20mm (3/4") clear stone to form a sound bed for the pipe. The Contractor shall be paid an extra for such additional excavation and for supplying and placing of the granular material in place of unsound soil as per the unit price established for same in the Form of Tender.

No extras will be allowed for excavating any hardpan, boulders, rocks, cobbles, ice or other obstacles found in the excavation or in the line of the trench or for any pumping or baling of water required in the execution of the work. The trench must be drained or pumped in order to avoid the necessity of making joints under water. The trench must also be drained to avoid any possibility of ground water entering the pipe in the trench until the installation has been successfully completed.

The Contractor shall be responsible for the safe and proper handling of the pipe and shall inspect all pipes to ensure that no cracks, chips or defects exist in the pipe prior to placing the pipe in the drain line. Should the Contractor permit damaged pipe or materials to be installed in the drain, it shall be responsible for the removal and replacement of same at its own expense should the Engineer require such removal and replacement.

If the drain pipe is laid in freezing weather, the Contractor shall take all the necessary precautions to prevent damage to the pipe or to any of the materials used in the construction of the work. In addition, the Contractor shall take care that no frozen ground or backfill is placed in the trench backfilling adjacent to the drain pipe.

All drain pipes and the various other materials used in the placing of said pipe shall be installed in strict compliance with the manufacturer's recommendations.

The Contractor shall also be required, as part of the drain pipe installation, to satisfactorily connect all intercepted main tiles into the new covered drain. When intercepted tiles are to be connected, the Contractor shall be required to utilize a pre-

Specifications - 4th Concession Road Drain Relocation Extension
(for Domenic Mastronardi and Rima Mastronardi)
Municipality of Leamington - D-10-023

manufactured eccentric tee and smoothwall Big "O" pipe to connect between the tee and the existing main drains to the south. The plastic stub shall be connected to the covered drain with a mortar joint or where possible a plastic connecting adapter. The Contractor shall provide all of the above equipment and materials required to connect all intercepted main tiles at no extra cost to the project, and all of same shall be performed to the full satisfaction of the Municipal Drainage Superintendent or the Consulting Engineer and shall not be backfilled until it is inspected by them. Any drains being abandoned on the opposite side of the relocated main covered drain shall be blocked off either with a manufactured cap suitable for the purpose or a grout plug extending a minimum of 305mm (12") into the pipe for the full internal diameter of said pipe.

Backfill for the drain pipe shall be native material from the excavation. Said fill shall be carefully placed and compacted around the haunches of the pipe and overtop of the pipe to a minimum of 95% Standard Proctor Density (S.P.D.). The Contractor shall at all times be very careful when performing its backfilling operations so that no damage is caused to the covered drain. To ensure that no damage is caused to the proposed drain pipe, alternative methods of achieving the required backfill compaction shall be submitted to the Engineer or the Municipal Drainage Superintendent for their approval prior to the commencement of this work.

The Contractor is advised that the Owner will be responsible to remove any pipes located on their private lands being Parcels 650-08400 and 650-08550, including any work related to CBMH1 located on the line between the two parcels. The Contractor shall plug or cap both ends of the lines being abandoned as previously noted.

VII. GENERAL CONDITIONS

- a) The Municipal Drainage Superintendent or 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 Municipality of Leamington and the Engineer and its' representatives for any damages which it may cause or sustain during the progress of the work. It shall not hold the

Specifications - 4th Concession Road Drain Relocation Extension
(for Domenic Mastronardi and Rima Mastronardi)
Municipality of Leamington - D-10-023

Municipality of Leamington or the 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 Drainage Superintendent and Consulting Engineer can review same and check that the work will generally conform with 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 Municipality 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 Municipality. The Contractor, upon completing the works, shall clean all debris and junk, etc., 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 (MUTCD) for Roadway Work Operations.
- f) 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.
- g) 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.

Specifications - 4th Concession Road Drain Relocation Extension
(for Domenic Mastronardi and Rima Mastronardi)
Municipality of Leamington - D-10-023

- h) 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 Municipal Drainage Superintendent and the 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 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.
- i) The Contractor will be required to submit to the Municipality, a Certificate of Good Standing from the Workplace Safety and Insurance Board prior to the commencement of the work and the Contractor will be required to submit to the Municipality, a Certificate of Clearance for the project from the Workplace Safety and Insurance Board before Final Payment is made to the Contractor.
- j) 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.
- k) The Contractor shall be required, as part of this Contract, to provide Comprehensive Liability Insurance coverage for not less than \$2,000,000.00 on this project, and shall name the Municipality of Leamington and its' officials, and the Consulting Engineer and their staff as additional insured under the policy. The Contractor must submit a copy of this policy to both the Municipal Clerk and the Consulting Engineer prior to the commencement of work.

Specifications - 4th Concession Road Drain Relocation Extension
(for Domenic Mastronardi and Rima Mastronardi)
Municipality of Leamington - D-10-023

1) Monthly progress orders for payment shall be furnished the Contractor by the Municipal Drainage Superintendent. 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 Engineer and the Municipality, 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 Engineer or Municipality 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.

m) 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.

APPENDIX "A"

Ministry of
Natural Resources
615 John Street North
Aylmer ON N5H 2S8
Tel: 519-773-9241
Fax: 519-773-9014

Ministère des
Richesses naturelles
615, rue John Nord
Aylmer ON N5H 2S8
Tél: 519-773-9241
Télééc: 519-773-9014



May 21, 2010

AYL-L-134-10

Gerard Rood, P.Eng.
N.J. Peralta Engineering Ltd.
45 Division Street North
Kingsville, ON N9Y 1E1

Dear Mr. Rood:

RE: 4th Concession Road Drain and the *Endangered Species Act, 2007*

Thank you for your inquiry about protected species and habitats that may occur along the 4th Concession Road Drain on the Mastronardi property located at 353 Highway 77, Lot 6 Concession 3, in the Geographic Township of Mersea, Municipality of Leamington, County of Essex and the steps you should take to determine if the proposed drain relocation project for a greenhouse expansion may impact protected species or habitats.

Staff at the MNR Aylmer District office have reviewed species occurrence information on file and in the Natural Heritage Information Centre database and determined that there are no known occurrences of endangered or threatened species on or in the immediate area of the Mastronardi property. Therefore, the activities associated with the project, as currently proposed, **will likely not contravene** section 9 (species protection) of the *Endangered Species Act, 2007* (ESA 2007) for species.

Eastern Foxsnake (Carolinian population) and its habitat are protected under the ESA 2007. This species regularly inhabits agricultural lands throughout the area, and so, woodlands, farm hedgerows, and drainage corridors can be important habitats as well as seasonal migration linkages. Eastern Foxsnake may also utilize old bridges, culverts, and foundations as communal over-wintering sites. It is recommended that netting type erosion control measures not be used for projects over drains and rivers. At these locations a product such as Curlex Netfree® blankets should be used for erosion control to prevent entanglement of Eastern Foxsnake.

If you become aware of any protected species and/or habitats on the property, please contact the District office as soon as possible to help determine if the activities could impact the species or its habitat.

Please be advised that it is also your responsibility to be aware of and comply with all other relevant provincial or federal legislation, municipal by-laws, other MNR approvals or required approvals from other agencies.

If you have any concerns or questions please contact Melody Cairns at 519-773-4736, by fax 519-773-9014 or by email ESAScreeningRequest.AylmerDistrict@ontario.ca.

Sincerely,

A handwritten signature in cursive script that reads "McAurn".

Melody Cairns, SAR Biologist
MNR Aylmer District Office

APPENDIX "B"

PLANS, PROFILE & SECTIONS

OF THE

4TH CONCESSION ROAD DRAIN RELOCATION EXTENSION

(For Domenic Mastronardi (650-08400) & Rima Mastronardi (650-08550), Part of Lot 6, Concession 3)
(Geographic Township of Mersea)

IN THE
MUNICIPALITY OF LEAMINGTON

IN THE
COUNTY OF ESSEX • ONTARIO

Gerard Road
GERARD ROAD, P.ENG.



N. J. PERALTA ENGINEERING LTD.

45 DIVISION STREET NORTH
KINGSVILLE, ONTARIO
N9Y 1E1

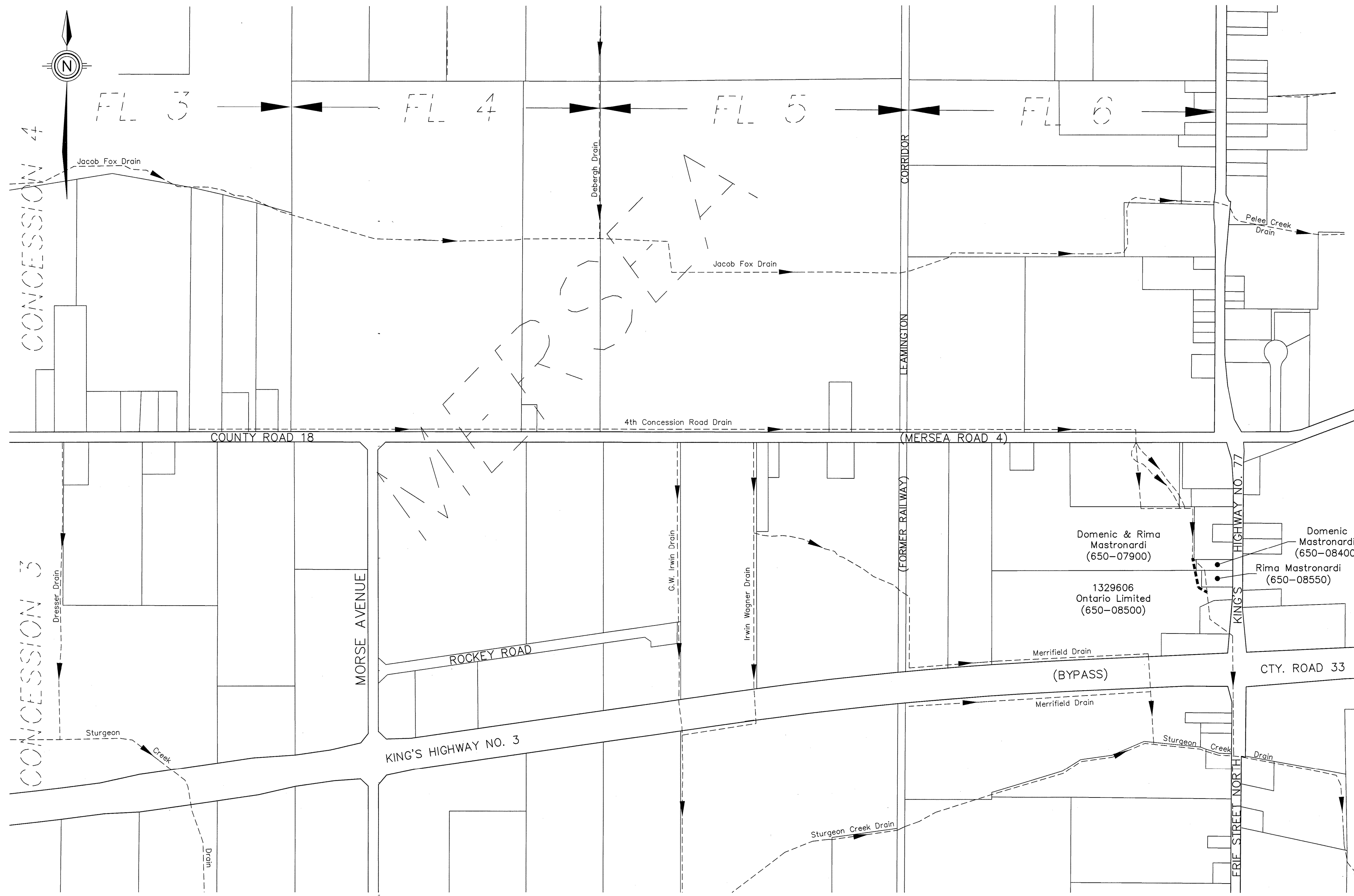
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MUNICIPALITY OF LEAMINGTON

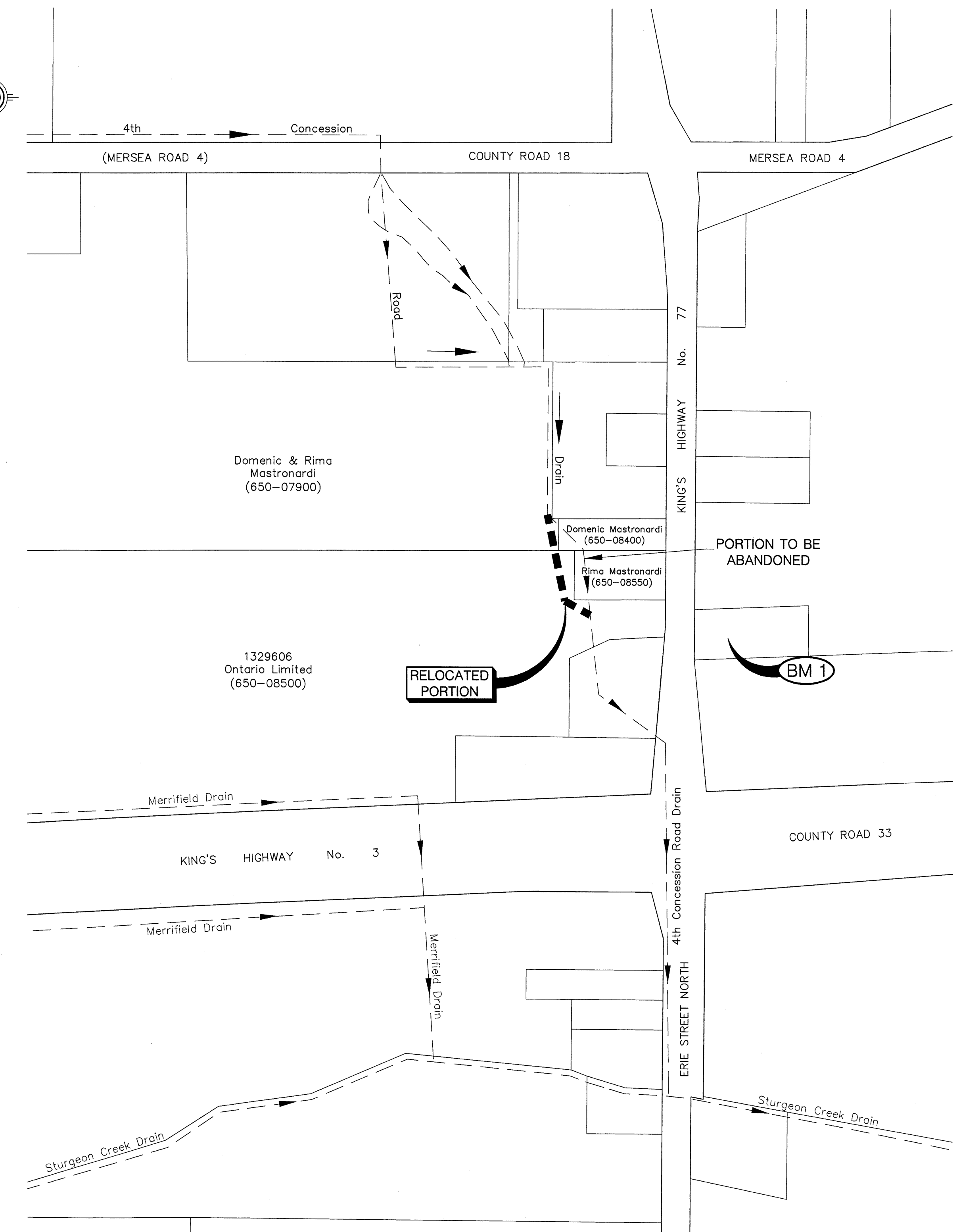
MAYOR: JOHN PATTERSON
CLERK: BRIAN SWEET
DRAINAGE SUPERINTENDENT: LU-ANN BARRETO

BENCHMARKS:

1. NORTHWEST CORNER OF THE FIRST CONCRETE STEP ON THE 1-1/2 STORY FRAME HOUSE MN. 354 ON THE EAST SIDE OF KING'S HIGHWAY No. 77. **ELEV. 190.012m**



KEY PLAN
Scale = 1:5,000



PLAN
Scale = 1:2,000

THESE DRAWINGS HAVE BEEN REDUCED IN SIZE AND THE SCALE THEREFORE VARIES. FULL SCALE DRAWINGS CAN BE VIEWED AT THE MUNICIPAL OFFICES IF REQUIRED.

DRAWN BY: H.C.M./M.V.	
PLOT CODE: 1:1	
COMPUTER FILE: D1002301.dwg	
FILE No.: D10-023 (E07-008)	SHEET No.: 1 OF 3

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NOTES:

1. THE ACCURACY OF THE UTILITIES SHOWN ON THESE DRAWINGS ARE NOT GUARANTEED BY THE OWNER OR N. J. PERALTA ENGINEERING LTD. OTHER UTILITIES MAY BE PRESENT OR THE UTILITIES SHOWN MAY DIFFER IN SIZE OR LOCATION SHOWN.
2. ALL ELEVATIONS SHOWN IN METRES.
3. LOCATION OF EXISTING COVERED DRAINS IS APPROXIMATE BASED ON OLD PLANS.

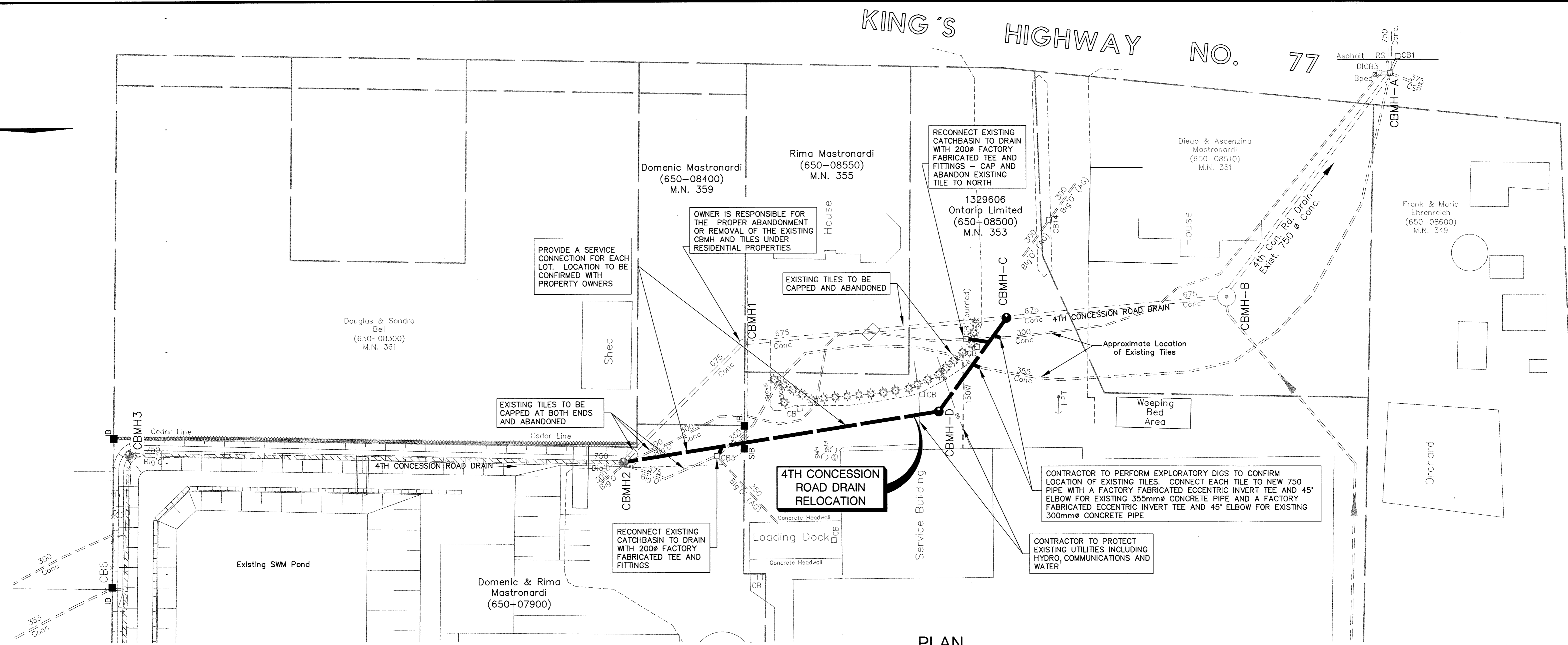
BENCHMARKS:

1. NORTHWEST CORNER OF THE FIRST CONCRETE STEP ON THE 1-1/2 STORY FRAME HOUSE, M.N. 354 ON THE EAST SIDE ON KING'S HIGHWAY NO. 77. **ELEV. 190.012m**

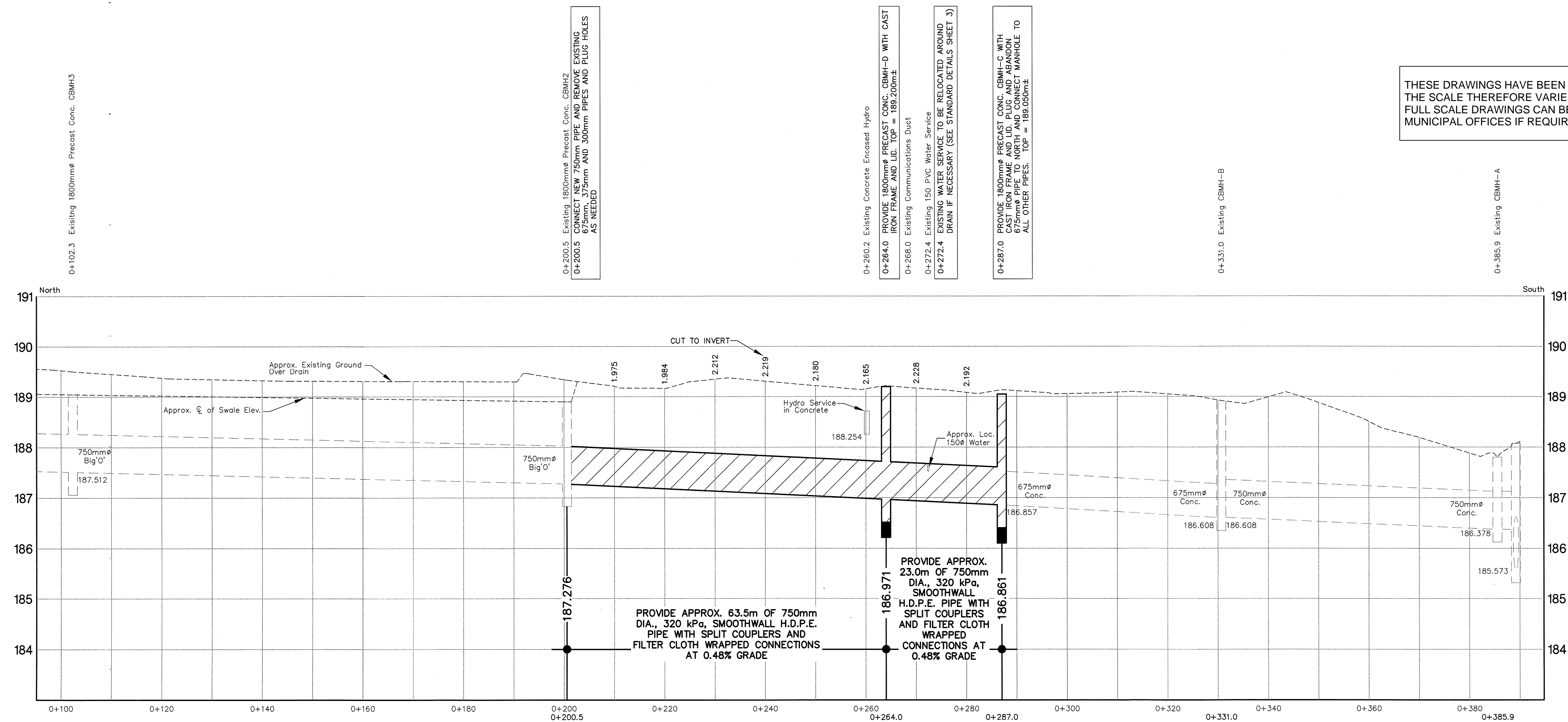
ISSUED FOR:	BY:	DATE:
REVISIONS		

N. J. Peralta Engineering Ltd.
 Consulting Engineers
 Kingsville Ontario

THESE DRAWINGS HAVE BEEN REDUCED IN SIZE AND THE SCALE THEREFORE VARIES. FULL SCALE DRAWINGS CAN BE VIEWED AT THE MUNICIPAL OFFICES IF REQUIRED.



PLAN
 Scale = 1:500



PROFILE
 Scale = 1:500 (Hor.)
 1:50 (Vert.)

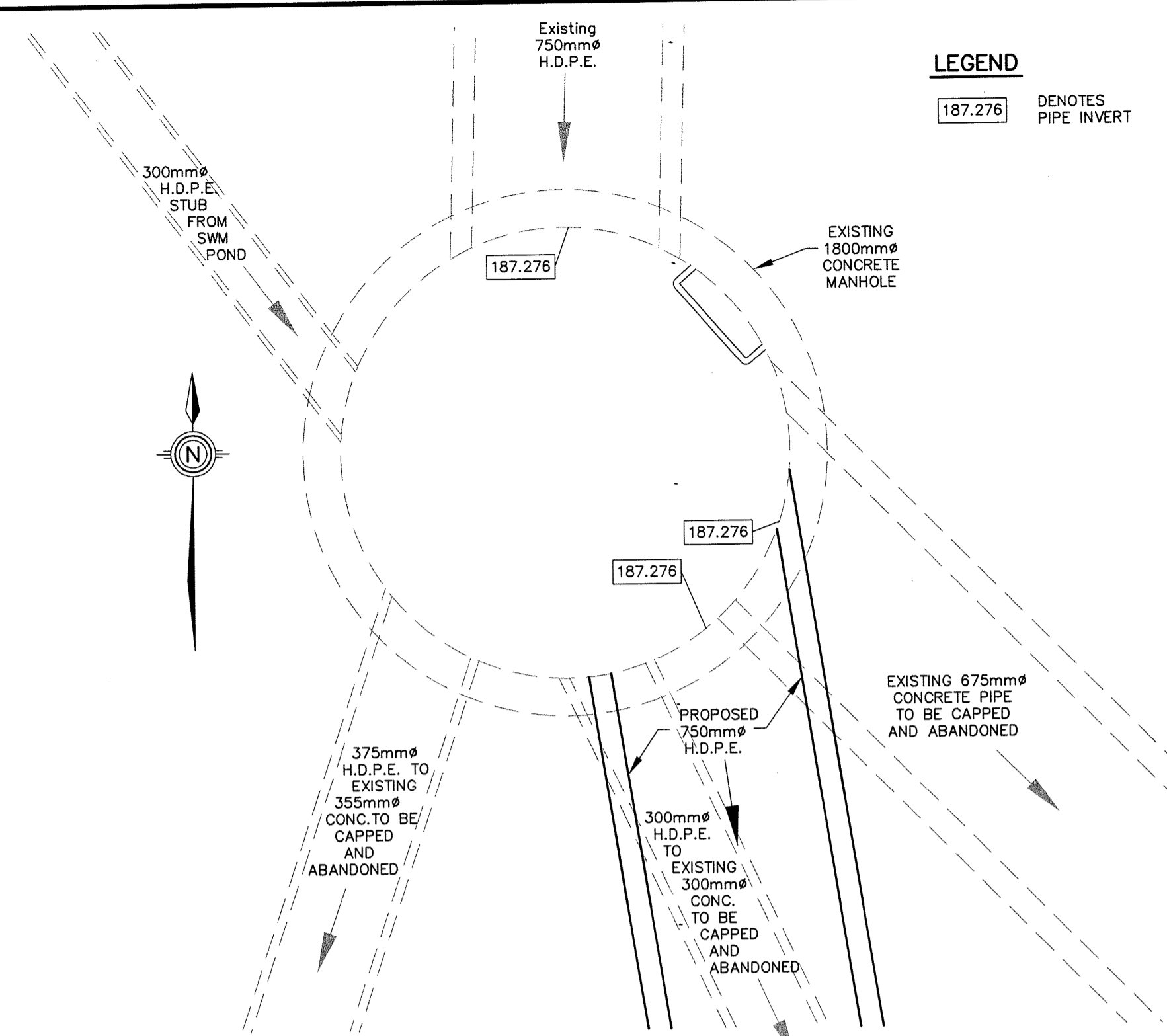
4th CONCESSION ROAD DRAIN RELLOCATION
 (FOR DOMENIC MASTRONARDI & RIMA MASTRONARDI)
 MUNICIPALITY OF LEAMINGTON, ONTARIO

SHEET TITLE:
PLAN AND PROFILE

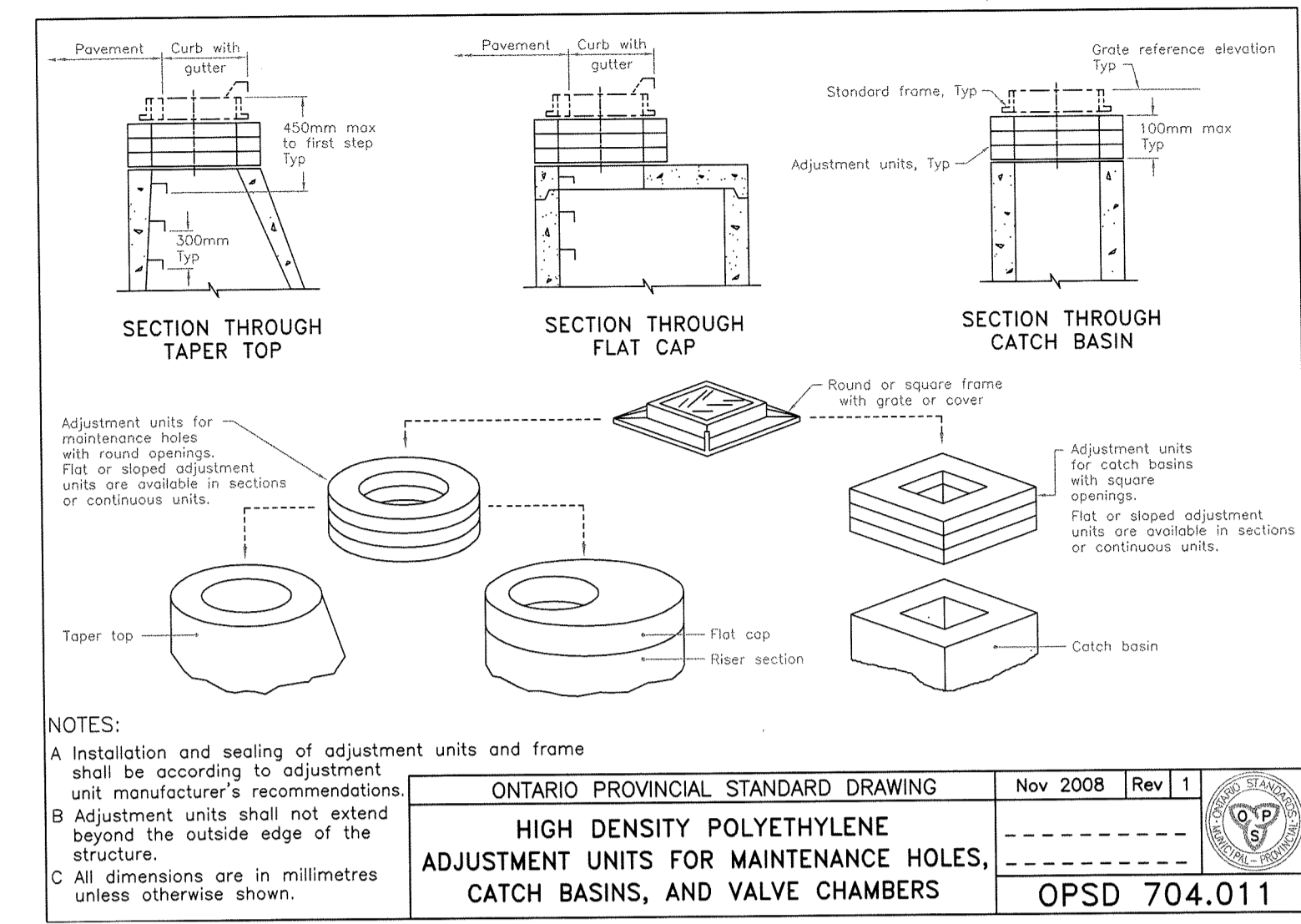
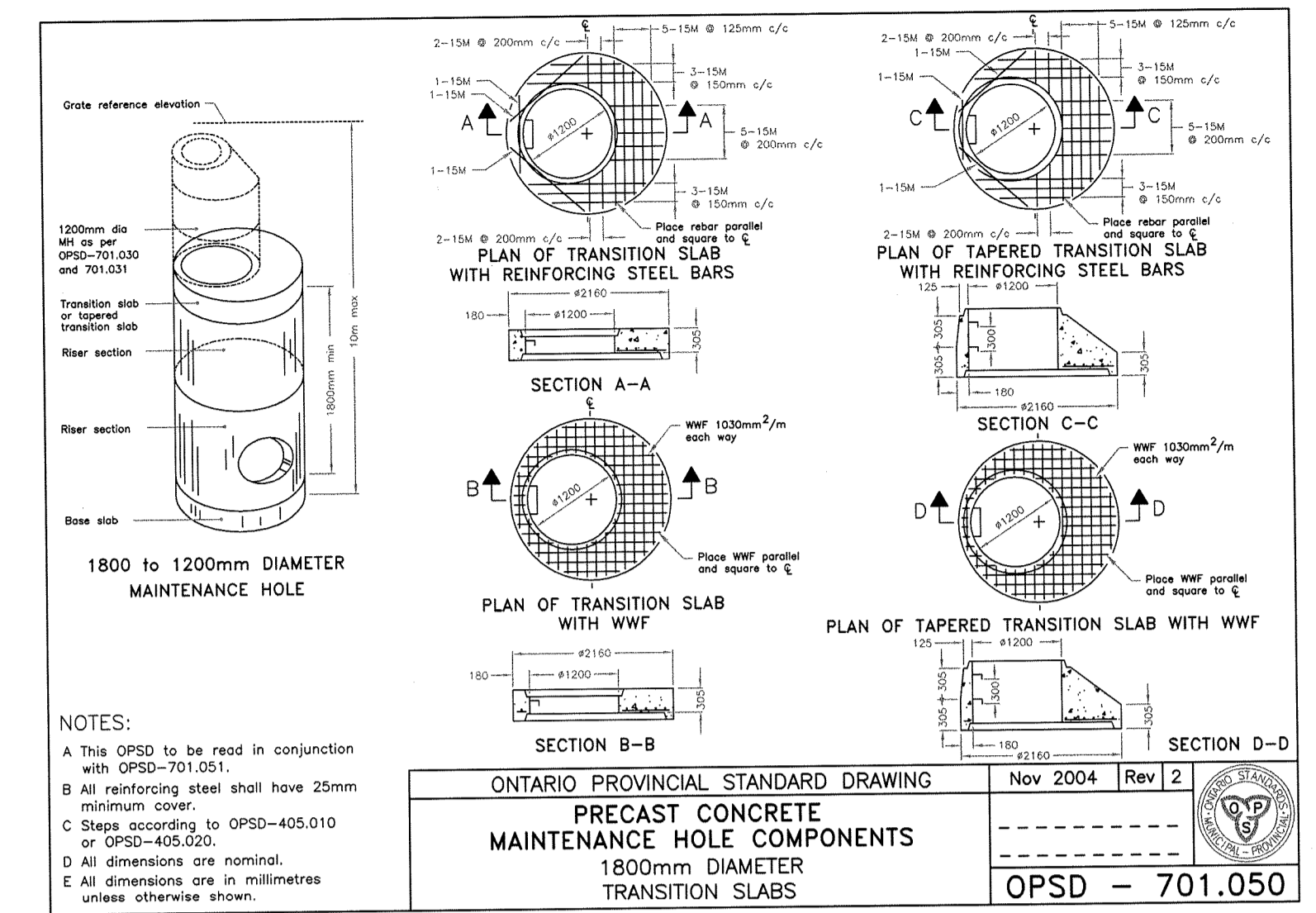
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DRAWN BY: H.C.M.	SCALE: 1:500
SHEET No.: 2	OF: 3
PROJECT No.: D10-023 (E07-008)	

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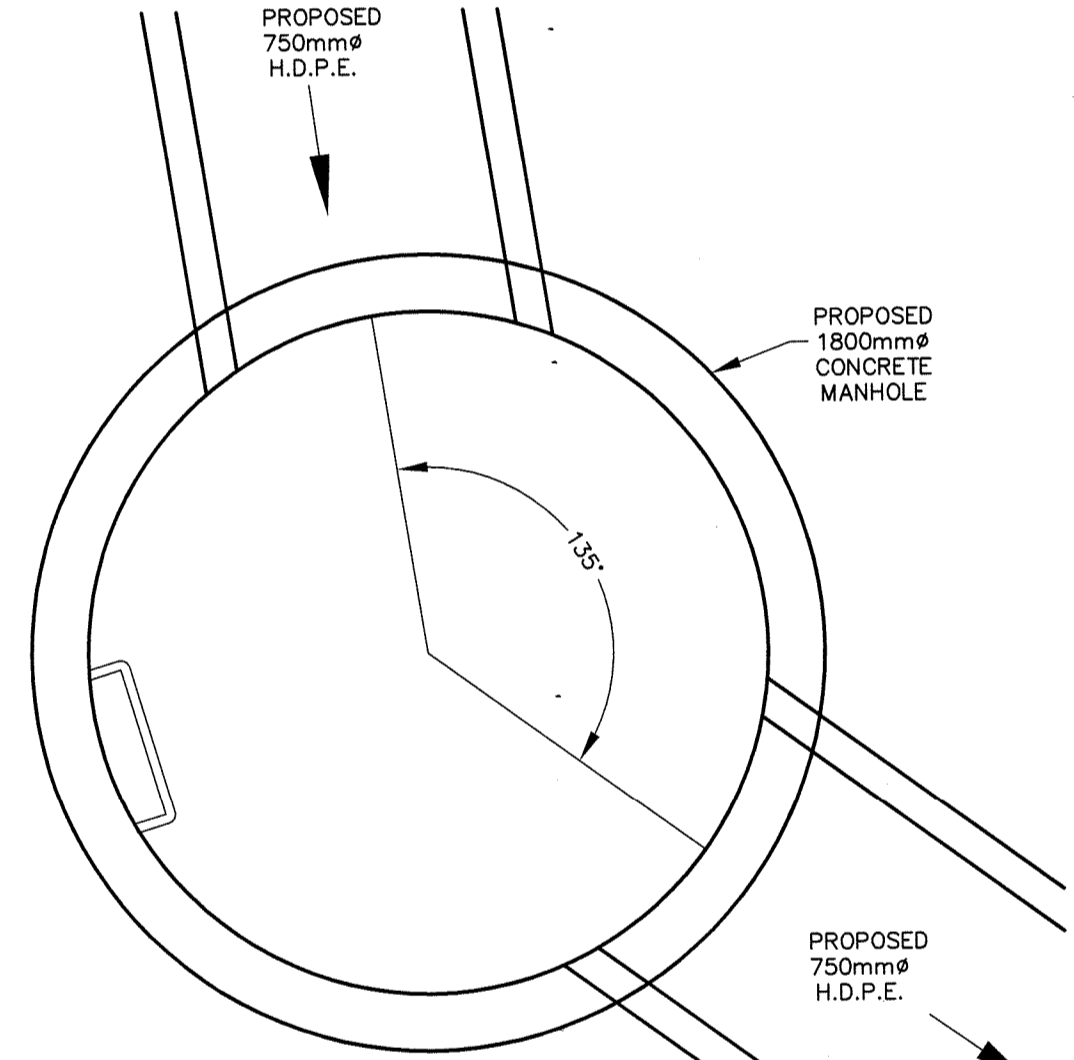
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187.276 DENOTES PIPE INVERT



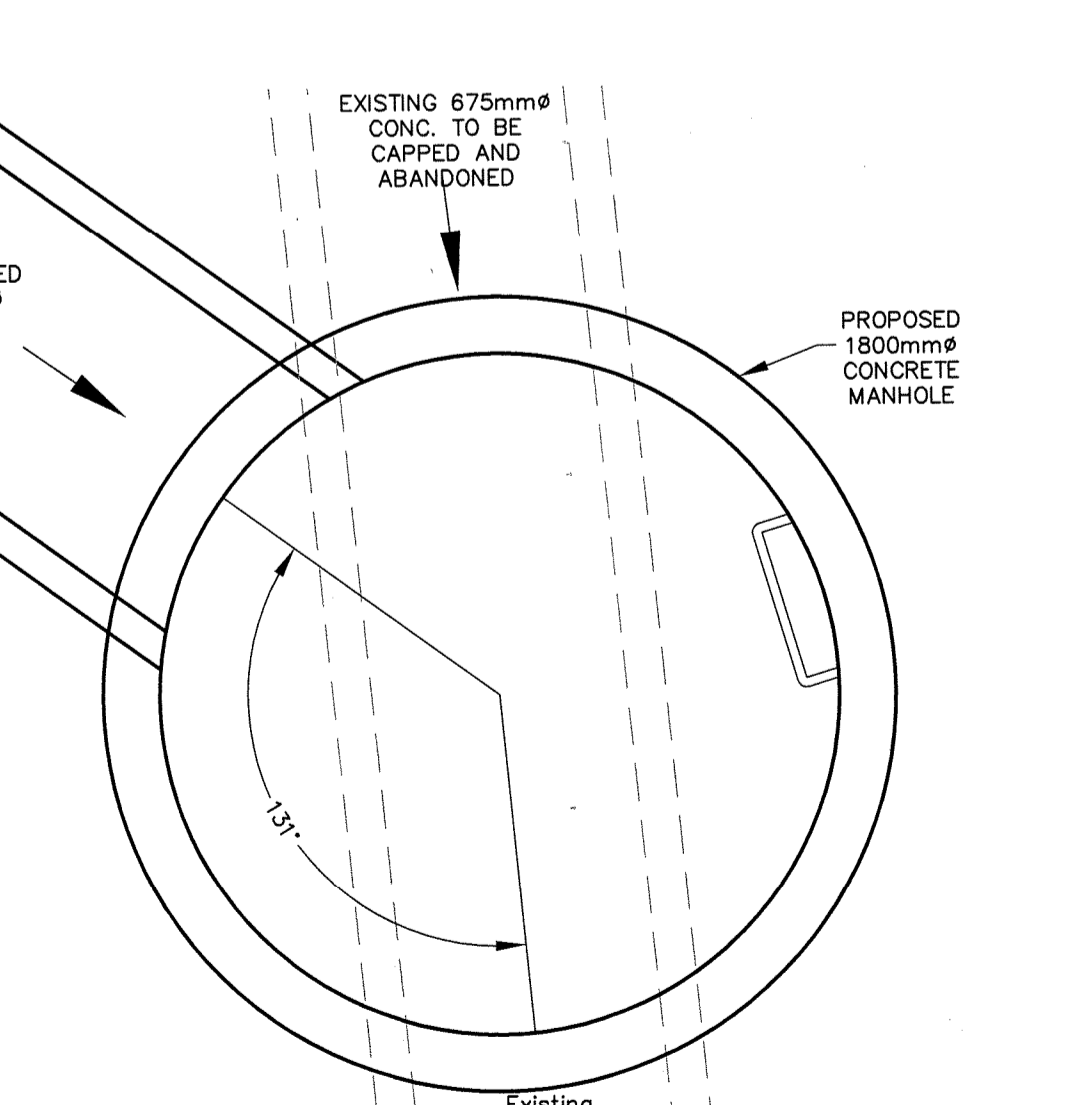
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2. ALL ELEVATIONS SHOWN IN METRES.

BENCHMARKS:
1. NORTHWEST CORNER OF THE FIRST CONCRETE STEP ON THE 1-1/2 STORY FRAME HOUSE NO. 354 ON THE EAST SIDE ON W/O HIGHWAY 77
ELEV. 190.012m

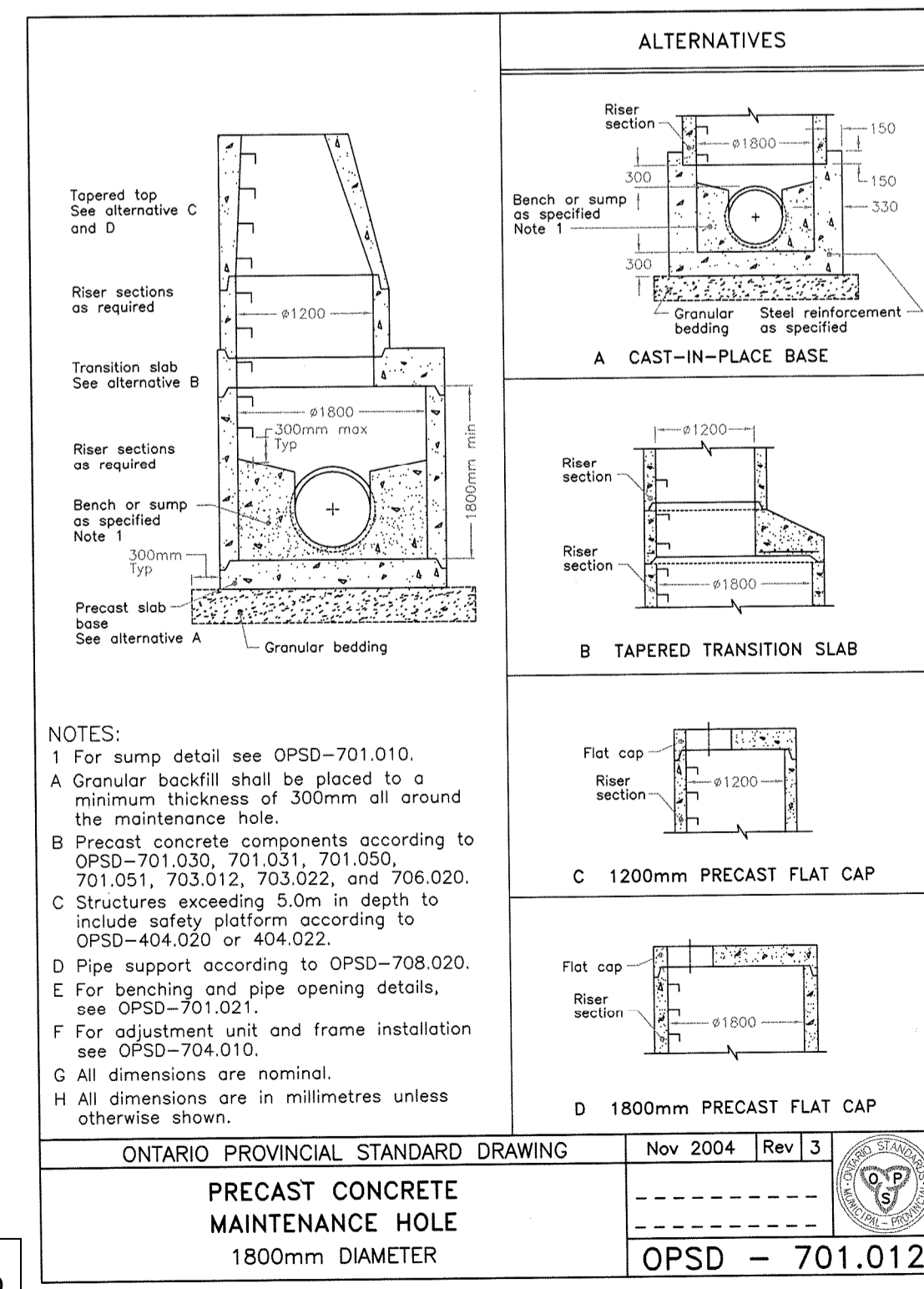
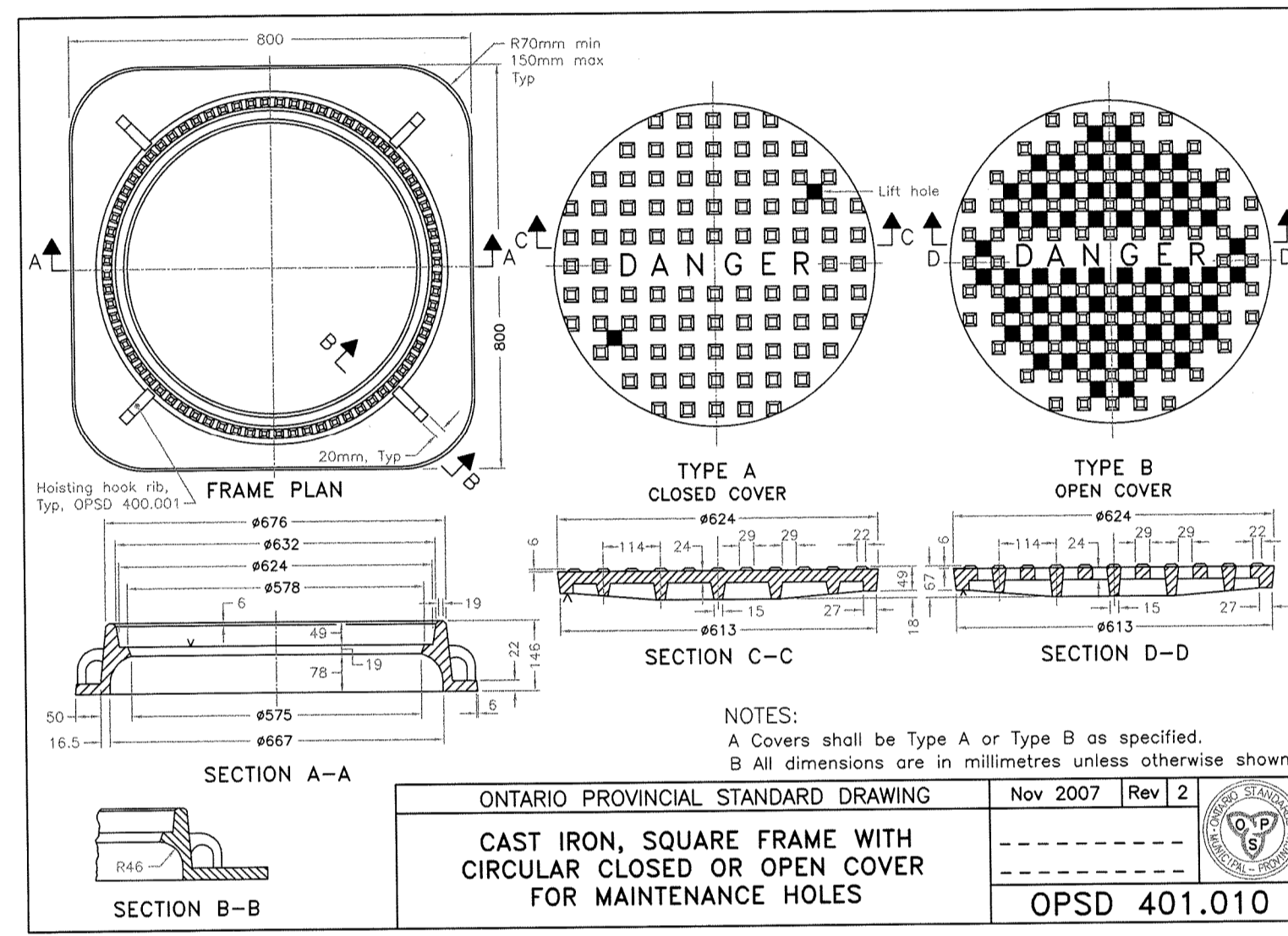
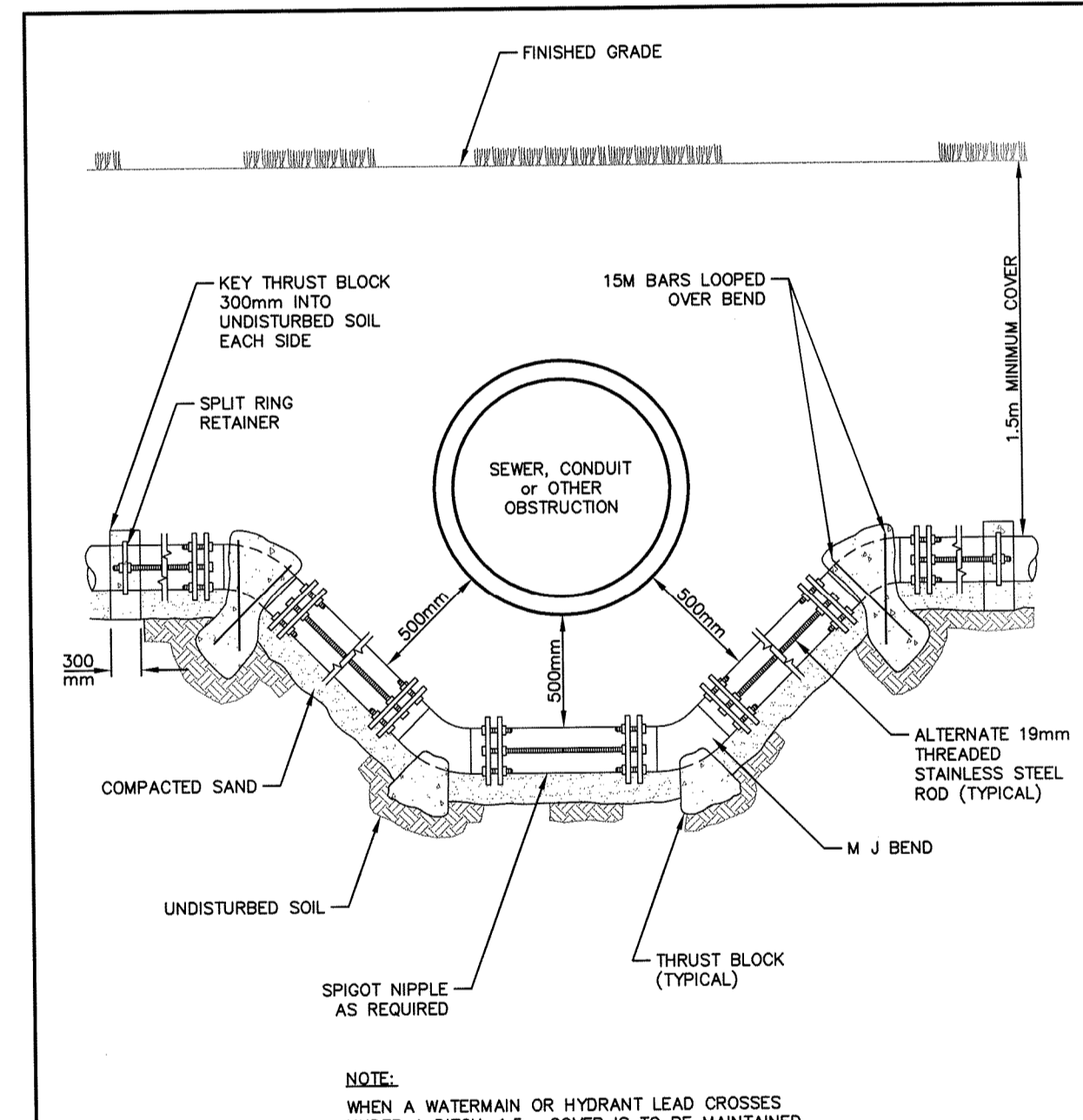
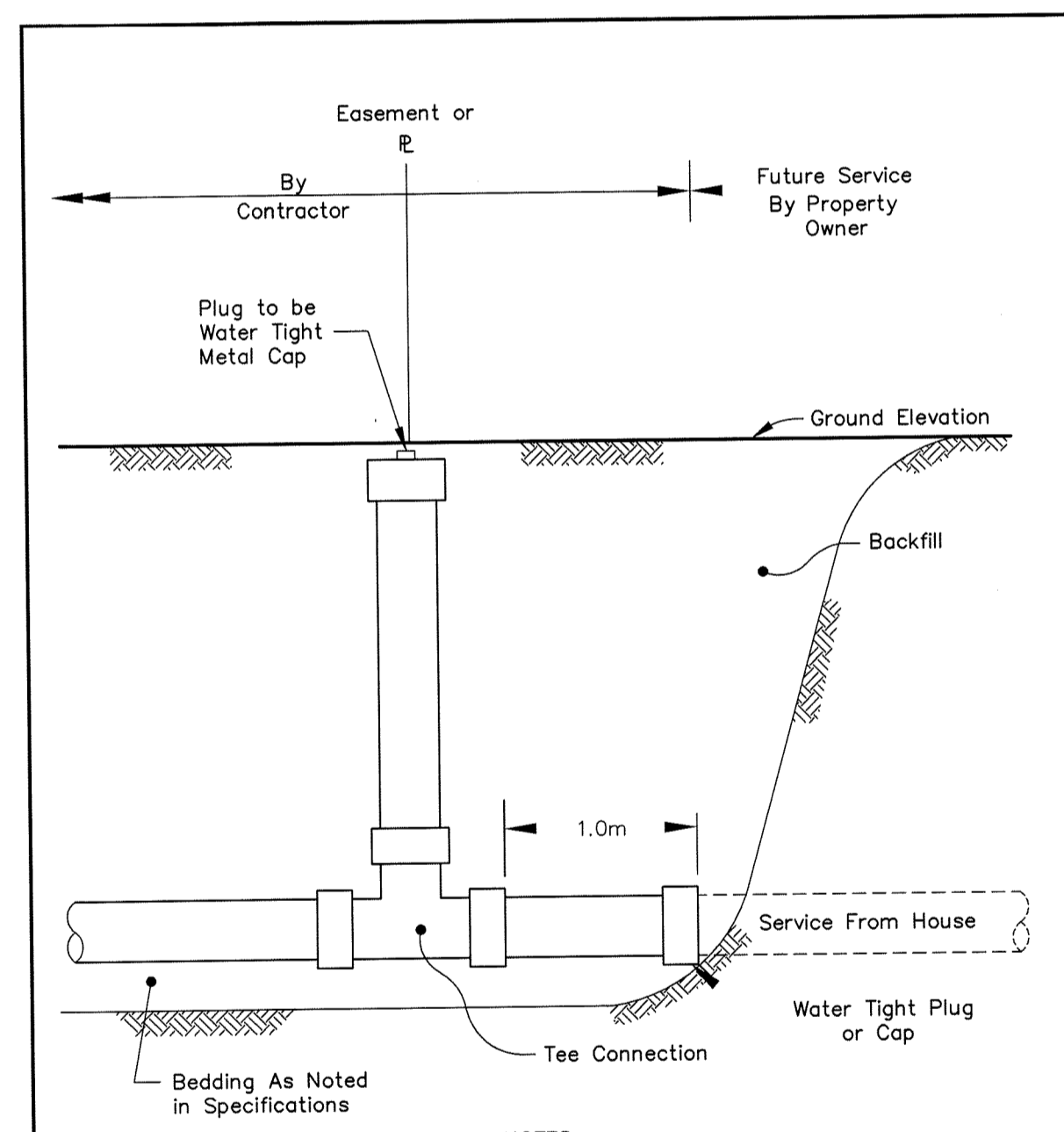
CBMH2 DETAIL
Scale = 1:20



CBMH-D DETAIL
Scale = 1:20



CBMH-C DETAIL
Scale = 1:20



THESE DRAWINGS HAVE BEEN REDUCED IN SIZE AND THE SCALE THEREFORE VARIES. FULL SCALE DRAWINGS CAN BE VIEWED AT THE MUNICIPAL OFFICES IF REQUIRED.

ISSUED FOR:	BY:	DATE:

N. J. Peralta Engineering Ltd.
Consulting Engineers
Kingsville Ontario

4th CONCESSION ROAD DRAIN RELOCATION EXTENSION
(FOR DOMENIC MASTRONARDI & RIMA MASTRONARDI)
MUNICIPALITY OF LEAMINGTON, ONTARIO

CBMH AND STANDARD DETAILS

DESIGNED BY:	H.C.M.	DATE:	MARCH 31, 2011
DRAWN BY:	H.C.M.	SCALE:	1:500
SHEET No.:	3	OF:	3
PROJECT No.:	D10-023 (E07-008)		