

Amendment to the  
Engineer's Report for the  
Dowdall Municipal Drain  
Branch No. 6  
DND Property

Prepared For:



Prepared By:

Robinson Consultants Inc.  
Consulting Engineers

Project No. B11035  
August 2015

August 11<sup>th</sup>, 2015

Mayor and Members of Council  
City of Ottawa  
110 Laurier Avenue West  
Ottawa, ON K1P 1J1

**Attention:**                   **Mr. Rick O'Connor**  
                                      **City Clerk**

**Reference:**               **Amendment to the Engineer's Report**  
                                  **Dowdall Municipal Drain – Branch No. 6 Enclosure – DND Property**  
                                  **Rideau-Goulbourn Ward and Twp. of Beckwith**  
                                  **Our Project No. B11035**

Dear Sir:

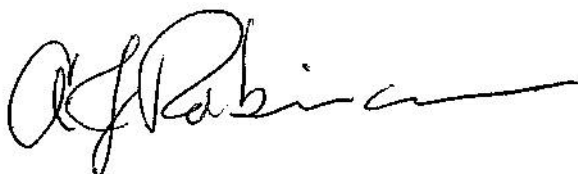
This Amendment to the Engineer's Report for the Dowdall Municipal Drain (Branch No.6), Rideau-Goulbourn Ward and Township of Beckwith, which is respectfully submitted for Council's consideration, was initiated by the City of Ottawa under Section 78 of the Drainage Act, RSO 1990. The purpose of the report is to accommodate a request to enclose the municipal drain crossing the property of the Department of National Defence (DND) to permit future site development and provide site security for the military facility. This Report makes modifications to the existing Engineer's Report entitled "Engineer's Report – Dowdall Municipal Drain – Modifications and Improvements," dated REV November 2010, by Robinson Consultants Inc, for Branch No.6. Remaining sections of the Dowdall Municipal Drain, not modified by this report, will continue to be governed by the REV Nov. 2010 Engineer's Report prepared by Robinson Consultants Inc.

All costs associated with this amendment to the Engineer's Report and associated construction will be assessed to the Department of National Defence as the owner of the lands where the enclosure is to be implemented. Construction will be completed under the existing contract with the City of Ottawa.

If you have any questions, please feel free to contact the undersigned at 592-6060 extension 104.

Yours very truly,

ROBINSON CONSULTANTS INC.



A.J. Robinson, P.Eng.  
Drainage Engineer

AJR:plw

c.c.     David Ryan, Program Manager – Municipal Drainage, City of Ottawa

## TABLE OF CONTENTS

1.0	INTRODUCTION .....	1
1.1	On-Site Meeting .....	1
2.0	PURPOSE OF THE AMENDMENT REPORT .....	1
2.1	Branch No. 6 -- Modifications .....	1
3.0	EXISTING CONDITIONS .....	1
3.1	Location of the Drain .....	1
3.2	Drainage Basin and Limits .....	2
3.3	Drawings Forming Part of the Engineer's Report .....	2
4.0	DESIGN AND CAPACITY OF PROPOSED WORKS .....	2
5.0	CONSTRUCTION .....	2
6.0	ASSESSMENTS .....	2
6.1	Proposed Enclosure .....	2
6.2	Adjacent Works .....	2
7.0	MAINTENANCE .....	3
8.0	PERMITS AND AUTHORIZATIONS .....	3

## FIGURE

Figure 3.1	Location Plan .....	Following Page 1
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## LIST OF APPENDICES

Appendix A	Drainage Plans and Profiles
Appendix B	Letter of Advise – Fisheries Act

## **1.0 INTRODUCTION**

Robinson Consultants Inc. was appointed by the City of Ottawa on October 12, 2011, to complete an Engineer's Report to amend the existing Engineer's Report for the Dowdall Municipal Drain – Branch No. 6. The Amendment to the Engineer's Report for the modifications to the Municipal Drain was initiated by the City of Ottawa under Section 78 of the Drainage Act in consideration of a request for the enclosure of the drain through the Department of National Defense (DND) property by the DND.

### **1.1 On-Site Meeting**

An on-site meeting of with the Department of National Defense was held on June 14, 2011. An additional meeting with the upstream affected landowner was held on July 11, 2012.

## **2.0 PURPOSE OF THE AMENDMENT REPORT**

The City of Ottawa initiated the Amendment to the Engineer's Report under Section 78 of the Ontario Drainage Act in consideration of a request for the required enclosure by the DND. The purpose of the Report is to permit the enclosure of a portion of Branch No. 6 where it crosses the DND property through a proposed secure compound area (W. Pt. Lot 6, Con 4).

To accommodate these changes, amendments are required to the existing Engineer's Report, entitled "Engineer's Report – Dowdall Municipal Drain – Modifications and Improvements," dated REV Nov. 2010, by Robinson Consultants Inc. The amendments include modifications to a portion of the Branch No.6 of the drain.

Modifications are as detailed in the followings sections

### **2.1 Branch No. 6 -- Modifications**

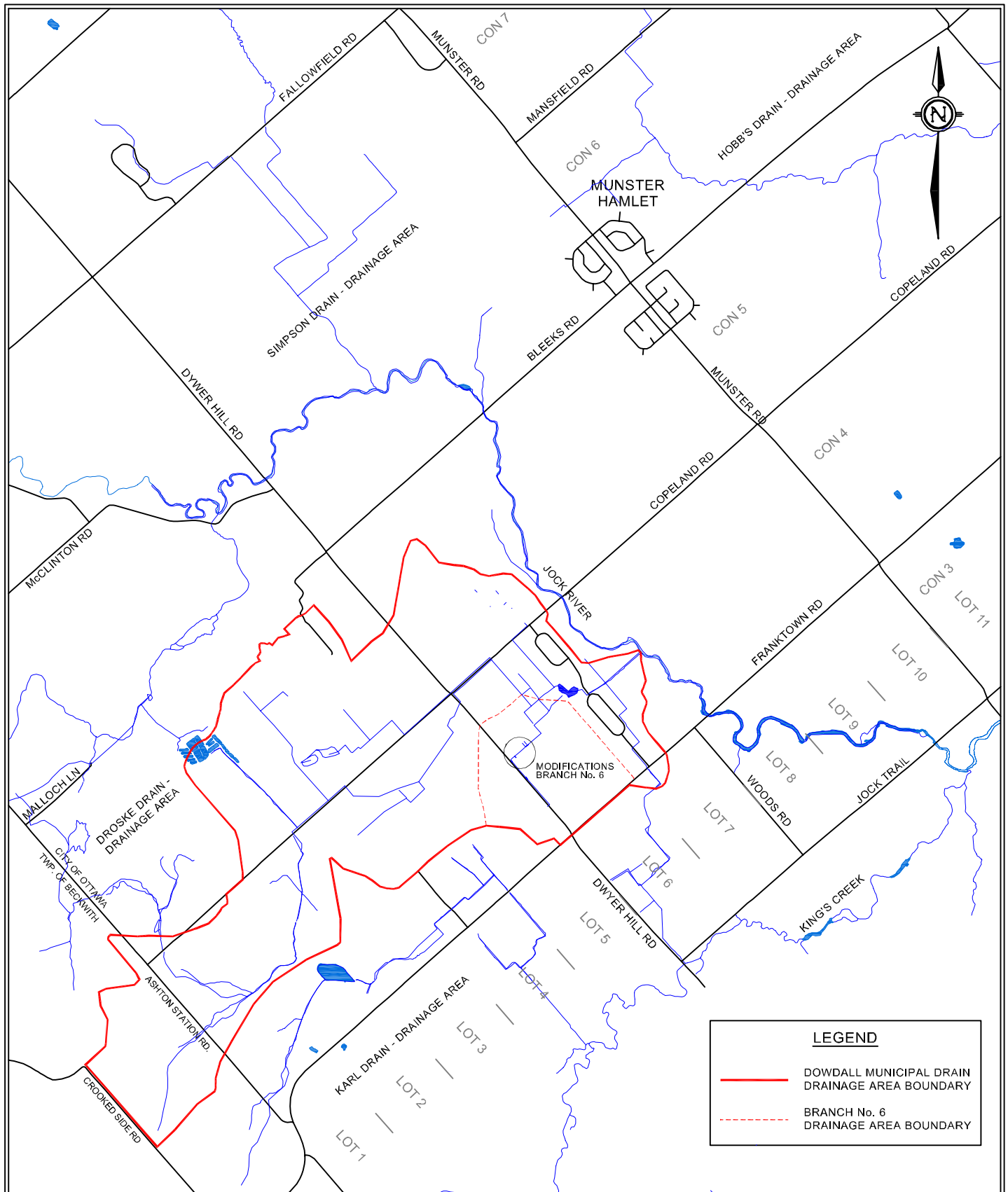
Modifications to the construction proposed by the 2010 Engineer's Report for Branch No. 6 of the Dowdall Municipal Drain include the enclosure of a portion of the open drainage system for Branch No.6 with a pipe system and related appurtenances.

## **3.0 EXISTING CONDITIONS**

### **3.1 Location of the Drain**

Considerations for Branch No. 6 as identified by this Report are contained within the property owned by the DND, located in W. Pt. Lot 6, Concession 4, City of Ottawa – Rideau Goulbourn Ward, former Township of Goulbourn, and the adjacent road allowance for Dwyer Hill Road. The proposed enclosure commences at a concrete headwall located at Station 6+480 along the current alignment of Branch No. 6 (as per the Robinson Consultants Inc. Rev. Nov. 2010 Engineer's Report). The modifications terminate at a ditch inlet catch basin (DICB) structure within the road allowance of Dwyer Hill Road along the current alignment of Branch No. 6 (as per the REV. Nov. 2010 Engineer's Report) at Station 6+660, for a total length of 180 metres. The remaining portions of Branch No. 6 both upstream and downstream of the modifications shall continue to be governed by the November 2010 Engineer's Report.

The Location of the drain and modifications are shown on the Location Plan - Figure 3.1.



**Robinson**  
Consultants

Title

## LOCATION PLAN

Fig. No.

**3.1**

Project

DOWDALL MUNICIPAL DRAIN - DND PROPERTY

Job No.

11035

Scale

1:40 000

Date

AUG. 2012

### **3.2 Drainage Basin and Limits**

The drainage basin for the Dowdall Municipal Drain is not modified by the modifications to Branch No. 6 for the DND property. The drainage basin limits for the Dowdall Municipal Drain and Branch No. 6 are shown on Figure 3.1 and Dwg. No. 05017-A2 of the November 2010 Robinson Consultants Inc. Engineer's Report. Dwg. No. 05017-A2 is included for reference in **Appendix A** of this report.

### **3.3 Drawings Forming Part of the Engineer's Report**

Dwg. No. 11035-AP1, has been prepared showing the plan and profile of the 'as-built' enclosure as well as construction details. Dwg. No. 11035-AP1 is provided in **Appendix A**.

## **4.0 DESIGN AND CAPACITY OF PROPOSED WORKS**

The drainage design for the proposed modifications was completed based on the calculated flow and hydrologic modeling provided for this portion of Branch No. 6 in the November 2010 Dowdall Municipal Drain Engineer's Report. Although this system is not considered to be a storm sewer, additional calculations were completed to ensure that the proposed design would meet the 5 year storm return period typically provided for in storm sewer design. Overland flow is provided by a swale along the alignment of the enclosure in the event that the capacity of the system is exceeded.

## **5.0 CONSTRUCTION**

All required construction was completed through a contract with the City of Ottawa following the completion of the adjacent construction on Branch No. 6.

## **6.0 ASSESSMENTS**

### **6.1 Proposed Enclosure**

The full cost of the design, report and construction for the modifications to Branch No. 6 is assessed as a special benefit to the DND as the owner of the property requesting the enclosure.

### **6.2 Adjacent Works**

All other costs for the construction of the open drain both upstream and downstream of the enclosure as provided for in the Rev. Nov. 2010 Robinson Consultants Inc. Engineer's Report are to be distributed as per that report.

## **7.0 MAINTENANCE**

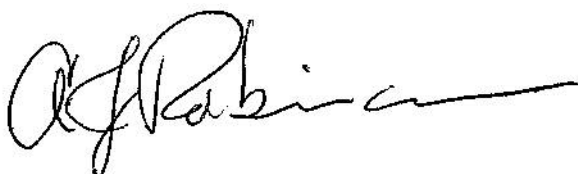
All costs for future maintenance are governed by and are to be distributed as per the 2010 Engineer's Report, with the exception that any cost for maintenance of the enclosed portion of the drain shall be assessed as a special benefit to the owner of the property (W. Pt. Lot 6, Con 4) for the enclosed portion of the drain (currently owned by DND).

## **8.0 PERMITS AND AUTHORIZATIONS**

Plans have been submitted for review and consideration for required permits and authorizations to the Rideau Valley Conservation Authority (RVCA) and the Ministry of Natural Resources – Species at Risk (MNR-SAR). The RVCA has confirmed that the work required for the enclosure is not subject to the Provincial Regulation 174/06 as the work is to be completed on lands under the federal jurisdiction. As such, no authorization is required under the RVCA regulations. However, as the works are subject to the Federal Fisheries Act, the RVCA, on the behalf of the Department of Fisheries and Oceans (under agreement) has issued a letter of advise in this regard, dated December 14, 2011, which is included as Appendix B. The MNR has confirmed that there are no additional requirements for the amended construction provided that it is completed in conjunction with the other portions of the Dowdall Municipal Drain.

All of which is respectfully submitted,

ROBINSON CONSULTANTS INC.

A handwritten signature in black ink, appearing to read 'A.J. Robinson', with a long horizontal flourish extending to the right.

A.J. Robinson, P.Eng  
Drainage Engineer

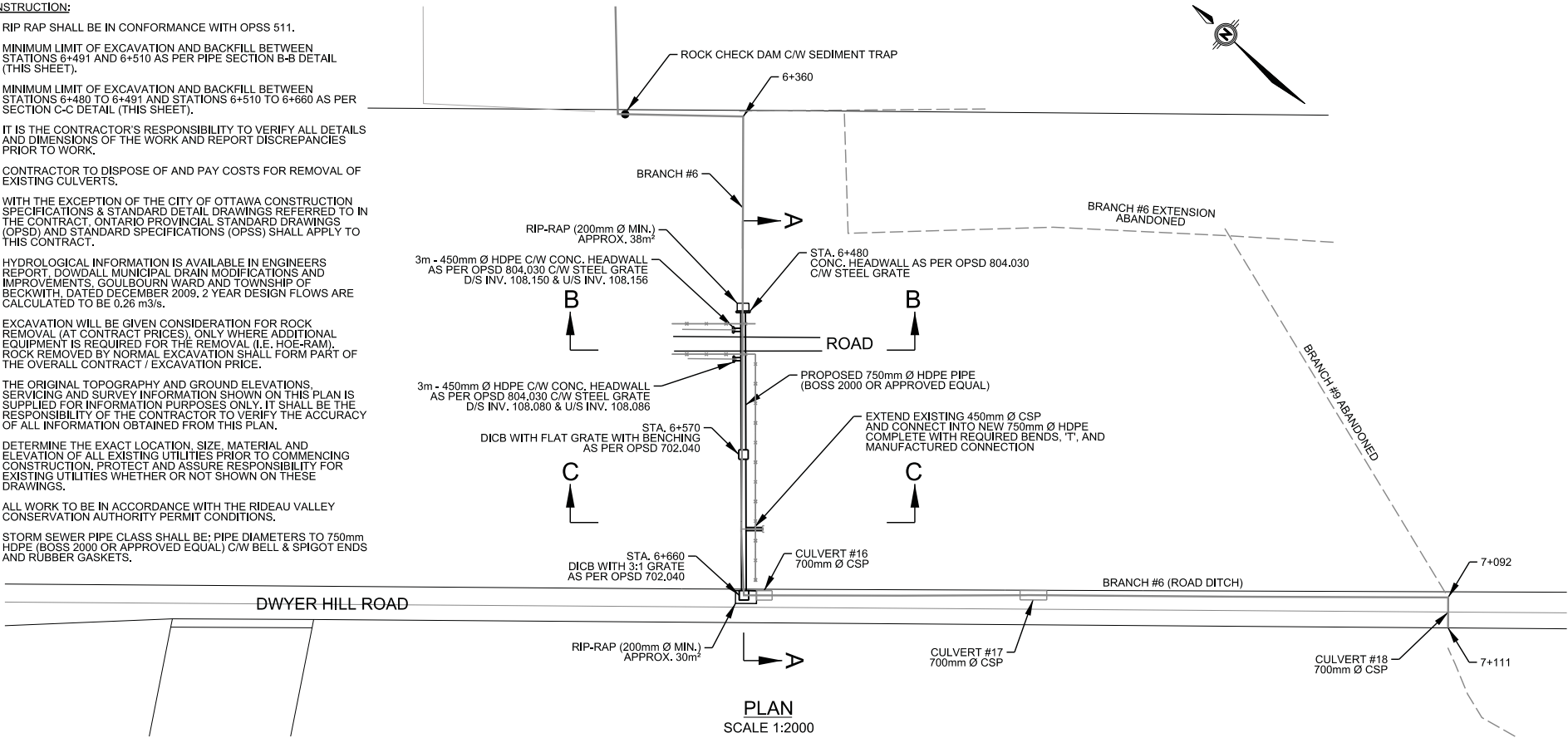
## Appendix A

### Drainage Plans

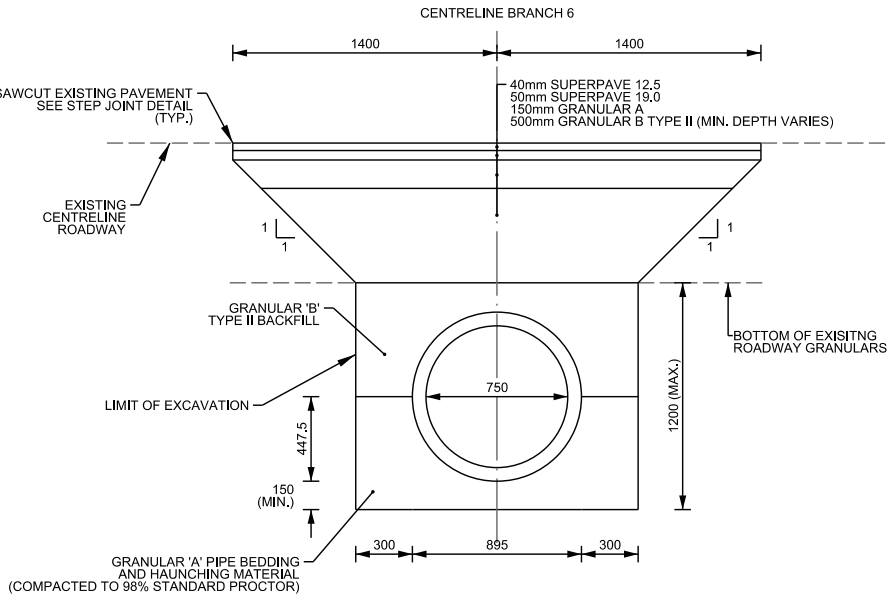


CONSTRUCTION:

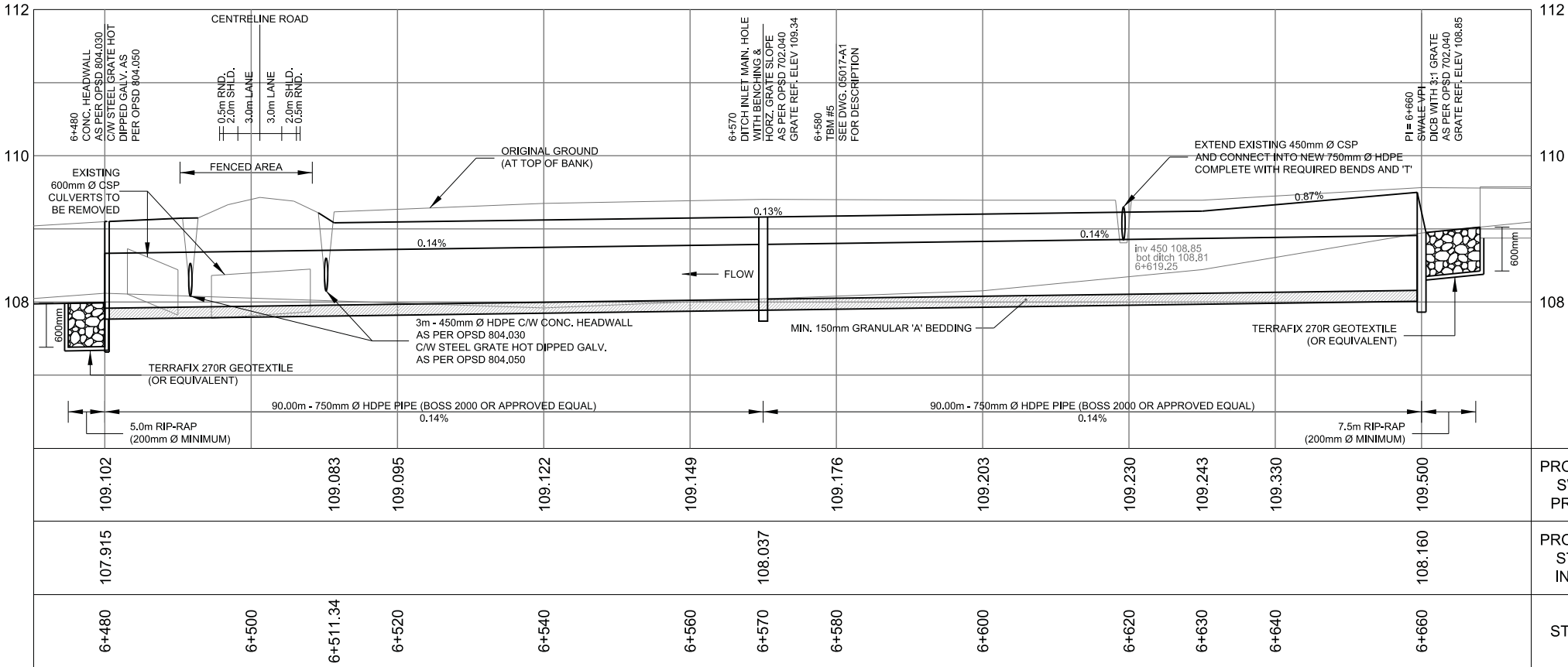
1. RIP RAP SHALL BE IN CONFORMANCE WITH OPSS 511.
2. MINIMUM LIMIT OF EXCAVATION AND BACKFILL BETWEEN STATIONS 6+491 AND 6+510 AS PER PIPE SECTION B-B DETAIL (THIS SHEET).
3. MINIMUM LIMIT OF EXCAVATION AND BACKFILL BETWEEN STATIONS 6+480 TO 6+491 AND STATIONS 6+510 TO 6+660 AS PER SECTION C-C DETAIL (THIS SHEET).
4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DETAILS AND DIMENSIONS OF THE WORK AND REPORT DISCREPANCIES PRIOR TO WORK.
5. CONTRACTOR TO DISPOSE OF AND PAY COSTS FOR REMOVAL OF EXISTING CULVERTS.
6. WITH THE EXCEPTION OF THE CITY OF OTTAWA CONSTRUCTION SPECIFICATIONS & STANDARD DETAIL DRAWINGS REFERRED TO IN THE CONTRACT, ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND STANDARD SPECIFICATIONS (OPSS) SHALL APPLY TO THIS CONTRACT.
7. HYDROLOGICAL INFORMATION IS AVAILABLE IN ENGINEERS REPORT, DOWDALL MUNICIPAL DRAIN MODIFICATIONS AND IMPROVEMENTS, GOULBOURN WARD AND TOWNSHIP OF BECKWITH, DATED DECEMBER 2009. 2 YEAR DESIGN FLOWS ARE CALCULATED TO BE 0.26 m<sup>3</sup>/s.
8. EXCAVATION WILL BE GIVEN CONSIDERATION FOR ROCK REMOVAL (AT CONTRACT PRICES) ONLY WHERE ADDITIONAL EQUIPMENT IS REQUIRED FOR THE REMOVAL (I.E. HOE-RAM). ROCK REMOVED BY NORMAL EXCAVATION SHALL FORM PART OF THE OVERALL CONTRACT / EXCAVATION PRICE.
9. THE ORIGINAL TOPOGRAPHY AND GROUND ELEVATIONS, SERVICING AND SURVEY INFORMATION SHOWN ON THIS PLAN IS SUPPLIED FOR INFORMATION PURPOSES ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ACCURACY OF ALL INFORMATION OBTAINED FROM THIS PLAN.
10. DETERMINE THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION, PROTECT AND ASSURE RESPONSIBILITY FOR EXISTING UTILITIES WHETHER OR NOT SHOWN ON THESE DRAWINGS.
11. ALL WORK TO BE IN ACCORDANCE WITH THE RIDEAU VALLEY CONSERVATION AUTHORITY PERMIT CONDITIONS.
12. STORM SEWER PIPE CLASS SHALL BE: PIPE DIAMETERS TO 750mm HDPE (BOSS 2000 OR APPROVED EQUAL) C/W BELL & SPIGOT ENDS AND RUBBER GASKETS.



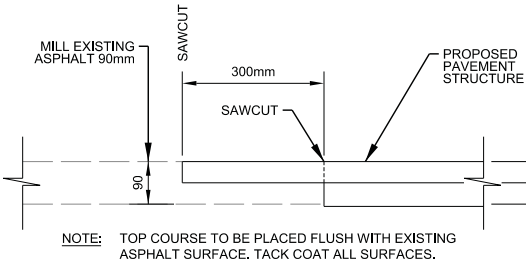
PLAN  
SCALE 1:2000



PIPE IN ROADWAY - SECTION B-B  
(STA. 6+491 TO STA. 6+510)  
N.T.S.

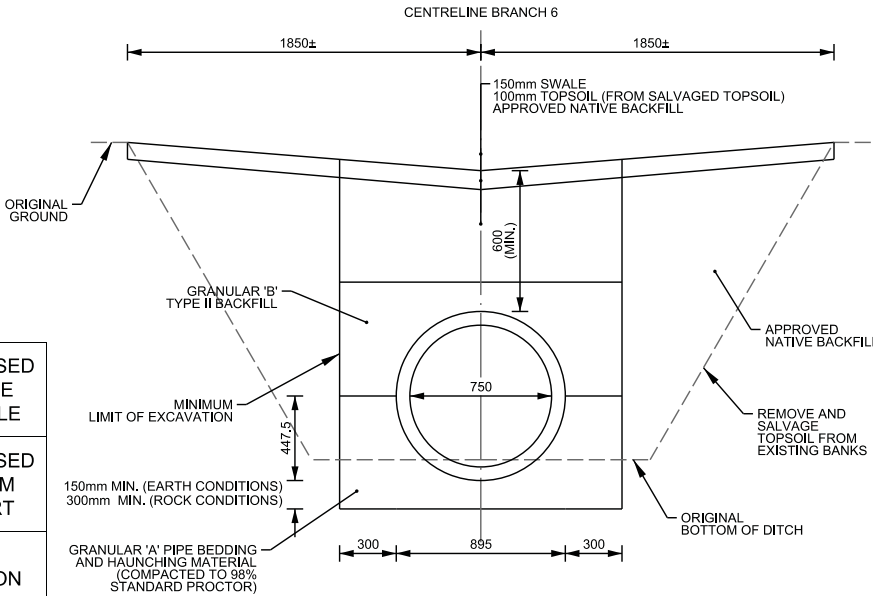


LONGITUDINAL - SECTION A-A  
SCALE 1:400



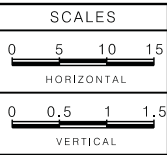
NOTE: TOP COURSE TO BE PLACED FLUSH WITH EXISTING ASPHALT SURFACE. TACK COAT ALL SURFACES.

SAWCUT DETAIL  
N.T.S.



PIPE IN EXISTING DITCH - SECTION C-C  
(STA. 6+510 TO STA. 6+660)  
N.T.S.

No.	DATE	REVISION	BY	No.	DATE	REVISION	BY
1	29.11.11	ISSUED FOR RVCA APPROVAL	BSA				
2	01.08.12	CITY OF OTTAWA APPROVAL	LF				



**Robinson  
Consultants**

CONSULTING ENGINEERS  
350 Palladium Drive  
Kanata, Ontario, K2V 1A8  
Telephone (613) 592-6060

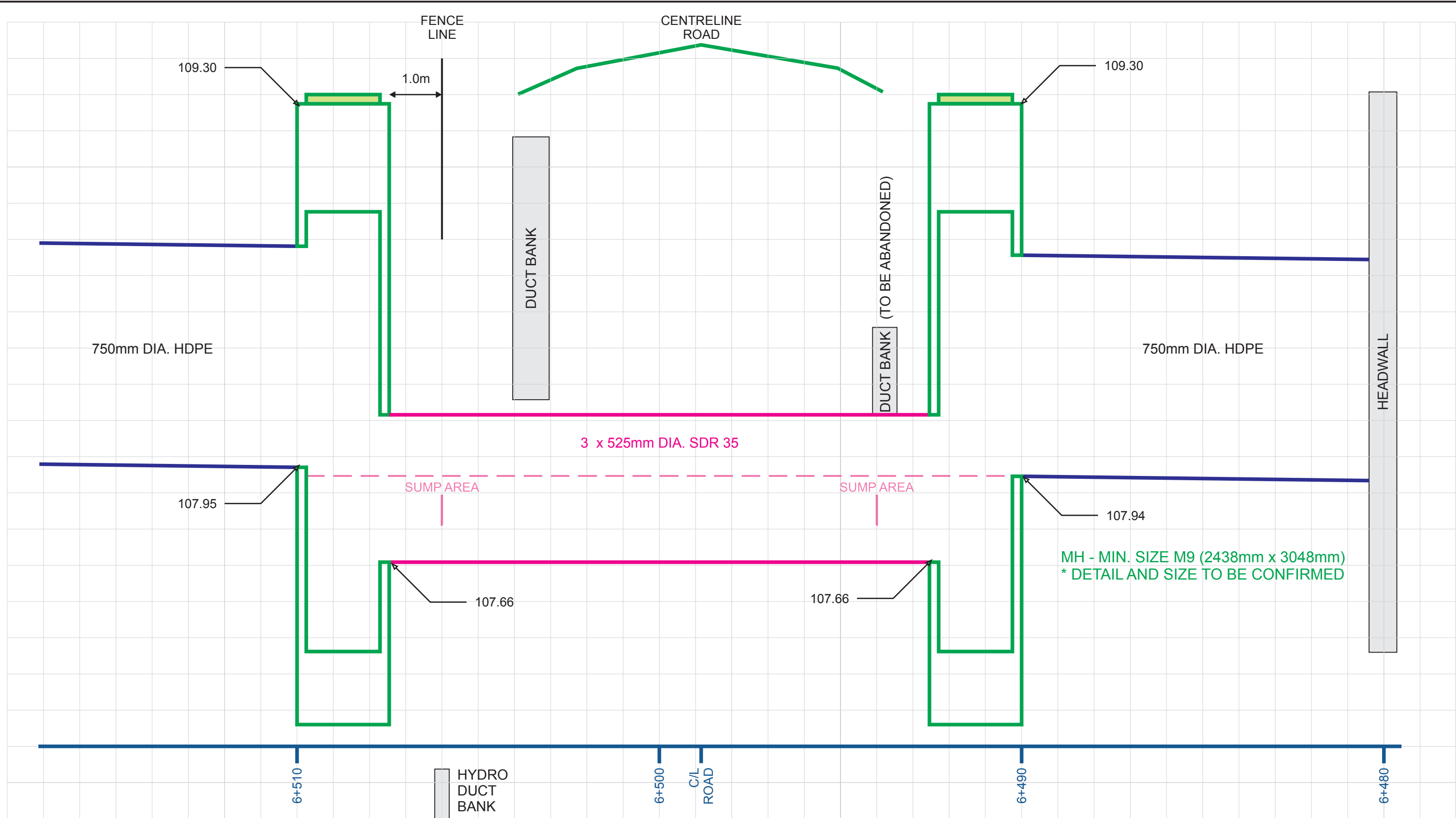
DESIGN	BSA
CHECKED	LF
DRAWN	ROV
CHECKED	LF
APPROVED	AJR

CITY OF OTTAWA

DOWDALL MUNICIPAL DRAIN

BRANCH #6 - PLAN & PROFILE  
ENCLOSED DRAIN SECTION

PROJECT No.	11035
CONTRACT No.	
DATED	AUGUST 2012
DWG. No.	11035-AP1



## Appendix B

Letter of Advise -- Fisheries Act

Date: December 14th, 2011  
File No. RVST-38/11

Attn: Mr. David Ryan  
Corporation of the City of Ottawa  
110 Laurier Ave W  
Ottawa ON  
K1P 1J1

**RE: The Dowdall Municipal Drain – Branch No. 6 enclosure proposal of approximately 132m of a type F municipal drain on the property of the Department of National Defense, located in lot 6 concession 4 formerly in Goulbourn ward, now in the City of Ottawa**

Dear Mr. Ryan,

The Rideau Valley Conservation Authority is under a Level II Agreement with the Department of Fisheries and Oceans - Canada in which we are responsible for the review of proposed works as to their impacts upon the fish habitats of the watershed of the Rideau River.

It is our understanding that your proposal consists of:

- *The proposal to enclose approximately 132m of a type F municipal drain known legally as the Dowdall Municipal Drain – Branch No. 6 on the property of the Department of National Defense.*

as outlined in the following documents

- *The supporting drawing titled "Branch # 6 – Plan and Profile enclosed drain section", prepared by Robinson Consultants, Project No. 11035, Dwg. No. 11035-AP1, dated November 2011.*

We have reviewed your proposal under the habitat protection provisions of the *Fisheries Act*. The measures described in your plans are not adequate to protect fish and fish habitat. Therefore, please ensure that the following additional measures are incorporated into your plans.

1. No in water work is to occur between March 15 and June 30, during any given year to protect local fish populations during their spawning and nursery time periods.
2. To mitigate potential sediment releases into fish habitat, in the event of an unexpected rainfall, silt barriers and/or traps should be placed in the channel during the proposed works and until the banks have been stabilized. It is incumbent on the proponent and his/her contractors to ensure that sediment and erosion controls measures are functioning properly and are maintained/upgraded as required. Sediment and/or fines will be considered a deleterious substance. Section 36 (3) of the *Fisheries Act* of Canada prohibits persons from depositing such substances in fish habitat.
3. Operate machinery on land and in a manner that minimizes disturbance to adjacent watercourses.
  - Machinery is to arrive on site in a clean condition and is to be maintained free of fluid leaks.
  - Wash, refuel and service machinery and store fuel and other materials for the machinery away from the water to prevent deleterious substances from entering the water.
  - Keep an emergency spill kit on site in case of fluid leaks or spills from machinery.



- Activities such as equipment refueling and maintenance must be conducted away from the water to prevent entry of petroleum products, debris, or other deleterious substances into the water
4. Install and maintain effective sediment control measures before, during and after the work to prevent re-suspended sediment from spreading to adjacent areas. Inspect sediment control measures regularly and make all necessary repairs if any damage or leakage is discovered. Once the work is complete allow sufficient time for the disturbed areas to be stabilized prior to the removal of sediment control measures.
  5. If there is water in the drain at the time of the proposed construction a fish stranding mitigation program shall be implemented by a fisheries person who is familiar with the fish species in this area immediately following isolation to ensure that fish are removed from the work site and released immediately downstream of the work area.
  6. All disturbed soils associated with the work, including spoil piles, should be stabilized immediately upon completion of work. Stabilize any waste materials removed from the work site, above the ordinary high water mark, to prevent them from entering any watercourse. Spoil piles could be contained with silt fence, flattened, covered with biodegradable mats or tarps, and/or planted with preferably native grass or shrubs.
  7. Existing flows should be maintained downstream of the work area without interruption, during all stages of the work.
  8. Silt or debris that has accumulated around the temporary rock check dams should be removed prior to their withdrawal.
  9. Develop a response plan that is to be implemented immediately in the event of a sediment release or spill of a deleterious substance. This plan is to include measures to: a) stop work, contain sediment-laden water and other deleterious substances and prevent their further migration into the watercourse and downstream receiving watercourses; b) notify the RVCA and all applicable authorities in the area c) promptly clean-up and appropriately dispose of the sediment-laden water and deleterious substances; and d) ensure clean-up measures are suitably applied so as not to result in further alteration of the bed and/or banks of the watercourse.
  10. Work in water shall not be conducted at times when flows are elevated due to local rain events, storms or seasonal floods.

By implementing these additional measures, it is our opinion that the proposed works and undertakings will not likely result in the harmful alteration, disruption or destruction (HADD) of fish habitat, which is prohibited unless authorized by DFO. These are recommendations to ensure that the proposed works will likely not result in a HADD of fish habitat. Therefore a subsection 35(2) authorization is not necessary.

You could contravene subsection 35(1) of the *Fisheries Act* if a HADD of fish habitat results from any change in your proposed plan or from failure to properly implement these additional measures. Subsection 35(1) states, "*no person shall carry on any work or undertaking that results in the harmful alteration, disruption or destruction of fish habitat.*"

If these plans have changed since the time of submission, the advice in this letter may no longer apply and you should consult with us to determine if further review is required.

**NOTE:** This advice has been given based upon the information received as annotated above. If there are further changes to the location and / or operational nature of in water works, such changes should be discussed with the RVCA. Changes that result in the harmful alteration, disruption and / or destruction of fish habitat could result in a further review of 8 to 12 weeks.

If the proposed work is carried out as per the above conditions to the Rideau Valley Conservation Authority conflict with Section 35 of the Fisheries Act should be avoided. This section states:

*"No person shall carry on any work or undertaking that results in the harmful alteration, disruption or destruction of fish habitat."*

This is a *letter of advice* as to how the project can be implemented in a manner that should avoid conflict with Section 35 (1) of the Fisheries Act of Canada. It is not a permit to proceed with the works. Nothing in this letter is intended to confer upon you the exclusive use or occupation of Provincial or Federal Crown lands. This letter of advice does not absolve the proponent from the responsibility of securing any other permits / permissions from other agencies, including but not necessarily limited to:

(a) Your local Municipality who manages development in accord with the Ontario Planning Act and the Building Code Act

(b) Provincial Agencies such as the Ontario Ministry of Natural Resources who manage shoreline works through such legislation as Lakes and Rivers Improvement Act, Public Lands Act and the Beds of Navigable Waters Act

(c) Your local Conservation Authority who manage Regulated Flood plains and Alterations to Waterways through the Conservation Authorities Act. Conservation Authorities also provide advice to DFO - Canada regarding Fish Habitat.

(d) Federal agencies such as the Canadian Coast Guard , Prescott , (Navigable Waters Protection Act) or Parks Canada Rideau Canal , Smiths Falls , (Heritage Canal Regulations).

Yours truly,



Jennifer Lamoureux,  
Aquatic and Fish Habitat Biologist, RVCA

C.c. Andy Robinson P. Eng., Robinsons Consultants  
Major Ronald Carriere, CANSOFCOM COS FD  
Mark Ferguson, DFO Eastern Ontario District