

# RIDING MOUNTAIN NATIONAL PARK

## CLEAR LAKE CABIN AREA (CLCA)

### WATER AND WASTEWATER EXTENSIONS

### (ACCESS TO EACH CABIN)

#### PLAN INDEX:

- C01 GENERAL PLAN
- C02 PROFILES 1-4
- C03 PROFILES 5-10
- C04 WASTEWATER SEWER DETAILS
- C05 WATERMAIN DETAILS



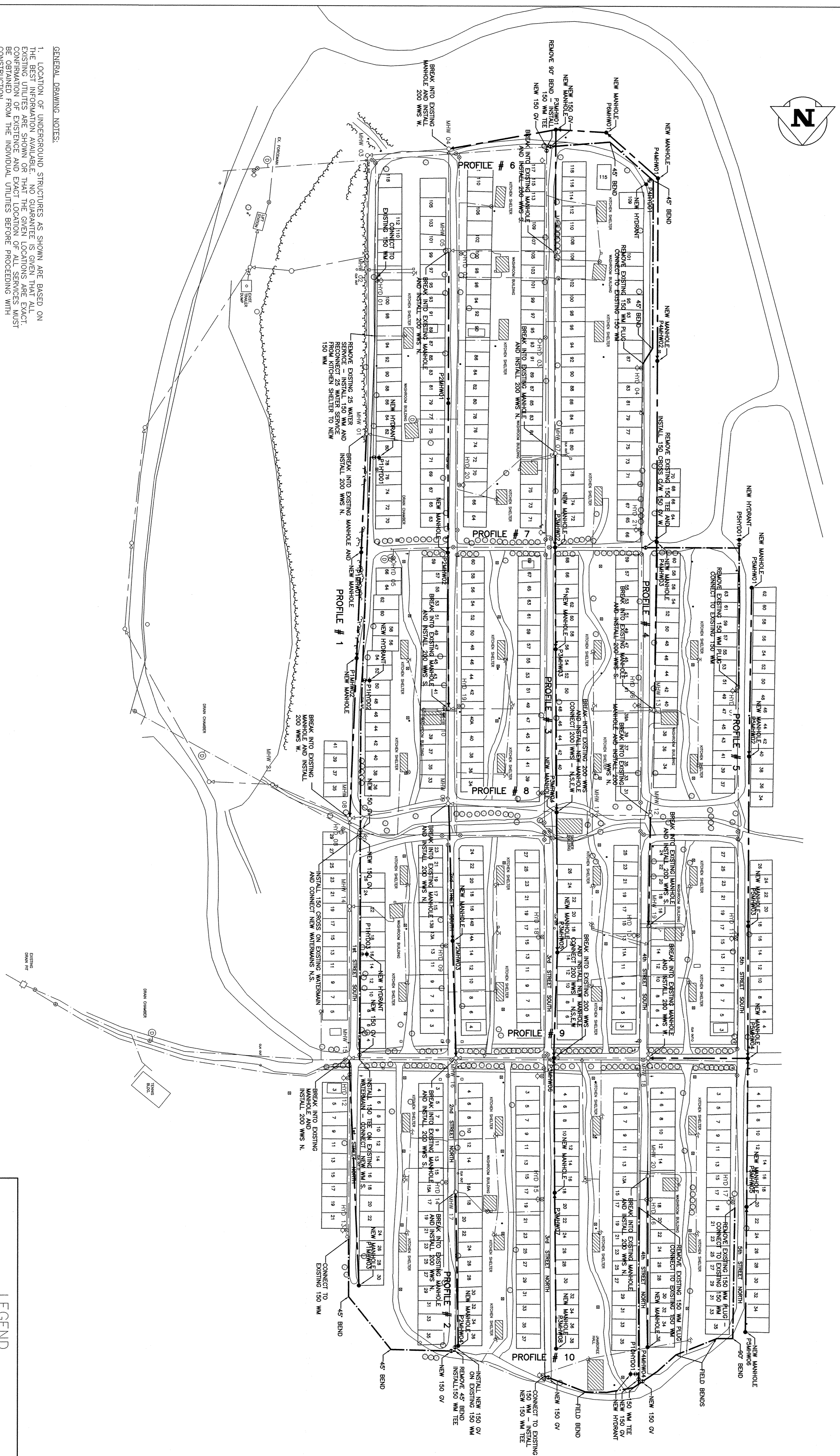
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**MARCH 2013**  
PROJECT NUMBER  
131-13930-00



**GENERAL DRAWING NOTES**

1. LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE LOCATION OF EXISTING STRUCTURES AND UTILITIES. EXISTING UTILITIES ARE SHOWN ON THE GROUND CONDITIONS AND EXACT CONFORMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE DETERMINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.
2. DESCRIPTION OF PROPERTY LIMITS, AND EXISTING AND/OR PROPOSED UTILITIES ARE SHOWN ON THE GROUND CONDITIONS AND EXACT CONFORMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE DETERMINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.
3. EXISTING GROUND LOCATIONS (AS INDICATED ON DRAWING) ARE TO BE CONFIRMED DURING CONSTRUCTION.
4. ALL TOPOGRAPHIC INFORMATION HAS BEEN PROVIDED BY OTHERS.
5. PIPE SIZING, HYDRAULIC ANALYSIS AND DOWN STREAM CAPACITIES HAVE BEEN DESIGNED BY OTHERS.
6. DRAWING IS IN METRIC. WHOLE NUMBERS INDICATE MILLIMETRES, AND DECIMALIZED NUMBER INDICATE METRES.

**BENCHMARK INFORMATION**

ELEVATION: 817.716 m  
 DEEP BENCH MARK IN MANHOLE IN LAWN OF INTERPRETIVE CENTRE  
 ALONG MAIN STREET, 19.1 M SOUTH OF PROJECTION OF NORTH  
 TO BUILDING, 10.5 M NORTHWEST OF MOST WESTERN OF TREE  
 MAPLE TREES, 5.3 M NORTHWEST OF CURB ALONG DRIVEWAY.  
 UNIQUE NUMBER: 81M146

PRIOR TO CONSTRUCTION, BENCHMARK TO BE VERIFIED THAT THE  
 ELEVATION CONFORMS TO EXISTING SITE CONDITIONS.

**LEGEND**

- | EXISTING |              | PROPOSED |                         |
|----------|--------------|----------|-------------------------|
| ○        | HYDRANT      | +        | MANHOLE                 |
| ◇        | GATE VALVE   | —        | WATER PIPE              |
| —        | SEWER PIPE   | —        | GREY WATER DUMP STATION |
| ⊙        | CURBSTOP     | ⊙        | WATERMAIN DRAIN CHAMBER |
| ⊙        | UTILITY POLE | ⊙        | MTS FEDESTAL            |

 Certificate of Authorization M. 8079 Date March 19, 2009		 D.H. GENIVAR P. Eng. 1975	
No.	Date	Description	Drawn by / Approved
1	13/02/04	ISSUED FOR REVIEW	M.P.M.
Revision / Revisions A 1 Detail number 1 Number of sheets B 8 Sheet number 8 Sur number number			
Linear dimensions in millimetres Dimensions in metres		Client Acceptance / Acceptation du client Signature _____ Date _____ File No. / N. de dossier _____	

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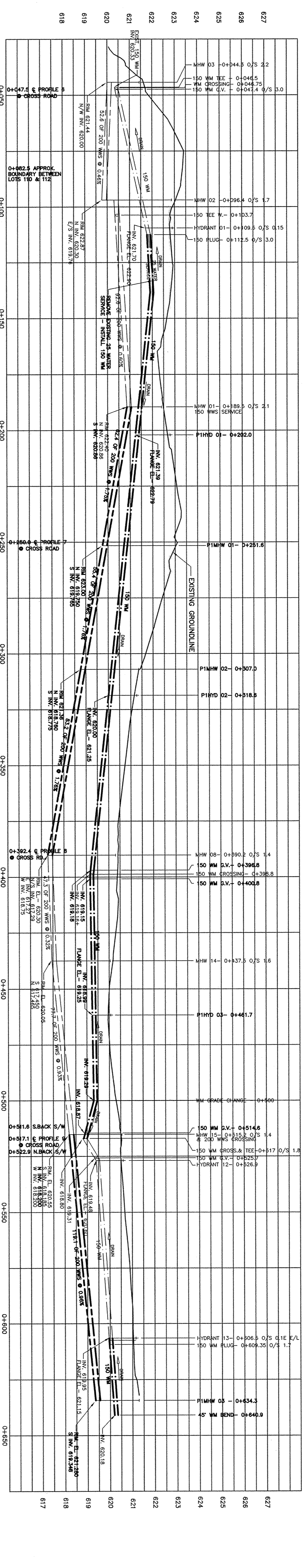
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Project number / Numéro de projet: 131-13930-00  
 Project title / Titre du projet:  
**CLEAR LAKE CABIN AREA (CLCA)  
 WATER AND WASTEWATER  
 EXTENSIONS  
 (ACCESS TO EACH CABIN)**

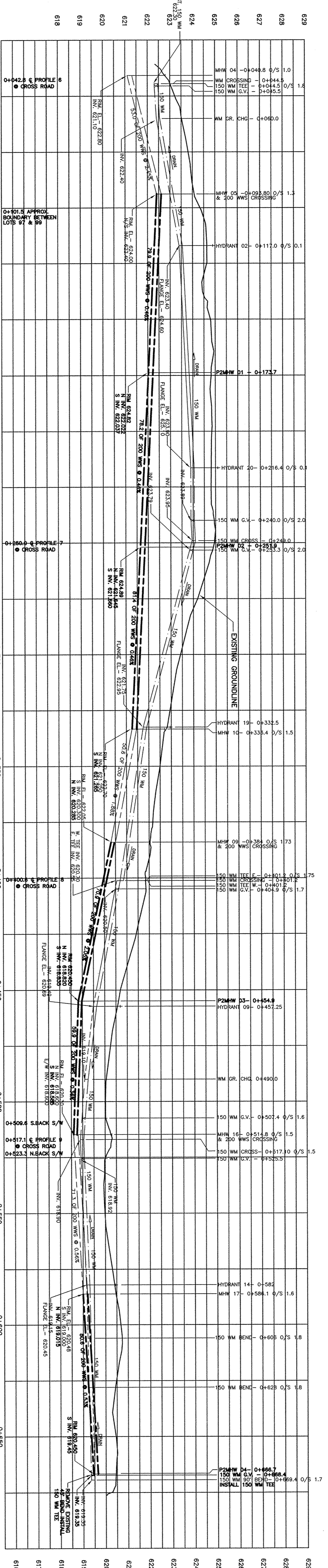
**GENERAL PLAN**

Scale / Échelle	Date
1:1,000	JANUARY 1, 2013
Drawn by / Dessiné par	Date
CORY WITT	
Checked by / Vérifié par	Date
CHRIS HANSON	
Approved by / Approuvé par	Date
W.H.B.	
Project No. / N. du projet	Drawn No. / N. du dessin
Client Reference No. / Numéro de référence du client	Sheet No. / Feuille N.
C01	1

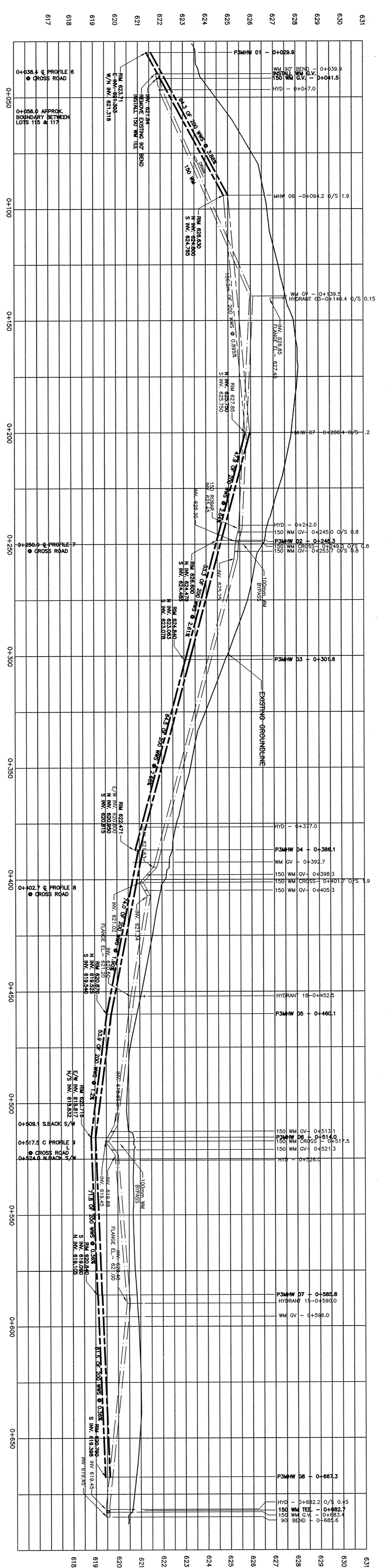
**PROFILE 1  
(1st STREET)**



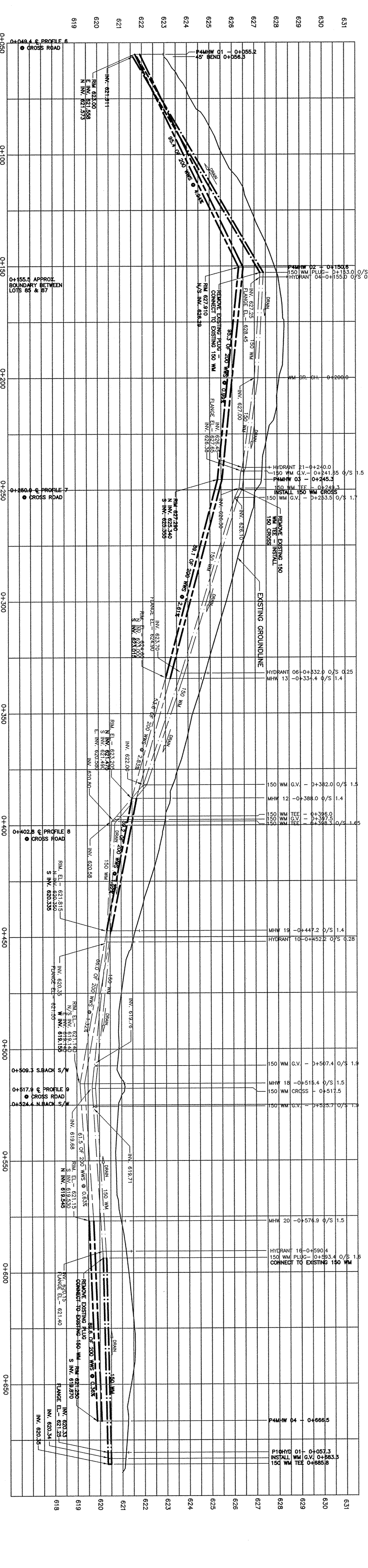
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(2nd STREET)**



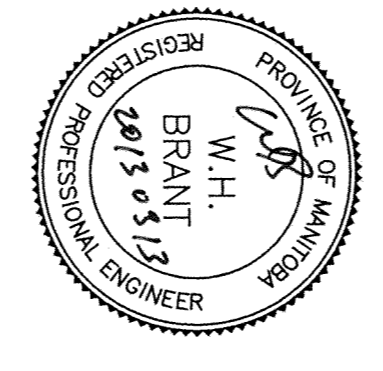
**PROFILE 3  
(3rd STREET)**



**PROFILE 4  
(4th STREET)**



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1	12/02/04	ISSUED FOR REVIEW	L.B.	M.P.M.



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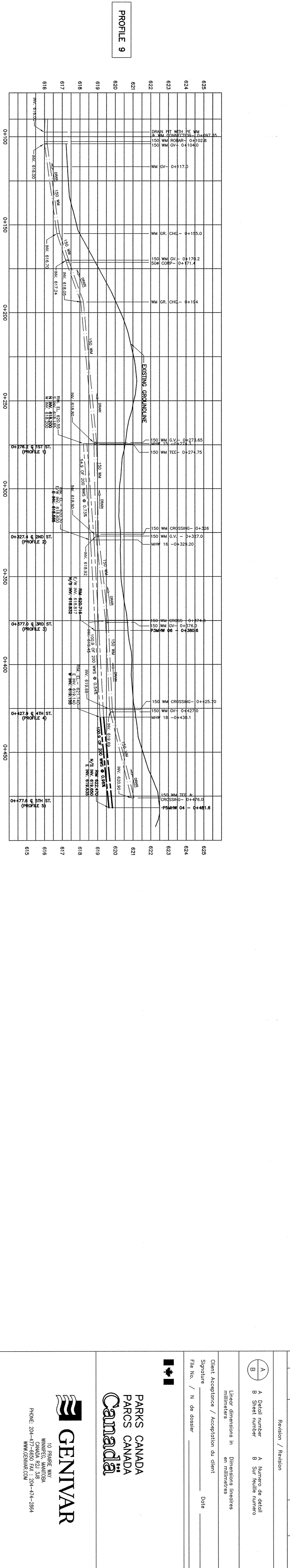
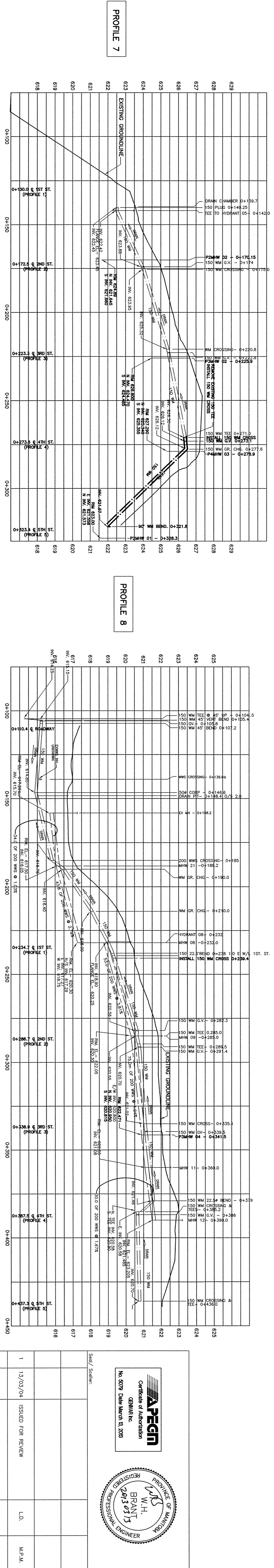
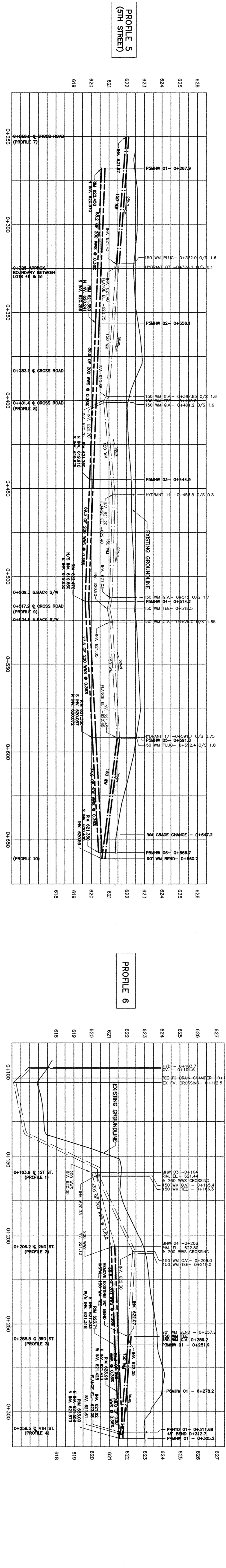
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MONTÉE, SUITE 204  
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Project number / Numéro projet: 131-13930-00

Project title / Titre du projet: CLEAR LAKE CABIN AREA (CLCA) WATER AND WASTEWATER EXTENSIONS (ACCESS TO EACH CABIN)

Profiles: # 1 TO PROFILE # 4

Scale / Échelle	Drawn / Dessiné par	Date
1:1000 (V) 1:00 (H)	CORY WITT	JANUARY 1, 2013
Checked / Vérifié par	CHRIS HANSON	DATE
Approved by / Approuvé par	W.H.S.	DATE
Project No. / N. du projet	Sheet No. / N. de la page	Sheet No. / N. de la page
002		2



Project number / Numéro projet 131-13930-00  
 Project title / Titre de projet  
 CLEAR LAKE CABIN AREA (LOCA)  
 WATER AND WASTEWATER  
 EXTENSIONS  
 (ACCESS TO EACH CABIN)  
 PROFILES:  
 PROFILE # 5 TO PROFILE # 10

Scale / Échelle  
 1:1000 (H) 1:100 (V)

Drawn by / Dessiné par  
 CONN WITT  
 Checked by / Vérifié par  
 CHRIS HANSON  
 W.H.B.

Project No. / N. du projet  
 Drawing reference No. / Numéro de référence de dessin  
 003

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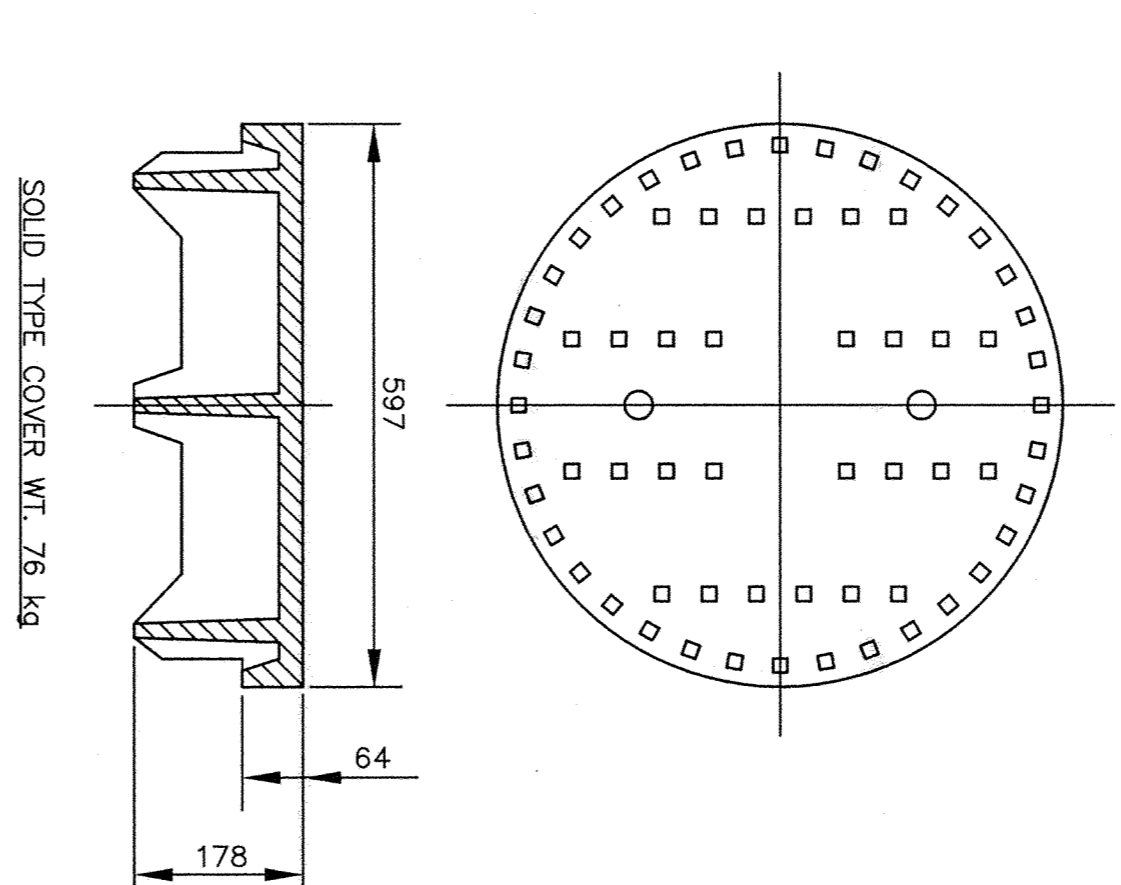
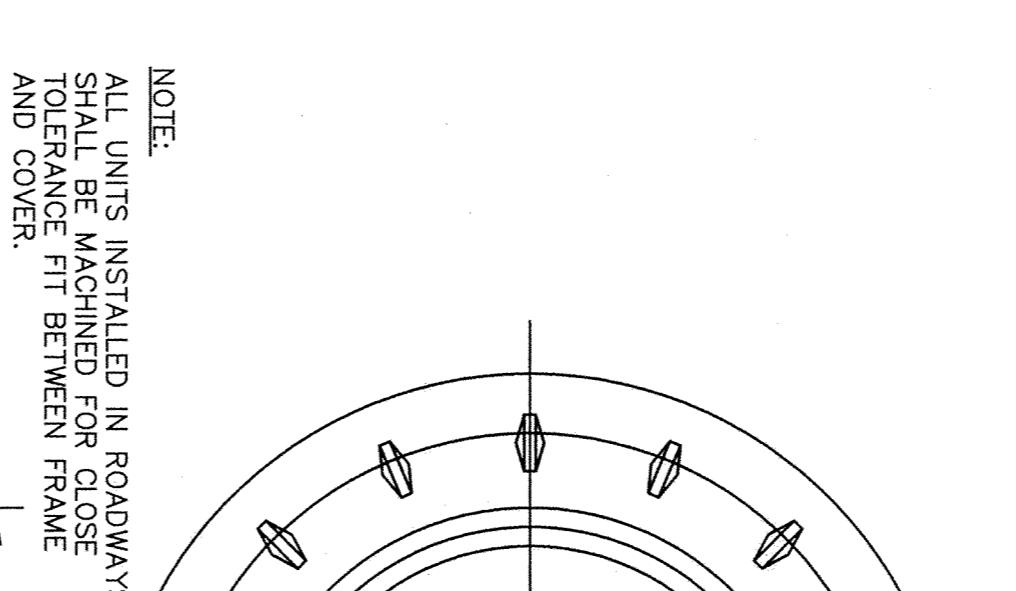
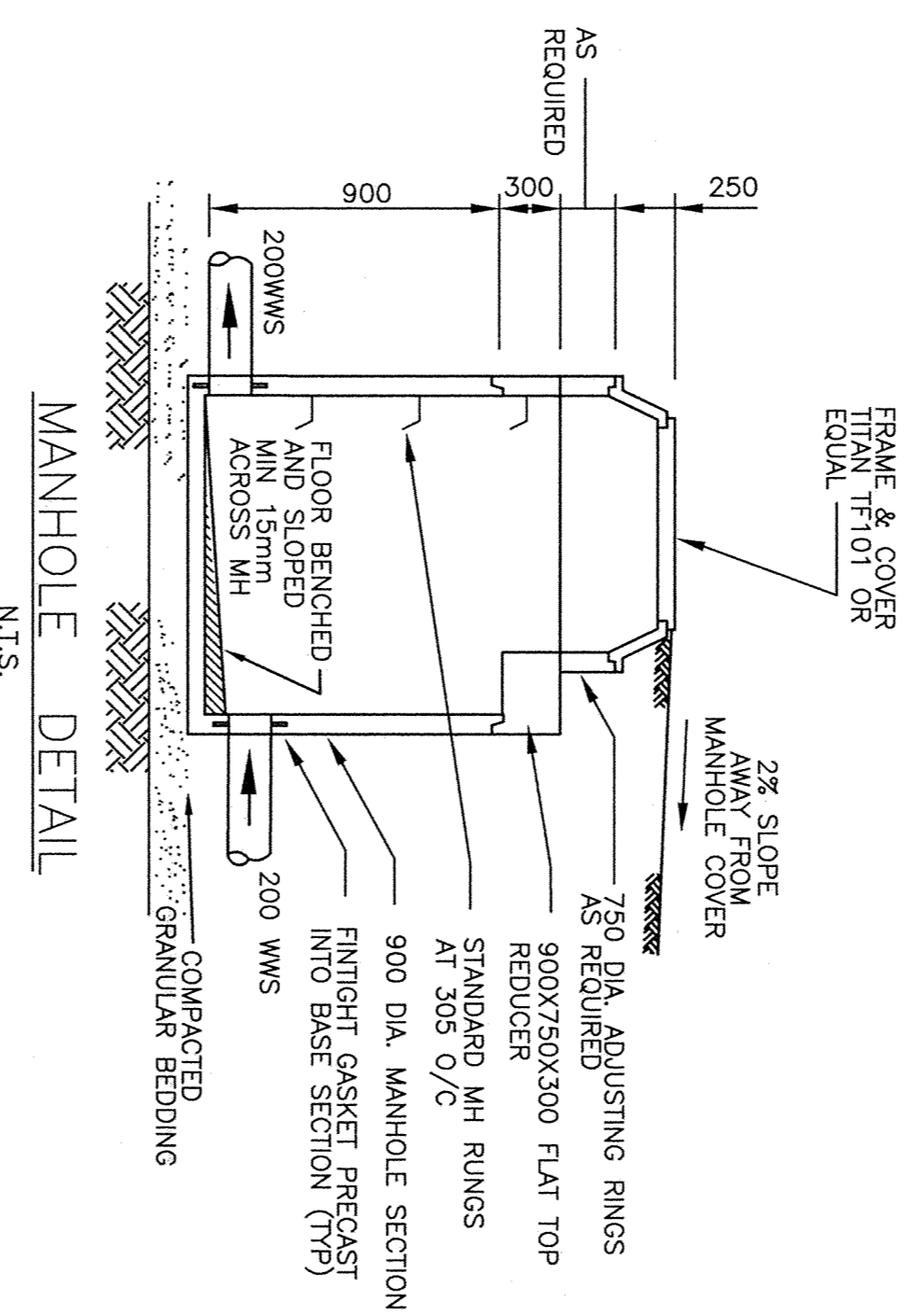
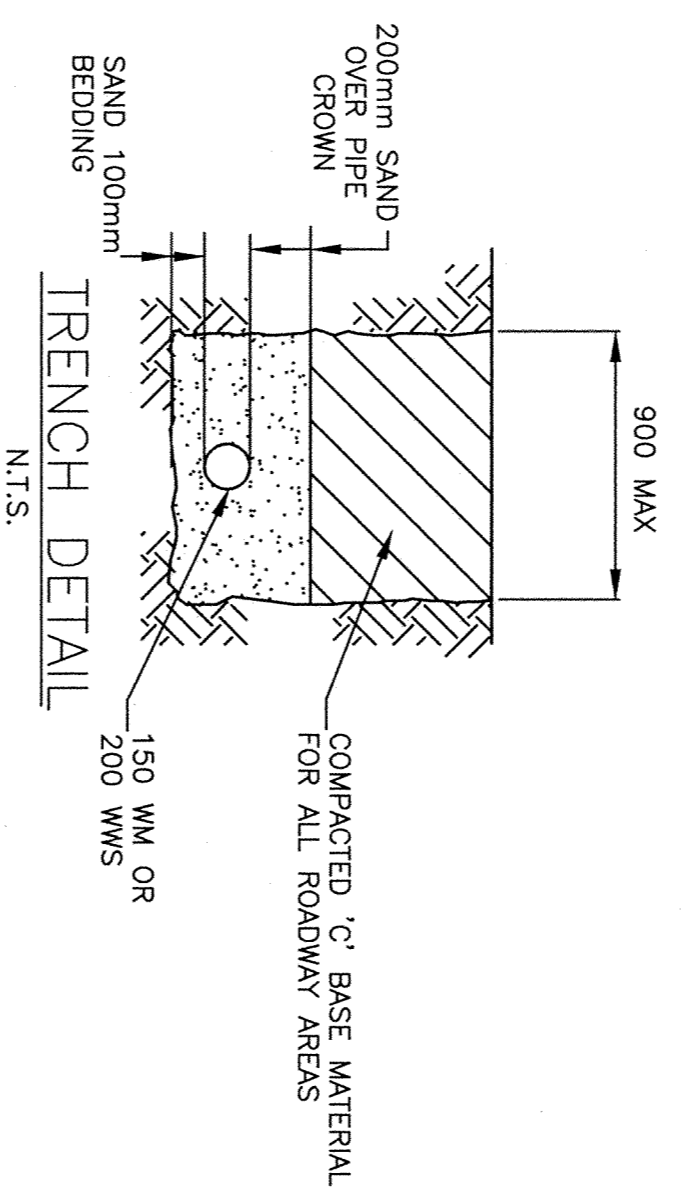
**APRIN**  
 Canada's Adoption  
 Centre  
 1600 Dufferin Street  
 Winnipeg, MB R2C 2S8

**W.H. BRANT**  
 2013 0315  
 PROFESSIONAL ENGINEER

No.	Date	Description	Drawn by / Dessiné par	Approved / Approuvé
1	1/3/2014	ISSUED FOR REVIEW	L.O.	M.J.M.

Client Acceptance / Acceptation du client  
 Signature \_\_\_\_\_ Date \_\_\_\_\_  
 Title No. / N. de dossier \_\_\_\_\_  
 Lienar dimensions in millimeters / Dimensions linéaires en millimètres

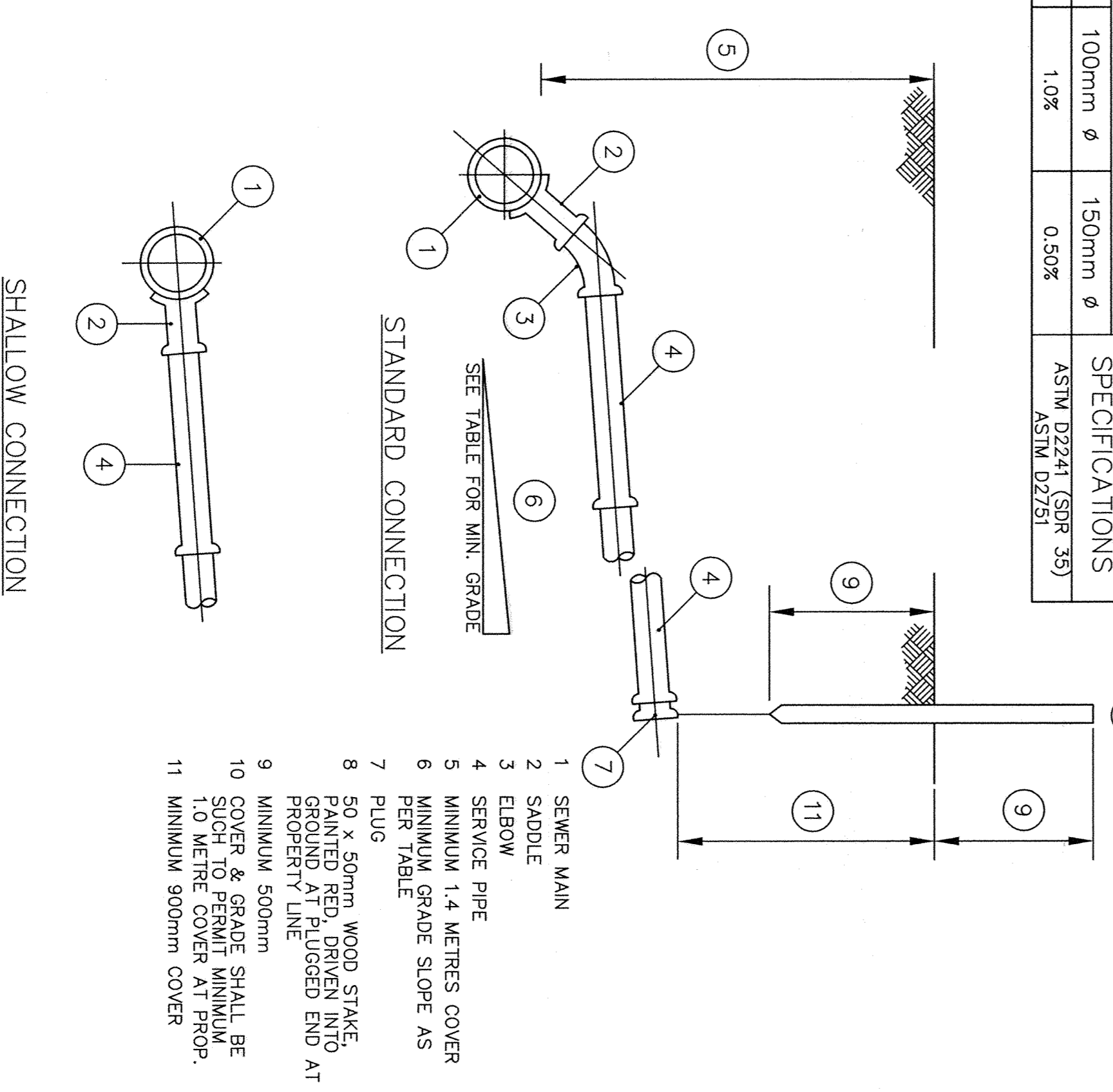
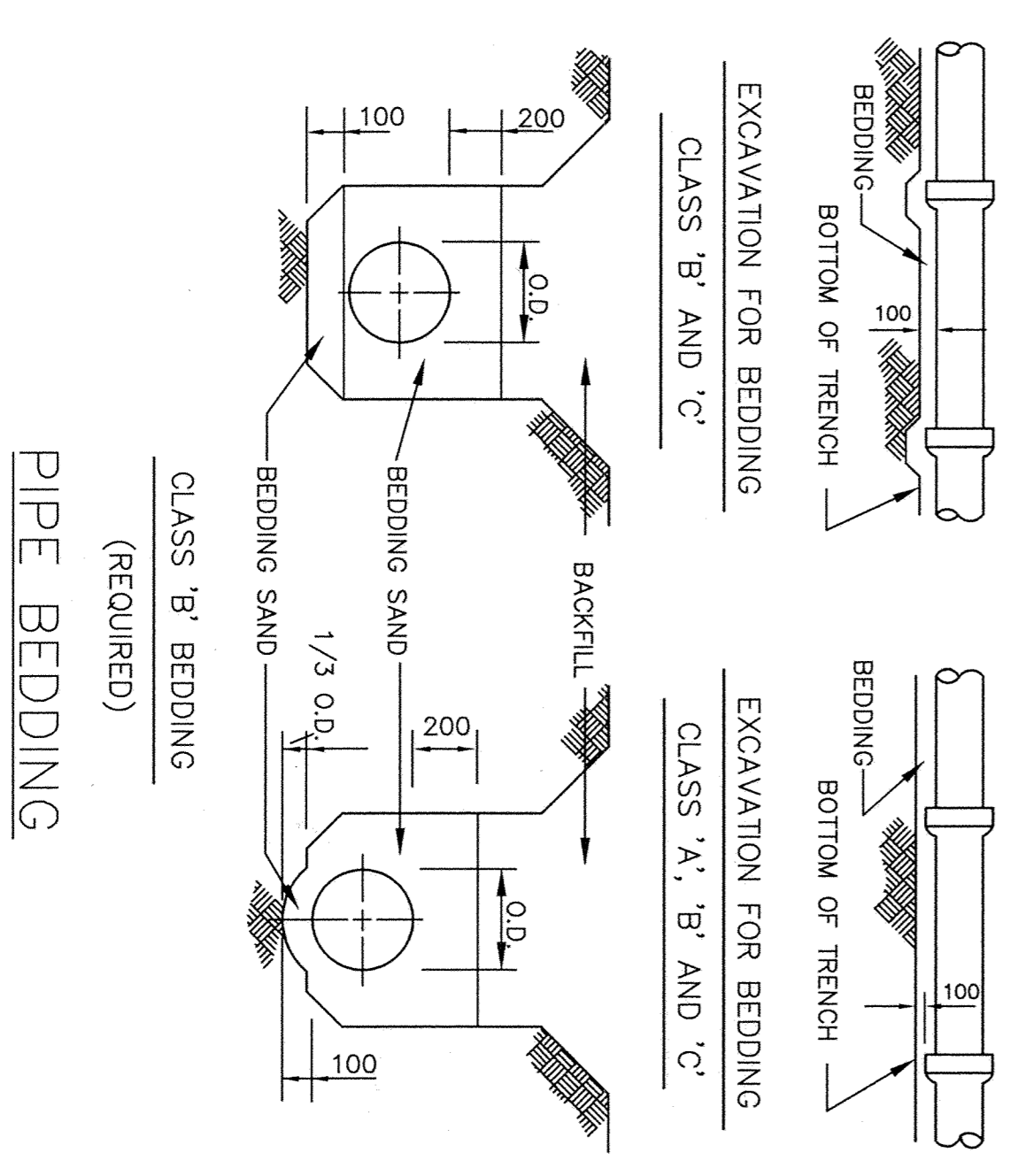
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 A Detail number / Numéro de détail  
 B Sheet number / Numéro de feuille



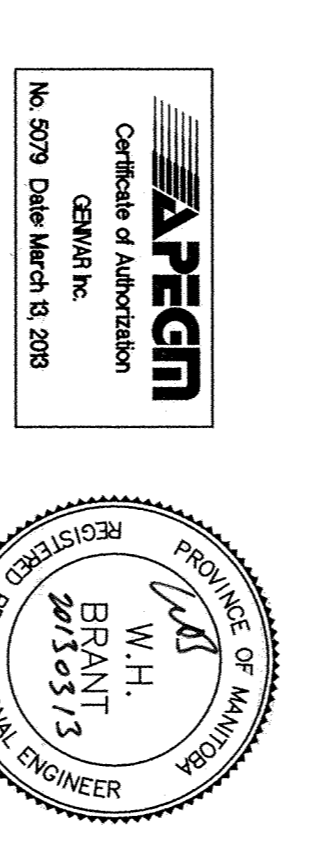
SOLID TYPE MANHOLE FRAME & COVER UNIT  
N.T.S.

NOTE:  
ALL UNITS INSTALLED IN ROADWAYS SHALL BE MACHINED FOR CLOSE FIT BETWEEN FRAME AND COVER.

MINIMUM PERMISSIBLE GRADE (SLOPE)	MATERIAL SPECIFICATIONS
PVC	100mm $\phi$ 150mm $\phi$ ASTM D2238 (SPP-39) ASTM D2231



- 1 SINKER MAN
- 2 SLOPE
- 3 SERVICE PIPE
- 4 SERVICE PIPE
- 5 MINIMUM 1.4 METRES COVER PER TABLE
- 6 50 X 50mm WOOD STAKE TO GROUND AT FLOUSED END AT PROPERTY LINE
- 7 PLUG
- 8 MINIMUM 500mm
- 9 MINIMUM 900mm
- 10 COVER & GRADE SHALL BE 1.0 METRE COVER AT PROP.
- 11 MINIMUM 900mm COVER



No.	Date	Description	Drawn By	Approved
1	12/03/04	ISSUED FOR REVIEW	L.O.	M.P.M.

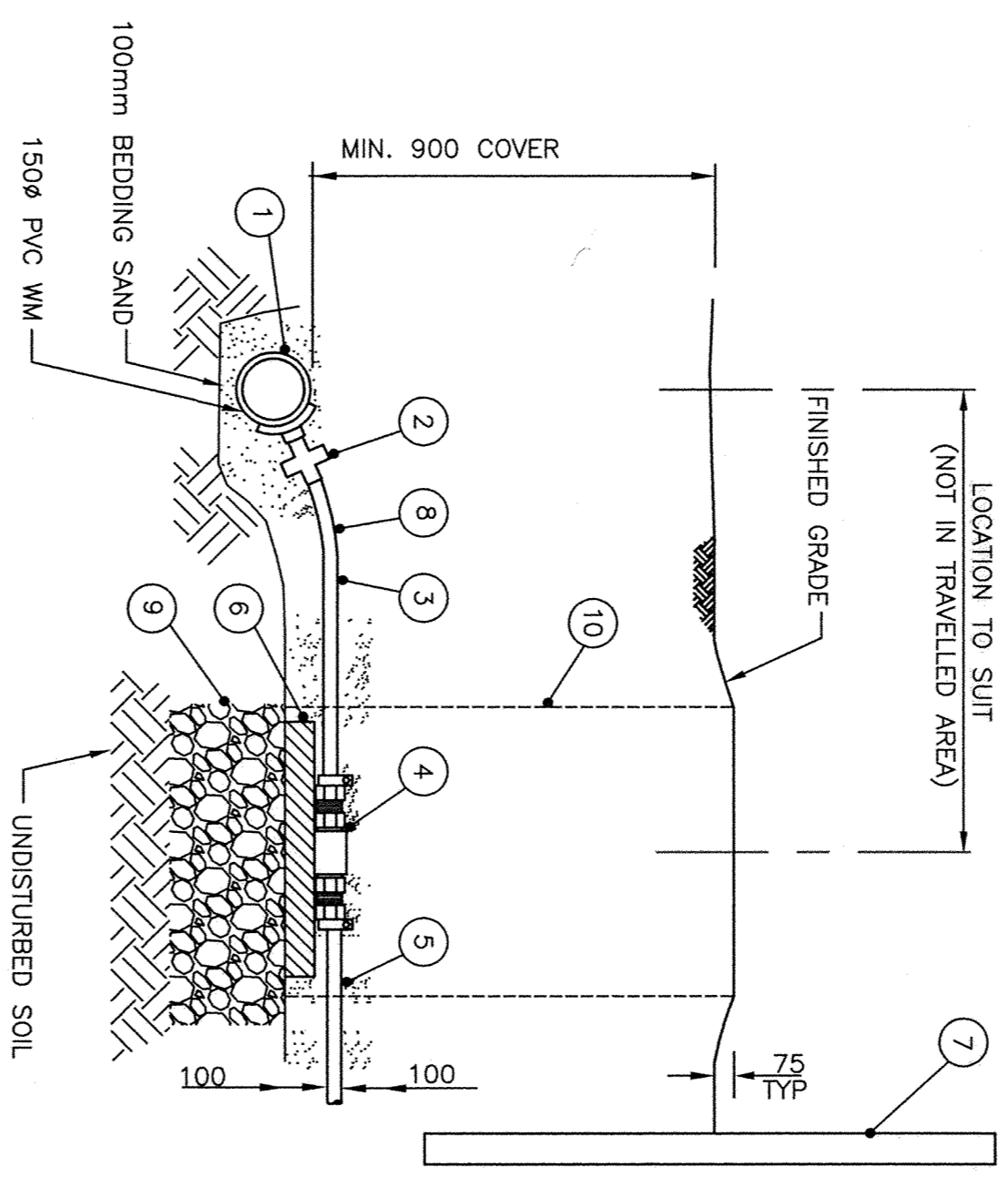
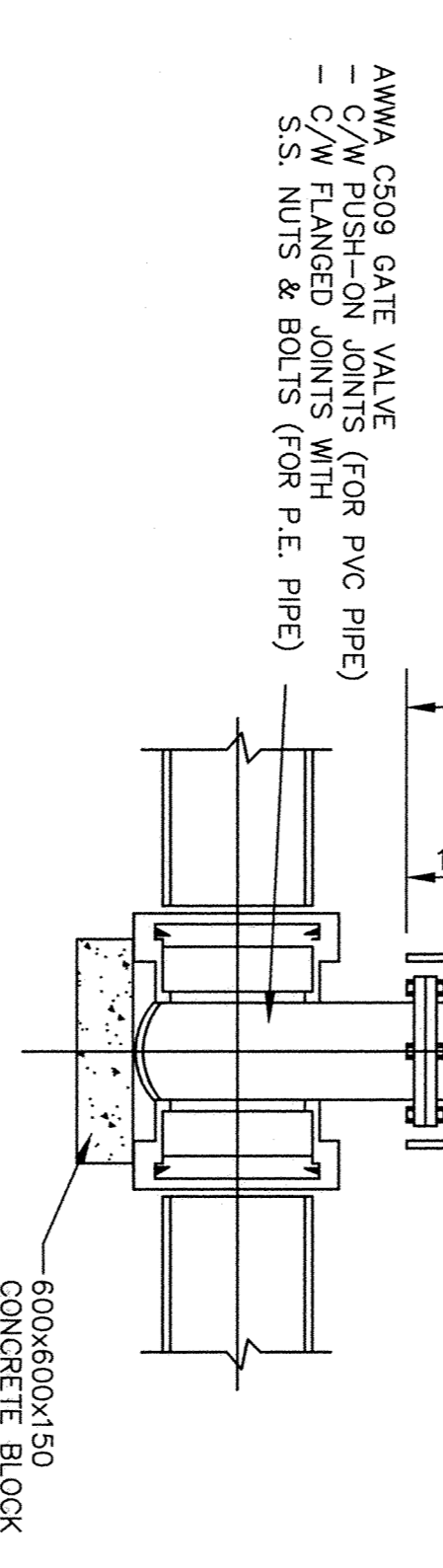
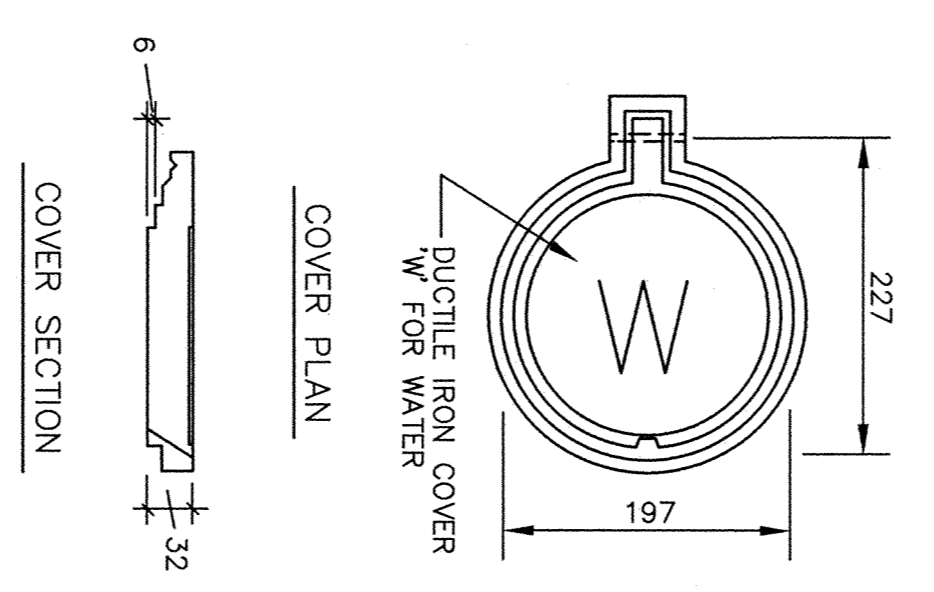
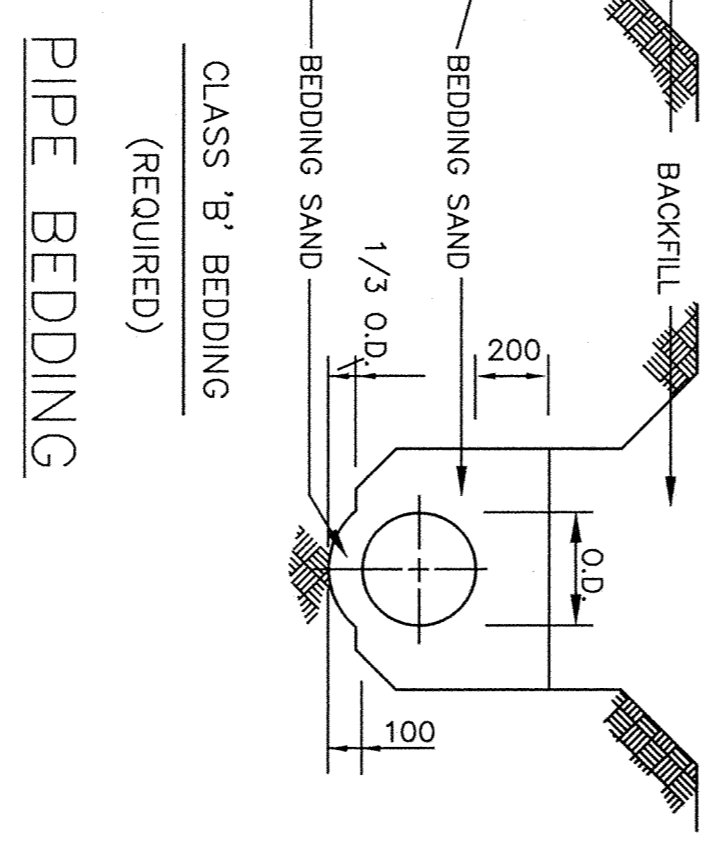
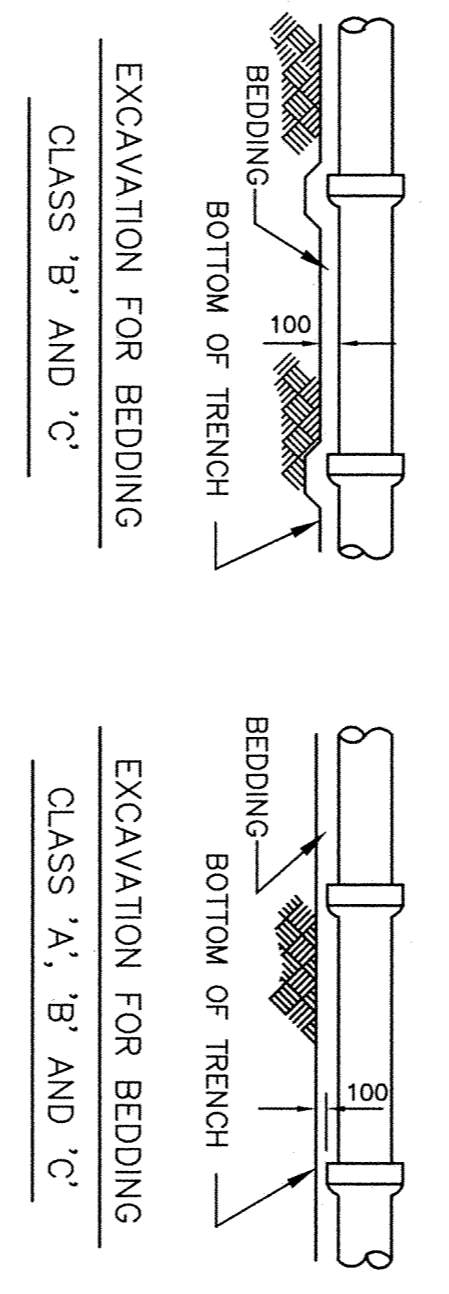
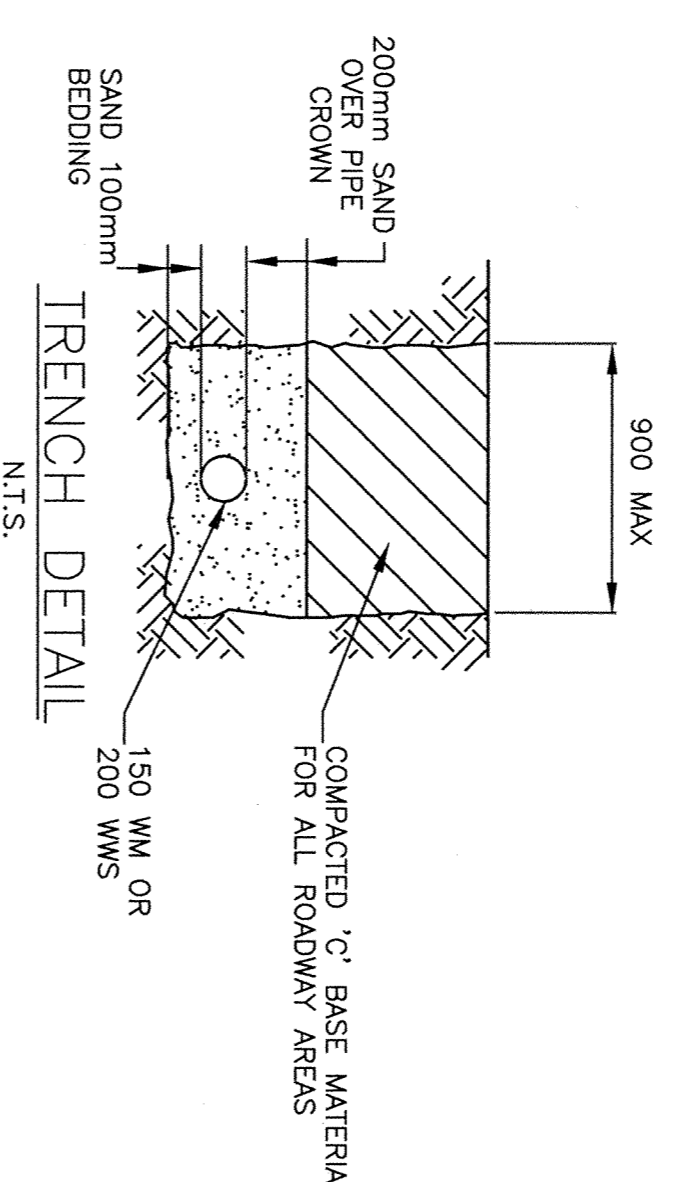
Client acceptance / Acceptation du client \_\_\_\_\_ Date \_\_\_\_\_  
 Signature / N. de designer \_\_\_\_\_ Date \_\_\_\_\_

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Project number / Numéro projet: 131-13930-00  
 Project title / Titre de projet: CLEAR LAKE CABIN AREA (CLCA) WATER AND WASTEWATER EXTENSIONS (ACCESS TO EACH CABIN)  
 Drawing title / Titre de dessin: WASTEWATER SEWER DETAILS

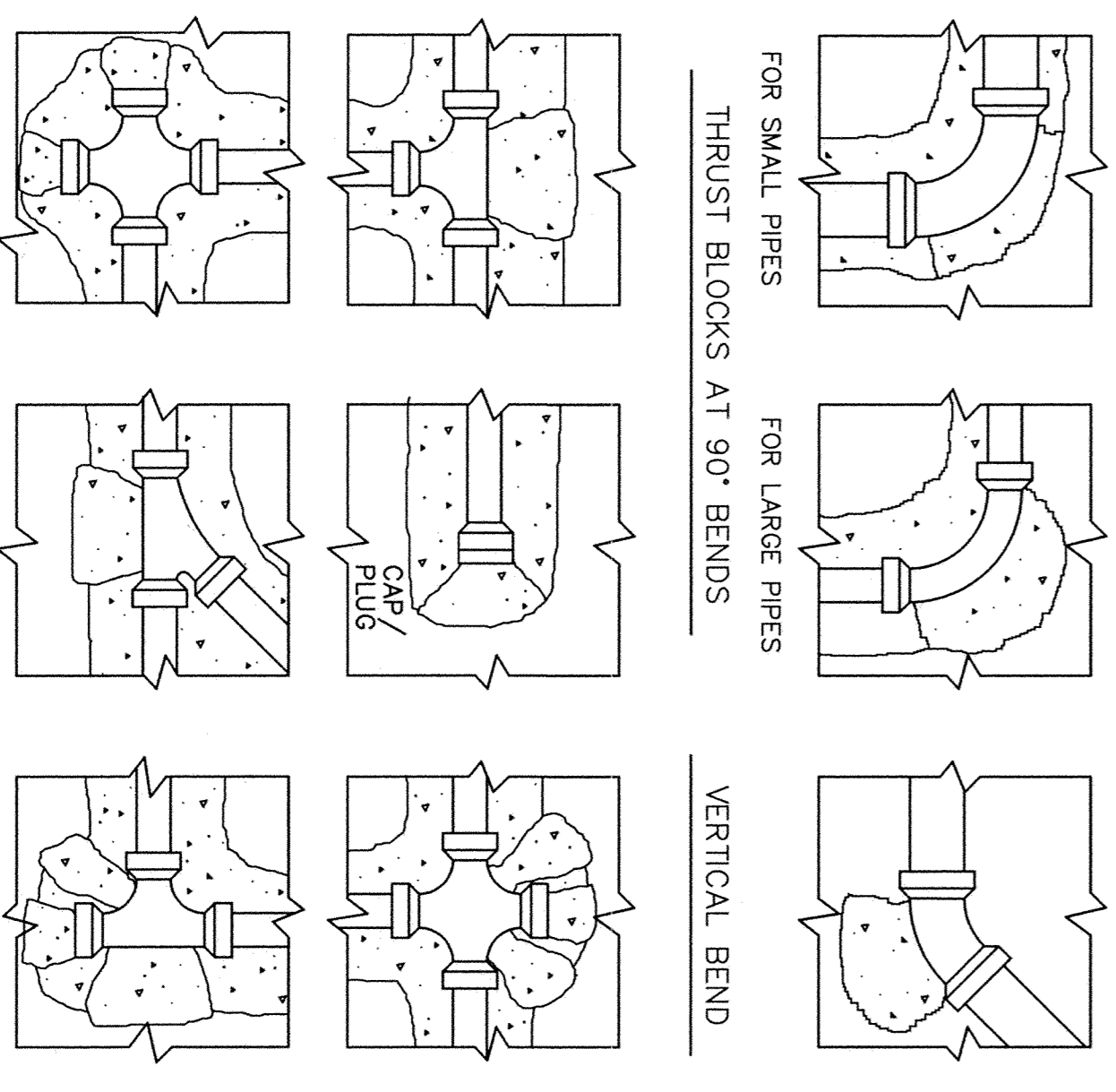
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 Drawn by / Dessiné par: \_\_\_\_\_ Date: \_\_\_\_\_  
 Checked by / Vérifié par: \_\_\_\_\_ Date: \_\_\_\_\_  
 Approved by / Approuvé par: \_\_\_\_\_ Date: \_\_\_\_\_  
 W.H.B.



1. WATERMAIN DEPTH - AS SHOWN ON PROFILES
2. MAIN (CORPORATION) STOP (THREADED NUT)
3. SERVICE PIPE (19mm "MUNIDPEX")
4. CURB STOP (DRANNO) OF PIPE
5. 38 X MIN 255 X MIN 300 PRESSURE TREATED LUMBER BASE
6. 60 X 60mm TO INDICATE LOCATION OF END OF SERVICE LINE
7. PIPE "GOOSENECK" SHALL BE HORIZONTAL IF REQUIRED TO MAINTAIN ADEQUATE COVER
8. STEEL OR POLY ACCESS BOX (SUPPLIED BY OWNERS - MAX BURY 600mm)
9. ALL THREADED JOINTS SHALL BE WRAPPED WITH "THERLOW" TAPE OR APPROVED ANTI-SEIZE COMPOUND. ALL JOINTS SHALL BE SECURELY JOINTED TO PREVENT LEAKAGE.
10. CURBSTOP MUST BE INSTALLED ABOVE CROWN OF PIPE.

NOTE: WATER SERVICE LINE MUST BE GRADED TOWARDS MAIN TO ALLOW LINE TO DRAIN.

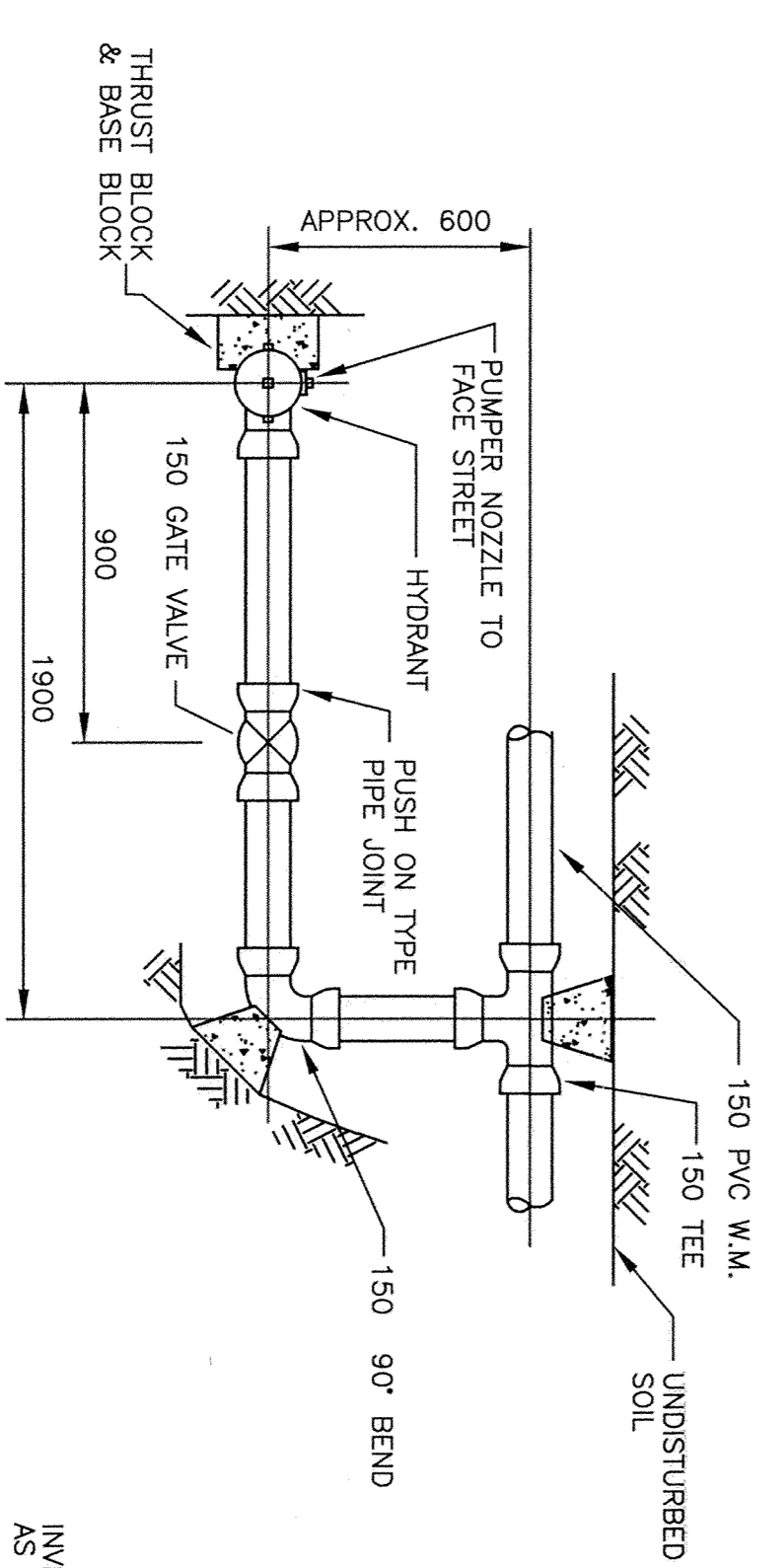
### GATE VALVE INSTALLATION



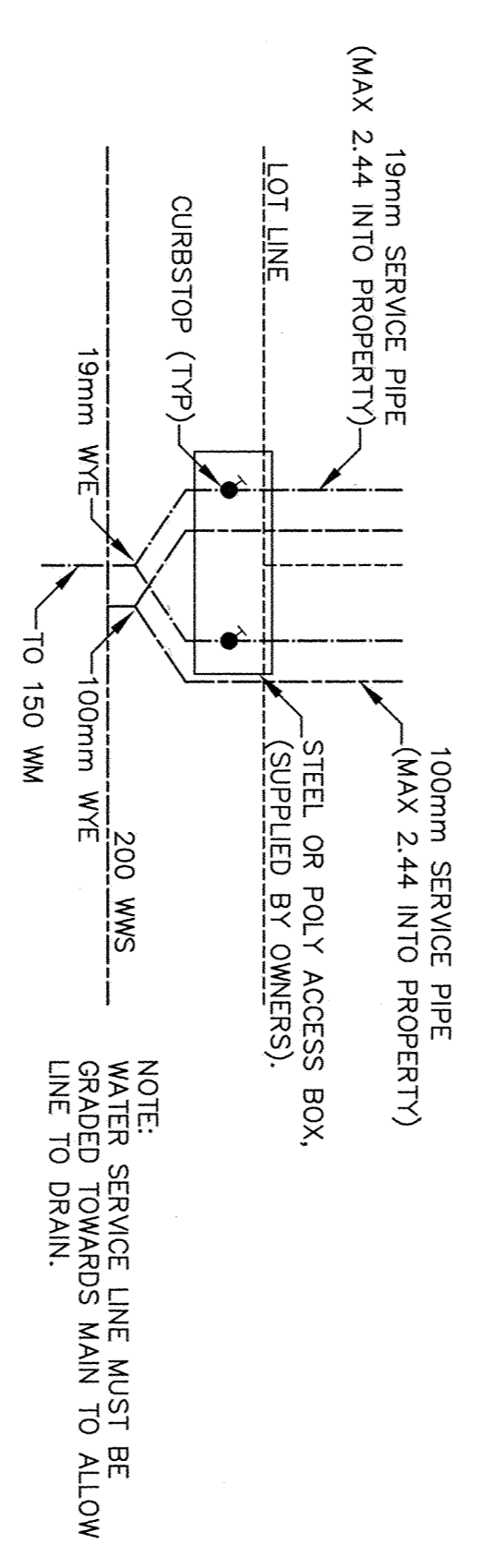
- NOTES:
1. ALL THRUST BLOCKS TO BE CAST IN PLACE AGAINST UNDISTURBED SOIL.
  2. ON CAPPED (PLUGGED) TEES & CROSSERS, SEPARATE THRUST BLOCKS SHALL BE PLACED FOR EACH CAP (PLUG).
  3. ALL JOINTS TO BE COMPACTED TO BE MIN 15 MPa.
  4. COVERING SHALL BE COMPACTED TO BE MIN 15 MPa.

### THRUST BLOCK INSTALLATIONS

### SHORT FIRE HYDRANT DETAIL TOP VIEW N.T.S.

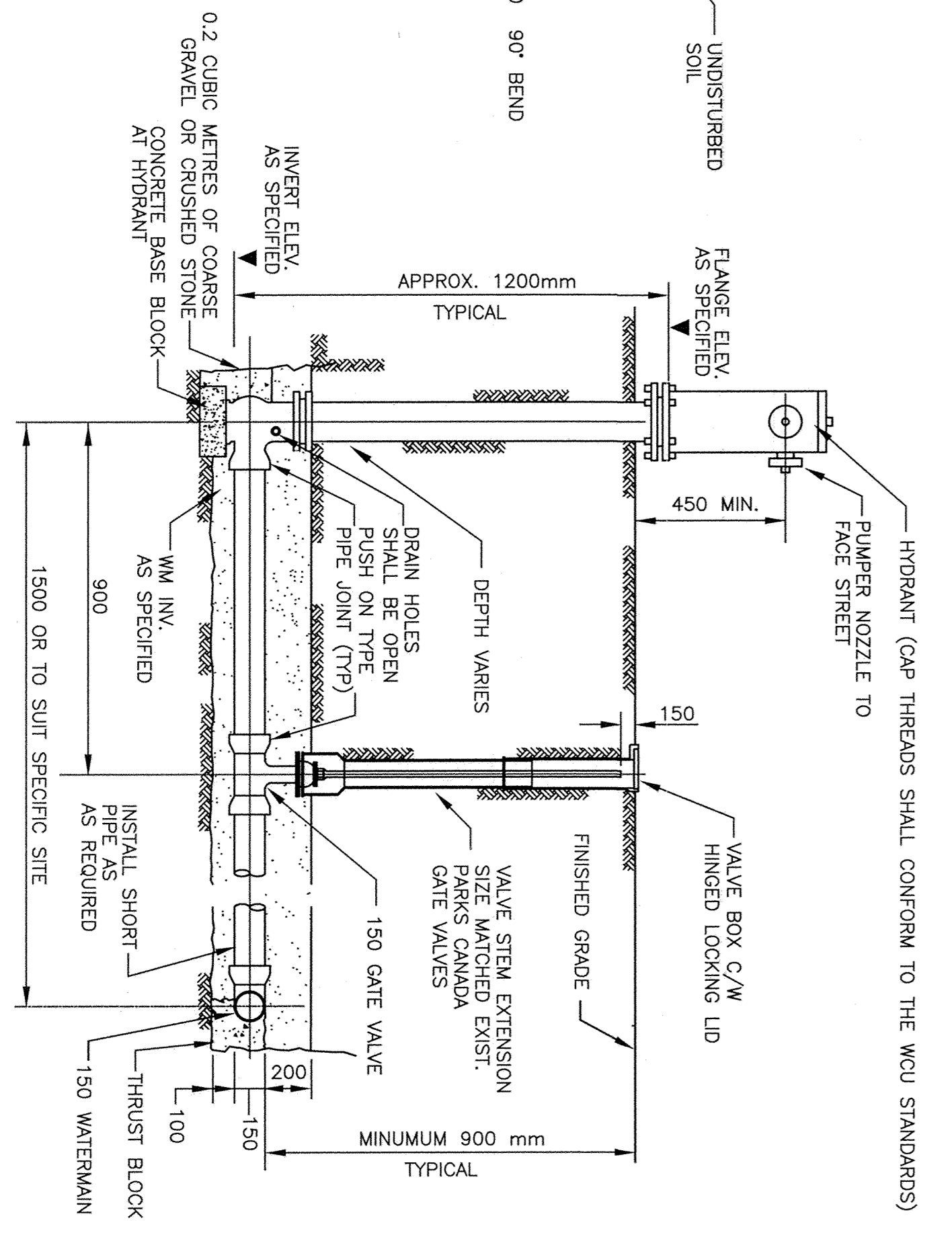



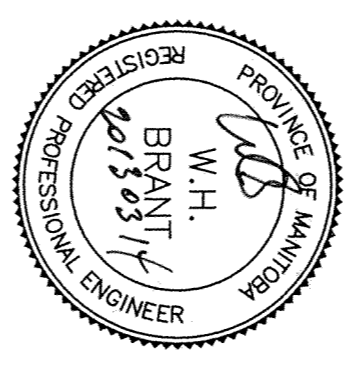

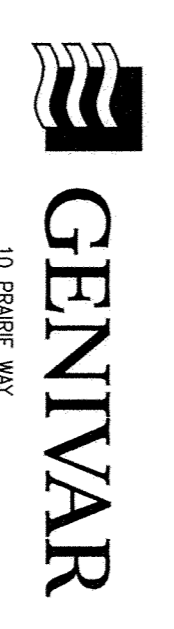
### SERVICE CONNECTION DETAIL N.T.S.



NOTE: WATER SERVICE LINE MUST BE GRADED TOWARDS MAIN TO ALLOW LINE TO DRAIN.

### STANDARD FIRE HYDRANT/GATE VALVE DETAIL SIDE VIEW N.T.S.



 Certificate of Authorization No. 2079 Date March 13, 2020		 W.H. BRANT No. 12123 CIVIL ENGINEER	
Sheet Number		Scale	
No.	Date	Description	Drawn By / Approved
1	13/03/04	ISSUED FOR REVIEW	L.D. W.P.M.
Revision / Revision		Name of detail	
A		B	Sheet number
Linear dimensions in millimetres		Dimensions in feet and inches	
Client Acceptance / Acceptation du client		Date	
File No. / N° de dossier			
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Project Number / Numéro projet 131-13930-00		Project Title / Titre de projet	
CLEAR LAKE CABIN AREA (CLOCA)		WATER AND WASTEWATER EXTENSIONS (ACCESS TO EACH CABIN)	
WATER DETAILS		Drawing Size / Taille de dessin	
Scale / Echelle		Date	
Drawn by / Dessiné par		Date	
Checked by / Vérifié par		Date	
Designed by / Conçu par		Date	
Approved by / Approuvé par		Date	
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Project No. / N° de projet		Sheet No. / Feuille N°	
Drawing Reference No. / Numéro de référence de dessin		5	