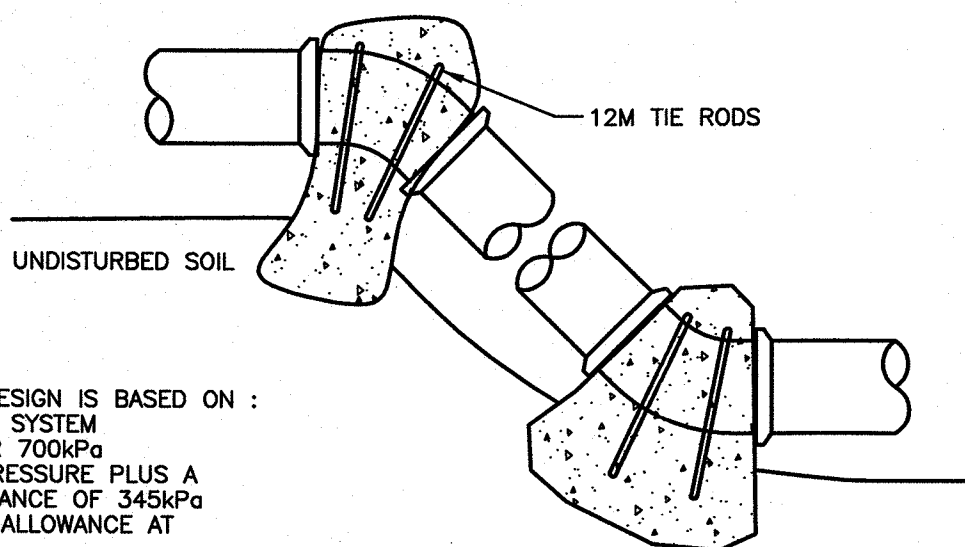


- THRUST BLOCK DESIGN IS BASED ON :
1. 1050kPa MAX. SYSTEM PRESSURE OR 700kPa OPERATING PRESSURE PLUS A SURGE ALLOWANCE OF 345kPa (21ps SURGE ALLOWANCE AT 55psi/tpa)
  2. THRUST BLOCK DESIGN ASSUMES A MIN. VERTICAL SOIL BEARING OF 100kPa
  3. THRUST BLOCK BEARING AREA BASED ON P.V.C. PIPE (AWWA C900 AND C905 DR18)
  4. CONCRETE 20MPa TYPE 50 CEMENT.

TABLE - FOR CALCULATION OF BASIC THRUST BLOCK BEARING AREA 'A' (IN SQUARE METERS)

PIPE SIZE	150	200	250	300	350	400	450
'A'	0.40	0.68	1.06	1.54	2.08	2.72	3.44

28 HORIZONTAL THRUST BLOCK DETAIL  
N.T.S.



- THRUST BLOCK DESIGN IS BASED ON :
1. 1050kPa MAX. SYSTEM PRESSURE OR 700kPa OPERATING PRESSURE PLUS A SURGE ALLOWANCE OF 345kPa (21ps SURGE ALLOWANCE AT 55psi/tpa)
  2. THRUST BLOCK DESIGN ASSUMES A MIN. VERTICAL SOIL BEARING OF 100kPa
  3. THRUST BLOCK BEARING AREA BASED ON P.V.C. PIPE (AWWA C900 AND C905 DR18)
  4. CONCRETE 20MPa TYPE 50 CEMENT.
  5. UNIT WEIGHT OF CONCRETE ASSUMED IS 2400kg/m³

#### UPWARD THRUST (GRAVITY)

TABLE - FOR CALCULATION OF BASIC THRUST BLOCK BEARING AREA ( IN SQUARE METERS )  
CONCRETE UNIT WEIGHT 2400Kg/cu.m

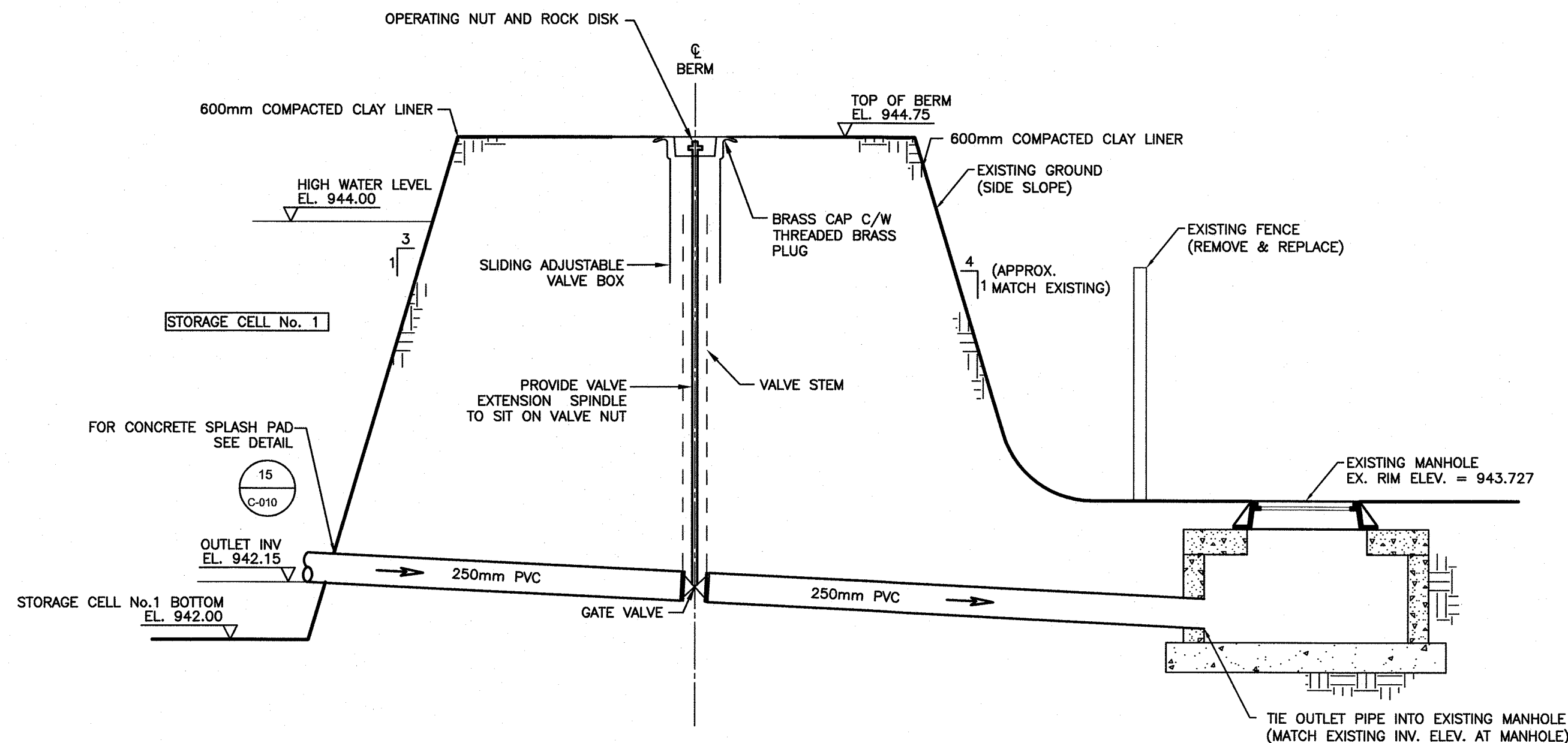
BEND	PIPE SIZE	150	200	250	300	350	400	450
11.25°		0.16	0.28	0.45	0.64	0.87	1.14	1.44
22.50°		0.32	0.57	0.88	1.27	1.73	2.26	2.82
30°		0.42	0.75	1.17	1.69	2.30	3.00	3.80
45°		0.62	1.11	1.73	2.50	3.40	4.44	5.62

#### DOWNWARD THRUST

TABLE - FOR CALCULATION OF BASIC THRUST BLOCK BEARING AREA ( IN SQUARE METERS )  
CONCRETE UNIT WEIGHT 2400Kg/cu.m

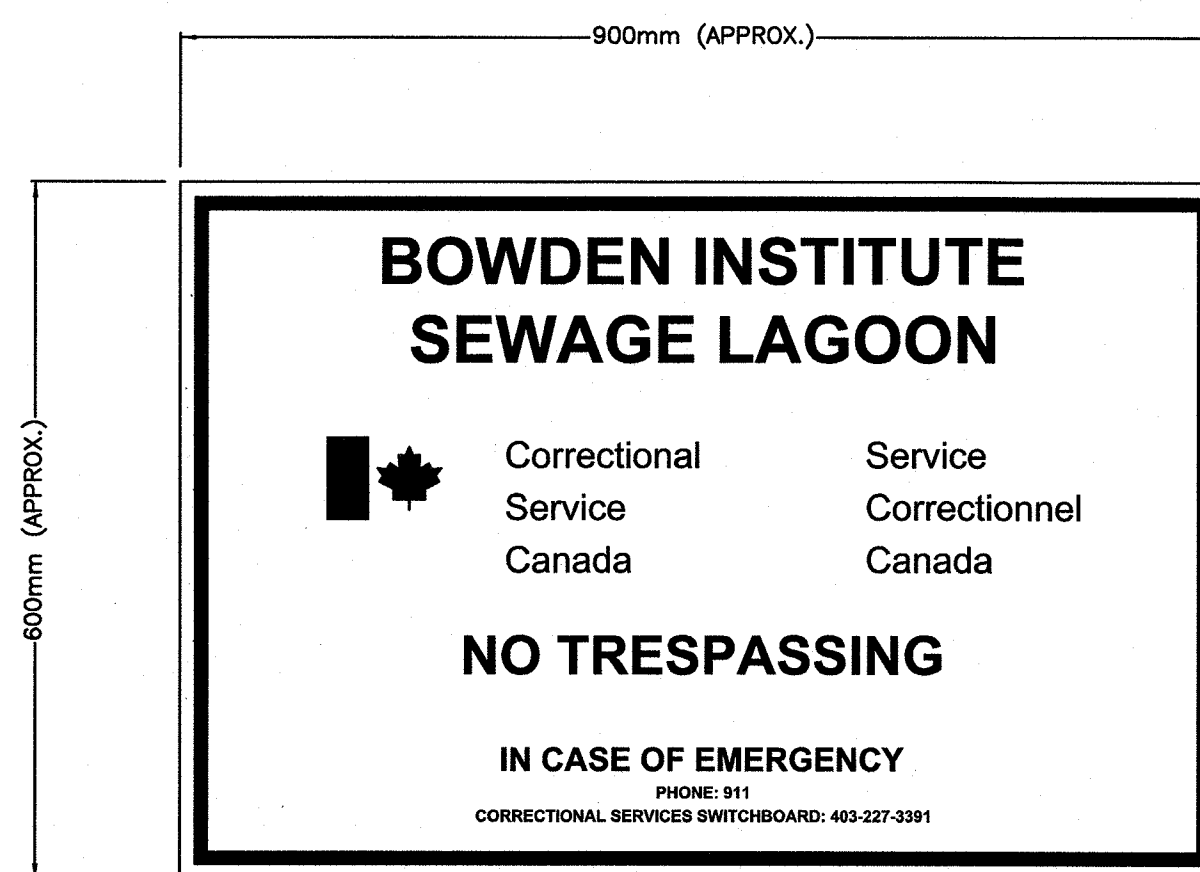
BEND	PIPE SIZE	150	200	250	300	350	400	450
11.25°		0.04	0.07	0.11	0.15	0.21	0.27	0.34
22.50°		0.08	0.13	0.21	0.30	0.41	0.53	0.67
30°		0.10	0.18	0.28	0.40	0.54	0.71	0.89
45°		0.15	0.26	0.41	0.59	0.80	1.05	1.32

29 VERTICAL BEND THRUST BLOCK DETAIL  
N.T.S.



NOTE:  
COMPLETELY REMOVE EXISTING OUTFALL STRUCTURE BETWEEN STORAGE CELL No. 1 AND EXISTING MANHOLE AND INSTALL NEW OUTFALL STRUCTURE

30 NEW OUTFALL STRUCTURE FOR STORAGE CELL No. 1  
C-002 N.T.S.

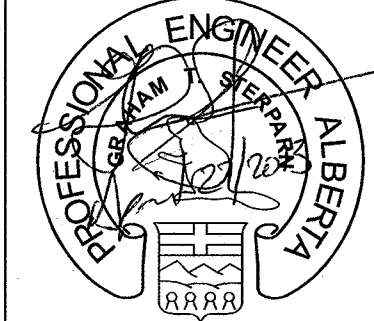


- NOTE:
1. SIGN TO BE METAL AND SECURELY FASTENED TO THE CHAIN LINK FENCE TO THE SATISFACTION OF THE DEPARTMENTAL REPRESENTATIVE.
  2. CONTRACTOR TO PROVIDE THE DEPARTMENTAL REPRESENTATIVE WITH A SHOP DRAWING FOR APPROVAL PRIOR TO SIGN FABRICATION. SHOP DRAWING TO IDENTIFY DIMENSIONS, FONT SIZE AND COLOR, BACKGROUND COLOR AND MATERIALS.

31 WARNING SIGN DETAIL  
C-002 N.T.S.

Consultant's Name / Nom de l'expert-conseil

Eng. Stamp / Sceau de l'ingénieur



APEGGA Permit to Practice P 3979

No.	Description/Description	Date/Date
0	ISSUE FOR TENDER AND CONSTRUCTION	2013.04.24

Revision / Revision	
A	A detail number / numéro de détail
B	B source drawing no. / de dessin no.
C	C detail on drawing no. / détail sur dessin no.

project	Correctional Service Canada	Service Correctionnel Canada	project
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Sewage Infrastructure Upgrade  
Bowden Institution  
Innisfail, Alberta

drawing / dessin

DETAILS

designed	Steven Kennedy	concept
date	2012.09.28	
drawn	Marcel Revet	dessiné
date	2012.09.28	
reviewed	-	revise
date	-	
approved	-	approuvé
date	-	
Tender	Steve Phypers	Soumission
PWGCS Project Manager	Administrateur de Projets TPSGC	
project number	R.051803.001	no. du projet
drawing no.	C-012	no. du dessin

Canada