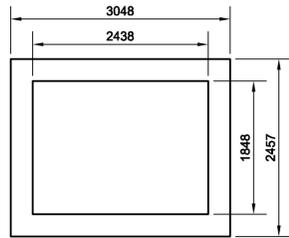
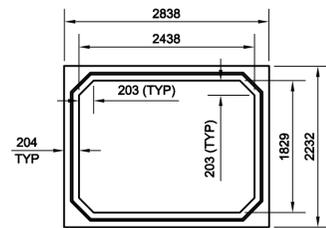


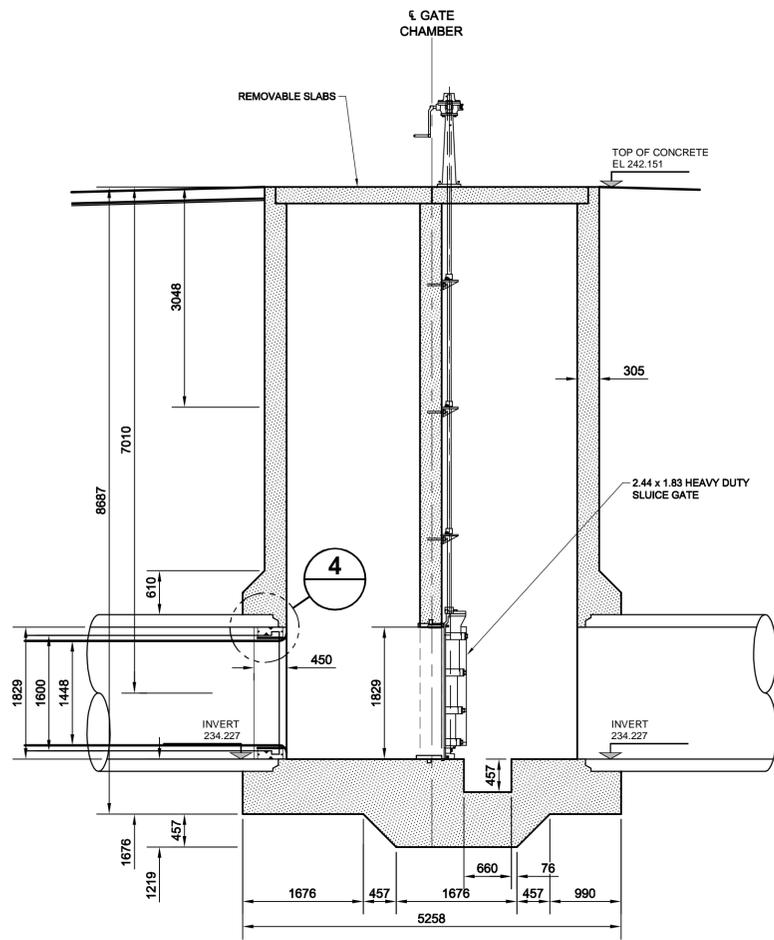
SECTION A
1-0620M-C0003-001, 1-0620M-C0004-001
SCALE 1:50
EXISTING BOX CULVERT
FLARED OUTLET WEST END



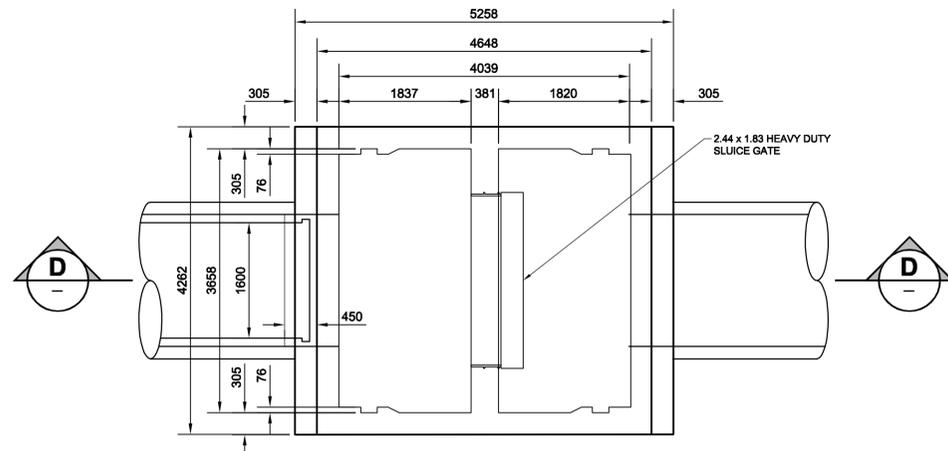
SECTION B
1-0620M-C0003-001, 1-0620M-C0004-001
SCALE 1:50
EXISTING CAST-IN-PLACE
BOX CULVERT
WEST OF DEACON ROAD



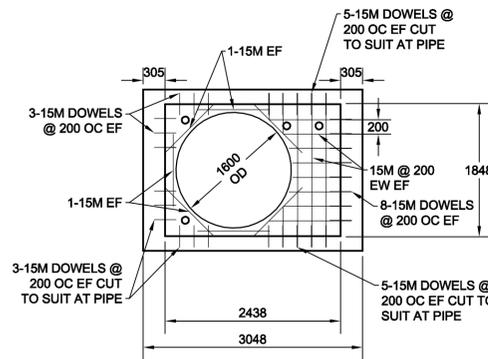
SECTION C
1-0620M-C0003-001, 1-0620M-C0004-001
SCALE 1:50
EXISTING PRECAST
BOX CULVERT



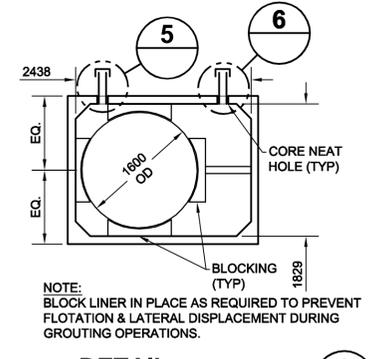
SECTION D
SCALE 1:50
EXISTING SLUICE GATE CHAMBER



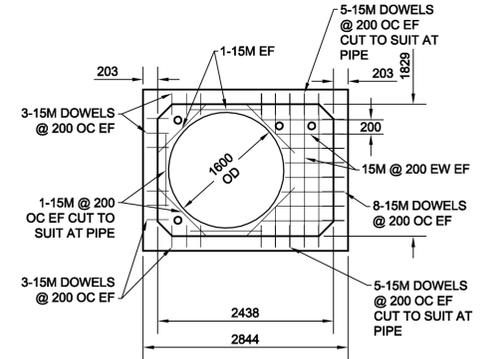
SECTION 1
1-0620M-C0003-001, 1-0620M-C0004-001
SCALE 1:50
EXISTING SLUICE GATE CHAMBER



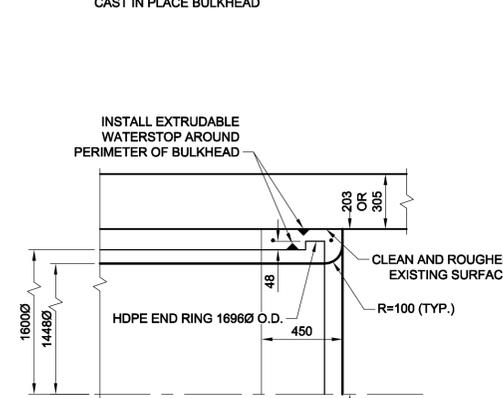
DETAIL 1
1-0620M-C0005-001, 1-0620M-C0006-001
SCALE 1:50
CAST IN PLACE BULKHEAD



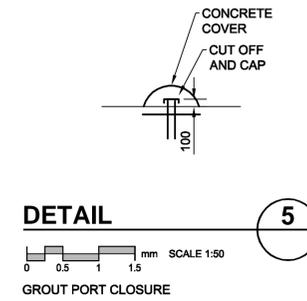
DETAIL 2
1-0620M-C0005-001, 1-0620M-C0006-001
SCALE 1:50
GROUT PORT



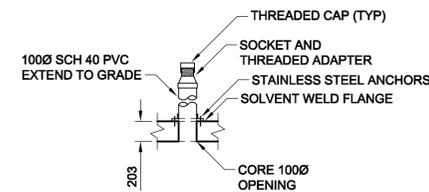
DETAIL 3
1-0620M-C0005-001, 1-0620M-C0006-001
SCALE 1:50
CAST IN PLACE BULKHEAD



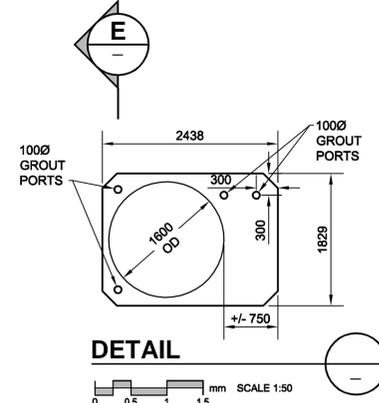
DETAIL 4
SCALE 1:20



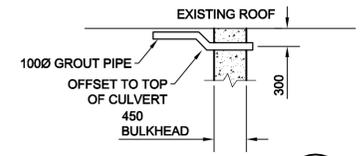
DETAIL 5
SCALE 1:50
GROUT PORT CLOSURE



DETAIL 6
SCALE 1:20



DETAIL
SCALE 1:50
BULKHEAD GROUT PORT



SECTION E
SCALE 1:50
BULKHEAD GROUT PORT AIR RELEASE

Thermal Expansion Coefficient, $\alpha = 0.00009$ in/in/degree F
Water temp during install, $T_w = 5$ °C

HDPE PIPE EXPANSION TABLE					
Change in Temperature		Change in Pipe Length		Fabrication Length	
°C	°F	m	ft	m	ft
30	54	0.548	1.799	113.348	371.877
25	45	0.457	1.499	113.257	371.578
20	36	0.365	1.199	113.165	371.278
15	27	0.274	0.899	113.074	370.978
10	18	0.183	0.600	112.983	370.678
5	9	0.091	0.300	112.891	370.379
0	0	0.000	0.000	112.800	370.079
-5	-9	-0.091	-0.300	112.709	369.779
-10	-18	-0.183	-0.600	112.617	369.479
-15	-27	-0.274	-0.899	112.526	369.179
-20	-36	-0.365	-1.199	112.435	368.880
-25	-45	-0.457	-1.499	112.343	368.580
-30	-54	-0.548	-1.799	112.252	368.280
-35	-63	-0.640	-2.098	112.160	367.980
-40	-72	-0.731	-2.398	112.069	367.681

Notes:
- Change in temperature = (Fabrication Temperature - Installation Temperature)
- Build pipe to fabrication length based on temperatures at time of fabrication
- Installed Pipe Length, L = 112.8 m = 370.079 ft
- Thermal Expansion Coefficient, $\alpha = 9 \times 10^{-5}$ in/in/degree F

AECOM
Certificate of Authorization
AECOM Canada Ltd.
No. 4671 Date: _____
BID OPPORTUNITY NO. 567-2012

150 WM	WATERMAIN	150 WM	EXISTING	CURB STOP	NEW	150 WM	WATERMAIN	150 WM	EXISTING	LOCATION APPROVED	UNDERGROUND STRUCTURES
+	HYDRANT	+	+	REDUCER	+	+	HYDRANT	+	+	SUPR. U/G STRUCTURES	DATE
+	VALVE	+	+	COUPLING	+	+	VALVE	+	+	COMMITTEE	
+	LAND DRAINAGE SEWER	+	+	ANODE	+	+	LAND DRAINAGE SEWER	+	+	NOTE:	
+	WASTE WATER SEWER	+	+	HYDRO	+	+	WASTE WATER SEWER	+	+	LOCATION OF UNDERGROUND STRUCTURES	
○	MANHOLE	○	○	MTS	○	○	PAVEMENT CROWN	○	○	AS SHOWN ARE BASED ON THE BEST	
○	CATCH BASIN	○	○	GAS	○	○	N/W PROPERTY LINE	○	○	INFORMATION AVAILABLE. BUT NO	
○	CURB INLET	○	○	TESTHOLE	○	○	S/E PROPERTY LINE	○	○	GUARANTEE IS GIVEN THAT ALL EXISTING	
○	CULVERT	○	○	LAMP STANDARD	○	○	N/W GUTTER	○	○	UTILITIES ARE SHOWN OR THAT THE GIVEN	
+	PIPE ABANDONMENTS	+	+	TREE	+	+	S/E GUTTER	+	+	LOCATIONS ARE EXACT. CONFIRMATION OF	
+	SURVEY BAR	+	+		+	+		+	+	EXISTENCE AND EXACT LOCATION OF ALL	
+	LEGEND - PLAN	+	+		+	+		+	+	SERVICES MUST BE OBTAINED FROM THE	
+	NEW	+	+		+	+		+	+	INDIVIDUAL UTILITIES BEFORE PROCEEDING	
+	EXISTING	+	+		+	+		+	+	WITH CONSTRUCTION.	

NO.	REVISIONS	YYMMDD	BY
0	ISSUED FOR CONSTRUCTION	12/07/16	ADL

AECOM			
DESIGNED BY	JT	CHECKED BY	C.C.M
DRAWN BY	AD	APPROVED BY	C.C.M
HOR. SCALE	1:500	RELEASED FOR CONSTRUCTION	ORIGINAL SIGNED BY
VERT. SCALE	NA	R. SOROKOWSKI	
DATE	JULY 16, 2012	DATE	JULY 16, 2012

PROFESSIONAL'S SEAL
REVISION 0
ISSUED FOR CONSTRUCTION
WAS SEALED BY
C.C. MACEY
AND DATED
12/07/16
CONSULTANT DRAWING NO.
60195708-00-C-401-ROX.dwg

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
CITY OF WINNIPEG
DEACON RESERVOIR INTERCONNECTOR
CULVERT REHABILITATION
MISCELLANEOUS DETAILS

SHEET 7 OF 7
DRAWING NUMBER
1-0620M-C0007-001
REV 0