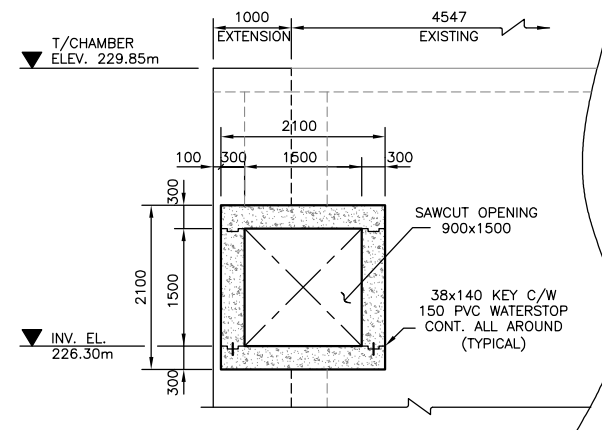
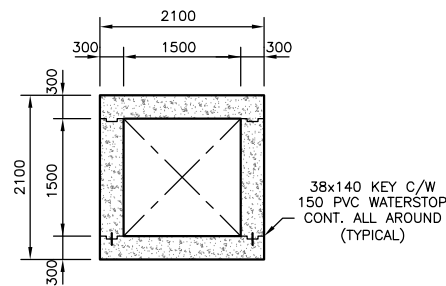


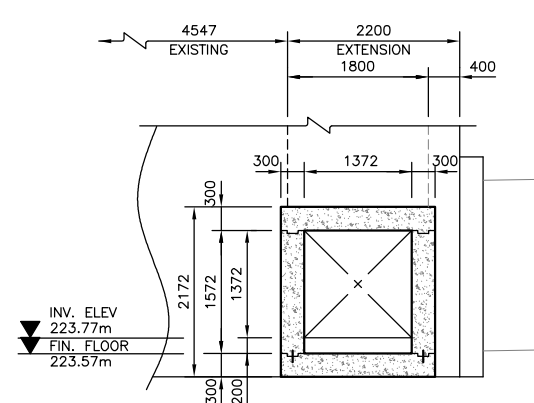
A SECTION - FLOOD PUMP STATION
SCALE: 1:50



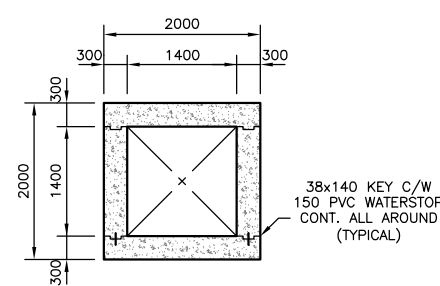
B SECTION - BOX CULVERT
SCALE: 1:50



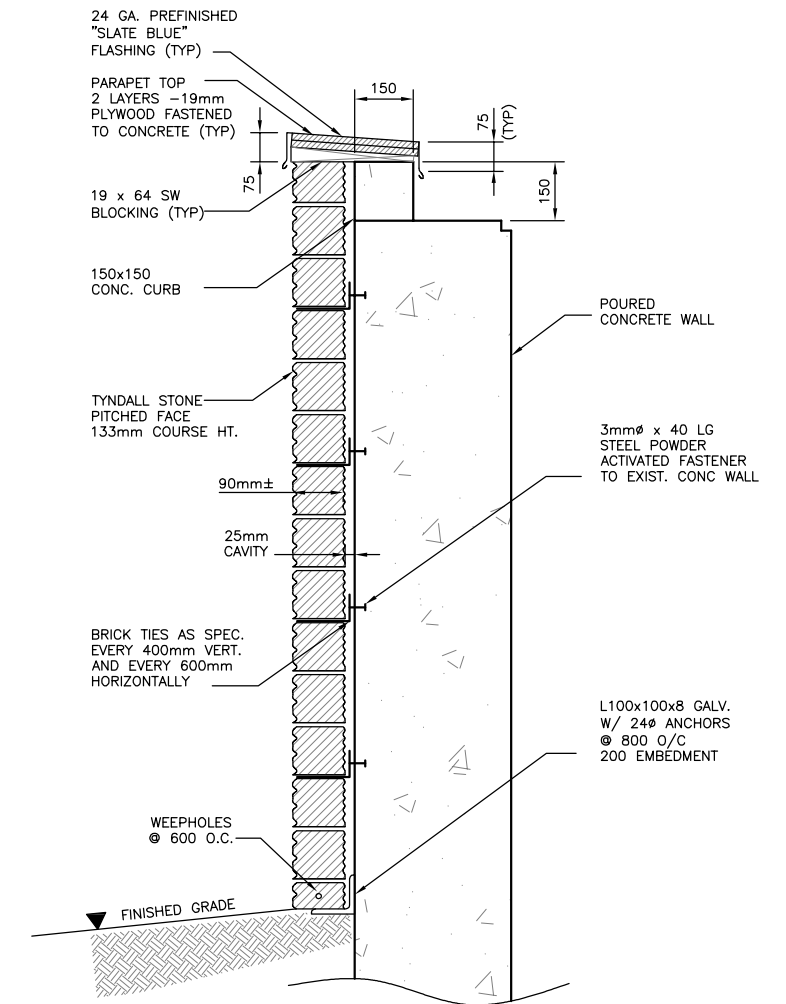
C SECTION - BOX CULVERT
SCALE: 1:50



D SECTION - BOX CULVERT
SCALE: 1:50



E SECTION - BOX CULVERT
SCALE: 1:50



F DETAIL
SCALE: 1:10

WARNING

IF POWER EQUIPMENT OR EXPLOSIVES ARE TO BE USED FOR EXCAVATION ON THIS PROJECT THE CONTRACTOR MUST:
1) NOTIFY THE GAS COMPANY OF THE PROPOSED LOCATION OF EXCAVATION.
2) TAKE PRECAUTION TO AVOID DAMAGE TO GAS COMPANY INSTALLATIONS.
SEE PROVINCIAL REGULATION 210/72 FOR DETAILS.

METRIC

WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES



SCALE: 1:250 METRIC A1
1:500 METRIC A3

GENERAL NOTES

- 1). CONCRETE MATERIALS TO CAN. 3-A23.1 AND CAN. 3-A23.2.
- 2). ALL CONCRETE TO HAVE MINIMUM COMPRESSIVE STRENGTH OF 30 MPa AT 28 DAYS AND CEMENT TO BE TYPE 50 SULPHATE RESISTANT.
- 3). REINFORCEMENT IS NEW DEFORMED BILLET STEEL BAR CONFORMING TO CSA G30.18-M92 GRADE 400 MPa
- 4). UNLESS NOTED OTHERWISE CLEAR CONCRETE REINFORCING STEEL IS:
 - CONCRETE CAST AGAINST EARTH 75 mm
 - ALL OTHER CONCRETE 50 mm
- 5). ALL STEEL ANCHORS, NUTS AND BOLTS CONFORM TO ASTM A276 TYPE #316 STAINLESS STEEL.
- 6). ALL ALUMINUM IN CONTACT WITH CONCRETE IS PAINTED WITH BITUMINOUS ISOLATION COATING AT THE ALUMINUM / CONCRETE INTERFACE.
- 7). PROCEDURE FOR DOWELING INTO EXISTING CONCRETE:
 - DRILL HOLE IN EXISTING CONCRETE TO DEPTH AND DIA. SHOWN ON DWGS.
 - CLEAN OUT HOLE TO REMOVE ALL DRILLING DEBRIS.
 - FILL HOLE WITH NON-SHRINK GROUT AND INSERT DOWEL. ROTATE TO ENSURE GOOD COVERAGE OF GROUT.

B.M. XX-XXX ELEV. XXX.XXX	KGS GROUP CONSULTING ENGINEERS & PROJECT MANAGERS WINNIPEG (204) 896-1209 THUNDER BAY (807) 345-2233		ENGINEER'S SEAL
	DESIGNED BY: CMS	CHECKED BY: CMS	ORIGINAL DRAWING SIGNED BY:
	DRAWN BY: EDC	APPROVED BY:	C. SIEPMAN
	SCALE: AS NOTED	RELEASED FOR CONSTRUCTION:	05/12/07
0 ISSUED FOR CONSTRUCTION 05/12/07 CMS	DATE 05/11/08	DATE	CONSULTANT DRAWING NO. 05-0107-13-11
NO. REVISIONS	DATE	BY	

THE CITY OF WINNIPEG
WATER & WASTE DEPARTMENT

HAWTHORNE FLOOD PUMPING STATION UPGRADE
STRUCTURAL-SUBSTRUCTURE SECTIONS AND DETAILS

SHEET 11 OF 24
CAD FILE DRAWING NUMBER 05-0107-13-11
CITY DRAWING NUMBER LD-3248

APEGM
Certificate of Authorization
KGS Group
No. 245 Expiry: April 30, 2006