NOTE: OUTER RING OF PILES (RADIUS-3800) HAVE A RAKE OF 3VERT/1HOR: (RAKE OUTWARDS) INNER RING(RADIUS-2200) PLUS CENTRE PILE - VERTICAL.

43-25M TOP
43-30M BOTTOM

52-25M TOP
52-30M BOTTOM.

1-25M TOP & BOTTOM.

STAT. EO+48.630m

STAT. NO+16.730m.

OVERFLOW ABOVE

ACCESS ABOVE

FIRST JOINT.

450 IGTG ϕ INLET PIPE

22½° (TYP)

ADD 4-30M E.F. & E.S. 3500 LONG (TYP)

R=3800 (46 PILES)

R=2400 (8 PILES)

R=1600 (4 PILES)

45° (TYP)

15° (FIELD CHECK)

WALL THICKENING

20M@300

762ϕ PIPE WITH BLIND FLANGE FOR ACCESS INTO SURGE TANK.

20M@300 E.F.

400mm. OCTAGONAL PRECAST - PRESTRESSED PILES AS SPEC'D - 90 TONNE BEARING CAPACITY. CUT-OFF EL. 229.430m. (SEE SECTION C ON THIS DWG).

300 SQ x 300 DP. SUMP WITH LOOSE GRATING.

25 SLOPE.

1000 TYP 20M@300

20M@300 E.F.

3-PILES UNDER S. WALL OF CHAMBER HAVE A RAKE OF 3VERT/1HOR (RAKE OUTWARDS).

2300

2-PILE. 20M@300 I.F.

20M@2000 F.

1G TG ϕ OUTLET PIPE (SEE 'P' DWGS FOR CONN'TN TO EXISTING PIPEWORK).

PLAN ABOVE ELEV. 230.430m

SCALE. 1:50

15M@300

EL. 236.150m

2-15M (CONT)

DETAIL (1)

SCALE 1:20

20ϕ STAINLESS STEEL BARS @150 c/c

4-30x30x5 GALV. & CLIP. RAMSET TO CONCRETE.

L.P EL. 260.825m

COL. G-20M. 10M TIES @300 TYP.

L.P.

500 TYP

R=2285

R=4035

20M@250 E.F.

15M@250 E.F.

SAFETY CLIMB LADDER AS SPEC'D.

LADDER TYPE 'A'.

OPEN GRATING. SEE DWG S13

38ϕ HATCH DRAIN

HP

HP EL 260.925m

2-LEVELS OPEN GRATING - SEE SECTION (A) & DWG. S13.

LADDERS: TYPE 'A' SEE DWG. S13.

PLAN ABOVE ELEV. 263.425m

SCALE. 1:50

16-25M TOP
16-30M BOTT

32-20M TOP
32-15M BOTT

ALTERNATE.

20M GALV LIFTING HOOK. 2-REQ'D PER SLAB.

150 150 150

LIFTING HOOK DETAIL

SCALE. 1:20

5kN HOOK CAST IN ROOF LOCATED ABOVE 762ϕ PIPE-BLIND FLANGE.

LIFTING HOOKS SEE DETAIL ABOVE.

EL. 260.000m

315 kN/m

2-35M. TOP

750 x 900 TYPE 'J-3AL' BILCO ROOF HATCH

R=4035

ROOF PLAN

SCALE. 1:50

NOTE: THE FORCES SHOWN ARE THE REQUIRED MINIMUM EFFECTIVE PRESTRESSING FORCES PER METRE HEIGHT AT ANY POINT IN THE SHAFT WALL.

1100 kN/m

1550 kN/m

PRESTRESSING FORCE DIAGRAM.

BONDED PRESTRESSING CABLE.

20M@300 T&B. (LAPS WERE STAGGERED)

30M@175

10M@200 E.F

30M.

15M@250 E.F.

INNER FACE

TYPICAL REBAR DETAIL IN WALLS OF SURGE TANK.

15M@250 E.F.

EL. 263.425m

38ϕ HATCH DRAIN

15M@250 E.F.

1200

EL. 262.180m

15M@250 E.F.

VARIES 400-300

402

EL. 260.925m.

20M@300 T&B.

25M T&B.

20M@300 T&B.

HEAT TRACED OPEN GRATING SEE ELECT DWGS.

SAFETY CLIMB LADDER STARTING FROM EL. 236.150m.

100 x 15 PUDDLE FLANGE. (TYP)

SECTION (A)

SCALE. 1:50

U/S EL 264.410m

OVERFLOW WEIR EL. 262.425m.

R=1745

R=2285

35°

35°

35A0

140 300

650

230

90

650

BUTTRESS FOR PRESTRESSING CABLE ANCHORAGES.

1372ϕ STEEL PIPE.

R=840

R=1745

TYPE 'C' JOINT SEALER & FILLER AROUND PERIMETER OF PIPE - SEE SECTION.

150 CONC SLAB.

EL. 236.150m

FOR LOCATION OF LEVEL TX FLANGES SEE ELECT DWGS.

JOINT SEALER & FILLER.

WELL COMPACTED GRANULAR 'B' FILL.

200x6 STEEL WATERSTOP.

EL. 230.430m

100

BASE OF ACCESS & OVERFLOW PIPES

SEE SECTION (C) FOR REINF'T

SECTION (B)

SCALE. 1:50

100-15M E.F.

FOR HEAT TRACING REFER TO ELECT. DWGS.

15M@250

20M@250 E.F.

100-25M.

100-20M.

100-15M.

100-25M.

150

200

600

VARIES 400-300

100-25M

20M @ 300 T&B.

DETAIL (3)

SCALE. 1:20

3-30M.

3-25M.

50-15M.

3-20M.

3-20M.

200x6 STEEL WATERSTOP

15M@250 E.F.

900

PRESTRESSED CONC. SHAFT 10M@200 E.F.

DETAIL (2)

SCALE. 1:20

200 MIN (TYP)

10

600

300

100

20M@300

20M@300 INTO SURGE TANK WALL.

DOWELLED

NAT. EL. 231.980m

PILE CAP EL. 230.430m

SECTION (E)

SCALE. 1:50

51 EXTRUDED POLYSTYRENE INSUL. C/W SINGLE LAYER OF GRANULAR

10M@200 T&B.

3-20M T&B. PER SLAB

GR. EL. 236.000m.

EL. 235.500m

5+5-15M.

40 (TYP)

10M@250 E.W. T&B

15M@250

EL. 233.480m

2-20M 2-25M.

2-20M 2-25M.

300

10M@300.

4x6-20M DIAG. EF

LADDER TYPE 'A' SEE DWG. S13.

15M@200

20M@300.

20M@300 E.F.

TOP OF PIPE

25 M@ 175

600

167G ϕ OUTLET PIPE

EL. 231.980m.

762 ϕ ACCESS PIPE

EL. 231.180m.

25M.

2000

EL. 231.980m

EL. 260.925m

EL. 230.430m.

20M@300

20M @200.

100

VOIDFORM (TYP AS GRAN 'B' SPEC'D)

25M TOP 30 M BOTTOM

THIS SLAB REMAINED FULLY SHORED UNTIL THE STRUCTURE ABOVE INCLUDING ROOF SLAB WAS CAST & CURED FOR A MINIMUM OF 7 DAYS.

SECTION (C)

SCALE. 1:50

PRESTRESSING WIRES CAST INTO PILE CAP 300mm MIN (TYP).

19ϕ STAINLESS STEEL SAFETY RAIL. 150 HIGH

350

260

20M @ 300 T&B.

35M. 20M.T. (ALTERNATE)
20M. 15M B. (ALTERNATE)

U/S EL. 264.410m

4-25M (CONT.)

100-20M

100-25M.

15M STIRR @ 300.

10M TIES @ 300

G-20M

WEIR EL 262.425m

100-15M E.F.

20M@250 E.F.

15M@250 E.F.

REINFORCEMENT ON THIS SIDE IS SIMILAR TO THAT SHOWN ON THE OTHER SIDE. SEE DETAIL 3 ON THIS DWG.

EL. VARIES

U/S EL. 260.525m

SEE DETAIL 3 ABOVE FOR REINFORCEMENT IN THIS AREA.

SECTION (D)

SCALE. 1:50

DIMENSIONS IN MILLIMETRES EXCEPT AS NOTED

PROVINCE OF MANITOBA G. REMPEL May/78 REGISTERED ENGINEER

1372 ϕ STEEL PIPE - OVERFLOW.

EL. 236.175m

SEE TYPICAL REBAR DETAIL ON THIS DWG.

140 CORBEL. SEE DETAIL 1 ON THIS DWG.

R=2285

35°

15°±

EL. 236.150m (TYP).

FOR LOCATION OF LEVEL TX FLANGES SEE ELECT. DWGS.

1372 ϕ STEEL PIPE - ACCESS.

SEE DETAIL 2 ON THIS DWG (TYP).

JOINT SEALER AS SPECIFIED.

4-200 THICK PRECAST CONC. REMOVABLE SLABS 4-20M T&B & 10M@200 T&B.

WATERPROOF MEMBRANE.

10M@250 T&B. E.W.

2-15M T&B.

2400

4900

2900

300

1400

200

150 150

JOINT FILLER AS SPEC'D.

10M@200 T&B.

4-20M T&B.

REMOVABLE SLABS. DETAIL - N.T.S.

167G ϕ OUTLET PIPE. EL. 233.480±m

EL. 232.880m.

PLAN ABOVE ELEV. 236.150m

SCALE. 1:50

ISSUED FOR INFORMATION WITH BID OPPORTUNITY 35-2006

CONSULTANT	DIVISION OF UTILITY ENGINEERING OFFICE	CENTRAL FILE	ENGINEERING OFFICE	SHEET No.	SIZE	SECURITY	No. OF FRAMES	REFERENCE No.	DATE FILMED
		DRAWING FILE NUMBER		No. OF SHEETS	MEDIUM	SEC. FRAME No.			

GRID CO-ORDINATES
MICROFILMING

WORKS & OPERATIONS DEPARTMENT

REV.	DESCRIPTION	BY	DATE
1	REVISED TO AS BUILT	WM	MAY 80

JAMES F. MacLAREN LIMITED
CONSULTING ENGINEERS, PLANNERS AND SCIENTISTS
WINNIPEG · LONDON · WINDSOR · WATERLOO · TORONTO

DRAWN BY: B.E.F.C.C. DESIGNED BY: N.R.
CHECKED BY: C.V.W. APPROVED BY: DATE

THE CITY OF WINNIPEG
WATERWORKS, WASTE AND DISPOSAL DIVISION

DEACON BOOSTER PUMPING STATION

STRUCTURAL
PLANS AND DETAILS
SURGE TANK BRANCH II

AS BUILT

SCALE: AS SHOWN
DATE: MAY 30, 1978.
CONSULTANT DRAWING No. S12 of 13
CITY DRAWING No. DBP-26

FILE 10819-A1-10368