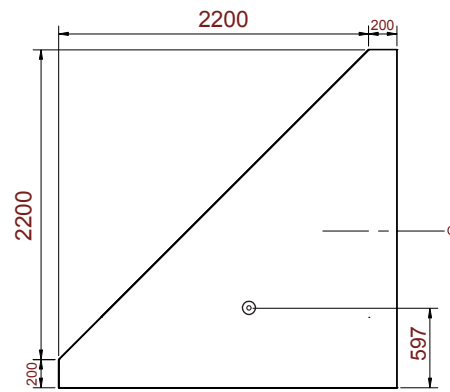
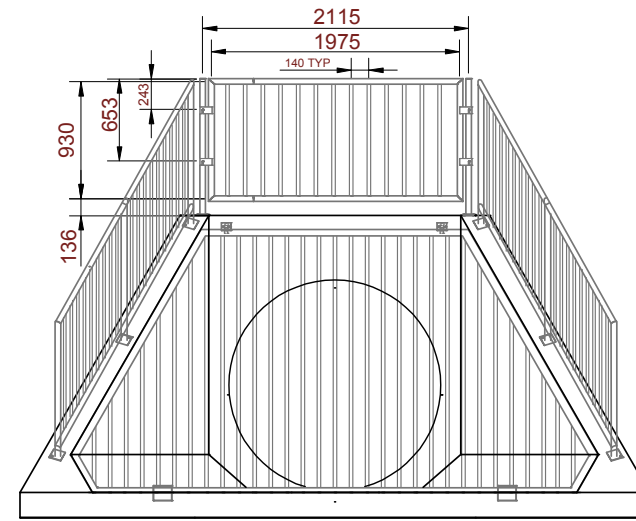


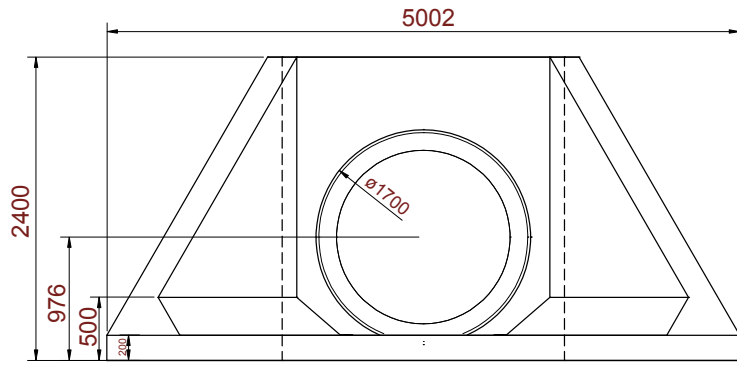
TOP VIEW



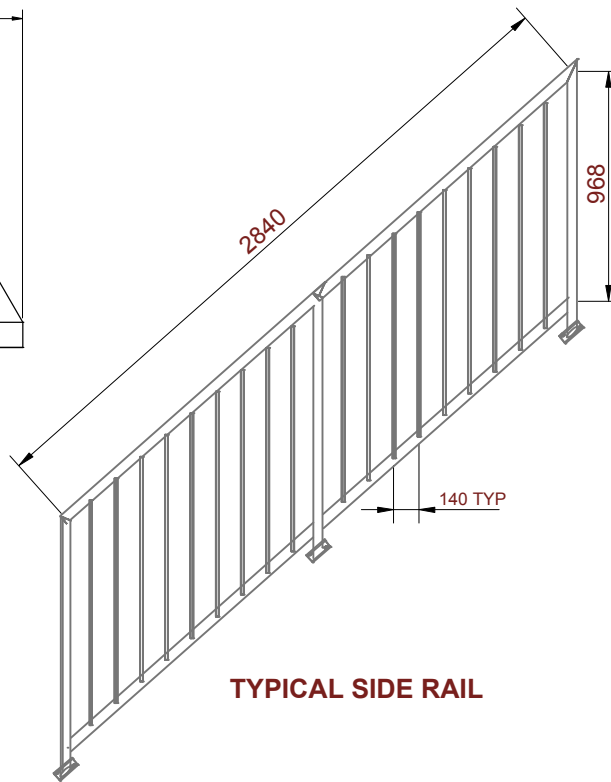
SIDE VIEW



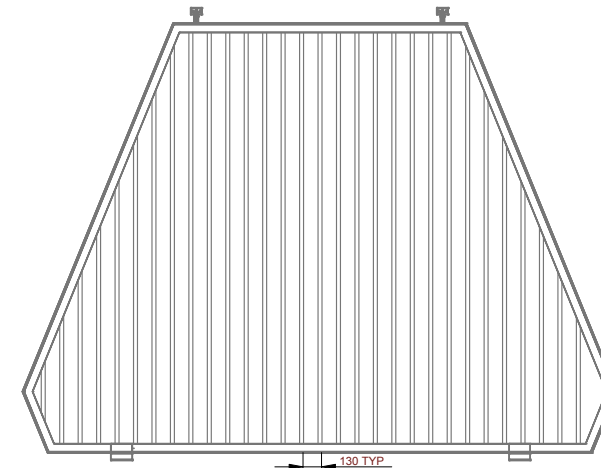
HAND RAIL



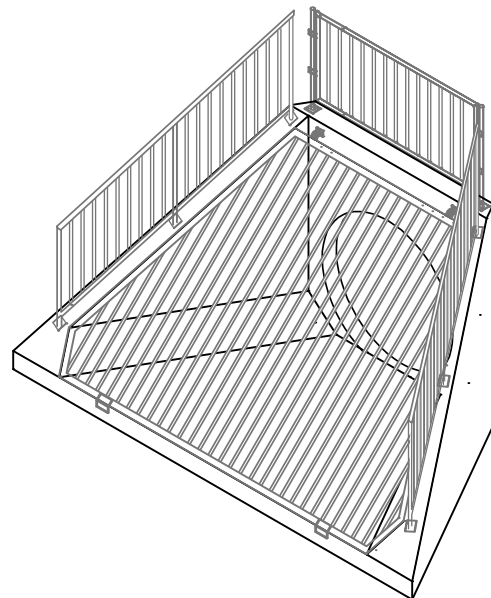
FRONT VIEW



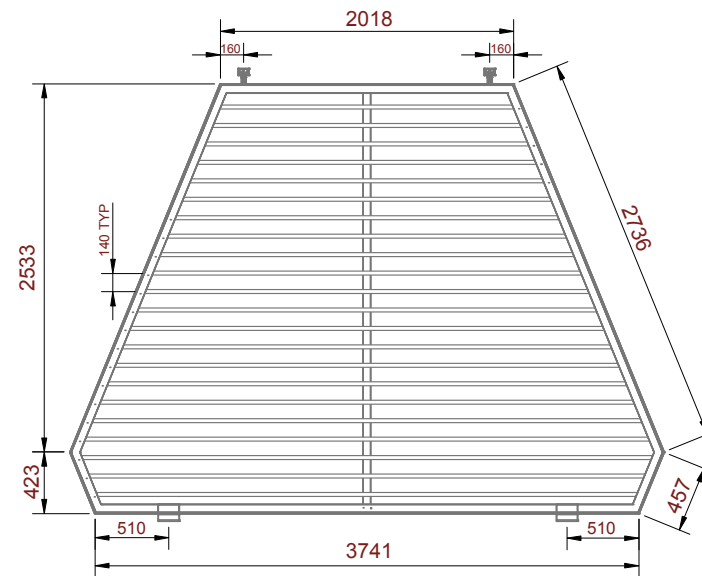
TYPICAL SIDE RAIL



INFLOW GRATE



ISOMETRIC



OUTFLOW GRATE

TYPICAL GRATE

SHAW SUPPLIED ITEMS	
3	STAINLESS STEEL "L" BRACKETS
6	190mm (3/4") STAINLESS DROP-IN ANCHORS
6	190mm (3/4") x 380mm (1 1/2") BOLTS
6	190mm (3/4") WASHERS

NOTES

GENERAL
1. FOR HANDLING, STORAGE, TRANSPORTATION AND ERECTION PROCEDURES PLEASE REFER TO "HEADWALL INSTALLATION GUIDE" AND "DAYTON/RICHMOND GUIDELINES FOR HANDLING CONCRETE PIPE AND UTILITY PRODUCTS".

2. WEIGHT = 8800 kg

3. TOLERANCE FOR STRUCTURAL ELEMENTS, MATERIALS & CONSTRUCTION CONFORM TO CAN/CSA A23.4 "PRECAST CONCRETE" CLAUSE 10.

4. PRECAST HEADWALL MUST BE FASTENED TO REINFORCED CONCRETE PIPE WITH SHAW SUPPLIED HARDWARE (SEE HEADWALL INSTALLATION GUIDE).

GEOTECHNICAL
1. GEOTECHNICAL ENGINEER TO PROVIDE ON-SITE INSPECTION FOR PLACEMENT AND COMPACTION OF BACKFILL.

DESIGN
1. THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH CAN/CSA S6.06 UNDER THE FOLLOWING DESIGN PARAMETERS:
- DESIGN LIVE LOAD = CL-625
- DESIGN DEAD LOAD = 2H-1V EARTH FILL TOP SLOPE.
- CONCRETE UNIT WEIGHT = 24.0 kN/m³
- SOIL/BACKFILL UNITWEIGHT = 22.0 kN/m³

REINFORCEMENT
1. ALL REINFORCING STEEL SHALL BE GRADE 400 AND CONFORM TO CAN/CSA G30.18 (LATEST EDITION).

2. ALL WELDED WIRE MESH SHALL HAVE A F_y = 485 MPA AND CONFORM TO CAN/CSA G30.14 AND G30.15 (LATEST EDITION).

3. ALL REINFORCING SHALL BE DETAILED, FABRICATED, PLACED AND SUPPORTED IN ACCORDANCE WITH CAN/CSA A23.4 (LATEST EDITION).

4. THE CONCRETE COVER OVER PRINCIPAL REINFORCING SHALL BE 50mm ± 10mm AS REQUIRED BY ENVIRONMENTAL EXPOSURE 8.11.2.2 (a) IN CAN/CSA S6.06.

CONCRETE
1. CONCRETE MIX DESIGNS SHALL CONFORM TO REQUIREMENTS:

- CONCRETE STRENGTH = 28 MPA AT TIME OF STRIPPING
- DESIGN CONCRETE STRENGTH OF 45 MPA AT 28 DAYS OR TIME OF SHIPPING
- 5% TO 7% AIR ENTRAINMENT
- GLEN HOLME AGGREGATE SHALL BE USED WITH A NOMINAL AGGREGATE SIZE OF 13mm

2. CONCRETE CURING SHALL BE IN CONFORMANCE WITH CAN/CSA A23.1 (LATEST EDITION).

3. SHAW CONCRETE BATCH No. SHALL BE 406.

ITEMS INCLUDED:

- 1. HWHANDLG
- 2. HWG2400H OR HWG2400V

REV NO.	REASON	DATE



DRAWING NO.
XXXXXXXXXX

DRAWING NO.
STANDARD HEADWALL
2400 X 2400 C/W 1350 PIPE

DRAWING NO.
STANDARD LAYOUT
HAND RAILS
INFLOW / OUTFLOW GRATES

CONTRACTOR
XXXXXXXXXX

DATE
22 JANUARY 2008

SCALE
AS NOTED

DRAWN
N. DIMOCK

CHECKED
R. MacDOW