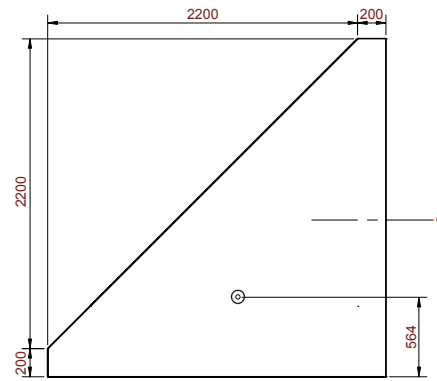
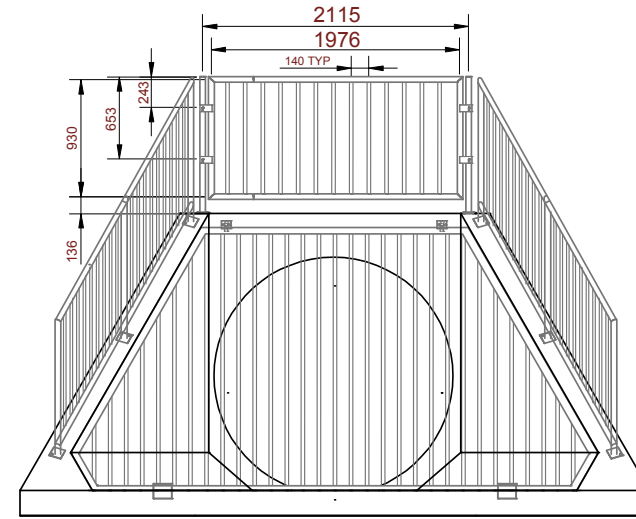


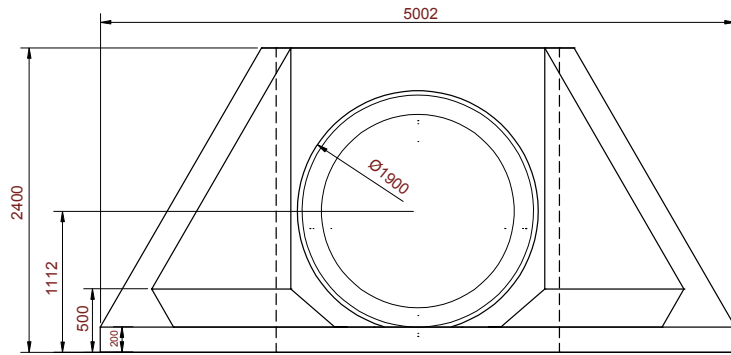
TOP VIEW



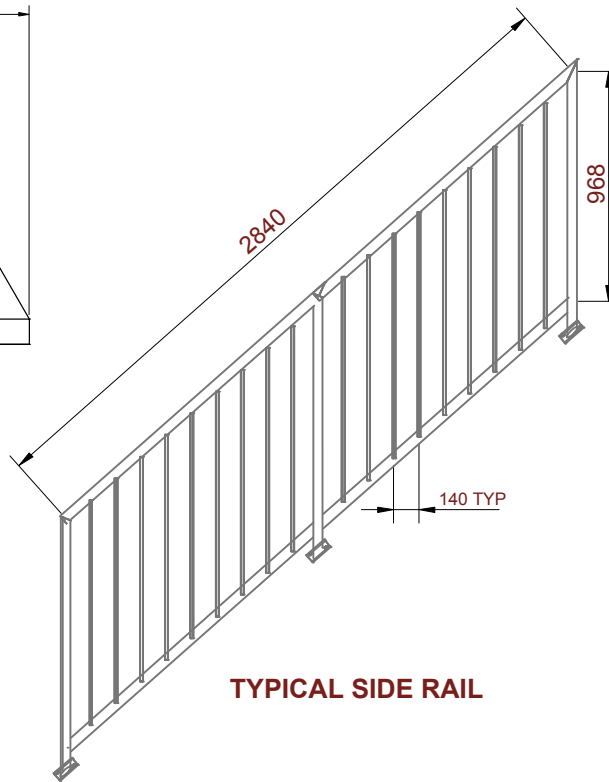
SIDE VIEW



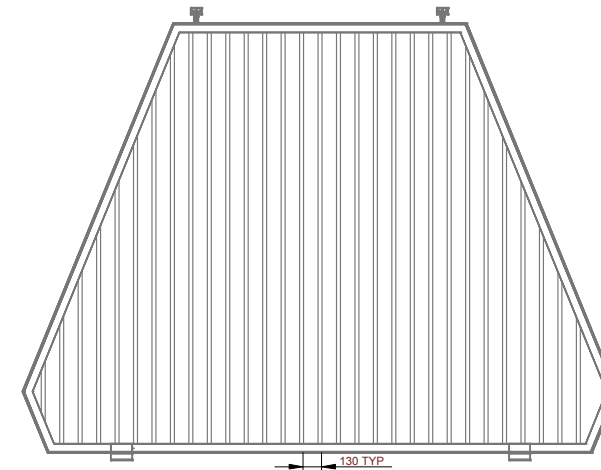
HAND RAIL



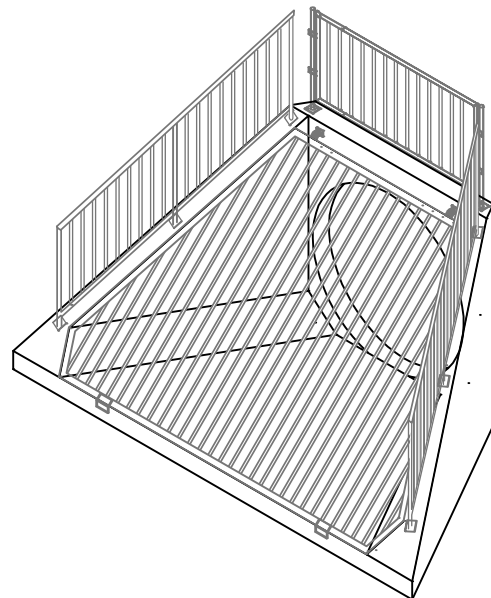
FRONT VIEW



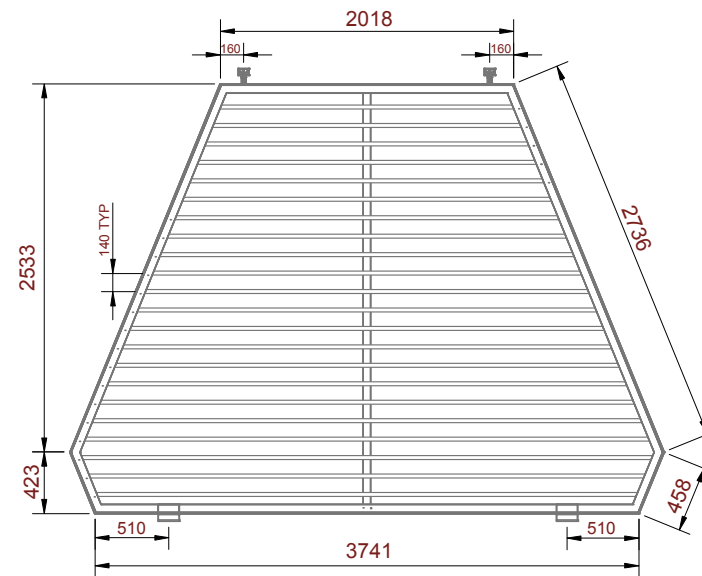
TYPICAL SIDE RAIL



INFLOW GRATE



ISOMETRIC



OUTFLOW GRATE

TYPICAL GRATE

SHAW SUPPLIED ITEMS	
3	STAINLESS STEEL "L" BRACKETS
6	19Ømm (3/4") STAINLESS DROP-IN ANCHORS
6	19Ømm (3/4") x 38Ømm (1 1/2") BOLTS
6	19Ømm (3/4") WASHERS

NOTES

- GENERAL**
- FOR HANDLING, STORAGE, TRANSPORTATION AND ERECTION PROCEDURES PLEASE REFER TO "HEADWALL INSTALLATION GUIDE" AND "DAYTON/RICHMOND GUIDELINES FOR HANDLING CONCRETE PIPE AND UTILITY PRODUCTS".
  - WEIGHT = 8500 kg
  - TOLERANCE FOR STRUCTURAL ELEMENTS, MATERIALS & CONSTRUCTION CONFORM TO CAN/CSA A23.4 "PRECAST CONCRETE" CLAUSE 10.
  - PRECAST HEADWALL MUST BE FASTENED TO REINFORCED CONCRETE PIPE WITH SHAW SUPPLIED HARDWARE (SEE HEADWALL INSTALLATION GUIDE).
- GEOTECHNICAL**
- GEOTECHNICAL ENGINEER TO PROVIDE ON-SITE INSPECTION FOR PLACEMENT AND COMPACTION OF BACKFILL.
- DESIGN**
- 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/m<sup>3</sup>
    - SOIL/BACKFILL UNITWEIGHT = 22.0 kN/m<sup>3</sup>
- REINFORCEMENT**
- ALL REINFORCING STEEL SHALL BE GRADE 400 AND CONFORM TO CAN/CSA G30.18 (LATEST EDITION).
  - ALL WELDED WIRE MESH SHALL HAVE A F<sub>y</sub> = 485 MPA AND CONFORM TO CAN/CSA G30.14 AND G30.15 (LATEST EDITION).
  - ALL REINFORCING SHALL BE DETAILED, FABRICATED, PLACED AND SUPPORTED IN ACCORDANCE WITH CAN/CSA A23.4 (LATEST EDITION).
  - 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**
- 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
  - CONCRETE CURING SHALL BE IN CONFORMANCE WITH CAN/CSA A23.1 (LATEST EDITION).
  - SHAW CONCRETE BATCH No. SHALL BE 406.
- ITEMS INCLUDED:**
- HWHANDLG
  - HWG2400H OR HWG2400V

REV NO.	REASON	DATE



DRAWING NO. XXXXXXXXX

DRAWING NO. STANDARD HEADWALL 2400 X 2400 C/W 1500 PIPE

DRAWING NO. STANDARD LAYOUT HAND RAILS INFLOW / OUTFLOW GRATES

CONTRACTOR XXXXXXXXX

DATE 22 JANUARY 2008 SCALE AS NOTED

DRAWN N. DIMOCK CHECKED R. MacDOW