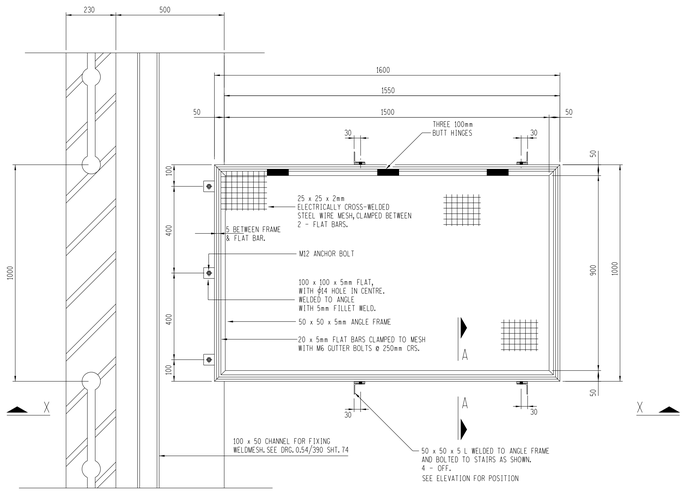
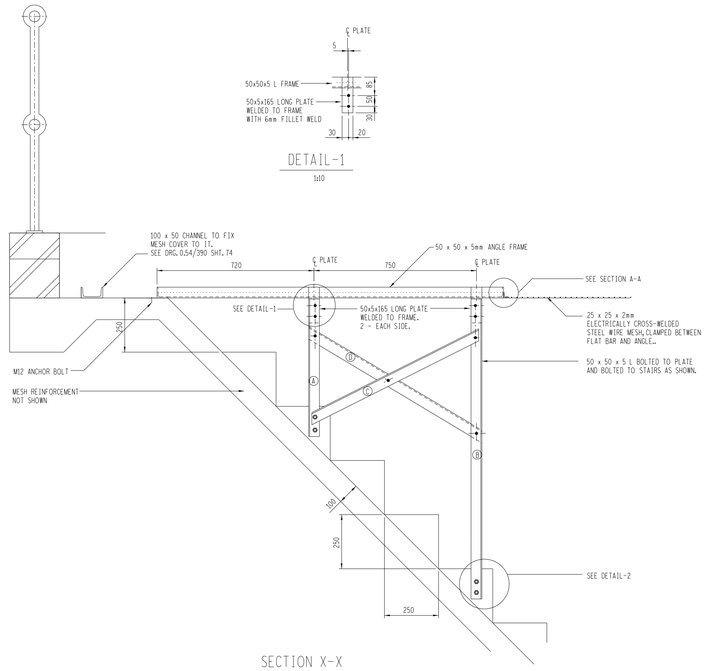
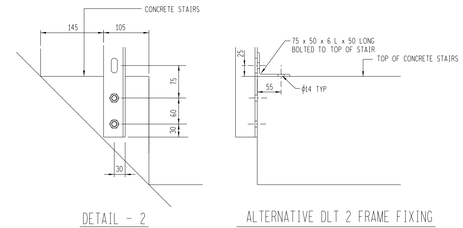


PLAN ON TRAP DOOR ABOVE STAIRS
1:10



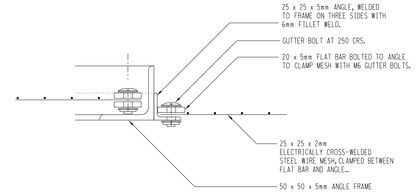
DETAIL-1
1:10

SECTION X-X
1:10



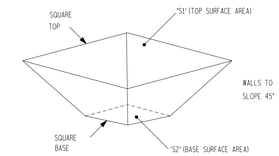
DETAIL - 2
1:5

ALTERNATIVE DLT 2 FRAME FIXING
1:5



SECTION A-A
1:5

DAM SHAPE



PYRAMID FRUSTRUM

$V = \frac{1}{3} h [S1 + S2 + \sqrt{S1.S2}]$

DESIGN DATA

POSITION OF OUTLET PIPE INVERT. (SEE SECTION)

(Y) ½ DAM VOLUME

(X) ⅘ DAM VOLUME

DIMENSIONS (X) & (Y) ARE BASED ON THE S.G. RATIOS OF WATER AND TRANSFORMER OIL WITH A 20% VOLUME SAFETY MARGIN TO EACH.

THEREFORE
INVERT LEVEL OF OUTLET PIPE = (X) = 120% OF THE OIL VOLUME.

THUS
66,66% OF THE TOTAL VOLUME OF THE DAM IS THE TRANSFORMER OIL HOLDING CAPACITY.

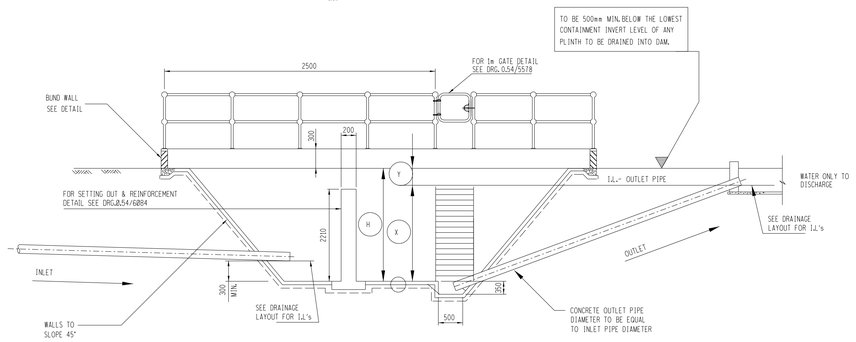
e.g. HOLDING DAM FOR $80m^3$ OF OIL

DAM DETAILS

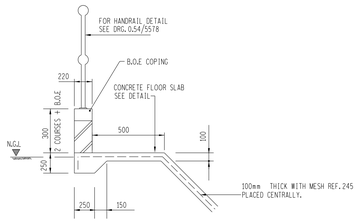
TOP = 9,276 x 9,276m
BASE = 4,276 X 4,276m
DEPTH = 2,50m
WALL SLOPE = 45°

$120m^3$ TOTAL VOLUME x 66,66% = $80m^3$ TFFR OIL HOLDING CAPACITY

TYPE	OIL HOLDING CAPACITY	(A) LENGTH EACH SIDE	(B) LENGTH EACH SIDE	(H)	(X)	(Y)	AREA 245 MESH
5	50m 3	7,784m	2,784m	2,500m	2,250m	0,250m	118m 2
6	60m 3	8,324m	3,324m	2,500m	2,250m	0,270m	128m 2
8	80m 3	9,726m	4,726m	2,500m	2,210m	0,290m	149m 2
10	100m 3	10,110m	5,110m	2,500m	2,190m	0,310m	168m 2
12	120m 3	10,862m	5,862m	2,500m	2,180m	0,320m	188m 2
15	150m 3	11,876m	6,876m	2,500m	2,170m	0,330m	215m 2
16	160m 3	12,191m	7,191m	2,500m	2,160m	0,340m	223m 2
18	180m 3	12,792m	7,792m	2,500m	2,150m	0,350m	241m 2
20	200m 3	13,359m	8,359m	2,500m	2,150m	0,350m	259m 2
23	230m 3	14,244m	9,244m	2,500m	2,150m	0,350m	284m 2



DAM CONSTRUCTION DETAILS
N.T.S



BUND WALL DETAIL
N.T.S

BOLT SCHEDULE		
STRENGTH GRADE 4.8		
TYPE	LENGTH	NO. OFF
M12	40mm LONG	20
M12	ANCHOR BOLT	11

WATER PRESSURE RELEASE VALVE:

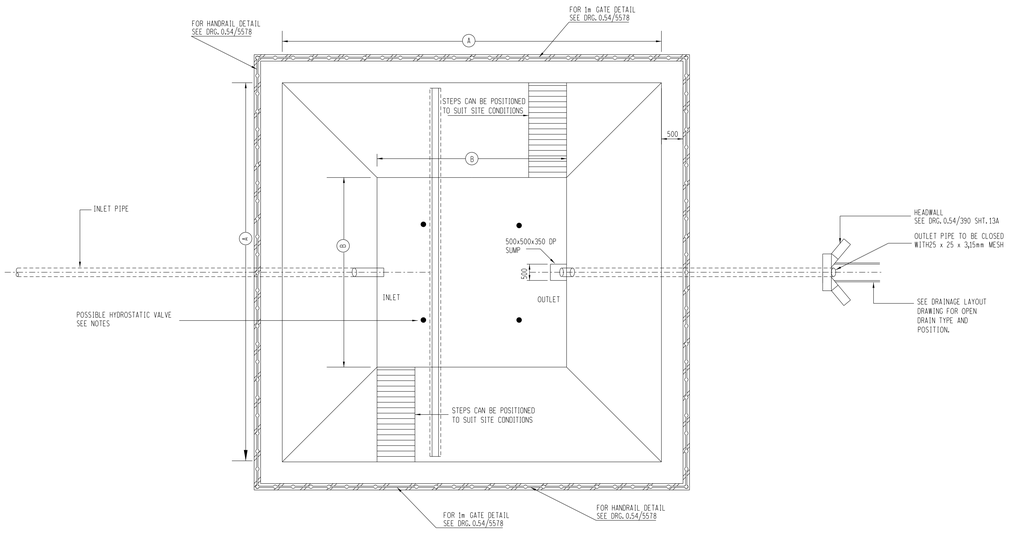
VALVES TO BE INSTALLED ONLY WHEN INSTRUCTED BY ESKOM FOR AREAS WITH HIGH WATER TABLE.

INSTALL FOUR VALVES IN FLOOR EQUALLY SPACED AS SHOWN ON PLAN IN CENTRE OF PANEL.

VALVES TO BE UNDERDRAIN COMPLETE WITH HYDROSTATIC VALVE SUPPLIED BY "WATERLINES" AND INSTALLED TO MANUFACTURERS SPECIFICATION TEL: 011 786 9623 OR SIMILAR APPROVED.

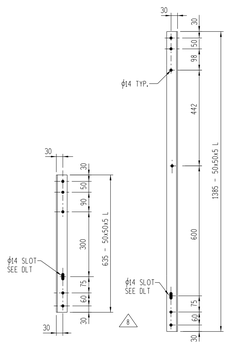
NOTES:

1. 100mm THICK CONCRETE WITH MESH REF. 245 (200x200x6,3mm) PLACED CENTRALLY
2. CONCRETE STRENGTH AT 28 DAYS/STONE SIZE: BLINDING = 20/19
3. CONCRETE TO HAVE WOOD FLOAT FINISH
4. ALL BUILDING AND CIVIL WORKS TO COMPLY WITH S.A.B.S. 1200 SPECS.
5. FOR STANDARD CIVIL DETAILS (DTL) REFER TO 0.54/390.
6. THE DAM MUST BE COMPLETELY WATERPROOF.
7. FOR 1.2's SEE DRAINAGE LAYOUT DRAWING.
8. ALL STEELWORK TO BE GRADE 300W
9. ALL STEELWORK TO BE HOT DIPPED GALVANIZED TO SABS 763.
10. WELDING SYMBOLS IN ACCORDANCE WITH SABS 0.44
11. ALL WELDS TO BE SEAL WELDED
12. ALL HOLES TO BE ϕ14mm UNLESS OTHERWISE SHOWN (M6 GUTTER BOLT)



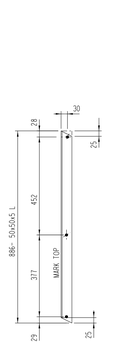
PLAN
N.T.S

ϕ14 SLOT DETAIL
1:2

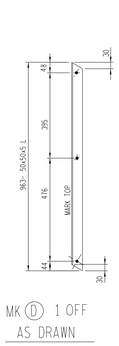


MK (A) 1 OFF AS DRAWN
1:10
MK (A) 1 OFF OPP. HAND

MK (B) 1 OFF AS DRAWN
1:10
MK (B) 1 OFF OPP. HAND



MK (C) 1 OFF AS DRAWN
1:10
MK (C) 1 OFF OPP. HAND



MK (D) 1 OFF AS DRAWN
1:10
MK (D) 1 OFF OPP. HAND

REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	Ø54/	REFERENCE DRAWINGS
10	GALVANIZED STEEL HANDRAIL TO BE BUILD ON BUNDWALL	CJ	DJS	BJH	03/2018		
9	COMPARTMENT WALL & STAIRS ADDED	SM	DJS	DJS	05/2011		
8	ALTERNATIVE FIXING ADDED (DIMS REVD	DJA	DJS	DJS	05/2000		
7	MESH WIRE THICKNESS CHANGED	DBN	DJS	DJS	05/2001		
6	VALVE ADDED & JOINT DTL REMOVED	DBN		DJS	05/2000	398	BOUNDARY FENCE
5	REDRAWN ON CAD TRAPDOOR ADDED				02/1998	5644	JOINT DETAILS

DESIGN APPROVED	L.RYAN	
DATE	03/03/1998	
DESIGN CHECKED	G.V.C.	
DATE	26/02/1998	
DRAWN BY	D.B. NAUDE	
DATE	02/1998	
SCALE	AS SHOWN	

Eskom Transmission

TRANSFORMER OIL HOLDING DAM

DETAILS

©

SHEET NUMBER	REVISION
0.54/3754	10

SIZE GROOTTE A0