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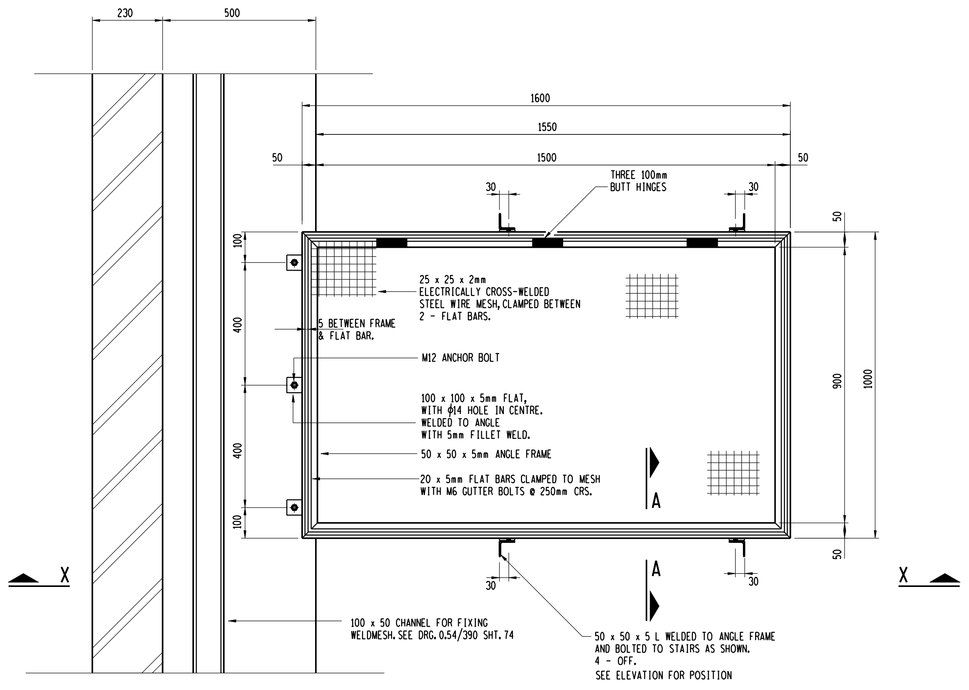
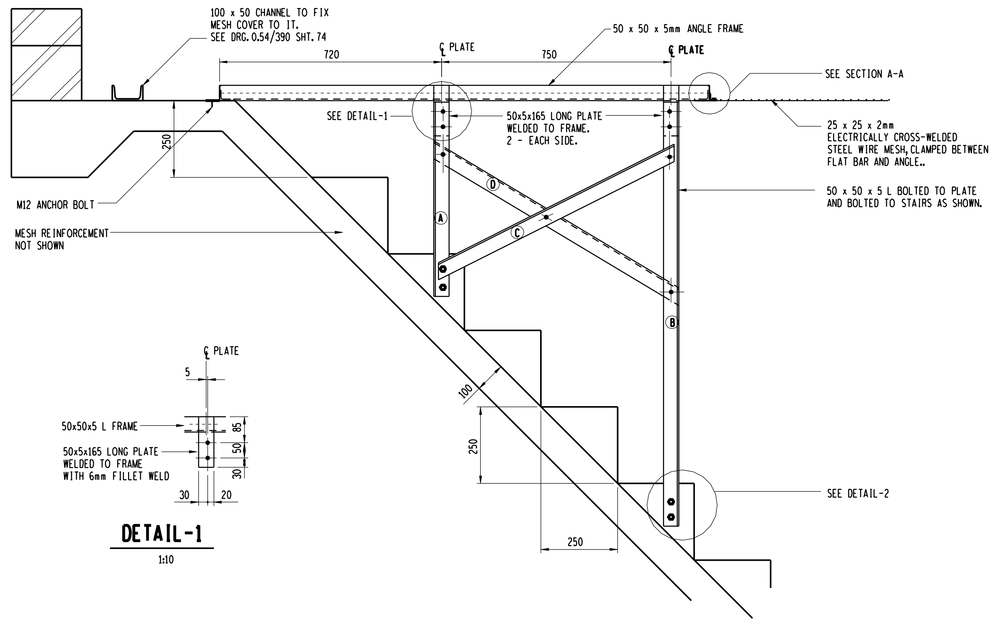
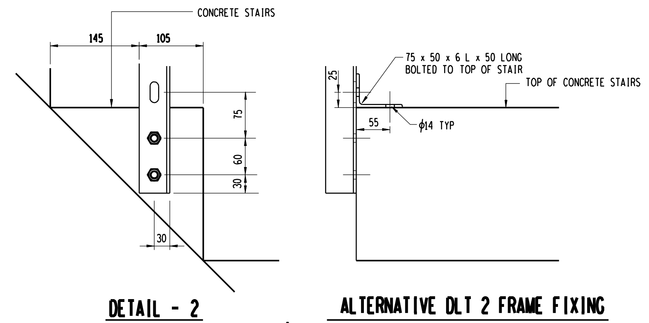


PLAN ON TRAP DOOR ABOVE STAIRS
1:10



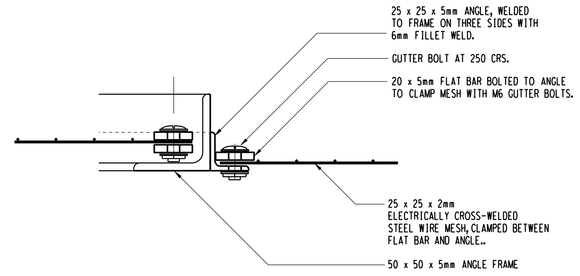
SECTION X-X
1:10

DETAIL-1
1:10



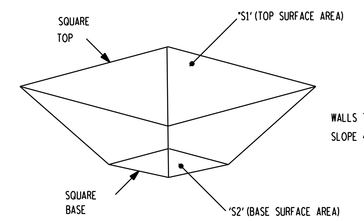
DETAIL - 2
1:5

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.

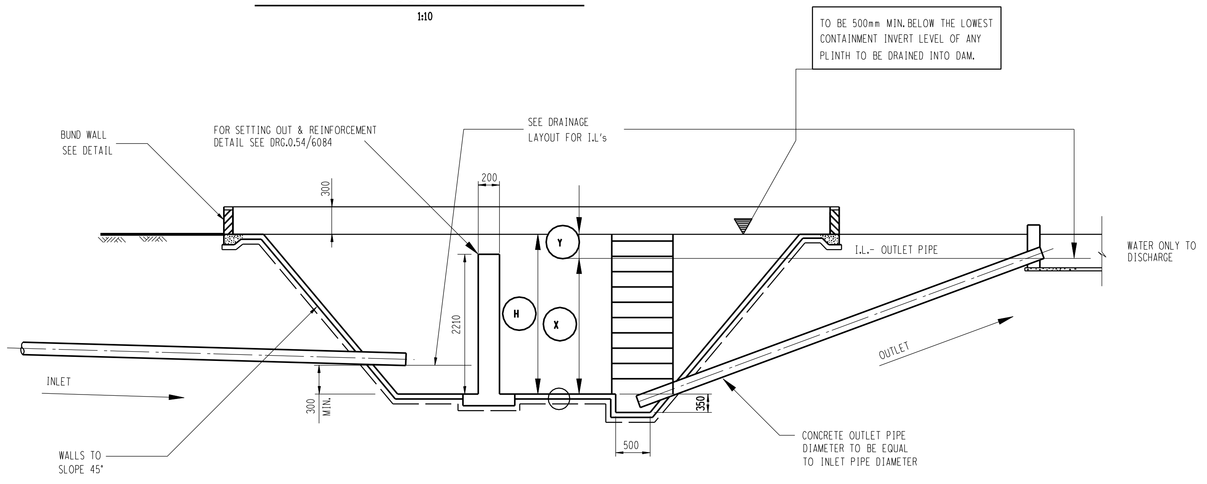
THUS
66,66% OF THE TOTAL VOLUME OF THE DAM IS THE TRANSFORMER OIL HOLDING CAPACITY.

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

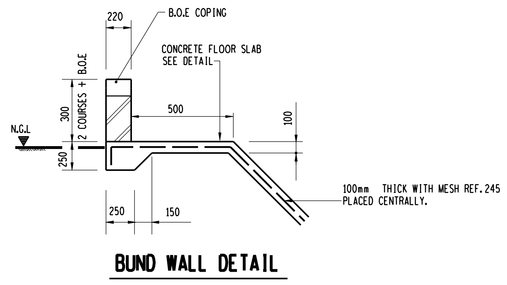
DAM DETAILS

TOP = 9,726 x 9,726m
BASE = 4,726 X 4,726m
DEPTH = 2,50m
WALL SLOPE = 45°

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



DAM CONSTRUCTION DETAILS
N.T.S



BUND WALL DETAIL
N.T.S

TYPE	OIL HOLDING CAPACITY	(A) LENGTH EACH SIDE	(B) LENGTH EACH SIDE	(H)	(X)	(Y)	AREA 245 MESH
5	50m³	7,784m	2,784m	2,500m	2,250m	0,250m	118m²
6	60m³	8,324m	3,324m	2,500m	2,250m	0,270m	128m²
8	80m³	9,726m	4,726m	2,500m	2,210m	0,290m	149m²
10	100m³	10,110m	5,110m	2,500m	2,190m	0,310m	168m²
12	120m³	10,862m	5,862m	2,500m	2,180m	0,320m	188m²
15	150m³	11,876m	6,876m	2,500m	2,170m	0,330m	215m²
16	160m³	12,191m	7,191m	2,500m	2,160m	0,340m	223m²
18	180m³	12,792m	7,792m	2,500m	2,150m	0,350m	241m²
20	200m³	13,359m	8,359m	2,500m	2,150m	0,350m	259m²
23	230m³	14,244m	9,244m	2,500m	2,150m	0,350m	284m²

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

WATER PRESSURE RELEASE VALVE:

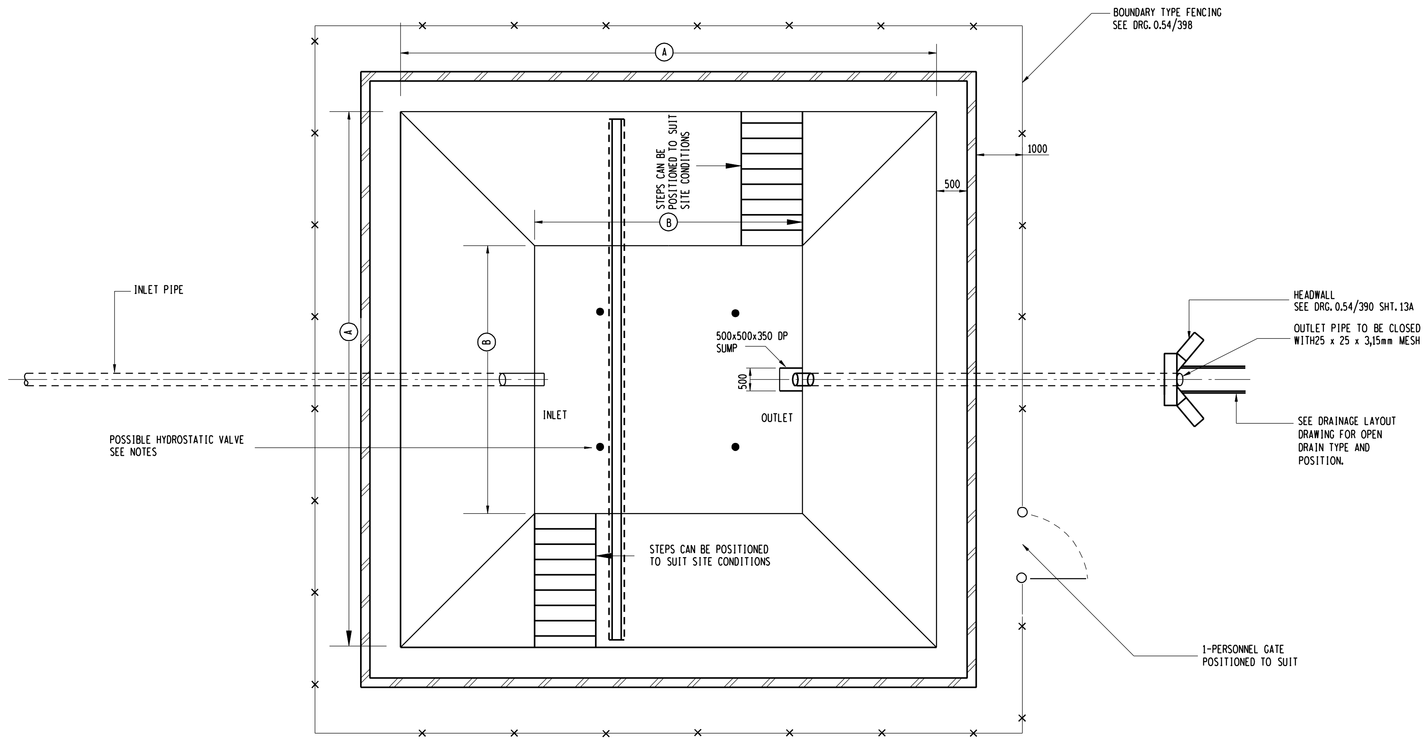
VALVES TO BE INSTALLED ONLY WHEN INSTRUCTED BY ESKOM FOR AREAS WITH HIGH WATER TABLE.

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 9823 OR SIMILAR APPROVED.

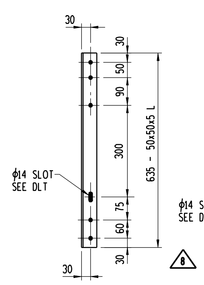
NOTES:

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 I.L.'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)

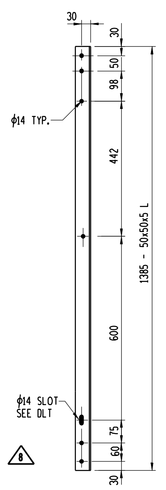


PLAN
N.T.S

ϕ14 SLOT DETAIL
1:2



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



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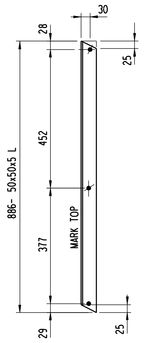
OPP. HAND



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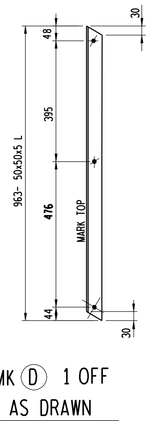
OPP. HAND



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

REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE		
9	COMPARTMENT WALL & STAIRS ADDED	SM	DJCS	DJCS	05/2011		
8	ALTERNATIVE FIXING ADDED DIMS REC'D	DJA	DJCS	DJCS	05/2000		
7	MESH WIRE THICKNESS CHANGED	DBN	DJCS	DJCS	09/2001		
6	VALVE ADDED & JOINT DTL. REMOVED	DBN		DJCS	05/2000	398	BOUNDARY FENCE
5	REDRAWN ON CAD TRAPDOOR ADDED				02/1998	5644	JOINT DETAILS

DESIGN APPROVED	L.AYAN
DATE	03/03/1998
DESIGN CHECKED	G.A.C.
DATE	26/02/1998
DRAWN BY	DB. NAUDE
DATE	02/1998
SCALE	AS SHOWN

Eskom Transmission

TRANSFORMER OIL HOLDING DAM
DETAILS

0.54/3754

SHEET NUMBER: 9
REVISION: 9

SIZE GROOTTE A0