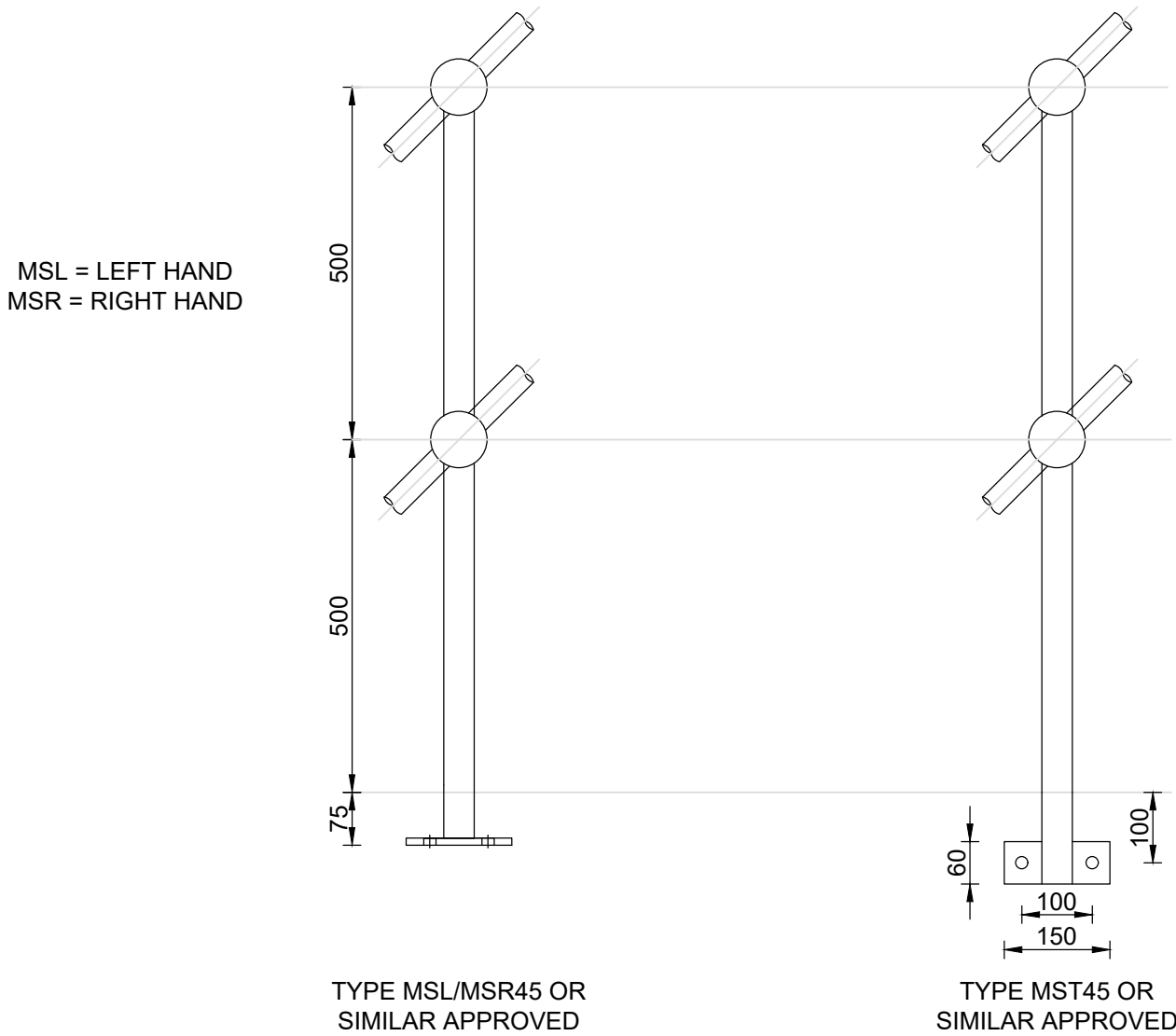
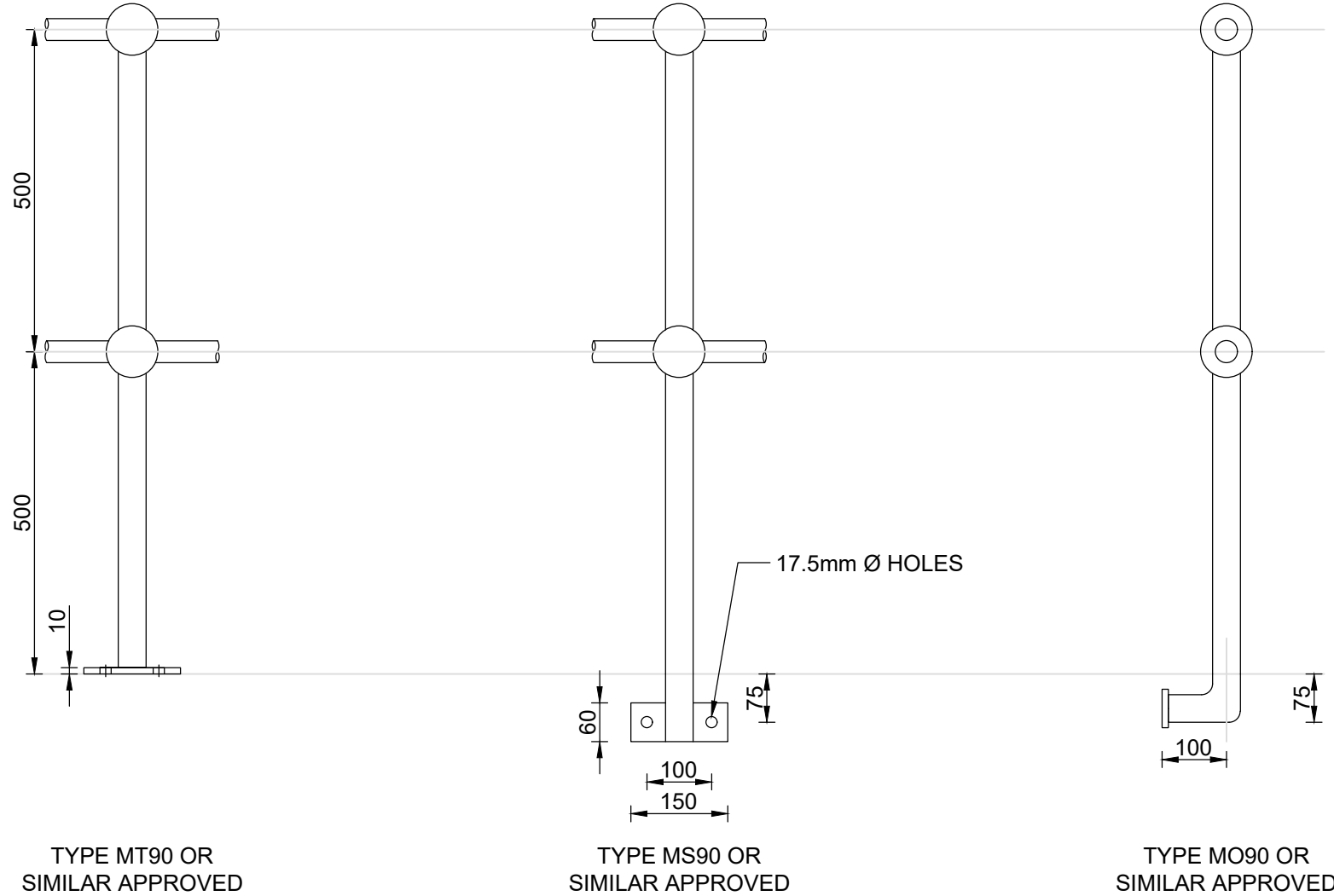


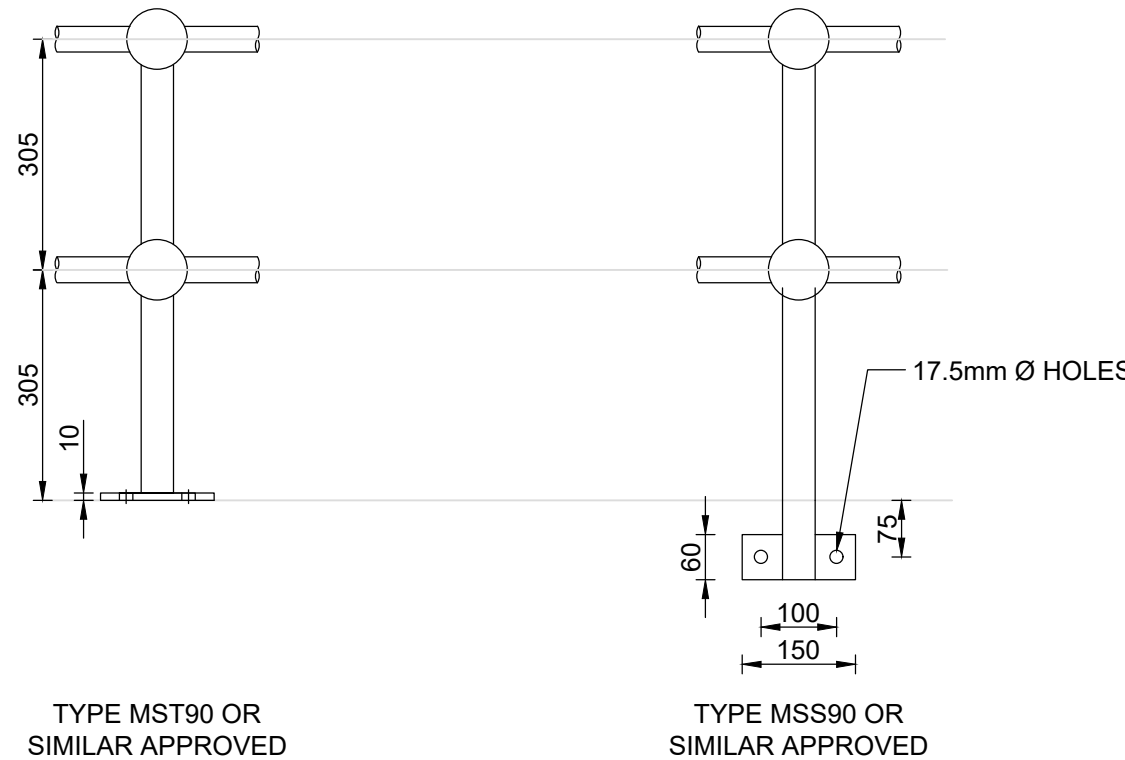
TYPICAL DETAILS
FOR STAIRS
SCALE 1:10



STANCHIONS (WITH ANGLED HANDRAILS)
SCALE 1:10



STANCHIONS
SCALE 1:10

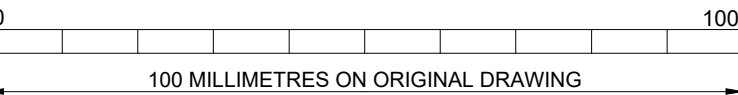


STANCHIONS FOR STAIRS
SCALE 1:10

Process Unit	Description	Location	H (m)	Length (m)	Unit	Qty	DwgNo
	Grid:						
Inlet Works	Concrete walkways ex hand-stops at head of works	Walkway	1.0	4.3	m	4.3	10909001-0106
Inlet Works	Walkway ex channel crossing (1 x side only)	Walkway	1.0	1.1	m	1.1	10909001-0106
Inlet Works	Walkway new channel crossing @ new coarse screen (1 x side only)	Walkway	1.0	1.1	m	1.1	10909001-0106
Inlet Works	Walkway new screen crossing (1 x side only)	Walkway	1.0	1.1	m	1.1	10909001-0106
Inlet Works	Along sides of new channel, strategic sections	Channel	1.0	30.1	m	30.1	10909001-0106
Inlet Works	Along sides of exist channel, strategic sections	Channel	1.0	19.0	m	19.0	10909001-0106
Inlet Works	Vortex Tanks - walkway access (2 sides x 7.5m) downstream (2 x 2.2 m x 2 structures)	Walkway	1.0	15.0	m	15.0	10909001-0106
Inlet Works	Opposite Flow Meter Flume, Grit Channel (2 x 1.5m)	Channel	1.0	3.0	m	3.0	10909001-0106
Inlet Works	Existing grit channel termination - dead end	Channel	1.0	2.0	m	2.0	10909001-0106
Inlet Works	Existing by-pass channel dead-end	Channel	1.0	4.6	m	4.6	10909001-0106
Inlet Works	Part-Perimeter of vortex tank (2 tanks x 6m)	Vortex tanks	1.0	12.0	m	12.0	10909001-0106
Imhoff Tank	Around the outer perimeter (2 x 10.6m + 2 x 12.0m)	Imhoff Tank	1.0	45.2	m	45.2	10909001-0513
Syphon Chamber	Walkway above hand-stops; both sides (2 x 3.550 m)	Syphon Chamber	1.0	7.1	m	7.1	10909001-0542
Bio-filter	Access Tower: length: (1.77m + 1.4m) x 2	Bio-filter	1.0	6.3	m	6.3	10909001-0546
BNRAS	Flow Meter Chamber (BNRAS): Strategic edges only	BNRAS, Flow Meter Chamber	1.0	5.0	m	5.0	10909001-0528
BNRAS	Access to Surface Aerators (13.6m per platform)	BNRAS Aerators x 6	1.0	81.6	m	81.6	10909001-0528
BNRAS	Access to Mixers; 5.000m length x 2 x 4 no	BNRAS, Mixers, Access x4	1.0	40.0	m	40.0	10909001-0528
BNRAS	Access to Mixers; 7.500m length x 2	BNRAS, Mixers, Access x2	1.0	15.0	m	15.0	10909001-0528
BNRAS	Central Walkway and Anoxic Zone (concrete edges)	BNRAS, Central walkway	1.0	91.6	m	91.6	10909001-0528
BNRAS	Effluent Launder & Stairs: (2.55m + 1m) x 2	BNRAS, Effluent Launder	1.0	7.1	m	7.1	10909001-0528
BNRAS	Outer perimeter: WAS Sump – n/a [mentis grating sufficient]	WASSump	1.0	0.0	m	0.0	10909001-0528
BNRAS	Outer perimeter: RAS Sump	RASSump	1.0	10.0	m	10.0	10909001-0528
Clarifier							
CL2 Tank	Existing Chlorination Tank, Flow Meter Sensor - railing on one side	CL2 Tank, Flow Meter	1.0	1.0	m	1.0	10909001-0509
Ponds	Access / Jetty	Pond 1 - Outlet Jetty	1.0	10.0	m	10.0	RE-TO ADMSE
Ponds	Access / Jetty	Pond 2 - Outlet Jetty	1.0	10.0	m	10.0	RE-TO ADMSE
Ponds	Access / Jetty	Pond 3 - Outlet Jetty	1.0	12.0	m	12.0	RE-TO ADMSE
	Total					444.0	

- NOTES:
- DRAWING TO BE READ WITH BILL OF QUANTITIES
 - ALL STEEL ELEMENTS TO BE HOT-DIPPED GALVANISED (HDG) TO SABS 1461.
 - RAILINGS AND STANCHIONS TO BE MADE FROM MILD STEEL AND OF BALL TYPE TUBULAR WELDED CONSTRUCTION.
 - TUBULAR STEEL MEMBER SPECIFICATIONS:
 - STANCHIONS: 42.9mm OD
 - BENDS: 34.2mm OD
 - HANDRAIL TUBING: 34.1mm OD, 2.5mm THICK, 6m LONG
 - THE TABLE PROVIDED IS INDICATION OF OVERALL HANDRAILING LENGTHS. STRATEGIC LOCATIONS WILL BE CONFIRMED WITH THE CONTRACTOR ON SITE DURING CONSTRUCTION
 - CONTRACTOR TO CONFIRM ALL DIMENSIONS ON SITE AND IS REQUIRED TO PROVIDE THE EMPLOYER'S AGENT WITH WORKSHOP DRAWINGS FOR APPROVAL PRIOR TO ORDERING AND MANUFACTURING

FOR TENDER



- (A) BEFORE CONTRACT COMMENCES
(A) AFTER CONTRACT HAS COMMENCED

Nr.	DATE	AMENDMENTS
(T1)	2025/02/12	ISSUED FOR TENDER

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PROJECT
TSHIAME WWTW REFURBISHMENT

DRAWING DESCRIPTION
TYPICAL DETAIL:
REPLACEMENT HAND RAILS

DRAWING NO.
10909001-0516

(T1)

DESIGNED:	GM	CHECKED:	GM
DRAWN:	HP	SCALE:	AS SHOWN A1
APPROVED:		DATE:	2025-02-03
FILE PATH:	V3 Consulting Engineers\Bloemfontein - 03 Des Dev\04 Draw\01 Civils\02 DWG		

ISSUED FOR TENDER