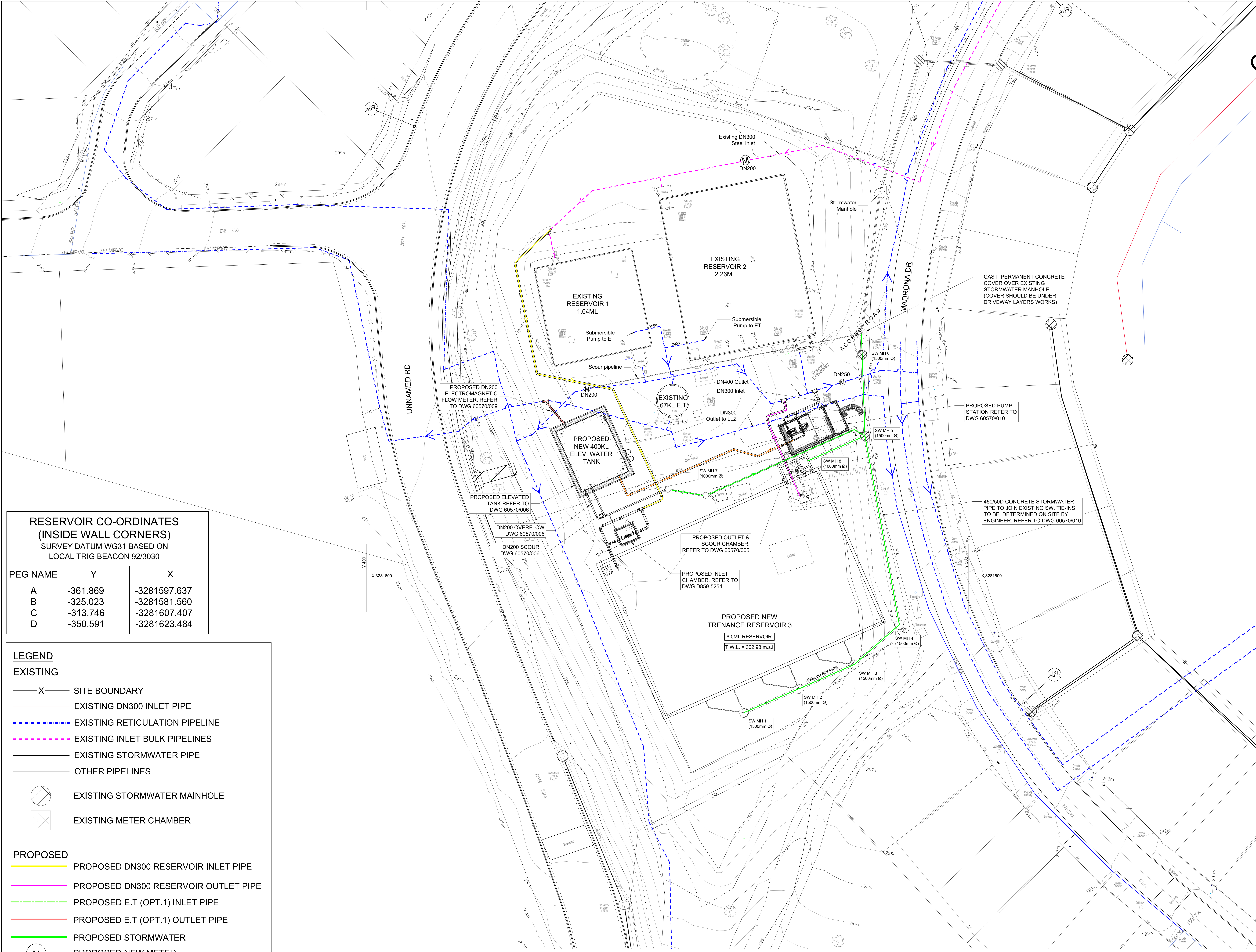


DRAWING REGISTER					
D859 - TRENANCE 3 RESERVOIR					
DWG No.		DWG No.	CONTRACT No.	TITLE	SHEET
(CONSULTANT)		(CLIENT)	(WS)		No.
PROJECT	No.	RESERVOIR			
D859	5000	60570/001	32269-5W	Site Plan	1 of 1
D859	5250	60570/002	32269-5W	Concrete Floor Layout and Details	1 of 1
D859	5251	60570/003	32269-5W	Reservoir Sections Concrete Outline and Details	1 of 1
D859	5252	60570/004	32269-5W	Concrete Roof Layout and Details	1 of 1
D859	5253	60570/005	32269-5W	Outlet Structure and Scour Chamber Layout and Details	1 of 1
D859	5254	60570/006	32269-5W	Inlet Chamber and Associated Pipework	1 of 1
D859	5255	60570/007	32269-5W	Elevated Tank & Details	1 of 1
D859	5256	60570/008	32269-5W	DN300 Inlet Plan & Long Section (Elevated Tower)	1 of 1
D859	5257	60570/009	32269-5W	DN200 Meter Chamber off DN300 (Elevated Tower Outlet Pipe)	1 of 1
D859	5258	60570/010	32269-5W	Stormwater Plan & Long Section	1 of 1
PUMP STATION					
D859	5200	60570/015	32269-5W	Pumpstation Associated details	1 of 3
D859	5200	60570/015	32269-5W	Pumpstation Associated details	2 of 3
D858	5200	60570/015	32269-5W	Pumpstation Associated details	3 of 3
STANDARD DETAILS					
D859	5400	60570/020	32269-5W	Standard Details	1 of 2
D859	5400	60570/020	32269-5W	Standard Details	2 of 2
D859	5401	60570/021	32269-5W	Hinged Mild Steel Cover and Frame for 1200 x 1200mm Opening	1 of 1
D859	5402	60570/022	32269-5W	GRP Access Ladder	1 of 2
D859	5402	60570/022	32269-5W	GRP Access Ladder	2 of 2
D859	5403	60570/023	32269-5W	Standard Details Typical Trench Details	1 of 1
D859	5404	60570/024	32269-5W	Standard Details Thrust Block Details	1 of 1
D859	5405	60570/025	32269-5W	Typical DN200 Inline Meter Assembly	1 of 1
D859	5406	60570/026	32269-5W	Typical DN250 Inline Meter Assembly	2 of 1
ELECTRICAL DETAILS					
D859	5500	60570/029	32269-5W	Electrical & Instrumentation Layout	1 of 1
D859	3000	60570/030	32269-5W	P & ID Diagram	1 of 1
D859	5502	60570/031	32269-5W	Lightning Protection & Earthing Layout	1 of 2
D859	5502	60570/031	32269-5W	Lightning Protection & Earthing Layout	2 of 2
D859	5503	60570/032	32269-5W	Pump Station Electrical, Fire & Intruder Alarm Layout	1 of 1
D859	5504	60570/033	32269-5W	Typical G.A & Line Diagram of Motor Control Panel	1 of 1



RESERVOIR CO-ORDINATES (INSIDE WALL CORNERS) SURVEY DATUM WG31 BASED ON LOCAL TRIG BEACON 92/3030		
PEG NAME	Y	X
A	-361.869	-3281597.637
B	-325.023	-3281581.560
C	-313.746	-3281607.407
D	-350.591	-3281623.484

LEGEND

EXISTING

X

SITE BOUNDARY

EXISTING DN300 INLET PIPE

EXISTING RETICULATION PIPELINE

EXISTING INLET BULK PIPELINES

EXISTING STORMWATER PIPE

OTHER PIPELINES

EXISTING STORMWATER MAINHOLE

EXISTING METER CHAMBER

PROPOSED

PROPOSED DN300 RESERVOIR INLET PIPE

PROPOSED DN300 RESERVOIR OUTLET PIPE

PROPOSED E.T (OPT.1) INLET PIPE

PROPOSED E.T (OPT.1) OUTLET PIPE

PROPOSED STORMWATER

M

PROPOSED NEW METER

eTHEKWINI WATER SERVICES

WATER DESIGN BRANCH

REDUCED PLAN USE SCALE BELOW

0 10 20 30 40 50 60 70

70mm ON ORIGINAL PLAN

CONSULTANT:

NAIDU CONSULTING

1st Floor
No.5, The Boulevard
West Way Office Park
Wesville, Durban
Tel: +27 (0) 31 265 6007
Fax: +27 (0) 31 265 6011
Email: info@naiduconsulting.com

Drawing No.: D859-52-5000 REV 0

FOR INFORMATION

REFERENCE DRAWINGS (60570/...)

DWG No.	TITLE/DESCRIPTION
001	Site Plan
002	Concrete Floor Layout and Details
003	Reservoir Sections Concrete Outline and Details
004	Concrete Roof Layout and Details
005	Outlet Structure and Scour Chamber Layout and Details
006	Inlet Chamber and Associated Pipework
007	Elevated Tank & Details
008	DN 300 Inlet Plan & Long Section (Elevated Tower)
009	DN 200 Meter Chamber off DN 300 (Elevated Tower Outlet Pipe)
010	Stormwater Plan & Long Section
015	Pumpstation Associated details Sht 1
015	Pumpstation Associated details Sht 2
015	Pumpstation Associated details Sht 3
029	Electrical & Instrumentation Layout
030	P & ID Diagram
031	Lightning Protection & Earthing Layout
032	Pump Station Electrical, Fire & Intruder Alarm Layout
033	Typical G.A & Line Diagram of Motor Control Panel

STANDARD DRAWINGS

020	Standard Details Sht 1
020	Standard Details Sht 2
021	Hinged Mild Steel Cover and Frame for 1200 x 1200mm Opening
022	GRP Access Ladder Sht 1
022	GRP Access Ladder Sht 2
023	Standard Details Typical Trench Details
024	Standard Details Thrust Block Details
025	Typical Inline Meter Assembly

0

01/09/2025

ISSUED FOR TENDER ONLY

B

01/08/2025

ISSUED FOR INFORMATION

A

01/02/2025

ISSUED FOR INFORMATION

Revision

Date

Description

32269-5W

Contract No.

D859

Project No.

WATER AND SANITATION

Planning Unit

59

Ward No.

TRENANCE 3 RESERVOIR
CONSTRUCTION OF A 6.0ML
REINFORCED CONCRETE RESERVOIR,
400KL ELEVATED STEEL TANK AND
ANCILLARY WORKS

Project Title

SITE PLAN

Drawing Title

As Shown

Scales

A0

Paper Size

30-01-2025

Date

Z. Bhengu

Designed

A. Goorun

Checked

N. Adams

Drawn

Bulk Operations

Area Engineer (W.O.)

Manager (W.D.)

Director (Water)

E.Msweli - Head Water & Sanitation Unit

60570/001

Drawing No.

1

Sheet

0

Rev.

General notes:

- All work in accordance with the relevant sections of SANS 1200 and as required by the local authorities or statutory bodies.
- This drawing to be read in conjunction with drawings from the relevant disciplines: Architect, Civil, Electrical, Mechanical, etc.
- The Engineer shall be notified without delay should there be any discrepancies between drawings, details, and specifications.
- Only written dimensions and levels shall be used.
- The Contractor shall give the Engineer at least 24 hours advance notice for inspections.
- Where reference is made to the South African Standard Specifications, the current edition shall be used.
- All services to be proved prior to any demolition, excavation, or construction.
- Reinforcing to be checked and approved by the Engineer prior to casting concrete.
- Foundation excavations to be inspected and approved by the Structural/Geotechnical Engineer before any blinding is cast.
- Concrete strength at 28 days:

Blinding:	15 MPa
Pilecaps:	30 MPa
Ground beams:	30 MPa
Footings:	30 MPa
Columns:	40 MPa
Shear walls:	35 MPa
Surface beds:	20 MPa
Slabs:	30 MPa
Beams:	30 MPa
Valve Chambers	30 MPa

- Cover to steel reinforcement:

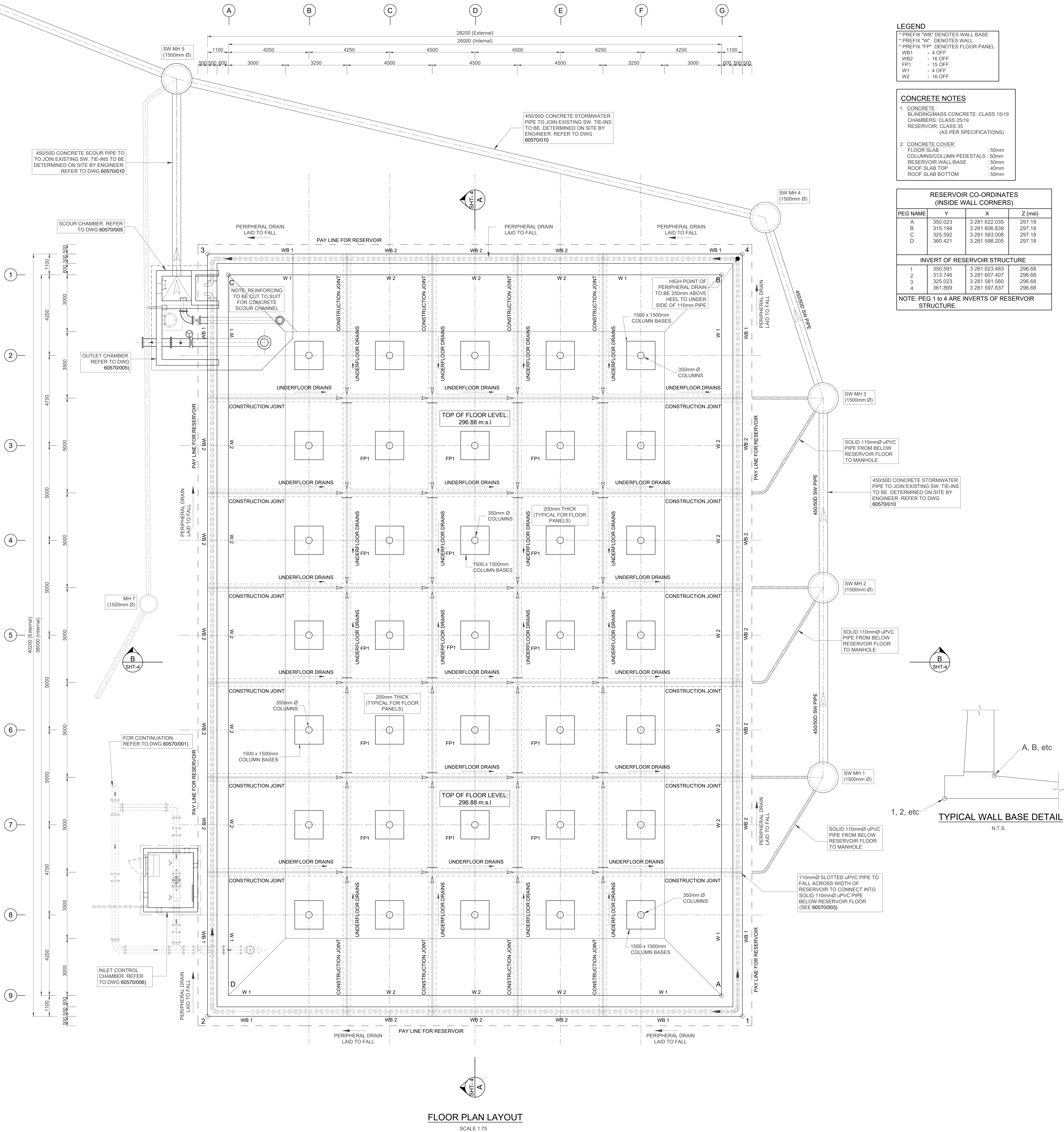
Pilecaps:	75 mm
Ground beams:	50 mm
Foundations:	50 mm
Columns:	50 mm
Shear walls:	50 mm
Slabs:	50 mm
Beams:	50 mm

- Stripping of formwork:

Slabs:	10 days
Beams:	14 days

Cube test results to be approved prior to stripping of formwork.

- All sharp exposed edges of concrete to be chamfered 25 x 25mm.
- All foundations cast onto ground to have a blinding layer, unless otherwise noted.
- Saw cuts are made as soon as the concrete is firm enough not to be torn or damaged by the cutting blade (usually between 18 to 24 hours after casting).
- All areas beneath surface beds shall be soil poisoned to SABS Standards. Certificates to be issued to the Engineer.
- CJ: Construction Joint.



6THEKWINI WATER SERVICES

WATER DESIGN BRANCH

REDUCED PLAN USE SCALE BELOW
0 10 20 30 40 50 60 70
70mm ON ORIGINAL PLAN

CONSULTANT:

NAIDU CONSULTING

1st Floor
No.5, The Boulevard
West Way Office Park
Westville, Durban
Tel : +27 (0) 31 265 6007
Fax : +27 (0) 31 265 6011
Email: info@naiduconsulting.com

Drawing No.: D859-52-5250 REV 0

FOR TENDER ONLY

REFERENCE DRAWINGS (60570/...)

DWG No.	TITLE/DESCRIPTION
001	Site Plan
003	Reservoir Sections Concrete Outline and Details
004	Concrete Roof Layout and Details
005	Outlet Structure and Scour Chamber Layout and Details
006	Inlet Chamber and Associated Pipework
010	Stormwater Plan & Long Section

STANDARD DRAWINGS

020	Standard Details Sht 1
020	Standard Details Sht 2
021	Hinged Mild Steel Cover and Frame for 1200 x 1200mm Opening
022	GRP Access Ladder Sht 1
022	GRP Access Ladder Sht 2
023	Standard Details Typical Trench Details
024	Standard Details Thrust Block Details

Contract No.

32269-5W

Project No.

D859

Planning Unit

WATER AND SANITATION

Ward No.

59

Project Title

TRENANCE 3 RESERVOIR
CONSTRUCTION OF A 6.0ML
REINFORCED CONCRETE RESERVOIR,
400KL ELEVATED STEEL TANK AND
ANCILLARY WORKS

Drawing Title

RESERVOIR FLOOR PLAN

Scales : As Shown

Paper Size : A0

Designed : Z. Bhengu

Checked : A. Goorun

Date : 01-09-2025

Drawn : N. Adams

Bulk Operations

Area Engineer (W.O.)

Manager (W.D.)

Director (Water)

E.Msweli - Head:Water & Sanitation Unit

60570/002

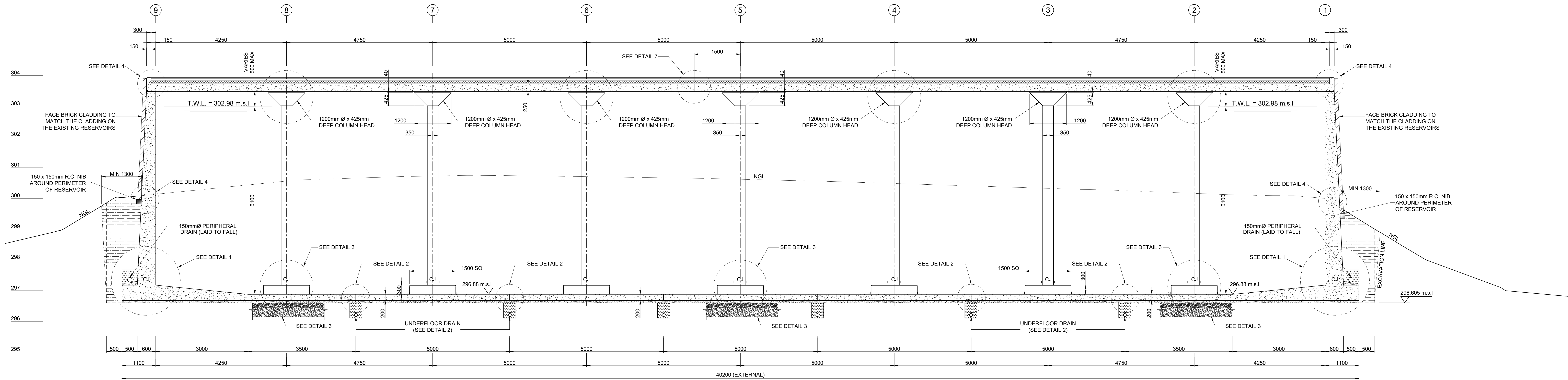
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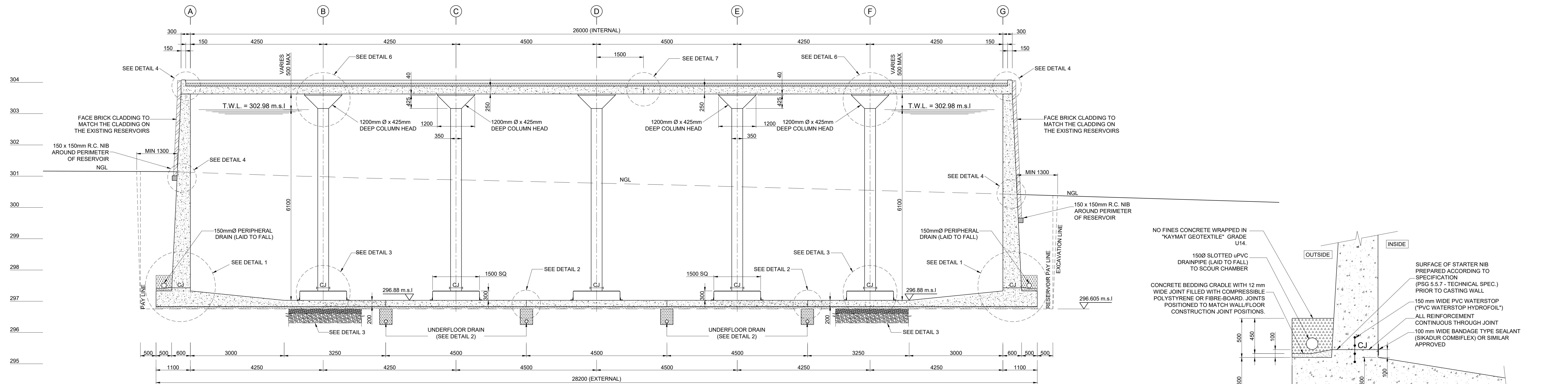
Drawing No.

Sheet

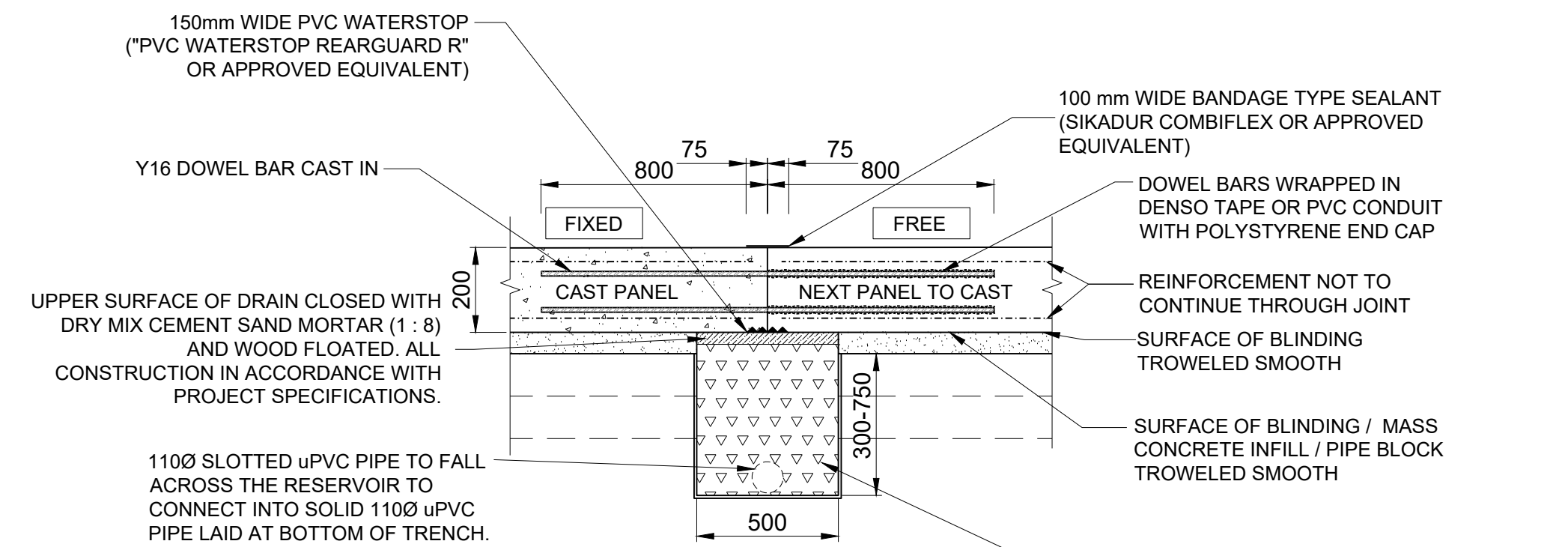
Rev.



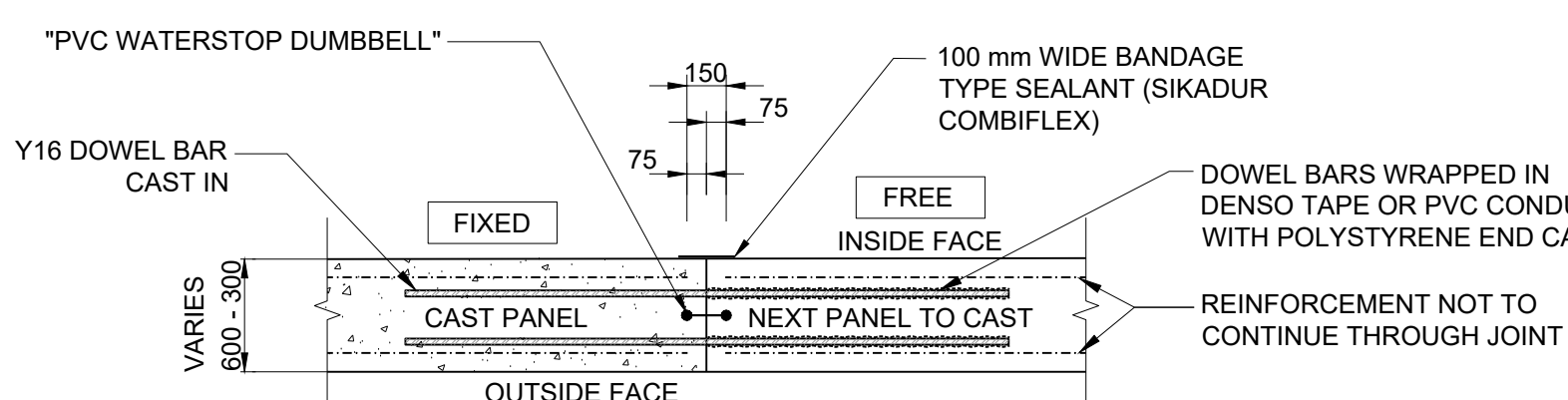
SECTION A
SCALE 1:50
001



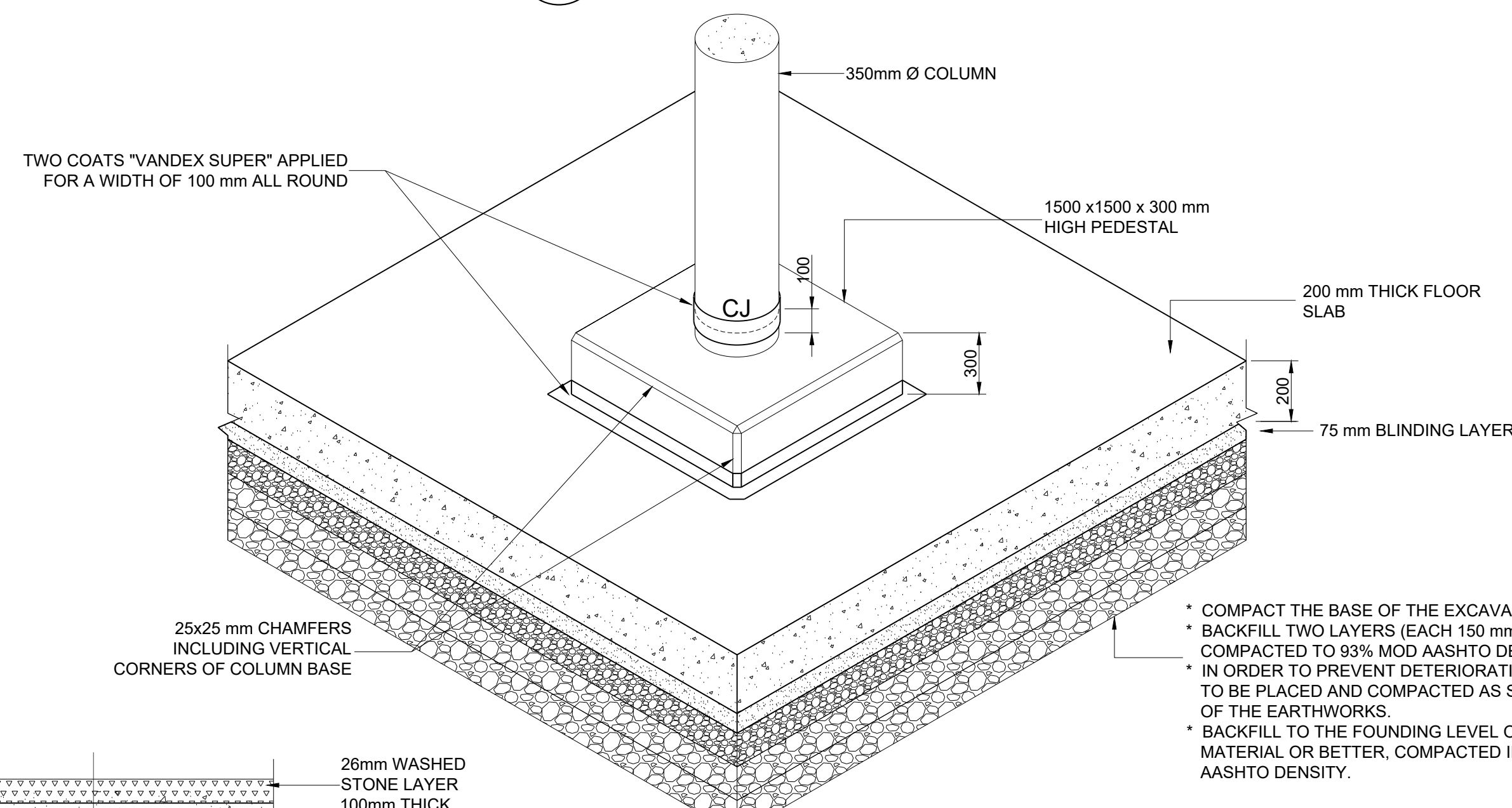
SECTION B
SCALE 1:50
001



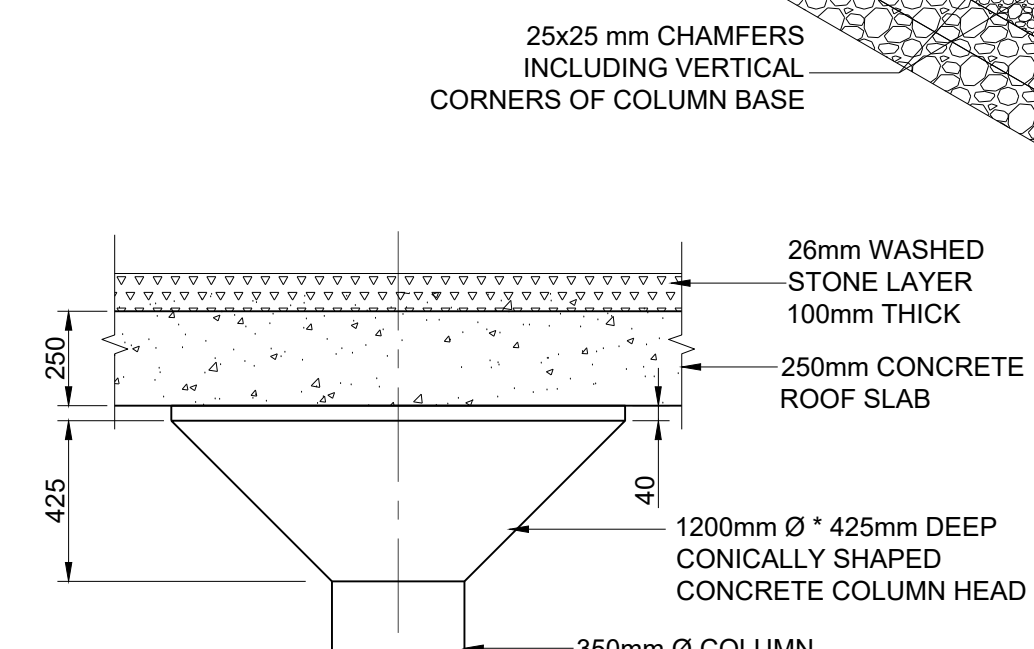
DETAIL 2
UNDERFLOOR DRAIN AND
VERTICAL CONSTRUCTION
JOINT IN FLOOR DETAIL
SCALE 1:20



DETAIL 5
VERTICAL CONSTRUCTION JOINT
IN WALL DETAIL
SCALE 1:20



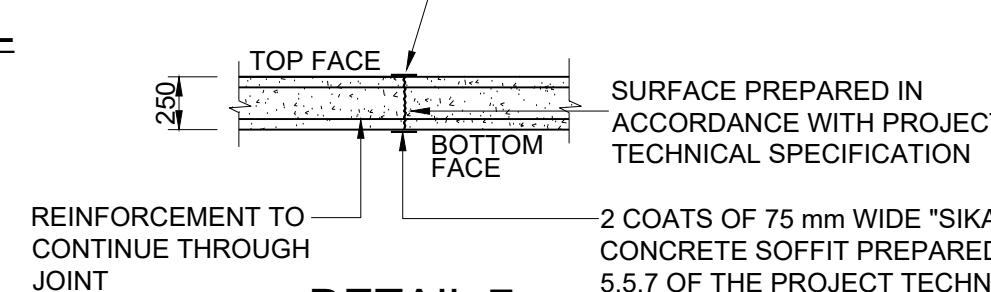
DETAIL 3
TYPICAL COLUMN
BASE DETAIL
SCALE 1:20



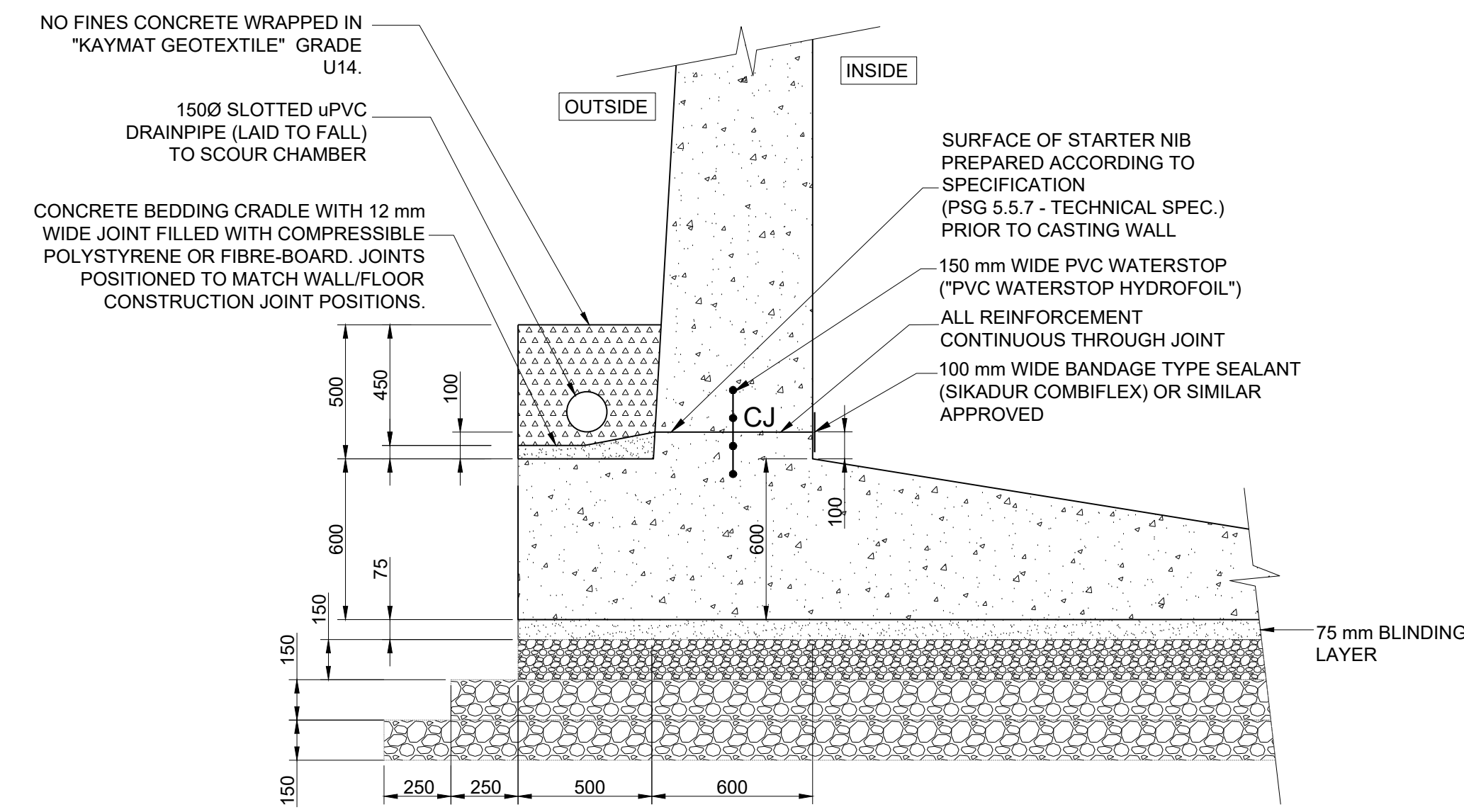
DETAIL 6
TYPICAL COLUMN
HEAD DETAIL
SCALE 1:20

- COMPACT THE BASE OF THE EXCAVATION TO 90% MOD AASHTO DENSITY.
- BACKFILL TWO LAYERS (EACH 150 mm THICK) WITH IMPORTED G6 MATERIAL, COMPACTED TO 95% MOD AASHTO DENSITY.
- IN ORDER TO PREVENT DETERIORATION OF THE BEDROCK, THESE LAYERS TO BE PLACED AND COMPACTED AS SOON AS POSSIBLE AFTER COMPLETION OF THE EARTHWORKS.
- BACKFILL TO THE FOUNDING LEVEL OF THE STRUCTURE WITH IMPORTED G5 MATERIAL OR BETTER, COMPACTED IN 150 mm THICK LAYERS TO 95% MOD AASHTO DENSITY.

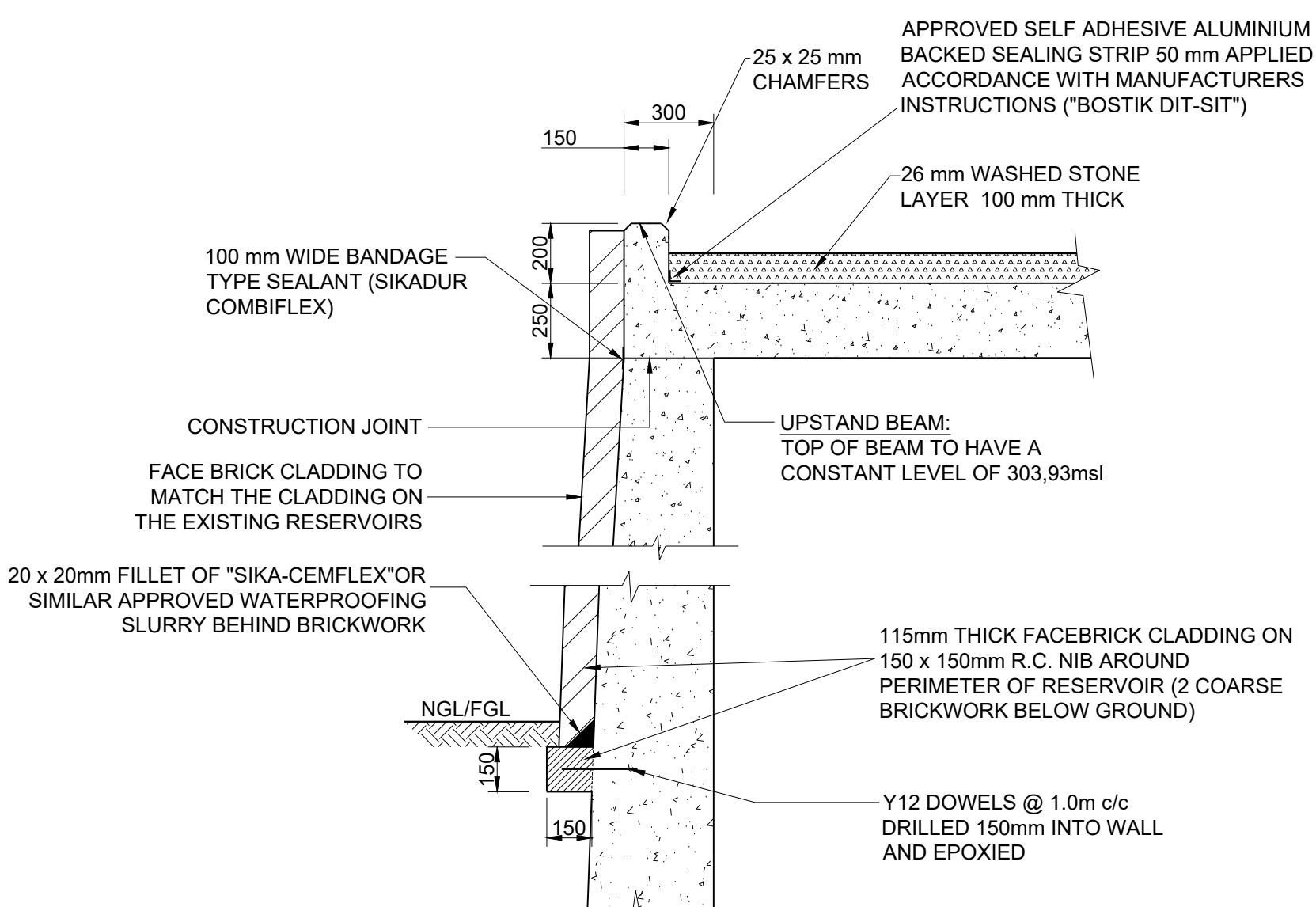
- 50 mm WIDE SELF ADHESIVE ALUMINIUM BACKED SEALING STRIP APPLIED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS ("BOSTIK DITSIT") TO RETURN UP INSIDE OF UPSTAND WALL FOR 400 mm



DETAIL 7
CONSTRUCTION JOINT
DETAIL IN ROOF SLAB
SCALE 1:20



DETAIL 1
TYPICAL WALL FOOTING DETAIL
SCALE 1:20



DETAIL 4
TYPICAL WALL-ROOF
INTERFACE DETAIL
SCALE 1:20

eTHEKWINI WATER SERVICES

WATER DESIGN BRANCH

REDUCED PLAN USE SCALE BELOW

0 10 20 30 40 50 60 70

70mm ON ORIGINAL PLAN

CONSULTANT:

NAIDU CONSULTING

1st Floor
No. 5, The Boulevard
West Way Office Park
Westville, Durban
Tel : +27 (0) 31 265 6007
Fax : +27 (0) 31 265 6011
Email: info@naiduconsulting.com

Drawing No.: D859-52-5251 REV 0

FOR TENDER ONLY

REFERENCE DRAWINGS (60570/...)

DWG No.	TITLE/DESCRIPTION
001	Site Plan
002	Concrete Floor Layout and Details
004	Concrete Roof Layout and Details

STANDARD DRAWINGS

Revision	Date	Description
1	JULY 2025	ISSUED FOR TENDER ONLY

Contract No. 32269

Project No. D859

Planning Unit WATER AND SANITATION

Ward No. 59

Project Title TRENANCE 3 RESERVOIR CONSTRUCTION OF A 6.0ML REINFORCED CONCRETE RESERVOIR, 400KL ELEVATED STEEL TANK AND ANCILLARY WORKS

Drawing Title RESERVOIR SECTIONS

Scales: As Shown

Paper Size: A0

Designed: Z. Bhengu Date: 30-01-2025

Checked: A. Goorun Drawn: N. Adams

Bulk Operations

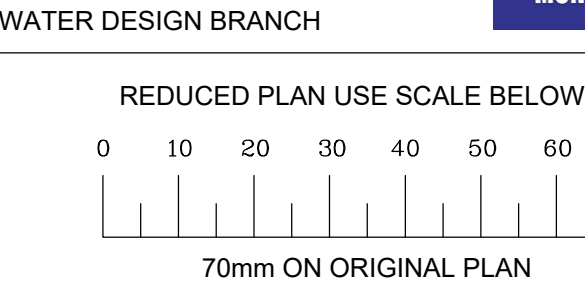
Area Engineer (W.O.)

Manager (W.D.)

Director (Water)

E.Msweli - Head Water & Sanitation Unit

Drawing No. 60570/003 Sheet 1 Rev. 1



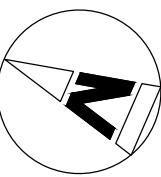
FOR TENDER ONLY

REFERENCE DRAWINGS (60570/...)

DWG No.	TITLE/DESCRIPTION
001	Site Plan
002	Concrete Floor Layout and Details
003	Reservoir Sections Concrete Outline and Details
005	Outlet Structure and Scour Chamber Layout and Details
006	Inlet Chamber and Associated Pipework

STANDARD DRAWINGS

020	Standard Details Sht 1
020	Standard Details Sht 2
021	Hinged Mild Steel Cover and Frame for 1200 x 1200mm Opening
022	GRP Access Ladder Sht 1
022	GRP Access Ladder Sht 2



0	05/09/2025	ISSUED FOR TENDER
B	06/08/2025	INLET CHAMBER RELOCATION
A	02 / 02 / 2025	ISSUED FOR INFORMATION
Revision	Date	Description

32269-5W

Contract No.

D859

Project No.

Planning Unit
WATER AND SANITATION

Ward No.

59

Project Title

**TRENANCE 3 RESERVOIR
CONSTRUCTION OF A 6.0ML
REINFORCED CONCRETE RESERVOIR,
400KL ELEVATED STEEL TANK AND
ANCILLARY WORKS**

Drawing Title

RESERVOIR ROOF PLAN

Scales : As Shown

Paper Size : A0

Designed : Z. Bhengu Date : 01-09-2025

Checked : A. Goorun Drawn : N. Adams

Bulk Operations

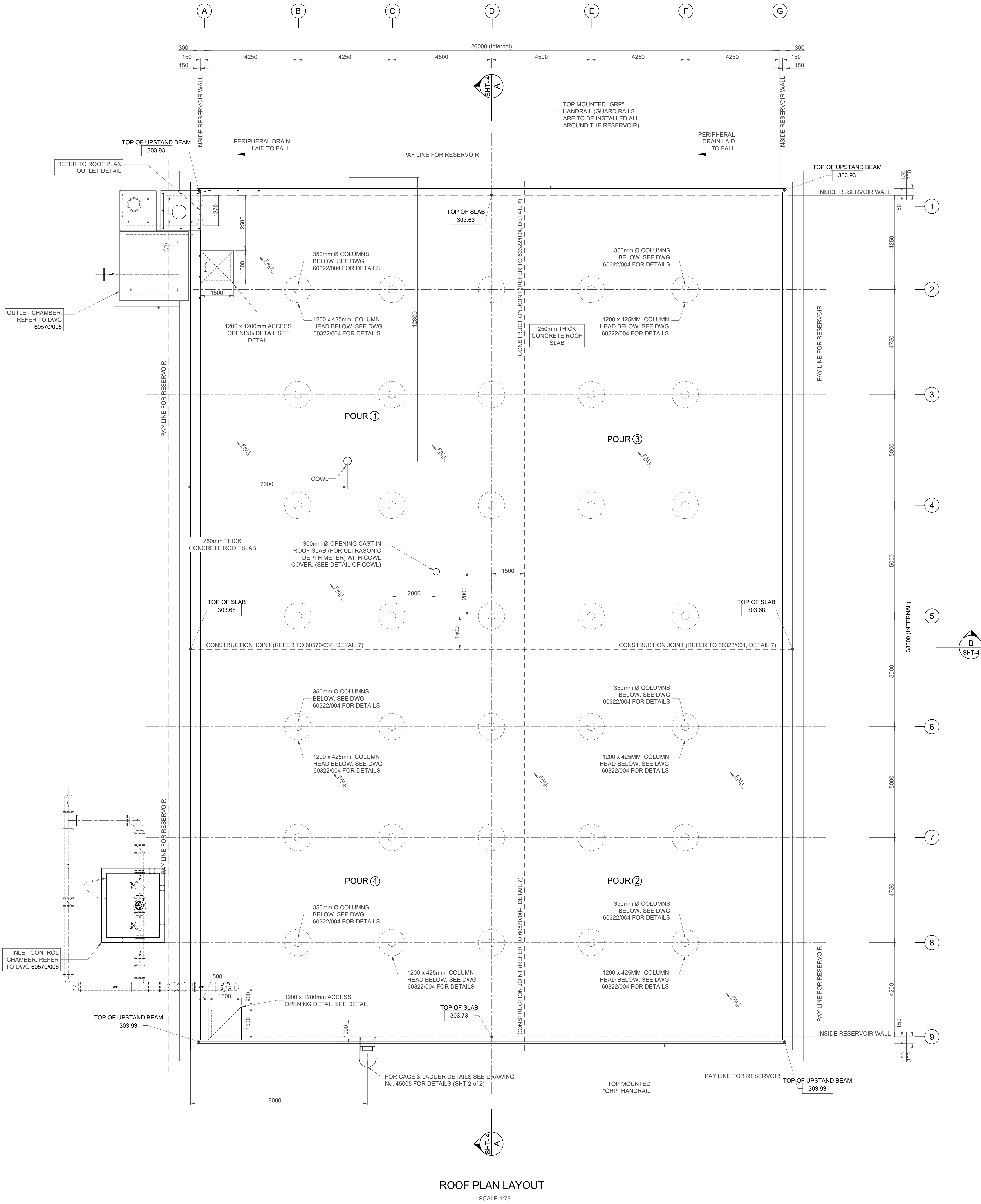
Area Engineer (W.O)

Manager (W.D.)

Director (Water)

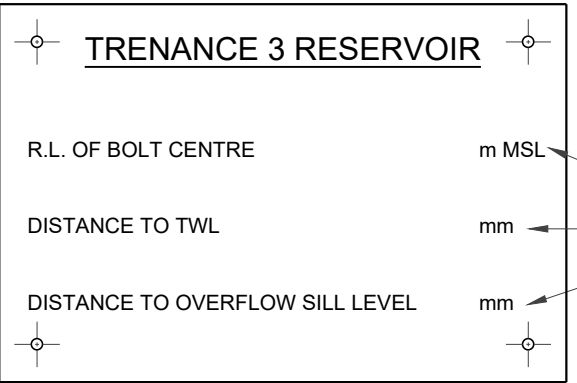
E.Mavvel - Head Water & Sanitation Unit

Drawing No. 60570/004 Sheet 1 Rev. 0



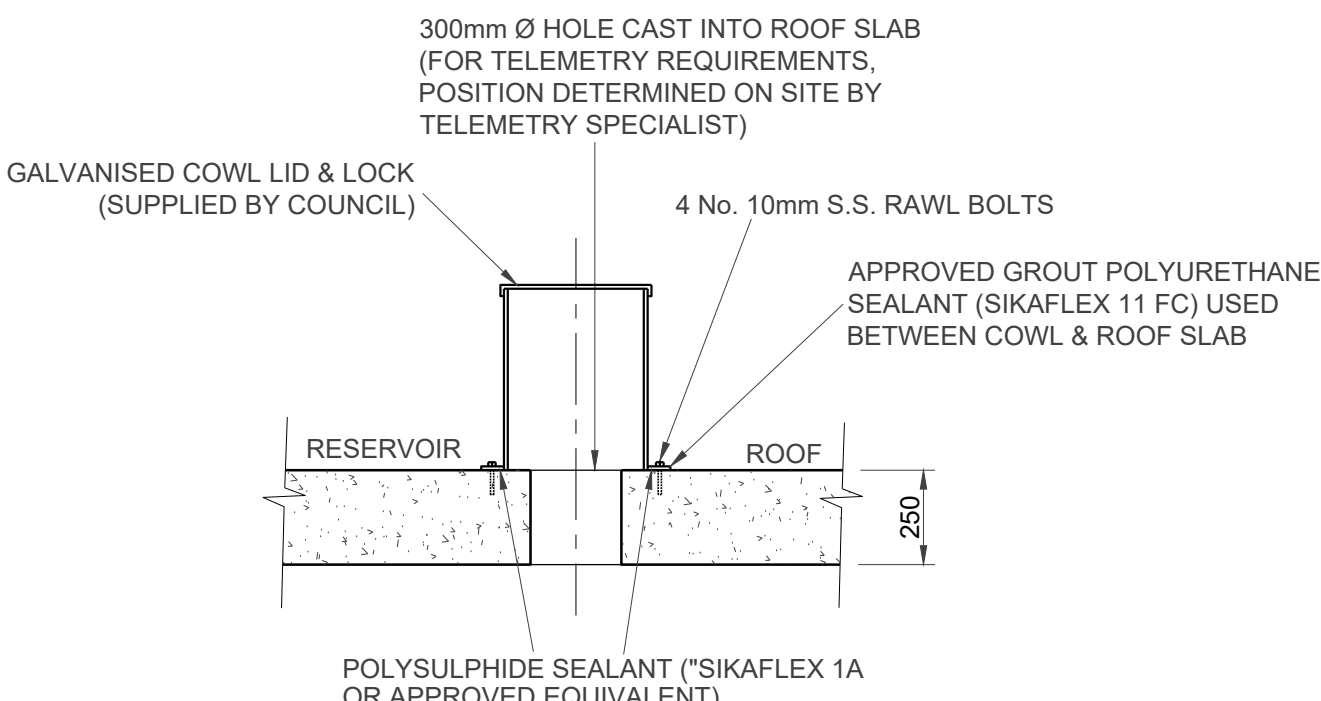
ROOF PLAN LAYOUT
SCALE 1:75

8mmØ STAINLESS STEEL ANCHOR BOLT FIXED INTO
SIDE OF OPENING THROUGH RESERVOIR ROOF
SLAB (CENTRE OF BOLT PUNCHED)

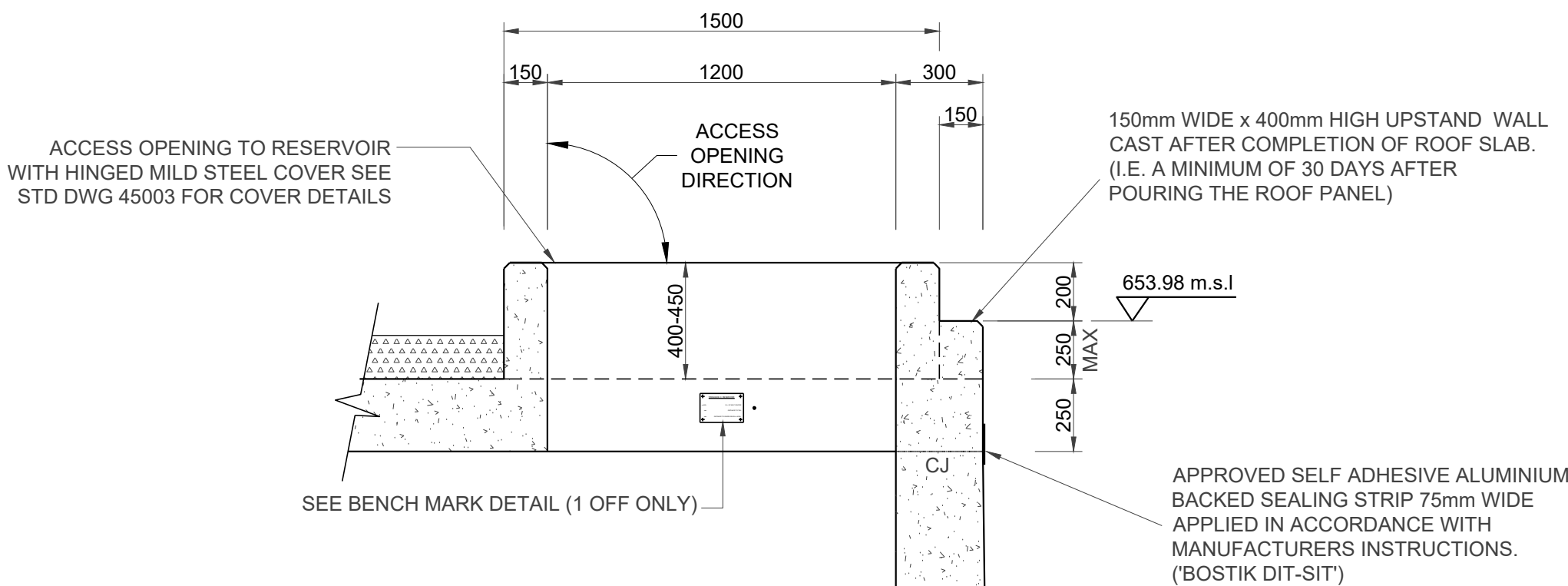


150 x 100 x 2mm BRASS PLAQUE FIXED TO CONCRETE
WITH 4 No. 3mmØ BRASS PINS SET INTO
PRE-DRILLED HOLES WITH GENERAL PURPOSE ADHESIVE
(SEE ABOVE FOR DETAILS OF INSCRIPTION)

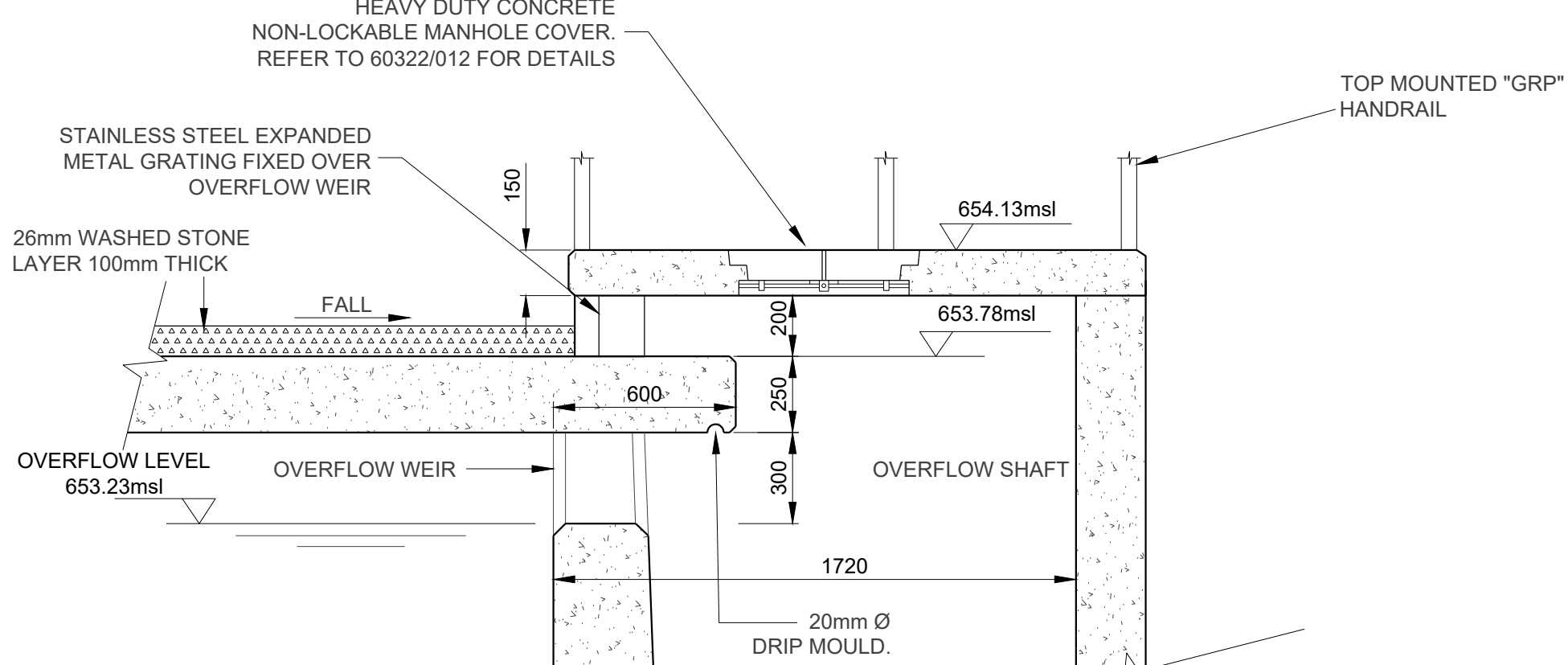
BENCH MARK
SCALE 1:2



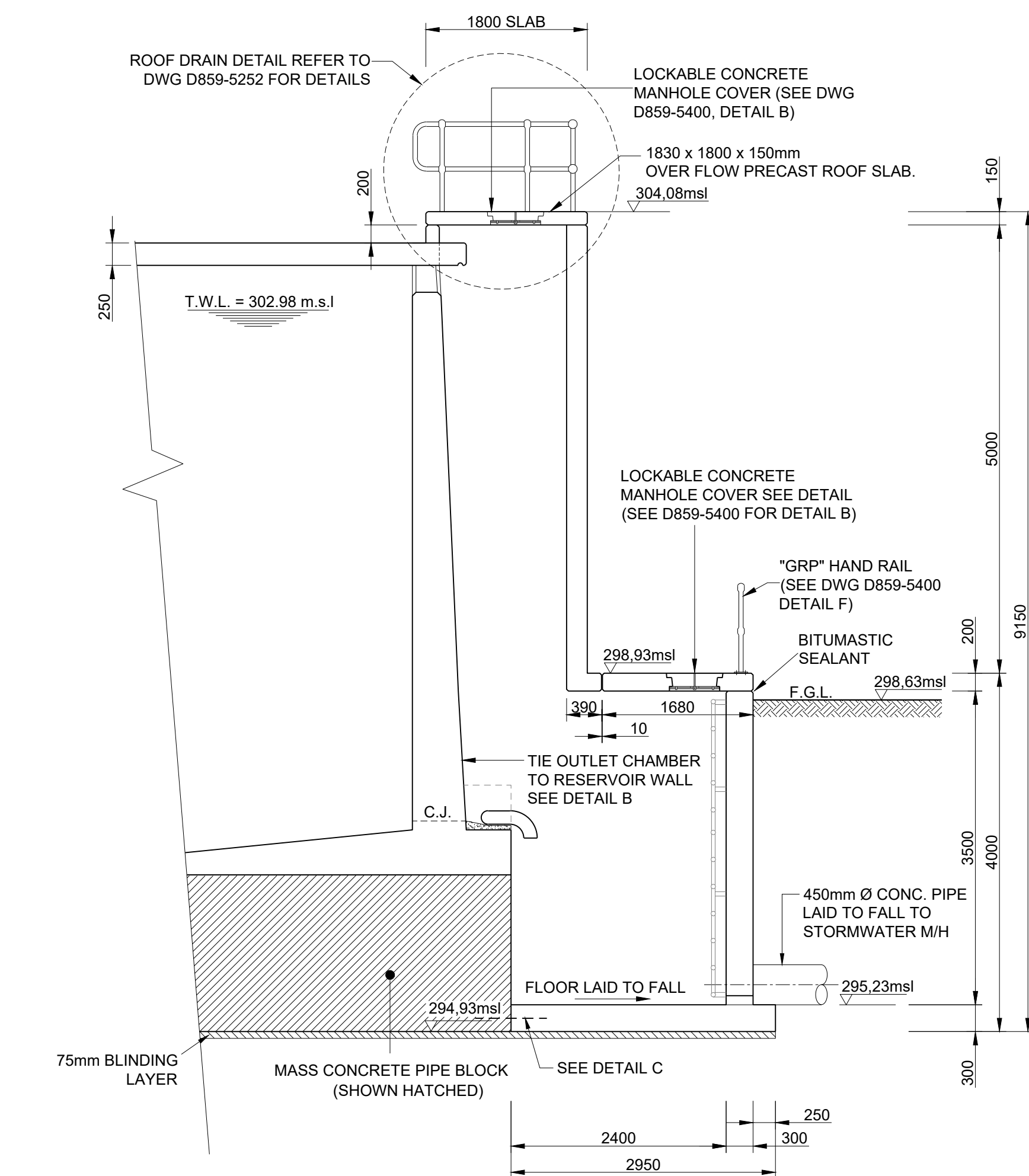
DETAIL OF COWL
SCALE 1:20



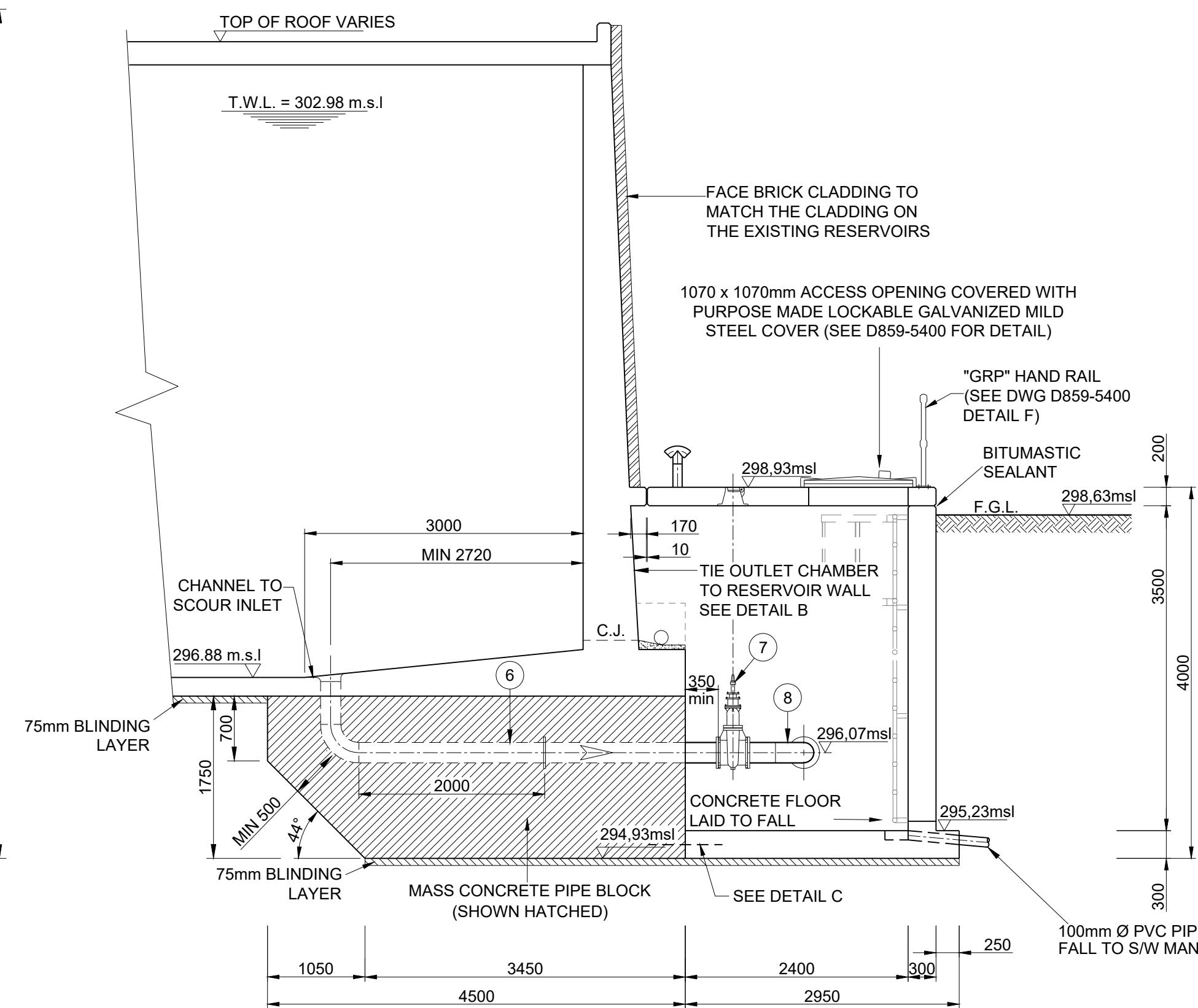
DETAIL OF 1200 x 1200 ACCESS OPENING IN ROOF
SCALE 1:20



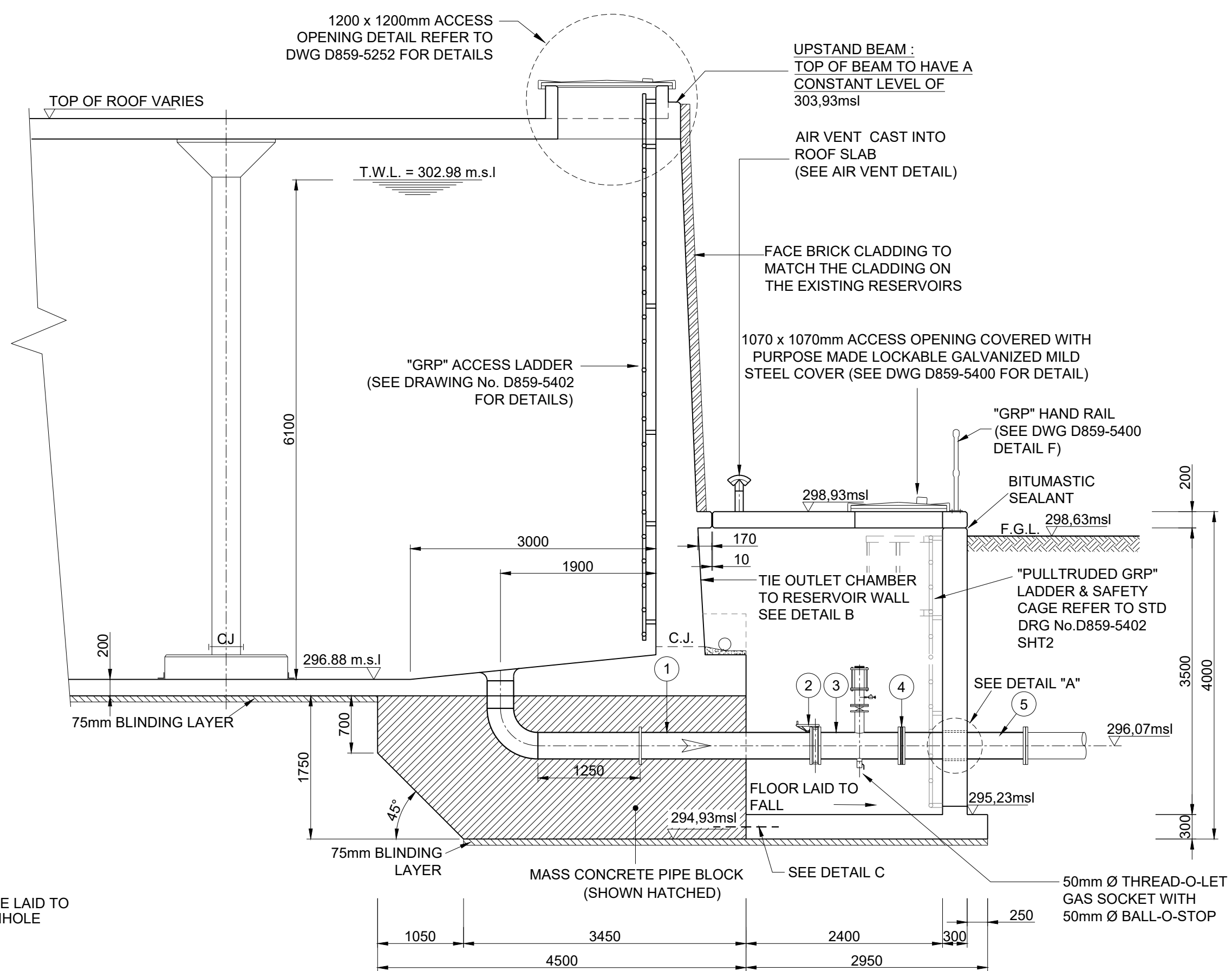
DETAIL OF ROOF DRAIN
SCALE 1:20



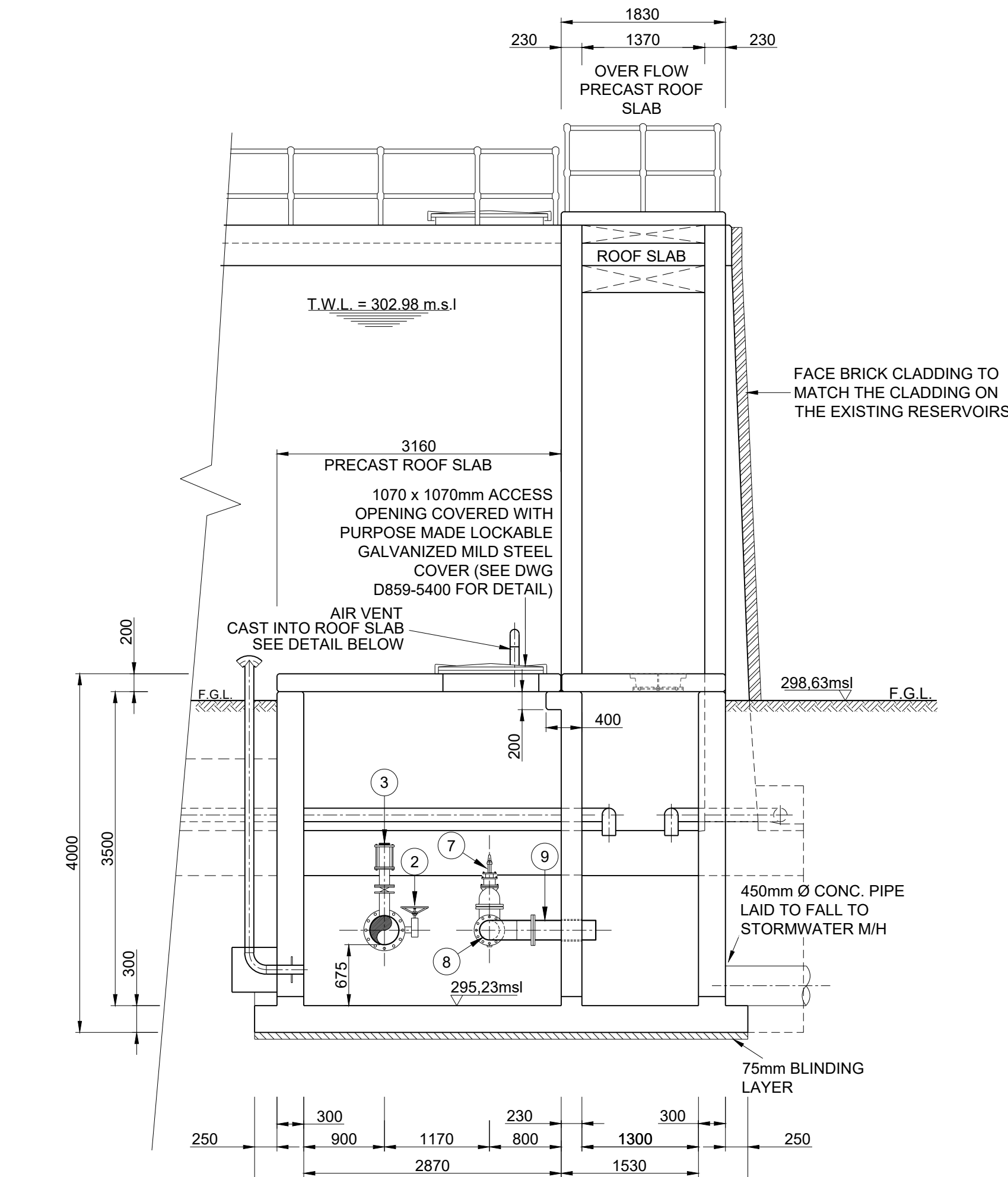
SECTION A-A (WET WELL)
SCALE 1:50



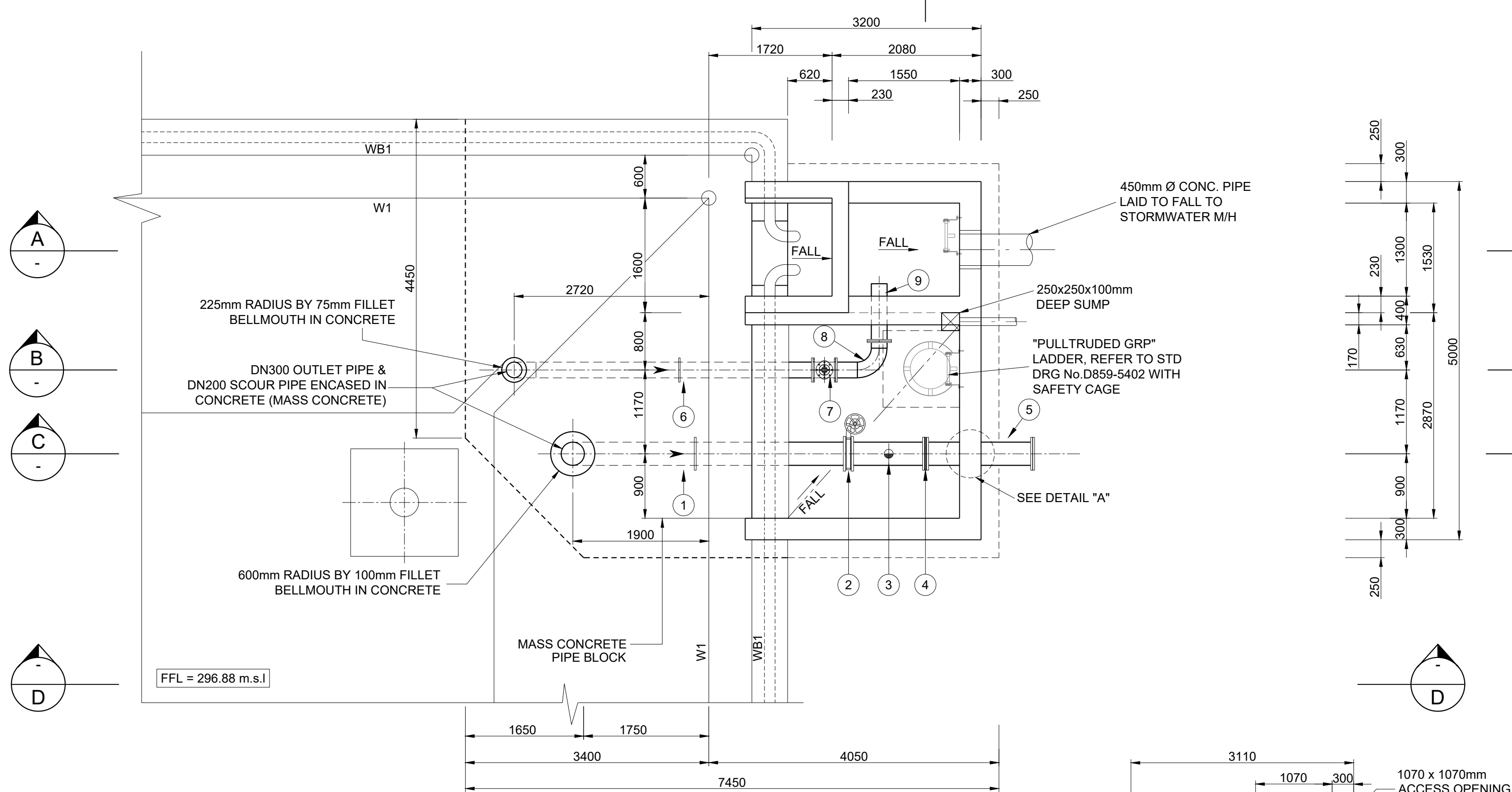
SECTION B-B (SCOUR CHAMBER)
SCALE 1:50



SECTION C-C (OUTLET CHAMBER)
SCALE 1:50



SECTION E-E
SCALE 1:50

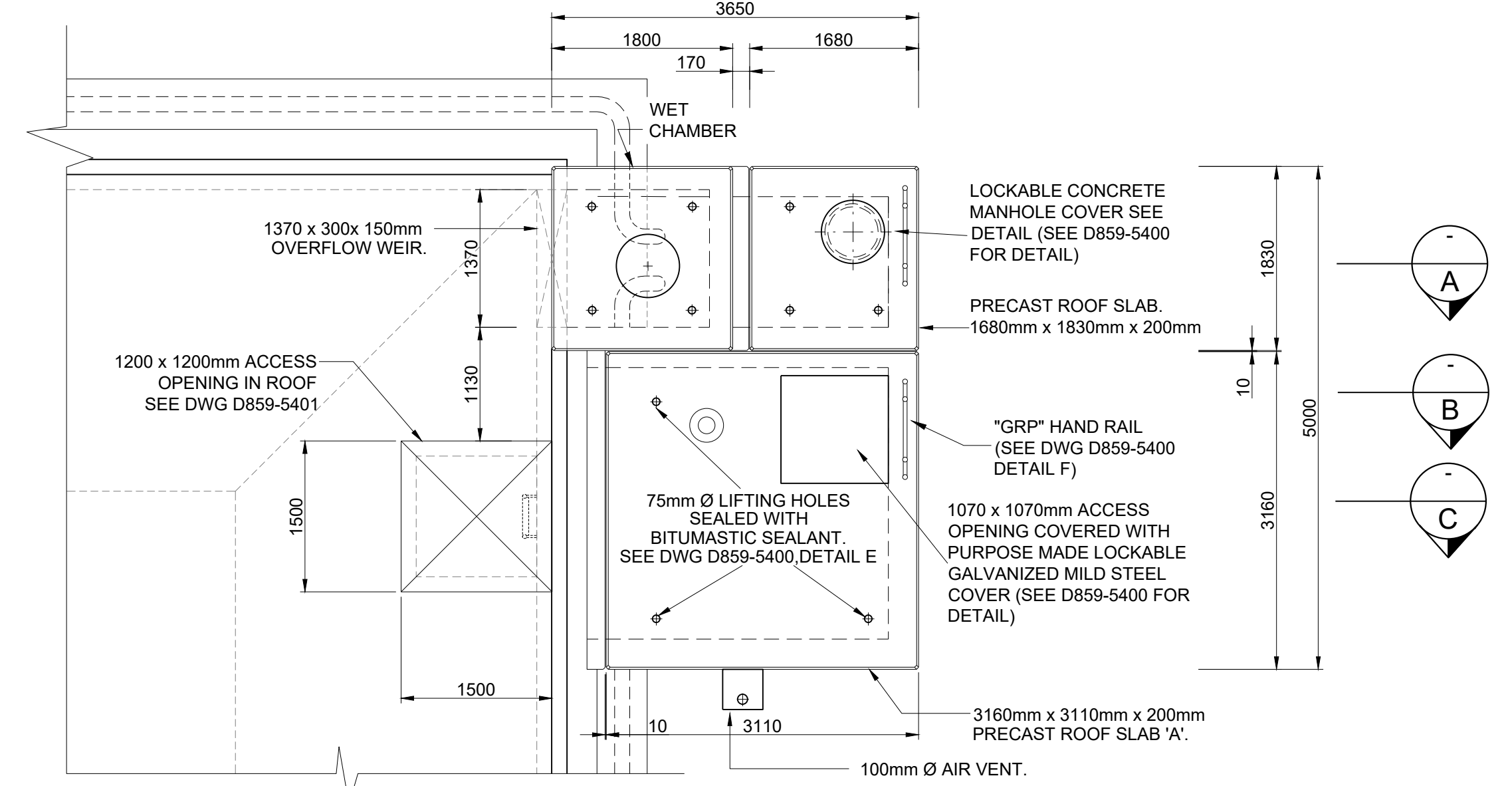
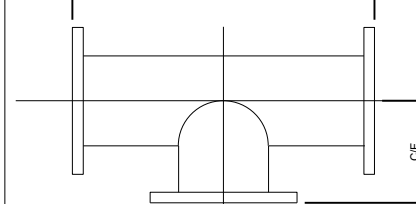


PLAN OF SCOUR CHAMBER
LEVEL 303.48msl
SCALE 1:50

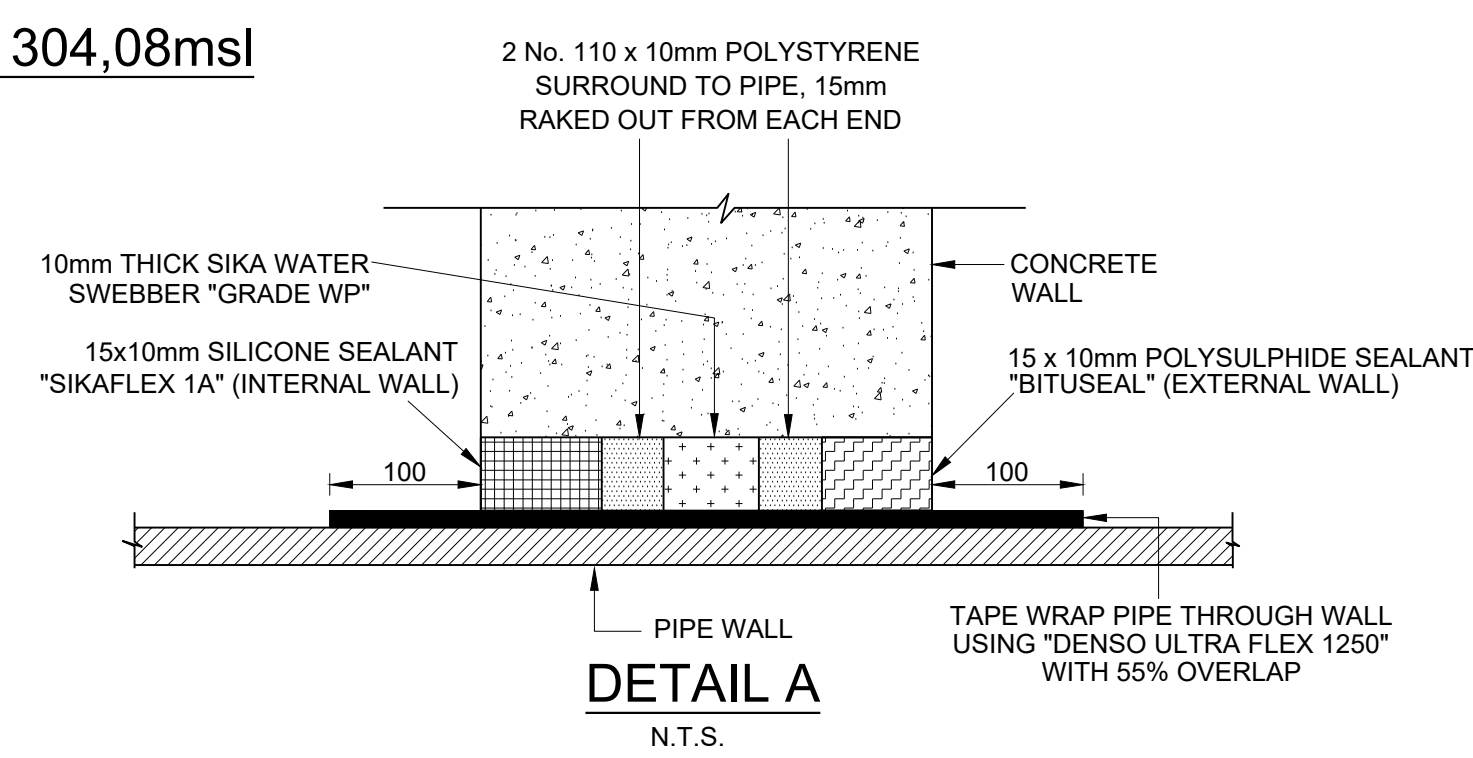
PIPEWORK & FITTINGS SCHEDULE							
ITEM	NOM DIA	DESCRIPTION	DIMENSIONS (mm)				No. Of
			A	B	C	F/F	
SCHEDULE FOR OUTLET PIPEWORK							
1	DN300	SPECIAL (ANSI) B16.9 - 90° LONG RADIUS BEND WITH 340mm LONG SPOOL PIECE ON ONE END AND A 335mm LONG SPOOL PIECE ON THE OTHER END. (FINAL LENGTHS DETERMINED ON SITE) B.E.F. ONE FLANGE TO MATCH ITEM 2. PUDDLE FLANGE AS SHOWN.					1
		PN16 WAFER BUTTERFLY VALVE TYPE 2 SEMI LUGGED (E.P.D.M. LINED) TO EN1092-1 PN16. TYPE ISORIA BY AMRI. COMPLETE WITH HANDWHEEL, GEARBOX, NUTS, BOLTS, WASHERS AND GASKETS. VALVE INSTALLED THAT DISC IS HORIZONTAL TO FLOW.					78
3	DN300	SPOOL PIECE CW DN100 AIR VALVE ASSEMBLY AND DN25 THREAD-O-LET GAS SOCKET WITH DN60 BRASS BALL-O-STOP CENTRALLY PLACED. REF. ONE FLANGE TO MATCH ITEM 2.					1000
4	DN300	INSULATING FLANGE (INCLUSIVE OF ALL SLEEVES AND BOLTS).					1
5	DN300	SPOOL PIECE, FLANGED BOTH ENDS.					1480
SCHEDULE FOR SCOUR PIPEWORK							
6	DN200	SPECIAL (ANSI) B16.9 - 90° LONG RADIUS BEND WITH 460mm LONG SPOOL PIECE ON ONE END AND A 307mm LONG SPOOL PIECE ON THE OTHER END. (FINAL LENGTHS DETERMINED ON SITE) B.E.F. ONE FLANGE TO MATCH ITEM 7. PUDDLE FLANGE AS SHOWN.					1
7	DN200	SABS 604 PN16 WEDGE GATE VALVE WITH CAP TOP.					317
8	DN200	90° (ANSI) B16.9 LONG RADIUS BEND WITH 100mm SPOOL PIECE WELDED TO ONE END AND A 300mm LONG SPOOL PIECE WELDED TO THE OTHER END. B.E.F. ONE FLANGE TO MATCH ITEM 7 (LENGTHS TO BE VERIFIED ON SITE).					1
9	DN200	SPOOL PIECE 800mm LONG. F.O.E. OTHER END FLAIN END COATED (PE).					700
NOTE : ALL SPECIALS (EPOXY COATED (S.F.) TO PROJECT SPECIFICATIONS UNLESS OTHERWISE STATED. ALL PIPE TO SANS 719. SPEC. C. 4mm THICK ALL FLANGES TO TABLE 1600/3 (SANS 1123 - 2011) IF FACE TO FACE DIMENSION OF FITTINGS DIFFERS TO ACTUAL THE CONTRACTOR MUST INFORM THE ENGINEER PRIOR							

NOTE :
ALL SPECIALS EPOXY COATED (S.F.E) TO PROJECT SPECIFICATIONS UNLESS OTHERWISE STATED. ALL PIPE TO SANS 718, GRADE C, 4.5mm THICK.
ALL FLANGES TO TABLE 1600/3 (SANS 1123 - 2011).
IF FACE TO FACE DIMENSION OF FITTINGS DIFFER TO ACTUAL THE CONTRACTOR MUST INFORM THE ENGINEER PRIOR TO PIPE FABRICATION.

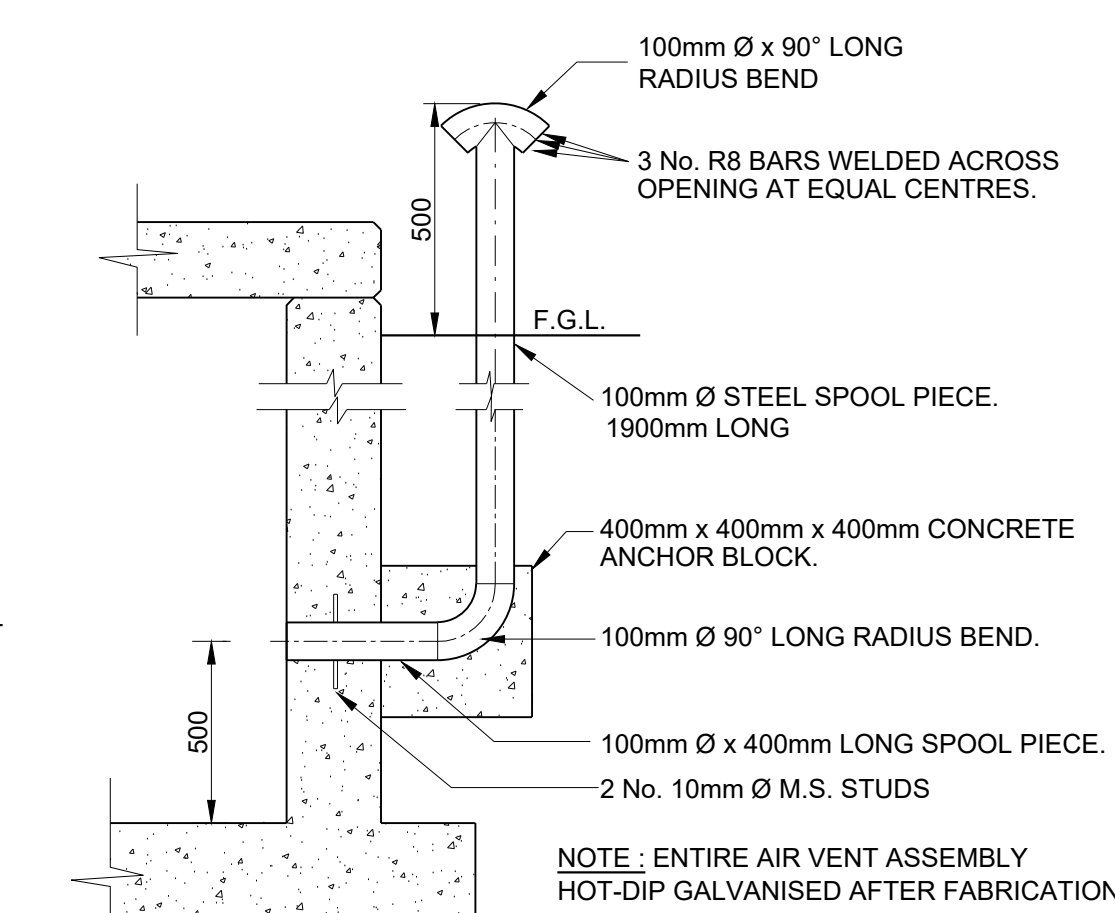
ABBREVIATIONS :
DN - DIAMETER NOMINAL
OD - OUTSIDE DIAMETER
ID - INSIDE DIAMETER
M.S - MILD STEEL
S.S - STAINLESS STEEL
H.D.G.M.S - HOT DIPPED GALVANISED MILD STEEL
G.M.S - GALVANISED MILD STEEL
C.I - CAST IRON
F.R.L - FINAL ROAD LEVEL
F.O.E - FLANGED ONE END
F.B.E - FLANGED BOTH ENDS
F.A.R - FLANGED ALL ROUND
L.R.B - LONG RADIUS BEND
S.R.B - SHORT RADIUS BEND
F.F - FACE TO FACE DIMENSION
C/F - CENTRE TO FACE DIMENSION
P.C - PLAN END COATED
P.E - PLAN END (FOR WELDING)
S.F.E - SOLVENT FREE EPOXY



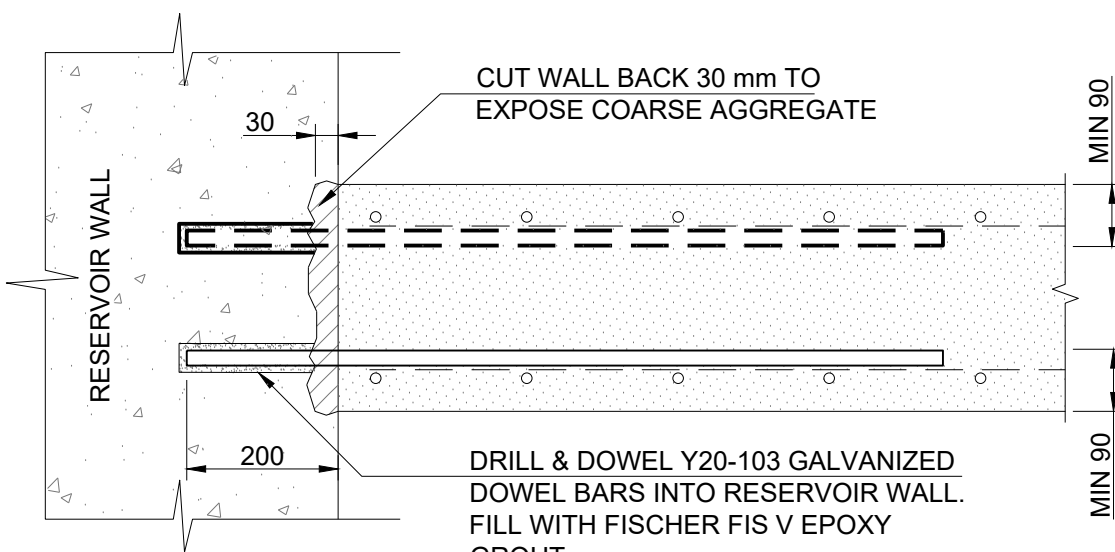
PLAN ABOVE LEVEL 304.08msl
SCALE 1:50



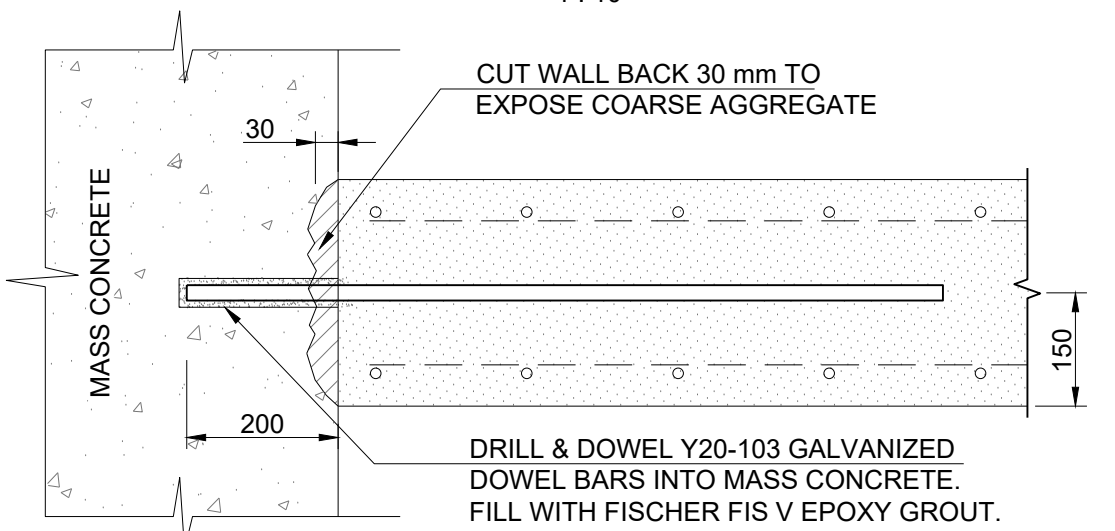
DETAIL A
N.T.S.



AIR VENT DETAIL
SCALE 1:50



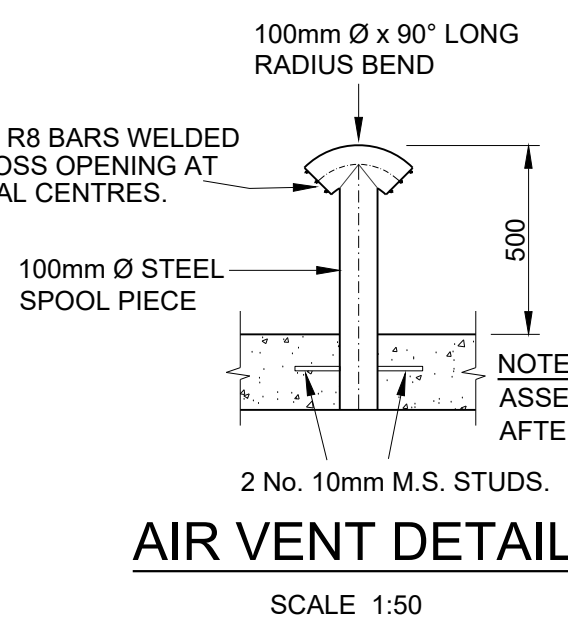
DETAIL B: WALL
DOWEL DETAIL
1:10



DETAIL C: FOUNDATION
DOWEL DETAIL
1:10

PLAN OF ROOF SLAB
SCOUR CHAMBER
SCALE 1:50

PLAN OF ROOF SLAB
SCOUR CHAMBER
SCALE 1:50

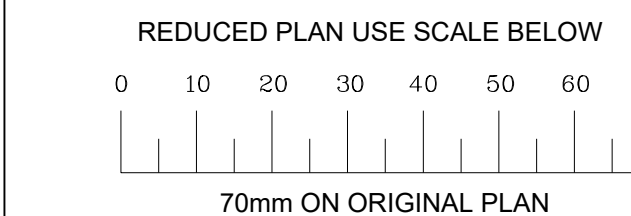


AIR VENT DETAIL
SCALE 1:50

eTHEKWINI WATER SERVICES



WATER DESIGN BRANCH



CONSULTANT:



Drawing No.: D859-52-5253 REV 0

FOR TENDER ONLY

REFERENCE DRAWINGS

DWG No. TITLE/DESCRIPTION

STANDARD DRAWINGS

CONCRETE AND GENERAL NOTES

- ALL LEVELS TO BE CONFIRMED ON SITE.
- ENGINEER TO INSPECT AND APPROVE FOUNDED MATERIAL BEFORE BLINDING IS CAST.
- ALL EXPOSED EDGES ARE CHAMFERED 25x5.
- GENERAL COVER TO ALL REINFORCING IS 50mm.
- ENSURE THERE IS AT LEAST 75mm COVER BETWEEN THE REINFORCING BARS AND PUDDLE FLANGE.
- CONSTRUCTION JOINTS ARE WELL CLEANED & SCABBLED TO EXPOSE FRESH AGGREGATE AND THOROUGHLY WETTED BEFORE THE NEXT LIFT IS POURED. CONSTRUCTION JOINTS TO HAVE SKAWELL S-2 OR SIMILAR APPROVED BEAD CENTRALLY PLACED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
- CONCRETE DISTANCE BLOCKS FOR POSITIONING REINFORCEMENT NEED TO BE MADE AT LEAST 3 WEEKS PRIOR TO REINFORCEMENT BEING FIXED. IN ORDER TO ALLOW FOR SUFFICIENT MOIST-CURING TIME.
- NO ACCESS OPENINGS OTHER THAN THOSE INDICATED ON DRAWINGS WILL BE ALLOWED.
- NO WIRE TIES BETWEEN WALL SHUTTERS WILL BE PERMITTED. FERRULE HOLES TO BE FREE OF FORMERS WITHIN 40mm OF SHUTTER.
- WORKING SPACE AROUND THE CHAMBER NOT TO EXCEED 100mm.
- REINFORCED CONCRETE SHALL BE WATERTIGHT TO SABS 1200G 5.5.11
- CONCRETE GRADE

BLINDING	15/19
MASS CONCRETE	20/19
CONCRETE	25/19 UNLESS OTHERWISE STATED
- WHERE APPLICABLE, AIR VENTS, LIFTING HOLES, LIFTING HOOPS, STEP IRONS AND DI COVER & FRAME WERE PRE-INSTALLED AT THE MANUFACTURER PRIOR TO DELIVERY ON SITE.
- BACKFILL MATERIAL AROUND STRUCTURE TO BE COMPACTED TO MINIMUM 95% MOISTURE AND MAXIMUM DENSITY IN MAXIMUM 150mm LAYERS.
- ON COMPLETION OF THE CHAMBERS, PAINT ALL EXPOSED ABOVE GROUND CHAMBERS WALLS AND ROOF SLABS WITH 2 COATS OF WHITE ROAD MARKING PAINT. THEREAFTER, STENCIL ON THE CHAMBER IDENTIFICATION NUMBERS TO BE ADVISED BY THE ENGINEER.
- SIGNAGE INSTRUCTIONS FOR USE 800 x 600 HEAVY DUTY PVC SIGN BOARD FIXED TO THE INSIDE OF THE CHAMBER AS PER THE ENGINEERS INSTRUCTIONS

FINISHING NOTES

- FORMED CONCRETE SURFACES FINISHES

Q.1. HIDDEN SURFACES ARE EXTERNAL SURFACES	
BURIED, ALL OTHER SURFACES INCLUDING INSIDE OF THE CHAMBER TO BE EXPOSED SURFACES	
VISIBLE SURFACES	SMOOTH
CONCEALED SURFACES	ROUGH
- UNFORMED CONCRETE SURFACES FINISHES

TOP OF BLINDING	WOOD FLOAT
TOP OF FLOOR	STEEL FLOAT
TOP OF SLABS	STEEL FLOAT

0	09 / 2025	ISSUED FOR TENDER ONLY
A	02 / 2025	ISSUED FOR INFORMATION
Revision	Date	Description

32269-5W

Contract No.

Project No. D859

Planning Unit
WATER AND SANITATION

Ward No. 59

Project Title
**TRENANCE 3 RESERVOIR
CONSTRUCTION OF A 6.0ML
REINFORCED CONCRETE RESERVOIR,
400KL ELEVATED STEEL TANK AND
ANCILLARY WORKS**

Drawing Title
**DN300 OUTLET & DN200 SCOUR
STRUCTURE
LAYOUT AND DETAILS**

Scales: As Shown
Paper Size: A0
Designed: Z. Bhengu
Checked: A. Goorun
Date: 01-09-2025
Drawn: N. Adams

Bulk Operations

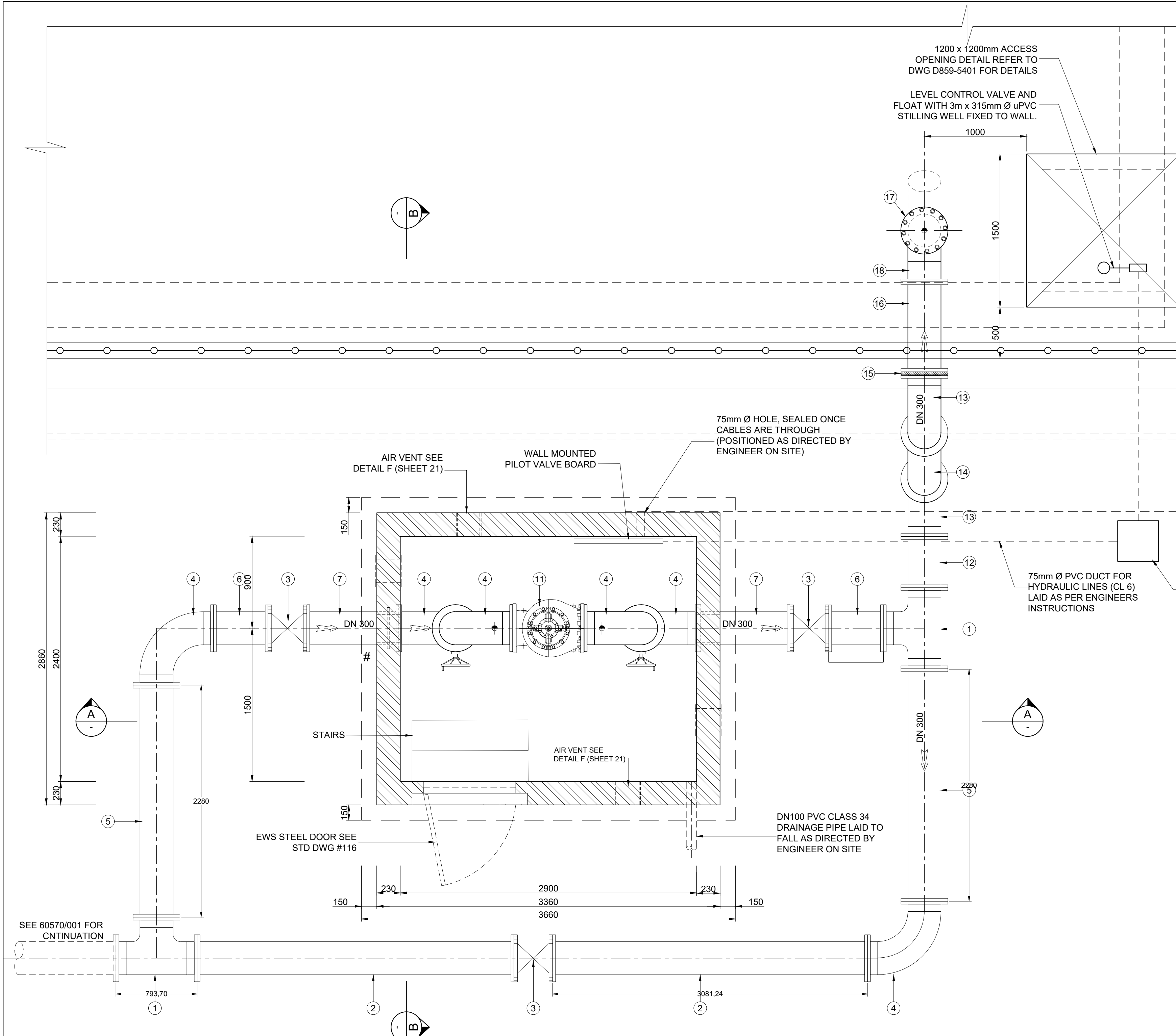
Area Engineer (W.O)

Manager (W.D.)

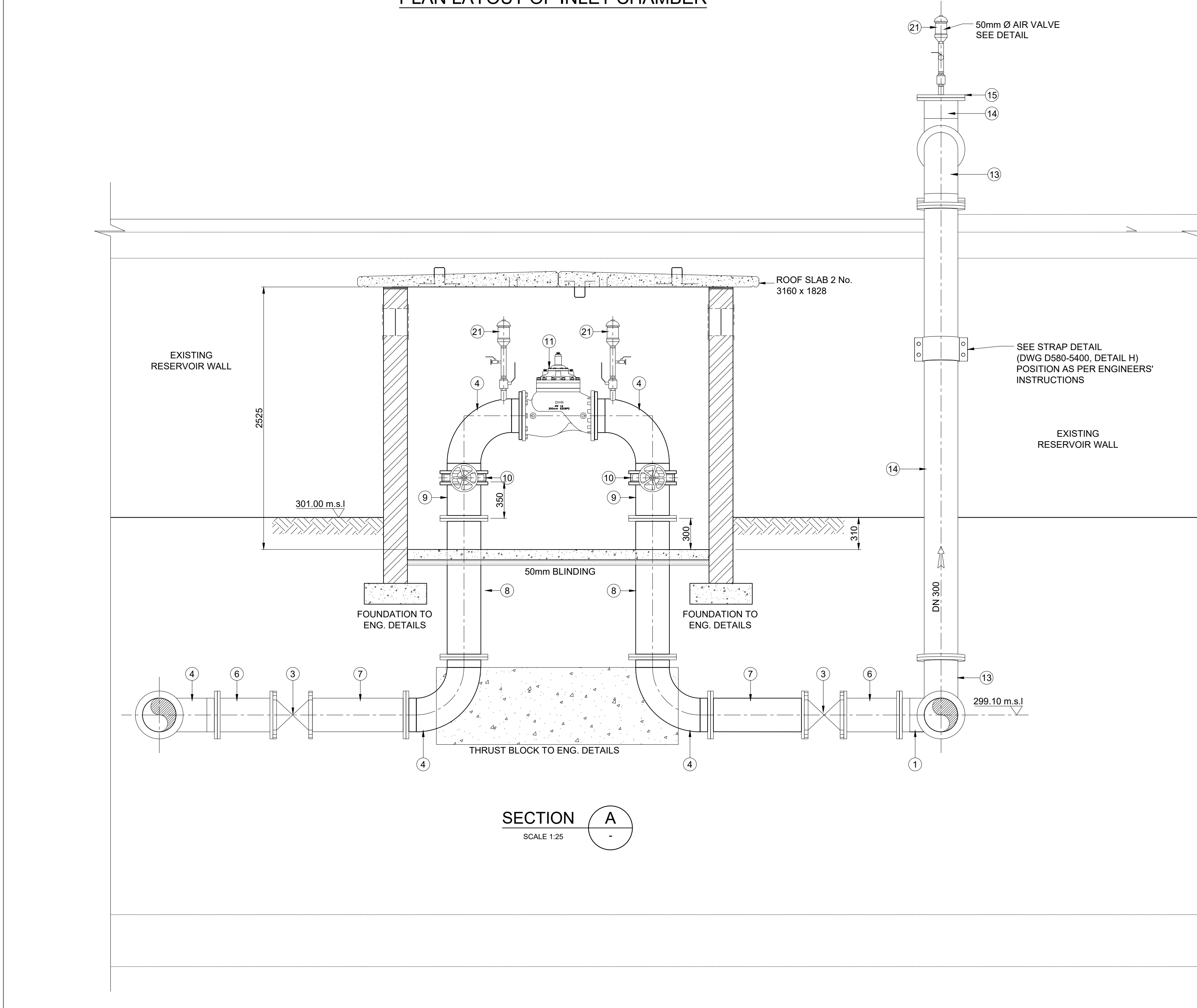
Director (Water)

E.Msweli - Head:Water & Sanitation Unit

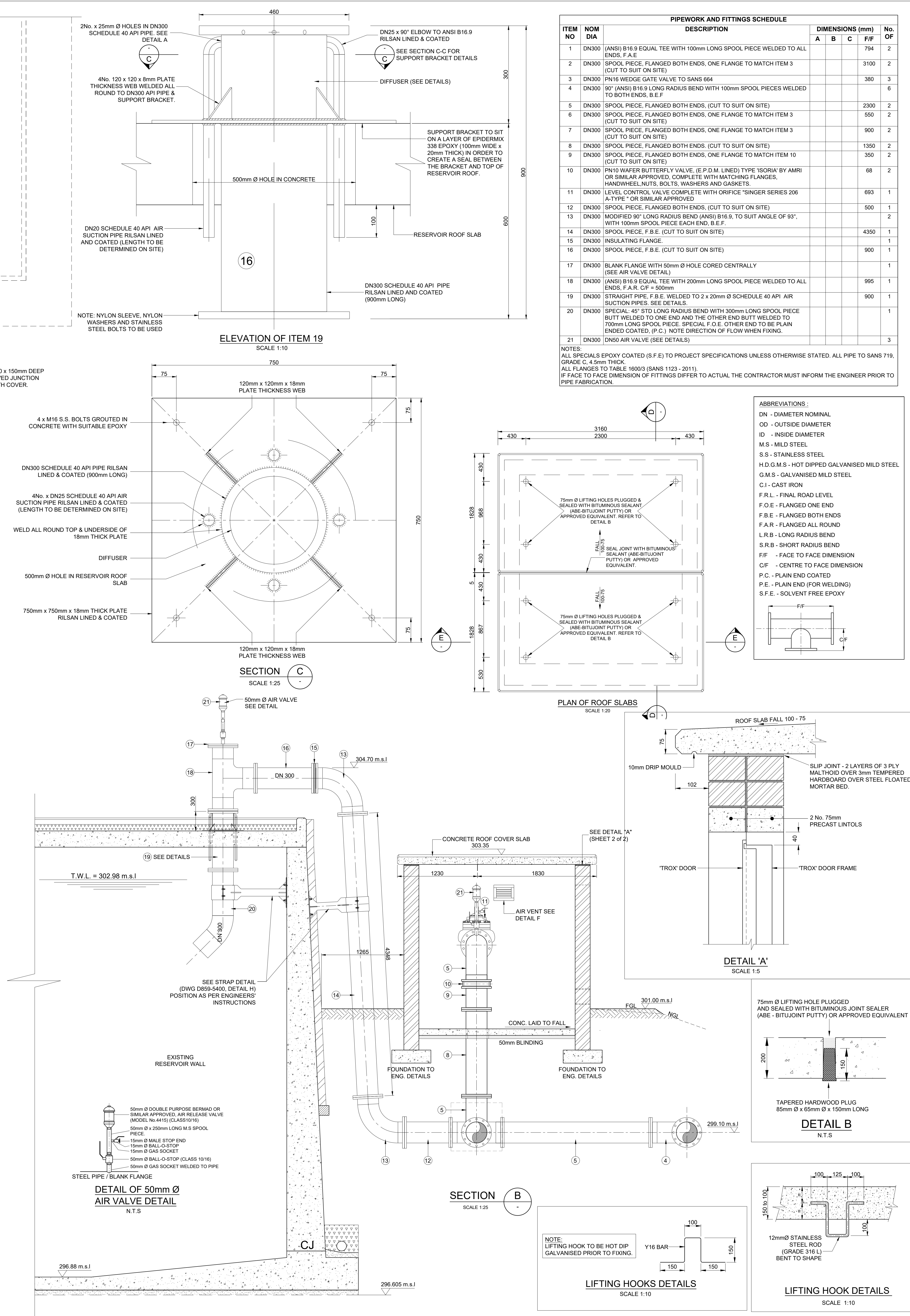
Drawing No. 60570/005 Sheet 1 Rev. 0



PLAN LAYOUT OF INLET CHAMBER



SECTION A
SCALE 1:25



ELEVATION OF ITEM 19
SCALE 1:10

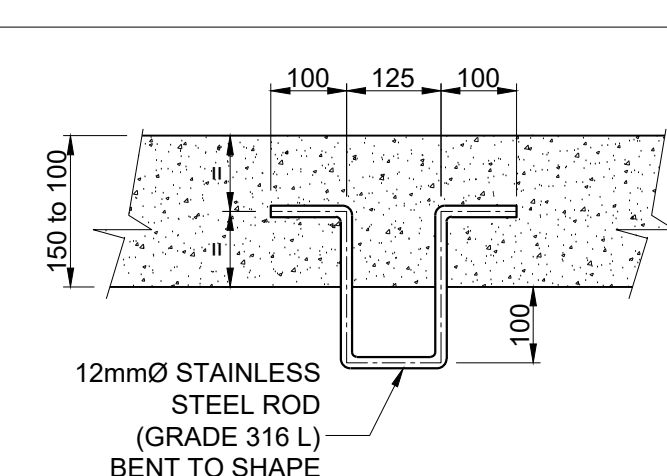
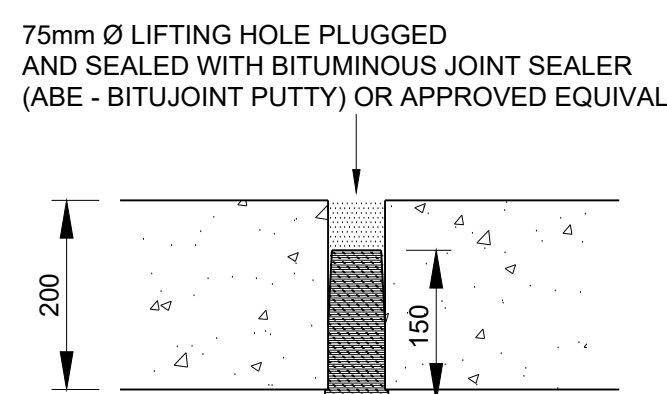
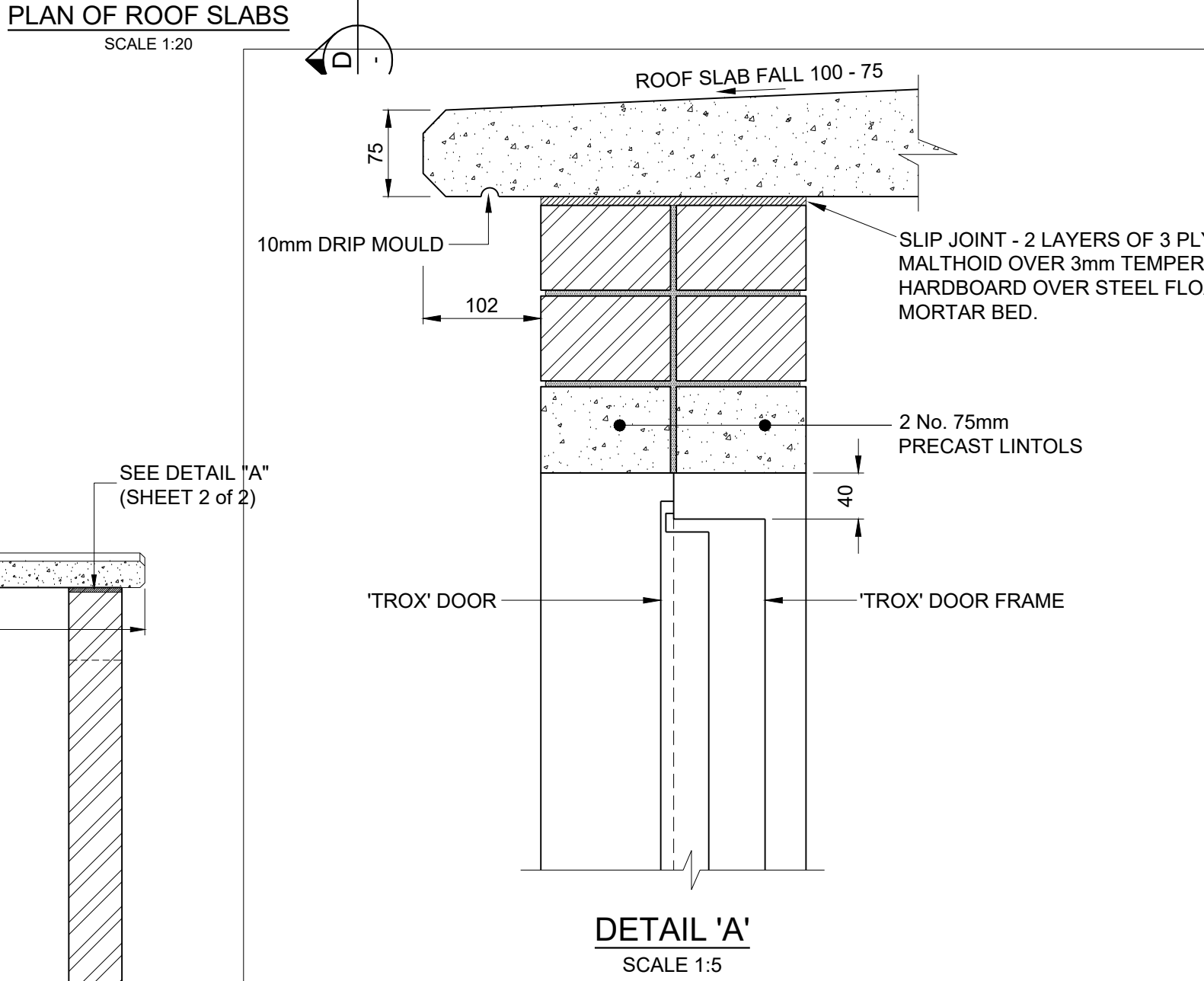
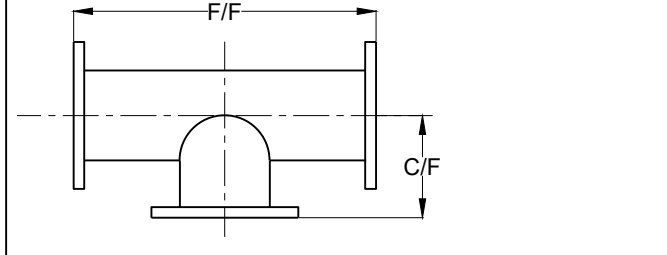
SECTION C
SCALE 1:25

SECTION B
SCALE 1:25

PIPEWORK AND FITTINGS SCHEDULE								
ITEM NO	NOM DIA	DESCRIPTION	DIMENSIONS (mm)				No. OF	
			A	B	C	F/F		
1	DN300	(ANSI) B16.9 EQUAL TEE WITH 100mm LONG SPOOL PIECE WELDED TO ALL ENDS, F.A.E					794	2
2	DN300	SPOOL PIECE, FLANGED BOTH ENDS, ONE FLANGE TO MATCH ITEM 3 (CUT TO SUIT ON SITE)					3100	2
3	DN300	PN16 WEDGE GATE VALVE TO SANS 664					380	3
4	DN300	90° (ANSI) B16.9 LONG RADIUS BEND WITH 100mm SPOOL PIECES WELDED TO BOTH ENDS, B.E.F					550	2
5	DN300	SPOOL PIECE, FLANGED BOTH ENDS, (CUT TO SUIT ON SITE)					2300	2
6	DN300	SPOOL PIECE, FLANGED BOTH ENDS, ONE FLANGE TO MATCH ITEM 3 (CUT TO SUIT ON SITE)					900	2
7	DN300	SPOOL PIECE, FLANGED BOTH ENDS, ONE FLANGE TO MATCH ITEM 3 (CUT TO SUIT ON SITE)					900	2
8	DN300	SPOOL PIECE, FLANGED BOTH ENDS, (CUT TO SUIT ON SITE)					1350	2
9	DN300	SPOOL PIECE, FLANGED BOTH ENDS, ONE FLANGE TO MATCH ITEM 10 (CUT TO SUIT ON SITE)					350	2
10	DN300	PN10 WAFER BUTTERFLY VALVE, (E.P.D.M. LINED) TYPE 'ISORIA' BY AMRI OR SIMILAR APPROVED, COMPLETE WITH MATCHING FLANGES, HANDWHEEL, NUTS, BOLTS, WASHERS AND GASKETS.					68	2
11	DN300	LEVEL CONTROL VALVE COMPLETE WITH ORIFICE 'SINGER SERIES 206 A-TYPE' OR SIMILAR APPROVED					693	1
12	DN300	SPOOL PIECE, FLANGED BOTH ENDS, (CUT TO SUIT ON SITE)					500	1
13	DN300	MODIFIED 90° LONG RADIUS BEND (ANSI) B16.9, TO SUIT ANGLE OF 93°, WITH 100mm SPOOL PIECE EACH END, B.E.F.					4350	1
14	DN300	SPOOL PIECE, F.B.E. (CUT TO SUIT ON SITE)					900	1
15	DN300	INSULATING FLANGE.						1
16	DN300	SPOOL PIECE, F.B.E. (CUT TO SUIT ON SITE)					900	1
17	DN300	BLANK FLANGE WITH 50mm Ø HOLE CORED CENTRALLY (SEE AIR VALVE DETAIL)						1
18	DN300	(ANSI) B16.9 EQUAL TEE WITH 200mm LONG SPOOL PIECE WELDED TO ALL ENDS, F.A.R. C/F = 500mm					995	1
19	DN300	STRAIGHT PIPE, F.B.E. WELDED TO 2 x 20mm Ø SCHEDULE 40 API AIR SUCTION PIPES, SEE DETAILS.					900	1
20	DN300	SPECIAL 45° STD LONG RADIUS BEND WITH 300mm LONG SPOOL PIECE BUTT WELDED TO ONE END AND THE OTHER END BUTT WELDED TO 700mm LONG SPOOL PIECE, SPECIAL F.O.E. OTHER END TO BE PLAIN ENDED COATED. (P.C.) NOTE DIRECTION OF FLOW WHEN FIXING.						1
21	DN300	DN50 AIR VALVE (SEE DETAILS)						3
NOTES:								
ALL SPECIALS EPOXY COATED (S.F.E) TO PROJECT SPECIFICATIONS UNLESS OTHERWISE STATED. ALL PIPE TO SANS 719, GRADE C, 4.5mm THICK								
ALL FLANGES TO TABLE 1600/3 (SANS 1123 - 2011)								
IF FACE TO FACE DIMENSION OF FITTINGS DIFFER TO ACTUAL, THE CONTRACTOR MUST INFORM THE ENGINEER PRIOR TO ORDERING								

NOTES:
ALL SPECIALS EPOXY COATED (S.F.E) TO PROJECT SPECIFICATIONS UNLESS OTHERWISE STATED. ALL PIPE TO SANS 719, GRADE C, 4.5mm THICK.
ALL FLANGES TO TABL 1600/3 (SANS 1123 - 2011).
IF FACE TO FACE DIMENSION OF FITTINGS DIFFER TO ACTUAL THE CONTRACTOR MUST INFORM THE ENGINEER PRIOR TO PIPE FABRICATION.

ABBREVIATIONS :	
DN	- DIAMETER NOMINAL
OD	- OUTSIDE DIAMETER
ID	- INSIDE DIAMETER
M.S.	- MILD STEEL
S.S.	- STAINLESS STEEL
H.D.G.M.S.	- HOT DIPPED GALVANISED MILD STEEL
G.M.S.	- GALVANISED MILD STEEL
C.I.	- CAST IRON
F.R.L.	- FINAL ROAD LEVEL
F.O.E.	- FLANGED ONE END
F.B.E.	- FLANGED BOTH ENDS
F.A.R.	- FLANGED ALL ROUND
L.R.B.	- LONG RADIUS BEND
S.R.B.	- SHORT RADIUS BEND
F.F.	- FACE TO FACE DIMENSION
C/F	- CENTRE TO FACE DIMENSION
P.C.	- PLAIN END COATED
P.E.	- PLAIN END (FOR WELDING)
S.F.E.	- SOLVENT FREE EPOXY



eTHEKWINI WATER SERVICES

WATER DESIGN BRANCH

REDUCED PLAN USE SCALE BELOW

0 10 20 30 40 50 60 70

70mm ON ORIGINAL PLAN

CONSULTANT:

NAIDU CONSULTING

1st Floor
No. 5, The Boulevard
West Way Office Park
Westville, Durban
Tel : +27 (0) 31 265 6007
Fax : +27 (0) 31 265 6011
Email: info@naiduconsulting.com

Drawing No.: D859-52-5254 REV 0

FOR TENDER ONLY

REFERENCE DRAWINGS

DWG No. TITLE/DESCRIPTION

STANDARD DRAWINGS

CONCRETE AND GENERAL NOTES

A. ALL LEVELS TO BE CONFIRMED ON SITE.
B. ENGINEER TO INSPECT AND APPROVE FOUNDING MATERIAL, BEFORE BLINDING IS CAST.
C. ALL EXPOSED EDGES ARE CHAMFERED 25x25.
D. GENERAL COVER TO ALL REINFORCING IS 50mm.
E. ENSURE THERE IS AT LEAST 75mm COVER BETWEEN THE REINFORCING BARS AND PULGE FLANGE.
F. CONSTRUCTION JOINTS ARE WELL CLEANED & SCABLED TO EXPOSE FRESH AGGREGATE AND THOROUGHLY WETTED BEFORE THE NEXT LIFT IS POURED. CONSTRUCTION JOINTS TO HAVE SKASWELL S-2 OR SIMILAR APPROVED BEAD CENTRALLY PLACED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
G. CONCRETE DISTANCE BLOCKS FOR POSITIONING REINFORCEMENT NEED TO BE MADE AT LEAST 3 WEEKS PRIOR TO REINFORCEMENT BEING FIXED, IN ORDER TO ALLOW FOR SUFFICIENT MOST-CURING TIME.
H. NO ACCESS OPENINGS OTHER THAN THOSE INDICATED ON DRAWINGS WILL BE ALLOWED.
I. NO WIRE TIES BETWEEN WALL SHUTTERS WILL BE PERMITTED. PERFORATE HOLES TO BE FREE OF FORMERS WITHIN 40mm OF SHUTTER.
J. WORKING SPACE AROUND THE CHAMBER NOT TO EXCEED 1000mm.
K. REINFORCED CONCRETE SHALL BE WATERTIGHT TO L. CONCRETE GRADE
BLINDING : 15/19
MASS CONCRETE : 20/19
CONCRETE : 25/19 UNLESS OTHERWISE STATED
SCREED : 1:3 (CEMENT/SAND)
M. WHERE APPLICABLE, AIR VENTS, LIFTING HOLES, LIFTING HOOKS, STEP IRONS AND DI COVER & FRAME WERE PRE-INSTALLED AT THE MANUFACTURER PRIOR TO DELIVERY ON SITE.
N. BACKFILL MATERIAL AROUND STRUCTURE TO BE COMPACTED TO MINIMUM 95% MODIFIED AASHTO MAXIMUM DENSITY IN MAXIMUM 150mm LAYERS.
O. ON COMPLETION OF THE CHAMBERS, PAINT ALL EXPOSED ABOVE GROUND CHAMBER WALLS AND ROOF SLABS WITH 2 COATS OF WHITE ROAD MARKING PAINT. THEREAFTER, STENCIL ON THE CHAMBER IDENTIFICATION NUMBER TO BE ADVISED BY THE ENGINEER.
P. SIGNAGE INSTRUCTIONS FOR USE 800 x 600 HEAVY DUTY PVC SIGN BOARD FIXED TO THE INSIDE OF THE CHAMBER AS PER THE ENGINEERS INSTRUCTIONS

FINISHING NOTES

Q. FORMED CONCRETE SURFACES FINISHES
Q.1. HIDDEN SURFACES ARE EXTERNAL SURFACES BURIED. ALL OTHER SURFACES INCLUDING INSIDE OF THE CHAMBER TO BE EXPOSED SURFACES
VISIBLE SURFACES : SMOOTH
CONCEALED SURFACES : ROUGH
R. UNFORMED CONCRETE SURFACES FINISHES
TOP OF BLINDING : WOOD FLOAT
TOP OF FLOOR : STEEL FLOAT
TOP OF SLABS : STEEL FLOAT

0	01/09/2025	ISSUED FOR TENDER ONLY
B	01/08/2025	INLET CHAMBER RELOCATION
A	01/02/2025	ISSUED FOR INFORMATION

Revision	Date	Description
0	01/09/2025	ISSUED FOR TENDER ONLY

32269-5W

Contract No.

Project No. D859

Planning Unit
WATER AND SANITATION

Ward No. 59

Project Title
**TRENANCE 3 RESERVOIR
CONSTRUCTION OF A 6.0ML
REINFORCED CONCRETE RESERVOIR,
400KL ELEVATED STEEL TANK AND
ANCILLARY WORKS**

Drawing Title
**DN300 RESERVOIR INLET
CHAMBER & DETAILS**

Scales : As Shown
Paper Size : A0
Designed : Z. Bhengu Date : 01-09-2025
Checked : A. Goorun Drawn : N. Adams

Bulk Operations

Area Engineer (W.O.)

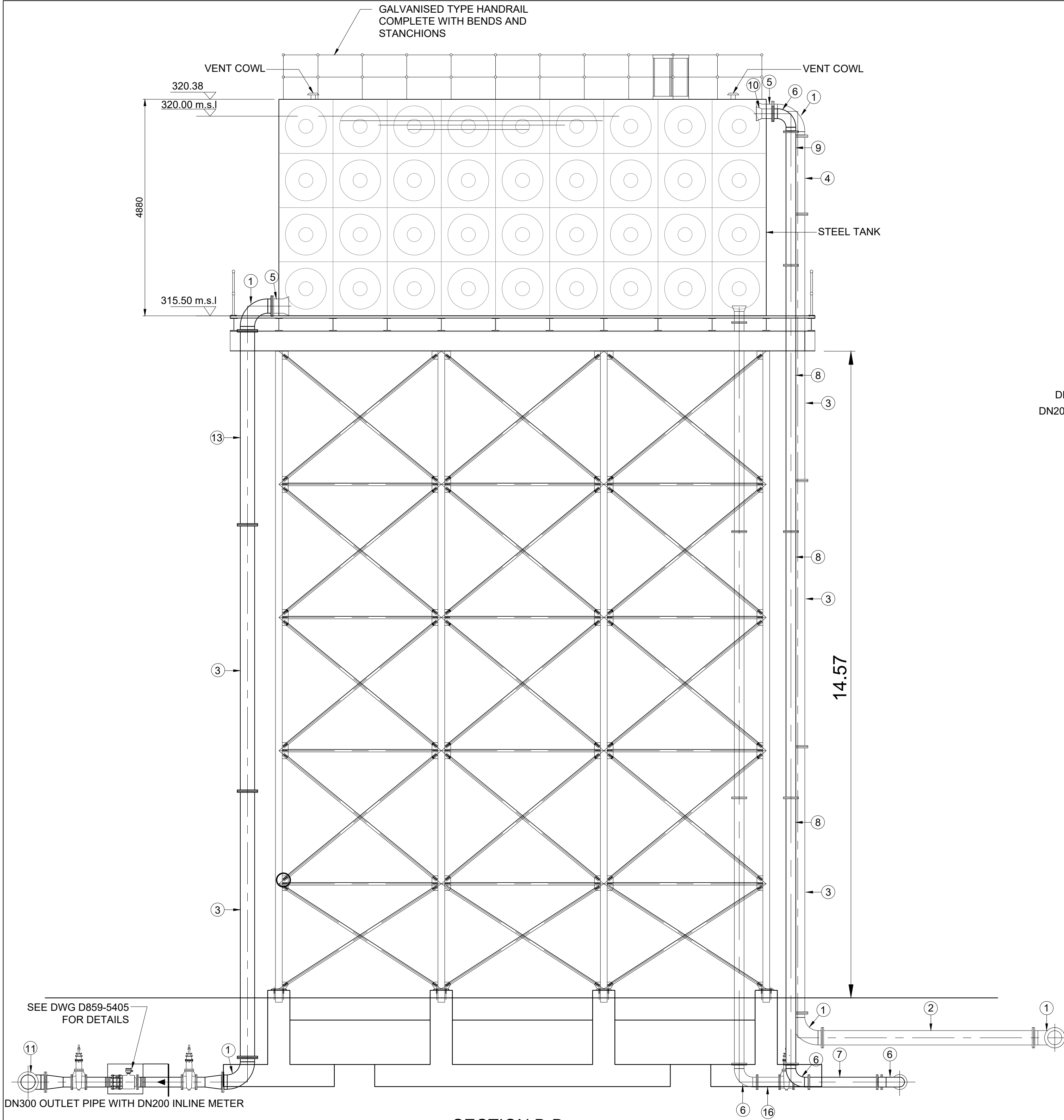
Manager (W.D.)

Director (Water)

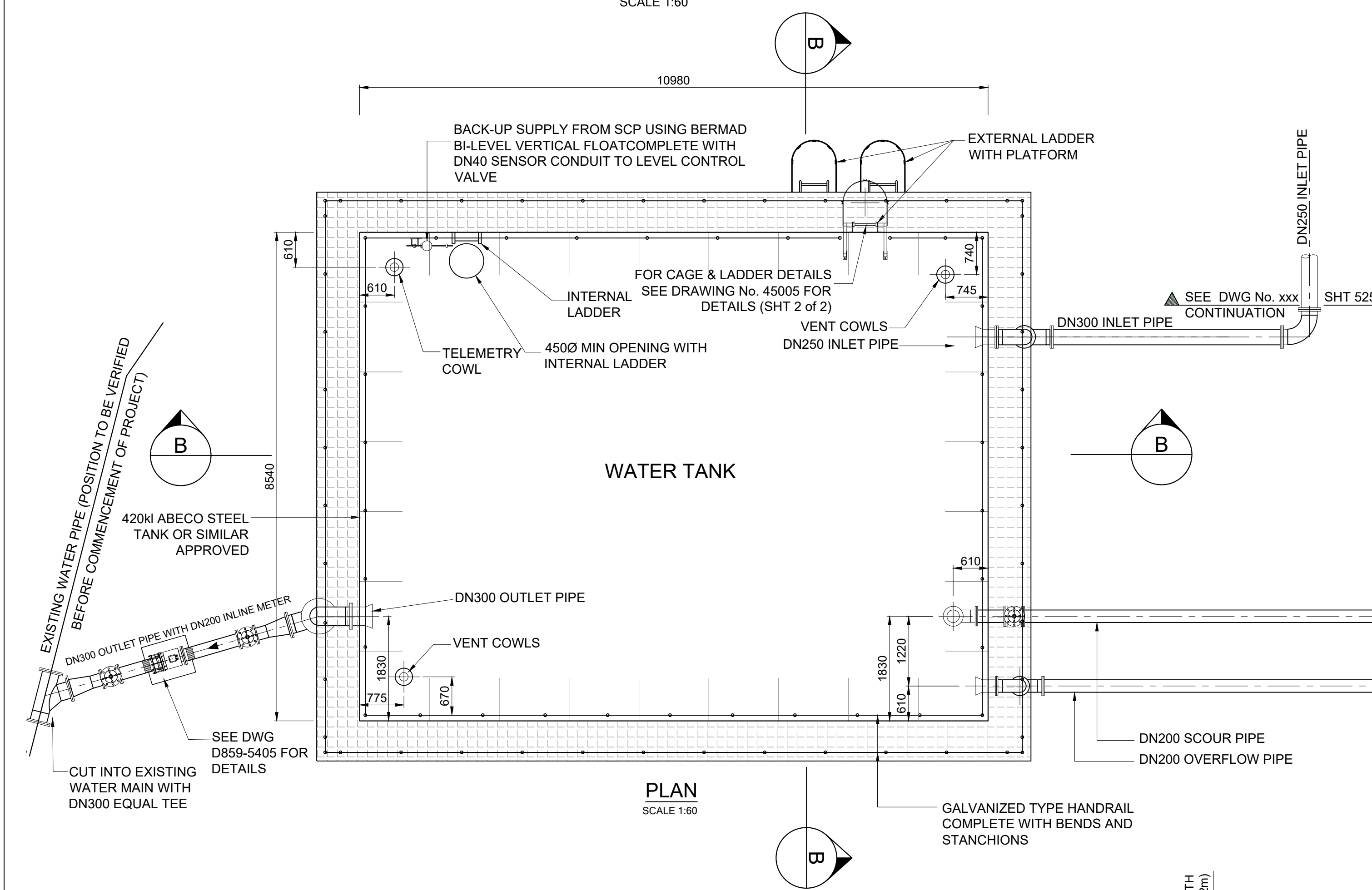
E.Mswell - Head Water & Sanitation Unit

60570/006	1	0
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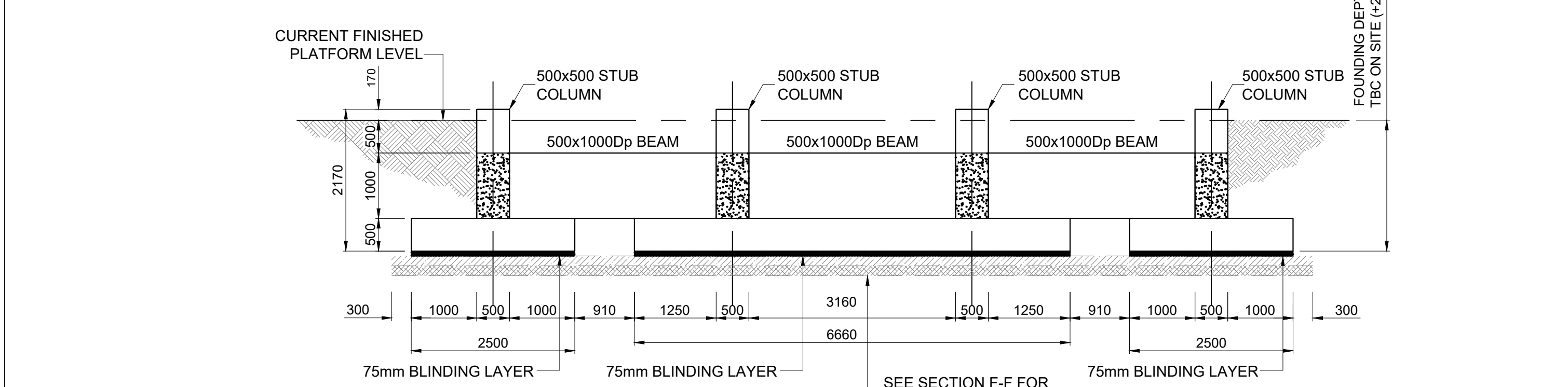
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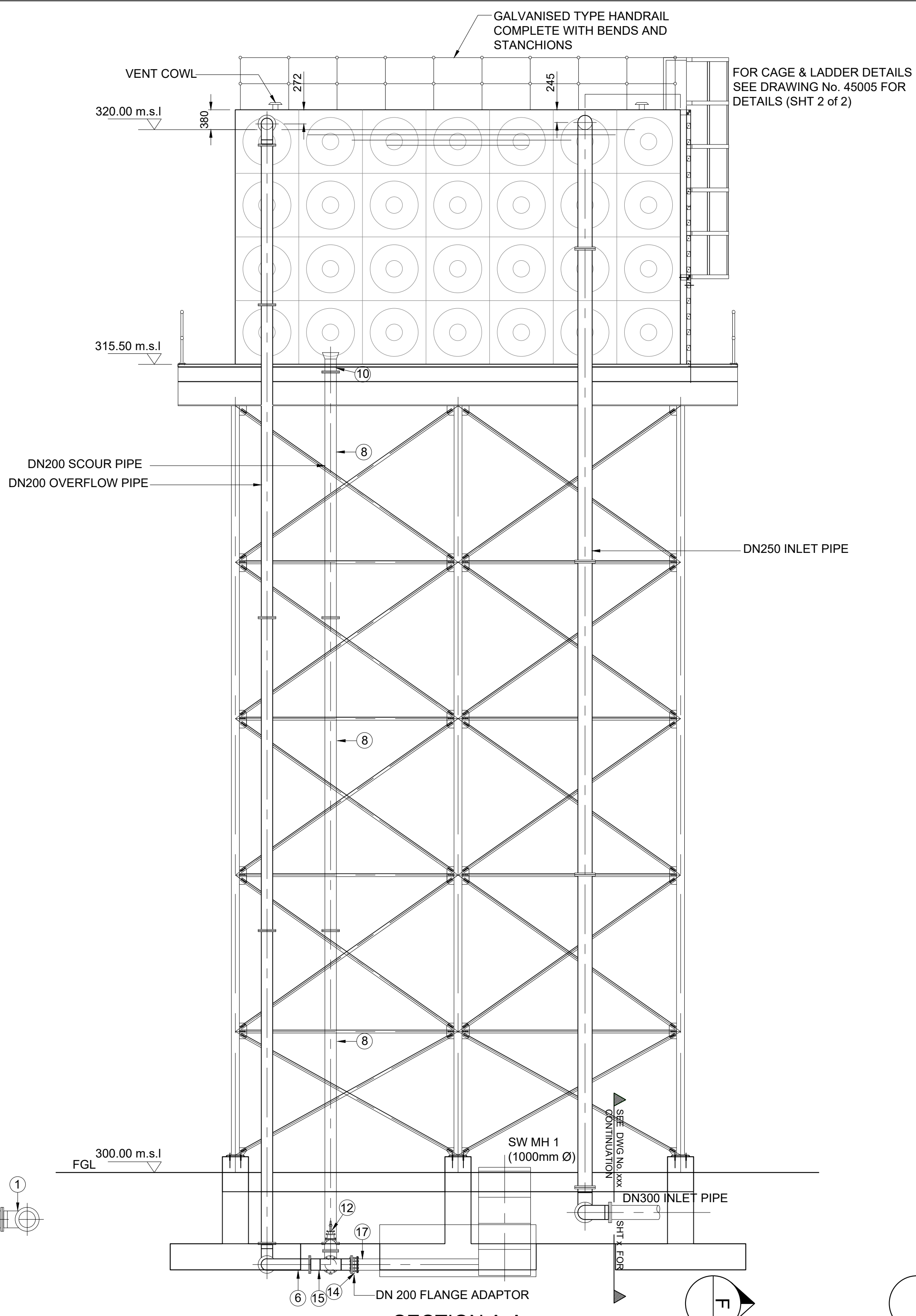
SECTION B-B
SCALE 1:60



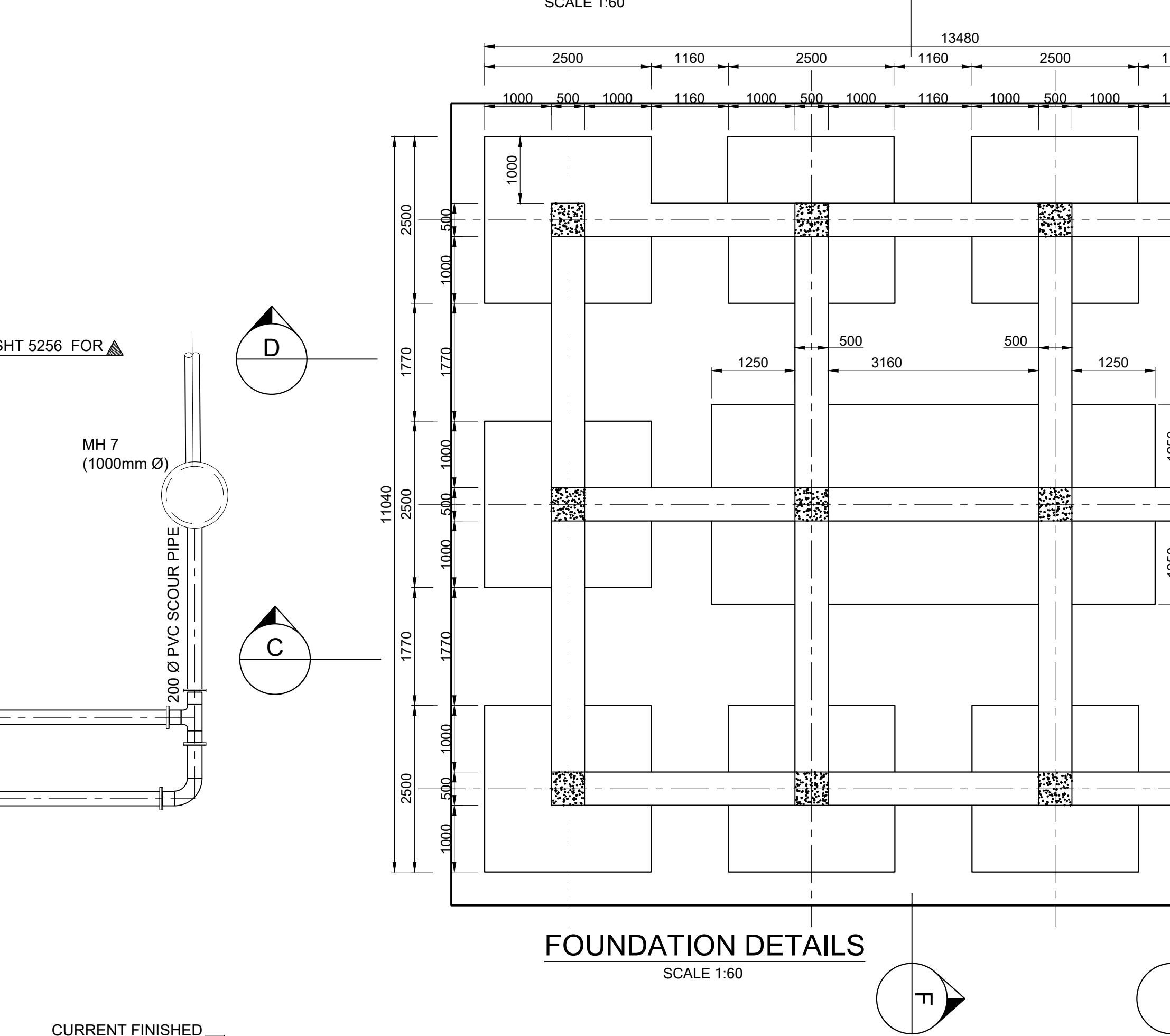
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SCALE 1:60



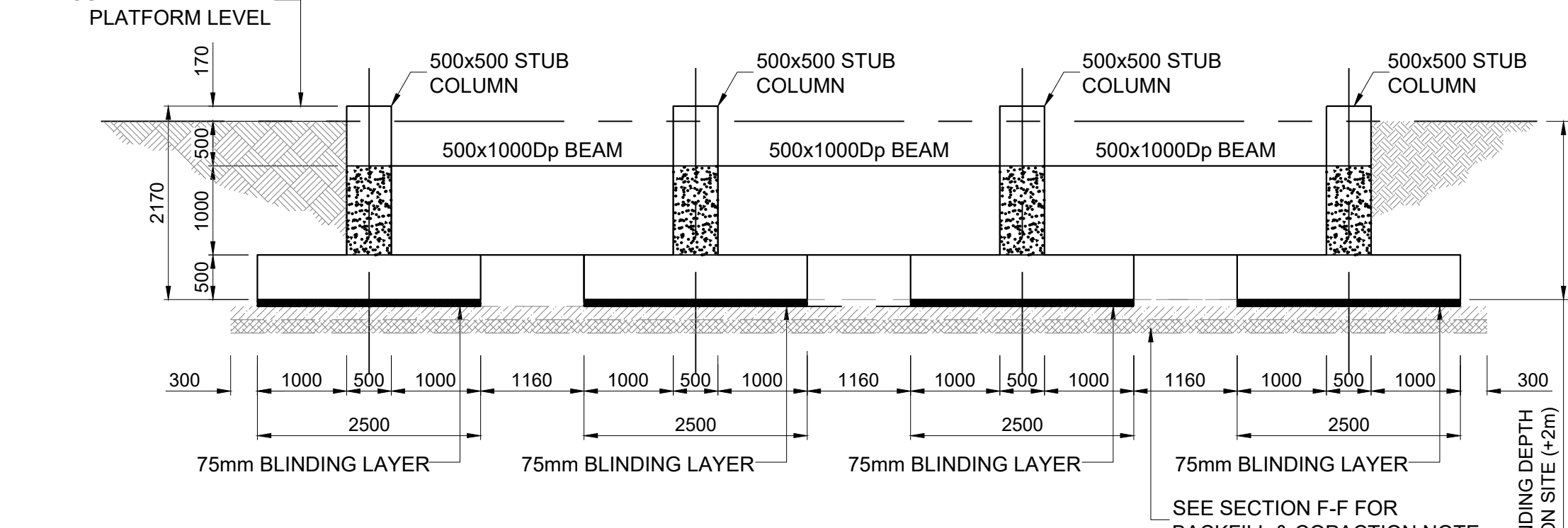
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SCALE 1:60



SECTION A-A
SCALE 1:60



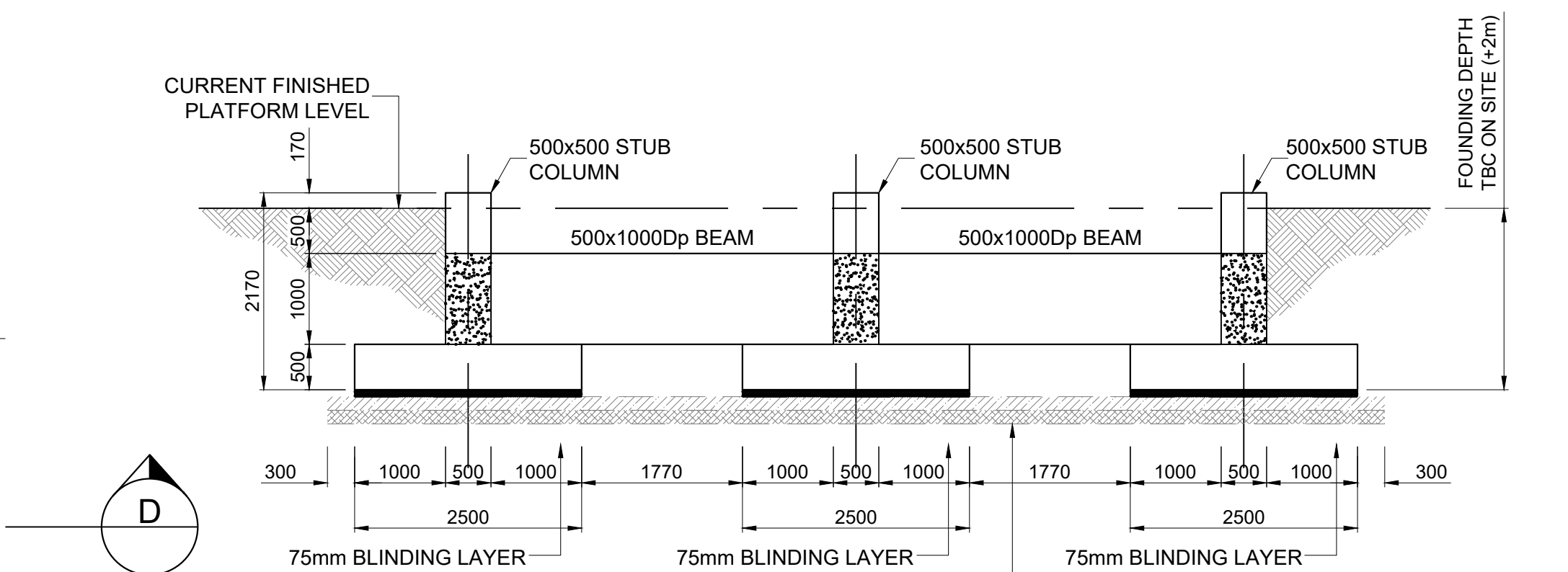
FOUNDATION DETAILS
SCALE 1:60



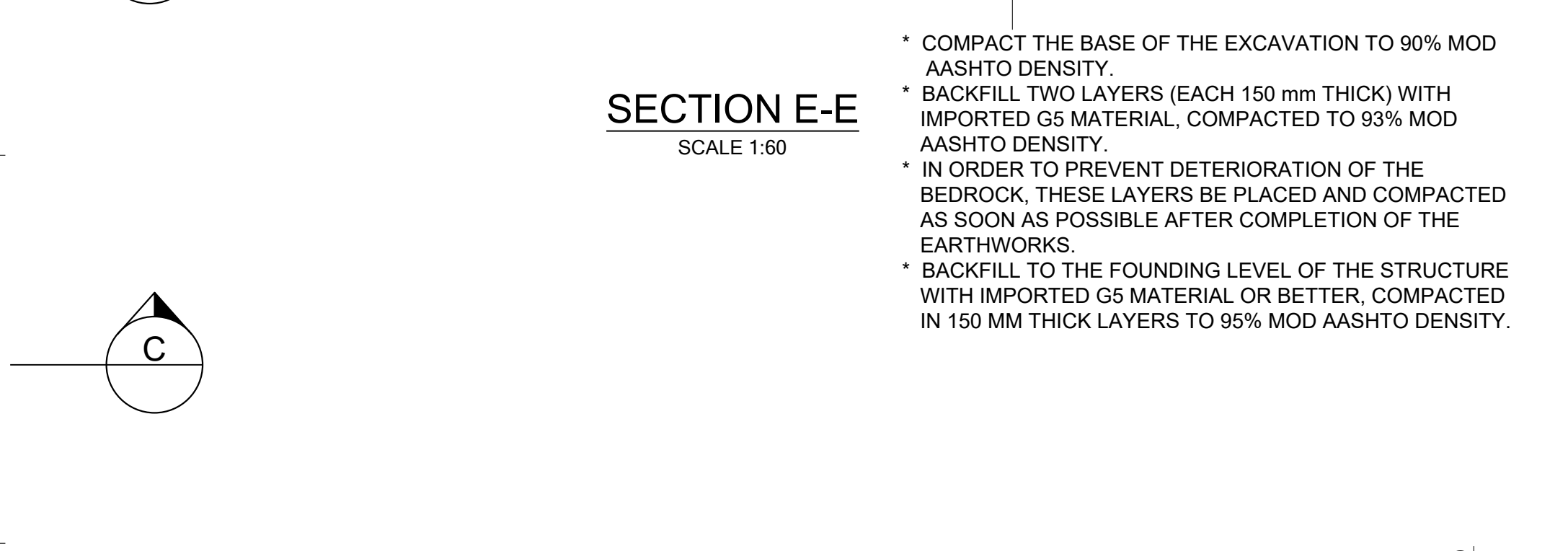
SECTION D-D
SCALE 1:60

PIPEWORK AND FITTINGS SCHEDULE							
ITEM NO	NOM DIA	DESCRIPTION	DIMENSIONS (mm)				No. OF
			A	B	C	F/F	
1	DN300	90° LONG RADIUS BEND (ANSI) B16.9, WITH 100mm SPOOL PIECE EACH END, F.B.E.					5
2	DN300	SPOOL PIECE, F.B.E. FINAL LENGTH DETERMINED ON SITE.				4755	1
3	DN300	SPOOL PIECE, F.B.E. FINAL LENGTH DETERMINED ON SITE.				6000	5
4	DN300	SPOOL PIECE, F.B.E. FINAL LENGTH DETERMINED ON SITE.				1760	1
5	DN300	FLANGED BELL MOUTH (ANSI) B16.9				375	2
6	DN200	90° LONG RADIUS BEND (ANSI) B16.9, WITH 100mm SPOOL PIECE EACH END, F.B.E.					5
7	DN200	SPOOL PIECE, F.B.E. FINAL LENGTH DETERMINED ON SITE.				1540	5
8	DN200	SPOOL PIECE, F.B.E. FINAL LENGTH DETERMINED ON SITE.				6000	6
9	DN200	SPOOL PIECE, F.B.E. FINAL LENGTH DETERMINED ON SITE.				3015	1
10	DN200	FLANGED BELL MOUTH (ANSI) B16.9				375	2
11	DN300	EQUAL TEE (ANSI) B16.9, WITH 100mm LONG SPOOL PIECE WELDED ON ALL ENDS. CF 355mm F.A.R. (LENGTHS TO BE VERIFIED ON SITE).				700	1
12	DN200	SANS 664 PN10 WEDGE GATE VALVE (WGV) COMPLETE WITH CAP TOP, CONCRETE SPACERS AND VALVE COVER. VALVES TO BE INSTALLED WITH SPINDLE EXTENSION WHERE DIRECTED BY THE ENGINEER.				317	1
13	DN200	SPOOL PIECE, F.B.E. FINAL LENGTH DETERMINED ON SITE.				4755	6
14	DN200	FLANGE ADAPTER					1
15	DN200	EQUAL TEE (ANSI) B16.9, WITH 200mm LONG SPOOL PIECE WELDED ON ALL ENDS. CF 355mm F.A.R. (LENGTHS TO BE VERIFIED ON SITE).				800	1
16	DN200	SPOOL PIECE, F.B.E. FINAL LENGTH DETERMINED ON SITE.				510	1
PVC PIPEWORK							
17	DN200	SPOOL PIECE				2500	1
NOTES: ALL SPECIALS EPOXY COATED (S.F.E) TO PROJECT SPECIFICATIONS UNLESS OTHERWISE STATED. ALL PIPE TO SANS 719, GRADE C, 4.5mm THICK. ALL FLANGES TO TABLE 1600/3 (SANS 1123 - 2011). IF FACE TO FACE DIMENSION OF FITTINGS DIFFER TO ACTUAL THE CONTRACTOR MUST INFORM THE ENGINEER PRIOR TO PIPE FABRICATION.							

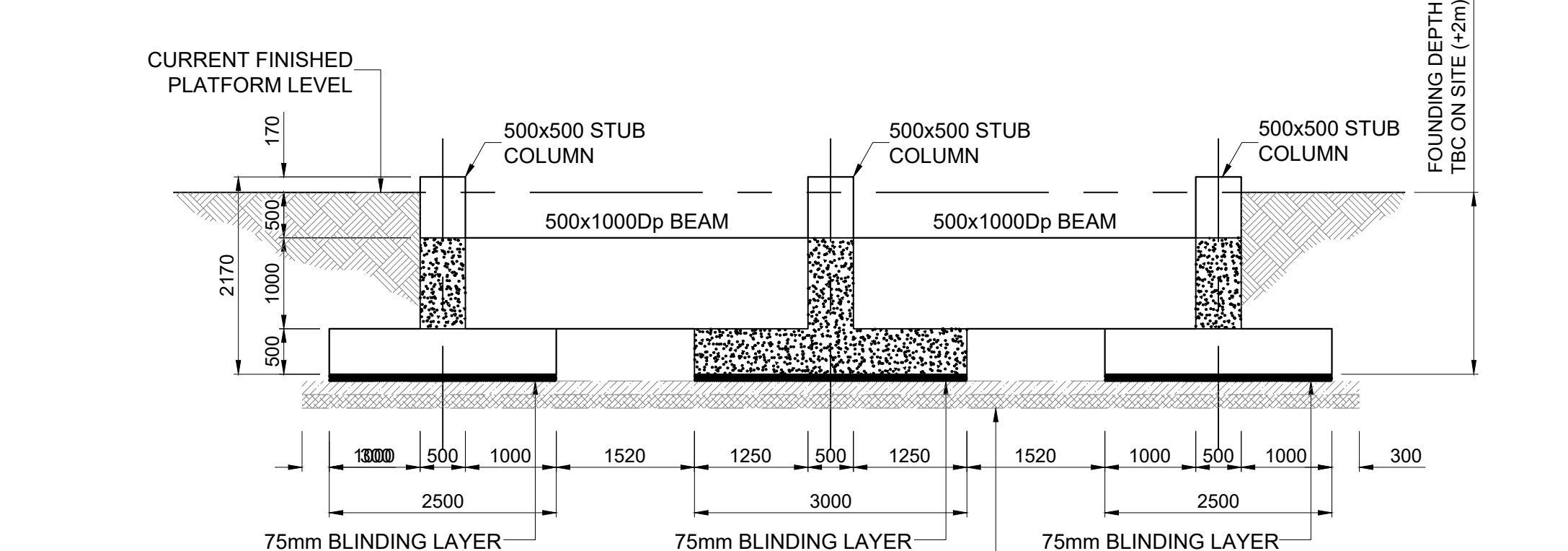
NOTES:
ALL SPECIALS EPOXY COATED (S.F.E) TO PROJECT SPECIFICATIONS UNLESS OTHERWISE STATED. ALL PIPE TO SANS 719, GRADE C, 4.5mm THICK.
ALL FLANGES TO TABLE 1600/3 (SANS 1123 - 2011).
IF FACE TO FACE DIMENSION OF FITTINGS DIFFER TO ACTUAL THE CONTRACTOR MUST INFORM THE ENGINEER PRIOR TO PIPE FABRICATION.



SECTION E-E
SCALE 1:60



SECTION F-F
SCALE 1:60



NOTES:
ALL SPECIALS EPOXY COATED (S.F.E) TO PROJECT SPECIFICATIONS UNLESS OTHERWISE STATED. ALL PIPE TO SANS 719, GRADE C, 4.5mm THICK.
ALL FLANGES TO TABLE 1600/3 (SANS 1123 - 2011).
IF FACE TO FACE DIMENSION OF FITTINGS DIFFER TO ACTUAL THE CONTRACTOR MUST INFORM THE ENGINEER PRIOR TO PIPE FABRICATION.

eTHEKWINI WATER SERVICES

WATER DESIGN BRANCH

REDUCED PLAN USE SCALE BELOW
0 10 20 30 40 50 60 70
70mm ON ORIGINAL PLAN

CONSULTANT:

NAIDU CONSULTING

1st Floor
No. 5, The Boulevard
West Way Office Park
Wentworth, Durban
Tel: +27 (0) 31 265 6007
Fax: +27 (0) 31 265 6011
Email: info@naiduconsulting.com

Drawing No.: D859-52-5255 REV 0

FOR TENDER ONLY

REFERENCE DRAWINGS

DWG No. TITLE/DESCRIPTION

STANDARD DRAWINGS

Contract No. 32269-5W

Project No. D859

Planning Unit WATER AND SANITATION

Ward No. 59

Project Title TRENANCE 3 RESERVOIR CONSTRUCTION OF A 6.0ML REINFORCED CONCRETE RESERVOIR, 400KL ELEVATED STEEL TANK AND ANCILLARY WORKS

Drawing Title 400KL ELEVATED TANK AND DETAILS

Scales: As Shown
Paper Size: A0
Designed: Z. Bhengu Date: 01-09-2025
Checked: A. Goorun Drawn: N. Adams

Bulk Operations
Area Engineer (W.O)
Manager (W.D.)
Director (Water)

E.Msweli - Head Water & Sanitation Unit
Drawing No. 60570/007 Sheet 1 Rev. 0