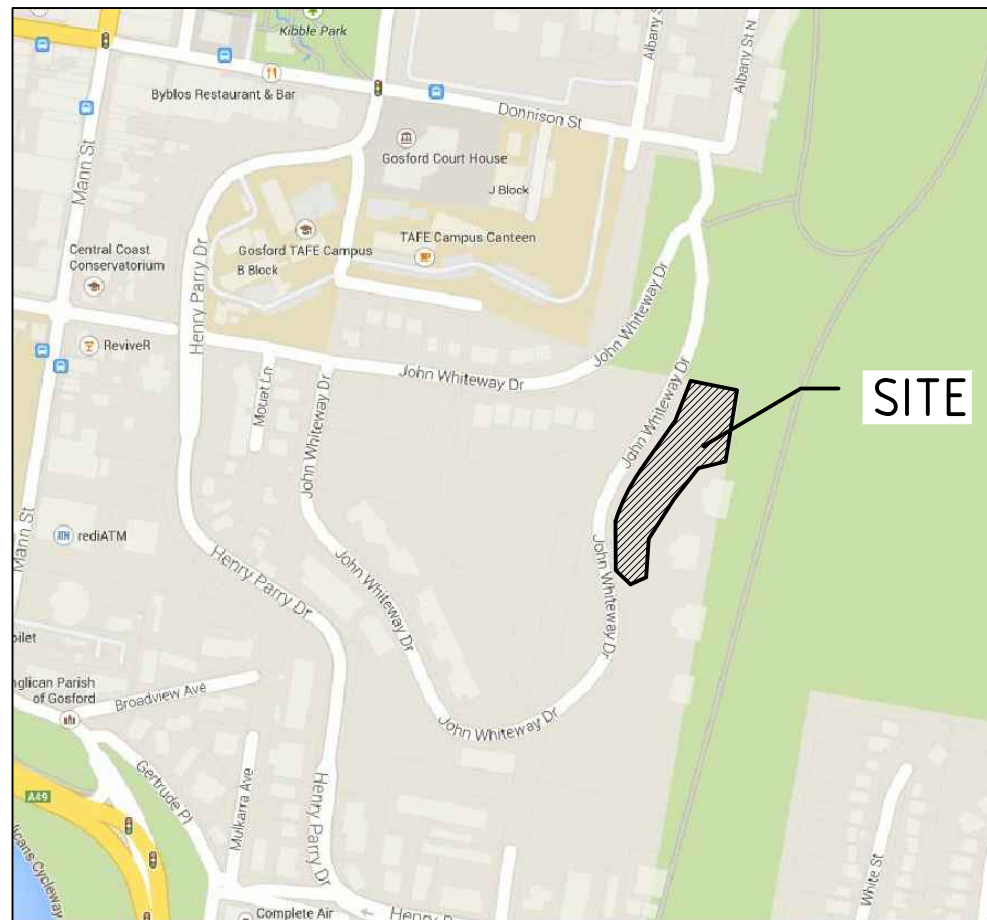


LOCALITY SKETCH

NOT TO SCALE

01954__100	COVER SHEET, DRAWING INDEX, GENERAL NOTES & LOCALITY SKETCH
01954__201	STORMWATER DRAINAGE BASEMENT PLAN
01954__202	STORMWATER DRAINAGE GROUND FLOOR PLAN
01954__203	STORMWATER DRAINAGE FIRST FLOOR PLAN
01954__204	STORMWATER DRAINAGE SECOND TO FOURTH FLOOR PLAN
01954__601	STORMWATER DRAINAGE CATCHMENT PLAN
01954__621	ON-SITE DETENTION TANKS 1 & 2 SECTIONS AND DETAILS
01954__622	ON-SITE DETENTION TANK 3 SECTIONS AND DETAILS
01954__623	HEADWALL DETAILS
01954__701	SEDIMENT & EROSION CONTROL PLAN
01954__702	SEDIMENT & EROSION CONTROL DETAILS
01954__801	DRIVEWAY GENERAL ARRANGEMENT PLAN
01954__802	DRIVEWAY ALIGNMENT CONTROL PLAN
01954__803	FIRE TRAIL LONGITUDINAL SECTIONS AND KERB RETURN PROFILES
01954__804	DRIVEWAY CROSS SECTIONS ALONG KR1 CONTROL
01954__805	CROSS SECTIONS ALONG FIRE NTH



1. ALL WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION.
2. THE CONSTRUCTOR SHALL PREPARE A DILAPIDATION REPORT FOR THE EXISTING INFRASTRUCTURE WITHIN THE ROAD RESERVE, INCLUDING BUT NOT LIMITED TO KERBS, GUTTERS, FOOTPATHS, VEHICULAR CROSSINGS, STREET SIGNS, SERVICE FITTING COVERS, ETC.
3. THE CONSTRUCTOR SHALL REVIEW, BE AWARE AND AT ALL TIMES COMPLY WITH THE SPECIFIC REQUIREMENTS FOR THIS DEVELOPMENT AS SET OUT IN THE DEVELOPMENT APPROVAL FOR THE PROJECT.
4. ANY CHANGES MADE BY THE CONSTRUCTOR TO ANY LEVEL, DIMENSION, LOCATION, POSITION, ALIGNMENT ETC., OF ANY OF THE WORKS SHOWN ON THE DRAWINGS WITHOUT THE WRITTEN CONSENT OF C&M CONSULTING ENGINEERS PTY. LTD. AND OR THE PRINCIPAL CERTIFYING AUTHORITY IS DONE SO AT THE CONSTRUCTORS OWN RISK.
5. THE CONSTRUCTOR SHALL ALLOW TO LIAISE WITH AND PROVIDE SUFFICIENT NOTICE TO THE PRINCIPAL CERTIFYING AUTHORITY TO ENSURE THAT ALL WORKS ARE INSPECTED TO ENABLE COMPLIANCE CERTIFICATES TO BE ISSUED THROUGHOUT THE CONSTRUCTION PERIOD. THE CONSTRUCTOR SHALL LIAISE WITH THE PRINCIPAL CERTIFYING AUTHORITY PRIOR TO ANY CONSTRUCTION WORKS COMMENCING AND PREPARE AN INSPECTION AND TEST PLAN WITH A MUTUALLY AGREED WITNESS AND HOLD POINTS FOR THE CONSTRUCTION WORKS.
6. IF THE PRINCIPAL CERTIFYING AUTHORITY IS NOT GOSFORD CITY COUNCIL, THEN THE CONSTRUCTOR MUST CONTACT GOSFORD CITY COUNCIL'S WORKS DIVISION TO ENABLE THEIR INSPECTION OF ALL WORKS (INCLUDING EROSION AND SEDIMENT CONTROL MEASURES) WITHIN THE ROAD RESERVE AREA.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL ACCESS TO THE SITE. THE ACCESS SHALL BE ALL WEATHER SAFE ACCESS TO THE CONTRACTOR'S SITE FACILITIES AT ALL TIMES FOR THE DURATION OF THE CONTRACT.
8. A TEMPORARY HOARDING OR FENCE OF MINIMUM 1.5m HIGH IS TO BE PROVIDED AROUND THE SITE TO PROTECT THE PUBLIC PRIOR TO COMMENCEMENT OF WORKS. HOARDINGS OR FENCES ARE TO BE STRUCTURALLY ADEQUATE. THE CONTRACTOR SHALL OBTAIN AN APPROVAL FROM COUNCIL PRIOR TO ERECTING THE HOARDING OR FENCE.
9. ALL NEW WORKS SHALL MAKE A SMOOTH CONNECTION WITH ANY FORMATIONS, STRUCTURES, ETC.
10. ALL ALTERATIONS AND/OR ADDITIONS TO EXISTING WORK, THE CONTRACTOR SHALL VERIFY THE DIMENSIONS OF THE EXISTING WORK BEFORE PROCEEDING AND NOTIFY THE SUPERINTENDENT OF DISCREPANCIES.
11. THE CONTRACTOR SHALL USE MANUFACTURED ITEMS IN THE WORK ONLY IN ACCORDANCE WITH THE CURRENT PUBLISHED
12. THE WORKS SHALL BE CONSTRUCTED IN SUCH A MANNER THAT THERE IS MINIMUM DISTURBANCE TO EXISTING TREES AND VEGETATION.
13. THE PUBLIC FOOTWAY AND ROADWAY FRONTING THE SITE SHALL BE MAINTAINED IN A SAFE AND UNOBSTRUCTED MANNER AT ALL TIMES DURING THE CONSTRUCTION WORKS.
14. THE CONSTRUCTOR SHALL BE RESPONSIBLE FOR REPAIRING TO THE SATISFACTION OF THE ASSET OWNER, ANY DAMAGE CAUSED TO ANY EXISTING INFRASTRUCTURE WITHIN THE ROAD RESERVE, INCLUDING BUT NOT LIMITED TO KERBS, GUTTERS, FOOTPATHS, VEHICULAR CROSSINGS, STREET SIGNS, SERVICE FITTING COVERS, ETC.
15. THE SITE SHALL BE KEPT IN A TIDY CONDITION AT ALL TIMES. LITTER RUBBISH AND BUILDING RUBBLE SHALL BE PLACED IN CONTAINERS OR BINS AND REGULARLY REMOVED FROM SITE AS REQUIRED.

1. STORMWATER DESIGN CRITERIA:
MINOR STORM ARI: 20 YEARS
MAJOR STORM ARI: 100 YEARS
IFD DATA LOCALITY: GOSFORD

2. PIPES DN375 AND LARGER TO BE STEEL REINFORCED CONCRETE PIPES CLASS '2':
APPROVED SPIGOT AND SOCKET WITH RUBBER RING JOINTS U.N.O.

3. PIPES DN300 AND SMALLER SHALL BE GRADE SH (SEWER GRADE) uPVC WITH RUBBER RING JOINTS.

4. EQUIVALENT STRENGTH FIBRE REINFORCED CONCRETE PIPES MAY BE USED UP TO DN450.

5. PIPES FOR SUB-SOIL DRAINS SHALL BE SLOTTED 100MM DIAMETER CLASS 1000 WRAPPED IN GEOFABRIC, U.O.N, COMPLYING WITH THE REQUIREMENTS OF AS 2439.

6. PRECAST PITS, WHERE ALLOWED, AND THE INSITU BASE SHALL COMPLY WITH THE REQUIREMENT OF THE MANUFACTURER.

7. ALL MILD STEEL FIXTURES INCLUDING GRATES, FRAMES, STEP IRONS, LADDERS, ETC., SHALL BE HOT DIP GALVANISED. GALVANISING SHALL COMPLY WITH THE REQUIREMENTS OF AS 1214 OR AS 1650, AS APPROPRIATE.

8. GEOFABRIC FILTER SHALL BE PERMEABLE, NON-WOVEN FABRIC MANUFACTURED FROM A POLYMER SUCH AS POLYPROPYLENE OR POLYESTER OF MASS NOT LESS THAN 135G/M2.

9. THE MINIMUM TRENCH WIDTHS SHALL BE AS FOLLOWS:
CONCRETE AND FRC PIPES: EXTERNAL PIPE DIAMETER PLUS 400MM.
uPVC PIPE: EXTERNAL DIAMETER OF PIPE PLUS 200MM.
SUBSOIL PIPE: 250MM.

10. ALL PIPES SHALL BE PLACED CENTRALLY WITHIN THE TRENCH WITH EQUAL CLEARANCE EACH SIDE.

11. 100mm DIA. SUBSOIL DRAINAGE PIPE 3m LONG WRAPPED IN FILTER SOCK TO BE PROVIDED IN PIPE TRENCHES UPSTREAM OF ALL PITS.

12. PIPE BEDDING MATERIAL SHALL BE CLEAN COARSE RIVER SAND WITH DEPTH AS FOLLOWS:
CONCRETE AND FRC PIPES: 100MM (175MM IN ROCK)
UPVC PIPE: 75MM (100MM IN ROCK)
SUBSOIL DRAINS: 50MM

13. ALL PIPES SHALL BE BACKFILLED WITH GRANULAR MATERIAL SUCH AS QUARRY FINES OR COARSE RIVER SAND TO A MINIMUM OF 150MM ABOVE THE PIPE. THE GRANULAR MATERIAL SHALL BE PLACED IN 150MM THICK MAXIMUM LAYERS AND COMPACTED TO ACHIEVE A DENSITY INDEX (ID) OF 70%. FREQUENCIES OF COMPACTION TESTS FOR TRENCHES SHALL BE 1 TEST PER 2 LAYERS PER 40 LINEAR METRE.

14. BACKFILL THE REMAINDER OF THE TRENCH ABOVE THE SAND TO SUBGRADE LEVEL WITH TRENCH MATERIAL. PLACE AND COMPACT MATERIALS IN LAYERS NOT EXCEEDING 150MM LOOSE THICKNESS. MATERIAL LOWER THAN 500MM BELOW SUBGRADE LEVEL SHALL BE COMPACTED TO AT LEAST 95% OF STANDARD MAXIMUM DRY DENSITY. THE TOP 500MM BELOW PAVEMENT SUBGRADE LEVELS SHALL BE COMPACTED TO AT LEAST 100% STANDARD MAXIMUM DRY DENSITY.

15. FILTER MATERIAL FOR SUBSOIL SHALL BE COARSE SAND OR CRUSHED STONE COMPLYING WITH ONE OF THE GRADINGS IN THE TABLE BELOW. WHERE NOTED ON THE DRAWINGS THE 7MM CRUSHED ROCK FILTER MATERIAL SHALL BE ENCLOSED WITHIN FILTER FABRIC SHEET AS SPECIFIED. FILTER MATERIAL SHALL BE PLACED IN 250MM LAYERS AND COMPACTED TO DENSITY INDEX (ID) OF 60%.

AS SIEVE SIZE (mm)	SAND	7mm ROCK
9.5	100	100
6.7	-	75-100
4.75	90-100	20-55
2.36	75-100	0-15
1.18	50-90	
0.6	20-60	
0.3	10-30	
0.15	2-10	
0.075	0-3	0-2

16. UNLESS OTHERWISE DETAILED OR PERMITTED, THE MINIMUM GRADE OF ALL PIPE WORKS SHALL BE 10%.

1. THE CONSTRUCTOR SHALL USE A SUITABLY QUALIFIED SURVEYOR TO SET OUT ALL WORKS. THE SURVEYOR SHALL ISSUE A CERTIFICATE TO THE PRINCIPAL CERTIFYING AUTHORITY CERTIFYING THAT THE WORKS HAVE BEEN SET OUT IN ACCORDANCE WITH THE APPROVED DRAWINGS PRIOR TO THE WORKS BEING CONSTRUCTED.
2. THE SURVEY WORK ASSOCIATED WITH THE CONTRACT SHALL INCLUDE SETTING OUT THE FOLLOWING COMPONENTS OF THE WORK:
 - DRAINAGE STRUCTURES

1. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONTROL OF EROSION AND SEDIMENTATION TO THE SATISFACTION OF COUNCIL, THE RELEVANT STATE AUTHORITIES AND THE SUPERINTENDENT. TO THIS END, THE EROSION AND SEDIMENTATION CONTROLS SHOWN ON THE DRAWINGS SHALL ONLY BE USED AS A GUIDE BY THE CONTRACTOR, AND SHALL REPRESENT THE MINIMUM REQUIREMENT ONLY.
2. NO CONSTRUCTION WORKS ARE TO COMMENCE ON SITE UNTIL ALL EROSION AND SEDIMENT CONTROL MEASURES ARE IN PLACE AND HAVE BEEN INSPECTED AND APPROVED BY THE COUNCIL ENGINEER AND/OR SUPERINTENDENT.
3. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REGULARLY INSPECTED, IN PARTICULAR AFTER STORMS, AND REPAIRED OR MAINTAINED AS REQUIRED TO ENSURE THE MEASURES CORRECT AND EFFICIENT FUNCTION THROUGHOUT THE DURATION OF THE WORKS, UNTIL SUCH TIME AS THE COUNCIL ENGINEER AND/OR SUPERINTENDENT AUTHORISES THE REMOVAL OF SUCH MEASURES.
4. ALL STOCKPILES SHALL BE CLEAR OF ALL TREES AND DRAINAGE LINES (INCLUDING OVERLAND FLOW PATHS) AND PROTECTED FROM EROSION.
5. IN THE CASE OF THE TEMPORARY CONSTRUCTION EXIT, THE CONTRACTOR SHALL UNDERTAKE WEEKLY SURFACE CLEANING BY DRAG BROOM OR EQUIVALENT, TO REMOVE ALL BUILD UP OF FOREIGN MATERIAL TO THE SATISFACTION OF THE SUPERINTENDENT.

1. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONTROL OF TRAFFIC INCLUDING VEHICLES AND PEDESTRIANS TO THE SATISFACTION OF COUNCIL, THE RELEVANT STATE AUTHORITIES AND THE SUPERINTENDENT.
2. THE CONTRACTOR IS TO PREPARE A TRAFFIC MANAGEMENT PLAN TO THE REQUIREMENTS OF THE RMS - TRAFFIC CONTROL AT WORK SITE, AS 1742 - AUSTRALIAN STANDARD MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, AND LOCAL COUNCIL STANDARDS.

1. OTHER ENVIRONMENTAL CONTROLS LIKE NOISE, DUST, VIBRATION, FLORA & FAUNA, FIRE, HAZMAT, AND CONTAMINATIONS MUST BE CONTROLLED TO THE REQUIREMENT OF THE COUNCIL AND THE RELEVANT STATE AUTHORITIES.

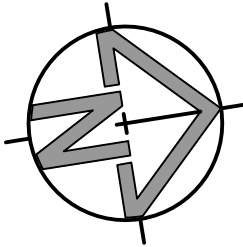
NOT FOR CONSTRUCTION

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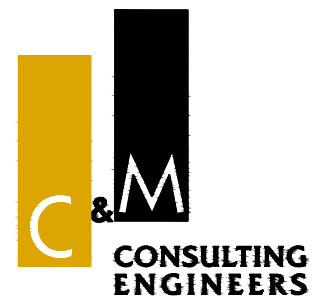


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01	W.M.	27/03/2018	A.M.	ISSUE FOR S4.55(2)
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ENGINEERING DESIGN AND
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ABN 21 118 134 240

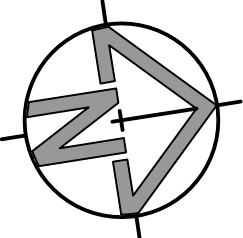
DESIGNER	W.MARTIN	DATE	12/03/2018
ENGINEER	P.O'BRIEN	LGA	GOSFORD
VERIFIER	A.MANCONE	SCALE @ A1	1:200
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70 JOHN WHITEWAY DRIVE, GOSFORD			
STORMWATER DRAINAGE BASEMENT PLAN			
STATUS	S4.55(2)	DRAWING No.	01954_201
REVISION	01		

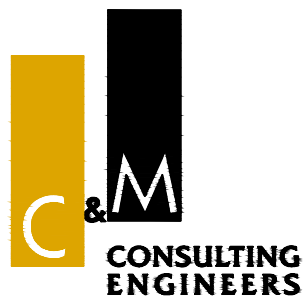


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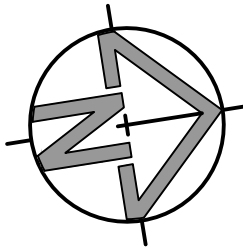
DESIGNER	W.MARTIN	DATE	12/03/2018
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70 JOHN WHITEWAY DRIVE, GOSFORD		
STORMWATER DRAINAGE GROUND FLOOR PLAN		
STATUS	S4.55(2)	DRAWING No. 01954_202
REVISION	01	

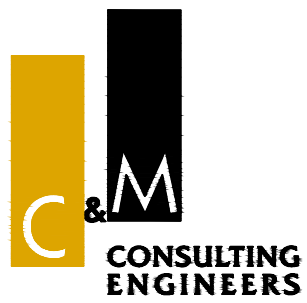


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ENGINEER	P.O'BRIEN	LGA	GOSFORD
VERIFIER	A.MANCONE	SCALE @ A1	1:200
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70 JOHN WHITEWAY DRIVE, GOSFORD			
STORMWATER DRAINAGE FIRST FLOOR PLAN			
STATUS	S4.55(2)	DRAWING No.	01954_203
		REVISION	01

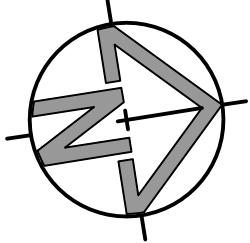


LEGEND

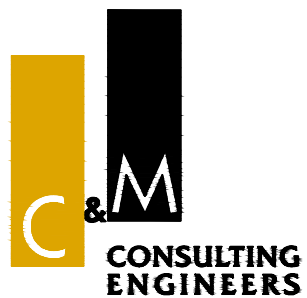
- BOUNDARY
- STORMWATER DRAINAGE LINE
- STORMWATER SUBSOIL DRAINAGE LINE WITH FLUSHING POINT
- STORMWATER RISING MAIN
- DOWNPIPE
- STORMWATER RISING MAIN
- RAINWATER OUTLET
- STORMWATER DRAINAGE PITS
- FINISHED SURFACE LEVEL
- FINISHED STORMWATER PIT LID/GRADE LEVEL

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70 JOHN WHITEWAY DRIVE, GOSFORD

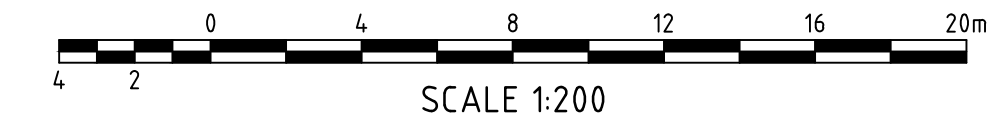
STORM WATER DRAINAGE
SECOND TO FOURTH FLOOR PLAN

STATUS S4.55(2) DRAWING No. 01954_204 REVISION 1



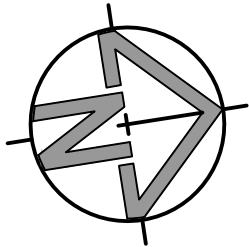
LEGEND

	OSD 1 AREA= 722m ²
	OSD 2 AREA= 554m ²
	OSD 3 AREA=2091m ²
	BYPASS AREA= 1405m ²
TOTAL AREA - 4772m ²	

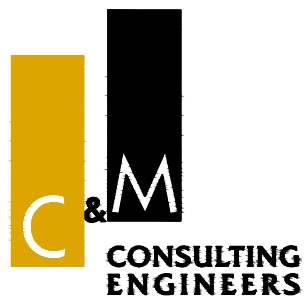


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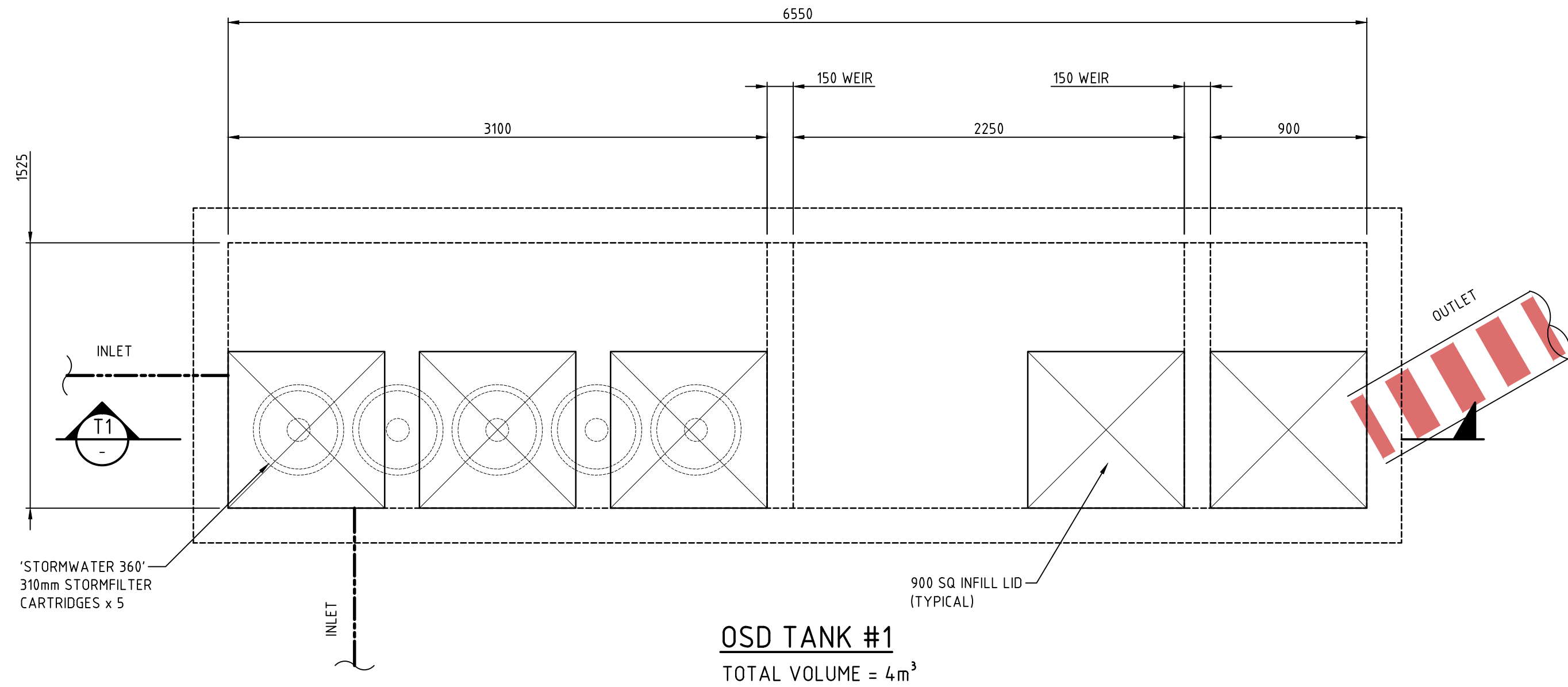
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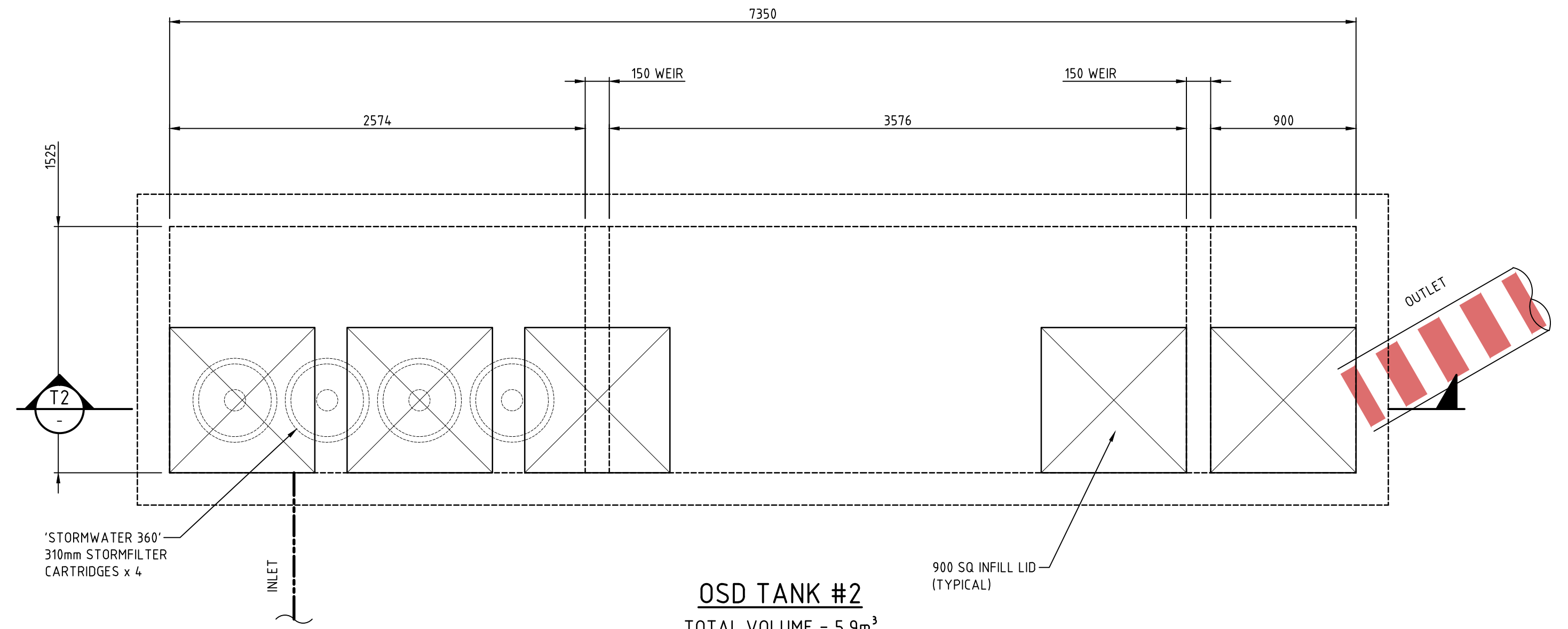
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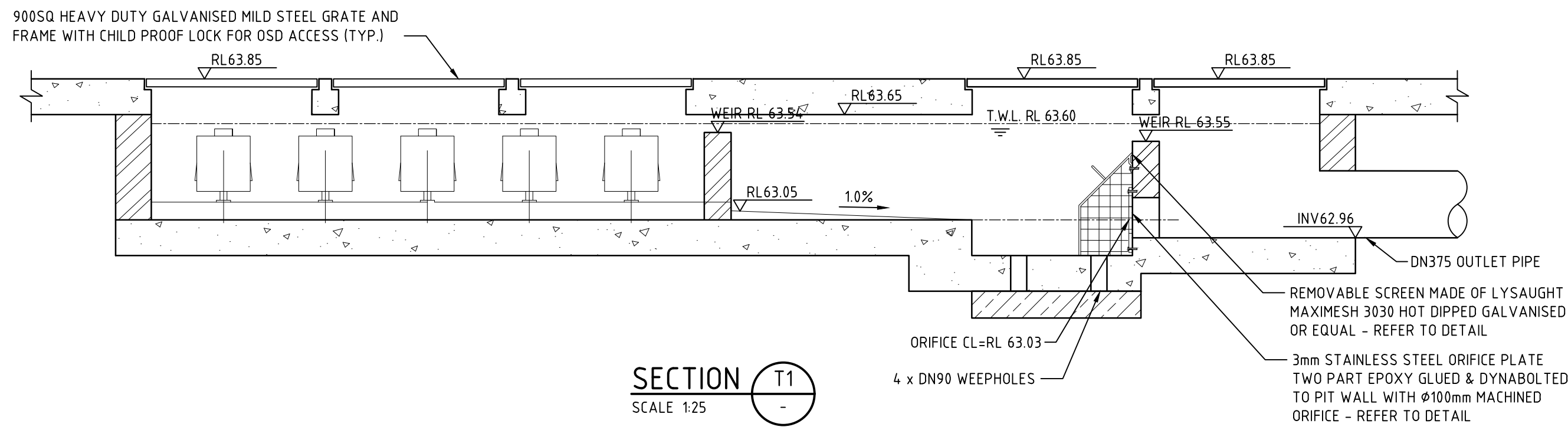
70 JOHN WHITEWAY DRIVE, GOSFORD		
STORMWATER DRAINAGE CATCHMENT PLAN		
STATUS	S4.55(2)	DRAWING No. 01954_601
		REVISION 01



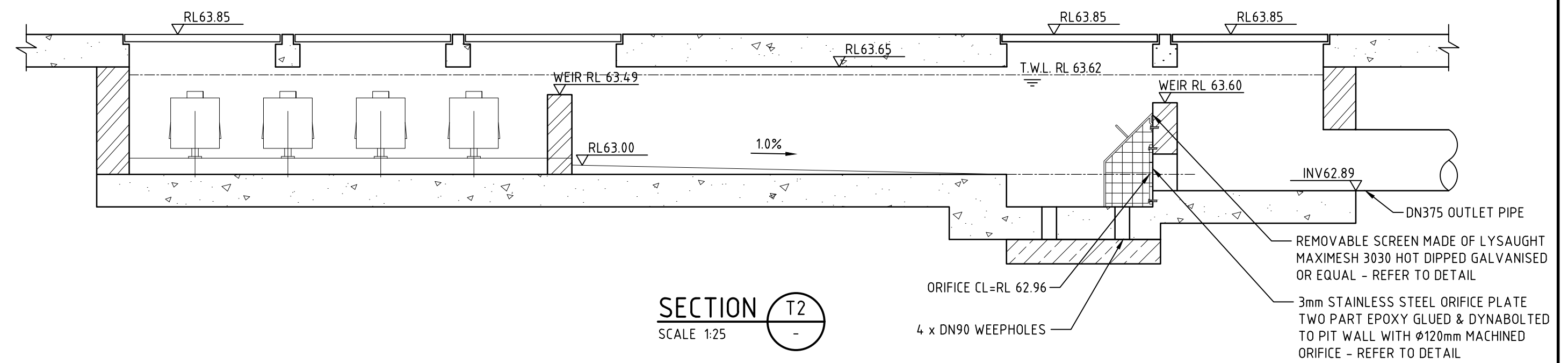
OSD TANK #1
TOTAL VOLUME = 4m³



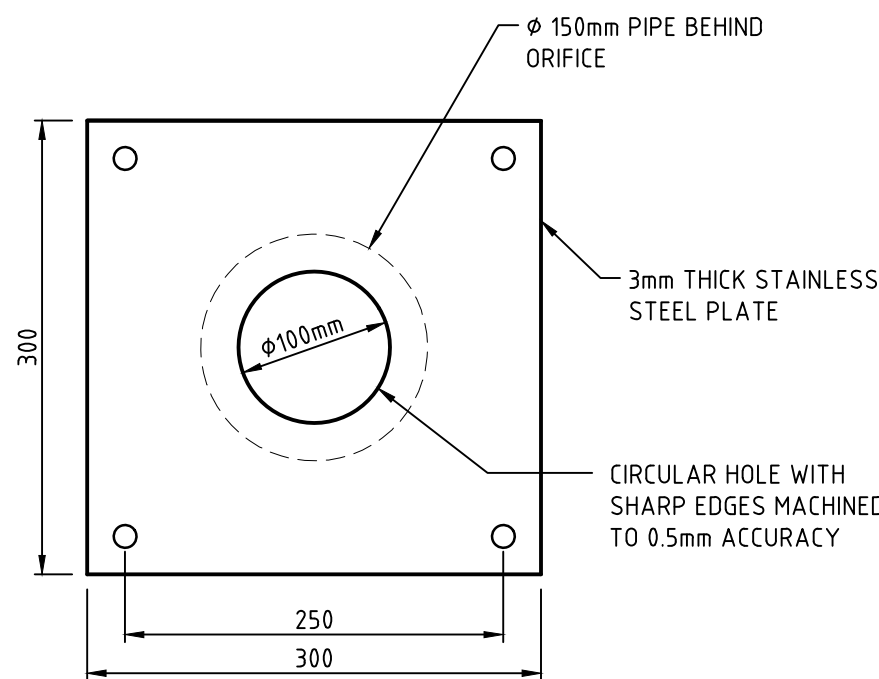
OSD TANK #2
TOTAL VOLUME = 5.9m³



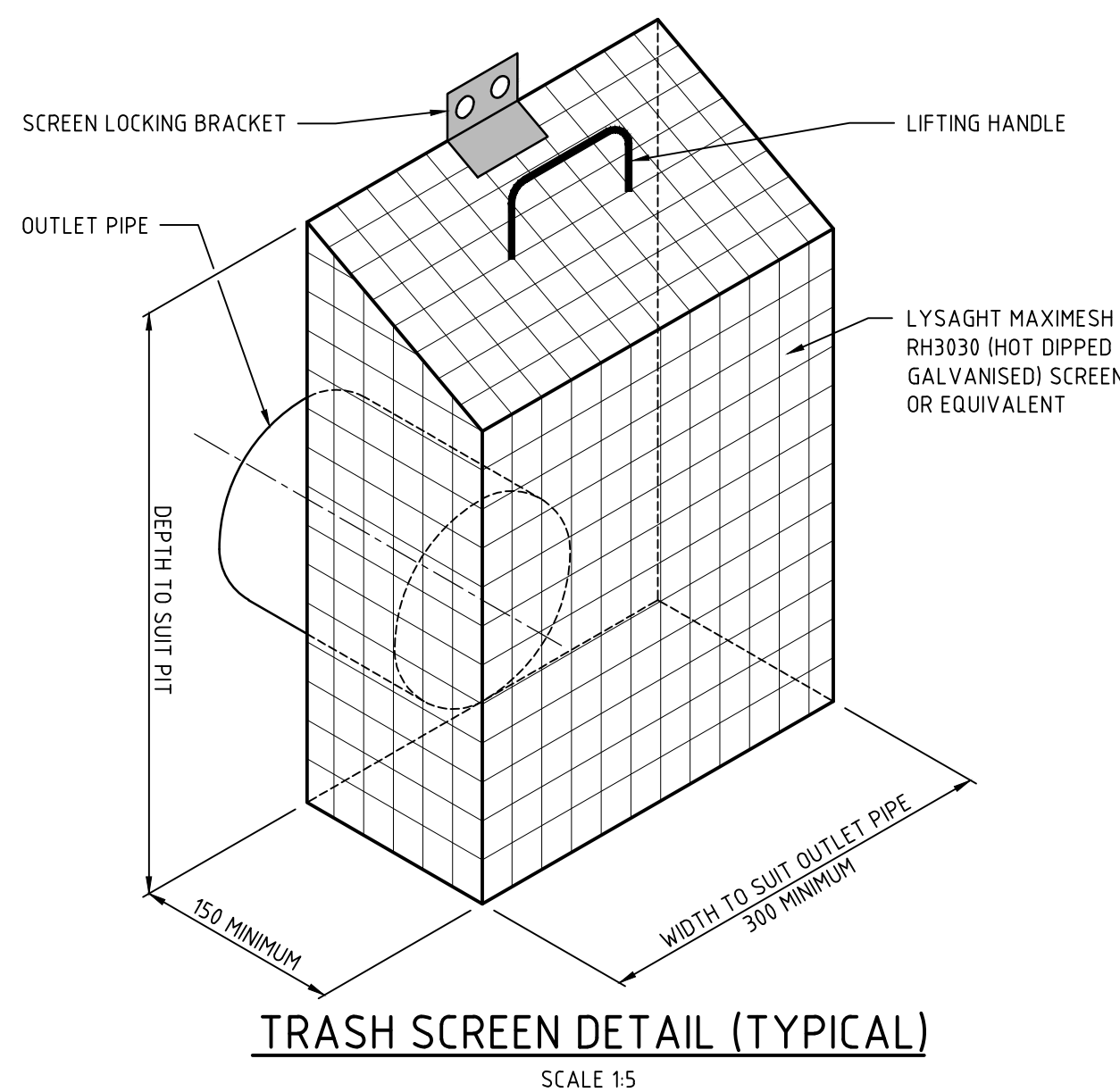
SECTION T1
SCALE 1:25



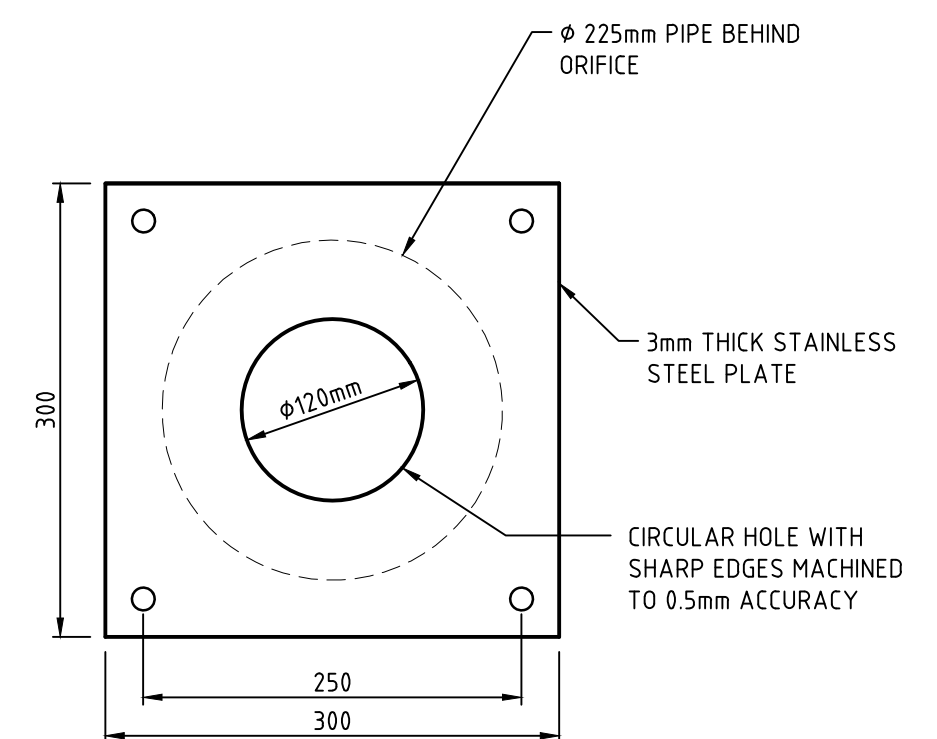
SECTION T2
SCALE 1:25



OSD TANK #1 ORIFICE PLATE DETAIL
SCALE 1:5

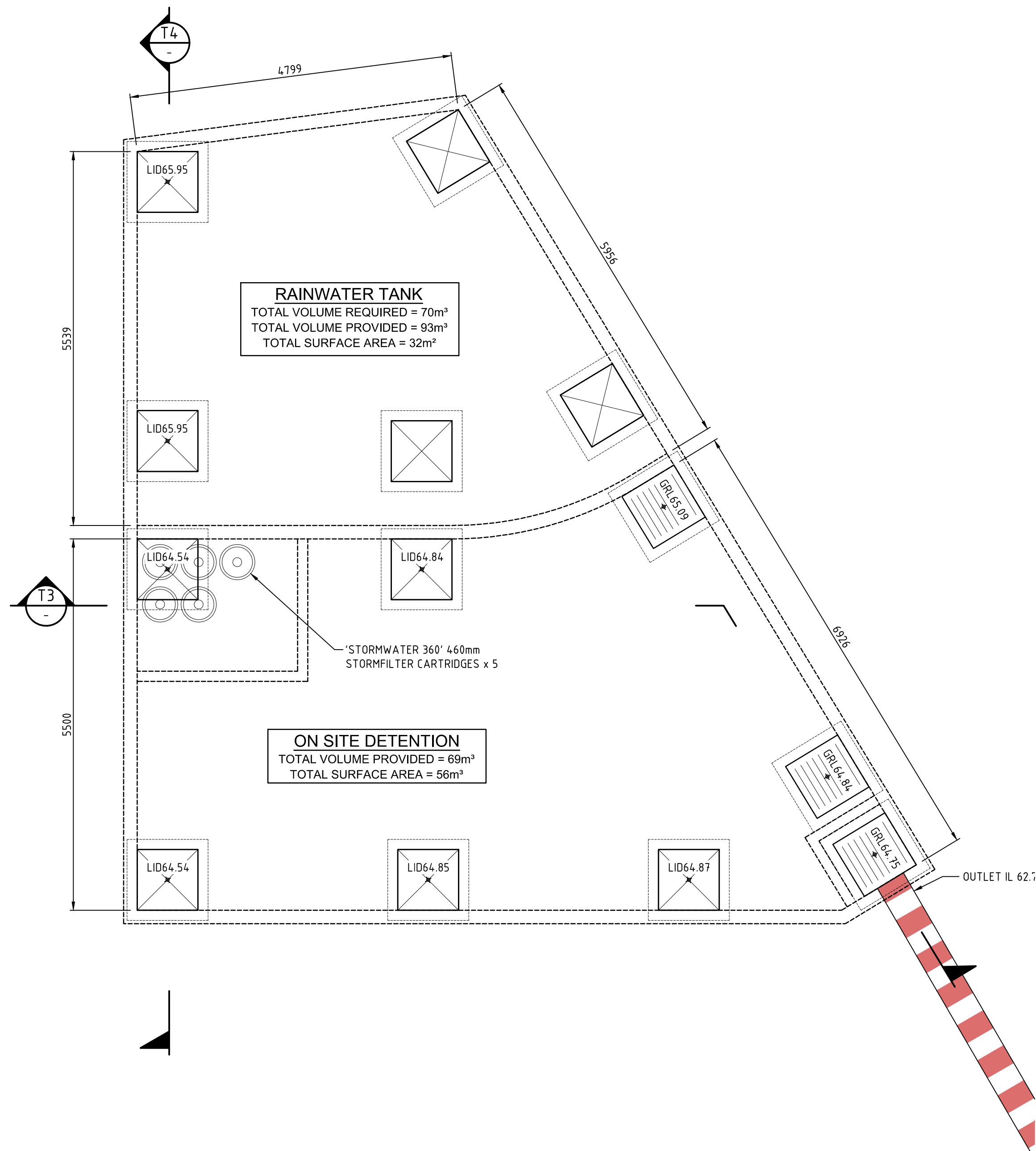


TRASH SCREEN DETAIL (TYPICAL)
SCALE 1:5

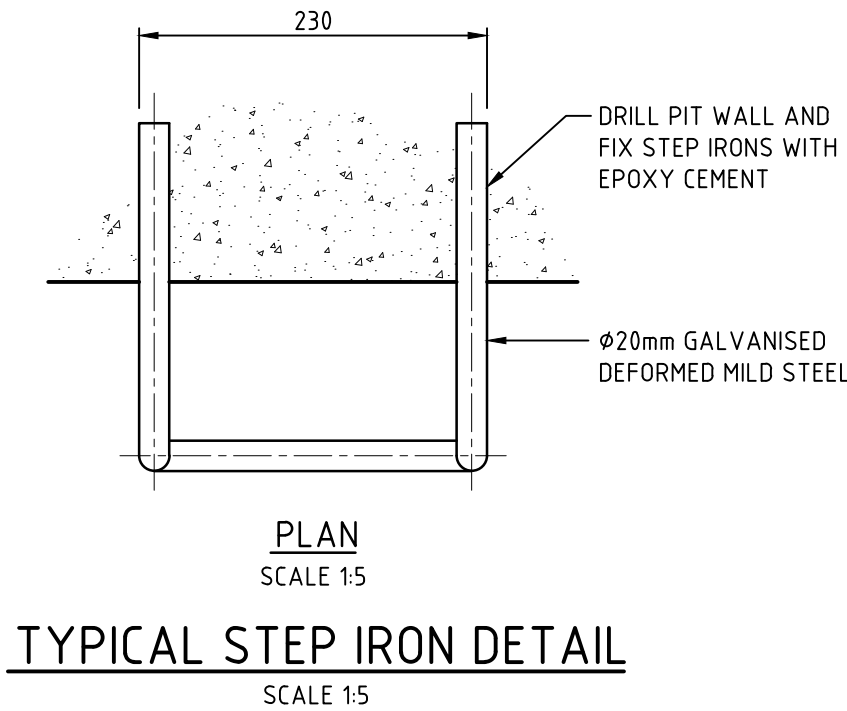
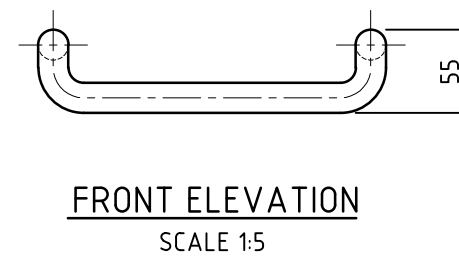
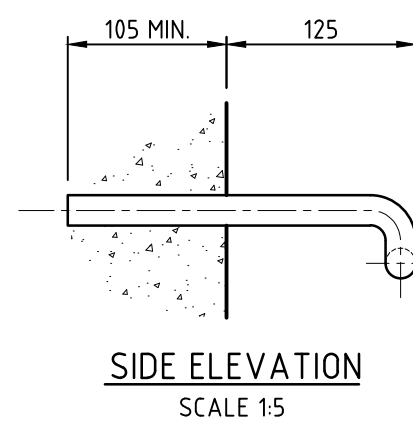
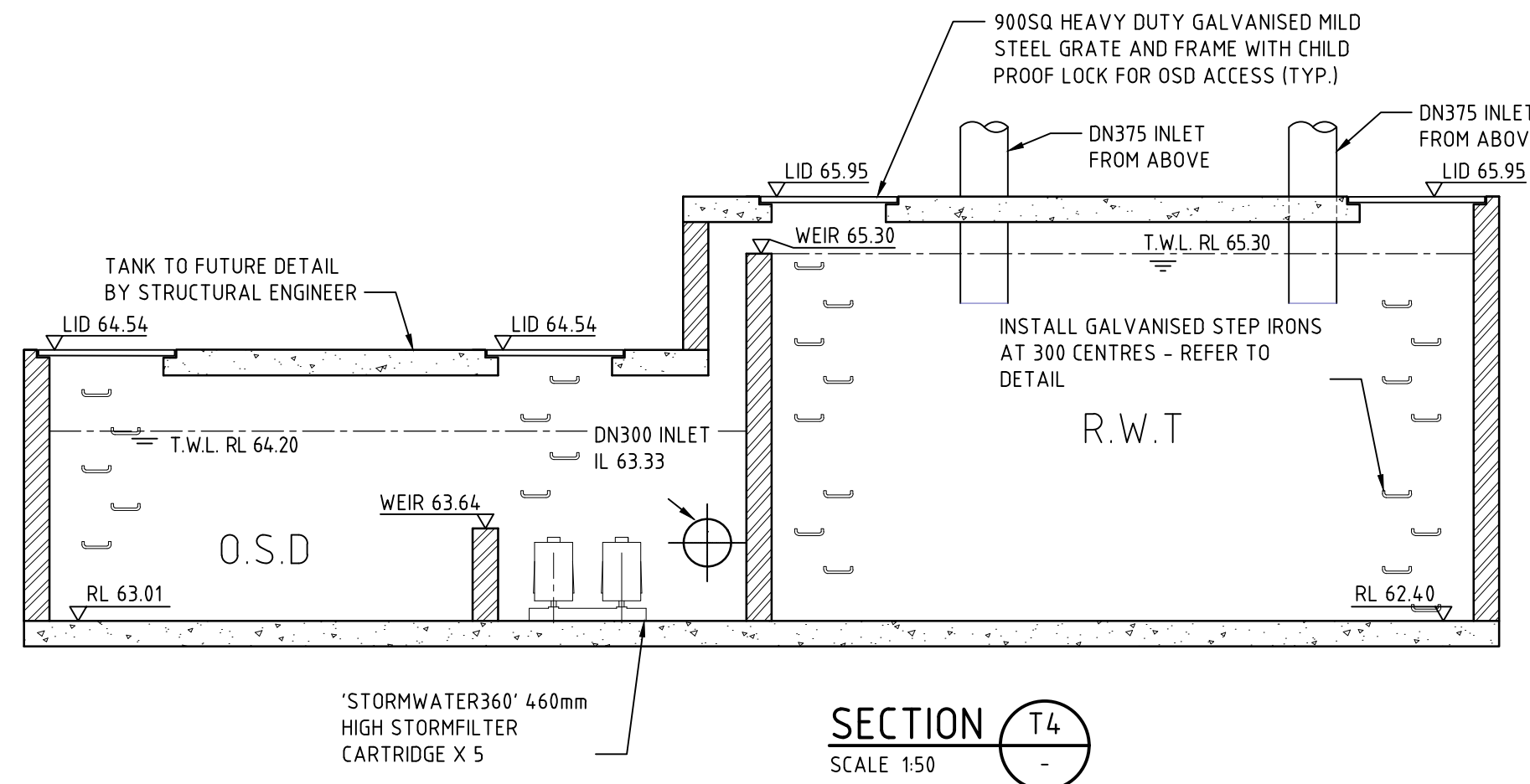
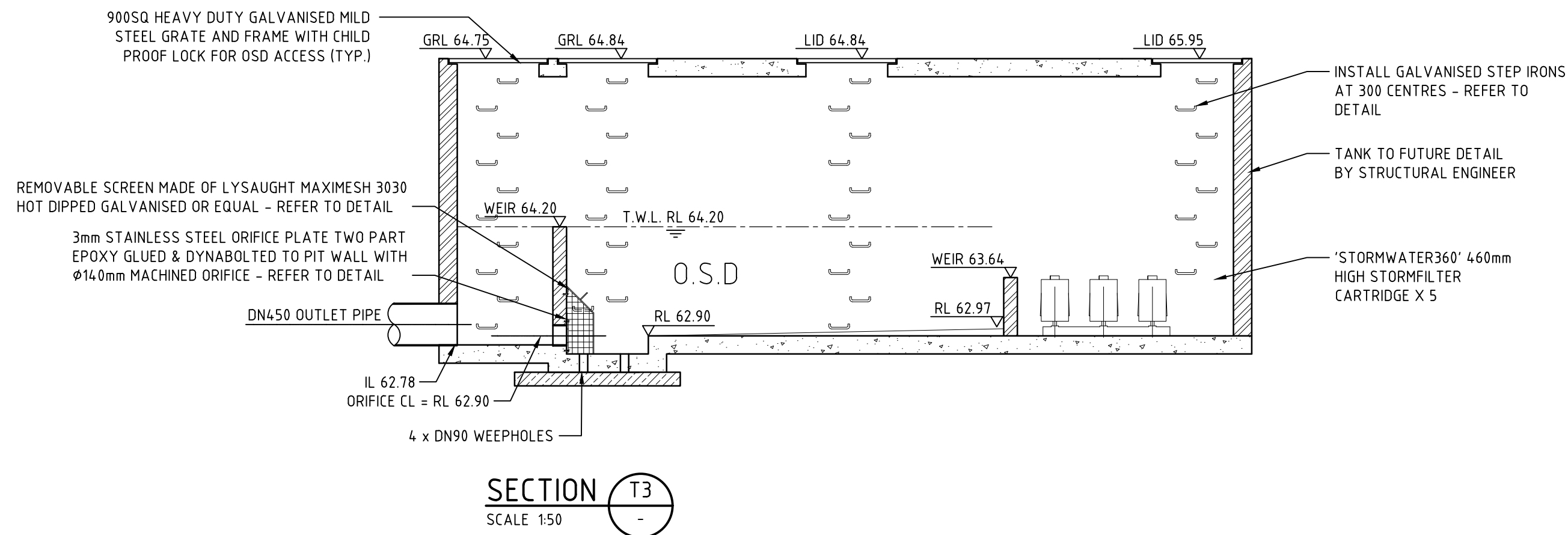
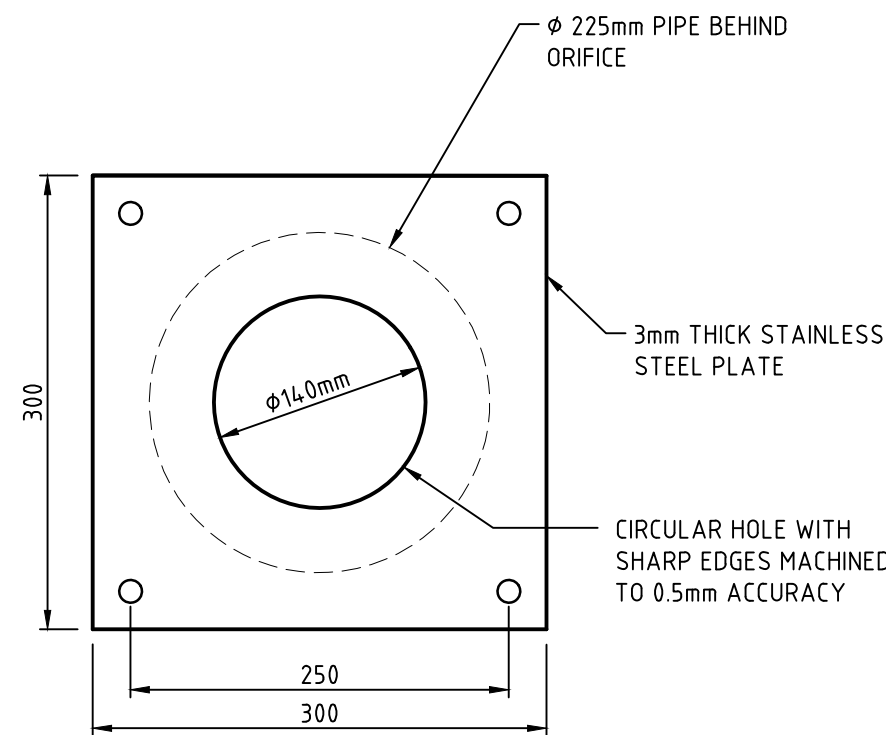


OSD TANK #2 ORIFICE PLATE DETAIL
SCALE 1:5

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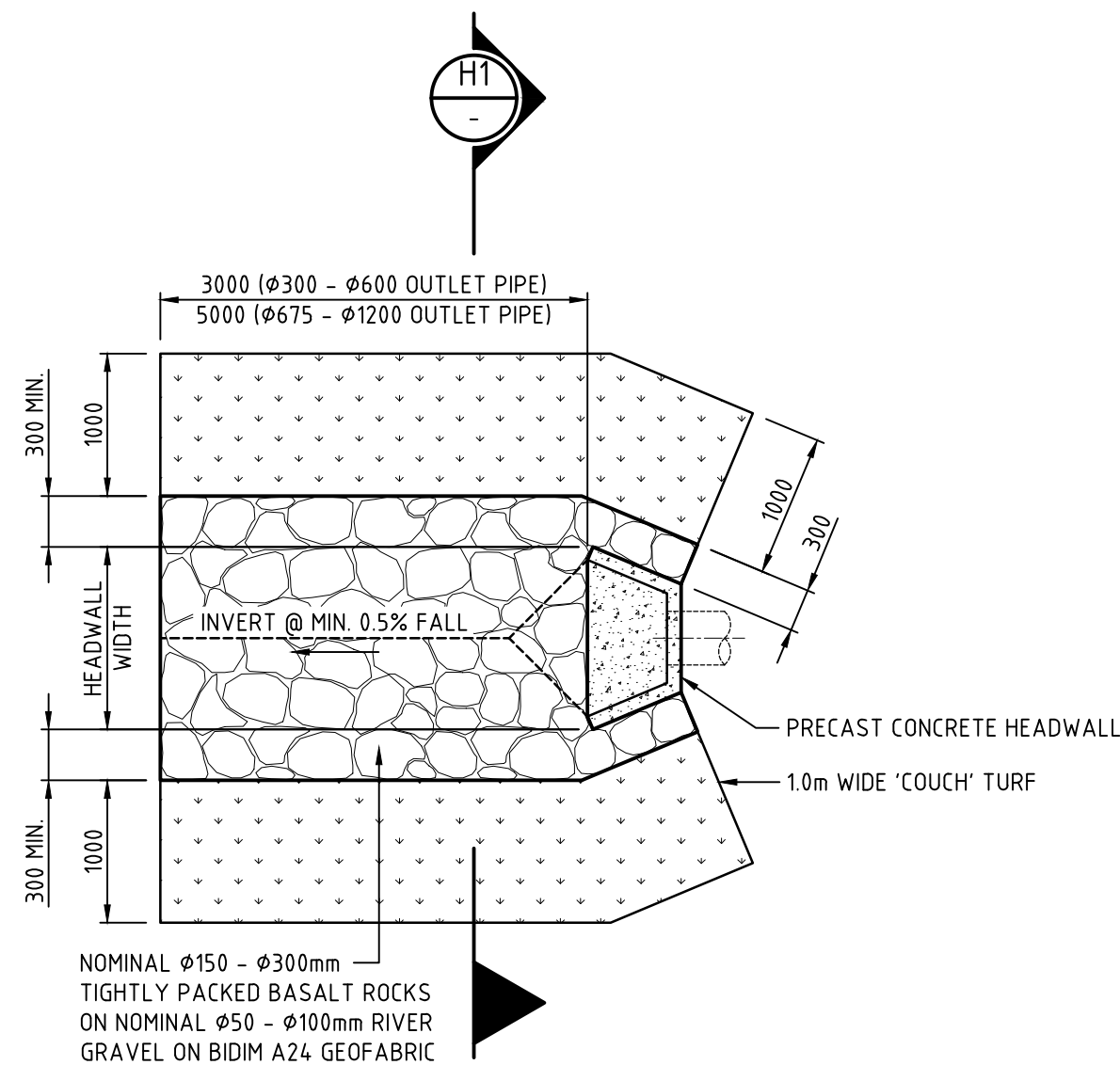
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01	W.M.	27/03/2018	A.M.	ISSUE FOR S4.55(2)

CLIENT	

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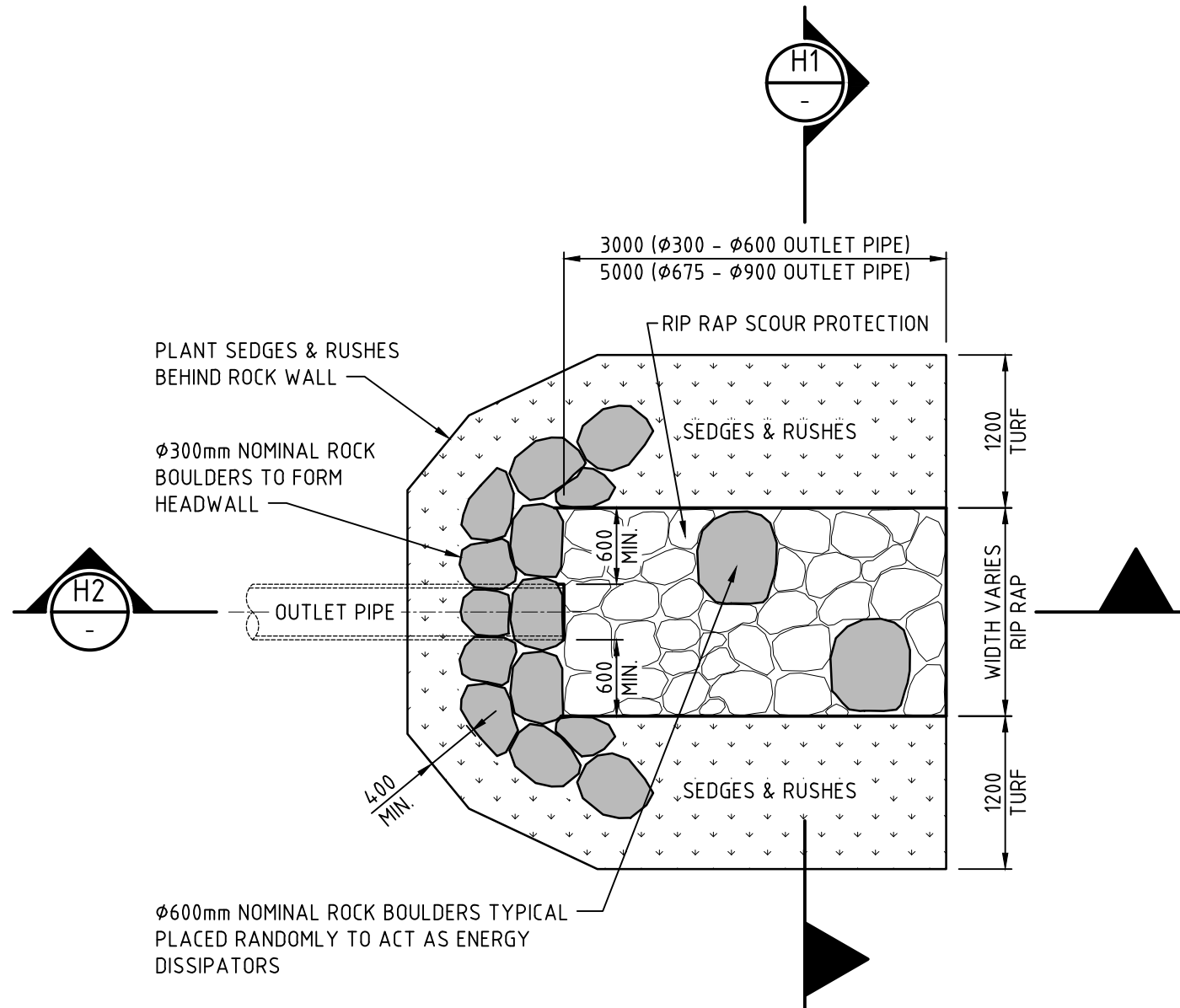
DESIGNER	W.MARTIN	DATE	12/03/2018
ENGINEER	P.O'BRIEN	LGA	GOSFORD
VERIFIER	A.MANCONE	SCALE @ A1	AS NOTED
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70 JOHN WHITEWAY DRIVE, GOSFORD			
ON-SITE DETENTION TANK 3 SECTIONS & DETAILS			
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		REVISION	01



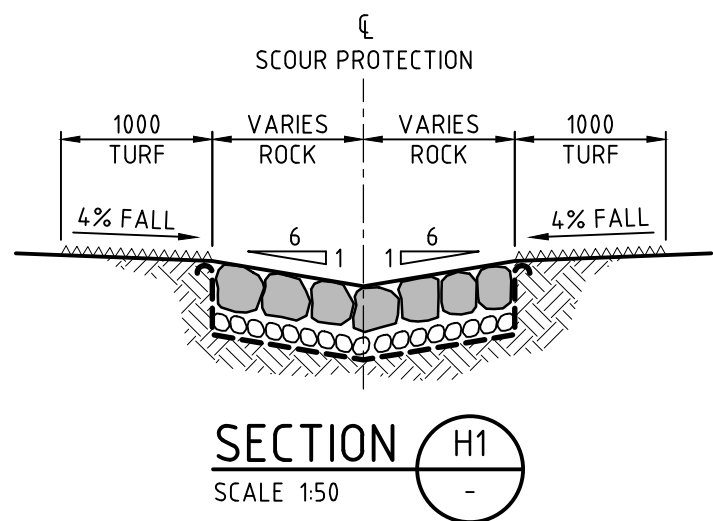
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WITH SCOUR PROTECTION DETAIL - PLAN

SCALE 1:50



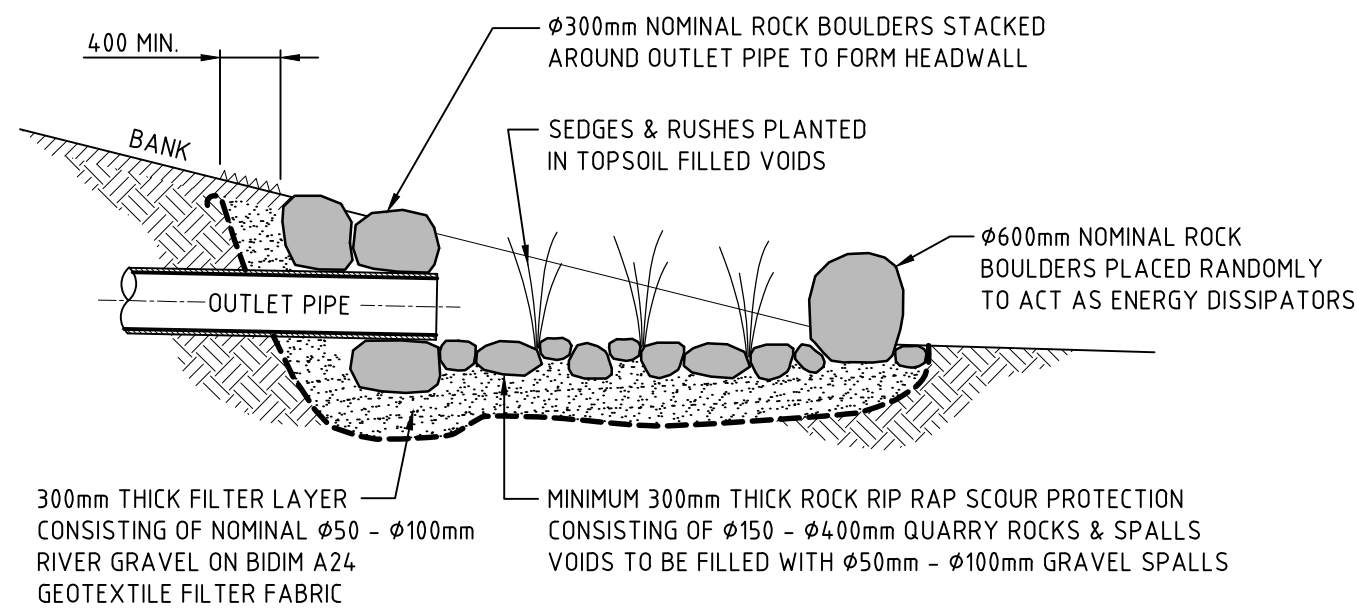
TYPICAL ROCK HEADWALL WITH
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SCALE 1:50



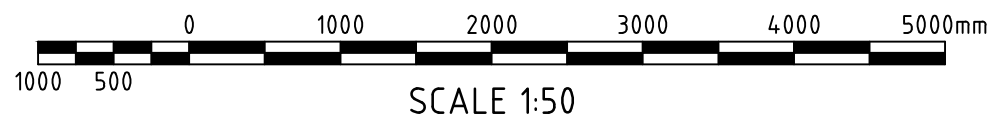
SECTION H1

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SECTION H2

SCALE 1:50



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DESIGNER	W.MARTIN	DATE	12/03/2018
ENGINEER	P.O'BRIEN	LGA	GOSFORD
VERIFIER	A.MANCONI	SCALE @ A1	AS NOTED
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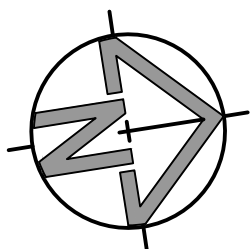
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REVISION	01		



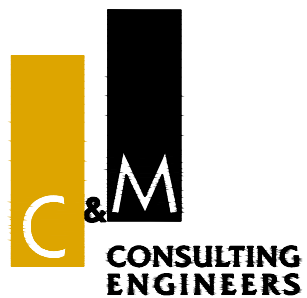
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REV.	DES.	DATE	VER.	DESCRIPTION



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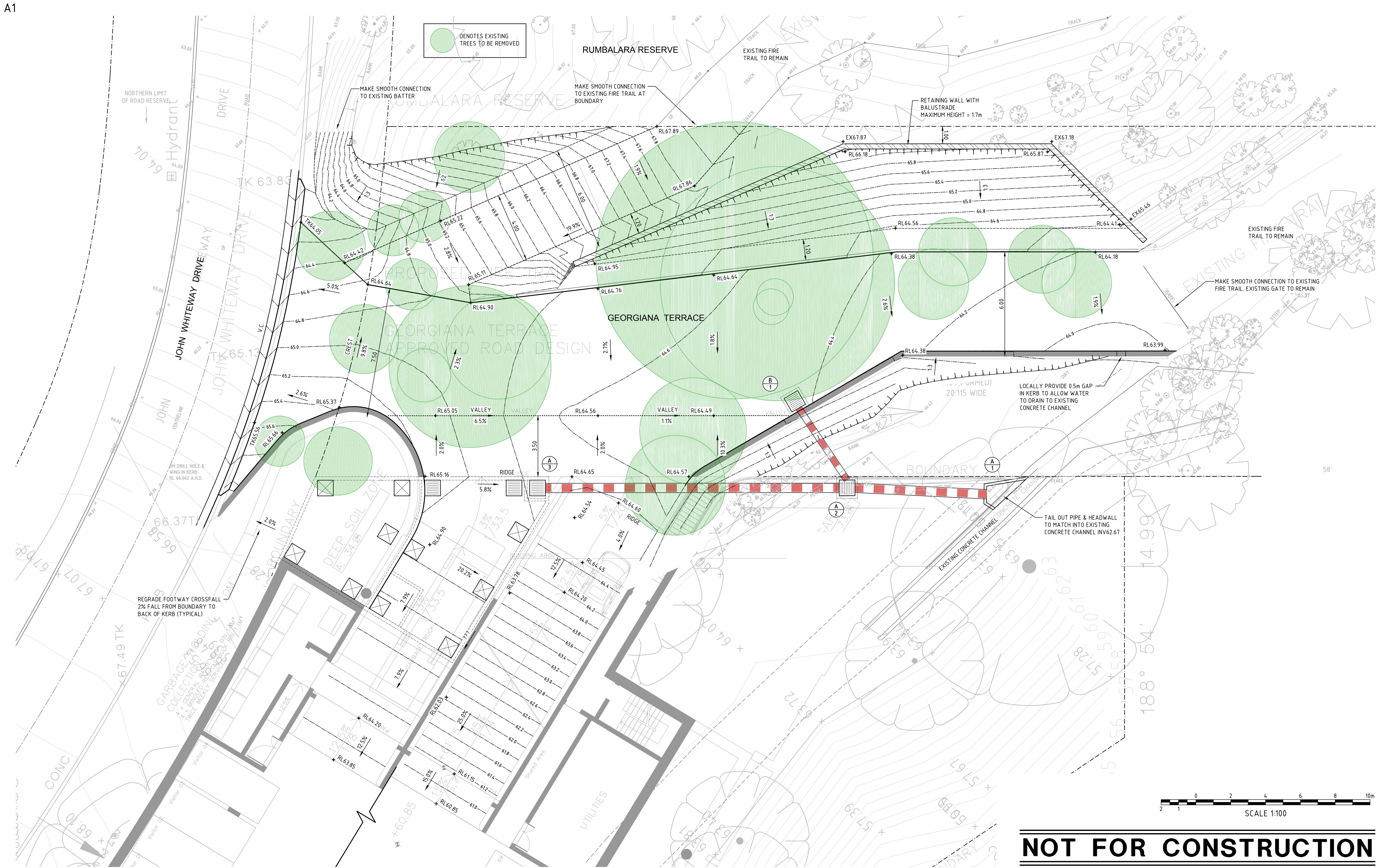
CIVIL AND HYDRAULIC
ENGINEERING DESIGN AND
PROJECT MANAGEMENT

SUITE 26
11 - 13 BROOKHOLLOW AVE
BAULKHAM HILLS NSW 2153

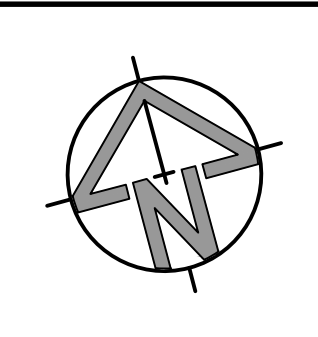
PHONE: (02) 9680 3100
FAX: (02) 9634 6989
ABN 21 118 134 240

DESIGNER	W.MARTIN	DATE	12/03/2018
ENGINEER	P.O'BRIEN	LGA	GOSFORD
VERIFIER	A.MANCONE	SCALE @ A1	1:200
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70 JOHN WHITEWAY DRIVE, GOSFORD			
SEDIMENT & EROSION CONTROL PLAN			
STATUS	S4.55(2)	DRAWING No.	01954_701
		REVISION	01



REV	DES	DATE	VER	DESCRIPTION
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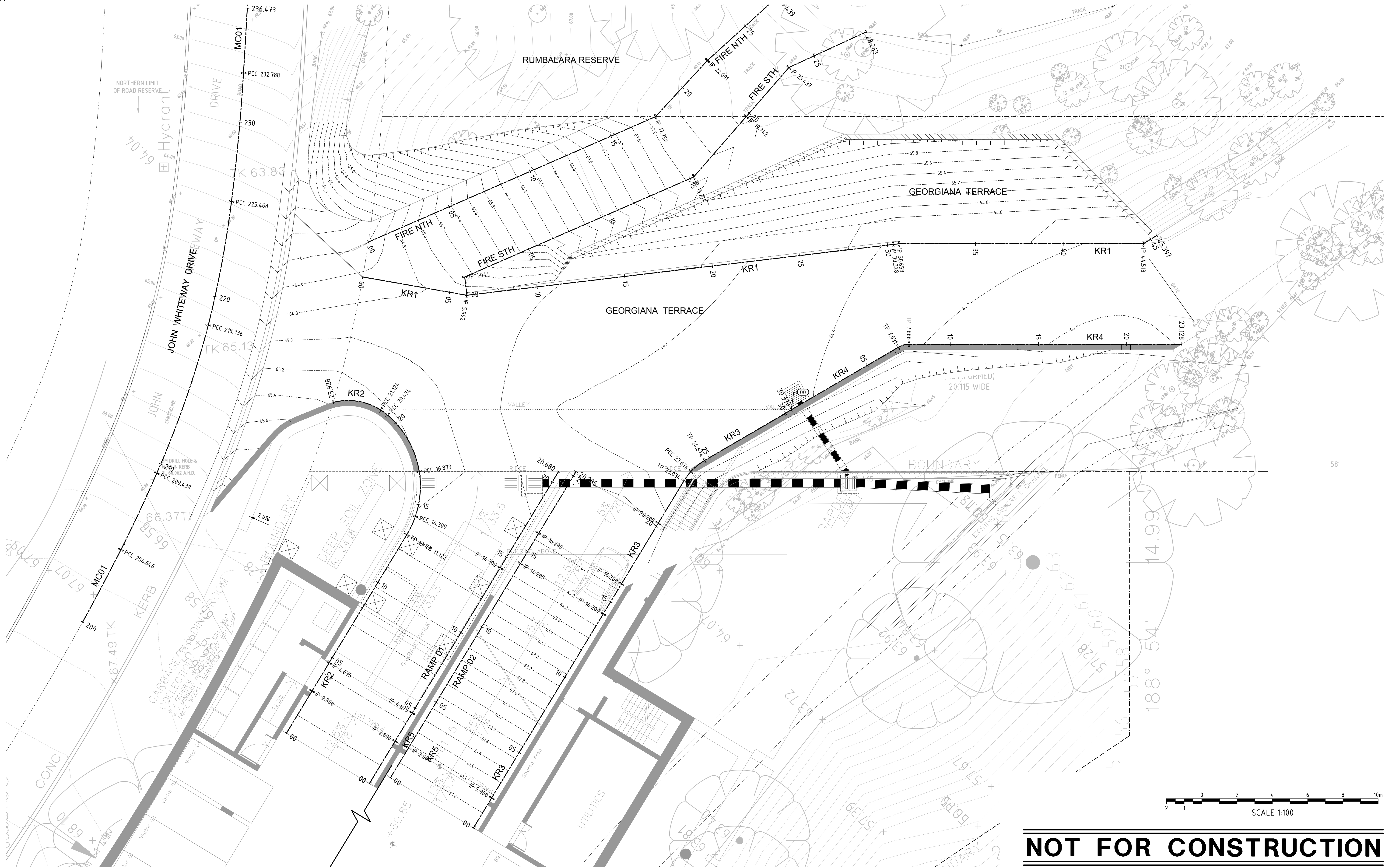
C&M CONSULTING ENGINEERS

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SUITE 26 11 - 13 BROOKHOLLOW AVE BAULKHAM HILLS NSW 2153
PHONE: (02) 9680 3100 FAX: (02) 9634 6989 ABN 21 118 134 240

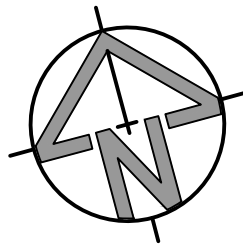
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ENGINEER	P.O'BRIEN	LGA	GOSFORD
VERIFIER	A.MANCONI	SCALE @ A1	1:200

70 JOHN WHITEWAY DRIVE, GOSFORD			
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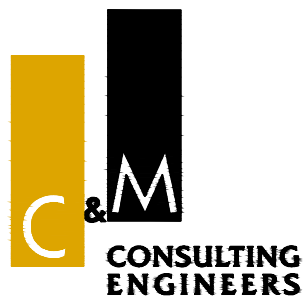
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REV.	DES.	DATE	VER.	DESCRIPTION	



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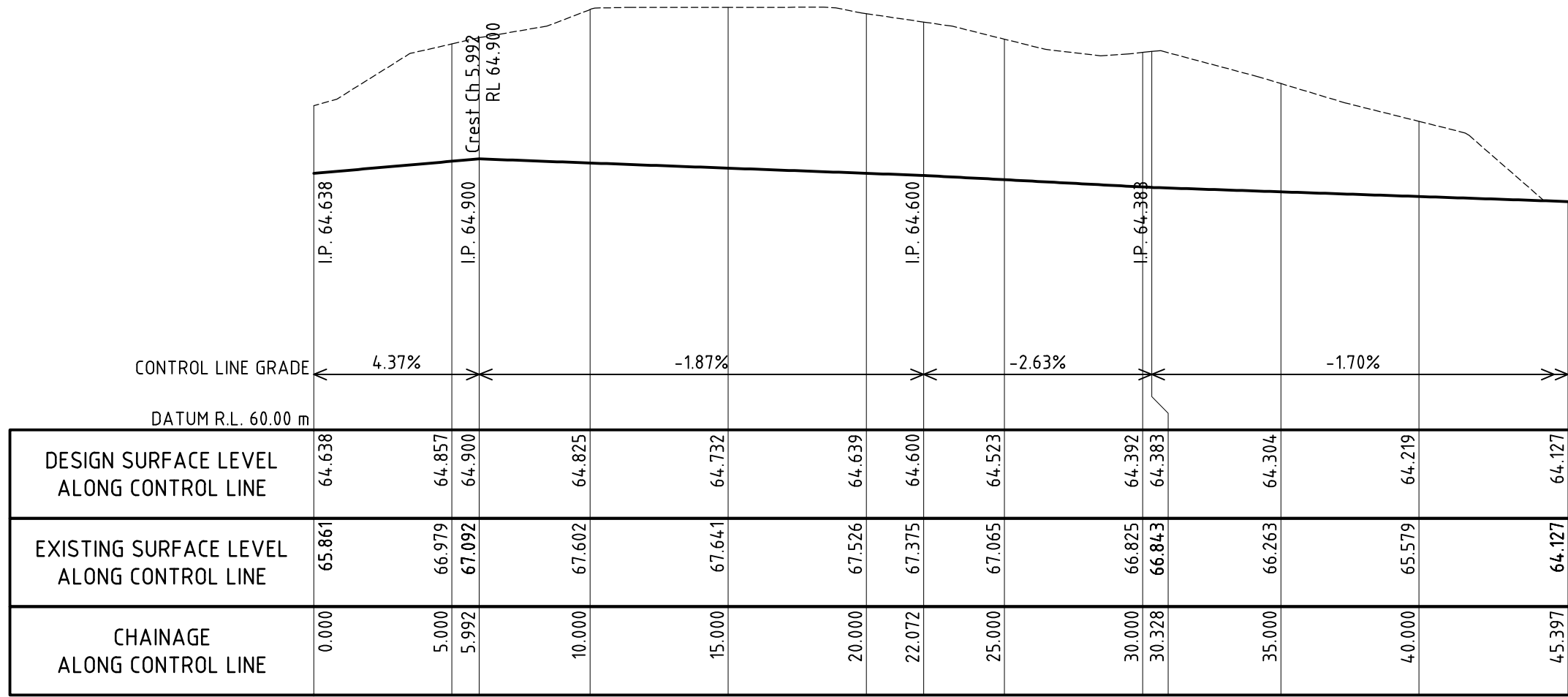
CIVIL AND HYDRAULIC
ENGINEERING DESIGN AND
PROJECT MANAGEMENT

SUITE 26
11 - 13 BROOKHOLLOW AVE
BAULKHAM HILLS NSW 2153

PHONE: (02) 9680 3100
FAX: (02) 9634 6989
ABN 21 118 134 240

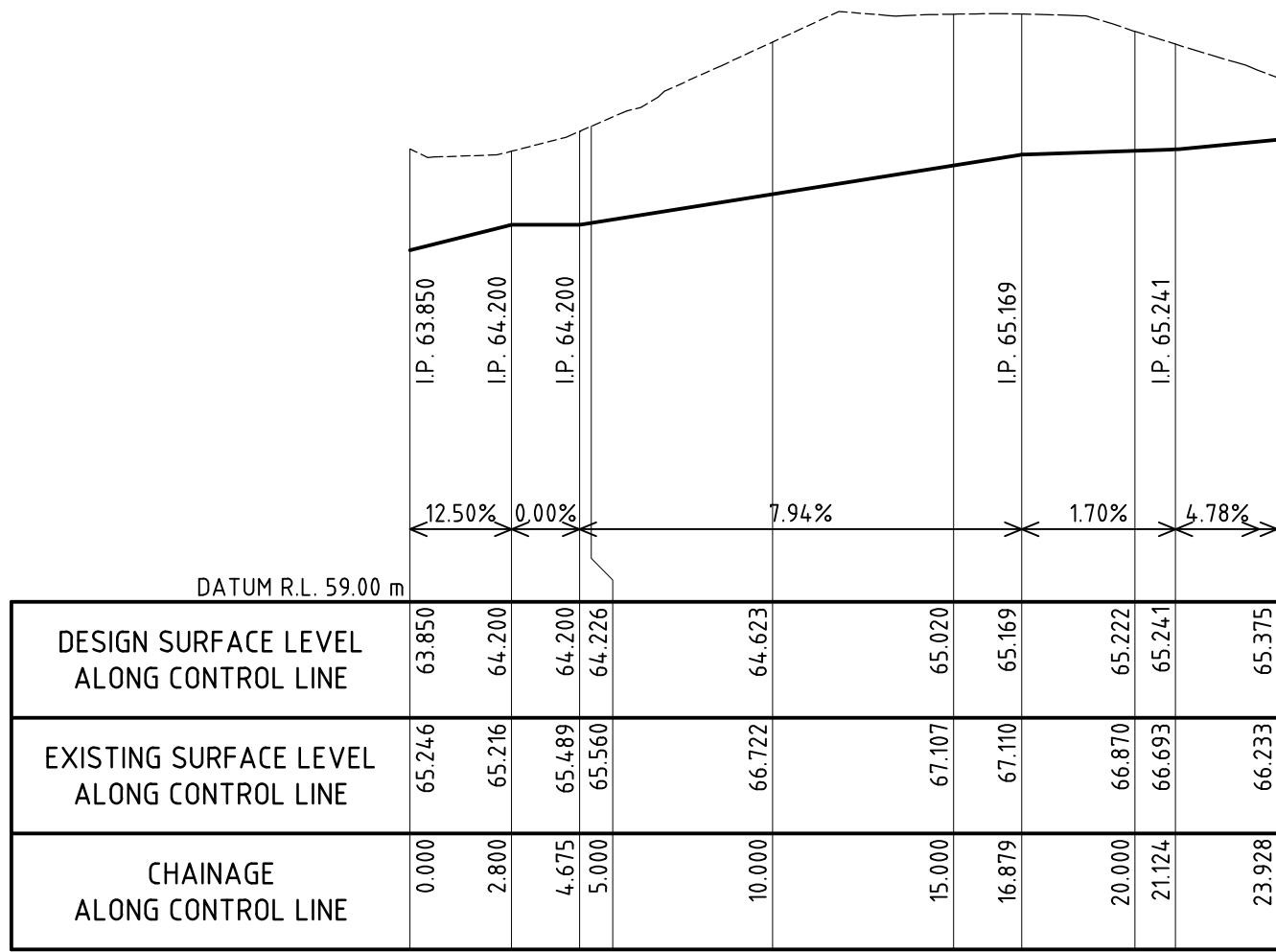
DESIGNER	W.MARTIN	DATE	12/03/2018
ENGINEER	P.O'BRIEN	LGA	GOSFORD
VERIFIER	A.MANCONE	SCALE @ A1	1:200
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70 JOHN WHITEWAY DRIVE, GOSFORD			
DRIVEWAY ALIGNMENT CONTROL PLAN			
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		REVISION	01



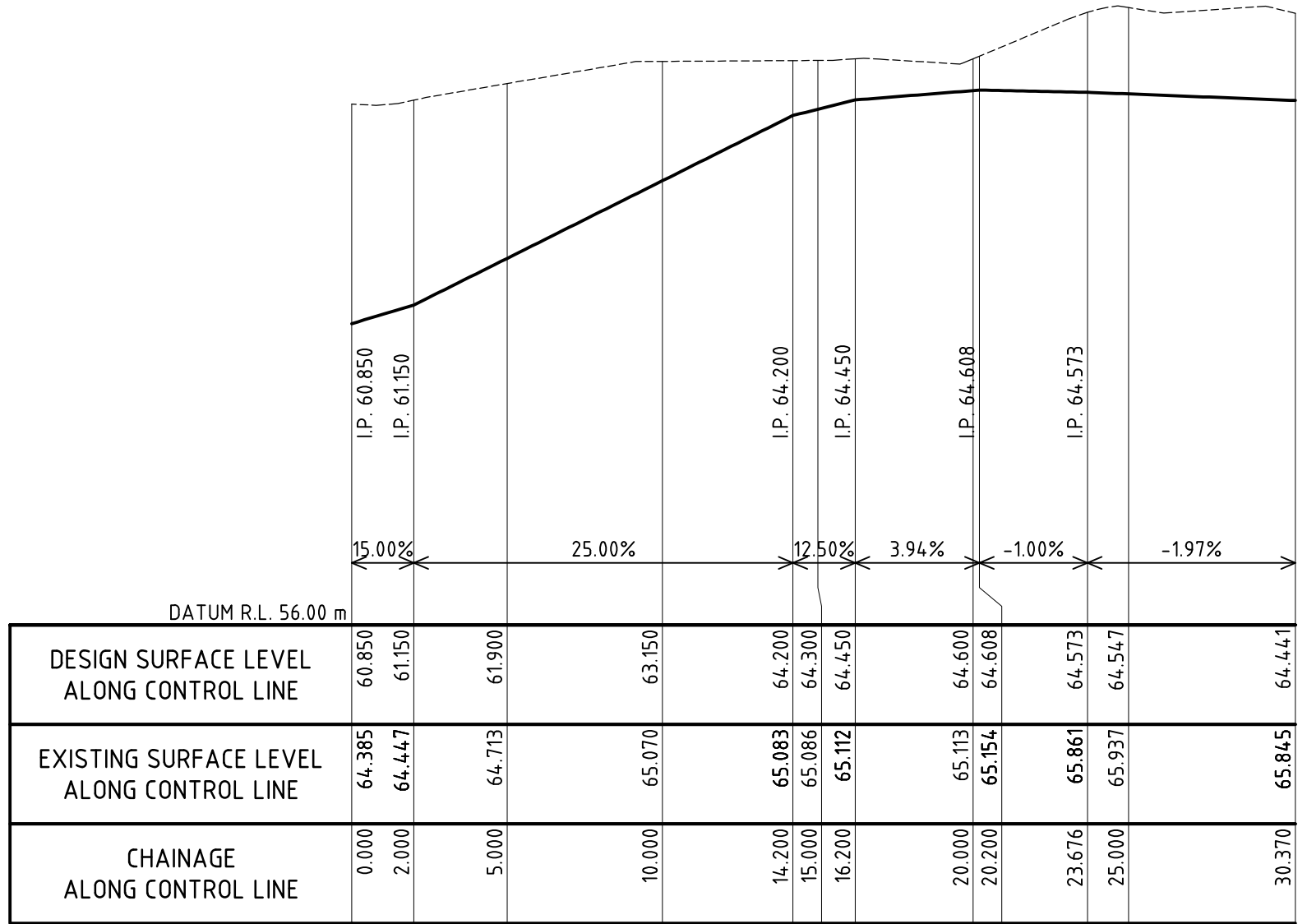
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SCALE V1:100 H1:200



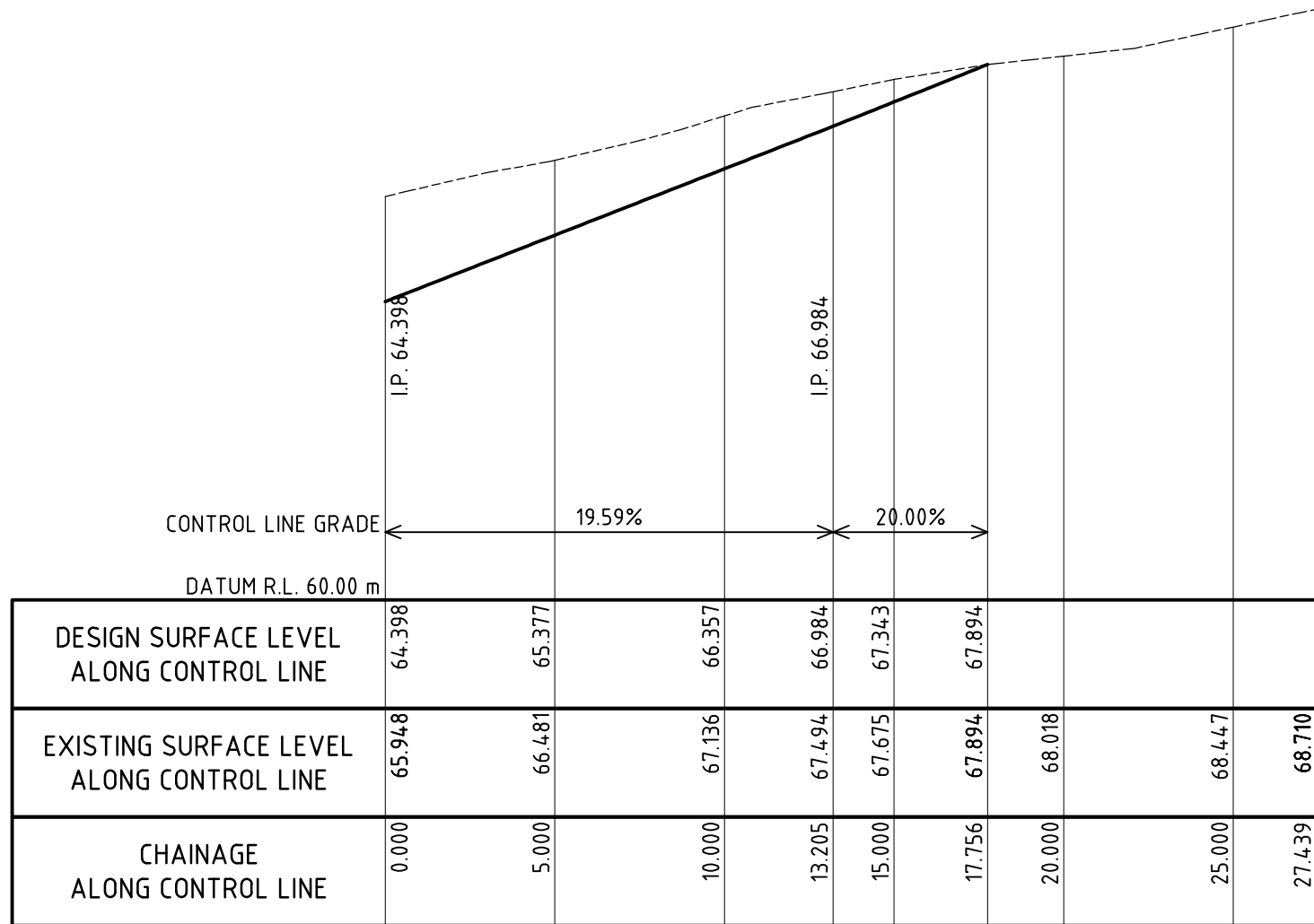
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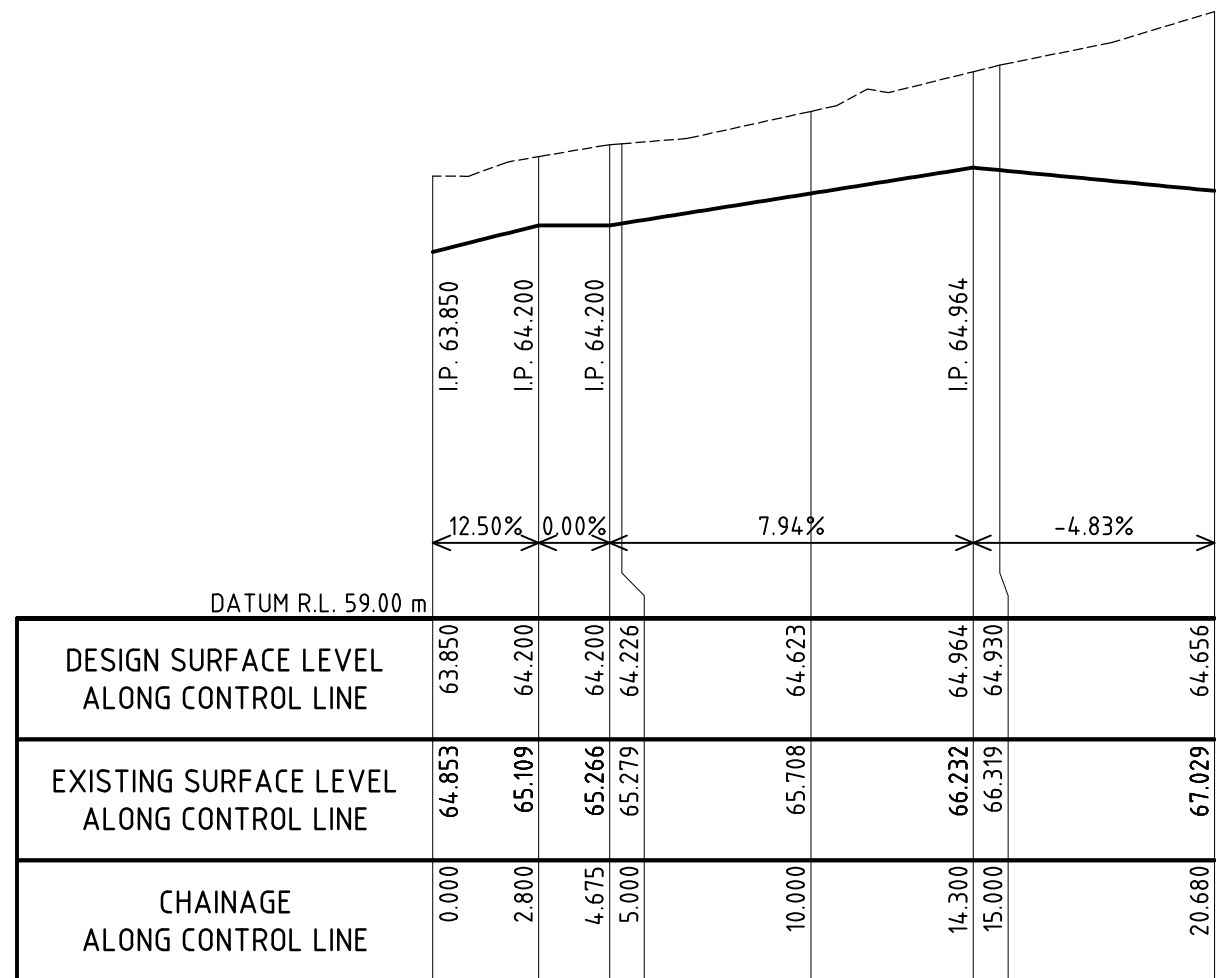
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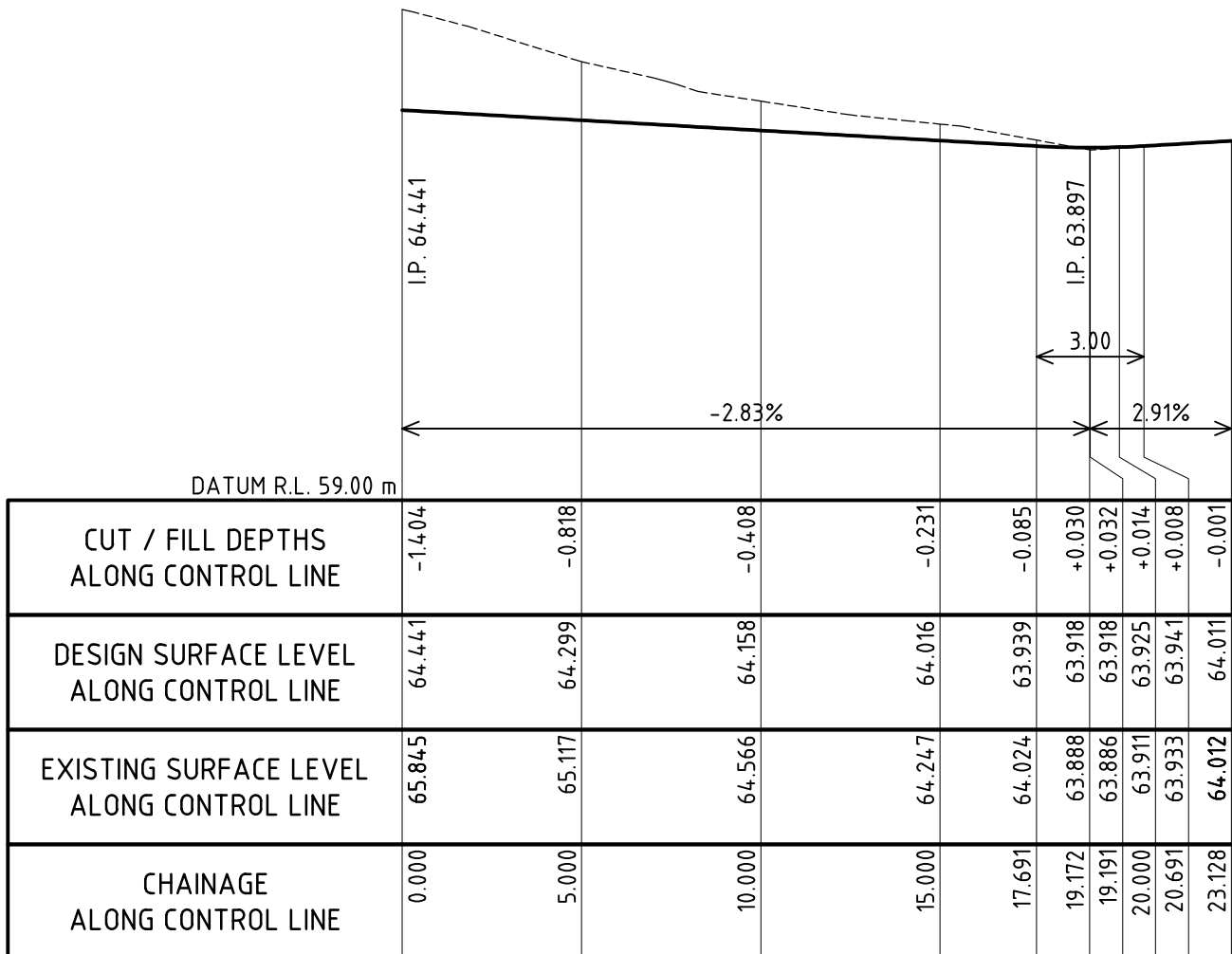
LONGITUDINAL SECTION ALONG FIRE NTH

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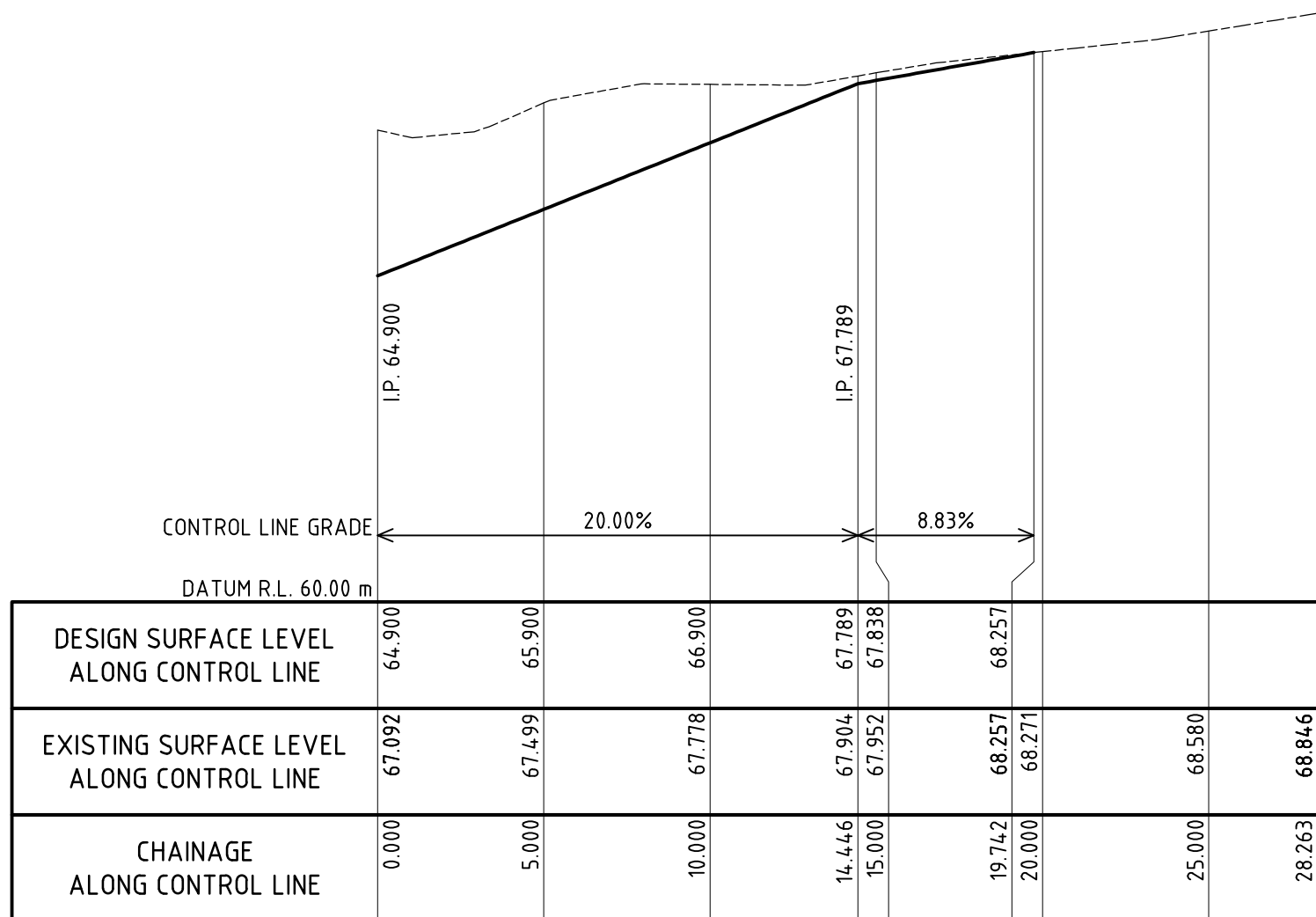
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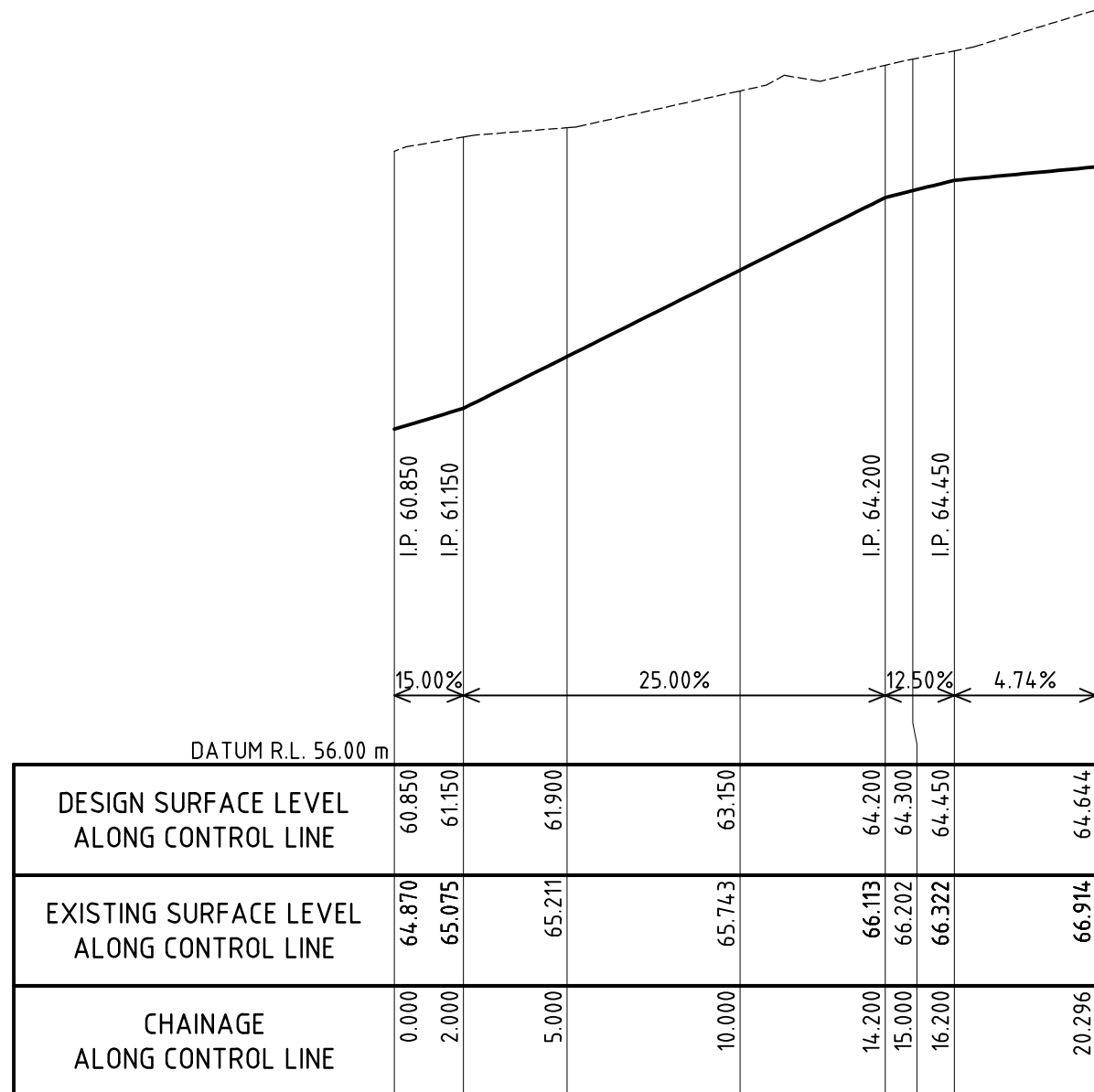
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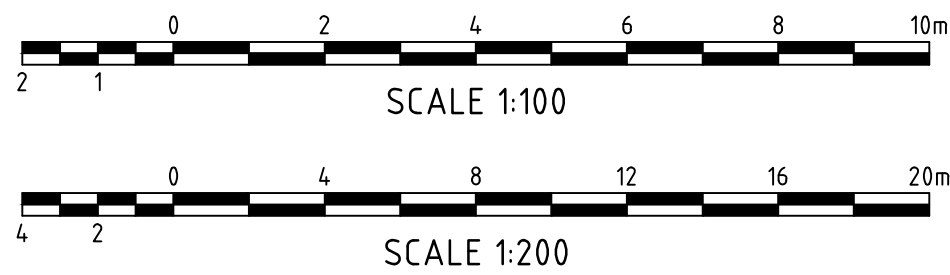
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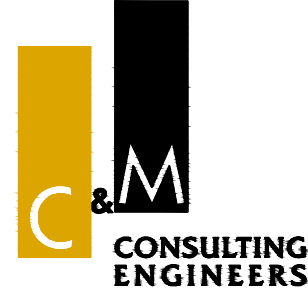
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REV.	DES.	DATE	VER.	DESCRIPTION

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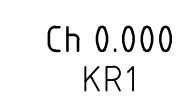
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ENGINEERING DESIGN AND
PROJECT MANAGEMENT

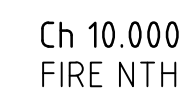
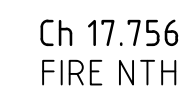
SUITE 26
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BAULKHAM HILLS NSW 2153

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ABN 21 118 134 240

DESIGNER	W.MARTIN	DATE	12/03/2018
ENGINEER	P.O'BRIEN	LGA	GOSFORD
VERIFIER	A.MANCONE	SCALE @ A1	1:200
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70 JOHN WHITEWAY DRIVE, GOSFORD			
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REVISION	01		

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