

DATE OF SURVEY : 16th SEPTEMBER 2022
 SURVEY BY : R. Boylan

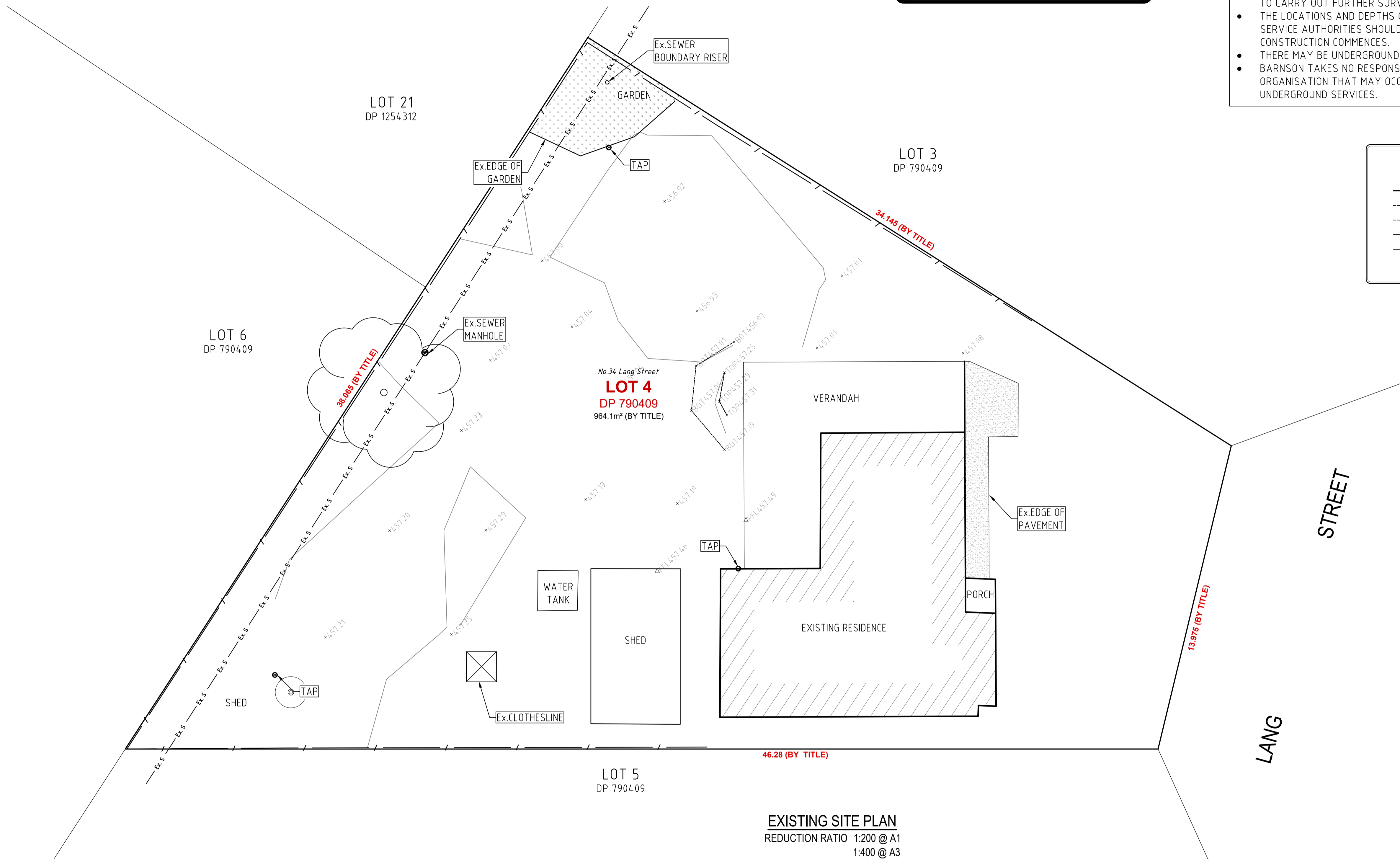
DATUM : AUSTRALIAN HEIGHT DATUM (A.H.D.)
 ORIGIN : PM 2994 RL 460.341m (S.C.I.M.S.)
 MAJOR CONTOUR INTERVAL : 1 METRE
 MINOR CONTOUR INTERVAL : 0.25 METRES

NOTES:

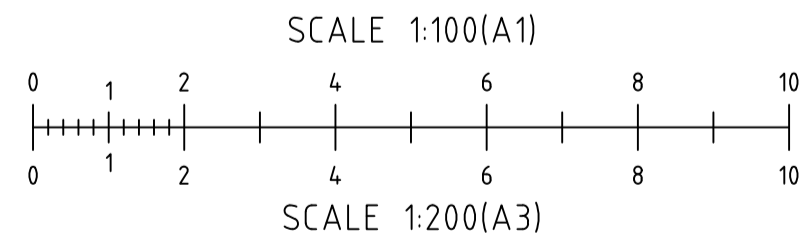
- THE BOUNDARY INFORMATION SHOWN ON THIS PLAN BEEN PLOTTED AS REQUIRED UNDER DIVISION 1, SECTION 9.1(1) OF THE "SURVEYING AND SPATIAL INFORMATION REGULATION 2017". IT HAS NOT BEEN DETERMINED BY AN ACCURATE BOUNDARY SURVEY.
- A DETAIL & LEVEL SURVEY IS NOT A "LAND SURVEY" AS DEFINED BY THE SURVEYING AND SPATIAL INFORMATION ACT 2002. IF ANY CONSTRUCTION OR DESIGN WORK WHICH RELIES ON CRITICAL SETBACKS FROM THE STREET OR BOUNDARIES IS PLANNED, IT WOULD BE IMPERATIVE TO CARRY OUT FURTHER SURVEY WORK TO DETERMINE THE BOUNDARY DIMENSIONS.
- THE LOCATIONS AND DEPTHS OF UNDERGROUND SERVICES ARE NOT ASSURED BY BARNSON. SERVICE AUTHORITIES SHOULD BE CONSULTED BEFORE ANY EXCAVATION, DEMOLITION OR CONSTRUCTION COMMENCES.
- THERE MAY BE UNDERGROUND SERVICES THAT HAVE NOT BEEN SHOWN HEREON.
- BARNSON TAKES NO RESPONSIBILITY FOR LOSSES, DAMAGES OR INJURIES TO ANY PERSON OR ORGANISATION THAT MAY OCCUR DUE TO THE RELIANCE ON THIS PLAN FOR THE LOCATION OF UNDERGROUND SERVICES.

LEGEND

- EXISTING SUBJECT CADASTRAL BOUNDARIES
- - - - - TOP OF BANK
- - - - - BOTTOM OF BANK
- / ——— EXISTING FENCE
- Ex. S — Ex. S — EXISTING UNDERGROUND SEWER PIPE - APPROX



EXISTING SITE PLAN
 REDUCTION RATIO 1:200 @ A1
 1:400 @ A3



ISSUED FOR CONSTRUCTION

Rev	Date	Description
0	11.04.2023	ISSUED FOR CONSTRUCTION

HYDRAULIC CALCULATIONS

- PRE & POST DEVELOPMENT ANALYSIS
DESIGN CALCULATIONS AS PER AS3500.3-2018
A) PRE-DEVELOPED:
 -TOTAL APPLICABLE CATCHMENT AREA (A) = 964.1 sq.m
 -RAINFALL INTENSITY (I) = 14.7 mm/hr (5min 5% AEP)
 -Cr = RUNOFF COEFFICIENT FOR ROOF AREA = 1.0
 -Ar = TOTAL ROOF AREA= 210.0 sq.m
 -Ci = RUNOFF COEFFICIENT FOR UNROOFED IMPERVIOUS AREA = 0.9
 -Ai = TOTAL UNROOFED IMPERVIOUS AREA= 14.0 sq.m
 -Cp = RUNOFF COEFFICIENT FOR PERVIOUS AREA = 0.3
 -Ap = TOTAL PERVIOUS GRASS AREA = 740.1 sq.m
 -TOTAL FLOW $Q_{PRE} = (Cr Ar + Ci Ai + Cp Ap) \cdot I / 3600 = 18.15 \text{ l/s}$
 B) POST-DEVELOPED FLOW TO PIT:
 -TOTAL APPLICABLE CATCHMENT AREA (A) = 964.1 sq.m
 -RAINFALL INTENSITY (I) = 14.7mm/hr (5min 5% AEP)
 -Cr = RUNOFF COEFFICIENT FOR ROOF AREA = 1.0
 -Ar = TOTAL ROOF AREA= 370.0 sq.m
 -Ci = RUNOFF COEFFICIENT FOR UNROOFED IMPERVIOUS AREA = 0.9
 -Ai = TOTAL UNROOFED IMPERVIOUS AREA= 50.0 sq.m
 -Cp = RUNOFF COEFFICIENT FOR PERVIOUS AREA = 0.3
 -Ap = TOTAL PERVIOUS GRASS AREA = 544.1 sq.m
 -TOTAL FLOW $Q_{POST} = (Cr Ar + Ci Ai + Cp Ap) \cdot I / 3600 = 23.6 \text{ l/s}$
 3. REQUIRED INFILTRATION VOLUME TO CAPTURE 544 sqm AREA GREEN FIELD FOR 20mm HIGH WATER = $544.0 \times 20 / 1000 \times 0.3 = 3.26 \text{ m}^3$
 4. PROPOSED INFILTRATION VOLUME = AREA x DEPTH x POROSITY = $2.0 \times 7 \times 1.0 \times 0.3 = 4.2 \text{ m}^3$

STORMWATER PIT SCHEDULE						
MARK	TOP R.L.	DEPTH (mm)	IL INLET	IL OUTLET	LxB	LID TYPE
P2	457.000	400	456.600	456.300	450x450	MD GRATED (GALV)
P1	457.350	400	456.970	456.950	450x450	MD GRATED (GALV)

DESIGN NOTE:
5% AEP, 5 MIN. INTERVAL
RAINFALL INTENSITY = 14.7mm/hr

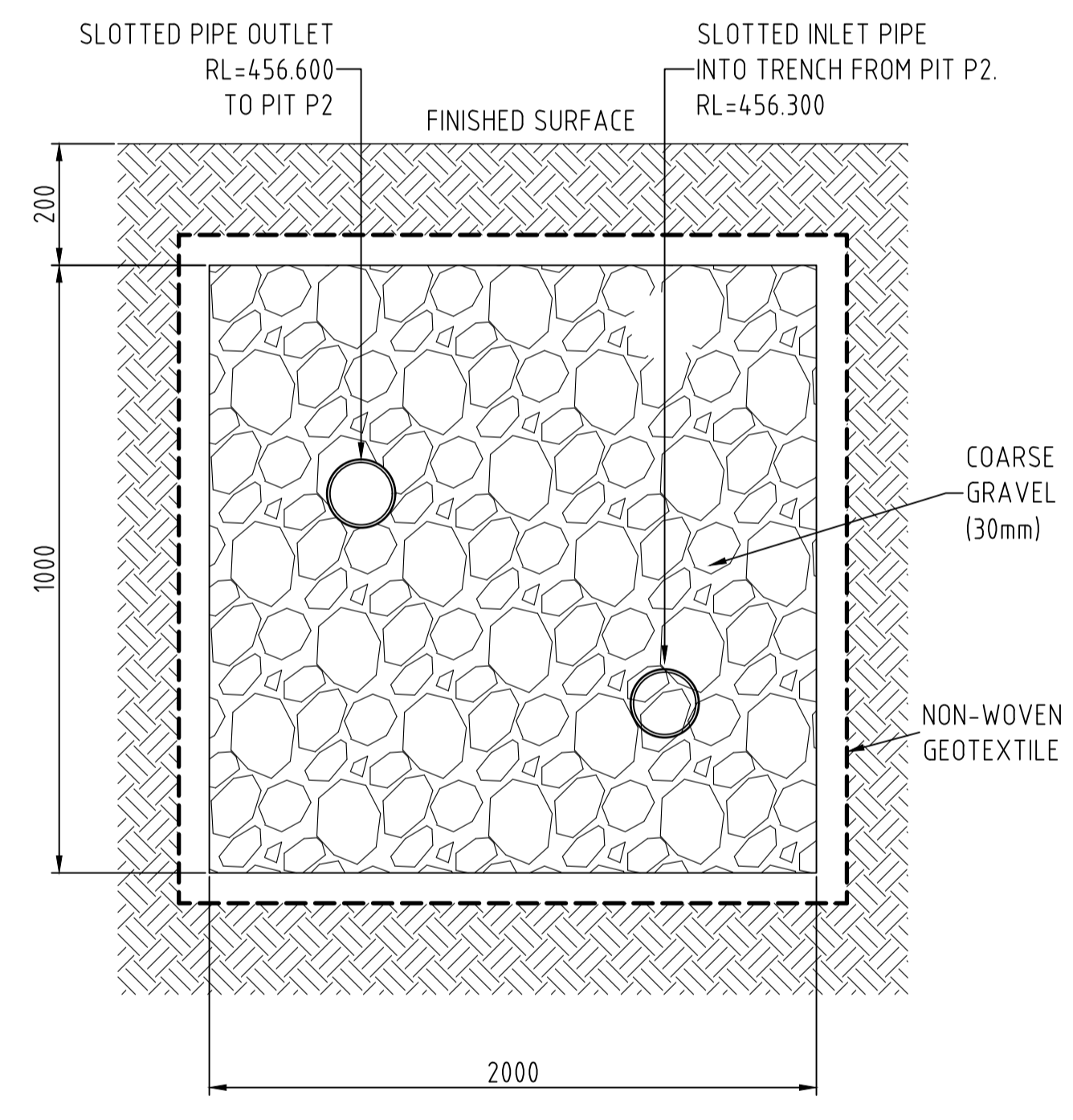
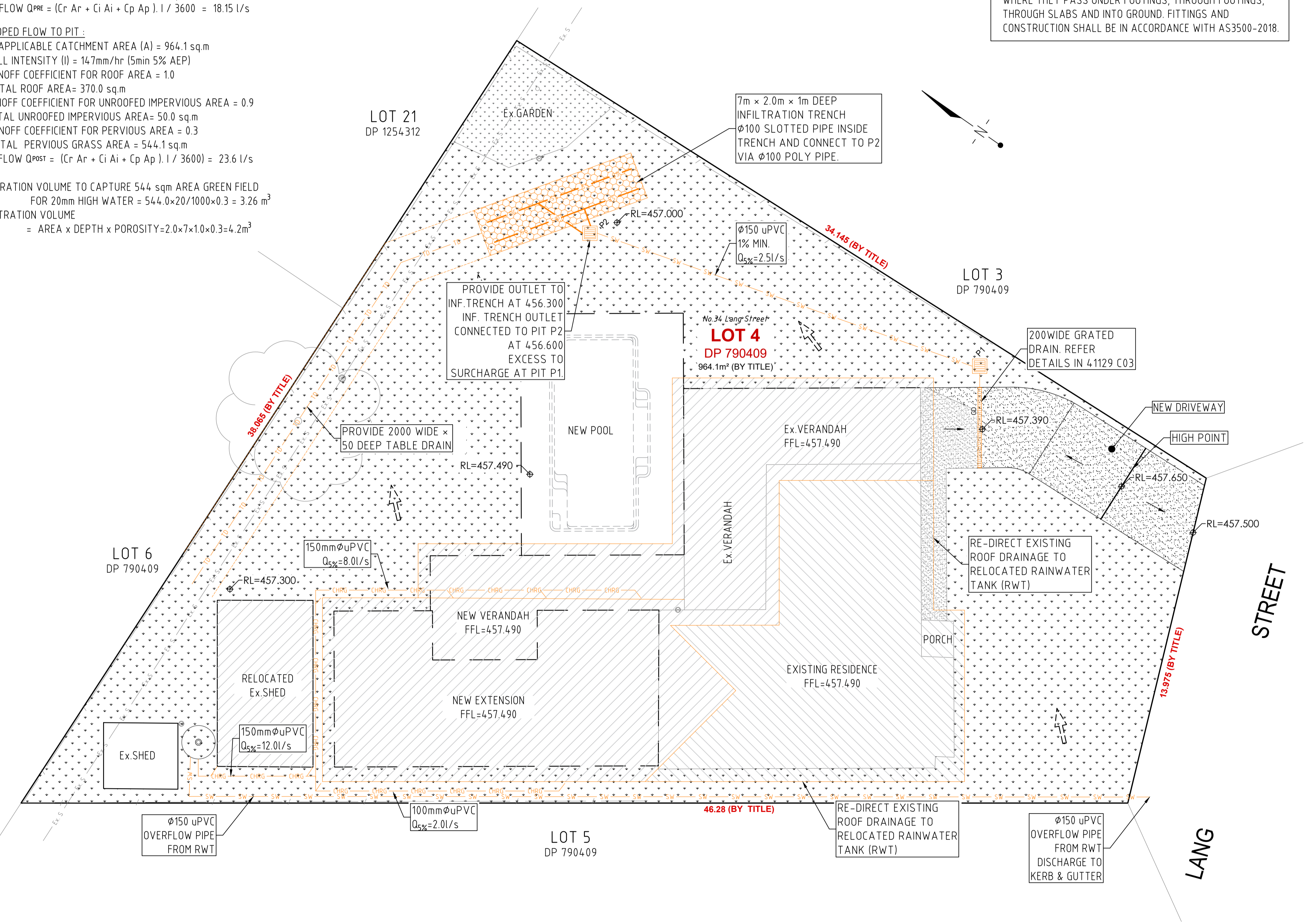
NOTE:
ALL STORMWATER & SEWER PIPES AND PLUMBING SHALL BE FITTED WITH SLEEVED UNIVERSAL FLEXIBLE COUPLINGS WHERE THEY PASS UNDER FOOTINGS, THROUGH FOOTINGS, THROUGH SLABS AND INTO GROUND. FITTINGS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH AS3500-2018.

LEGEND (existing)

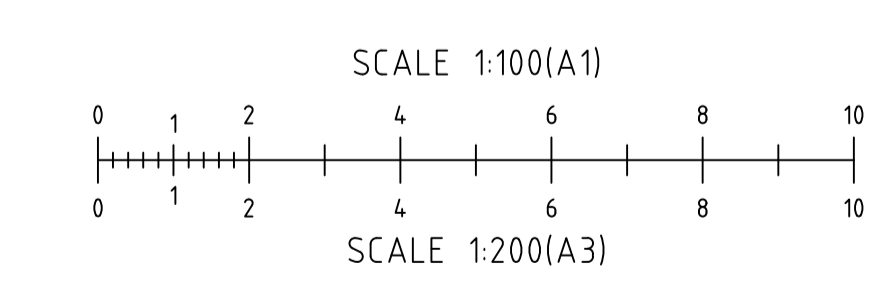
- EXISTING SUBJECT CADASTRAL BOUNDARIES
- TOP OF BANK
- BOTTOM OF BANK
- EXISTING FENCE
- EX-S EX-S EXISTING UNDERGROUND SEWER PIPE - APPROX

LEGEND (proposed)

- PROPOSED ROOF AREA
- PROPOSED DRIVEWAY AREA
- EXTENT OF LANDSCAPE AREA
- PROPOSED STORMWATER PIPE
- PROPOSED STORMWATER PIT
- PROPOSED SURFACE FALL DIRECTION
- FINISHED SURFACE RL'S
- MAJOR OVERLAND FLOW PATH DIRECTION
- EXISTING RAINWATER TANK
- PROPOSED PIPE SIZE & MATERIAL GRADIENT 5% AEP FLOW



TYPICAL INFILTRATION TRENCH CROSS SECTION
SCALE = 1:10



PROPOSED STORMWATER MANAGEMENT PLAN
REDUCTION RATIO 1:100 @ A1
1:200 @ A3



ISSUED FOR CONSTRUCTION



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 email generalenquiry@barnson.com.au
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Rev	Date	Description
0	11.04.2023	ISSUED FOR CONSTRUCTION

Project
PROPOSED ALTERATIONS & ADDITIONS TO EXISTING RESIDENCE
 Site Address
34 LANG STREET
MUDGEE NSW 2850
Client
PLAN LAND

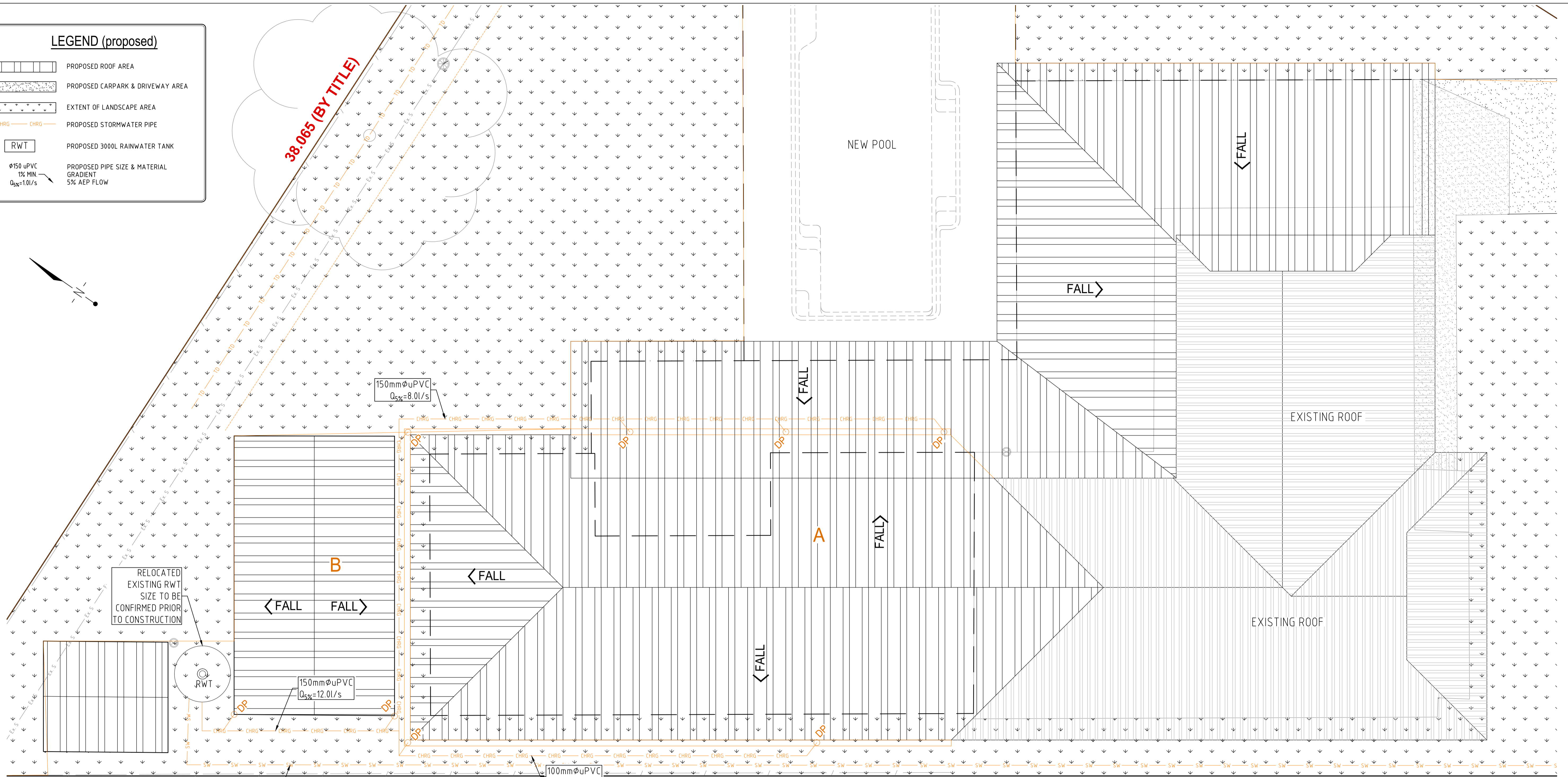
Drawing Title
PROPOSED STORMWATER MANAGEMENT PLAN
 Design LB
 Drawn LB
 Check LM
 Original Sheet Size A1
 Revision 0

Certification
 Project No 41129
 Drawing No C02

LEGEND (proposed)

- PROPOSED ROOF AREA
- PROPOSED CARPARK & DRIVEWAY AREA
- EXTENT OF LANDSCAPE AREA
- PROPOSED STORMWATER PIPE
- PROPOSED 3000L RAINWATER TANK
- PROPOSED PIPE SIZE & MATERIAL
GRADIENT
5% AEP FLOW

$\phi 150$ uPVC
 1% MIN
 $Q_{5\%}=1.0$ l/s



STORMWATER ANALYSIS

- DESIGN CALCULATIONS AS PER AS3500.3-2021
- EAVES GUTTERS DESIGNED FOR 5% AEP, 5 MINUTE INTENSITY. GUTTERS TO BE INSTALLED AT FALL 1:500 OR STEEPER. EAVE GUTTERS: GUTTER TO HAVE EQUIVALENT CROSS SECTIONAL AREA AS SPECIFIED.

CATCHMENT, GUTTERS, & DOWNPIPES						
LOCATION	AREA (m ²)	ROOF PITCH	FLOW l/s	GUTTER (m ²)	DP's	MAX m ² /DP
ROOF - A	217	22.0°	12.0	6,700	6x ϕ 100	4.0
ROOF - B	28	-	2.7	6,700	2x ϕ 90	4.0

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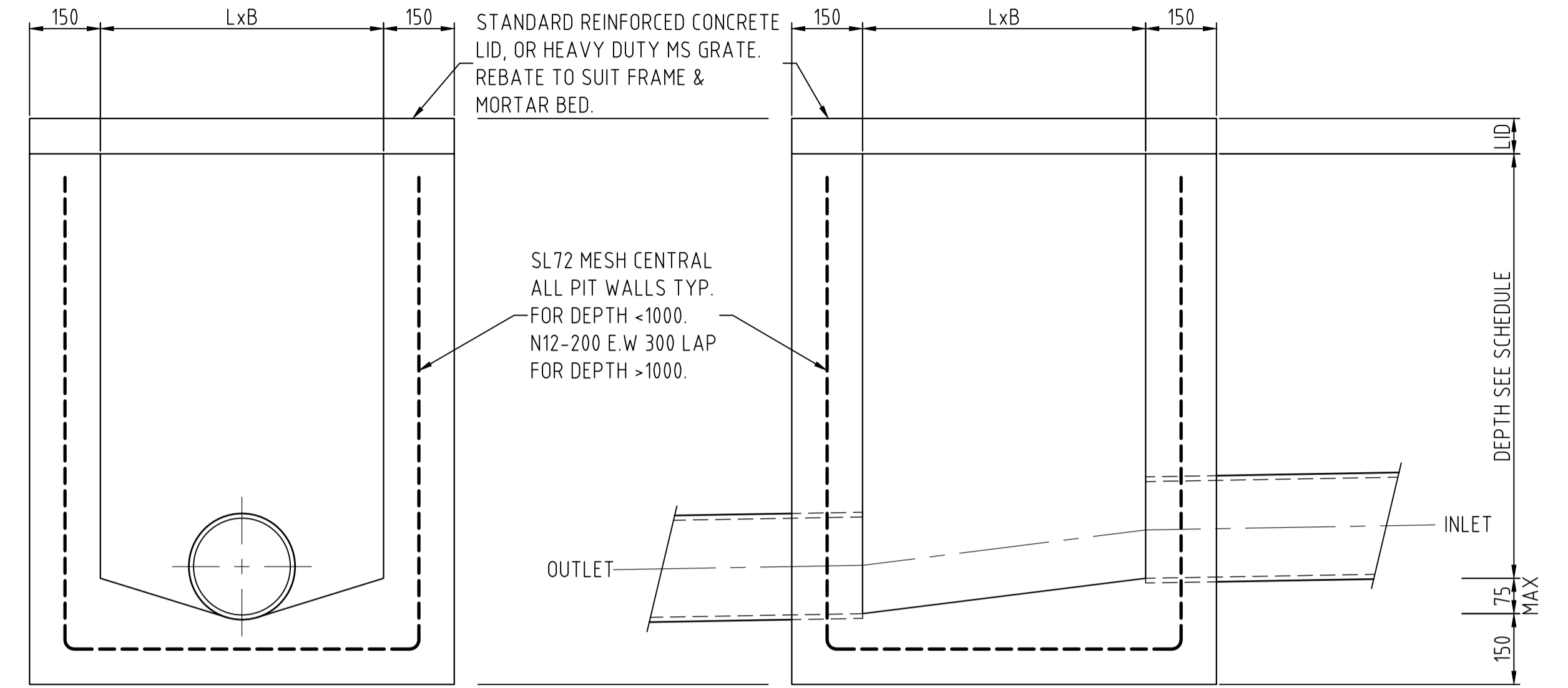
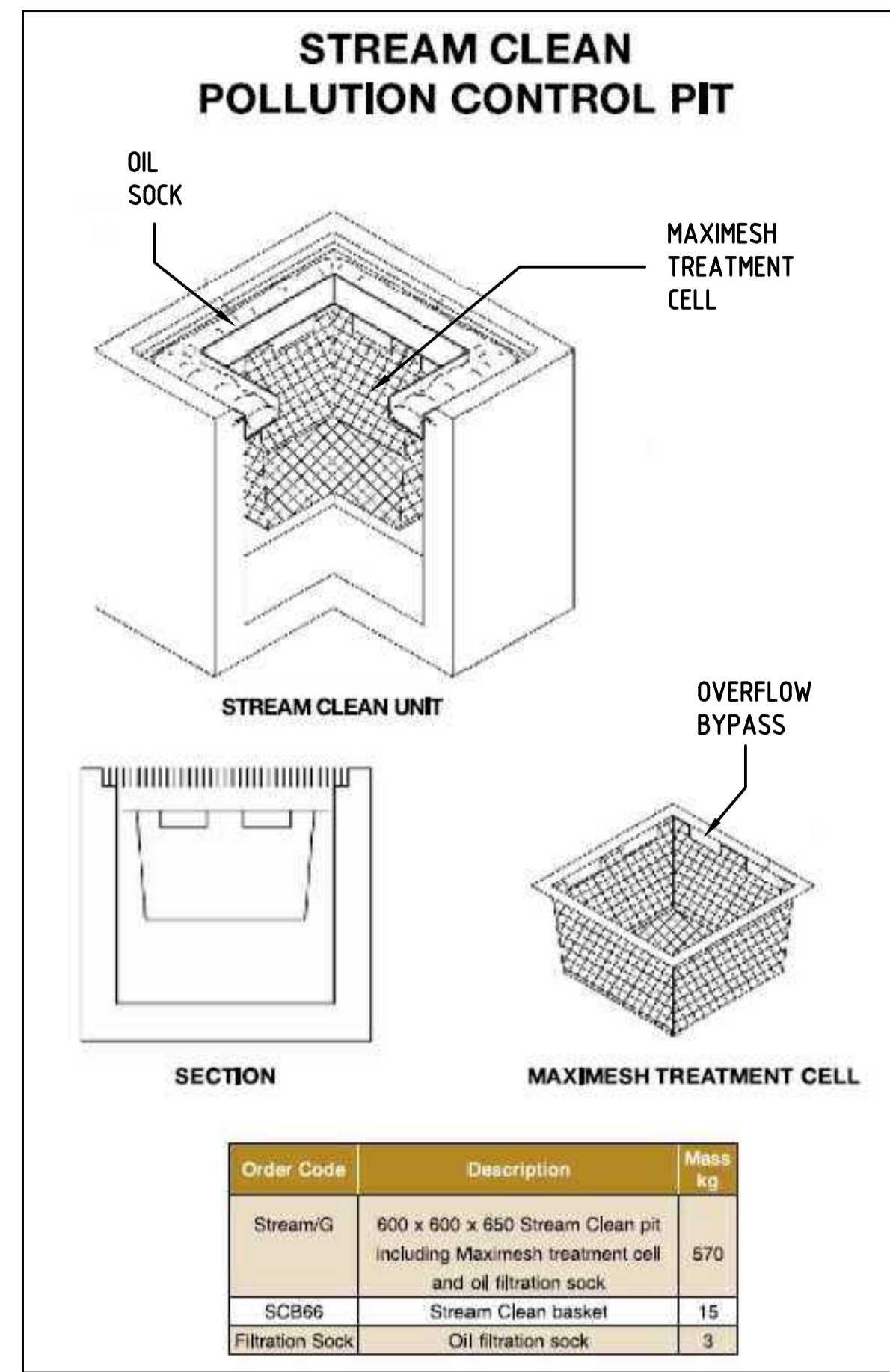


STORMWATER NOTES

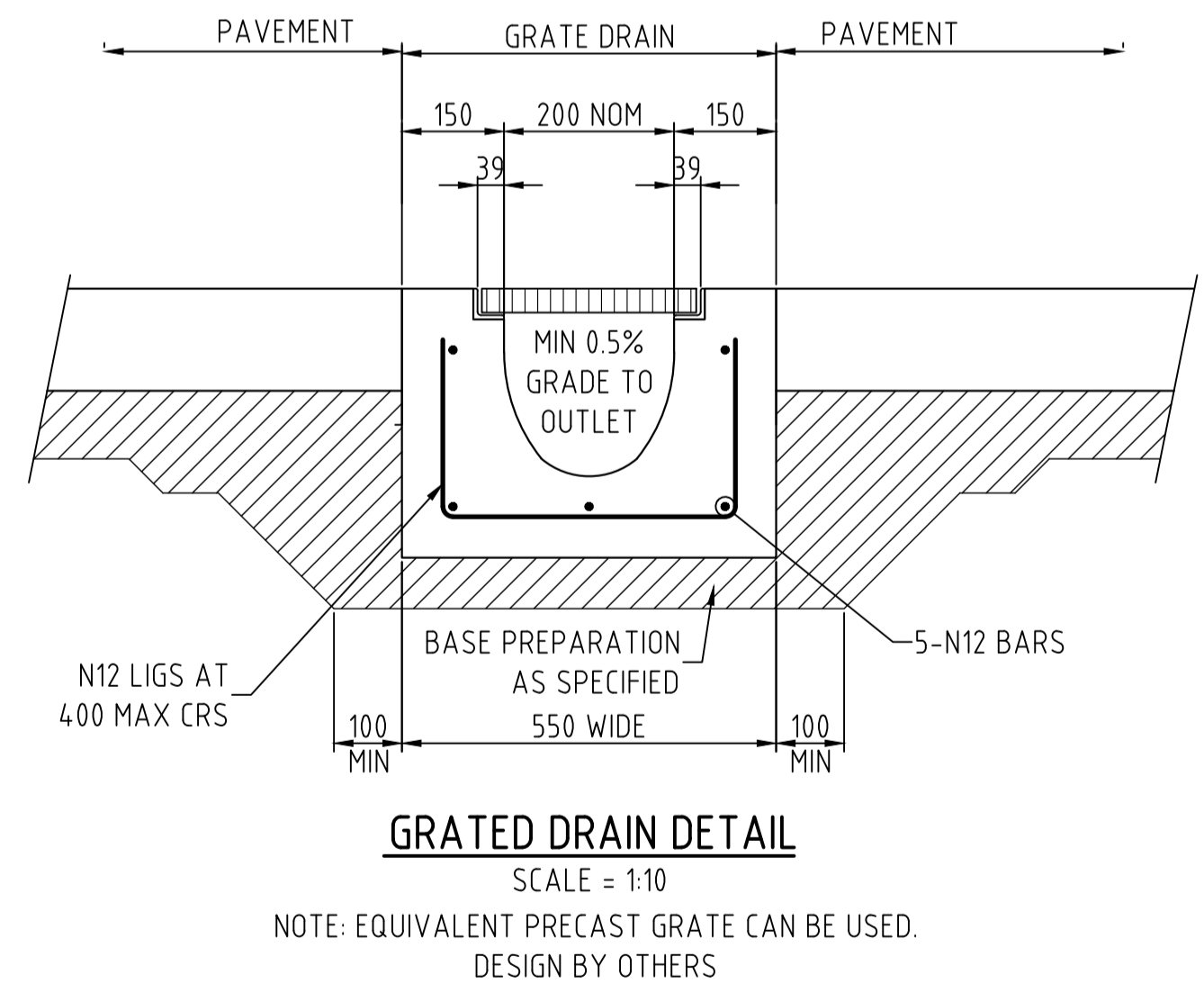
1. ALL DOWNPIPE LINES SHALL BE SEWER GRADE uPVC WITH SOLVENT WELD JOINTS (U.N.O)
2. EQUIVALENT STRENGTH VCP OR FCP PIPES MAY BE USED.
3. MINIMUM GRADE TO STORMWATER LINES TO BE 0.5% MINIMUM (U.N.O)
4. CONTRACTORS TO SUPPLY AND INSTALL ALL FITTINGS AND SPECIALS INCLUDING VARIOUS PIPE ADAPTORS TO ENSURE PROPER CONNECTION BETWEEN DISSIMILAR PIPEWORK.
5. ALL CONNECTIONS TO EXISTING DRAINAGE PITS SHALL BE MADE IN A TRADESMAN-LIKE MANNER AND THE INTERNAL WALL OF THE PIT AT THE POINT OF ENTRY SHALL BE CEMENT RENDERED TO ENSURE A SMOOTH FINISH.
6. APPROVED PRECAST PITS MAY BE USED.
7. WHERE TRENCHES ARE IN ROCK, THE PIPE SHALL BE BEDDED ON A MIN. 50mm CONCRETE BED (75mm THICK BED OF 12mm BLUE METAL) UNDER THE BARREL OF THE PIPE. THE PIPE COLLAR AT NO POINT SHALL BEAR THE ROCK. IN OTHER THAN ROCK, PIPES SHALL BE LAID ON A 75mm THICK SAND BED. IN ALL CASES, BACKFILL THE TRENCH WITH THE SAND TO 200mm ABOVE THE PIPE .WHERE THE PIPE IS UNDER PAVEMENTS, BACKFILL REMAINDER OF TRENCH WITH SAND OR APPROVED GRANULAR BACKFILL COMPACTED IN 150mm LAYERS TO 98% MAX. DRY DENSITY.
8. WHERE STORMWATER LINES PASS UNDER FLOOR SLABS, SEWER GRADE RUBBER RING JOINTS ARE TO BE USED.
9. ALL PIPES IN THE ROADWAY AND FOOTPATH AREAS, WHERE THE DEPTH OF PIPE IS LESS THAN 500mm FROM THE FINISHED SURFACE LEVEL ARE TO BE CONCRETE ENCASED.

PIPE TRENCH - FILL NOTES:

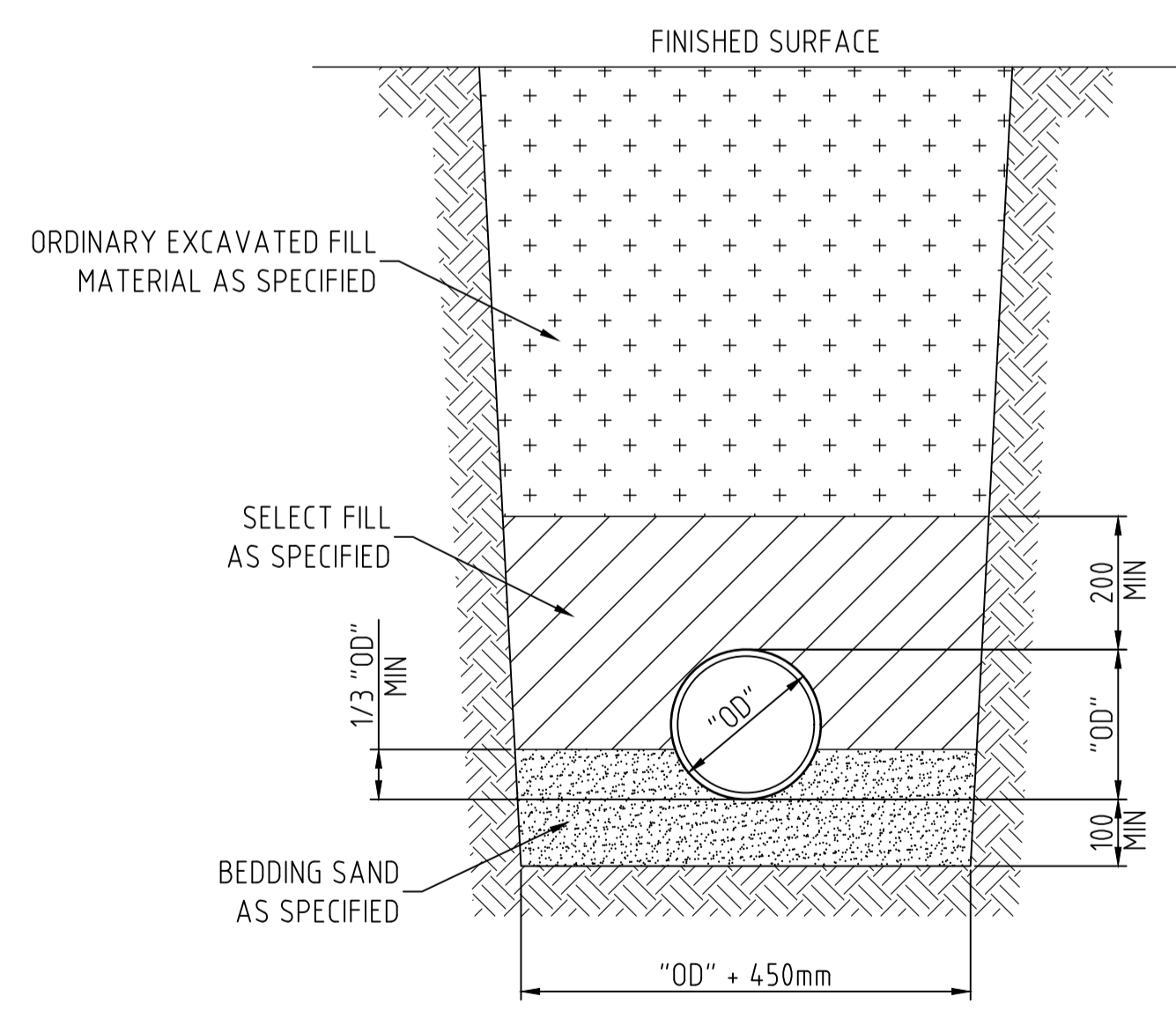
1. **BEDDING SAND**
BEDDING SAND SHALL BE GRANULAR MATERIAL HAVING A LOW PERMEABILITY AND HIGH STABILITY WHEN SATURATED, CONFORMING TO THE GRADING LIMITS FOR BEDDING SAND AS INDICATED IN THE CONTRACT DOCUMENTS. BEDDING SAND SHALL BE COMPACTED TO A DENSITY INDEX OF 95% AS DETERMINED IN ACCORDANCE WITH AS1289.
2. **APPROVED IMPORTED GRANULAR FILL**
ONLY IMPORTED GRANULAR FILL MATERIAL APPROVED BY THE SUPERINTENDENT SHALL BE USED. THIS FILL MATERIAL SHALL BE COMPACTED IN LAYERS NOT EXCEEDING 300mm THICK TO A DRY DENSITY OF 100% OF THE STANDARD MAXIMUM DRY DENSITY OF THE MATERIAL AND WITH A MOISTURE CONTENT NO MORE THAN 1% ABOVE OPTIMUM MOISTURE CONTENT AS DETERMINED IN ACCORDANCE WITH AS1289.
3. **ORDINARY EXCAVATED FILL MATERIAL**
ORDINARY EXCAVATED FILL MATERIAL IS EXCAVATED TRENCH MATERIAL THAT IS FREE OF VEGETABLE MATTER, HUMUS, LARGE CLAY LUMPS AND ROCK BOULDERS. THIS FILL MATERIAL SHALL BE COMPACTED IN LAYERS NOT EXCEEDING 300mm THICK, TO A DENSITY OF 95% OF THE STANDARD MAXIMUM DRY DENSITY OF THE MATERIAL WITH A MOISTURE CONTENT OF NOT MORE THAN 1% ABOVE THE OPTIMUM MOISTURE CONTENT AS DETERMINED IN ACCORDANCE WITH AS1289.



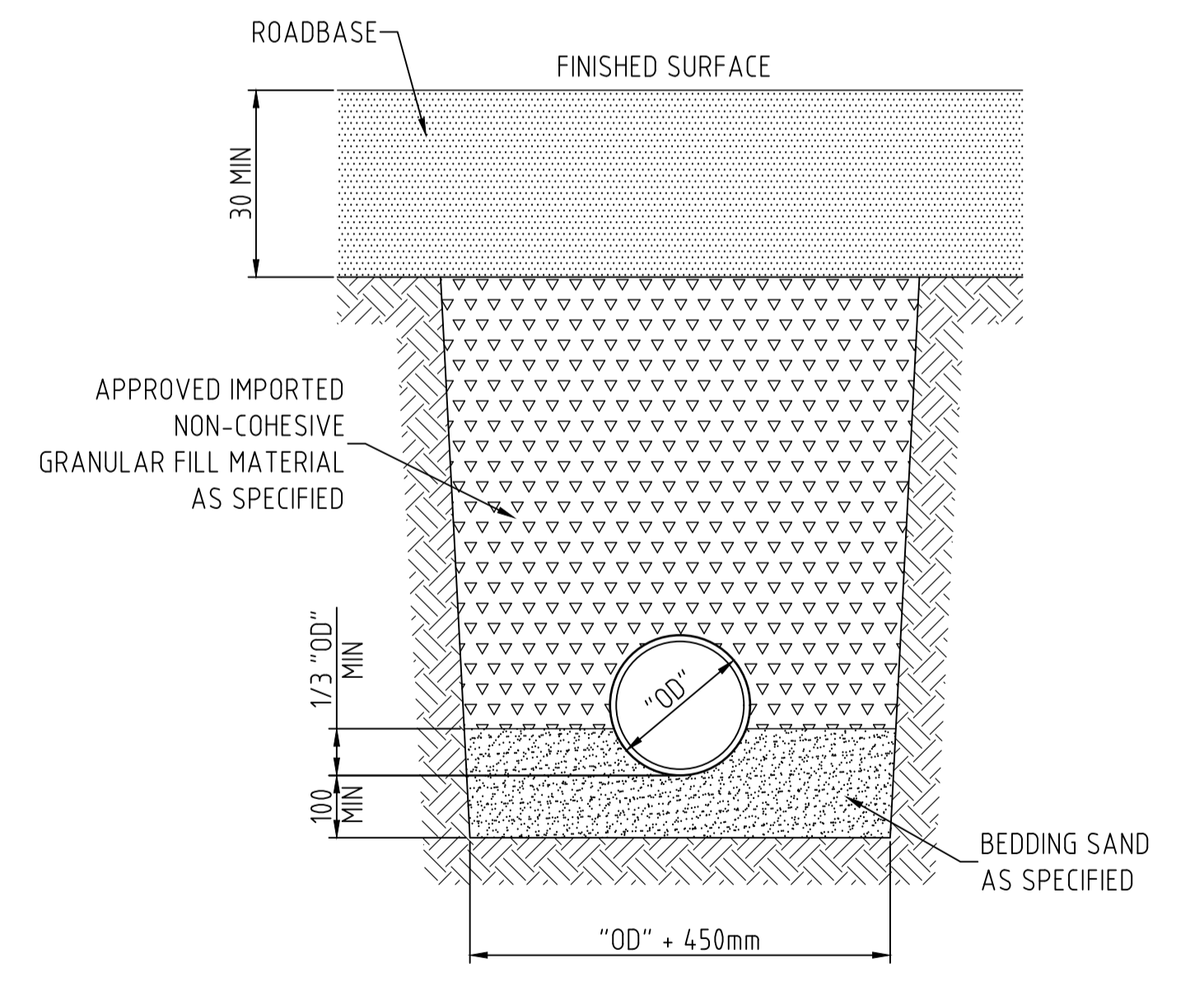
STORMWATER PIT
SCALE = 1:10
PRECAST EQUIVALENT MAY BE USED



GRADED DRAIN DETAIL
SCALE = 1:10
NOTE: EQUIVALENT PRECAST GRATE CAN BE USED. DESIGN BY OTHERS



PIPE TRENCH - EARTH FOUNDATION
SCALE = 1:10



PIPE TRENCH - ROADWAY
SCALE = 1:10
NOTE: PIPE COLLAR IS NOT TO REST ON ORIGINAL MATERIAL

ISSUE! SUBMISSION FOR DA