

PROPOSED SINGLE LEVEL WAREHOUSE

88 NEWTON ROAD, WETHERILL PARK NSW 2164

DEVELOPMENT APPLICATION PACKAGE

DRAWING LIST

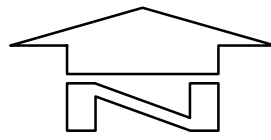
DRAWING NO.	DRAWING TITLE
C015039.01-DA 10	DRAWING LIST & GENERAL NOTES
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C015039.01-DA 15	EXISTING SERVICES PLAN
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C015039.01-DA 57	TYPICAL SECTIONS - SHEET 3

GENERAL NOTES:

- THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE RELEVANT AND CURRENT STANDARDS AUSTRALIA CODES AND WITH THE BY-LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITIES EXCEPT WHERE VARIED BY THE PROJECT SPECIFICATION.
- ALL DIMENSIONS SHOWN SHALL BE VERIFIED BY THE BUILDER ON SITE. ENGINEER'S DRAWINGS SHALL NOT BE SCALED FOR DIMENSIONS. ENGINEER'S DRAWINGS ISSUED IN ANY ELECTRONIC FORMAT MUST NOT BE USED FOR DIMENSIONAL SETOUT. REFER TO THE ARCHITECT'S DRAWINGS FOR ALL DIMENSIONAL SETOUT INFORMATION.
- DURING CONSTRUCTION THE STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVERSTRESSED. TEMPORARY BRACING SHALL BE PROVIDED BY THE BUILDER TO KEEP THE WORKS AND EXCAVATIONS STABLE AT ALL TIMES.
- UNLESS NOTED OTHERWISE ALL LEVELS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES.
- ALL WORKS SHALL BE UNDERTAKEN IN ACCORDANCE WITH ACCEPTABLE SAFETY STANDARDS & APPROPRIATE SAFETY SIGNS SHALL BE INSTALLED AT ALL TIMES DURING THE PROGRESS OF THE JOB.

ELECTRONIC INFORMATION NOTES:

- THE ISSUED DRAWINGS IN HARD COPY OR PDF FORMAT TAKE PRECEDENCE OVER ANY ELECTRONICALLY ISSUED INFORMATION, LAYOUTS OR DESIGN MODELS.
- THE CONTRACTOR'S DIRECT AMENDMENT OR MANIPULATION OF THE DATA OR INFORMATION THAT MIGHT BE CONTAINED WITHIN AN ENGINEER-SUPPLIED DIGITAL TERRAIN MODEL AND ITS SUBSEQUENT USE TO UNDERTAKE THE WORKS WILL BE SOLELY AT THE DISCRETION OF AND THE RISK OF THE CONTRACTOR.
- THE CONTRACTOR IS REQUIRED TO HIGHLIGHT ANY DISCREPANCIES BETWEEN THE DIGITAL TERRAIN MODEL AND INFORMATION PROVIDED IN THE CONTRACT AND/OR DRAWINGS AND IS REQUIRED TO SEEK CLARIFICATION FROM THE SUPERINTENDENT.
- THE ENGINEER WILL NOT BE LIABLE OR RESPONSIBLE FOR THE POSSIBLE ON-GOING NEED TO UPDATE THE DIGITAL TERRAIN MODEL, SHOULD THERE BE ANY AMENDMENTS OR CHANGES TO THE DRAWINGS OR CONTRACT INITIATED BY THE CONTRACTOR.



LOCALITY PLAN
NTS

FOR DEVELOPMENT APPLICATION

ISSUED FOR DEVELOPMENT APPLICATION				12.02.25				C			
ISSUED FOR DEVELOPMENT APPLICATION				29.04.24				B			
ISSUED FOR DEVELOPMENT APPLICATION				15.02.24				A			
AMENDMENTS				DATE	ISSUE	AMENDMENTS	DATE	ISSUE	AMENDMENTS	DATE	ISSUE
ARCHITECT				SBA				CLIENT			
CENTURIA				PROJECT				COSTIN ROE CONSULTING PTY LTD.			
88 NEWTON ROAD, WETHERILL PARK NSW 2164				DESIGNED				DRAWN			
FEB 24				CHECKED				SCALE			
AS SHOWN				CAD REF				C015039.01-DA10			
CONSULT AUSTRALIA				PO Box N419 Sydney NSW 1220				CRC			
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W: costinroe.com.au				C015039.01-DA10				DRAWING LIST & GENERAL NOTES			
ISSUE				C				C			

1. ALL EARTHWORKS SHALL BE COMPLETED GENERALLY IN ACCORDANCE WITH THE GUIDELINES SPECIFIED BY THE GEOTECHNICAL _____ PROVIDED BY _____ DATED _____
2. EXISTING LEVELS ARE BASED ON DOCUMENT PROVIDED BY L.T.S SURVEYORS TITLED 5114/5 0100 DATED 10.20.
3. STRIP ANY TOP SOIL OR DELETERIOUS MATERIAL AND DISPOSE OF FROM SITE OR STORE AS DIRECTED.
4. COMPLETE CUT TO FILL EARTHWORKS TO ACHIEVE THE REQUIRED LEVELS AS INDICATED ON THE DRAWINGS WITHIN A TOLERANCE OF +0mm/-10mm THROUGH BUILDING PADS/PAVEMENTS AND -0mm/-20mm ELSEWHERE.
5. PREPARE STEEP SLOPES TO RECEIVE FILL BY CONSTRUCTING BENCHING TO FACILITATE FILL PLACEMENT AND COMPACTION.
6. AREAS TO RECEIVE FILL (THAT ARE NOT ON BENCHMARK BATTERS) AND AREAS IN CUT SHALL BE PROOF ROLLED TO IDENTIFY ANY SOFT HEAVING MATERIAL. SOFT MATERIAL SHALL BE BOXED OUT AND REMOVED PRIOR TO FILL PLACEMENT. PROOF ROLLING TO BE INSPECTED BY A GEOTECHNICAL ENGINEER OR THE EARTHWORKS SUPERVISOR.
7. SITE WON FILL SHALL BE COMPACTED IN MAXIMUM 300mm LAYERS AND TO DRY OR HALF DENSITY RATIOS (STANDARD COMPACTION) OF BETWEEN 98% AND 103%. THE PLACEMENT MOISTURE VARIATION OR HALF MOISTURE VARIATION SHALL BE CONTROLLED TO BE BETWEEN 2% DRY AND 2% WET.
8. IMPORTED FILL SHALL BE COMPACTED IN MAXIMUM 300mm LAYERS AND TO DRY OR HALF DENSITY RATIOS (STANDARD COMPACTION) OF BETWEEN 98% AND 103%. THE PLACEMENT MOISTURE VARIATION OR HALF MOISTURE VARIATION SHALL BE CONTROLLED TO BE BETWEEN 2% DRY AND 2% WET.
9. ALL ENGINEERED FILL PARTICLES SHALL BE ABLE TO BE INCORPORATED WITHIN A SINGLE LAYER. FURTHER, LESS THAN 30% OF PARTICLES SHALL BE RETAINED ON THE 37.5 mm SIEVE. ENGINEERED FILL SHALL BE ABLE TO BE TESTED IN ACCORDANCE WITH THE STANDARD COMPACTION METHOD (IS:12895-4) OR HALF HOUR TEST METHOD (IS:12895-5.1). THESE METHODS REQUIRE LESS THAN 20% RETAINED ON THE 37.5 mm SIEVE. WHERE BETWEEN 20% AND 30% OF PARTICLES ARE RETAINED ON THE 37.5 mm SIEVE THE ABOVE TEST METHODS SHALL STILL BE ADOPTED AND TEST REPORTS ANNOTATED APPROPRIATELY. THESE REQUIREMENTS SHOULD BE MET BY THE MATERIAL AFTER PLACEMENT AND COMPACTION.
10. ALL THE EARTHWORKS UNDERTAKEN AND THE SUBGRADE CONDITION IN THE CUT AREAS (IN THE STATED PERIOD) ARE DOCUMENTED IN THE REPORTS AND HAVE BEEN UNDERTAKEN IN ACCORDANCE WITH THE SPECIFICATION (EG. COSTIN ROE SITE PREPARATION NOTES IN DWG C013003 01-EWC10)
11. PRIOR TO ANY EARTHWORKS, EROSION CONTROL AS OUTLINED IN THE EROSION AND SEDIMENTATION CONTROL PLAN SHALL BE COMPLETED.
12. EXISTING ROCK, IF ANY, SHALL BE REMOVED BY HEAVY ROCK BREAKING OR RIPPING. MATCH EXISTING LEVELS AT BATTER INTERFACE.
13. CONTRACTOR TO MATCH EXISTING LEVELS AT THE INTERFACE OF EARTHWORKS AND EXISTING SURFACE AT BATTER LOCATIONS OR WHERE NO RETAINING WALLS ARE PRESENT. ANY DISCREPANCY BETWEEN DESIGN AND EXISTING LEVELS TO BE REFERRED TO THE ENGINEER FOR DIRECTION OR ADJUSTMENTS TO DESIGN LEVELS.
14. DURING EARTHWORKS THE CONTRACTOR IS TO ENSURE ALL AREAS ARE FREE DRAINING & WILL NOT RETAIN WATER DURING RAINFALL. PROVIDE TEMPORARY MEASURES AS REQUIRED TO ENSURE FREE FLOWING RUNOFF THROUGH MANAGED DRAINAGE PATHS, DIVERSION DRAINS OR OTHER SUITABLE DISPOSAL METHOD AS AGREED DURING THE WORKS. REFER ANY CONCERNS TO THE ENGINEER. REFER TO EROSION AND SEDIMENT CONTROL DRAWINGS AND NOTES.

1. SILT FENCES AND SILT FENCE RETURNS SHALL BE ERECTED CONVEX TO THE CONTOUR TO POND WATER.
2. HAY BALE BARRIERS AND GEOFABRIC FENCES ARE TO BE CONSTRUCTED TO TOE OF BATTER, PRIOR TO COMMENCEMENT OF EARTHWORKS, IMMEDIATELY AFTER CLEARING OF VEGETATION AND BEFORE REMOVAL OF TOP SOIL.
3. ALL TEMPORARY EARTH BERMS, DIVERSION AND SILT DAM EMBANKMENTS ARE TO BE MACHINE COMPACTED, SEEDED AND MULCHED FOR TEMPORARY VEGETATION COVER AS SOON AS THEY HAVE BEEN FORMED.
4. CLEAR WATER IS TO BE DIVERTED AWAY FROM DISTURBED GROUND AND INTO THE DRAINAGE SYSTEM.
5. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AND PROVIDING ON GOING ADJUSTMENT TO EROSION CONTROL MEASURES AS REQUIRED DURING CONSTRUCTION.
6. ALL SEDIMENT TRAPPING STRUCTURES AND DEVICES ARE TO BE INSPECTED AFTER STORMS FOR STRUCTURAL DAMAGE OR CLOGGING, TRAPPED MATERIAL IS TO BE REMOVED TO A SAFE, APPROVED LOCATION.
7. ALL FINAL EROSION PREVENTION MEASURES INCLUDING THE ESTABLISHMENT OF GRASSING ARE TO BE MAINTAINED UNTIL THE END OF THE DEFECTS LIABILITY PERIOD.
8. ALL EARTHWORKS AREAS SHALL BE ROLLED ON A REGULAR BASIS TO SEAL THE EARTHWORKS.
9. ALL FILL AREAS ARE TO BE LEFT WITH A BUND AT THE TOP OF THE SLOPE AT THE END OF EACH DAYS EARTHWORKS. THE HEIGHT OF THE BUND SHALL BE A MINIMUM OF 200mm ALL CUT AND FILL SLOPES ARE TO BE SEEDED AND HYDROMULCHED WITHIN 10 DAYS OF COMPLETION OF FORMATION.
11. AFTER REVEGETATION OF THE SITE IS COMPLETE AND THE SITE IS STABLE IN THE OPINION OF A SUITABLY QUALIFIED PERSON ALL TEMPORARY WORK SUCH AS SILT FENCE, DIVERSION DRAINS ETC SHALL BE REMOVED.
12. ALL TOPSOIL STOCKPILES ARE TO BE SUITABLY COVERED TO THE SATISFACTION OF THE SITE MANAGER TO PREVENT WIND AND WATER EROSION.
13. ANY AREA THAT IS NOT APPROVED BY THE CONTRACT ADMINISTRATOR FOR CLEARING OR THE REMOVAL OF THE CONTRACTOR'S ACTIVITIES SHALL BE CLEARLY MARKED AND SIGNED POSTED, FENCED OFF OR OTHERWISE APPROPRIATELY PROTECTED AGAINST ANY SUCH DISTURBANCE.
14. ALL STOCKPILE SITES SHALL BE SITUATED IN AREAS PROVIDED FOR SUCH USE BY THE SITE MANAGER. A 6m BUFFER ZONE SHALL EXIST BETWEEN STOCKPILE SITES AND ANY STREAM OR FLOW PATH. ALL STOCKPILES SHALL BE ADEQUATELY PROTECTED FROM EROSION AND CONTAMINATION OF THE SURROUNDING AREA BY USE OF THE MEASURES APPROVED IN THE EROSION AND SEDIMENTATION CONTROL PLAN.
15. ACCESS AND EXIT AREAS SHALL INCLUDE SHAKE-DOWN OR OTHER METHODS APPROVED BY THE SITE MANAGER FOR THE REMOVAL OF SOIL MATERIALS FORM MOTOR VEHICLES.
16. THE CONTRACTOR IS TO ENSURE RUNOFF FROM ALL AREAS WHERE THE NATURAL SLOPE IS DISTURBED BY CONSTRUCTION, INCLUDING ACCESS ROADS, DEPOT AND STOCKPILE SITES, SHALL BE FREE OF POLLUTANTS BEFORE IT IS EITHER DISPERSED TO STABLE AREAS OR DIRECTED TO NATURAL WATERCOURSES.
17. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SLOPES, CROWNS AND DRAINS ON ALL EXCAVATIONS AND EMBANKMENTS TO ENSURE SATISFACTORY DRAINAGE AT ALL TIMES. WATER SHALL NOT BE ALLOWED TO POND ON THE WORKS UNLESS SUCH PONDING IS PART OF AN APPROVED ESCP / SWMP.

1. TYPE D BASIN IS REQUIRED.
2. VOLUME OF THE BASINS SHALL BE AS NOMINATED ON DRAWING. NOMINAL POND LOCATIONS AND NOMINAL DIMENSIONS.
3. SEDIMENT BUILD UP TO NOT EXCEED 33% TOTAL CAPACITY OF BASIN.
4. DEWATERING OF BASIN TO BE PERFORMED TO THE BOTTOM OF THE SEDIMENT SETTLING ZONE FOLLOWING ACHIEVEMENT OF WOODS MANAGEMENT OF DUSE AND DISCHARGE TO BE ACHIEVED WITHIN 5 DAYS OF THE INITIAL RAINFALL EVENT.
5. FOLLOWING DEWATERING PER NOTE 4, WATER LEVEL TO BE MAINTAINED AT 20% CAPACITY AFTER A FOUR DAY SETTLING PERIOD FOLLOWING A STORM EVENT.
6. WATER TO BE DOSED WITH GYPSUM TO ACCELERATE SETTLEMENT OF SUSPENDED SOLIDS AS REQUIRED.
7. GYPSUM DOSAGE RATE TO BE APPLIED AT APPROX. 32kg PER 100 CUBIC METRE OF COLLECTED RUNOFF.
8. THE USE OF ALUM (OR ANY OTHER ALTERNATIVE) AS A FLOCCULANT IS NOT RECOMMENDED. ALUM OR ANY OTHER FLOCCULANT IS TO BE USED ONLY FOLLOWING CONSULTATION WITH AND ACCEPTANCE FROM COUNCIL ESC OFFICERS.
9. DISCHARGE FROM BASIN IS PERMISSIBLE WHEN THE WATER PH IS 6.5-8.5 AND IS CLARIFIED TO AT OR BELOW A TSS OF 50mg/L. CLARIFICATION WOULD GENERALLY BE ACHIEVED IN 36-72 HOURS WITH THE USE OF GYPSUM. CORRELATION TESTS MUST BE UNDERTAKEN ON SITE TO ENSURE THIS IS ACHIEVED.
10. DEWATERING SHALL BE DONE IN SUCH A MANNER AS TO REMOVE THE CLEAN WATER (BEING WATER WITHIN THE ADOPTED CRITERIA) WITHOUT REMOVING OR DISTURBING THE SEDIMENT THAT HAS SETTLED. THE PUMP INTAKE PIPE IS NOT TO REST ON THE SETTLED SEDIMENT LAYER.
11. IF WATER EXCEEDS TSS OF 50mg/L DURING DEWATERING, PUMPING IS TO CEASE. RECORDS ARE TO BE KEPT (ON-SITE AT ALL TIMES) OF ALL MEASUREMENT PRIOR TO, DURING AND AFTER DISCHARGE. RECORDS TO BE MADE AVAILABLE TO COUNCIL OFFICERS UPON REQUEST.
12. PROVIDE SECURITY FENCE TO BASIN FOR SAFETY.

1. REFER TO SEDIMENT & EROSION CONTROL NOTES.
2. FOR SEDIMENT AND EROSION CONTROL DETAILS, REFER TO THE LANDCOM 'BLUE BOOK' AND EXTRACTS ON DRAWING DA20.
3. SEDIMENTATION BASIN SIZING BASED ON RECOMMENDATIONS OF 'SOILS AND CONSTRUCTION, MANAGING URBAN STORMWATER- THE BLUE BOOK'. CAPACITY BASED ON 5-DAY RAINFALL DEPTHS AT 85th PERCENTILE INTENSITY (32.2mm) IN THE LIVERPOOL CATCHMENT AREA.

1. ASSUME TYPE D SOIL (CLAY/SILTY CLAY)
2. ASSUME GROUP D SOIL (HIGH PLASTICITY AND SHRINK/SWELL PROPERTIES)
3. REFER TO DRAWING DA20 FOR SEDIMENTATION BASIN CALCULATIONS

TABLE 1 – STABILISATION REQUIREMENTS AND TREATMENT METHODS				
DURING CONSTRUCTION – TEMPORARY STABILISATION (DURING PERIODS OF INACTIVITY OR WHEN WORKS ARE ON HOLD)				
LANDS	STABILISATION REQUIREMENT	TIMEFRAMES	TREATMENT METHODS – PRODUCTS	REMARKS
ALL LANDS	C-FACTOR = 0.15 500% EQUIVALENT GROUND COVER ^[1]	APPLIES AFTER 20 WORKING DAYS OF INACTIVITY (EVEN THOUGH WORKS MIGHT CONTINUE LATER)	SOIL BINDER (I.E. VITAL P4/5/STONEWALL OR EQUIVALENT ^[1]) GEOTEXTILE, JUTE MATTING, BLACK PLASTIC OR EQUIVALENT ^[1]	<ul style="list-style-type: none"> - SPRAY ALL SURFACES WITH VITAL P4/5/STONEWALL OR EQUIVALENT^[1] - VITAL DILUTION RATE = 1 (10VITAL WATER) - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PROVIDED (APPROX. EVERY 3-4 MONTHS WITHOUT SUITABLE VEGETATION COVER) TO ENSURE THE REQUIRED COVER IS PROVIDED - COVER ALL EXPOSED SOILS. - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PROVIDED.
			REFER TO THE DRAIN SPECIFICATIONS DETAILED ON THE PLAN FOR SPECIFIC LINING/STABILISATION REQUIREMENTS EXAMPLE TREATMENT METHODS ARE SHOWN BELOW.	
			TEMPORARY LINING – GEOTEXTILE (I.E. BOM 2A OR EQUIVALENT ^[1])	<ul style="list-style-type: none"> - COMPLETE ANY SUBSOIL TREATMENT BEFORE LAYING THE MATTING. - INSTALL MATTING IN ACCORDANCE WITH SD 5-7. - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PROVIDED.
			JUTE MESH, SEEDING AND SOIL BINDER (I.E. VITAL P4/5/STONEWALL OR EQUIVALENT ^[1]) - LOW FLOWS TO MODERATE	<ul style="list-style-type: none"> - COMPLETE SUBSOIL TREATMENT (I.E. GYPSUM LIGHTLY RIPPED INTO SUBGRADE AT A RATE OF 5 TONNES/m²). - PLACE TOPSOIL TO A DEPTH OF AT LEAST 75mm. - COMPLETE ANY FERTILISATION AND SEEDING BEFORE LAYING THE MATTING. - INSTALL MATTING IN ACCORDANCE WITH SD 5-7. - SPRAY ALL SURFACES WITH VITAL P4/5/STONEWALL OR EQUIVALENT^[1] - VITAL DILUTION RATE = 1 / m² OF DILUTED VITAL MIXTURE - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PERMANENTLY MAINTAINED.
WATERWAYS, DRAINAGE LINES AND CONCENTRATED FLOW AREAS	C-FACTOR = 0.05 (700% GRASS COVER OR EQUIVALENT GROUND COVER ^[1])	APPLIES AFTER 10 WORKING DAYS FROM COMPLETION OF FORMATION AND BEFORE THEY ARE ALLOWED TO CARRY CONCENTRATED FLOWS.	JUTE MATTING (1-350mm) OR EQUIVALENT ^[1] - LOW FLOWS TO MODERATE	<ul style="list-style-type: none"> - COMPLETE SUBSOIL TREATMENT (I.E. GYPSUM LIGHTLY RIPPED INTO SUBGRADE AT A RATE OF 5 TONNES/m²). - PLACE TOPSOIL TO A DEPTH OF AT LEAST 75mm. - COMPLETE ANY FERTILISATION AND SEEDING BEFORE LAYING THE MATTING. - INSTALL MATTING IN ACCORDANCE WITH SD 5-7. - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PERMANENTLY MAINTAINED.
			TURF REINFORCEMENT MATTING (TRM) (E.G. TERRAMAT OR EQUIVALENT ^[1]) - MODERATE FLOWS	<ul style="list-style-type: none"> - COMPLETE SUBSOIL TREATMENT (I.E. GYPSUM LIGHTLY RIPPED INTO SUBGRADE AT A RATE OF 5 TONNES/m²). - PLACE TOPSOIL TO A DEPTH OF AT LEAST 75mm. - COMPLETE ANY FERTILISATION AND SEEDING BEFORE LAYING THE MATTING. - INSTALL MATTING IN ACCORDANCE WITH SD 5-7. - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PERMANENTLY MAINTAINED.
			ROCK LINING - HIGH FLOWS	<ul style="list-style-type: none"> - COMPLETE SUBSOIL TREATMENT (I.E. GYPSUM LIGHTLY RIPPED INTO SUBGRADE AT A RATE OF 5 TONNES/m²). - INSTALL GEOTEXTILE UNDERLAY (IF SPECIFIED) IN ACCORDANCE WITH SD 5-7. - INSTALL ROCK ADJUDICATING TO THE DEPTH AND SIZE AS SPECIFIED ON THE PLAN. - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PROVIDED.
STOCKPILES	C-FACTOR = 0.10 (60% GRASS COVER OR EQUIVALENT GROUND COVER ^[1])	APPLIES AFTER 10 WORKING DAYS FROM COMPLETION OF FORMATION	SEEDING AND SOIL BINDER (I.E. VITAL P4/5/STONEWALL OR EQUIVALENT ^[1])	<ul style="list-style-type: none"> - APPLY SEED TO ALL STOCKPILE SURFACES (NOTE: SEEDING MAY NOT BE REQUIRED IF EXISTING SEEDING IS PRESENT). - SPRAY ALL STOCKPILE SURFACES WITH VITAL P4/5/STONEWALL OR EQUIVALENT^[1] - APPLICATION RATE = 1 / m² OF DILUTED VITAL MIXTURE - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PERMANENTLY MAINTAINED.
			GEOTEXTILE, JUTE MATTING, BLACK PLASTIC OR EQUIVALENT ^[1]	<ul style="list-style-type: none"> - COVER ALL EXPOSED SOILS. - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PROVIDED. - REFERS TO SD 7-1.
			TOPSOIL, SEEDING AND SOIL BINDER (I.E. VITAL P4/5/STONEWALL OR EQUIVALENT ^[1])	<ul style="list-style-type: none"> - COMPLETE SUBSOIL TREATMENT (I.E. GYPSUM LIGHTLY RIPPED INTO SUBGRADE AT A RATE OF 5 TONNES/m²). - PLACE GYPSUM TREATED TOPSOIL TO A DEPTH OF AT LEAST 75mm. - APPLY ANY FERTILISERS REQUIRED. - APPLY SEED TO ALL SURFACES. - SPRAY ALL SURFACES WITH VITAL P4/5/STONEWALL OR EQUIVALENT^[1] - VITAL DILUTION RATE = 1 (10 VITAL WATER) - APPLICATION RATE = 1 / m² OF DILUTED VITAL MIXTURE - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PERMANENTLY MAINTAINED. - REFERS TO SD 7-1.
GENERAL SURFACES	C-FACTOR = 0.10 / 0.05 160% / 100% GRASS COVER OR EQUIVALENT GROUND COVER ^[1]	C-FACTOR = 0.1 APPLIES AFTER 10 WORKING DAYS FROM COMPLETION OF FORMATION AND C-FACTOR = 0.05 APPLIES WITHIN A FURTHER 60 DAYS	HYDROHEAL OR EQUIVALENT ^[1]	<ul style="list-style-type: none"> - COMPLETE SUBSOIL TREATMENT (I.E. GYPSUM LIGHTLY RIPPED INTO SUBGRADE AT A RATE OF 5 TONNES/m²). - PLACE GYPSUM TREATED TOPSOIL TO A DEPTH OF AT LEAST 75mm. - APPLY HYDROHEAL WITH APPROVED SEED MIX TO SOIL SURFACE. - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PERMANENTLY MAINTAINED.
<p>[1] – EQUIVALENT COVER/PRODUCT MUST ACHIEVE THE EQUIVALENT C-FACTOR WITH PROVEN RESEARCH/DOCUMENTATION TO VERIFY THIS.</p> <p>STANDARD DRAWINGS REFERENCED CAN BE LOCATED IN THE 'SOILS & CONSTRUCTION, MANAGING URBAN STORMWATER' – VOLUME 1' BOOK BY LANDCOM. ALTERNATIVE DETAILS MAY BE SOUGHT IN CONSULTATION WITH THE ENGINEER</p>				

TABLE 2 - LIMITATIONS TO ACCESS DURING CONSTRUCTION		
LAND USE	LIMITATION	REMARKS
CONSTRUCTION AREAS	LIMITED TO 5 PERCENT OF 7 METERS FROM THE EDGE OF ANY EXISTING CONSTRUCTION ACTIVITY AS SHOWN ON ENGINEERING PLANS	ALL SITE WORKERS SHOULD CLEARLY RECOGNISE THESE AREAS THAT, WHERE APPROPRIATE, ARE IDENTIFIED WITH YELLOW DOWNSLOPE AND SEDIMENT FENCE DOWNSLOPE AND SIMILAR MATERIALS
ACCESS CORRIDORS	LIMITED TO A MAXIMUM WIDTH OF 7 METERS	THE SITE MANAGER WILL DETERMINE THE LOCATION OF THESE ZONES ON SITE, THEY CAN VARY IN POSITION SO AS TO BEST CONSERVE EXISTING VEGETATION AND PROTECT DOWNSTREAM AREAS WHILE BEING CONSERVATIVE OF THE NEEDS OF THE SITE WORKERS ACTIVITIES. ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE BOUNDARIES
REMAINING LANDS, INCLUDING REVEGETATION	ENTRY PROHIBITED EXCEPT FOR ESSENTIAL MANAGEMENT WORKS	THINNING OF GROWTH MUST BE NECESSARY, FOR EXAMPLE, FOR FIRE REDUCTION OR

1. ALL COMPONENTS AND INSTALLATION SHALL COMPLY WITH AS4678 AND THE STANDARDS REFERRED TO THEREIN.
2. MINIMUM HEIGHT (H) TO GEOGRID REINFORCEMENT LENGTH (L) TO BE 1.0.
3. MINIMUM BEARING CAPACITY OF FOUNDATION (BASED ON MINIMUM H/L RATIO OF 1.0) TO BE AS FOLLOWS :
 - a. H MAX. 2.0m = 100 kPa
 - b. H MAX. 3.5m = 150 kPa
 - c. H MAX. 5.0m = 200 kPa
4. BEFORE COMMENCEMENT OF CONSTRUCTION THE FOUNDATION SHALL BE INSPECTED AND VERIFIED BY A QUALIFIED GEOTECHNICAL ENGINEER.
5. WHEN MINIMUM BEARING IS NOT ACHIEVABLE OR NOT MEETING DESIGN REQUIREMENT, THE FOUNDATION MATERIAL IS TO BE EXCAVATED AND REPLACED WITH APPROVED MATERIAL PLACED IN ACCORDANCE WITH THE FILLING SPECIFICATION TO A MINIMUM COMPACTION OF 100% SMDD AND PLACED WITHIN 2% OF OMC.
6. MINIMUM SURCHARGE LOAD TO BE APPLIED AS FOLLOWS U.N.O. ON PLAN:
 - a. LIVE LOAD = 20 kPa
 - b. DEAD LOAD = 5 kPa
 - c. CONSTRUCTION TRAFFIC LIVE LOAD = 10 kPa
7. THE GEOTEXTILES SHALL BE OF THE TYPE AND INDEX STRENGTH NOMINATED ON THE DRAWINGS. THE MINIMUM GEOTEXTILES SHALL BE A SINGLE LENGTH IN THE DIRECTION OF DESIGN TENSION, NOT LAPPED, MAKING PROVISION FOR CONNECTION TO THE FACING ACROSS THE WHOLE WIDTH OF THE FACING AND PROVIDING FOR THE SPECIFIED ANCHORAGE WITHIN THE DESIGNATED ANCHORAGE ZONE. GEOTEXTILES SHALL COVER THE WHOLE OF THE PLAN AREA BEHIND THE WALL FOR THE SPECIFIED ANCHORAGE LENGTH AND SHALL BE LAPPED WITH ADJACENT SECTIONS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
8. MINIMUM WALL EMBEDMENT AT THE TOE OF THE WALL TO BE 300mm.
9. DESIGN LIFE OF STRUCTURE IS TO BE 100 YEARS.
10. SELECT BACKFILL MATERIAL WITHIN THE REINFORCED SOIL BLOCK SHALL BE SOUND GRANULAR MATERIAL OF NATURAL OR INDUSTRIAL ORIGIN, NON-EXPANSIVE, FREE FROM ORGANIC OR OTHER AGGREGATE MATERIAL CONFORMING TO THE PHYSICAL, CHEMICAL AND ELECTROCHEMICAL LIMITS AS SPECIFIED AND SHALL NOT BE SUBJECT TO BREAKDOWN UNDER COMPACTION. THE SELECT BACKFILL MATERIAL IS TO HAVE THE FOLLOWING PARAMETERS:
 - a. MINIMUM INTERNAL FRICTION, $\phi = 34^\circ$
 - b. EFFECTIVE COHESION, $C' = 0$ kPa
 - c. UNIT WEIGHT = 21 kN/m³
 - d. PH BETWEEN 4 AND 9.
11. SELECT BACKFILL IS TO BE PLACED AND COMPACTED IN LAYERS NOT MORE THAN 300mm (LOOSE). COMPACTION TO NOT LESS THAN 100% SMDD WILL BE ACHIEVED AND MATERIAL PLACED WITHIN 2% OF OMC. DENSITY TESTING SHALL BE PERFORMED IN EACH COMPACTED LIFT IN ACCORDANCE WITH AS3579.
12. PROVIDE A DRAINAGE LAYER DIRECTLY BEHIND THE FACING UNITS IN A MINIMUM 300mm wide, ~20mm aggregate layer. FACING UNIT JOINTS TO BE FILLED WITH AGGREGATE. PROVIDE MINIMUM 40mm AG. DRAIN IN GEOTEXTILE SOCK AT TOE OF WALL FACING AND CONNECT TO DRAINAGE SYSTEM AT 30m MAX. SPACING.
13. THE NEED FOR A CHIMNEY DRAIN OR DRAINAGE AT THE REAR OF THE MASS SOIL BLOCK IS TO BE CONFIRMED ON SITE BY THE GEOTECHNICAL ENGINEER AND DESIGNER FOLLOWING PREPARATION OF THE FOUNDATION AND PRIOR TO CONSTRUCTION OF THE MASS SOIL BLOCK.
14. CONSTRUCTION EQUIPMENT WEIGHING MORE THAN 500KG STATIC WEIGHT IS TO BE KEPT BACK 15m FROM THE REAR FACE OF THE WALL FACING UNITS. COMPACTION OF THE SELECT FILL MATERIAL WITHIN THE 15m STRIP ADJACENT TO THE WALL SHALL BE ACHIEVED BY LIGHT MECHANICAL TAMPERS (VIBRATING PLATE, TRENCH COMPACTOR OR SIMILAR) TO GIVE THE SAME DENSITY AS IN THE REMAINDER OF THE SELECT FILL.
15. ALL DESIGN AND CONSTRUCT WALL SYSTEM TO BE COMPLETED IN ACCORDANCE WITH THE NOTES.
16. TOP OF WALL HEIGHTS ARE NOTED TO ALIGN WITH FINISHED PAVEMENT HEIGHTS. THE CONTRACTOR AND THEIR DESIGN AND CONSTRUCT WALLING CONTRACTORS ARE TO ENSURE THAT ALL WALL STRAPS ARE INSTALLED BELOW THE DESIGN EARTHWORKS SUBGRADE. CONTRACTOR TO ALLOW FOR WALL STRAPS TO BE GRADED AWAY FROM THE FACE OF THE WALL OR OTHERWISE INSTALLED TO SUIT EARTHWORKS DESIGN LEVELS AND GRADES.

1. ALL COMPONENTS AND INSTALLATION SHALL COMPLY WITH AS4678 AND THE STANDARDS REFERRED TO THEREIN.
2. MINIMUM BEARING CAPACITY OF FOUNDATION TO BE AS FOLLOWS :
 - a. H MAX. 2.0m = 100 kPa
 - b. H MAX. 3.5m = 150 kPa
 - c. H MAX. 5.0m = 200 kPa
3. BEFORE COMMENCEMENT OF CONSTRUCTION THE FOUNDATION SHALL BE INSPECTED AND VERIFIED BY A QUALIFIED GEOTECHNICAL ENGINEER.
4. WHERE MINIMUM BEARING IS NOT ACHIEVABLE OR NOT MEETING DESIGN REQUIREMENT, THE FOUNDATION MATERIAL IS TO BE EXCAVATED AND REPLACED WITH APPROVED MATERIAL PLACED IN ACCORDANCE WITH THE FILLING SPECIFICATION TO A MINIMUM COMPACTION OF 100% SMDD AND PLACED WITHIN 2% OF OMC.
5. MINIMUM SURCHARGE LOADS TO BE APPLIED AS FOLLOWS U.N.O. ON PLAN:
 - a. LIVE LOAD = 20 kPa
 - b. DEAD LOAD = 5 kPa
 - c. CONSTRUCTION TRAFFIC LIVE LOAD = 10 kPa
6. MINIMUM WALL EMBEDMENT AT THE TOE OF THE WALL TO BE 300mm MINIMUM UNLESS NOTED OTHERWISE.
7. DESIGN LIFE OF STRUCTURE IS TO BE 100 YEARS.
8. TIE WALLS ARE TO BE TEMPORARILY PROPPED AT TOP UNTIL SUCH TIME THE TOP OF WALL IS TIED TO THE SLAB AND 28-DAY COMPRESSIVE STRENGTH HAS BEEN ACHIEVED.
9. CONSTRUCTION EQUIPMENT WEIGHING MORE THAN 500Ks STATIC WEIGHT IS TO BE KEPT BACK 15m FROM THE REARFACE OF THE WALL FACING UNITS. COMPACTION OF THE SELECT FILL MATERIAL WITHIN THE 15m STRIP ADJACENT TO THE WALL SHALL BE ACHIEVED BY LIGHT MECHANICAL TAMPERS (VIBRATING PLATE, TRENCH COMPACTOR OR SIMILAR) TO GIVE THE SAME DENSITY AS IN THE REMAINDER OF THE SELECT FILL.
10. ALL DESIGN AND CONSTRUCT WALL SYSTEM TO BE COMPLETED IN ACCORDANCE WITH THESE NOTES.
11. WALL ELEVATIONS ALLOW FOR NOMINAL EMBEDMENT DEPTHS. WHERE DESIGN AND CONSTRUCT (D-C) WALL SYSTEMS ARE PROPOSED IT IS THE CONTACTORS RESPONSIBILITY TO ALLOW FOR THE FINAL EMBEDMENT DEPTHS AS PER THE D-C DESIGN ALLOWANCE FOR OVERALL WALL AREAS TO CONSIDER THE FINAL EMBEDMENT DEPTH.
12. WALL ELEVATIONS AND AREAS ARE BASED ON THE VERTICAL PLAN AREA. CONTRACTOR TO ALLOW ADDITIONAL SURFACE AREA WHERE WALLS ARE NOT VERTICAL OR HAVE BACKSLOPES.

1. EXISTING SITE LEVELS AND DETAILS BASED ON A PLAN OF SURVEY '51145 001DT' BY 'LTS SURVEYORS' DATED 12.10.2020.

CONTAMINATED MATERIAL ENCOUNTERED DURING THE WORKS SHALL BE MANAGED IN ACCORDANCE WITH THE CONTAMINATION MANAGEMENT PLAN, WHICH FORMS PART OF THE CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN. A CAPPING LAYER CONSISTING OF CLEAN COMPACTED CLAY FILL (VENM ONLY) TO A MINIMUM DEPTH OF 100mm IS TO BE PROVIDED OVER THE SITE. CONTAMINATED MATERIAL CAN NOT BE REMOVED FOR OFF-SITE DISPOSAL.

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE DUST CONTROL MEASURES ARE APPLIED AND MAINTAINED IN ACCORDANCE WITH THE CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN.
2. THE APPLICATION OF LIQUID BASED DUST SUPPRESSION MEASURES MUST BE SUCH THAT SEDIMENT LADEN RUNOFF RESULTING FROM SUCH MEASURES DOES NOT CREATE A TRAFFIC OR ENVIRONMENTAL HAZARD. (EG USING HAY BALES)
3. DUST GENERATION ASSOCIATED WITH WIND EROSION TO BE CONTROLLED USING WATER TRUCKS, DUST SUPPRESSING FOG, MIST GENERATORS, SEALANT PLACED OVER THE SOIL, SURFACE ROUGHENING OR RE-VEGETATION.
4. THE FOLLOWING ACTIVITIES SHALL BE ADOPTED, IF NECESSARY, TO MANAGE DUST CONTROL ON SITE:
 - LIMITING THE AREA OF SOIL DISTURBANCE AT ANY GIVEN TIME
 - REPLACING TOPSOIL AFTER COMPLETION OF EARTHWORKS.
 - PROGRAMMING WORK TO MINIMISE THE LIFE OF STOCKPILES.
 - TEMPORARILY STABILISING LONG-TERM STOCKPILES.
 - GRAVELLING UNSEALED ACCESS AND HAUL ROADS.
 - MINIMISING TRAFFIC MOVEMENT ON EXPOSED SURFACES.
 - LIMITING VEHICULAR TRAFFIC TO 15km/h.
 - RETAINING EXISTING VEGETATION AS WIND BREAKS.
5. OIL, LANDFILL GAS CONDENSATE OR ANY CONTAMINATED LEACHATE OR STORMWATER IS NOT TO BE USED FOR DUST SUPPRESSION.

[illegible]



EXISTING SERVICES NOTES:

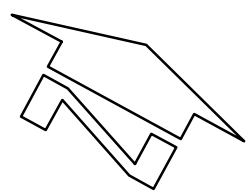
- DURING THE EXECUTION OF WORKS, THE CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF EXISTING SERVICES. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED TO THE EXISTING SERVICES TO THE SATISFACTION OF THE SUPERINTENDENT AND THE RELEVANT SERVICE AUTHORITY AT NO COST TO THE PRINCIPAL.
- WHERE IT IS NECESSARY TO REMOVE, DIVERT OR CUT INTO ANY EXISTING SERVICE, THE CONTRACTOR SHALL GIVE AT LEAST THREE (3) DAYS NOTICE OF ITS REQUIREMENTS TO THE SUPERINTENDENT, WHO WILL ADVISE WHAT ARRANGEMENTS SHOULD BE MADE FOR THE ALTERATION OF SUCH EXISTING WORKS.
- EXISTING SERVICES HAVE BEEN PLOTTED FROM SUPPLIED DATA. THE ACCURACY IS NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ESTABLISH THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO COMMENCING WORK. ALL CLEARANCES AND APPROVALS SHALL ALSO BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY PRIOR TO THE COMMENCEMENT OF WORK.
- ALL NEW AND EXHUMED SERVICES THAT CROSS EXISTING AND FUTURE ROADS/PAVEMENTS WITHIN THE SITE SHALL BE BACKFILLED WITH DGB20 MATERIAL TO SUBGRADE LEVEL AND COMPACTED TO 98% STANDARD DENSITY RATIO. SUBJECT TO PRIOR APPROVAL FROM RELEVANT AUTHORITY.
- ON COMPLETION OF SERVICES INSTALLATION, ALL DISTURBED AREAS SHALL BE RESTORED TO ORIGINAL, INCLUDING KERBS, FOOTPATHS, CONCRETE AREAS, GRAVEL AREAS, GRASSED AREAS AND ROAD PAVEMENTS.
- CARE TO BE TAKEN WHEN EXCAVATING NEAR UTILITY SERVICES. NO MECHANICAL EXCAVATION TO BE UNDERTAKEN OVER SERVICES. LIAISE WITH RELEVANT AUTHORITY.
- THE CONTRACTOR SHALL ALLOW FOR THE CAPPING OFF, EXCAVATION AND REMOVAL IF REQUIRED OF ALL EXISTING SERVICES IN AREAS AFFECTED BY THE WORKS WITHIN THE CONTRACT AREA AS SHOWN ON THE DRAWINGS UNLESS DIRECTED OTHERWISE BY THE SUPERINTENDENT. ALL TO REGULATORY AUTHORITY STANDARDS AND APPROVAL.
- THE CONTRACTOR IS TO MAINTAIN EXISTING STORMWATER DRAINAGE FLOWS THROUGH THE ROADS AT ALL TIMES. MAKE DUE ALLOWANCE FOR ALL SUCH FLOWS AT ALL TIMES.
- PRIOR TO COMMENCEMENT OF ANY WORKS THE CONTRACTOR SHALL OBTAIN THE SUPERINTENDENT'S APPROVAL OF THE PROGRAM FOR THE RELOCATION/CONSTRUCTION OF TEMPORARY SERVICES.
- CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES AS REQUIRED TO MAINTAIN EXISTING SUPPLY TO BUILDINGS REMAINING IN OPERATION DURING WORKS TO THE SATISFACTION AND APPROVAL OF THE SUPERINTENDENT. ONCE DIVERSION IS COMPLETE AND COMMISSIONED THE CONTRACTOR SHALL REMOVE ALL SUCH TEMPORARY SERVICES AND MAKE GOOD TO THE SATISFACTION OF THE SUPERINTENDENT.
- INTERRUPTION TO SUPPLY OF EXISTING SERVICES SHALL BE DONE SO AS NOT TO CAUSE ANY INCONVENIENCE OR DAMAGE TO THE ADJACENT RESIDENCES. CONTRACTOR TO GAIN APPROVAL OF THE SUPERINTENDENT FOR TIME OF INTERRUPTION.
- THE CONTRACTOR SHALL UNDERTAKE A DIAL BEFORE YOU DIG (DBYD 1100) SERVICES SEARCH BEFORE THE COMMENCEMENT OF ANY WORKS.

LEGEND:

LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON ESTATE DESIGN INFORMATION PROVIDED BY LTS SURVEYORS DATED 12.10.20 REF 51145001DT

- EXISTING SYDNEY WATER MAIN
- EXISTING SEWER MAIN
- EXISTING UNDERGROUND ELECTRICAL
- EXISTING UNDERGROUND TELECOM
- EXISTING GAS
- EXISTING STORMWATER



EXISTING SERVICES PLAN

SCALE 1:400

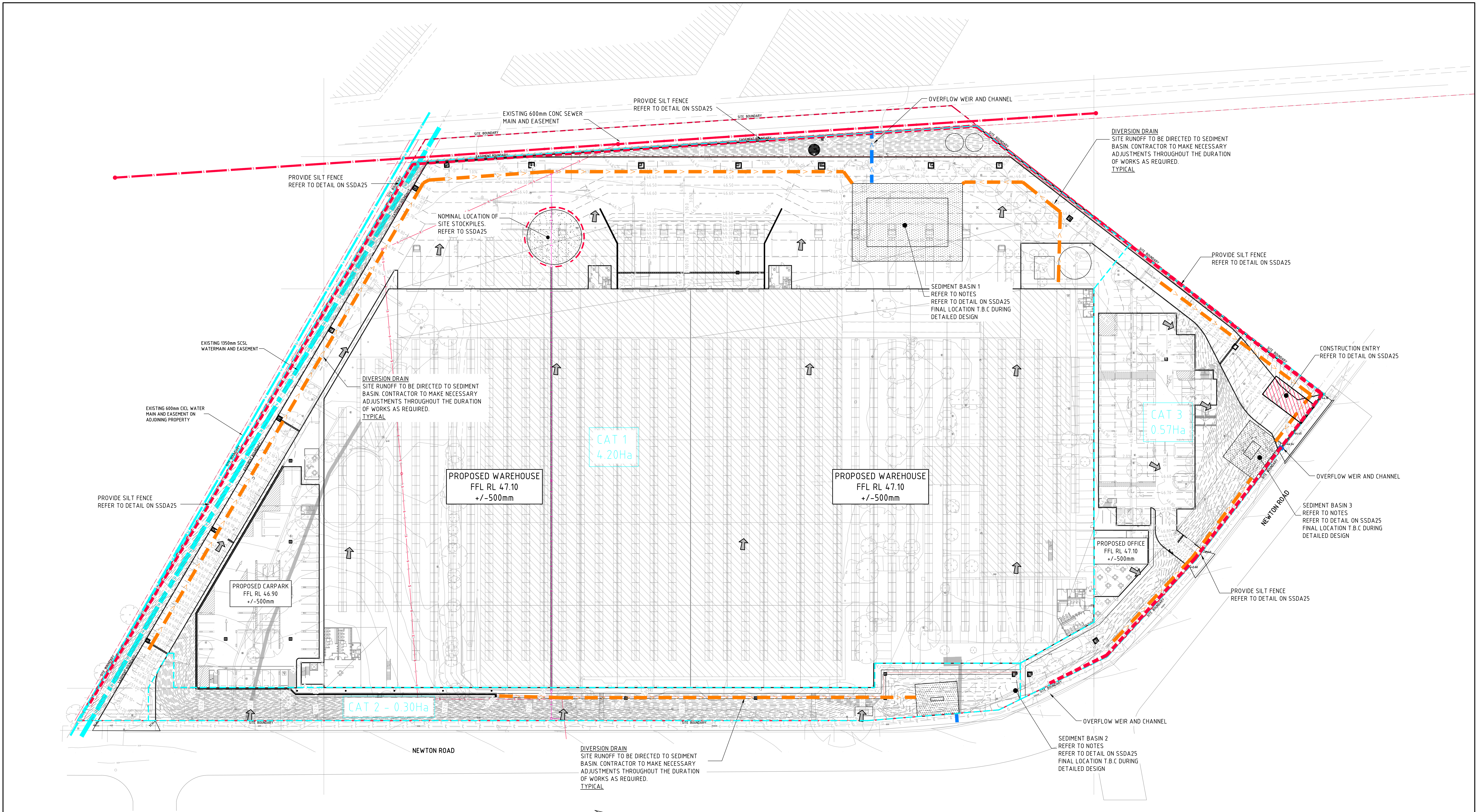
FOR DEVELOPMENT APPLICATION

4m 0 10 20 30 40m
SCALE 1:400 AT A0 SIZE SHEET

ISSUED FOR DEVELOPMENT APPLICATION				12.02.25				C							
ISSUED FOR DEVELOPMENT APPLICATION				29.04.24				B							
ISSUED FOR DEVELOPMENT APPLICATION				15.02.24				A							
AMENDMENTS				DATE	ISSUE	AMENDMENTS	DATE	ISSUE	AMENDMENTS	DATE	ISSUE	AMENDMENTS	DATE	ISSUE	AMENDMENTS

ARCHITECT	CLIENT	PROJECT	CONSULTANT	PROJECT	PROJECT	PROJECT	PROJECT	PROJECT	PROJECT	PROJECT	PROJECT	PROJECT	PROJECT	PROJECT	PROJECT
SBA	Centuria	PROPOSED WAREHOUSE	Costin Roe Consulting Pty Ltd.	88 NEWTON ROAD, WETHERILL PARK NSW 2164	PO Box 1415 Sydney NSW 1220	PO Box 1415 Sydney NSW 1220	PO Box 1415 Sydney NSW 1220	PO Box 1415 Sydney NSW 1220	PO Box 1415 Sydney NSW 1220	PO Box 1415 Sydney NSW 1220	PO Box 1415 Sydney NSW 1220	PO Box 1415 Sydney NSW 1220	PO Box 1415 Sydney NSW 1220	PO Box 1415 Sydney NSW 1220	PO Box 1415 Sydney NSW 1220
					Level 4, 4 Woodmill Street, Millers Point NSW 2000	Level 4, 4 Woodmill Street, Millers Point NSW 2000	Level 4, 4 Woodmill Street, Millers Point NSW 2000	Level 4, 4 Woodmill Street, Millers Point NSW 2000	Level 4, 4 Woodmill Street, Millers Point NSW 2000	Level 4, 4 Woodmill Street, Millers Point NSW 2000	Level 4, 4 Woodmill Street, Millers Point NSW 2000	Level 4, 4 Woodmill Street, Millers Point NSW 2000	Level 4, 4 Woodmill Street, Millers Point NSW 2000	Level 4, 4 Woodmill Street, Millers Point NSW 2000	Level 4, 4 Woodmill Street, Millers Point NSW 2000
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					e: mail@costinroe.com.au	e: mail@costinroe.com.au	e: mail@costinroe.com.au	e: mail@costinroe.com.au	e: mail@costinroe.com.au	e: mail@costinroe.com.au	e: mail@costinroe.com.au	e: mail@costinroe.com.au	e: mail@costinroe.com.au	e: mail@costinroe.com.au	e: mail@costinroe.com.au
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					w: costinroe.com.au	w: costinroe.com.au	w: costinroe.com.au	w: costinroe.com.au	w: costinroe.com.au	w: costinroe.com.au	w: costinroe.com.au	w: costinroe.com.au	w: costinroe.com.au	w: costinroe.com.au	w: costinroe.com.au

DRAWING TITLE	DRAWING No	ISSUE
EXISTING SERVICES PLAN	C015039.01-DA 15	C



LEGEND:
PROVIDE 1m RETURNS TO SILT FENCE AT 30m MAX. INTERVALS. TYPICAL (N.S.O.P.)

- DENOTES DIVERSION DRAIN
- DENOTES SILT FENCE WITH CATCH DRAIN
- DENOTES SILT FENCE ONLY
- CATCHMENT BOUNDARY
- DENOTES CONSTRUCTION ENTRY
- OVERLAND FLOW DIRECTION
- SEDIMENT BASIN (REFER TO PLAN)

SEDIMENTATION BASIN NOTE:
FOR SEDIMENT & EROSION CONTROL DETAILS REFER TO DRAWING C015039.01-DA25.

SEDIMENTATION BASIN SIZING BASED ON RECOMMENDATIONS OF 'SOILS AND CONSTRUCTION, MANAGING URBAN STORMWATER-THE BLUE BOOK'. CAPACITY BASED UPON 5 DAY RAINFALL DEPTH AT 85th PERCENTILE INTENSITY (32.2mm).

APPROXIMATE AREA OF DISTURBED SITE = 5.07Ha

SEDIMENTATION BASINS TO COLLECT RUN-OFF IN EXTREME RAINFALL EVENTS. COLLECTED RUN-OFF TO BE ASSESSED BY A QUALIFIED LABORATORY FOR DOUSING RATES OF ALUM OR GYPSUM TO ENSURE COAGULATION OF SEDIMENTS PRIOR TO WATER BEING DISCHARGED TO COUNCIL STORMWATER SYSTEM.

EACH BASIN IS TO HAVE A MARKER PLACED AS PER THE DETAIL TO INDICATE WHEN SEDIMENT IS TO BE REMOVED. REMOVED SEDIMENT IS TO BE CLASSED AND DEWATERED PRIOR TO REMOVAL FROM SITE.

ALLOWANCE TO BE MADE DURING BENCHING OF SITE TO ENSURE RUN-OFF IS DIRECTED TO SEDIMENTATION BASINS.

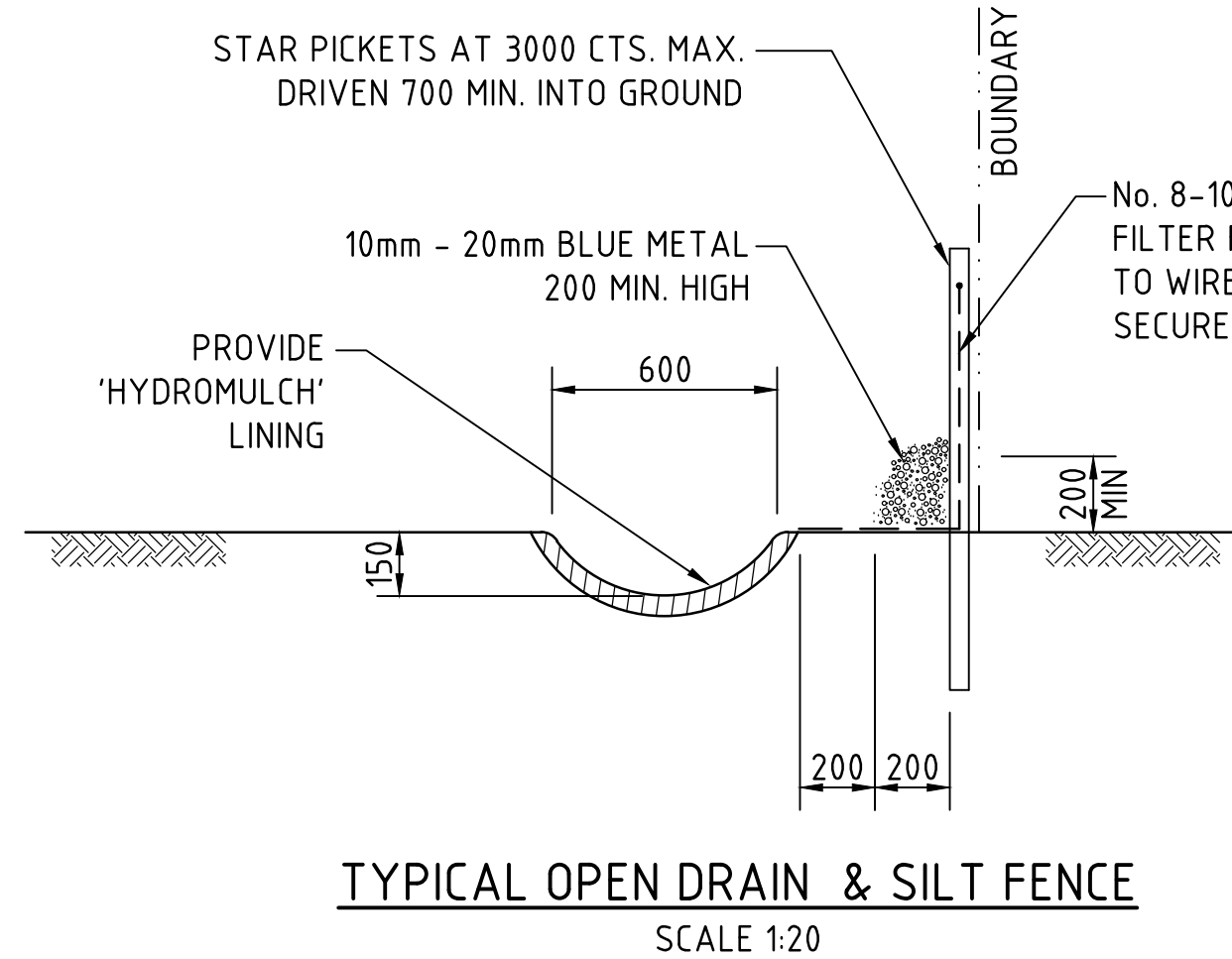
NOTES:
1. ASSUME TYPE D SOIL (CLAY/SILTY CLAY)
2. ASSUME GROUP D SOIL (HIGH PLASTICITY AND SHRINK/SWELL PROPERTIES)
SOIL TYPE ASSESSED FROM GEOTECHNICAL REPORT PROVIDED BY XXXX TITLED XXXX DATED XXXX.

EROSION AND SEDIMENT CONTROL PLAN
SCALE 1:400

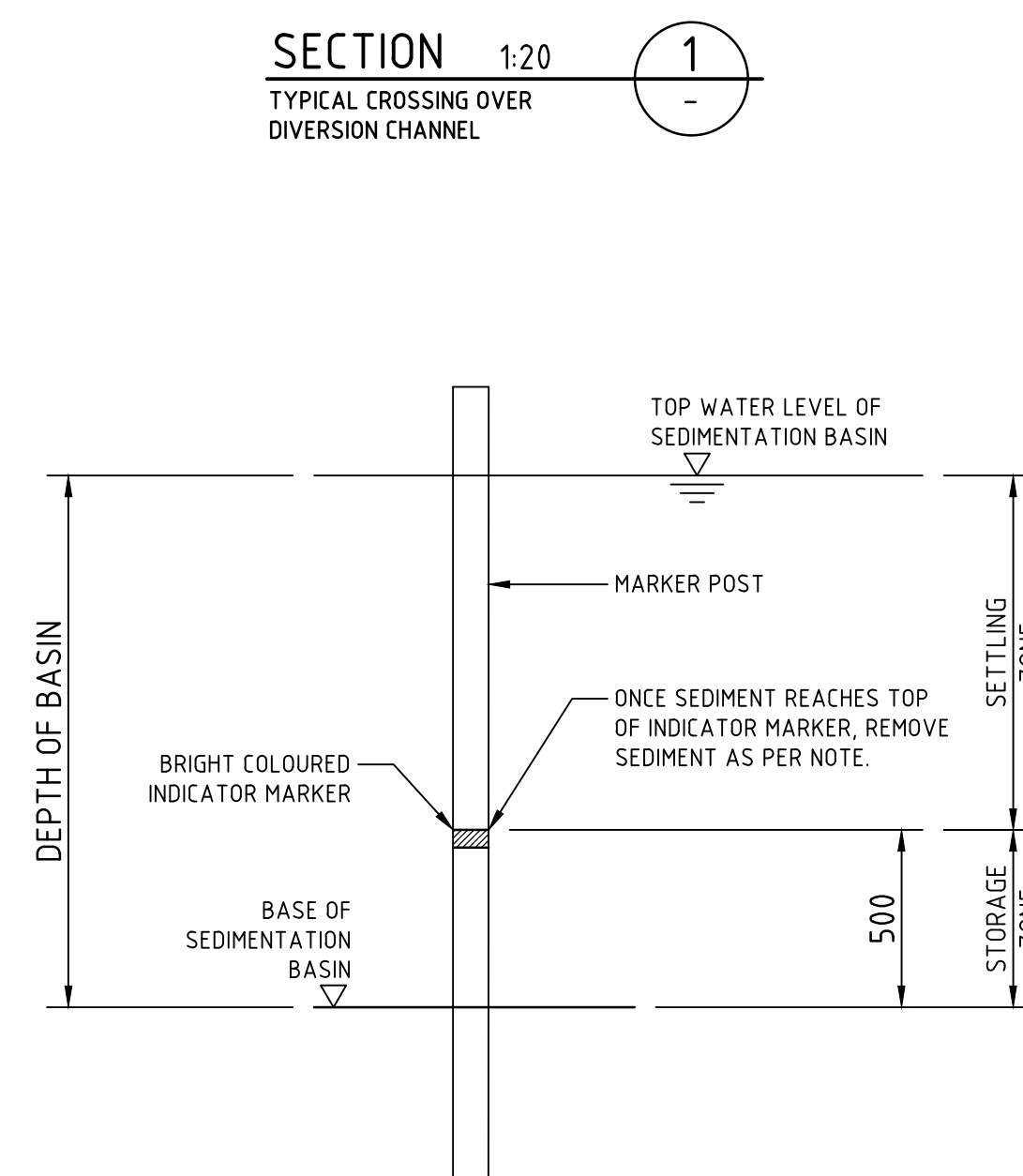
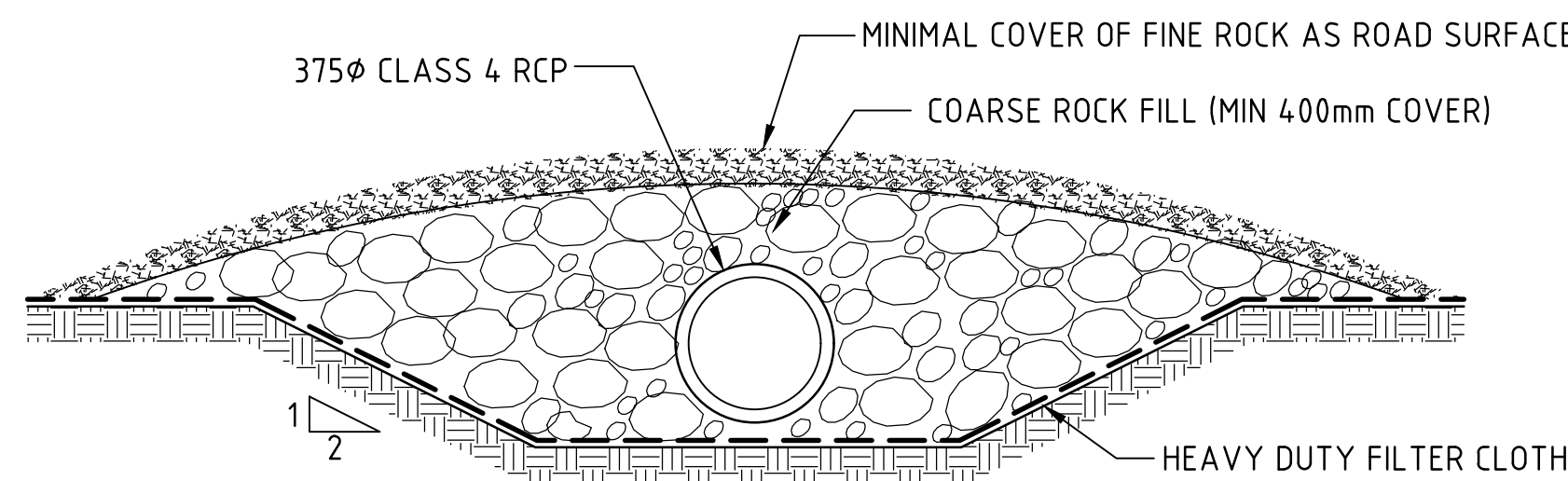
EROSION CONTROL NOTES:
REFER TO DRAWING DA11 FOR EROSION AND SEDIMENT CONTROL NOTES

SEDIMENT BASIN 1 DIMENSIONS:		SEDIMENT BASIN 2 DIMENSIONS:		SEDIMENT BASIN 3 DIMENSIONS:	
CATCHMENT AREA	= 4.20 ha	CATCHMENT AREA	= 0.30 ha	CATCHMENT AREA	= 0.57 ha
DISTURBED AREA	= 4.20 ha	DISTURBED AREA	= 0.30 ha	DISTURBED AREA	= 0.57 ha
REQUIRED BASIN VOLUME	= 867m ³	REQUIRED BASIN VOLUME	= 75m ³	REQUIRED BASIN VOLUME	= 119m ³
BASE DIMENSIONS (L X B)	= 25m x 15m	BASE DIMENSIONS (L X B)	= 4m x 1m	BASE DIMENSIONS (L X B)	= 5m x 3m
TOP DIMENSIONS (L X B)	= 34m x 24m	TOP DIMENSIONS (L X B)	= 13m x 10m	TOP DIMENSIONS (L X B)	= 14m x 12m
MAX SIDE SLOPE	= 1V:3H	MAX SIDE SLOPE	= 1V:3H	MAX SIDE SLOPE	= 1V:3H
DEPTH	= 1.5m	DEPTH	= 1.5m	DEPTH	= 1.5m
PROVIDED BASIN VOLUME	= 872m ³	PROVIDED BASIN VOLUME	= 78m ³	PROVIDED BASIN VOLUME	= 119m ³
Q10 WEIR PEAK FLOW	= 1.052m ³ /s	Q10 WEIR PEAK FLOW	= 0.091m ³ /s	Q10 WEIR PEAK FLOW	= 0.145m ³ /s
SPILLWAY WIDTH	= 4.0m	SPILLWAY WIDTH	= 1.0m	SPILLWAY WIDTH	= 1.0m
SPILLWAY DEPTH	= 0.3m	SPILLWAY DEPTH	= 0.3m	SPILLWAY DEPTH	= 0.3m

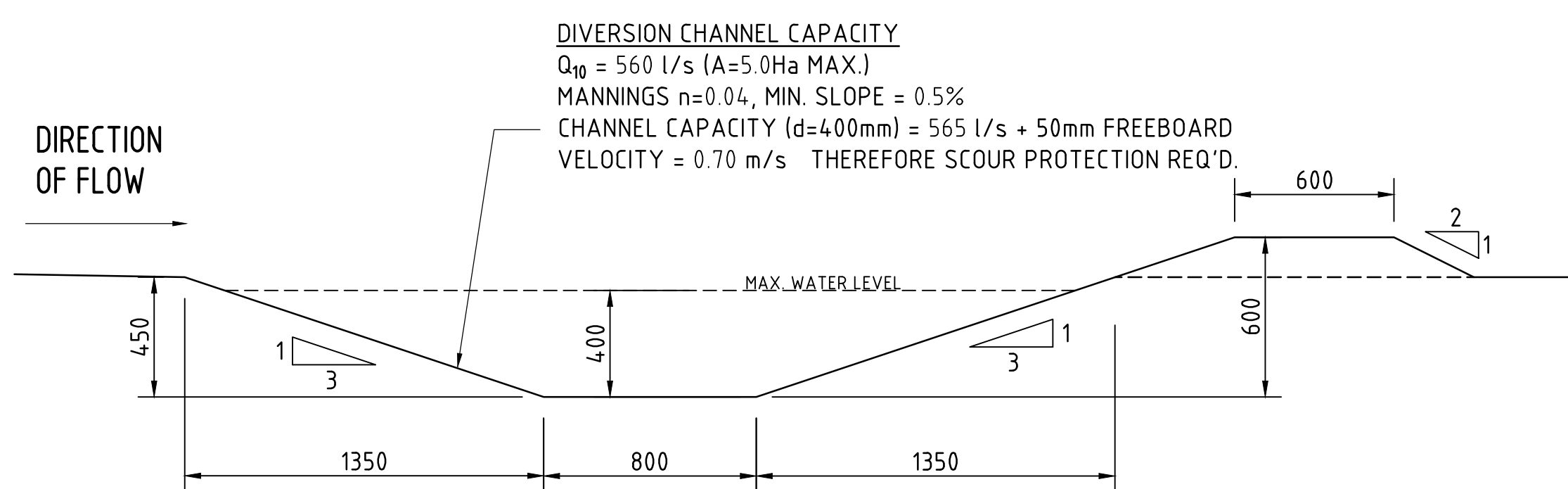
4m 0 10 20 30 40m
SCALE 1:400 AT A0 SIZE SHEET



1. PLACE ALL STOCKPILES IN LOCATIONS MORE THAN 5m FROM EXISTING VEGETATION, ROADS & HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT ELONGATED MOUNDS. SIDE SLOPE TO BE 1 V: 2 H MAX.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2m IN HEIGHT.
4. WHERE STOCKPILES ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE USING WOOD CHIP MULCH - 46 TONNE/ha.
5. CONSTRUCT SILT FENCE WITH CATCH DRAIN ON UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES & SILT FENCE ONLY 1 TO 2m DOWNSLOPE AS SHOWN.



SEDIMENT STORAGE MARKER
SCALE 1:20

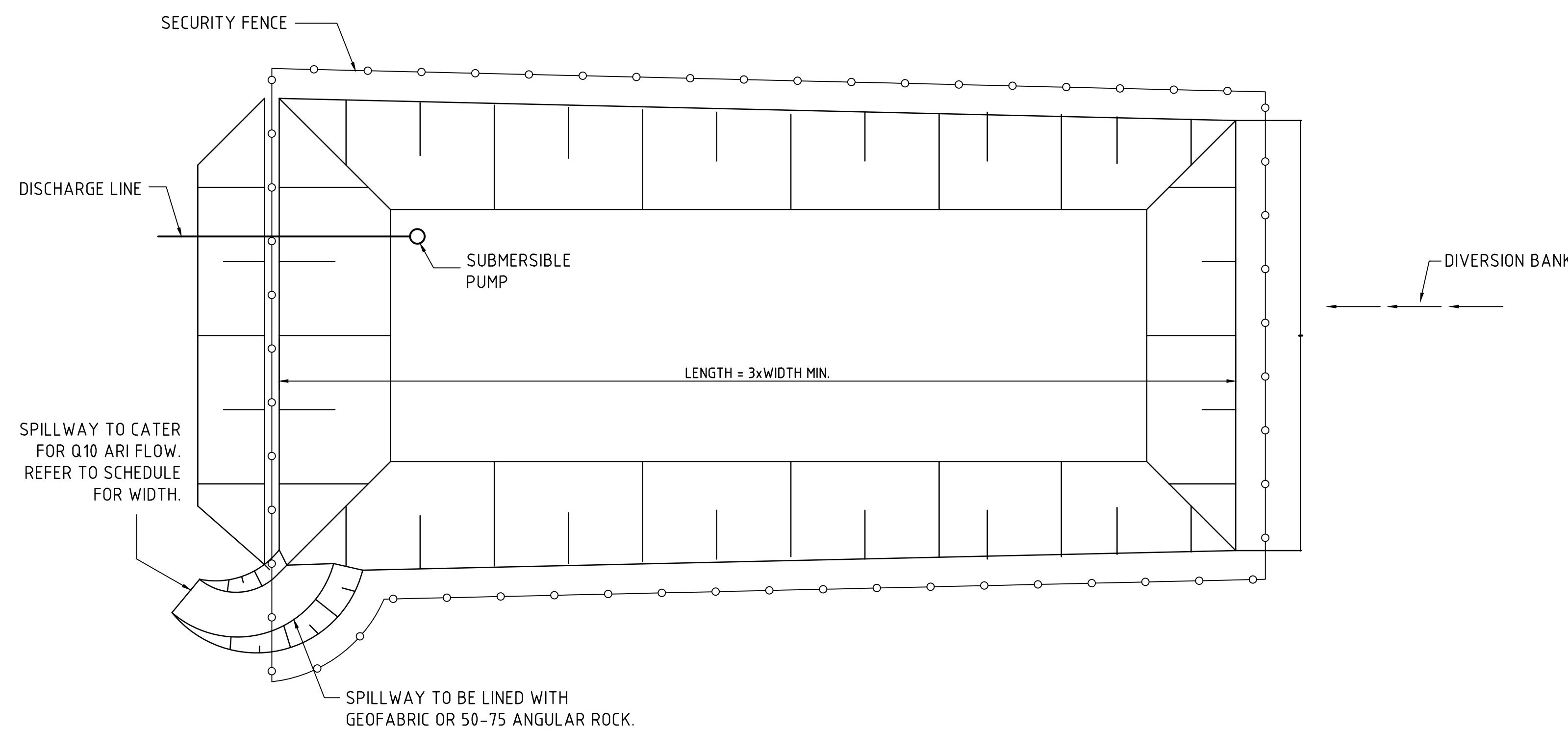


DIVERSION DRAIN SECTION - 3500 WIDE

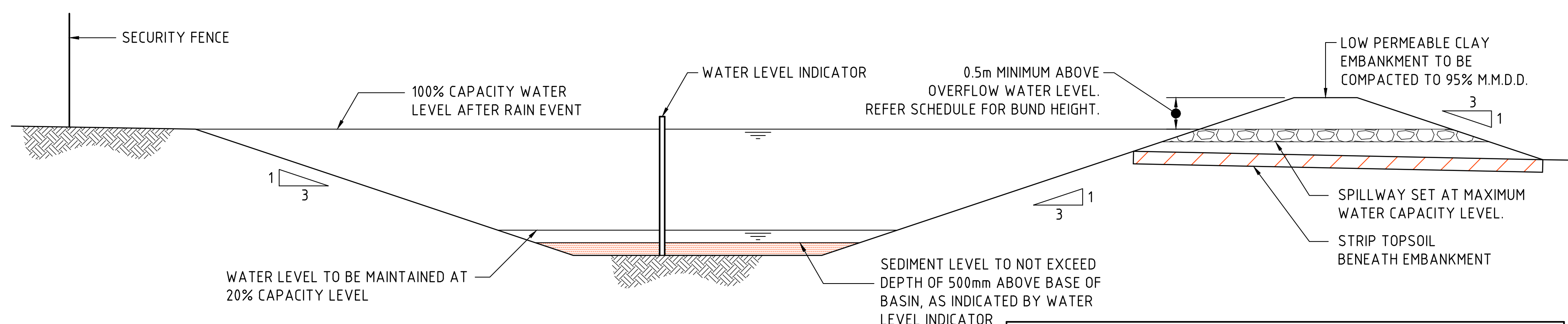
TEMPORARILY PROTECT THE SWALE FROM EROSION DURING CONSTRUCTION.

TEMPORARY DIVERSION DRAINS & EARTHEN CLEAN WATER DIVERSION DRAINS SHALL BE STABILISED BY:

- TURF REINFORCEMENT; OR
- GEOFABRIC LINER; OR
- POLYMER HYDRAULIC SOIL STABILISER. DOSAGE TO BE TO MANUFACTURER'S SPECIFICATION FOR FLOW RATES NOMINATED. DOSAGE SHALL BE SUCH THAT $C \geq 0.05$.



TYPICAL SEDIMENT CONTROL POND PLAN
SCALE 1:250



TYPICAL SEDIMENT CONTROL BASIN SECTION
SCALE 1:50

SPILLWAY SCHEDULE					
CATCHMENT (Ha)	FLOW (m ³ /s)	WIDTH (m)	FLOW DEPTH (m)	ROCK SIZE (mm)	BUND HEIGHT ABOVE SPILLWAY (m)
1	0.3	2	0.20	200	0.70
2	0.6	4	0.20	200	0.70
5	1.4	5	0.30	200	0.80
10	2.8	8	0.35	200	0.85
20	5.5	14	0.40	250	0.90
4.0	11.0	20	0.50	250	1.00

Site area	Sub-catchment or Name of Structure						Notes
	1	2	3				
Total catchment area (ha)	4.14	0.38	0.57				
Disturbed catchment area (ha)	4.14	0.38	0.57				

Soil analysis (enter sediment type if known, or laboratory particle size data)				
Sediment Type (C, F or D) if known:	D	D	D	From Appendix C (if known)
% sand (fraction 0.02 to 2.00 mm)				Enter the percentage of each soil particle. E.g. enter 10 for 10%.
% silt (fraction 0.002 to 0.02 mm)				
% clay (fraction finer than 0.002 mm)				
Dispersion percentage % of whole soil dispersible				E.g. enter 10 for dispersion of 10%. See Section 6.3.3 (e). Auto-calculated.
Soil Texture Group	D	D	D	Automatic calculation from above

Rainfall data				
Design rainfall depth (no of days)	5	5	5	See Section 6.3.4 and, particularly, Table 6.3 on pages 6-24 and 6-25.
Design rainfall depth (percentile)	85	85	85	
x-day, y-percentile rainfall event (mm)	32.2	32.2	32.2	
Rainfall R-factor (if known)				Only need to enter one or the other here
IFD: 2-year, 6-hour storm (if known)	10	10	10	

RUSLE Factors									
Rainfall erosivity (<i>R</i> -factor)	2210	2210	2210						Auto-filled from above
Soil erodibility (<i>K</i> -factor)	0.075	0.075	0.075						
Slope length (m)	200	100	100						
Slope gradient (%)	0.5	0.5	0.5						
Length/gradient (<i>LS</i> -factor)	0.12	0.11	0.11						RUSLE LS factor calculated for a high livestock ratio.
Erosion control practice (<i>P</i> -factor)	1.3	1.3	1.3		1.3	1.3	1.3		
Ground cover (<i>C</i> -factor)	1	1	1		1	1	1		

Sediment Basin Design Criteria (for Type D/F basins only. Leave blank for Type C basins)							
Storage (soil) zone design (no of months)	2	2	2				Minimum is generally 2 months
Cv (Volumetric runoff coefficient)	0.64	0.64	0.64				See Table F2, page F-4 in Appendix F

Soil loss (lb/yr)	26	23	23	
Soil Loss Class	1	1	1	See Table 4.2, page 4-13
Soil loss (m^3 /day/yr)	20	18	18	Conversion to cubic metres
Sediment basin storage (soil) volume (m^3)	14	1	2	See Sections 6.3.4(i) for calculations
Sediment basin settling (water) volume (m^3)	853	74	117	See Sections 6.3.4(i) for calculations
Sediment basin total volume (m^3)	867	75	119	

NB for sizing of Type C (coarse) sediment basins, see Worksheet 3 (if required)

Structure Details						
Structure Name	1	2	3			Auto-filled from Worksheet 1
Catchment Area (ha)	4.14	0.36	0.57			Auto-filled from Worksheet 1
Time of concentration (tc)	7	3	3			Auto-calculated assuming to is halved

Rainfall Intensities (FD Values)					
1 year, tc	52.51	52.51	52.51		Enter the relevant rainfall intensities (in mm/hr) for each of the nominated rainfall events. The time of concentration (tc) determines the duration of the event to be used
2 year, tc	68.08	68.08	68.08		
5 year, tc	89.03	89.03	89.03		
10 year, tc	101.56	101.56	101.56		
20 year, tc	117.91	117.91	117.91		
50 year, tc	139.5	139.5	139.5		
100 year, tc	156.1	156.1	156.1		

C ₁₂ runoff coefficient	0.9	0.9	0.9				Use AR&R or Table F3, pg F-6
Design ARI event (select):	10	10	10				Select design ARI (years) from dropdown
Frequency Factor	1	1	1	#N/A	#N/A	#N/A	Auto-filled based on selected ARI
Flow Calculation	1.052	0.091	0.145	#N/A	#N/A	#N/A	Auto-calculated based on selected ARI

where: Q_p is peak flow rate (m^3/sec) of average recurrence interval (ARI) of " T " years
 C_{10} is the runoff coefficient (dimensionless) for ARI of 10 years.
 F_T is a frequency factor for " T " years.
 A is the catchment area in hectares (ha)
 $I_{T, \tau}$ is the average rainfall intensity (mm/hr) for an ARI of " T " years
and a design duration of " τ " (minutes or hours)

$$\text{Time of concentration (t)} = 0.76 \times (A/100)^{0.38} \text{ hrs}$$

Note: For urban catchments the time of concentration should be determined by more precise calculations or reduced by a factor of 50 per cent. Place an x in the appropriate row below to automatically halve the time of concentration for that sub-catchment.

Structure Details								Notes
Name	1	2	3					
Catchment Area (ha)	4.14	0.36	0.57					
Place an x here to halve tc	x	x	x					Place an x if disturbed catchment
Time of concentration (tc)	7	3	3					minutes

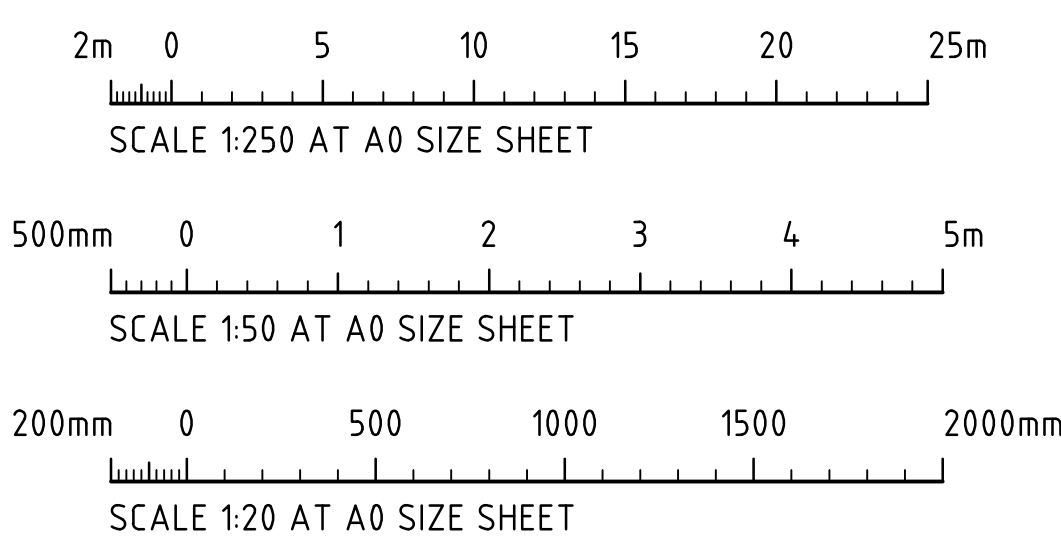
Rainfall Intensities									
1-year, tc	69.6	69.6	69.6						Enter the relevant rainfall intensities (in mm/hr) for each of the nominated rainfall events. The time of concentration (tc) determines the duration of the event to be used
2-year, tc	90.1	90.1	90.1						
5-year, tc	118	118	118						
10-year, tc	134	134	134						
20-year, tc	155	155	155						
50-year, tc	184	184	184						
100-year, tc	205	205	205						

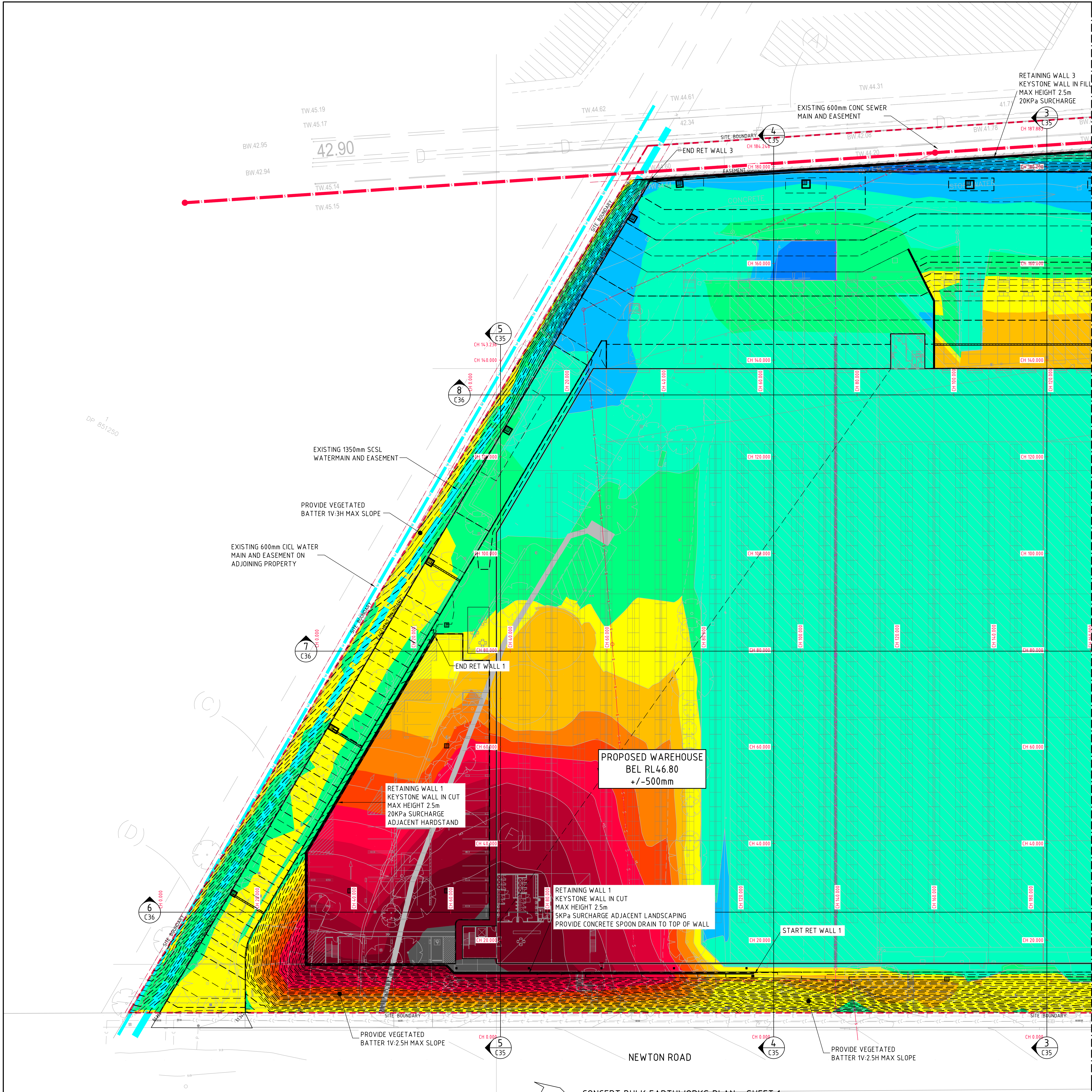
C10 runoff coefficient	0.9	0.9	0.9							Use AR&R or Table F3, pg F-6
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Frequency Factors									
FF, 1-year	0.8	0.8	0.8						Can use 0.8 for a construction site
FF, 2-year	0.85	0.85	0.85						Can use 0.85 for a construction site
FF, 5-year	0.90	0.90	0.90						Can use 0.95 for a construction site
FF, 10-year	1	1	1						Generally always 1
FF, 20-year	1.05	1.05	1.05						Can use 1.05 for a construction site
FF, 50-year	1.15	1.15	1.15						Can use 1.15 for a construction site
FF, 100-year	1.2	1.2	1.2						Can use 1.2 for a construction site

Flow Calculations					Notes	
1-year, t_c (m ³ /s)	0.577	0.05	0.079			
2-year, t_c (m ³ /s)	0.793	0.069	0.109			
5-year, t_c (m ³ /s)	1.161	0.101	0.16			
10-year, t_c (m ³ /s)	1.388	0.121	0.191			
20-year, t_c (m ³ /s)	1.686	0.147	0.232			
50-year, t_c (m ³ /s)	2.192	0.191	0.302			
100-year, t_c (m ³ /s)	2.548	0.222	0.351			

NB for flow calculations on sediment basin spillways, see Worksheet 3 (if required).





LEGEND:
LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED BY LTS SURVEYORS DATED 12.10.20.

- 50.00 — - EXISTING CONTOUR (0.2m INTERVAL)
- - - 50.00 - - B.E.L. CONTOUR (MAJOR 1.0m)
- - - 50.10 - - B.E.L. CONTOUR (MINOR 0.25m)
- ▲ 50.00 - B.E.L. SPOT LEVEL
- - SGGP, SINGLE GRATED GULLY PIT
- W — - EXISTING SYDNEY WATER MAIN
- S — - EXISTING SEWER MAIN

PAVEMENT FFL
DEPTH OF PAVEMENT. REFER TO STRUCTURAL PLANS FOR DETAILS.

NOMINATED B.E.L. DETAIL
NTS

CONCEPT EARTHWORKS ESTIMATES

SITE AREA = 5.07 Ha

DELETERIOUS MATERIAL STRIP = (-10,100m³) (TO BE EXPORTED/REUSED) (200mm OVER 5.07 Ha)

CUT = -15,350m³
FILL = +28,900m³

ALLOWANCES
DETAILED EXCAVATION (1,500m³/Ha) = -7,600m³

DIFFERENCE = +5,950m³ (i.e. IMPORT REQUIRED)

NOTE:
VOLUMES BASED ON 200mm DELETERIOUS MATERIAL STRIP OVER THE NOMINATED AREA. EARTHWORKS VOLUMES ARE APPROXIMATE ONLY. NO ALLOWANCE HAS BEEN MADE FOR DELETERIOUS MATERIAL, EROSION AND SEDIMENT CONTROL, BULKING OR COMPACTION OF FILLED SOILS, THE REMOVAL OF UNCONTROLLED OR CONTAMINATED MATERIAL OR ANY OTHER UNSPECIFIED EXCAVATION RELATED TO CONSTRUCTION ACTIVITIES. DETAILED EXCAVATION ALLOWANCE IS APPROXIMATE ONLY AND ACCOUNTS FOR STORMWATER/SERVICES TRENCHING AND FOUNDATIONS. THE DETAILED EXCAVATION VOLUMES ARE TO BE CONFIRMED BY THE CONTRACTOR. REFER ANY CONCERNS TO ENGINEER.

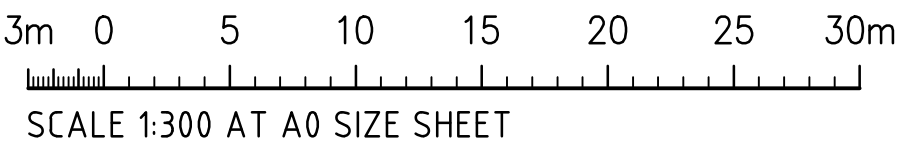
SITE PREPARATION NOTES:
REFER TO DRAWING DA11 FOR SITE PREPARATION NOTES

DEPTH RANGE		
No.	FROM DEPTH	TO DEPTH
1	-5.000	-4.500
2	-4.500	-4.000
3	-4.000	-3.500
4	-3.500	-3.000
5	-3.000	-2.500
6	-2.500	-2.000
7	-2.000	-1.500
8	-1.500	-1.000
9	-1.000	-0.500
10	-0.500	0.000
11	0.000	0.500
12	0.500	1.000
13	1.000	1.500
14	1.500	2.000
15	2.000	2.500

ALLOWANCES FOR STRUCTURE	
DEPTH OF PAVEMENT	
INTERNAL WAREHOUSE	300mm
OFFICE	300mm
EXTERNAL HARDSTAND	300mm
CAR PARK	300mm
LANDSCAPING	300mm
PEDESTRIAN	300mm

CONCEPT BULK EARTHWORKS PLAN - SHEET 1
SCALE 1:300

FOR DEVELOPMENT APPLICATION

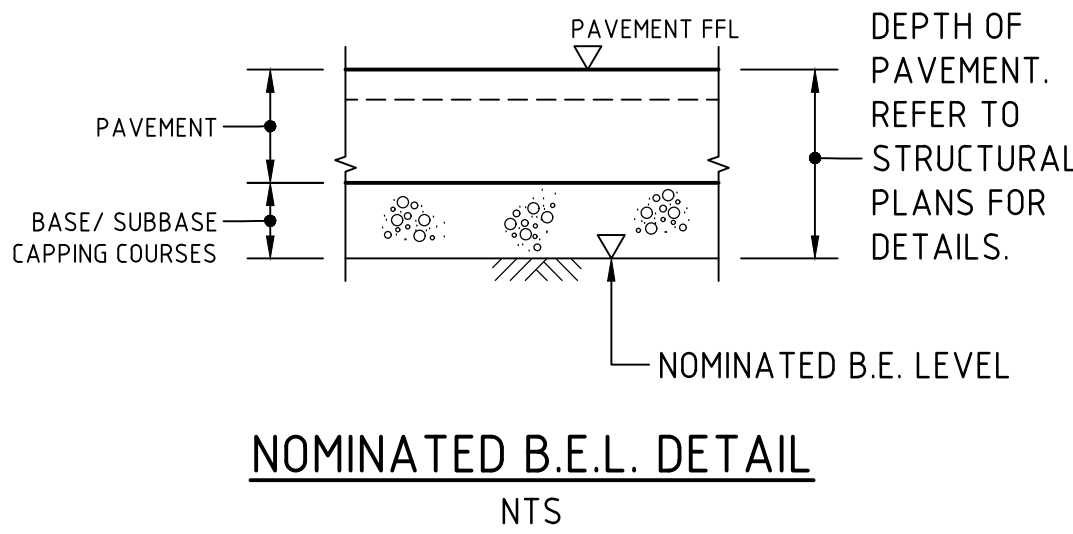


LEGEND:

LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY
INFORMATION PROVIDED BY LTS SURVEYORS DATED 12.10.20.

- 50.00 - EXISTING CONTOUR (0.2m INTERVAL)
- 50.00 - B.E.L. CONTOUR (MAJOR 1.0m)
- 50.10 - B.E.L. CONTOUR (MINOR 0.25m)
- 50.00 - B.E.L. SPOT LEVEL
- SGGP, SINGLE GRATED GULLY PIT
- EXISTING SYDNEY WATER MAIN
- EXISTING SEWER MAIN



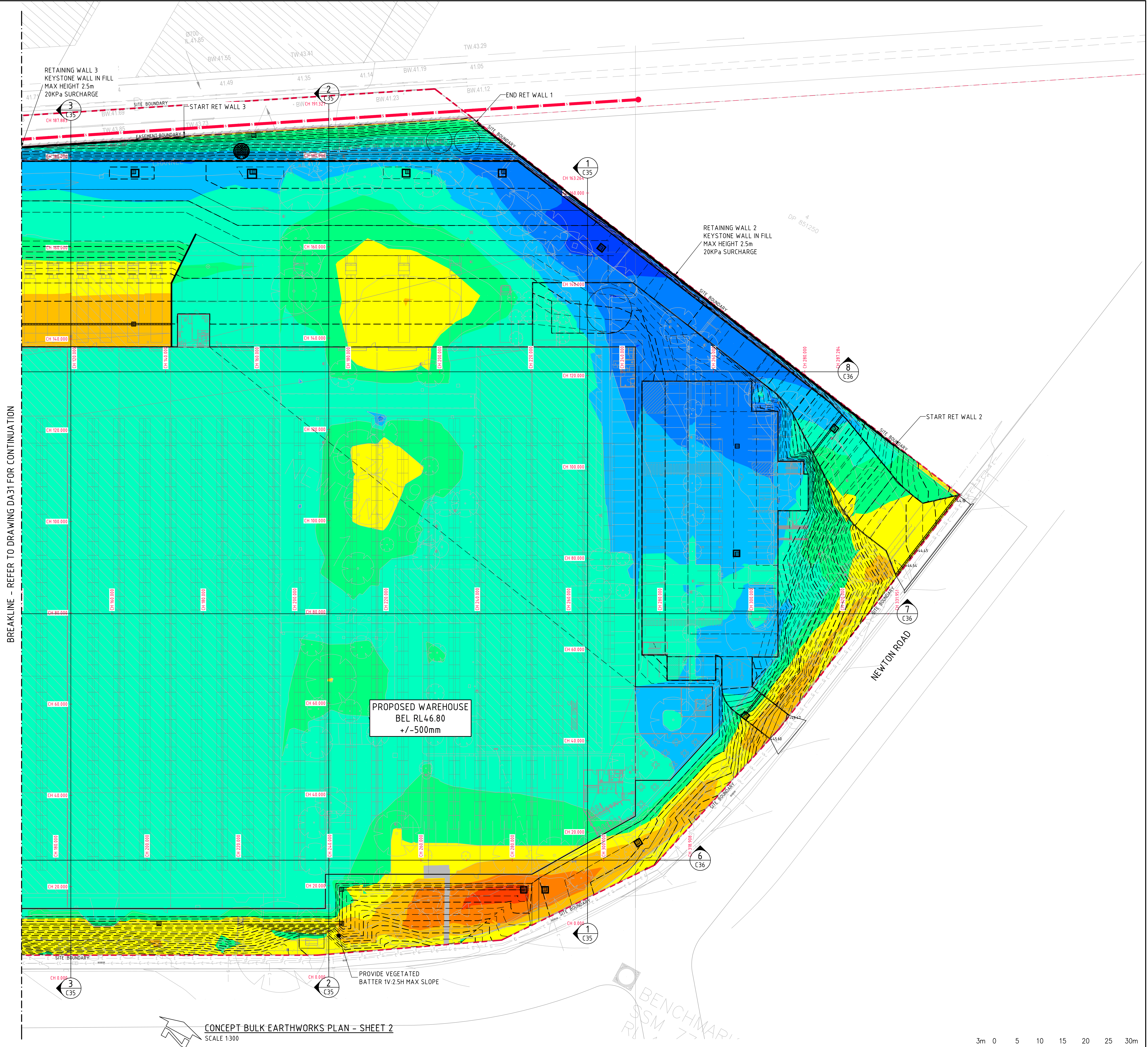
SITE PREPARATION NOTES:

REFER TO DRAWING DA11 FOR SITE PREPARATION NOTES

DEPTH RANGE			
No.	FROM DEPTH	TO DEPTH	COLOUR
1	-5.000	-4.500	
2	-4.500	-4.000	
3	-4.000	-3.500	
4	-3.500	-3.000	
5	-3.000	-2.500	
6	-2.500	-2.000	
7	-2.000	-1.500	
8	-1.500	-1.000	
9	-1.000	-0.500	
10	-0.500	0.000	
11	0.000	0.500	
12	0.500	1.000	
13	1.000	1.500	
14	1.500	2.000	
15	2.000	2.500	

ALLOWANCES FOR STRUCTURE

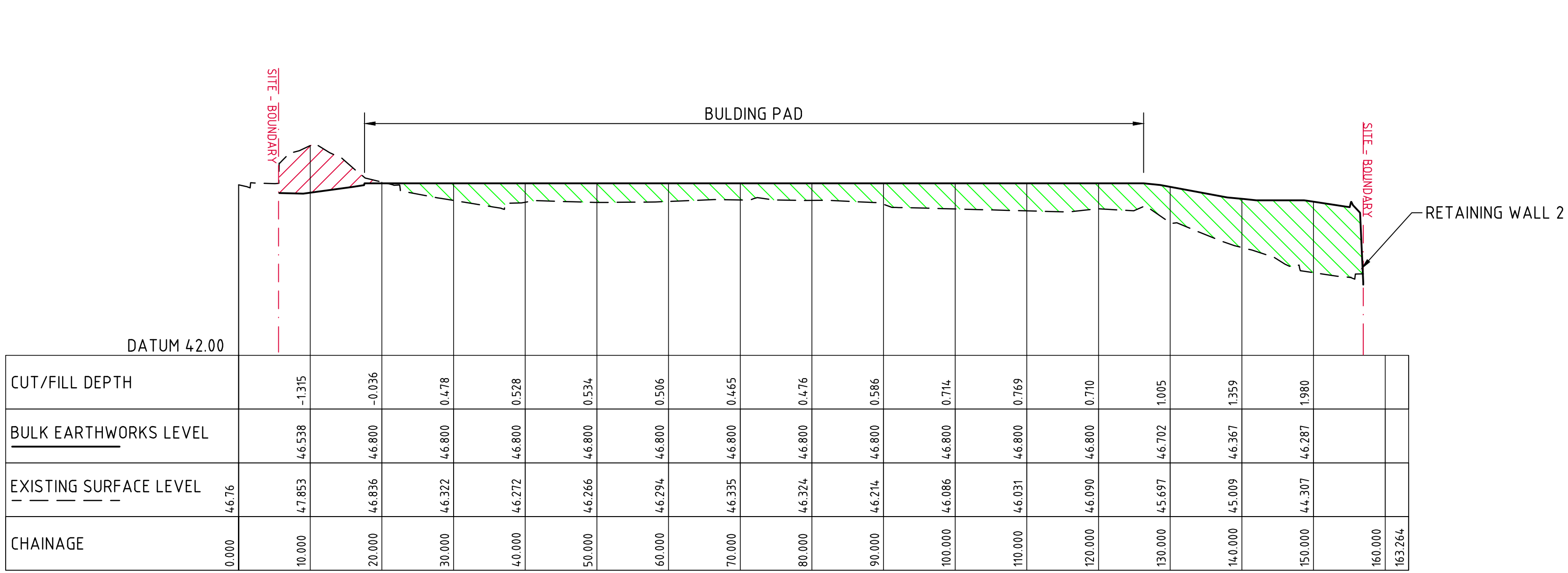
	DEPTH OF PAVEMENT
INTERNAL WAREHOUSE	300mm
OFFICE	300mm
EXTERNAL HARDSTAND	300mm
CAR PARK	300mm
LANDSCAPING	300mm
PEDESTRIAN	300mm



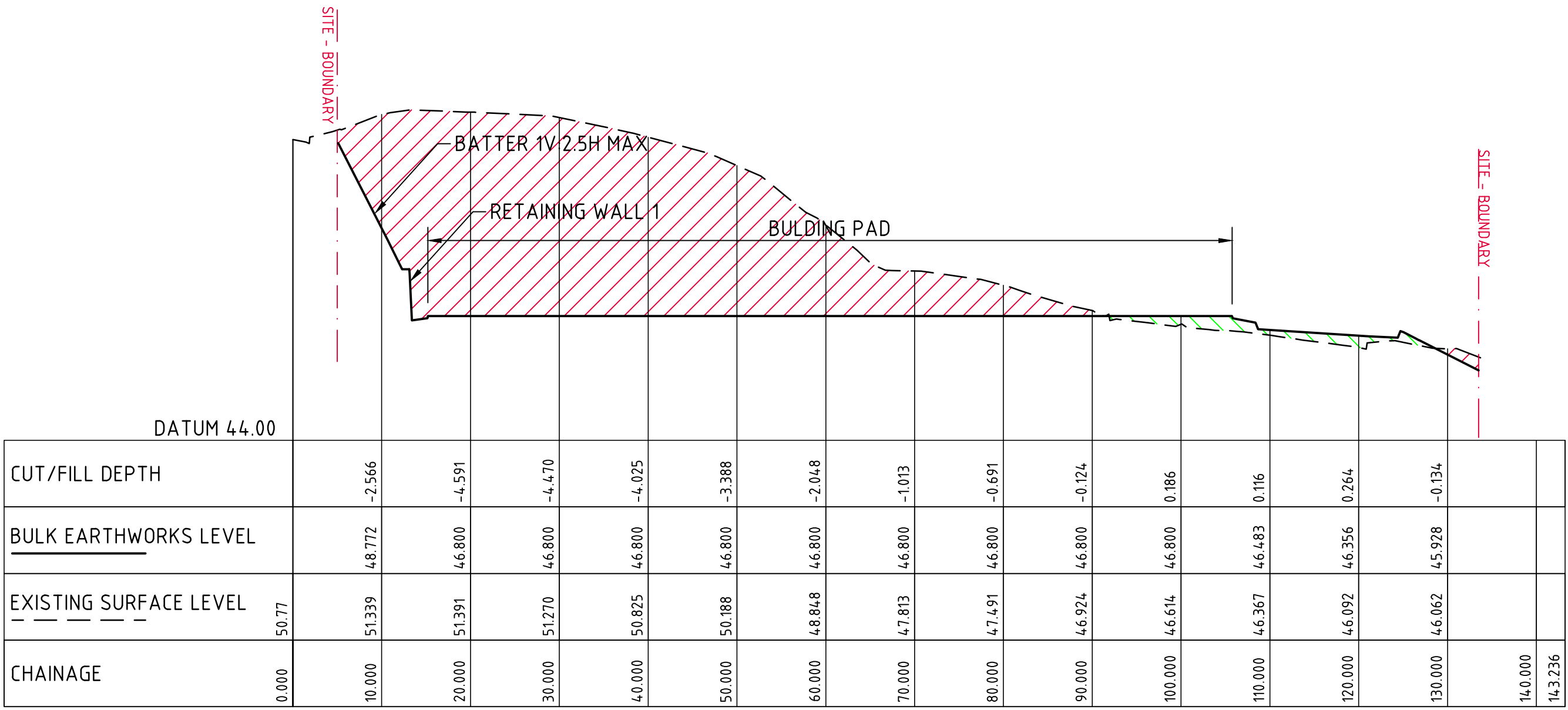
FOR DEVELOPMENT APPLICATION

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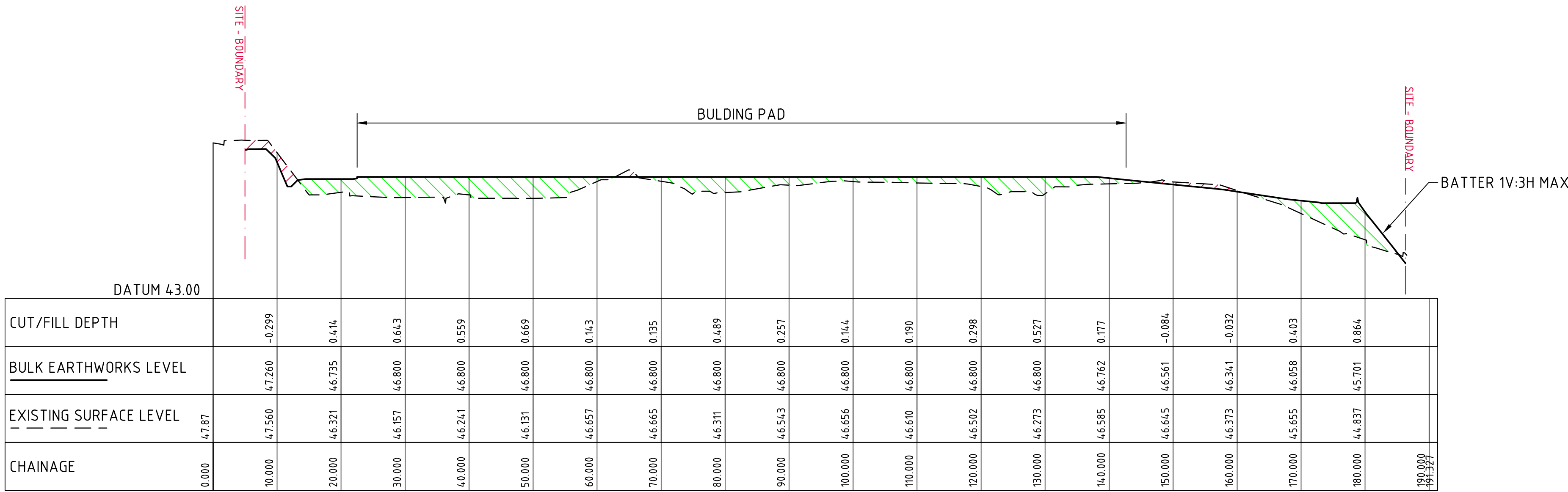
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ARCHITECT				SBA				CLIENT				CENTURIA				PROJECT				PROPOSED WAREHOUSE 88 NEWTON ROAD, WETHERILL PARK NSW 2164			
CONSULT AUSTRALIA				COSTIN ROE CONSULTING				CIVIL & STRUCTURAL ENGINEERS				DRAWING TITLE				CONCEPT BULK EARTHWORKS PLAN SHEET 2				DRAWING No			
DESIGNED				DRAWN				DATE				CHECKED				SCALE				CND REF			
MC				MC				FEB 24				HW				A0				C015039.01-DA.32			
PO Box N415 Sydney NSW 1220				Level 4 & Windmill Street, Millers Point NSW 2000				p: +61 2 9251 7699				e: mail@costinroe.com.au				w: costinroe.com.au				ISSUE			
D				C				B				A				C015039.01-DA.32				D			



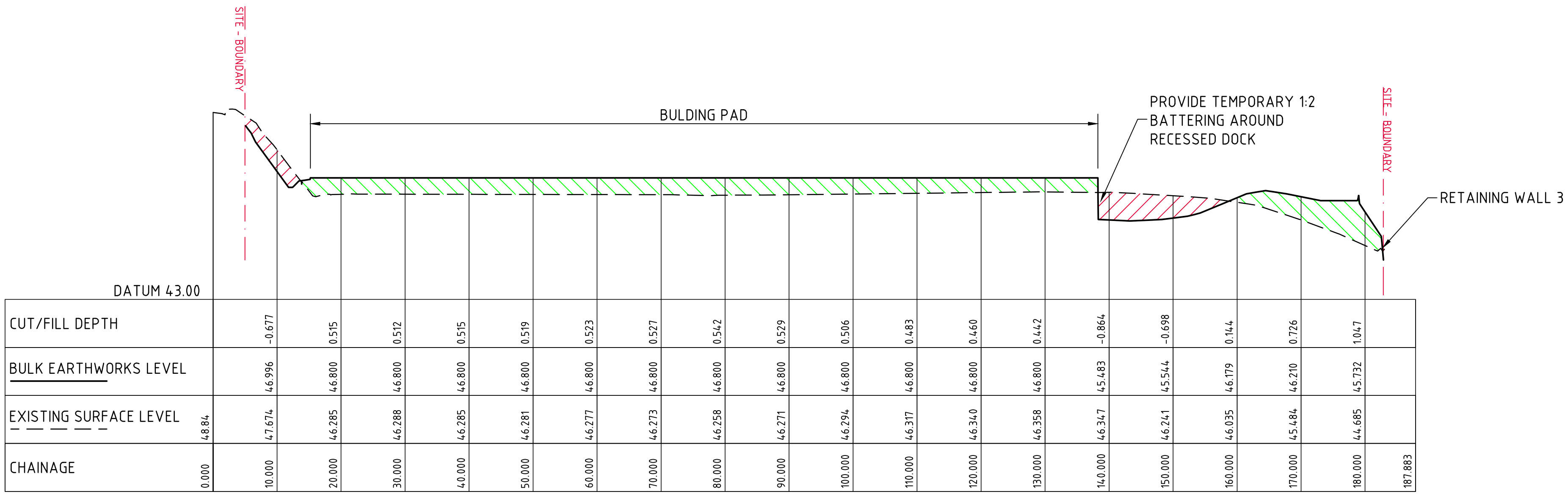
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VERTICAL SCALE 1:100



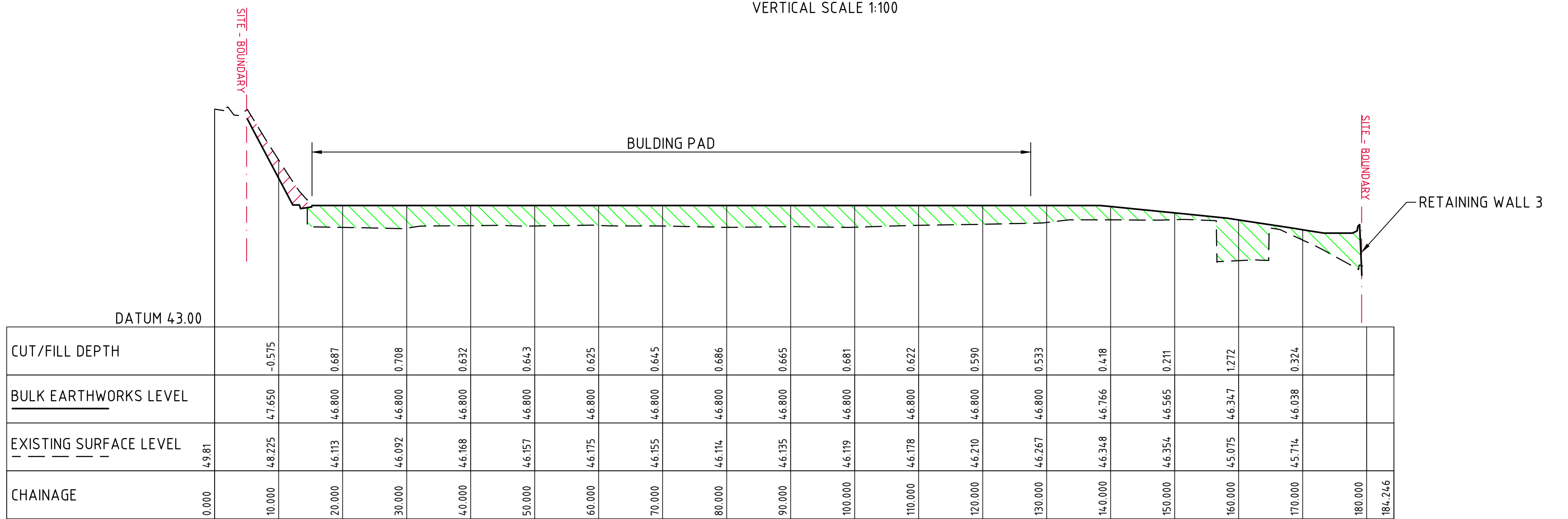
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VERTICAL SCALE 1:100



SECTION BULK EARTHWORKS 2
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



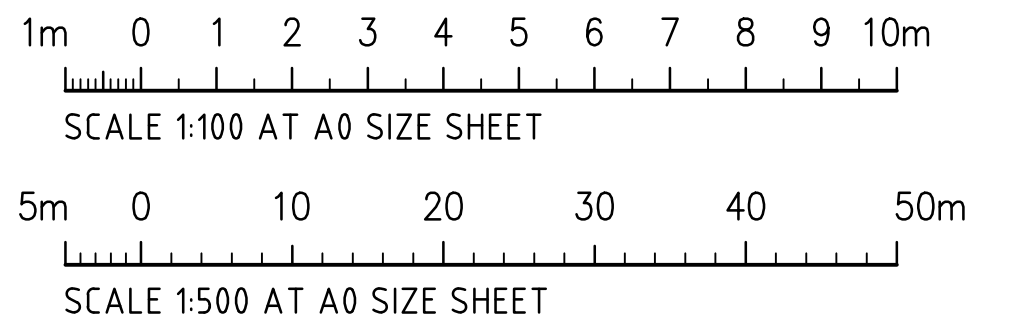
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HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



SECTION BULK EARTHWORKS 4
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

- LEGEND:
- DENOTES BULK EARTHWORKS PROFILE
 - DENOTES EXISTING PROFILE
 - DENOTES AREA IN CUT
 - DENOTES AREA IN FILL

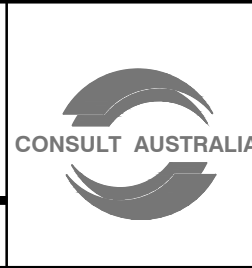
FOR DEVELOPMENT APPLICATION



ISSUED FOR DEVELOPMENT APPLICATION	12.02.25	D			
ISSUED FOR DEVELOPMENT APPLICATION	29.04.24	C			
ISSUED FOR DEVELOPMENT APPLICATION	10.06.24	B			
ISSUED FOR INFORMATION ONLY	26.03.24	A			
AMENDMENTS	DATE	ISSUE	AMENDMENTS	DATE	ISSUE



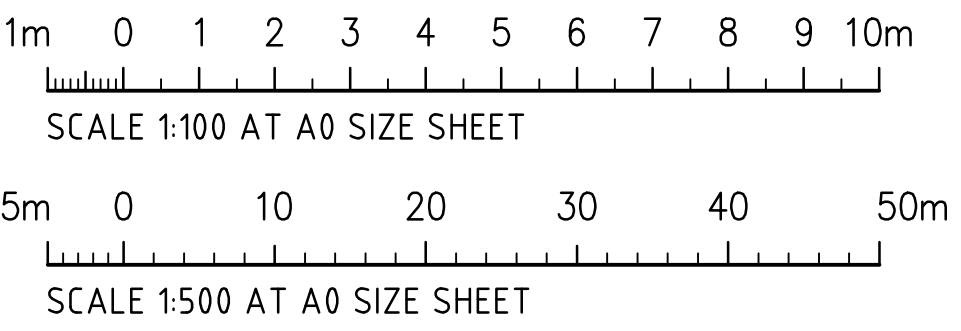
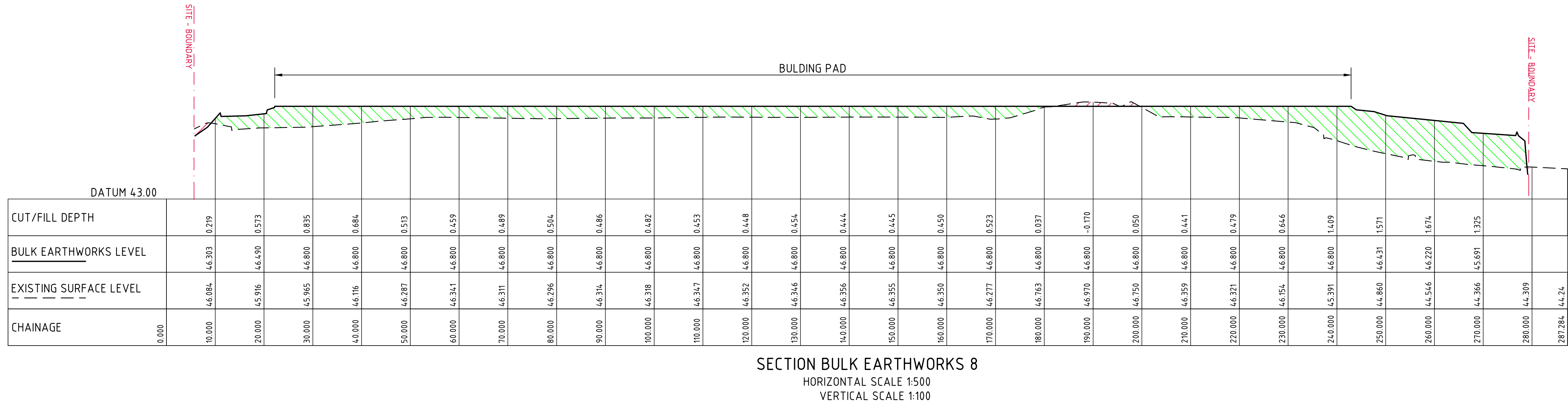
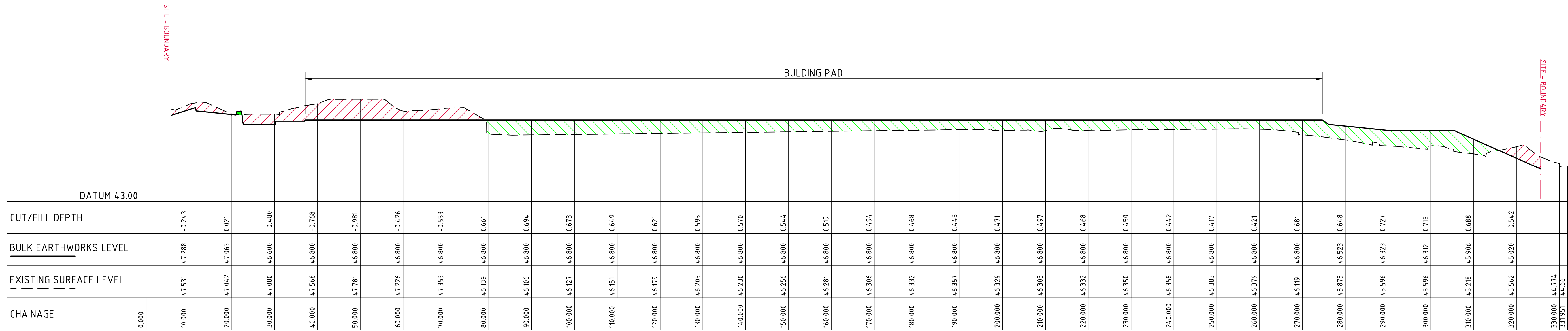
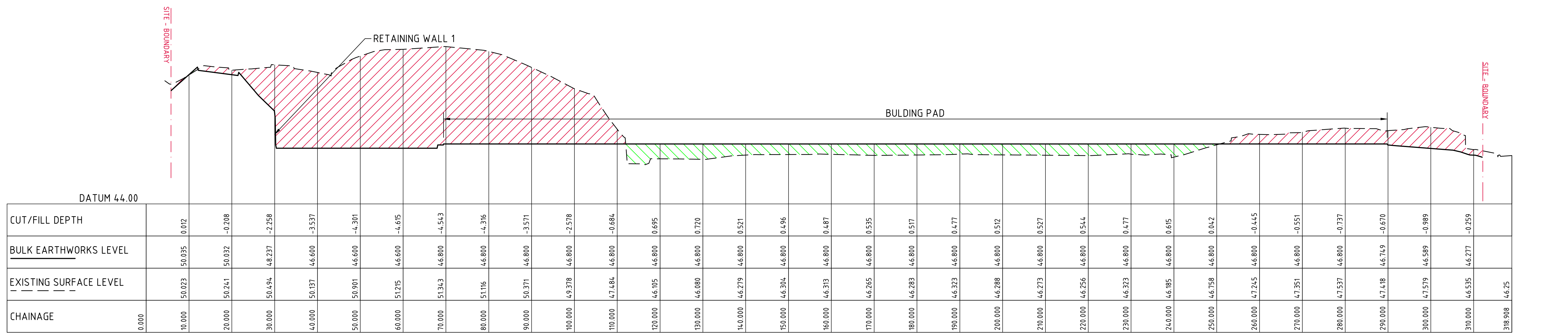
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DESIGNED MC	DRAWN MC	DATE FEB 24	CHECKED MW	SIZE A0	SCALE AS SHOWN	CAD REF: C015039-01-DA35



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f: +61 2 9241 3731 w: costinroe.com.au



DRAWING TITLE	CONCEPT BULK EARTHWORKS SECTIONS
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DRAWING No	C015039.01-DA35
ISSUE	D

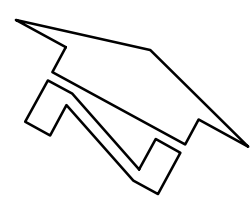
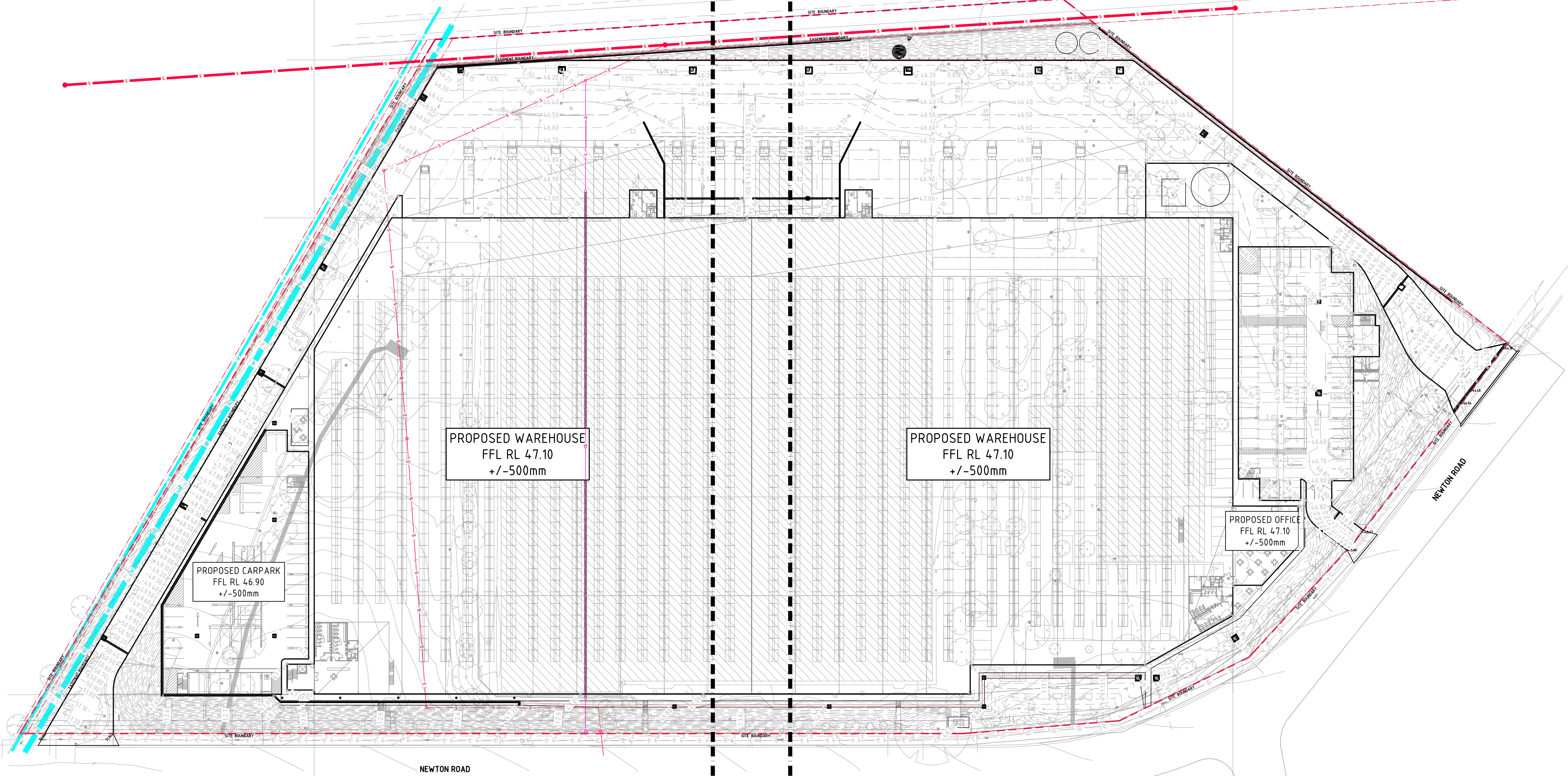


FOR DEVELOPMENT APPLICATION

ISSUED FOR DEVELOPMENT APPLICATION			12.02.25			D			ARCHITECT			CLIENT			PROJECT			CONSULT AUSTRALIA			Costin Roe Consulting Pty Ltd.			CRC			DRAWING TITLE			ISSUE		
ISSUED FOR DEVELOPMENT APPLICATION			29.04.24			C			SBA			Centuria			PROPOSED WAREHOUSE			CONSULT AUSTRALIA			PO Box N419 Sydney NSW 1220			CIVIL & STRUCTURAL ENGINEERS			CONCEPT BULK EARTHWORKS SECTIONS			D		
ISSUED FOR DEVELOPMENT APPLICATION			19.04.24			B			ARCHITECT			CENTURIA			88 NEWTON ROAD, WETHERILL PARK NSW 2164			CONSULT AUSTRALIA			Level 4 & 5 Windmill Street, Millers Point NSW 2000			CIVIL & STRUCTURAL ENGINEERS			SHEET 2			D		
ISSUED FOR INFORMATION ONLY			26.03.24			A			ARCHITECT			CENTURIA			DESIGNED DRAWN DATE			CONSULT AUSTRALIA			P: +61 2 9251 7699			CIVIL & STRUCTURAL ENGINEERS			SCALE 1:500 AT A0 SIZE SHEET			D		
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SHEET 1 - REFER TO DRAWING DA41 & DA51

SHEET 2 - REFER TO DRAWING DA42 & DA52



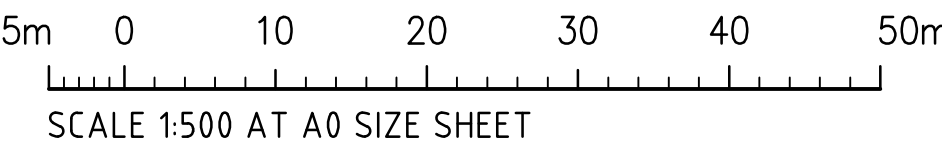
DRAWING KEY PLAN
SCALE 1500

STORMWATER DRAINAGE NOTES:

1. ALL STORMWATER WORKS TO BE COMPLETED IN ACCORDANCE WITH AUSTRALIAN STANDARD AS3500.3 PLUMBING AND DRAINAGE, PART 3: STORMWATER DRAINAGE.
2. THE MINOR (PIPED) SYSTEM HAS BEEN DESIGNED FOR THE 1 IN 20 YEAR ARI STORM EVENT AND THE MAJOR (OVERLAND) SYSTEM HAS BEEN DESIGNED FOR THE 1 IN 100 YEAR ARI STORM EVENT.
3. ALL FINISHED PAVEMENT LEVELS SHALL BE AS INDICATED ON FINISHED LEVELS PLANS DA51 & DA52.
4. PIT SIZES SHALL BE AS INDICATED IN THE SCHEDULE WHILE PIPE SIZES AND DETAILS ARE PROVIDED ON PLAN.
5. EXISTING STORMWATER PIT LOCATIONS AND INVERT LEVELS TO BE CONFIRMED BY SURVEY PRIOR TO COMMENCING WORKS ON SITE.
6. ALL STORMWATER PIPES Ø375 OR GREATER SHALL BE CLASS 2 (WITH HS2 SUPPORT) REINFORCED CONCRETE WITH RUBBER RING JOINTS UNLESS NOTED OTHERWISE.
7. ALL PIPES UP AND INCLUDING Ø300 TO BE uPVC GRADE S8B UNO.
8. PIPE CLASS NOMINATED ARE FOR IN-SERVICE LOADING CONDITIONS ONLY. CONTRACTOR IS TO MAKE ANY NECESSARY ADJUSTMENTS REQUIRED FOR CONSTRUCTION CONDITIONS.
9. ALL CONCRETE PITS GREATER THAN 1000mm DEEP SHALL BE REINFORCED USING N12-200 EACH WAY CENTERED IN WALL AND BASE. LAP MINIMUM 300mm WHERE REQUIRED. ALL CONCRETE FOR PITS SHALL BE F'c≥25 MPa. PRECAST PITS MAY BE USED WITH THE APPROVAL OF THE ENGINEER.
10. IN ADDITION TO ITEM 9 ABOVE, ALL CONCRETE PITS GREATER THAN 3000mm DEEP SHALL HAVE WALLS AND BASE THICKNESS INCREASED TO 200mm.
11. PIPES SHALL BE LAID AS PER PIPE LAYING DETAILS. PARTICULAR CARE SHALL BE TAKEN TO ENSURE THAT THE PIPE IS FULLY AND EVENLY SUPPORTED. RAM AND PACK FILLING AROUND AND UNDER BACK OF PIPES AND PIPE FAUCETS, WITH NARROW EDGED RAMMERS OR OTHER SUITABLE TAMPING DETAILS.
12. CONCRETE PIPES UNDER, OR WITHIN THE ZONE OF INFLUENCE OF PAVED AREAS SHALL BE LAID USING HS2 TYPE SUPPORT, AS A MINIMUM, IN ACCORDANCE WITH AS 3725. AGGREGATE BACKFILL SHALL NOT BE USED FOR PIPE BEDDING AND OR HAUNCH/SIDE SUPPORT.
13. WHERE PIPE LINES ENTER PITS, PROVIDE 2m LENGTH OF STOCKING WRAPPED SLOTTED Ø100 uPVC TO EACH SIDE OF PIPE.
14. ALL SUBSOIL DRAINAGE LINES SHALL BE Ø100 SLOTTED uPVC WITH APPROVED FILTER WRAP LAID IN 300mm WIDE GRANULAR FILTER UNLESS NOTED OTHERWISE. LAY SUBSOIL LINES TO MATCH FALLS OF LAND AND/OR 1 IN 200 MINIMUM. PROVIDE CAPPED CLEANING EYE (RODDING POINT) AT UPSTREAM END OF LINE AND AT 30m MAX. CTS. PROVIDE SUBSOIL LINES TO ALL PAVEMENT/ LANDSCAPED INTERFACES, TO REAR OF RETAINING WALLS (AS NOMINATED BY STRUCTURAL ENGINEER) AND AS SHOWN ON PLAN.
15. WHERE SUBSOIL DRAINAGE PASSES UNDER A PAVEMENT OR A SLAB, UNSLOTTED UPVC ARE TO BE PROVIDED UNLESS NOTED OTHERWISE.
16. ALL PIPE GRADES 1 IN 200 MINIMUM UNO.
17. PROVIDE STEP IRONS IN PITS DEEPER THAN 1000mm.
18. MIN. 600 COVER TO PIPE OBVERT BENEATH ROADS & MIN. 400 COVER BENEATH LANDSCAPED AND PEDESTRIAN AREAS.
19. PIT COVERS IN TRAFFICABLE PAVEMENT SHALL BE CLASS D 'HEAVY DUTY', THOSE LOCATED IN NON-TRAFFICABLE AREAS SHALL BE CLASS B 'MEDIUM DUTY' U.N.O.
20. PROVIDE CLEANING EYES (RODDING POINTS) TO PIPES AT ALL CORNERS AND T-JUNCTIONS WHERE NO PITS ARE PRESENT.
21. DOWN PIPES (DP) TO BE AS PER HYDRAULIC ENGINEERS DETAILS WITH CONNECTOR TO MATCH DP SIZE U.N.O. ON PLAN. PROVIDE CLEANING EYE AT GROUND LEVEL.
22. PIPE LENGTHS NOMINATED ON PLAN OR LONGSECTIONS ARE MEASURED FROM CENTER OF PITS TO THE NEAREST 0.5m AND DO NOT REPRESENT ACTUAL LENGTH. THE CONTRACTOR IS TO ALLOW FOR THIS.
23. WHERE CONNECTION TO EXISTING INGROUND DRAINAGE SYSTEMS, OPEN SWALES, CHANNELS OR ANY OTHER EXISTING SYSTEM, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION AND INVERT ON SITE AT THE BEGINNING OF THE CONSTRUCTION PERIOD. REFER ANY VARIANCE FROM DOCUMENTATION OR SURVEYS TO THE ENGINEER FOR CLARIFICATION.

FINISHED LEVELS PLAN NOTES:

1. LEVELS DATUM IS AUSTRALIAN HEIGHT DATUM (A.H.D.).
2. GRADING REQUIREMENTS TO BE COMPLETED IN ACCORDANCE WITH AUSTRALIAN STANDARD AS2890.1, AS2890.2 AND AS2890.6.
3. ALL CONTOUR LINES & SPOT LEVELS INDICATE FINISHED PAVEMENT LEVELS U.N.O. ON PLAN.
4. CONTOUR INTERVALS
 - THE MINOR CONTOUR INTERVAL IS 0.1m.
 - THE MAJOR CONTOUR INTERVAL IS 0.5m.
5. HARDSTAND GRADING
 - MINIMUM PAVEMENT GRADE IS TO BE 1:100 (1%).
 - GRADING OF ON-GRADE DOCKS TO BE 1:100 (1%) FALL AWAY FROM THE DOCK FACE FOR A LENGTH OF 15m U.N.O.
 - GRADING OF TRUCK CIRCULATION ZONES TO BE MINIMUM AS NOTED ABOVE, 3-4% NOMINAL AND MAX. 5%.
6. CAR PARKING AREA GRADES
 - MINIMUM PAVEMENT GRADE IS TO BE 1:100 (1%), DESIRABLE MINIMUM GRADE 1:50 (2%).
 - MAXIMUM PAVEMENT GRADE IS TO BE 1:20 (5%) IN CARPARKING AREAS AND 1:25 (4%) ELSEWHERE.
 - DISABLED ACCESS PARKING ZONES AND SHARED SPACE TO BE MAXIMUM OF 1:33 (3%) IN ASPHALT PAVEMENT AND MAXIMUM OF 1:40 (2.5%) IN CONCRETE PAVEMENT.
 - CARPARK RAMP GRADES TO BE MAX 1:5 WITH 2.5m SMOOTH TRANSITION AT TOP AND BOTTOM U.N.O.
7. TRUCK RAMP GRADES
 - MAXIMUM B-DOUBLE OR 19.0m AV RAMP GRADES ARE TO BE 1:8.3 (12%) U.N.O. ON PLAN
 - PROVIDE MINIMUM 4.0m LONG TRANSITION WHERE CHANGES OF GRADE EXCEED 1:20 (5%) AT A CREST U.N.O.
 - PROVIDE MINIMUM 3.0m LONG TRANSITION WHERE CHANGE OF GRADE EXCEED 1:20 (5%) AT A SAG U.N.O.
 - TRANSITIONS ARE TO PROVIDE A SMOOTH CONTINUOUS CIRCULAR AND TANGENTIAL CHANGE IN GRADE TO ENSURE NO SHARP OR ACUTE CHANGES IN GRADE ARE PRESENT.
8. WHERE FIRE BRIGADE ACCESS IS REQUIRED, MAXIMUM RAMP GRADIENTS ARE TO BE 1:6 (16.6%), DESIRABLE RAMP GRADIENTS ARE TO BE 1:8 (12.5%) WITH 7m TRANSITION TOP AND BOTTOM U.N.O. ON PLAN.
9. PERMANENT BATTER SLOPES ARE TO HAVE A MAXIMUM GRADE OF 1V:3H U.N.O. BASED ON GEOTECHNICAL ASSESSMENT. PROVIDE MINIMUM 0.5m BERM BETWEEN THE BACK OF KERB OR PAVEMENT EDGES AND THE TOP OR TOE OF A BATTER.
10. ALL BATTER SLOPE WITH GRADES AT OR EXCEEDING 1V:6H ARE TO BE TURFED IMMEDIATELY OR APPROPRIATE EROSION CONTROL IS TO BE PROVIDED TO THE SATISFACTION OF THE ENGINEER.
11. ALL FOOTPATHS ARE TO FALL AWAY FROM THE BUILDING AT 2.5% NOMINAL GRADE.
12. ALL PAVEMENTS ARE TO BE SET AT 30mm BELOW THE FINISHED FLOOR LEVEL OF THE WAREHOUSE AND OFFICE AREAS. PROVIDE LOCAL FEATHERING AT DOORWAYS OR ROLLER SHUTTERS TO PROVIDE FLUSH FINISH AS REQUIRED.
13. WHERE NEW AND EXISTING INTERFACING IS REQUIRED, MATCH EXISTING LEVELS AND PROVIDE SMOOTH INTERFACE BETWEEN NEW AND EXISTING GRADIENTS. REFER ANY CONCERNS TO THE ENGINEER.



FOR DEVELOPMENT APPLICATION

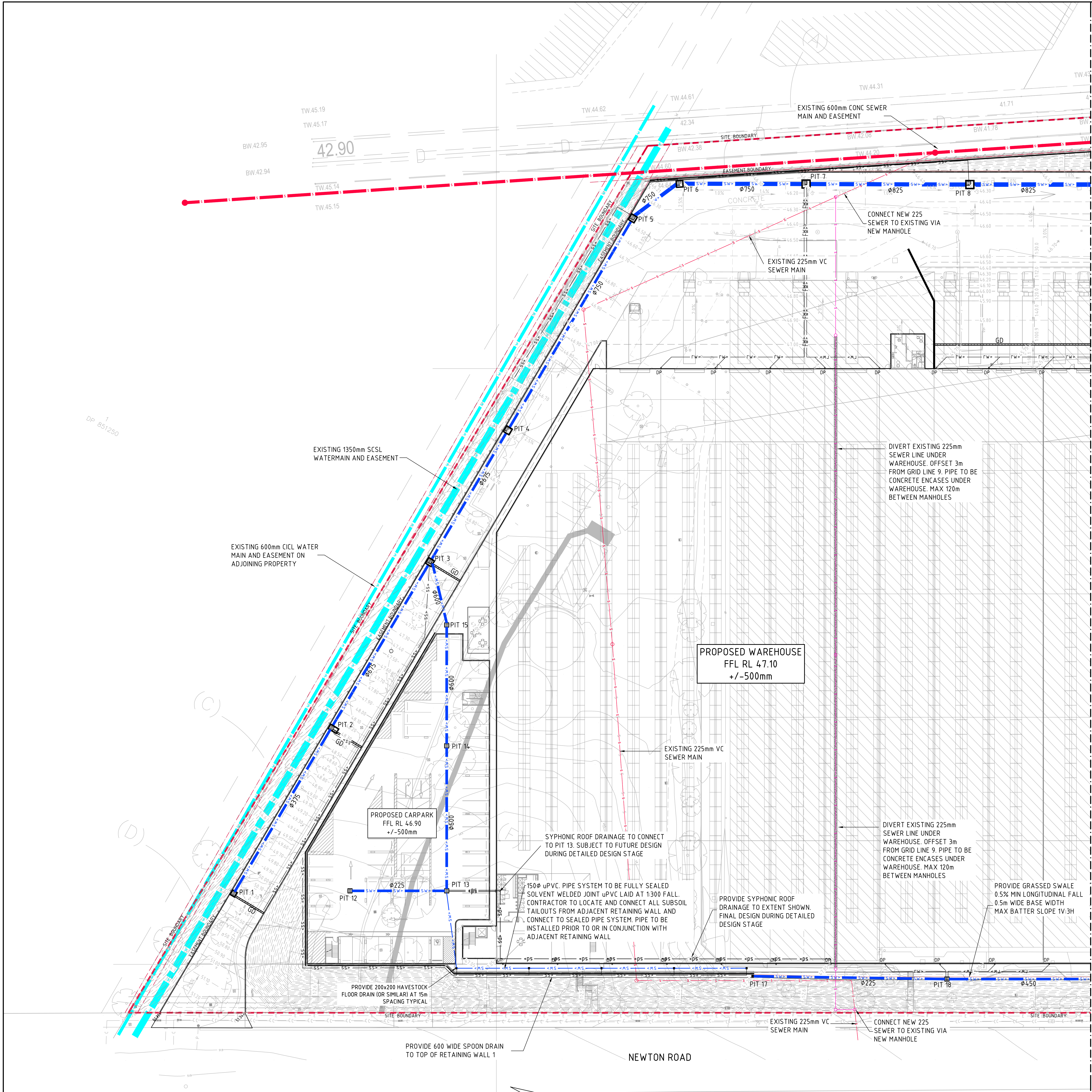
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ISSUED FOR DEVELOPMENT APPLICATION				29.04.24				C			
ISSUED FOR DEVELOPMENT APPLICATION				19.04.24				B			
ISSUED FOR DEVELOPMENT APPLICATION				15.02.24				A			
AMENDMENTS				DATE	ISSUE	AMENDMENTS	DATE	ISSUE	AMENDMENTS	DATE	ISSUE

ARCHITECT	CLIENT	PROJECT	CONSULTANT	ISSUE
		PROPOSED WAREHOUSE 88 NEWTON ROAD, WETHERILL PARK NSW 2164		D

DESIGNED	DRAWN	DATE	CHECKED	SIZED	SCALE	QAD REF.
MC	MC	FEB 24	MW	A0	AS SHOWN	C015039.01-DA40

PO Box N419 Sydney NSW 1220 Level 4 & 5 Windmill Street, Millers Point NSW 2000 p: +61 2 9251 7699 e: mail@costinroe.com.au w: costinroe.com.au		COSTIN ROE CONSULTING		CIVIL & STRUCTURAL ENGINEERS	
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DRAWING TITLE DRAWING KEY PLAN		DRAWING No	ISSUE
		C015039.01-DA 40	D



LEGEND:
LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON ESTATE DEISGN
INFORMATION PROVIDED BY LTS SURVEYORS DATED 12.10.20 REF
51145001DT

- SGGP, SINGLE GRATED GULLY PIT
- SJP, SEALED JUNCTION PIT
- KIP, KERB INLET PIT
- GD, GRATED DRAIN (300W x 225D UNO)
- PROPOSED DRAINAGE LINE
- EXISTING DRAINAGE LINE
- ROOFWATER DOWNPIPE (INDICATIVE)
- ROOFWATER LINE
- EXISTING SYDNEY WATER MAIN
- EXISTING SEWER MAIN
- SUBSOIL LINE
- OVERLAND FLOW DIRECTION
- FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS

STORMWATER DRAINAGE NOTES:
REFER TO DRAWING SSDA40 FOR STORMWATER NOTES
ALL INLET PITS TO BE FITTED WITH OCEAN PROTECT OCEANGUARD
PIT BASKET

PIT SCHEDULE					
PIT No.	GRATE RL	TYPE	SIZE	COMMENT	
PIT 1	50.30	SGGP	900x900	○	
PIT 2	48.30	SGGP	1800x900	○	900SQ RISER
PIT 3	46.92	SGGP	1200x1200	○	900SQ RISER
PIT 4	46.60	SGGP	1200x1200	○	900SQ RISER
PIT 5	46.45	SGGP	1200x1200	○	900SQ RISER
PIT 6	46.15	SGGP	1200x1200	○	900SQ RISER
PIT 7	46.15	SGGP	1500x1500	○	900SQ RISER
PIT 8	46.25	SGGP	1500x1500	○	900SQ RISER
PIT 9	46.25	SGGP	1800x1800	○	900SQ RISER
PIT 10	46.15	SGGP	1500x1500	○	900SQ RISER
PIT 11	44.37	SGGP	1500x1500	○	900SQ RISER
PIT 12	46.80	SGGP	900x900	○	
PIT 13	46.80	SGGP	900x900	○	
PIT 14	46.80	SGGP	900x900	○	
PIT 15	47.00	SGGP	900x900	○	
PIT 16	45.75	SGGP	900x900	○	
PIT 17	47.20	SGGP	900x900	○	
PIT 18	46.80	SGGP	900x900	○	
PIT 19	46.80	SGGP	900x900	○	
PIT 20	46.80	SGGP	900x900	○	
PIT 21	46.80	SGGP	900x900	○	
PIT 22	46.80	SGGP	900x900	○	
PIT 23	46.99	SGGP	1200x1200	○	900SQ RISER
PIT 24	46.85	SGGP	1200x1200	○	900SQ RISER
PIT 25	46.30	SGGP	1200x1200	○	900SQ RISER
PIT 26	46.50	SGGP	1500x1500	○	900SQ RISER
PIT 27	45.65	SGGP	1500x1500	○	900SQ RISER
PIT 28	46.65	SGGP	1500x1500	○	900SQ RISER
PIT 29	46.20	SGGP	1500x1500	○	900SQ RISER
PIT 30	46.15	SGGP	1500x1500	○	900SQ RISER
PIT 31	46.50	SGGP	900x900	○	

○ - DENOTES PIT TO BE FITTED WITH OCEAN PROTECT OCEANGUARD PIT INSERT

LEGEND:

LEVELS DATUM IS AHD.

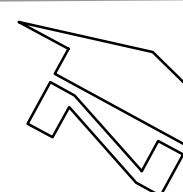
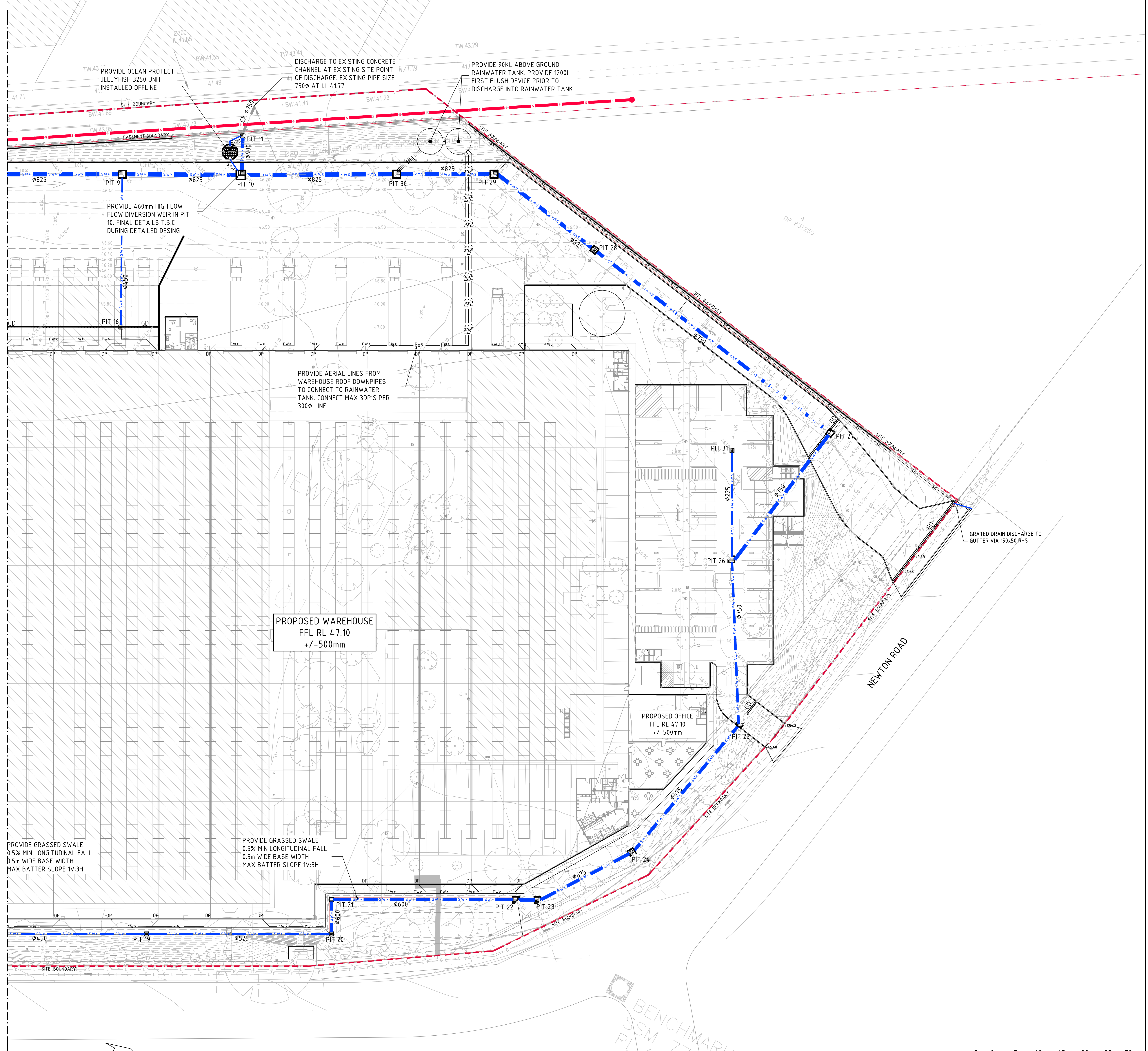
EXISTING SITE LEVELS AND DETAILS BASED ON ESTATE DESIGN INFORMATION PROVIDED BY LTS SURVEYORS DATED 12.10.20 REF 511450010T

- SGP, SINGLE GRATED GULLY PIT
- SJP, SEALED JUNCTION PIT
- KIP, KERB INLET PIT
- GD, GRATED DRAIN (300W x 225D UNO)
- PROPOSED DRAINAGE LINE
- EXISTING DRAINAGE LINE
- ROOFWATER DOWNPIPE (INDICATIVE)
- ROOFWATER LINE
- EXISTING SYDNEY WATER MAIN
- EXISTING SEWER MAIN
- SUBSOIL LINE
- OVERLAND FLOW DIRECTION
- FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS

STORMWATER DRAINAGE NOTES:

REFER TO DRAWING SSDA40 FOR STORMWATER NOTES
ALL INLET PITS TO BE FITTED WITH OCEAN PROTECT OCEANGUARD PIT BASKET

BREAKLINE - REFER TO DRAWING DA44 FOR CONTINUATION



CONCEPT STORMWATER DRAINAGE PLAN - SHEET 2
SCALE 1:300

FOR DEVELOPMENT APPLICATION

3m 0 5 10 15 20 25 30m
SCALE 1:300 AT A0 SIZE SHEET

ISSUED FOR DEVELOPMENT APPLICATION	12.02.25	E	
ISSUED FOR DEVELOPMENT APPLICATION	06.06.24	D	
ISSUED FOR DEVELOPMENT APPLICATION	29.04.24	C	
ISSUED FOR DEVELOPMENT APPLICATION	10.04.24	B	
ISSUED FOR DEVELOPMENT APPLICATION	15.02.24	A	
AMENDMENTS	DATE	ISSUE	AMENDMENTS

DATE	ISSUE	AMENDMENTS	DATE

DATE	ISSUE	AMENDMENTS	DATE

ARCHITECT	
SBA	

CLIENT	
Centuria	

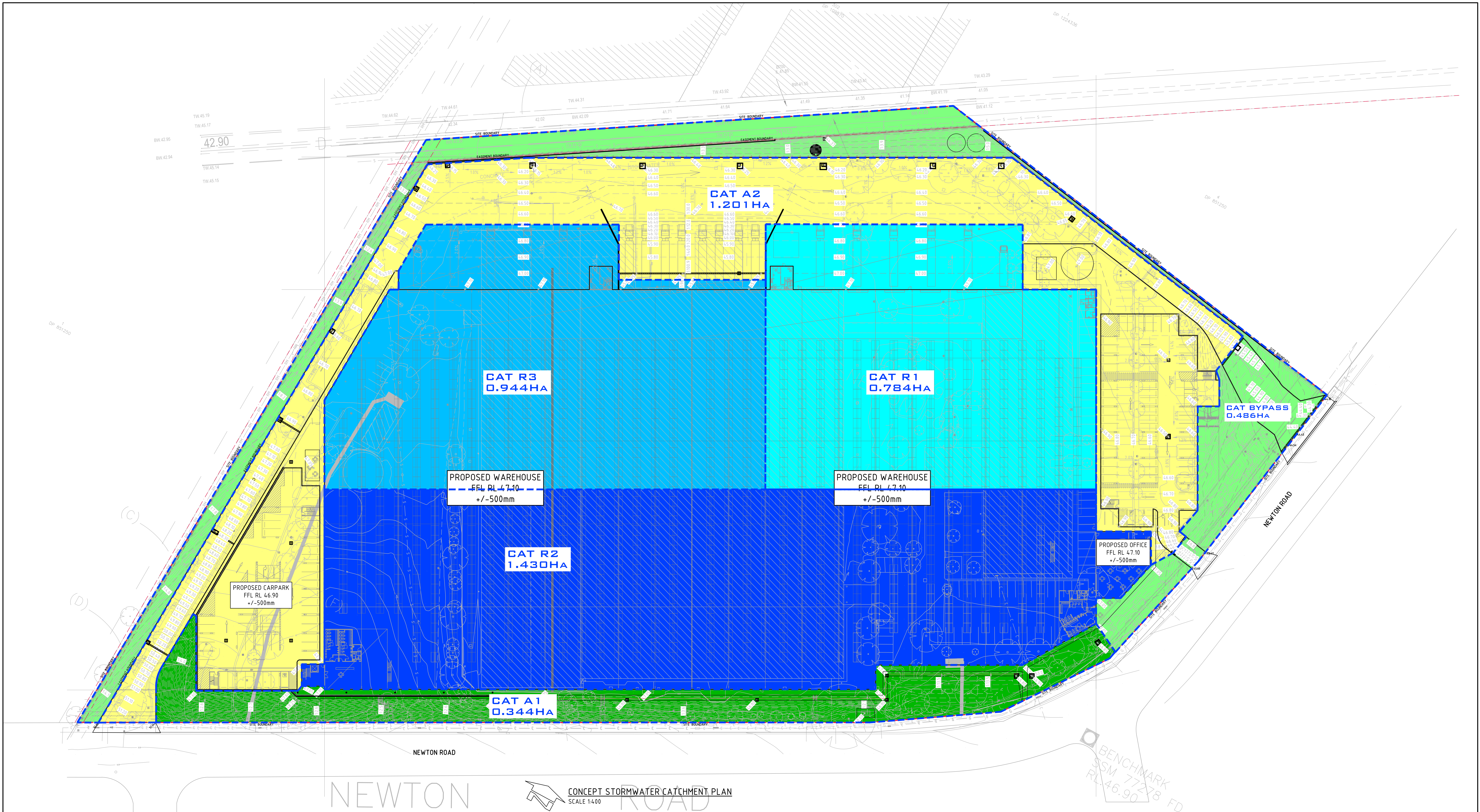
PROJECT	
PROPOSED WAREHOUSE	
88 NEWTON ROAD, WETHERILL PARK NSW 2164	
DESIGNED	
DRAWN	
DATE	
MC	
MC	
FEB 24	
CHECKED	
HW	
SIZE	
A0	
SCALE	
AS SHOWN	
CAD REF	
C015039.01-DA42	

CONSULT	
AUSTRALIA	

Costin Roe Consulting Pty Ltd.	
ABN 50 003 696 446	
PO Box N419 Sydney NSW 1220	
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e: mail@costinroe.com.au	
f: +61 2 9241 3731	
w: costinroe.com.au	

CRC	
COSTIN ROE CONSULTING	
CIVIL & STRUCTURAL ENGINEERS	

DRAWING TITLE	
CONCEPT STORMWATER DRAINAGE PLAN	
SHEET 2	
DRAWING No	
C015039.01-DA 42	
ISSUE	
E	



SUB-CATCHMENT AREAS - MUSIC

No.	CATCHMENT AREA (Ha)	% IMPERVIOUS	TREATMENT SYSTEM
ROOF R1	0.784	100	OCEANGUARD + RAINWATER TANK
ROOF R2	1.430	100	OCEANGUARD + JELLYFISH
ROOF R3	0.944	100	OCEANGUARD + RAINWATER TANK
LANDSCAPE A1	0.344	10	OCEANGUARD + JELLYFISH
HARDSTAND A2	1.201	90	OCEANGUARD + JELLYFISH
BYPASS	0.486	70	NONE
TOTAL	5.189		

LEGEND:

- DENOTES CATCHMENT ROOF R1
- DENOTES CATCHMENT ROOF R2
- DENOTES CATCHMENT ROOF R3
- DENOTES CATCHMENT LANDSCAPE A1
- DENOTES CATCHMENT HARDSTAND A2
- DENOTES BYPASS AREA

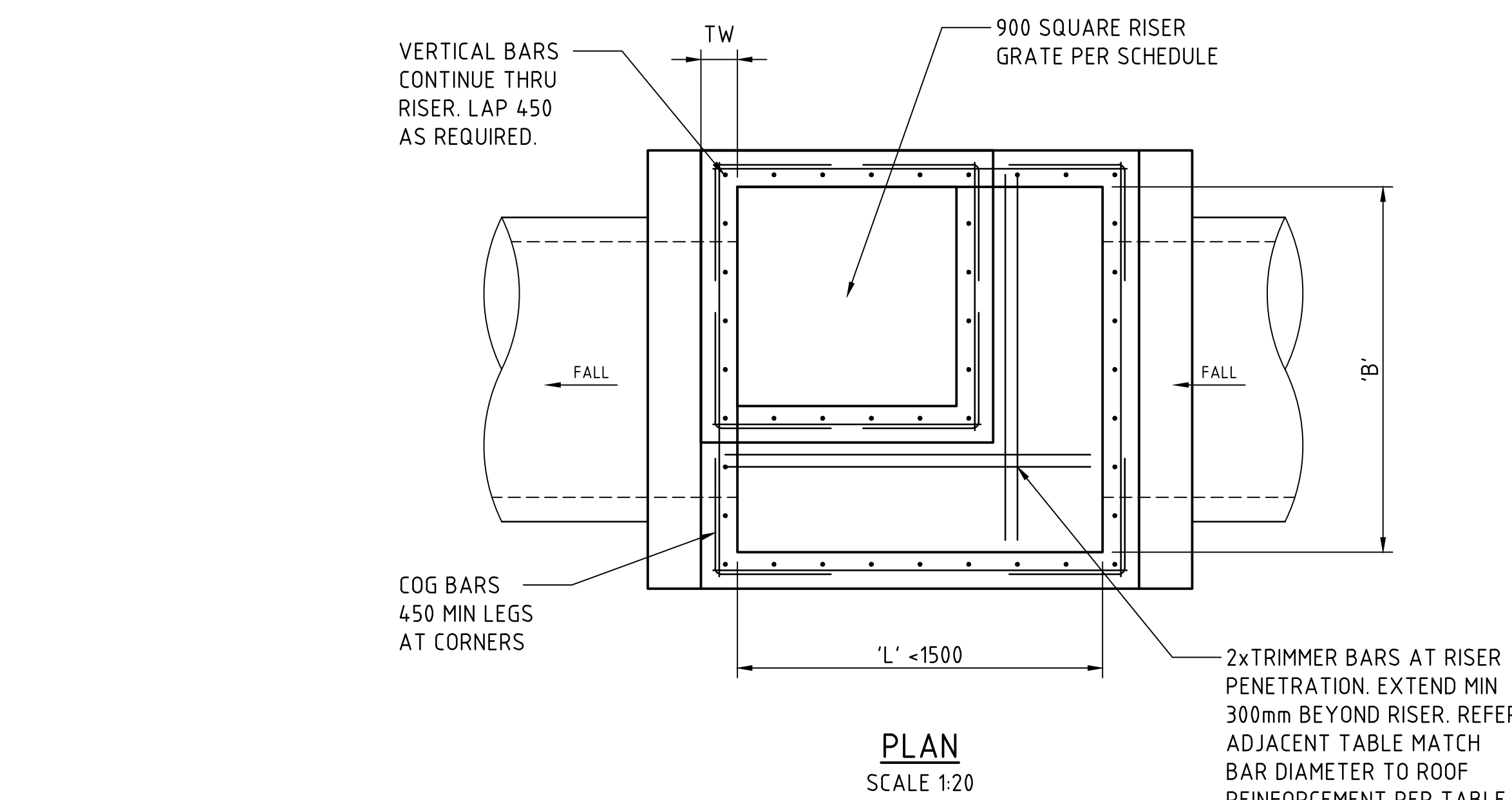
NOTE:

ALL INLET PITS TO BE FITTED WITH OCEAN PROTECT OCEAN GUARD INSERTS.

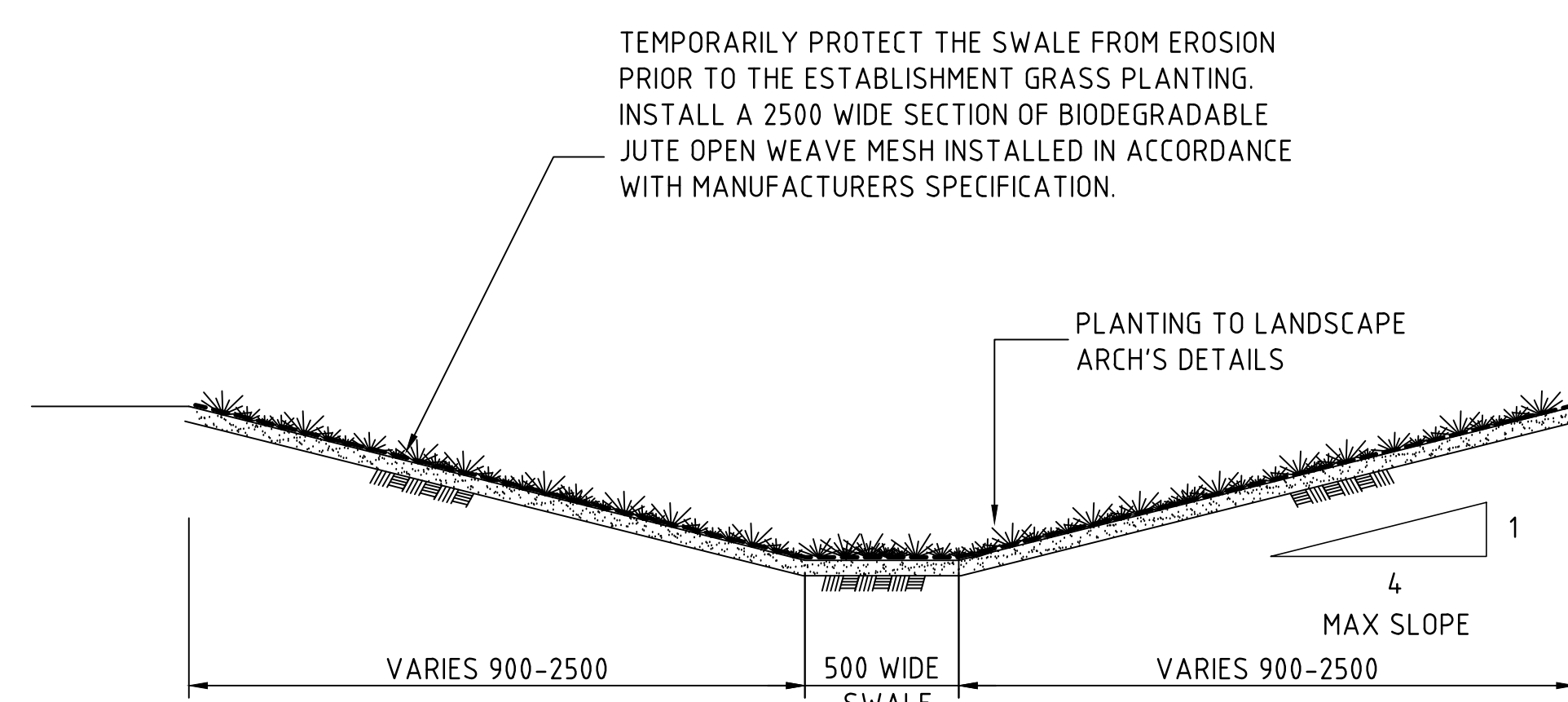
FOR DEVELOPMENT APPLICATION

4m 0 10 20 30 40m
SCALE 1:400 AT A0 SIZE SHEET

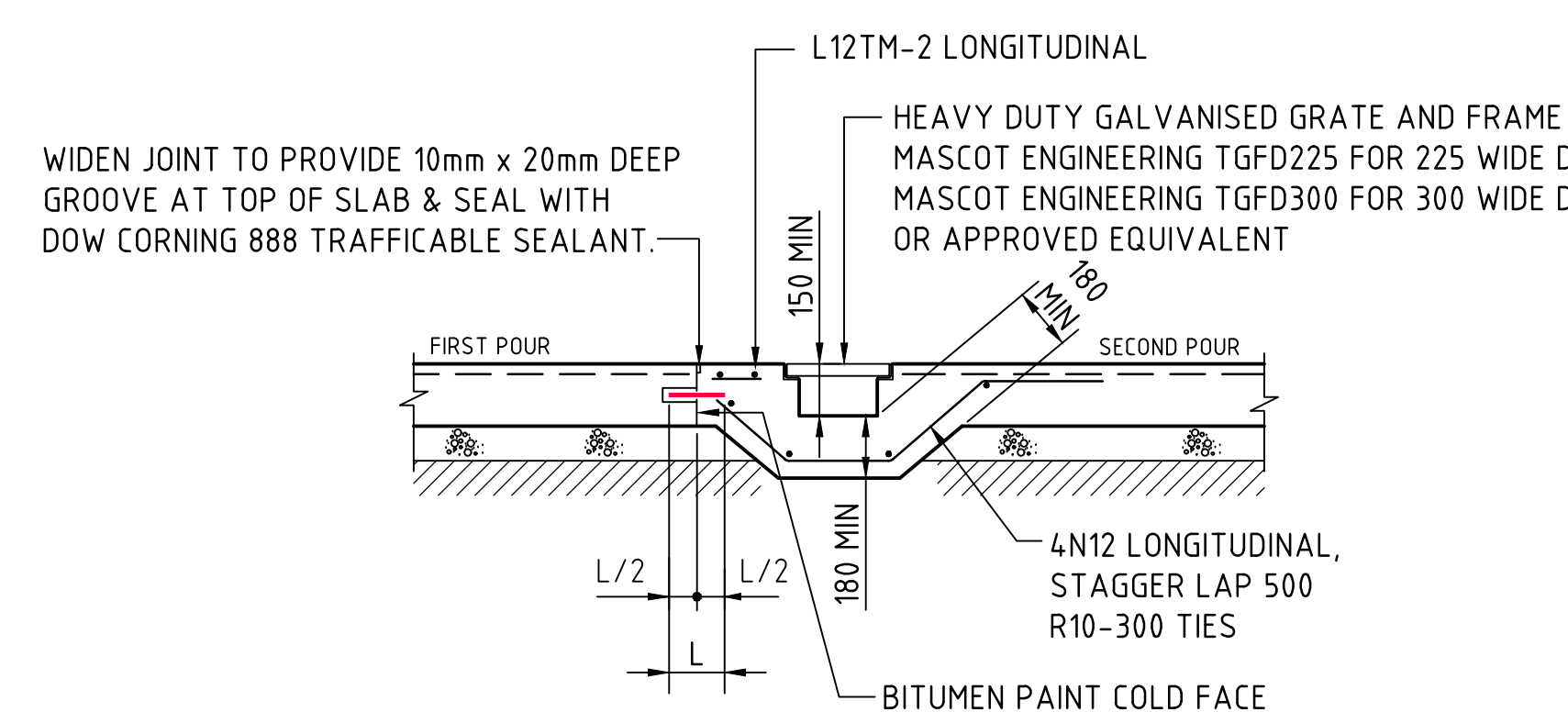
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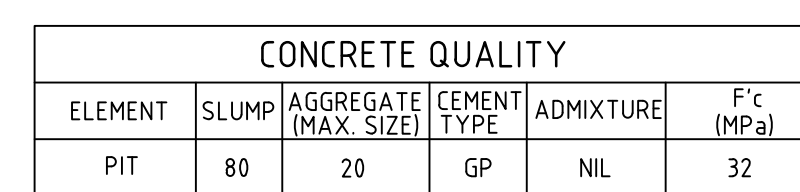
SUBSOIL NOT SHOWN FOR CLARITY.



TYPICAL SWALE DETAIL
1:20
ADOPT AS REQUIRED

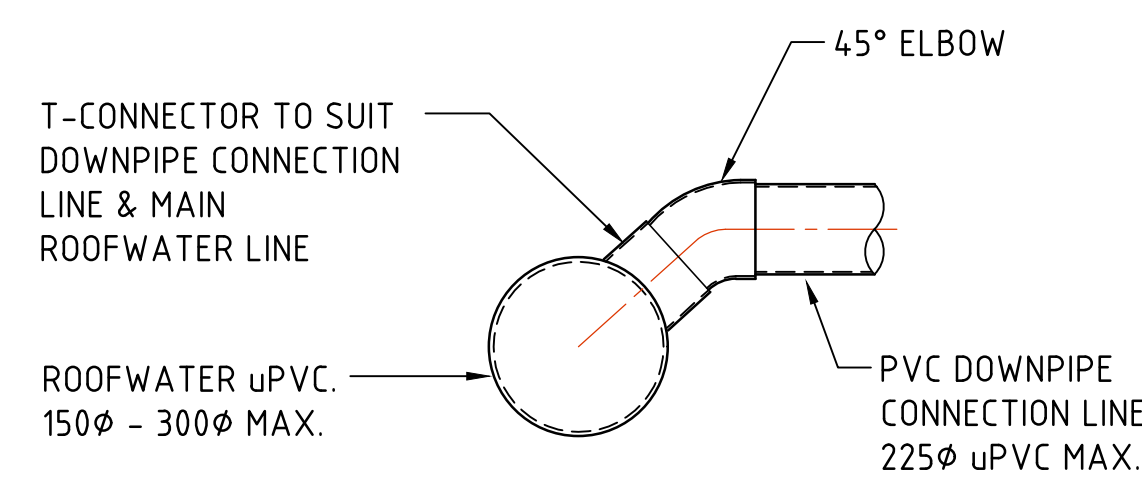


DOWEL JOINT AND GRATED DRAIN DETAIL-HARDSTAND
SCALE 1:20



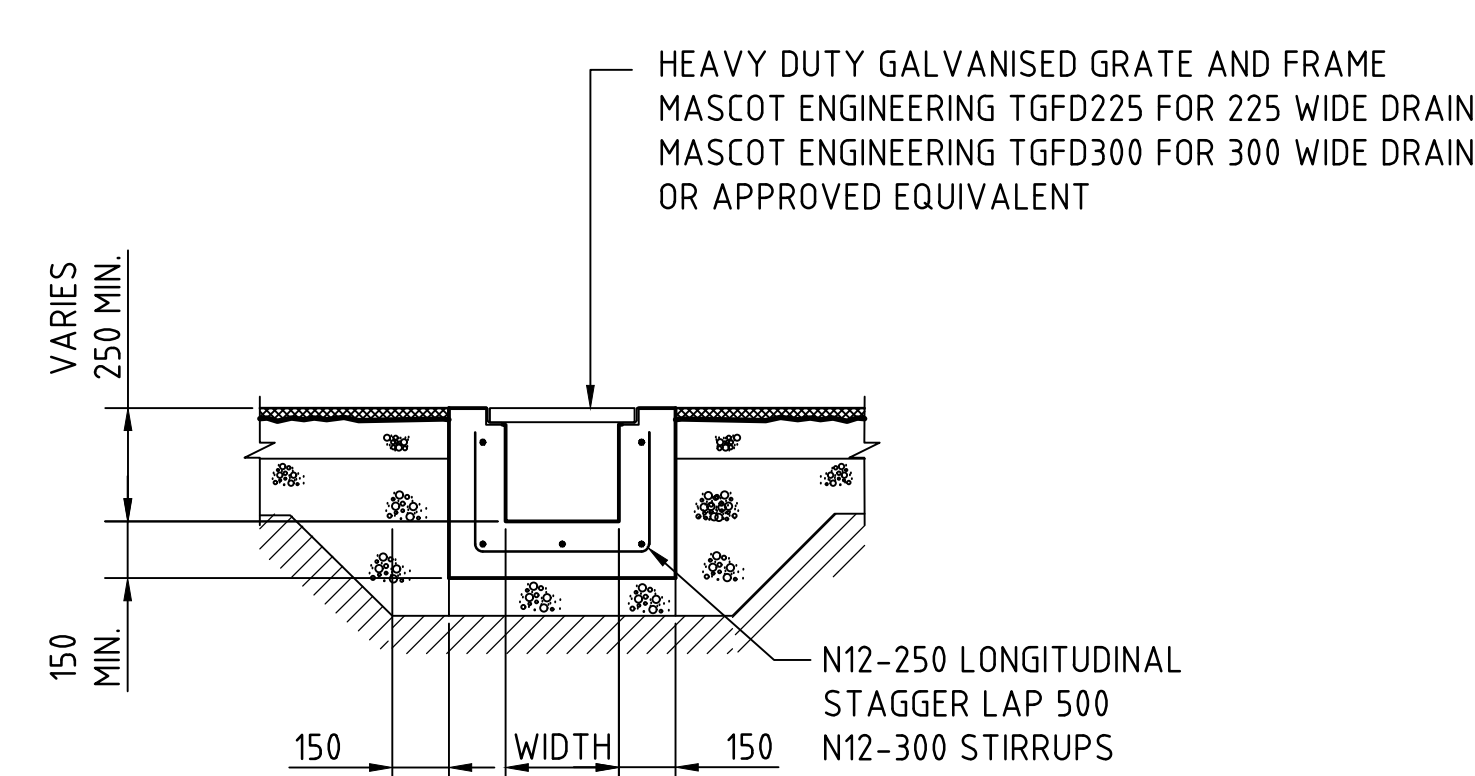
1. WHERE GULLY PIT IS LOCATED ON KERB RETURNS OR BULB OF CUL-DE-SACS PROVIDE CURVED PRECAST CONCRETE LINTELS.
2. SAG PITS SHALL HAVE LINTEL PLACED CENTRALLY ABOUT THE GRATE.
3. ALL REINFORCING TO HAVE 30 MIN. CLEAR CONCRETE COVER.
4. FOR PITS DEEPER THAN 1200mm STEP IRONS SHALL BE PROVIDED.

DEPTH 'H'	THICKNESS 'TW'	WALL REINFORCEMENT	THICKNESS 'TR'	ROOF REINFORCEMENT	THICKNESS 'TB'	BASE REINFORCEMENT
<15m	150mm	N12-200 EACH WAY	150mm	N12-200 EACH WAY	150mm	N12-200 EACH WAY
15m-3.0m	200mm	N12-200 EACH WAY	200mm	N12-200 EACH WAY	200mm	N12-200 EACH WAY
3.0m-4.5m	200mm	N16-200 EACH WAY	200mm	N16-200 EACH WAY	200mm	N12-200 EACH WAY
4.5-6.0	250mm	N16-200 EACH WAY	250mm	N16-200 EACH WAY	250mm	N16-200 EACH WAY

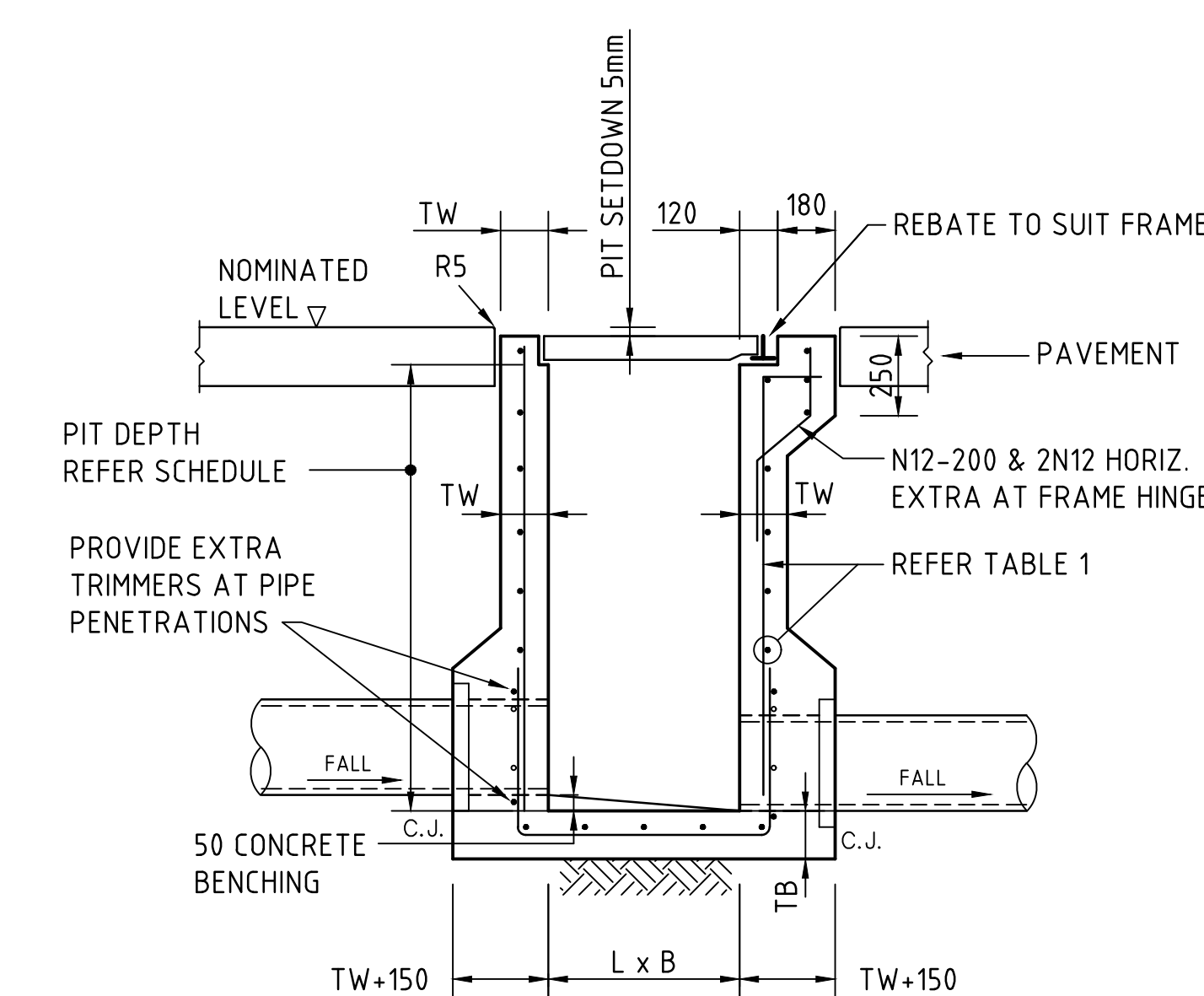


1. PROPRIETARY T-PIECE CONNECTORS SHALL BE USED TO WHERE DIRECT CONNECTIONS ARE REQUIRED TO uPVC PIPES
2. ALL JOINTS TO BE SEALED WITH SOLVENT WELDED JOINTS.
3. THE PVC PIPE SHALL NOT PROTRUDE BEYOND THE INNER SURFACE OF THE STORMWATER PIPE.

SCALE 1:20

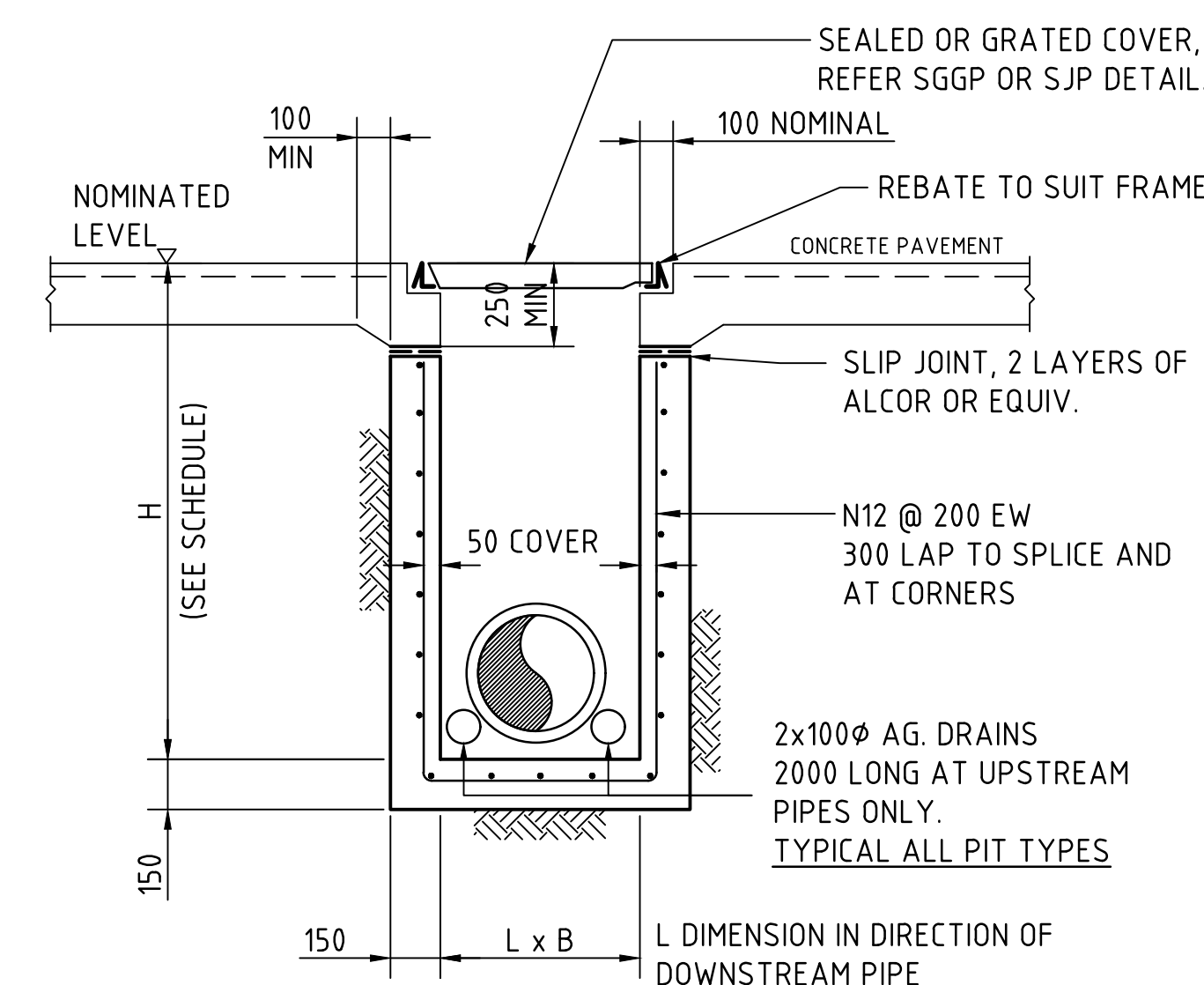


FALL 1:100 TO PITS
GRATED DRAIN DETAIL IN ASPHALT
SCALE 1:20



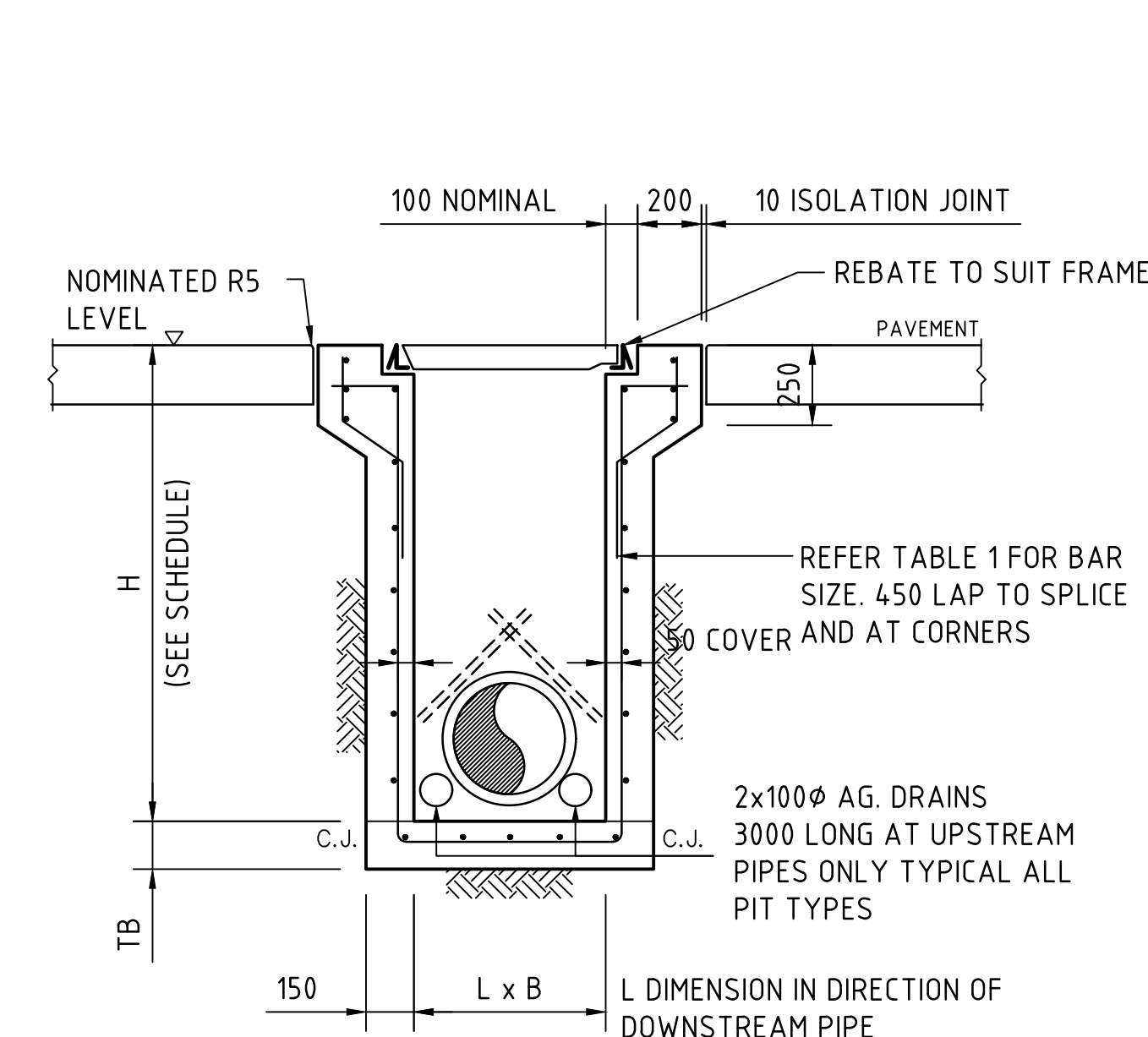
NOTES:

1. WHERE GULLY PIT IS LOCATED ON KERB RETURNS OR BULB OF CUL-DE-SACS PROVIDE CURVED PRECAST CONCRETE LINTELS.
2. SAG PITS SHALL HAVE LINTEL PLACED CENTRALLY ABOUT THE GRATE.
3. ALL REINFORCING TO HAVE 30 MIN. CLAEAR CONCRETE COVER.
4. FOR PITS DEEPER THAN 1200mm CLIMB RAILS SHALL BE PROVIDED.

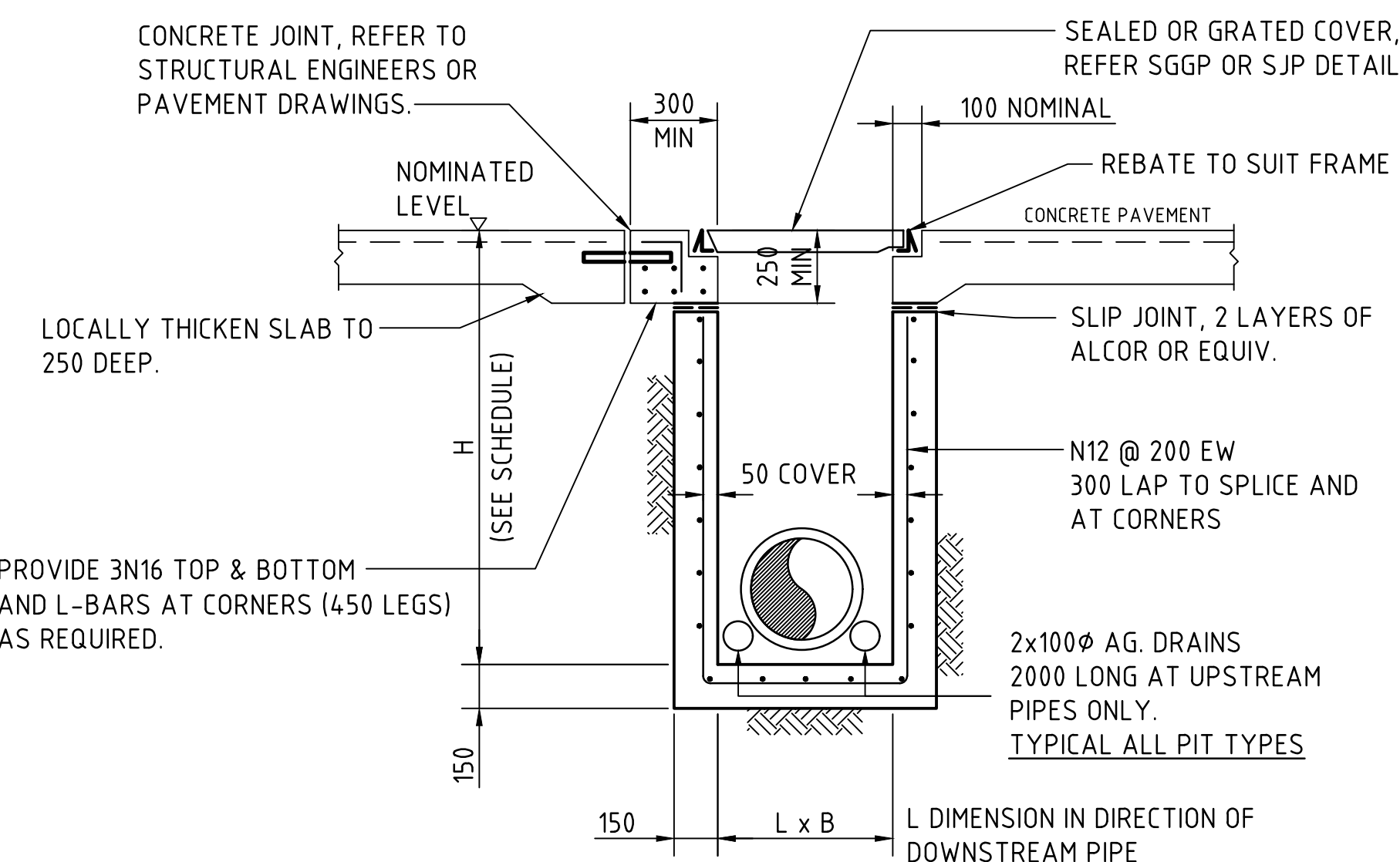


GRATE/COVER SUPPORT
CAST-INTO PAVEMENT SLAB

(ADOPT IN CONCRETE PAVEMENTS FOR SGGP's & SJP's, WHERE JOINTS ARE NOT LOCATED WITHIN PROXIMITY OF THE GRATE)

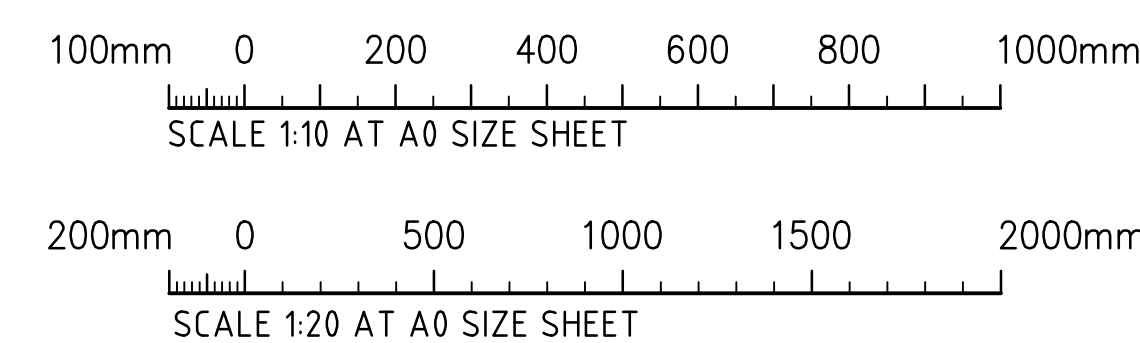


DEPTH 'H'	WALL THICKNESS 'TW'	WALL REINFORCEMENT	BASE THICKNESS 'TB'	BASE REINFORCEMENT
< 1.0m	150mm	-	150mm	-
1.0m-3.0m	150mm	N12-200 EACH WAY	150mm	N12-200 EACH WAY
3.0m-4.5m	200mm	N12-200 EACH WAY	200mm	N12-200 EACH WAY
4.5-6.0	200mm	N16-200 EACH WAY	200mm	N16-200 EACH WAY



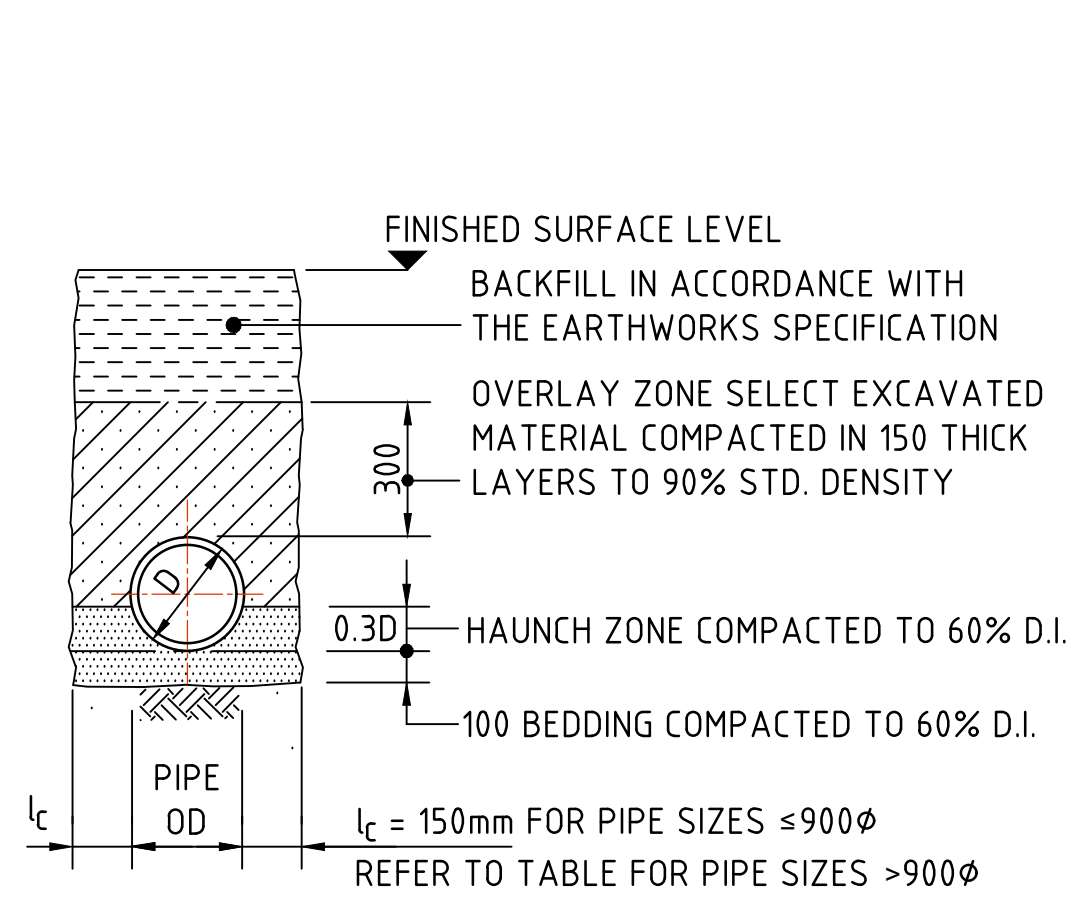
GRATE/COVER SUPPORT
CAST-INTO PAVEMENT SLAB

(ADOPT IN CONCRETE PAVEMENT FOR SGGP's & SJP's,
WHERE PITS ARE LOCATED IN THE CORNER OF SLAB
PANELS OR ADJACENT TO SLAB PANEL JOINTS)



FOR DEVELOPMENT APPLICATION

										ARCHITECT		CLIENT		PROJECT		CONSULT AUSTRALIA		Costin Roe Consulting Pty Ltd. ABN 50 003 676 446		DRAWING TITLE CONCEPT STORMWATER DETAILS - SHEET 1			
														PROPOSED WAREHOUSE 88 NEWTON ROAD, WETHERILL PARK NSW 2164						CIVIL & STRUCTURAL ENGINEERS		DRAWING No C015039.01-DA 45	
ISSUED FOR DEVELOPMENT APPLICATION										12.02.25		C											
ISSUED FOR DEVELOPMENT APPLICATION										29.04.24		B											
ISSUED FOR DEVELOPMENT APPLICATION										12.02.24		A											
AMENDMENTS										DATE		ISSUE		AMENDMENTS		DATE		ISSUE		AMENDMENTS		DATE	

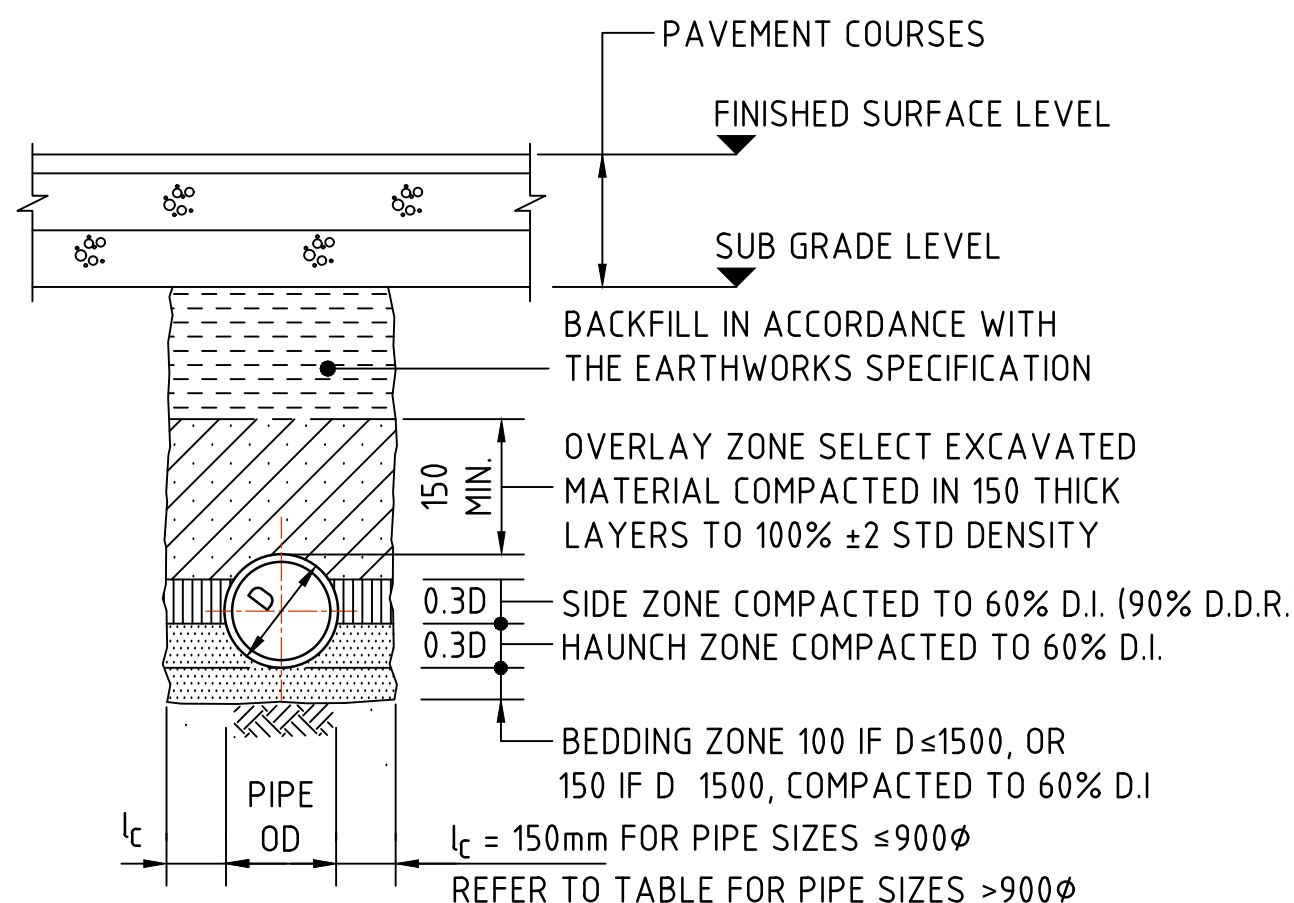


TYPE H1 SUPPORT TO CONCRETE PIPES AT LANDSCAPED AREAS
SCALE 1:20

BEDDING & HAUNCH MATERIAL GRADING	
SIEVE SIZE (mm)	WEIGHT PASSING (%)
19.0	100
2.36	100 TO 50
0.60	90 TO 50
0.30	60 TO 10
0.15	25 TO 0
0.075	10 TO 0

SIDE ZONE WIDTH	
PIPE SIZE (mm)	l _c (mm)
≤ 900φ	150
1050φ	175
1200φ	200
1350φ	225
1500φ	250
1650φ	275
1800φ	300

ENGINEER TO SPECIFY TRENCH WIDTHS FOR PIPE SIZES GREATER THAN 1800φ



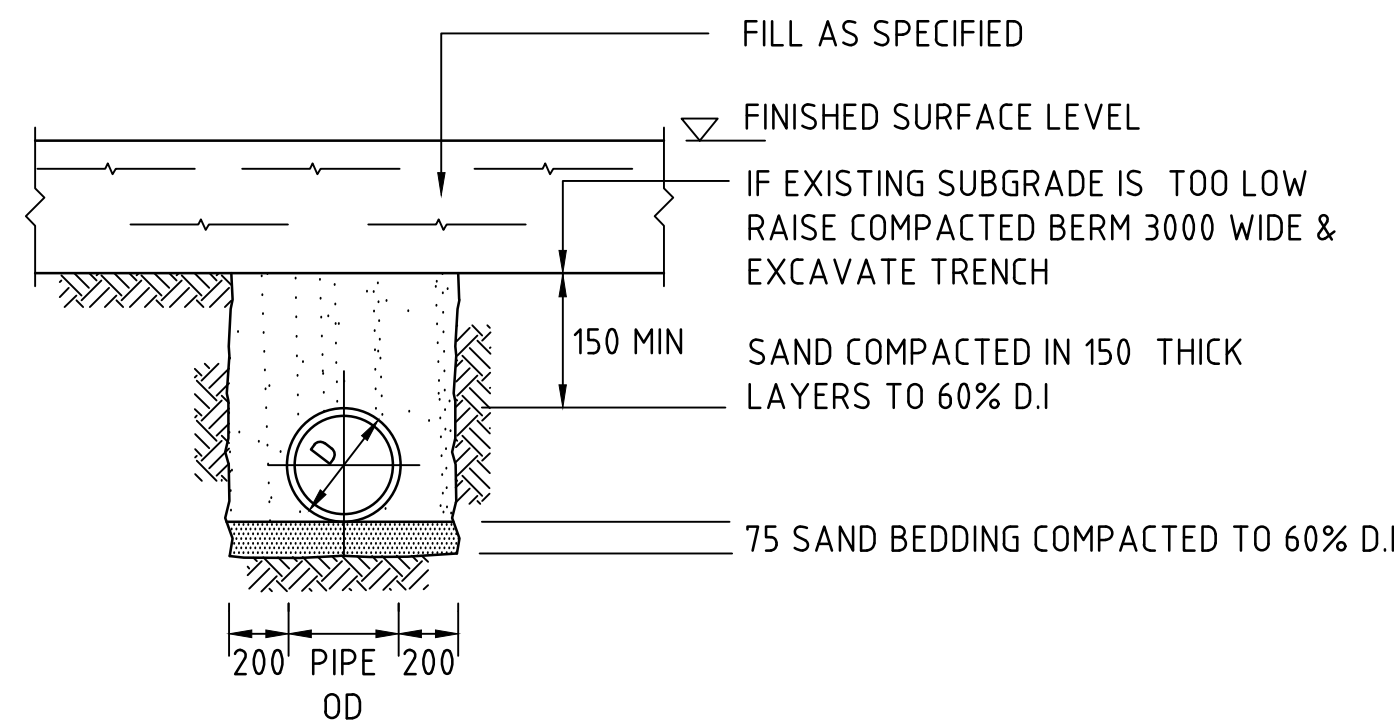
TYPE HS2 SUPPORT TO CONCRETE PIPES UNDER PAVEMENT

SCALE 1:20
D ≤ 1350, MAX FILL = 4.0m
D > 1350, MAX FILL = 3.0m

BEDDING & HAUNCH MATERIAL GRADING	
SIEVE SIZE (mm)	WEIGHT PASSING (%)
19.0	100
2.36	100 TO 50
0.60	90 TO 50
0.30	60 TO 10
0.15	25 TO 0
0.075	10 TO 0

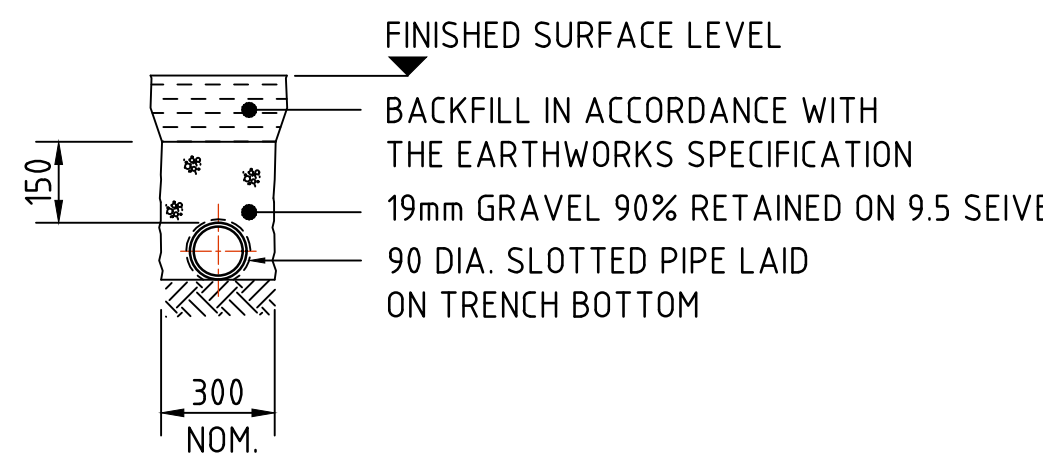
SIDE ZONE WIDTH	
PIPE SIZE (mm)	l _c (mm)
≤ 900φ	150
1050φ	175
1200φ	200
1350φ	225
1500φ	250
1650φ	275
1800φ	300

ENGINEER TO SPECIFY TRENCH WIDTHS FOR PIPE SIZES GREATER THAN 1800φ



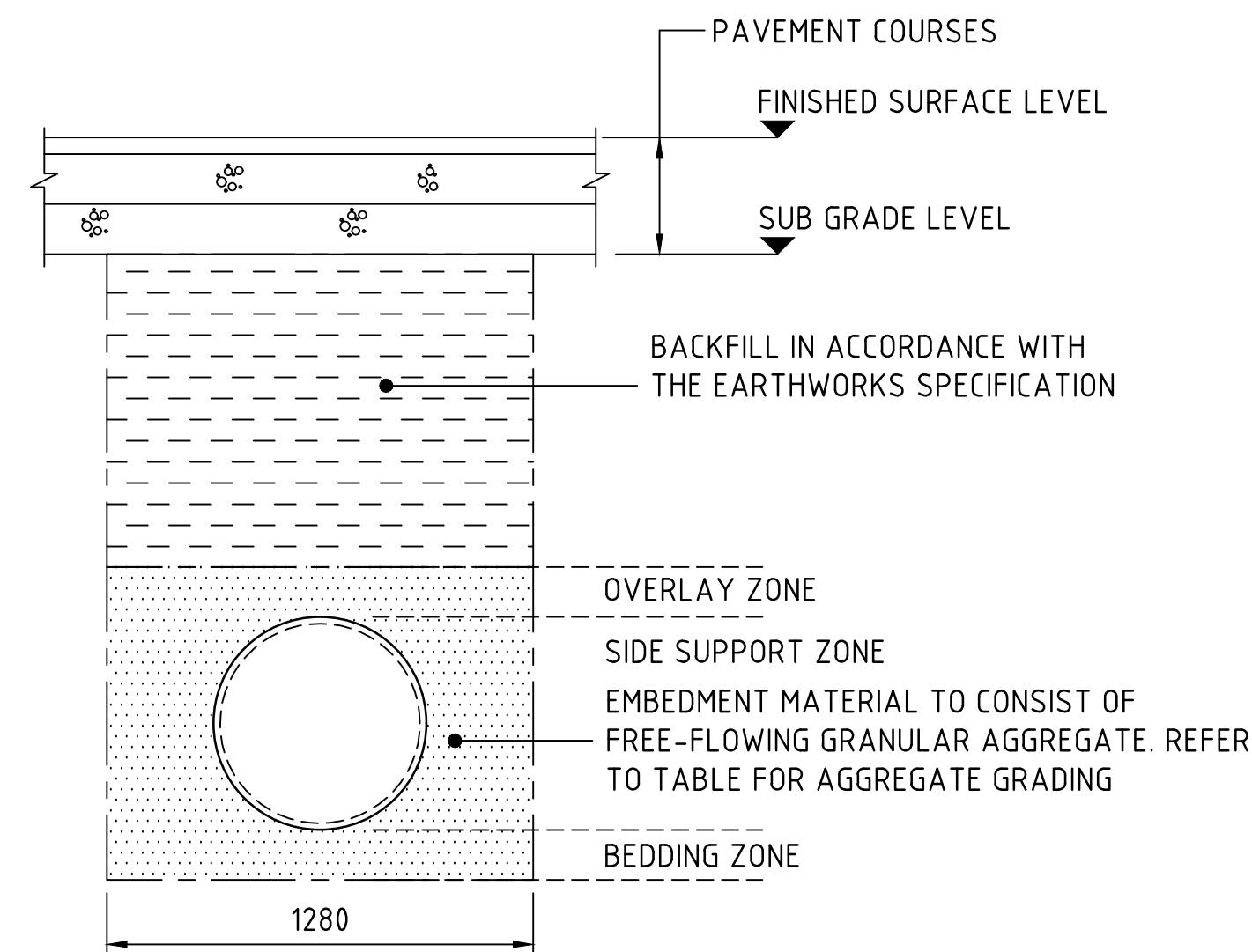
SUPPORT TO uPVC PIPES

SCALE 1:20



SUPPORT TO AGRICULTURAL DRAIN
FOR USE UNDER CAR PARK PAVEMENTS/LANDSCAPED AREAS
SCALE 1:20

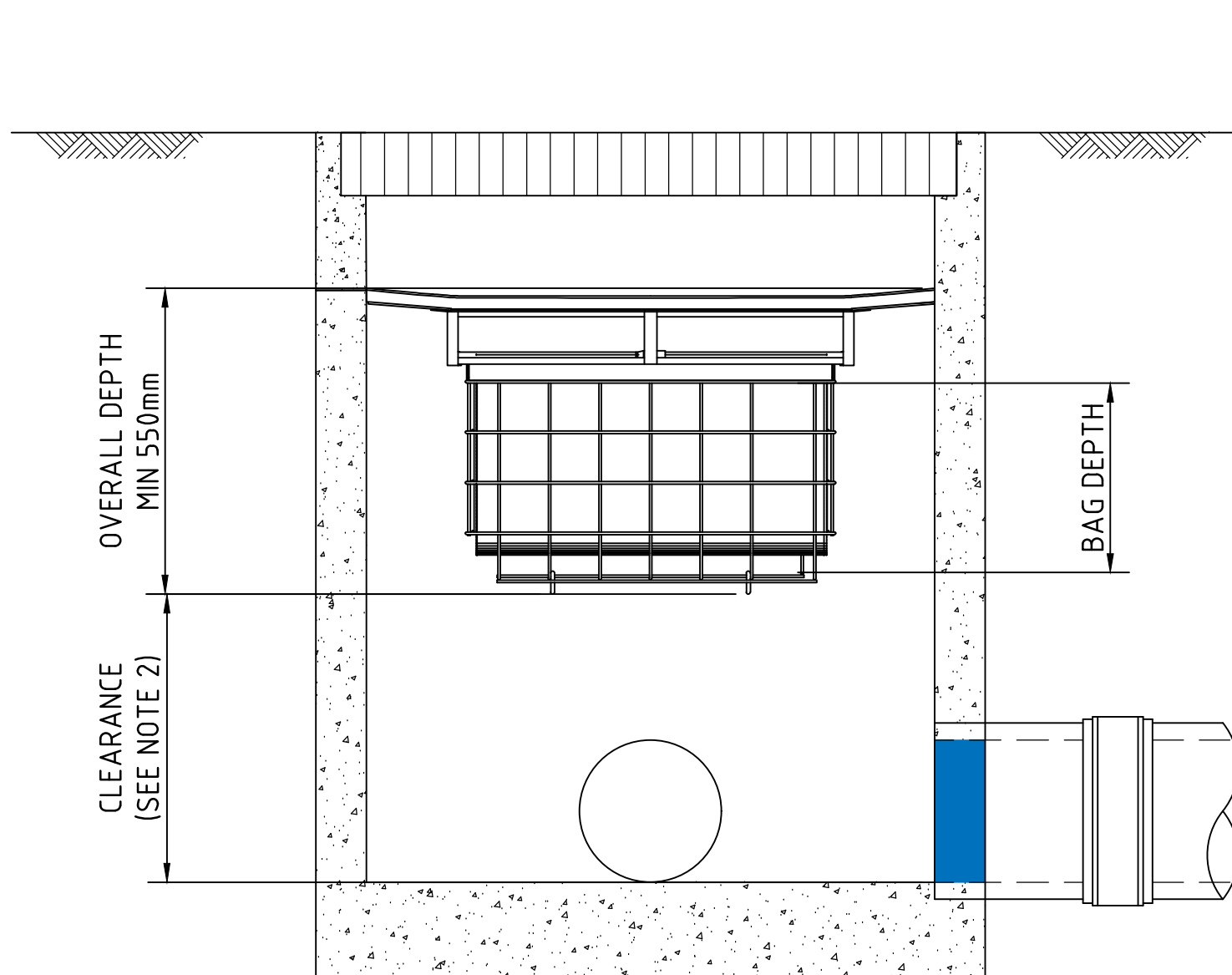
TYPICAL AGGREGATE GRADING			
SIEVE SIZE (mm)	% PASSING BY MASS		
	NOMINAL SIZE OF SINGLE-SIZE AGGREGATE 10mm	7mm	5mm
26.5	-	-	-
19	-	-	-
13.2	100	-	-
9.5	85-100	100	-
6.7	-	85-100	100
4.75	0-20	-	85-100
2.36	0-5	0-20	0-40
0.075	0-2	0-2	0-2



SUPPORT TO STORMPRO HDPE PIPES UNDER PAVEMENT

SCALE 1:20
PIPES TO BE INSTALLED AS PER REQUIREMENTS OF STORMPRO NSTALLATION GUIDE

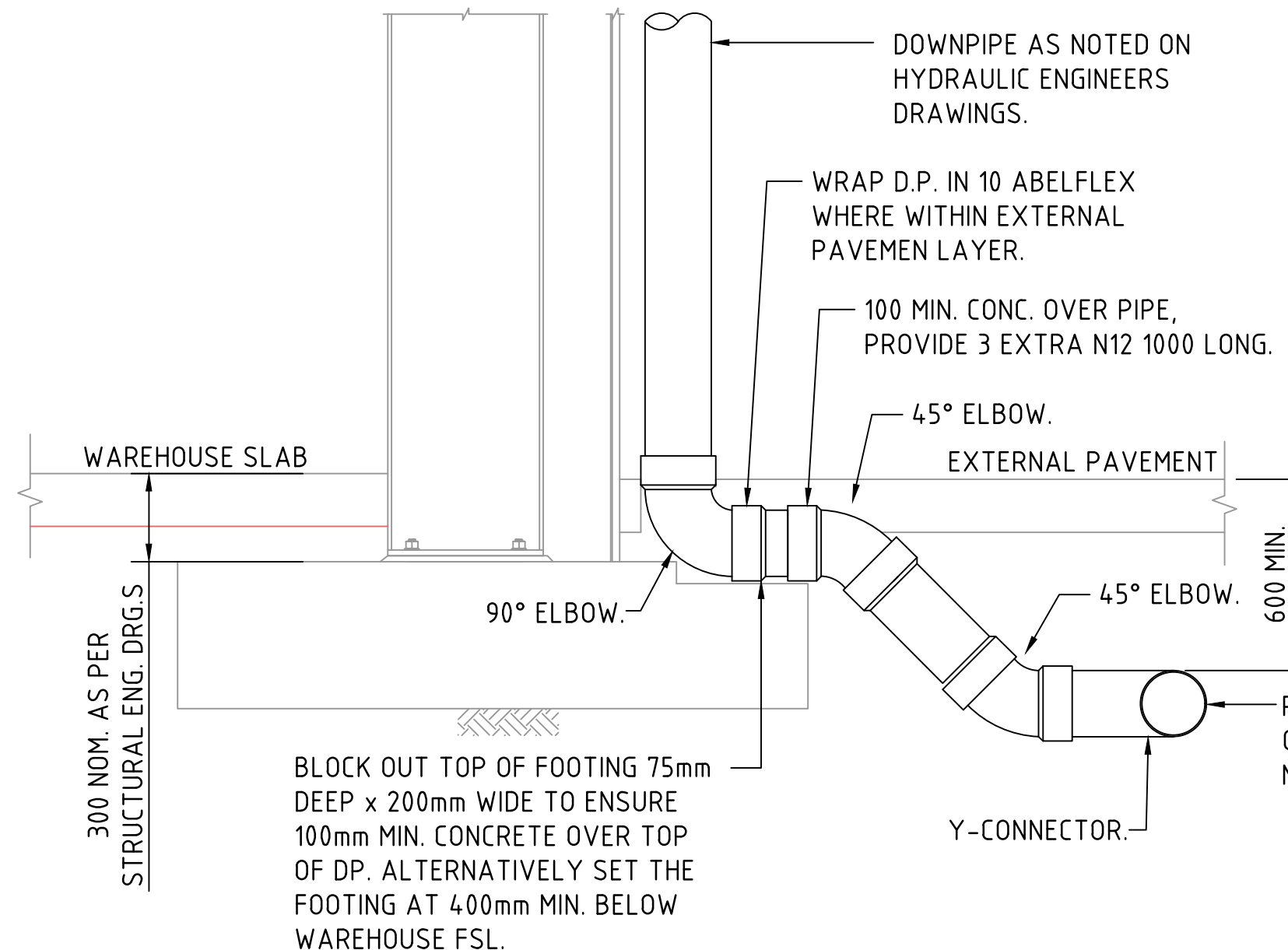
MINIMUM TRENCH DIMENSIONS									
NOMINAL DIAMETER (mm)	150mm	225mm	300mm	375mm	450mm	525mm	600mm	750mm	900mm
MINIMAL TRENCH WIDTH (mm)	470mm	560mm	745mm	830mm	1115mm	1200mm	1280mm	1435mm	1700mm
MINIMAL DEPTH OF BEDDING ZONE (mm)	100mm	100mm	100mm	100mm	150mm	150mm	150mm	150mm	150mm
MINIMAL DEPTH OF OVERLAY ZONE (mm)	150mm	150mm	150mm	150mm	150mm	150mm	150mm	150mm	200mm



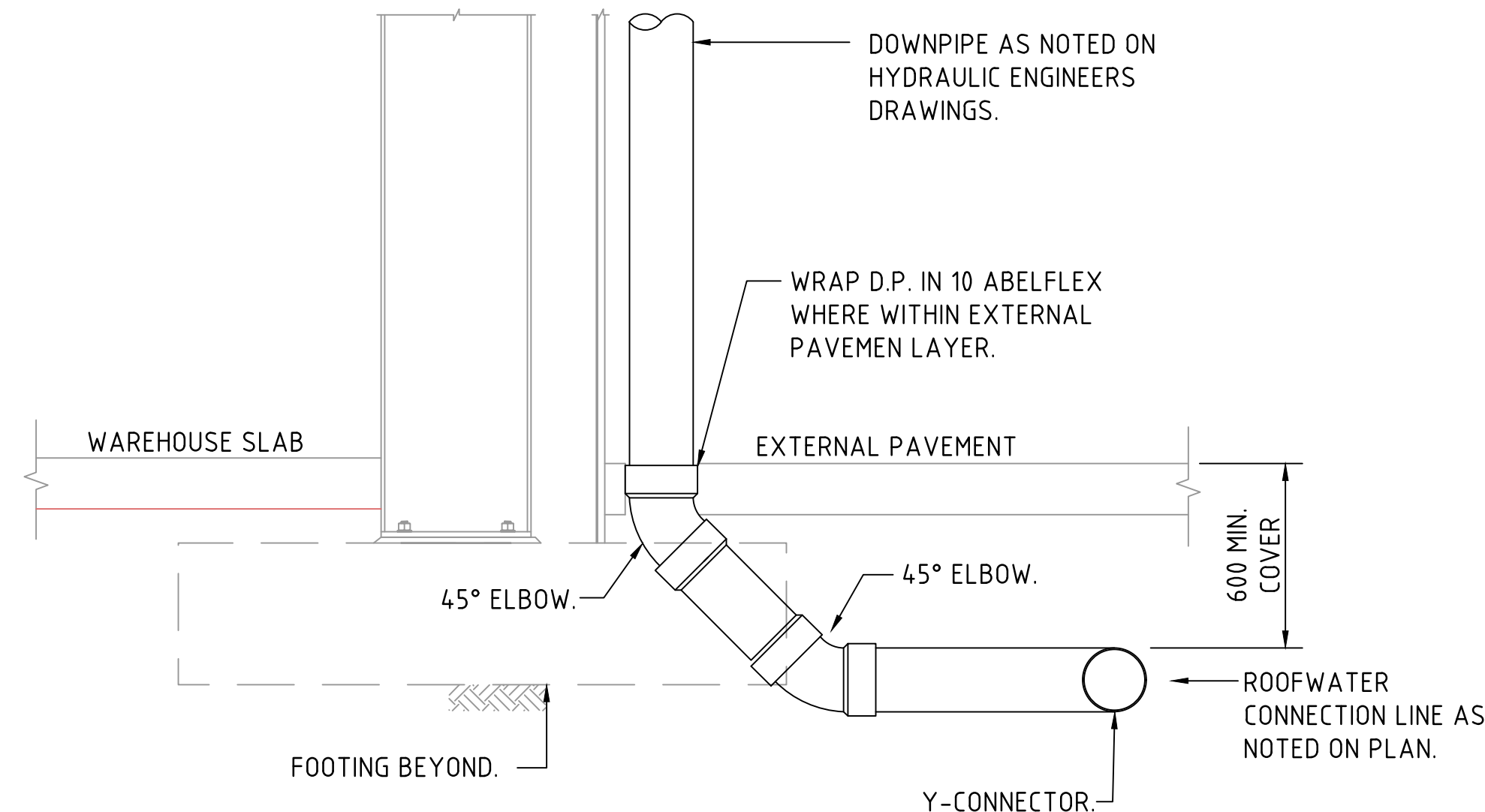
SURFACE FLOW CONFIGURATION



PIPE FLOW CONFIGURATION



DOWNPIPE TURN-UP DETAIL A
(AT FOOTING LOCATION)
SCALE 1:20



DOWNPIPE TURN-UP DETAIL B
(CLEAR OF FOOTING)
SCALE 1:20

GENERAL NOTES

- THE MINIMUM CLEARANCE DEPENDS ON THE CONFIGURATION (SEE NOTE 2) AND THE LOCAL COUNCIL REQUIREMENTS.
- CLEARANCE FOR ANY PIT WITHOUT AN INLET PIPE (ONLY USED FOR SURFACE FLOW) CAN BE AS LOW AS 50mm. FOR OTHER PITS, THE RECOMMENDED CLEARANCE SHOULD BE GREATER OR EQUAL TO THE PIPE OBVERT SO AS NOT TO INHIBIT HYDRAULIC CAPACITY.
- OCEAN PROTECT PROVIDES TWO FILTRATION BAG TYPES:- 200 MICRON BAGS FOR HIGHER WATER QUALITY FILTERING AND A COARSE BAG FOR TARGETING GROSS POLLUTANTS.
- DRAWINGS NOT TO SCALE.

GRATED STRIP DRAIN CONFIGURATION

OCEAN PROTECT OCEANGUARD DETAILS

FOR DEVELOPMENT APPLICATION

AMENDMENTS		DATE	ISSUE	AMENDMENTS	DATE	ISSUE
ISSUED FOR DEVELOPMENT APPLICATION		12.02.25	C			
ISSUED FOR DEVELOPMENT APPLICATION		29.01.24	B			
ISSUED FOR DEVELOPMENT APPLICATION		15.02.24	A			

ARCHITECT	SBA
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CLIENT	Centuria
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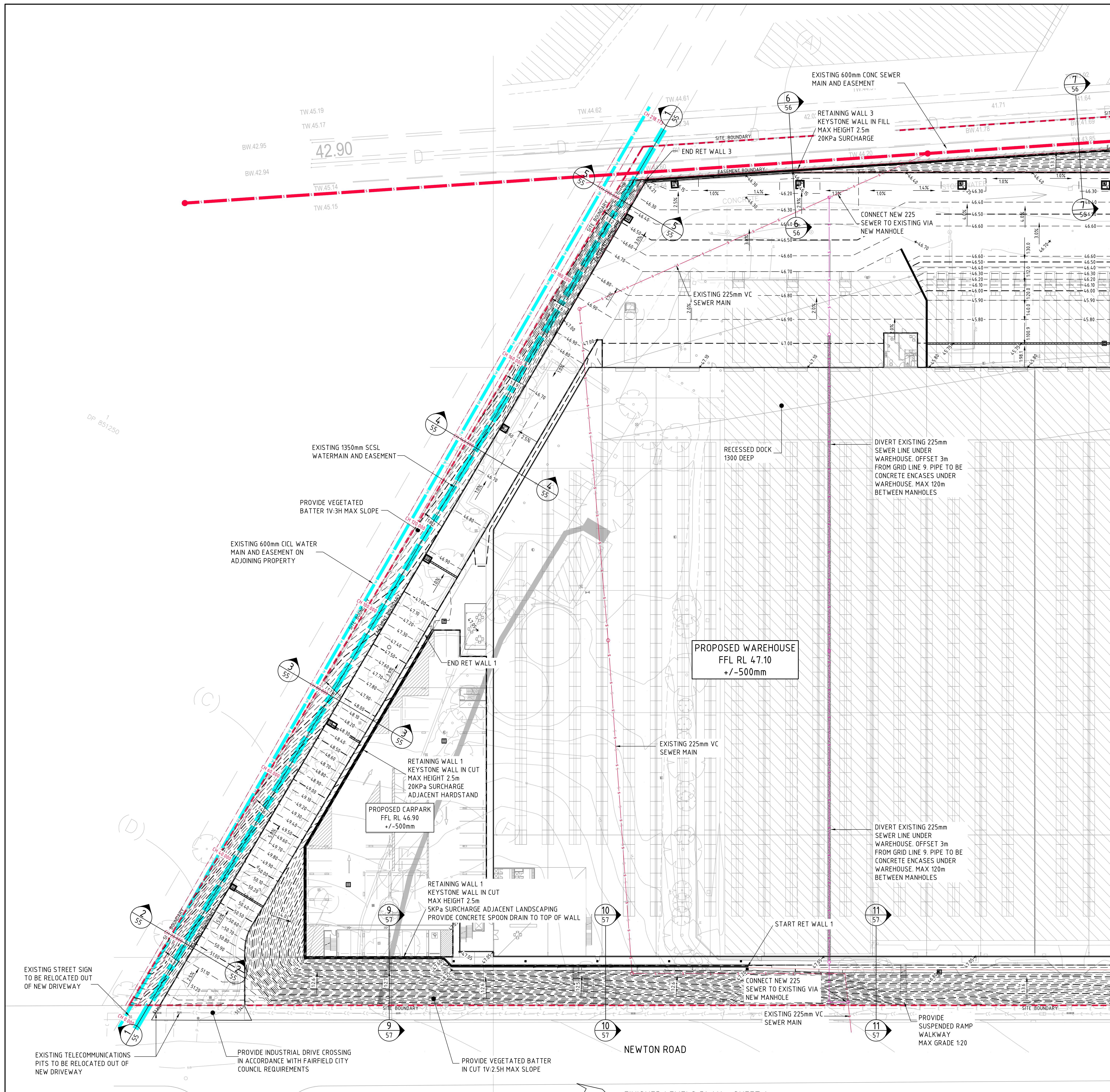
PROJECT	PROPOSED WAREHOUSE
	88 NEWTON ROAD, WETHERILL PARK NSW 2164

CONSULT	AUSTRALIA
---------	-----------

Costin Roe Consulting Pty Ltd.	ABN 50 003 696 446
PO Box N419 Sydney NSW 1220	
Level 4, 4 Westmill Street, Millers Point NSW 2000	
p: +61 2 9251 7699	f: +61 2 9241 3731
e: mail@costinroe.com.au	w: costinroe.com.au

CRC	CIVIL & STRUCTURAL ENGINEERS
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DRAWING TITLE	CONCEPT STORMWATER DETAILS - SHEET 2
DRAWING No	C015039.01-DA 46
ISSUE	C



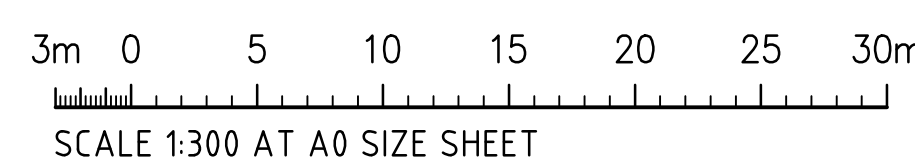
BREAKLINE - REFER TO DRAWING DA52 FOR CONTINUATION

LEGEND:
LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON ESTATE DESIGN INFORMATION PROVIDED BY LTS SURVEYORS DATED 12.10.20 REF 51145001DT

- SGGP, SINGLE GRATED GULLY PIT
- SJP, SEALED JUNCTION PIT
- KIP, KERB INLET PIT
- GD, GRATED DRAIN (300W x 225D UNO)
- EXISTING SYDNEY WATER MAIN
- EXISTING SEWER MAIN
- PROPOSED 225mm SEWER MAIN
- FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS
- FINISHED PAVEMENT SPOT HEIGHT

FINISHED LEVELS NOTES:
REFER TO DRAWING DA40 FOR FINISHED LEVELS NOTES



FOR DEVELOPMENT APPLICATION

LEGEND:

LEVELS DATUM IS AHD.

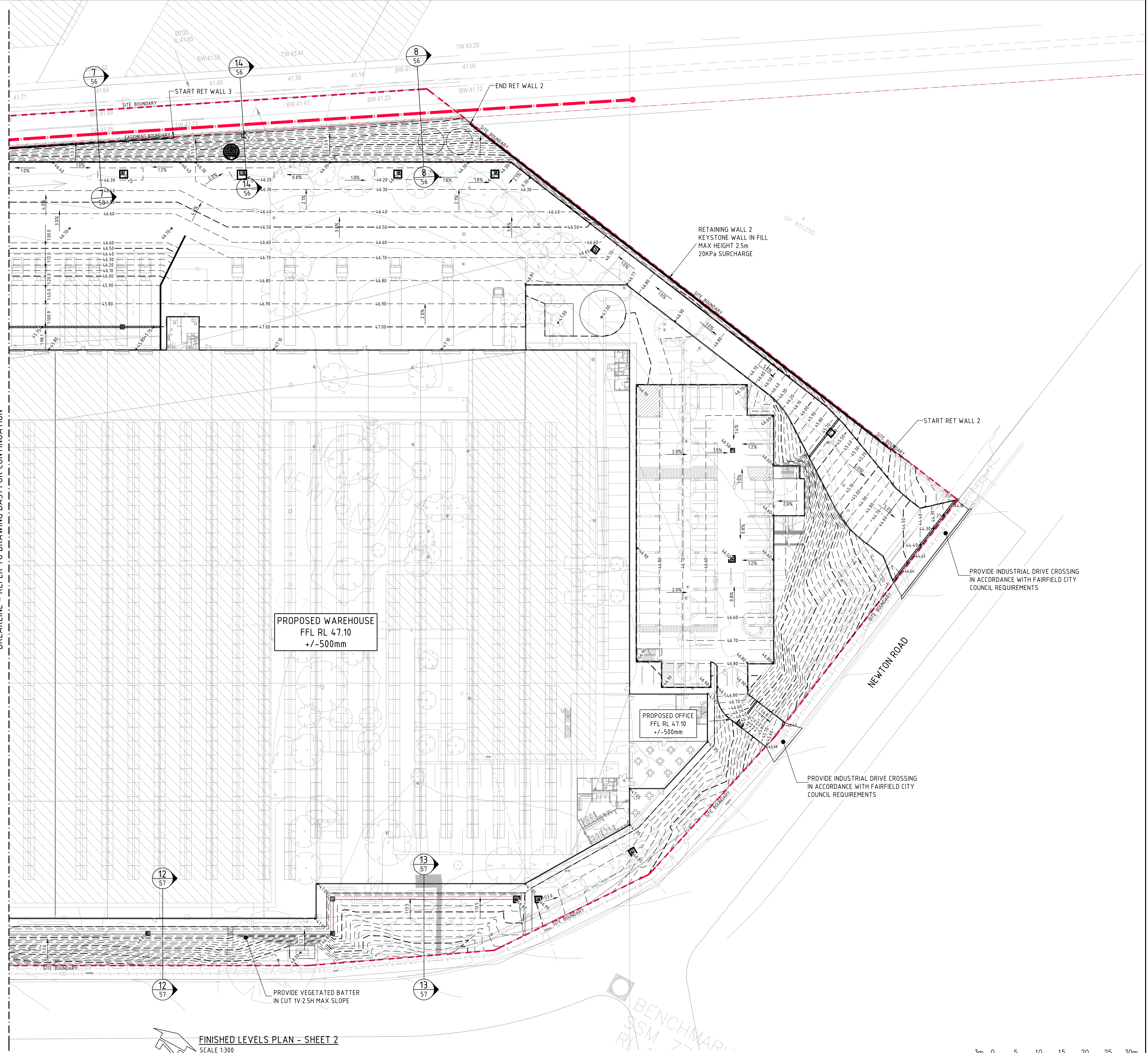
EXISTING SITE LEVELS AND DETAILS BASED ON ESTATE DESIGN INFORMATION PROVIDED BY LTS SURVEYORS DATED 12.10.20 REF 51145001DT

- SGGP, SINGLE GRATED GULLY PIT
- SJP, SEALED JUNCTION PIT
- KIP, KERB INLET PIT
- GD, GRATED DRAIN (300W x 225D UNO)
- EXISTING SYDNEY WATER MAIN
- EXISTING SEWER MAIN
- FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS
- FINISHED PAVEMENT SPOT HEIGHT

FINISHED LEVELS NOTES:

REFER TO DRAWING DA40 FOR FINISHED LEVELS NOTES

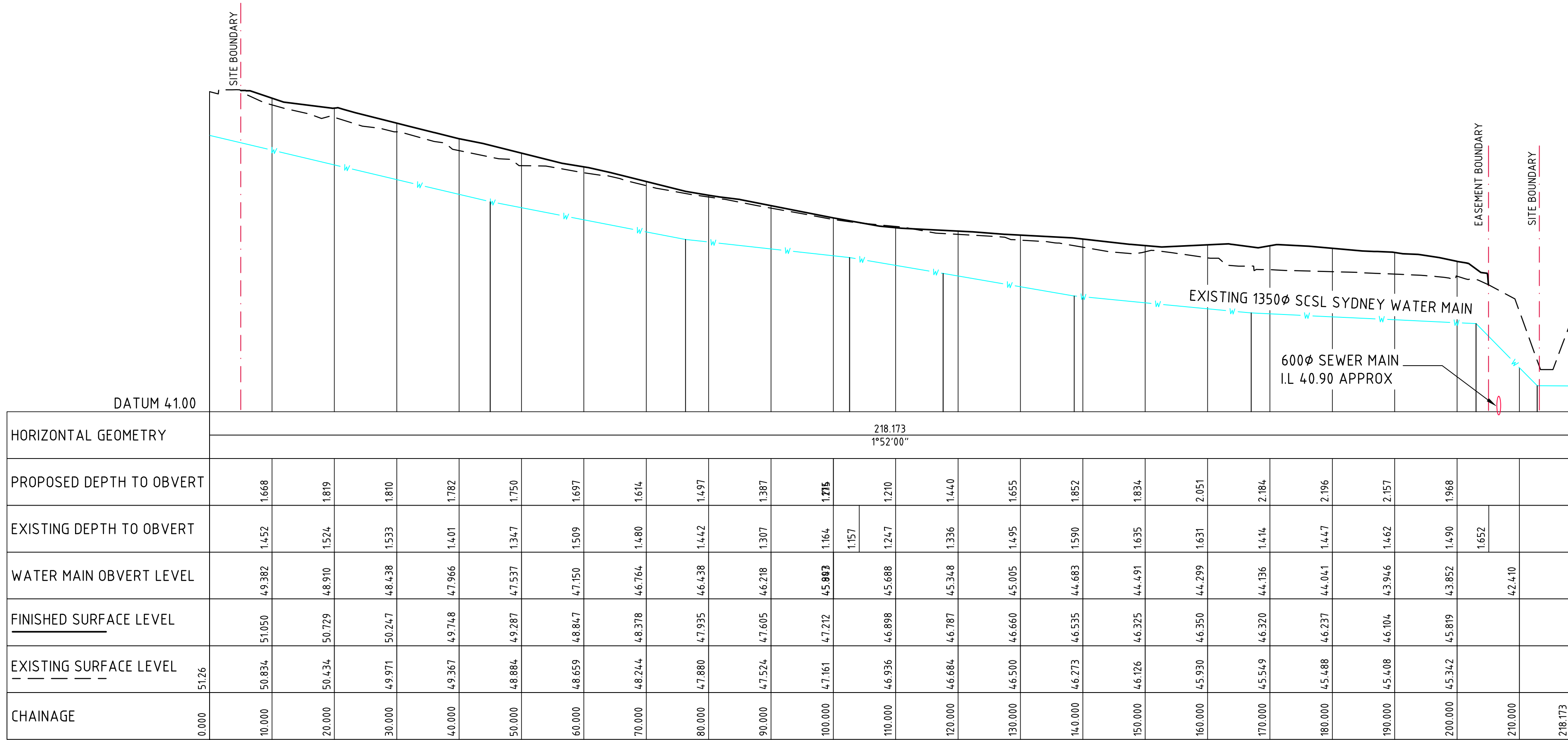
BREAKLINE - REFER TO DRAWING DA51 FOR CONTINUATION



FOR DEVELOPMENT APPLICATION

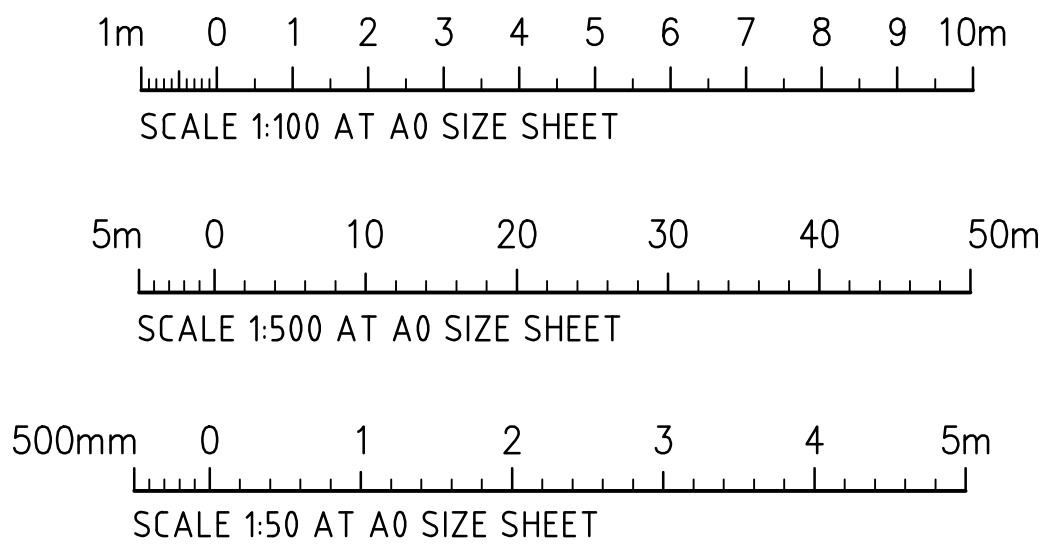
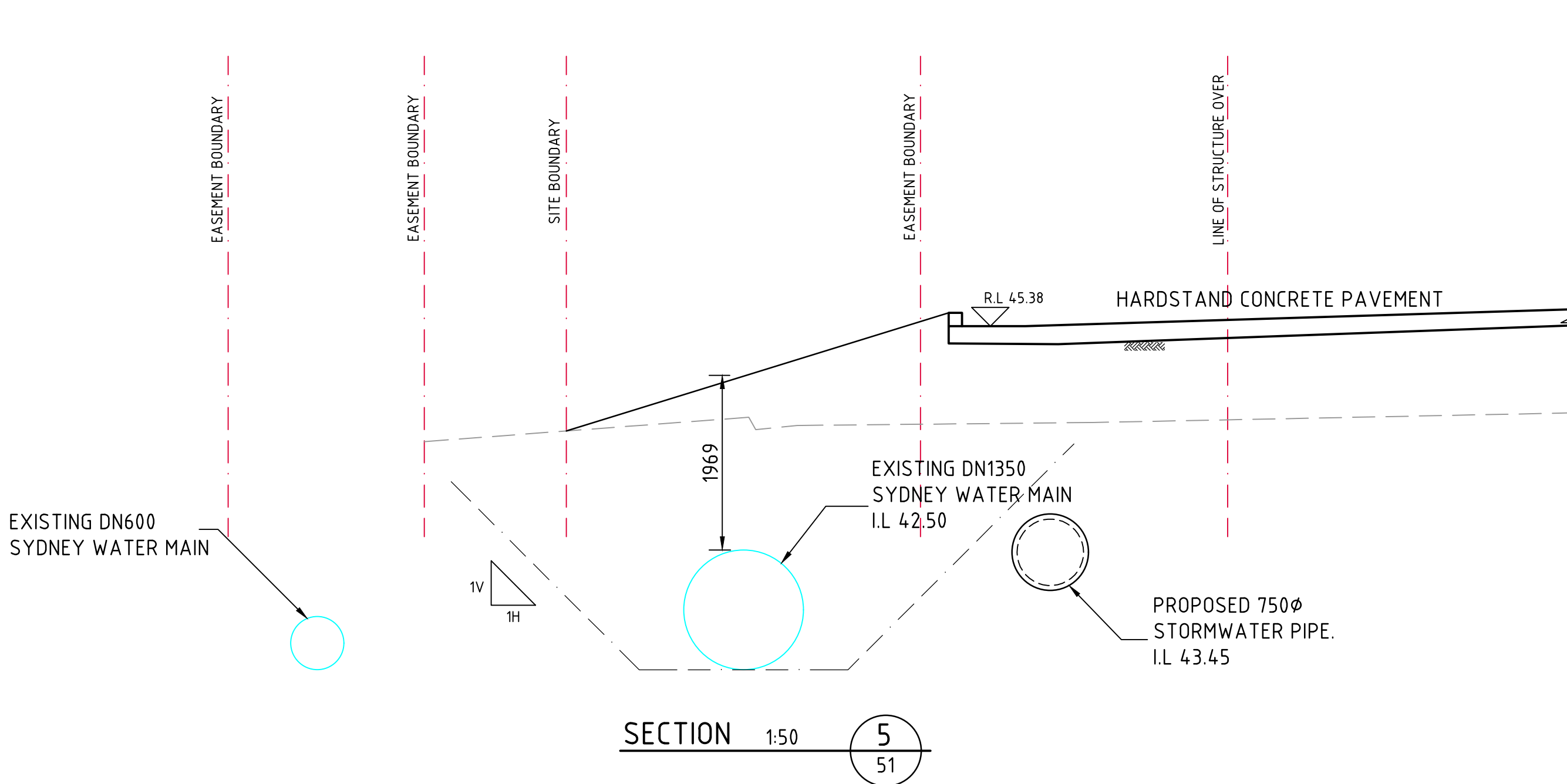
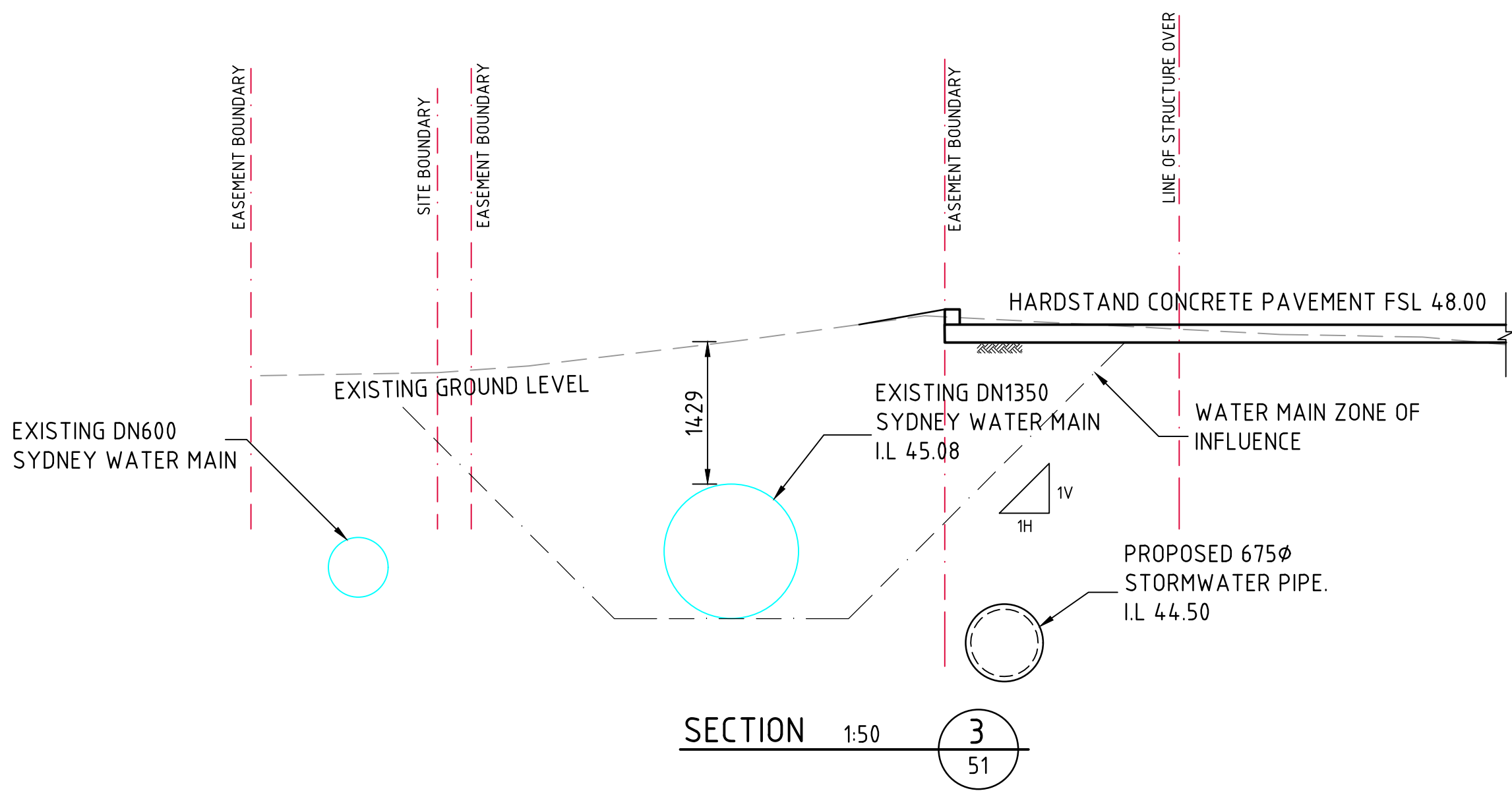
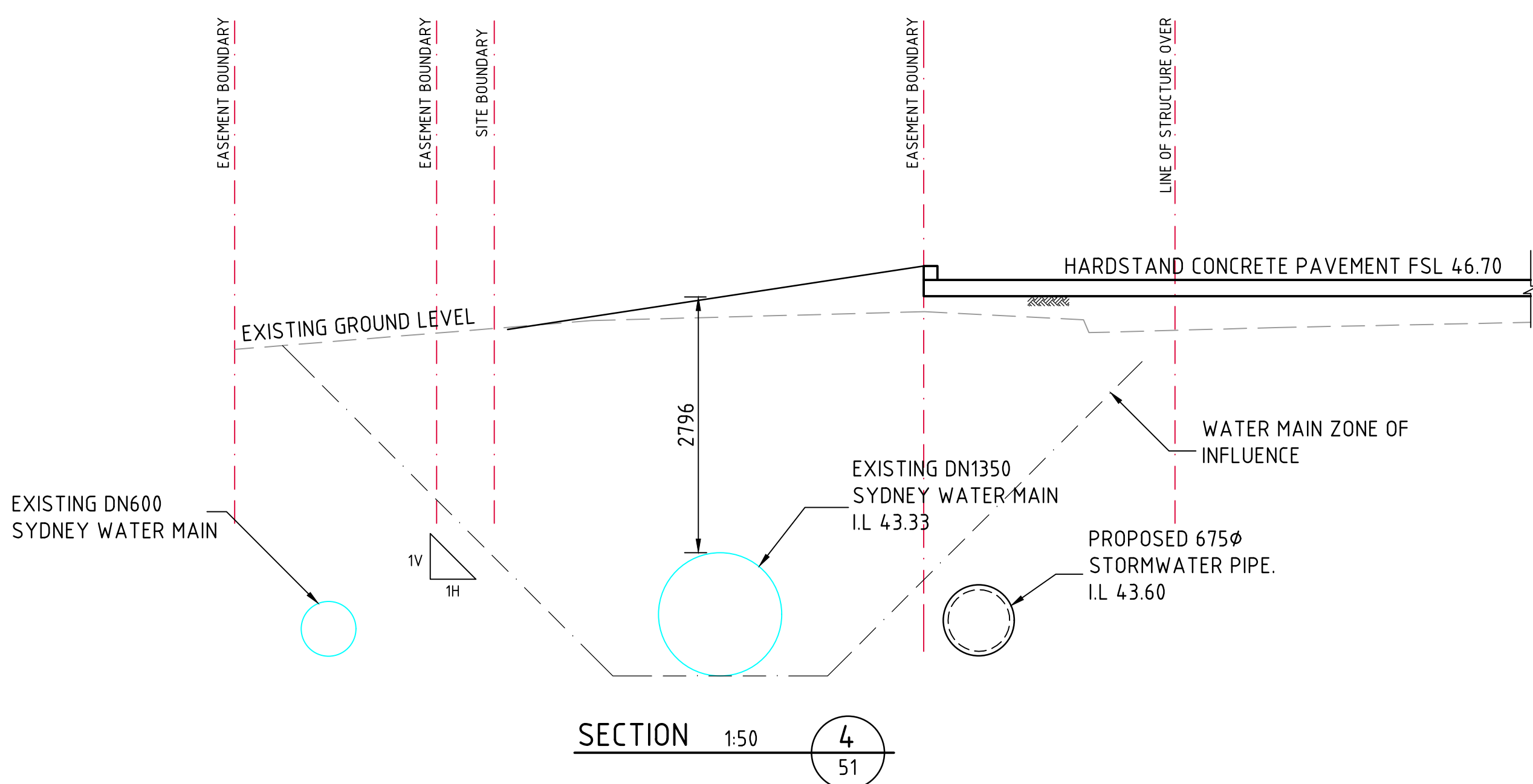
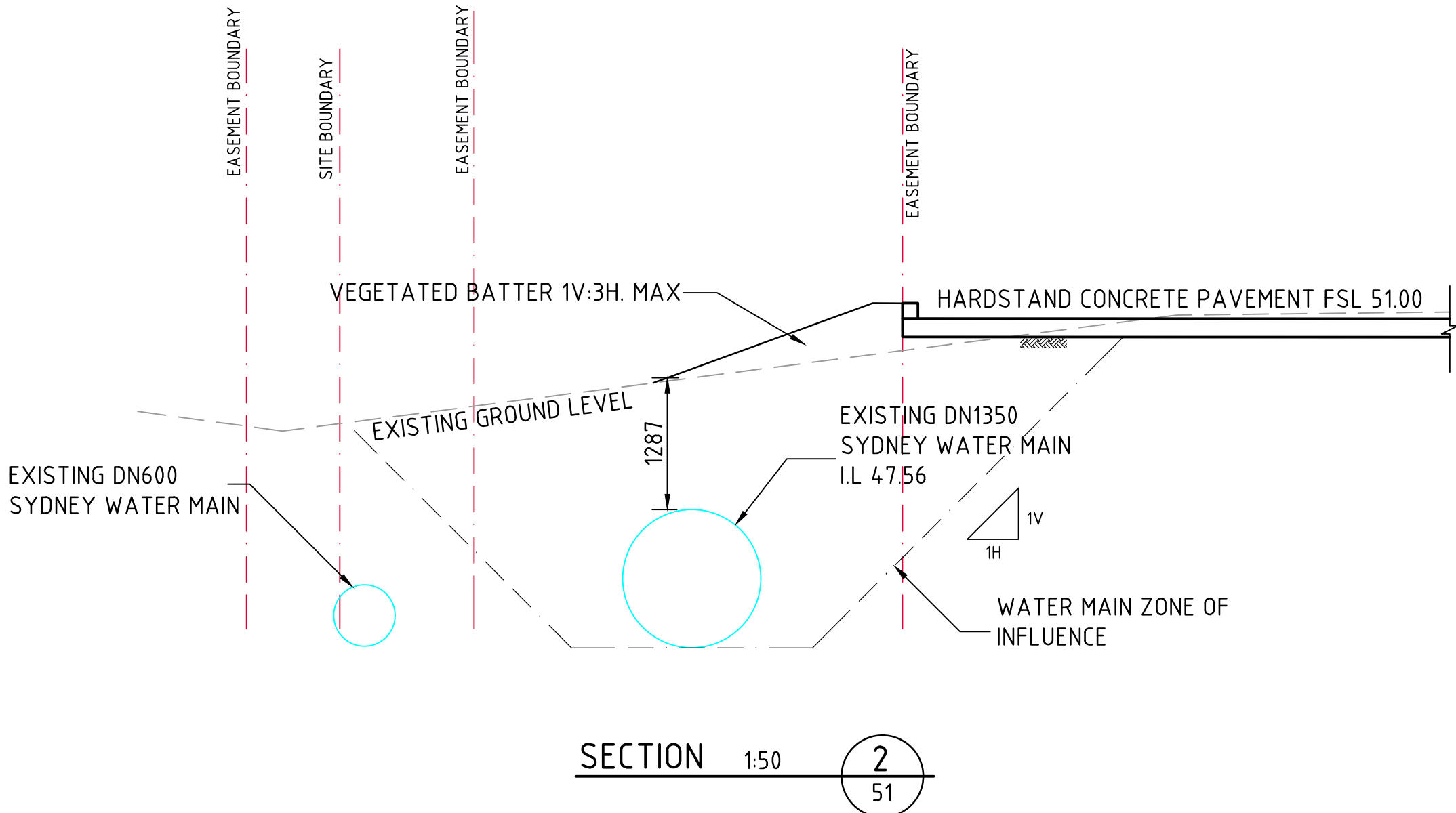
3m 0 5 10 15 20 25 30m
SCALE 1:300 AT A0 SIZE SHEET

ISSUED FOR DEVELOPMENT APPLICATION				12.02.25	E					ARCHITECT				CENTURIA				PROJECT				COSTIN ROE CONSULTING PTY LTD.				DRAWING TITLE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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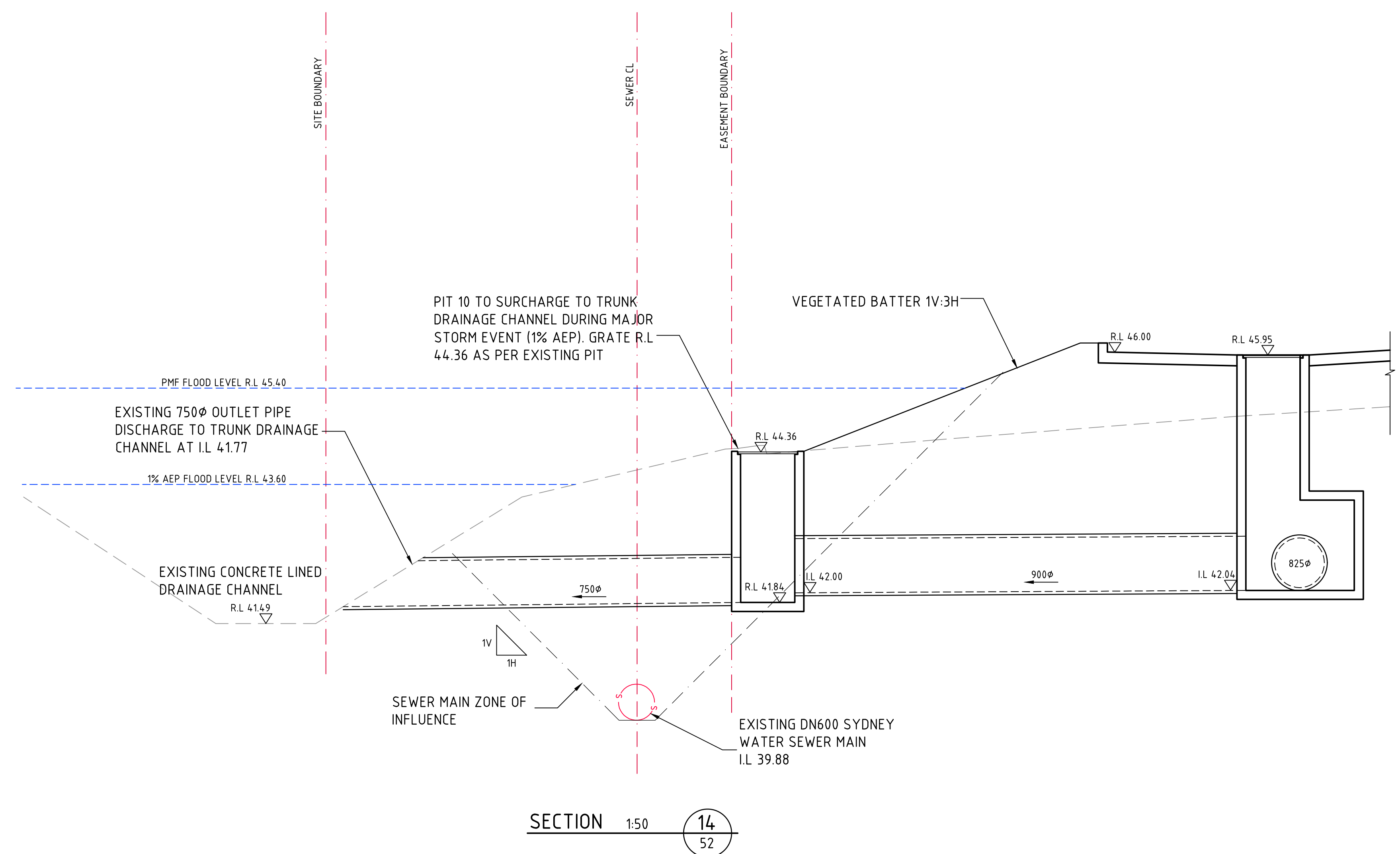
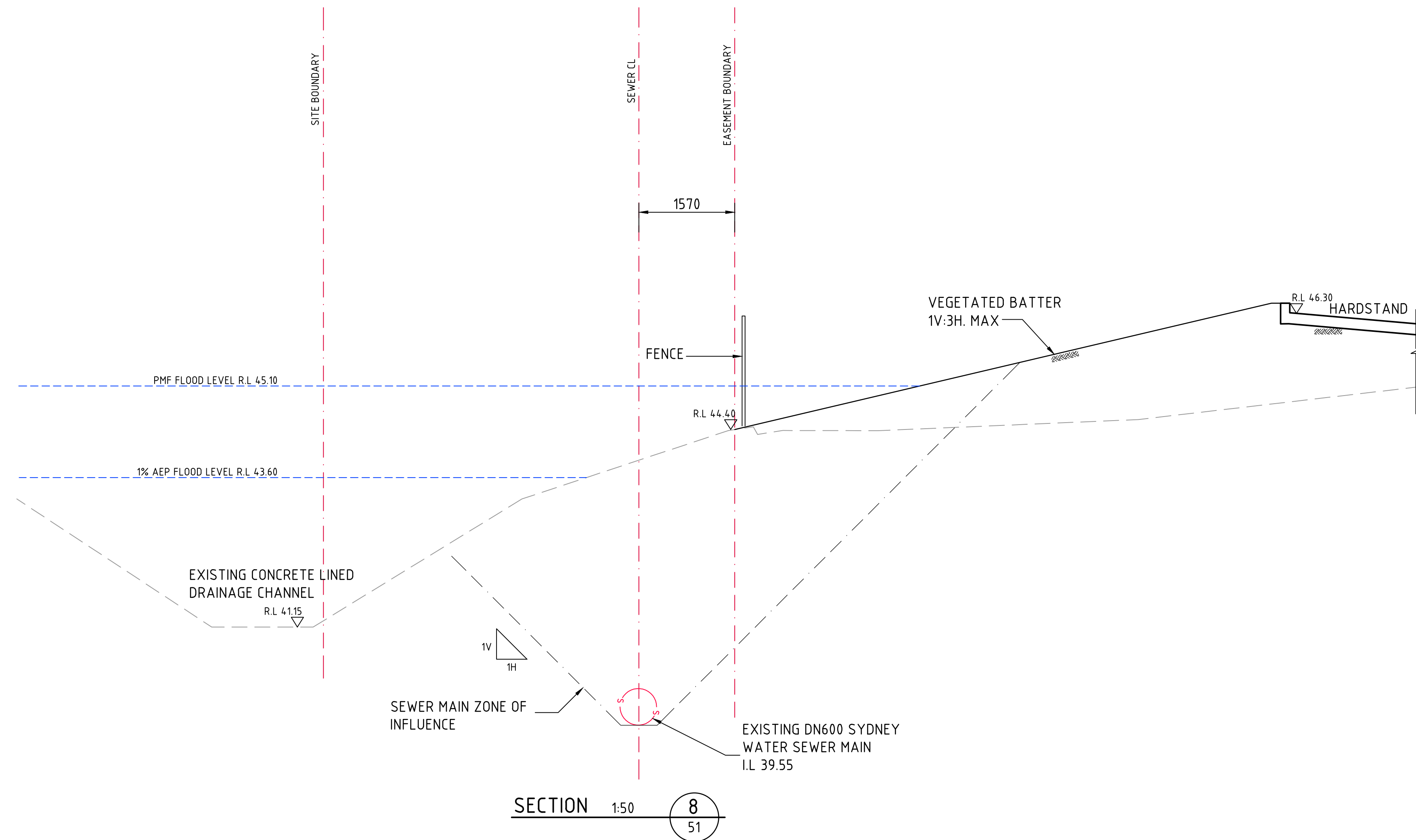
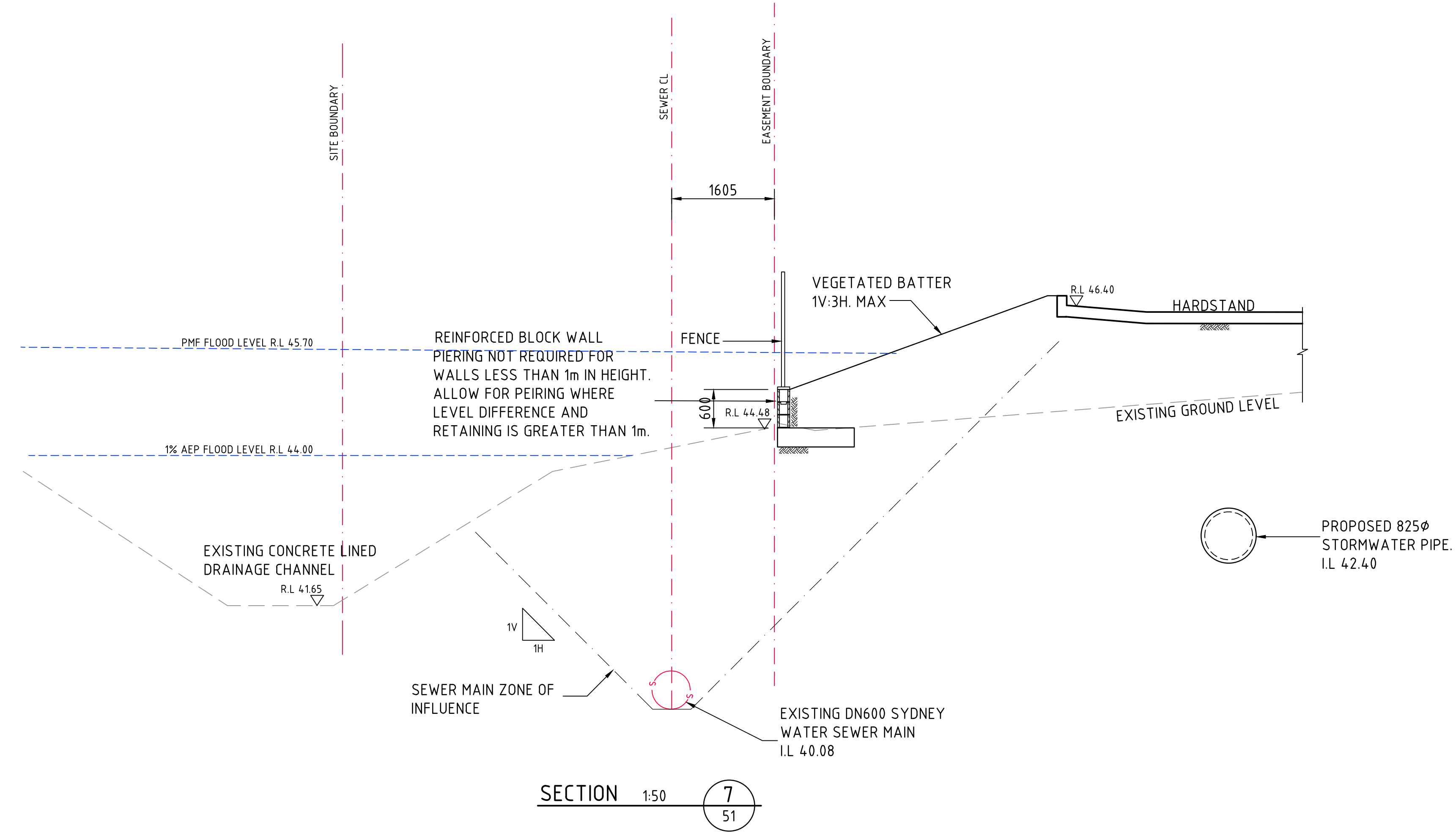
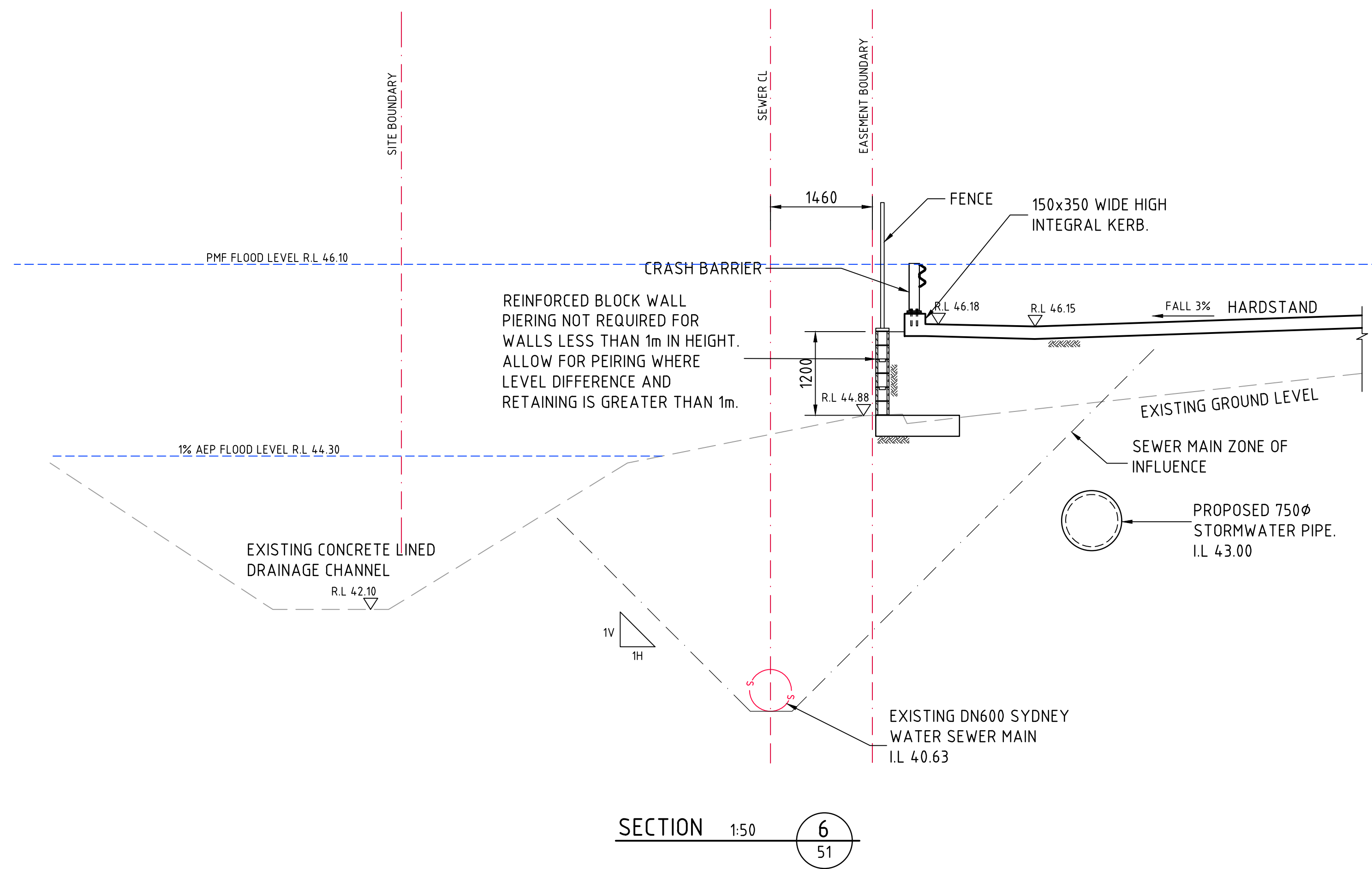
- NOTE:**
- SECTIONS OF SYDNEY WATER ASSETS ARE PROVIDED FOR INFORMATION ONLY.
 - DRAWINGS SHOW THE GENERAL ARRANGEMENT OF THE PROPOSED WORKS & GEOMETRICAL RELATIONSHIP TO THE EXISTING SYDNEY WATER ASSETS.
 - DRAWINGS DO NOT SHOW ANY PROPOSED PROTECTION DETAILS OR CONCEPT PROTECTION DETAILS ASSOCIATED WITH THE WORKS.
 - THESE DRAWINGS ARE INTENDED TO BE USED TO INFORM THE ASSESSMENT OF THE REQUIREMENTS ASSOCIATED WITH THE SYDNEY WATER ASSETS AND CONSULTATION WITH SYDNEY WATER.
- LEGEND:**
- DENOTES BULK EARTHWORKS PROFILE
 - DENOTES EXISTING PROFILE
 - DENOTES WATER MAIN OBVERT PROFILE

SECTION CL 1350mm WATER MAIN 1
HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:50
WATER MAIN LEVELS ARE BASED ON POTHOLE SURVEY AND ARE SHOWN APPROXIMATE ONLY

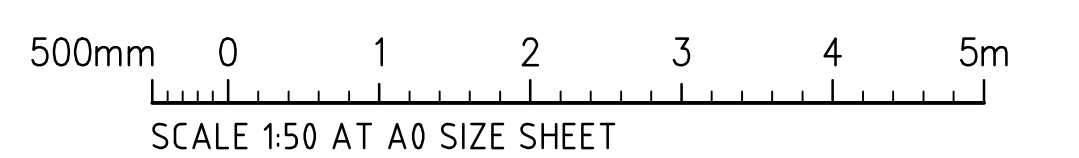


FOR DEVELOPMENT APPLICATION

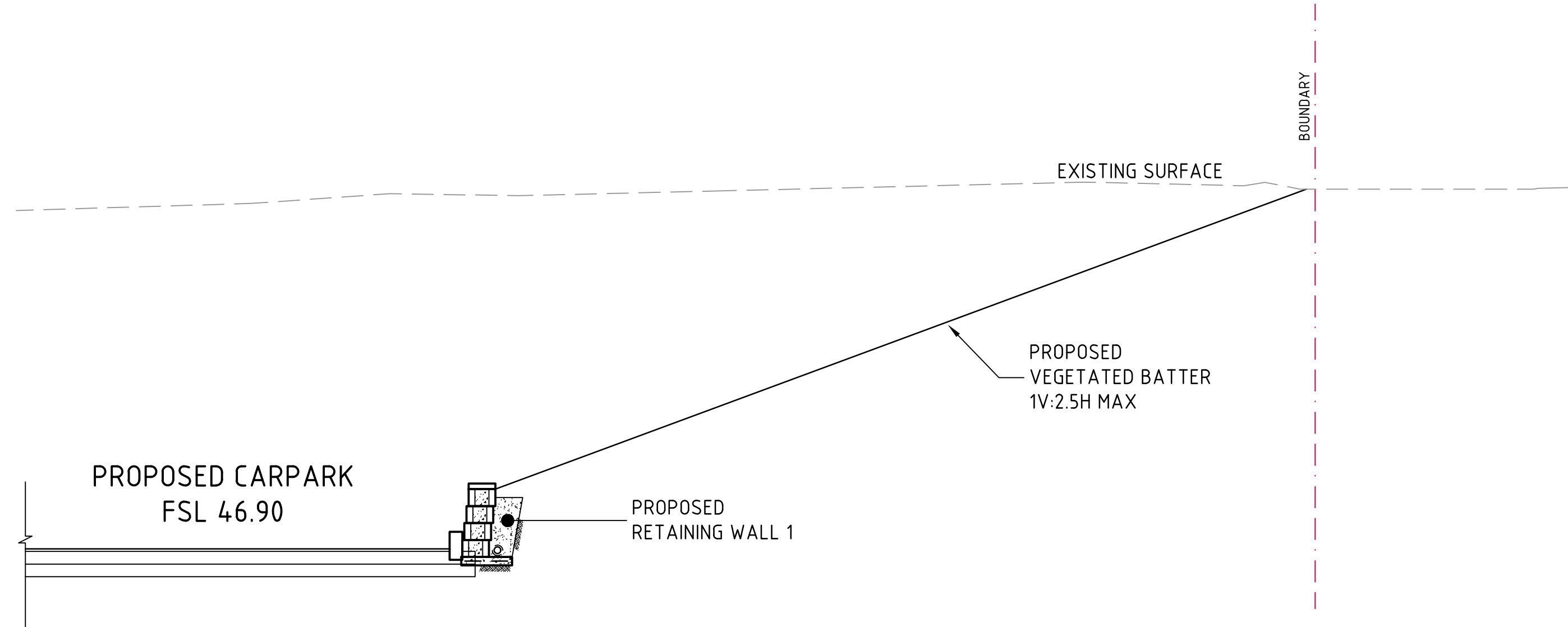
										ARCHITECT		CLIENT/ENR		PROJECT		CONSULT		COSTIN ROE CONSULTING		DRAWING TITLE											
												Centuria		PROPOSED WAREHOUSE				Costin Roe Consulting Pty Ltd. ABN 50 005 696 446		CRC CIVIL & STRUCTURAL ENGINEERS		TYPICAL SECTIONS-SHEET 1									
														88 NEWTON ROAD, WETHERILL PARK NSW 2164				PO Box N419 Sydney NSW 1520 Level 4 & Windmill Street, Millers Point NSW 2000 p: +61 2 9261 7699 e: mail@costinroe.com.au w: costinroe.com.au													
ISSUED FOR DEVELOPMENT APPLICATION										12.02.25		C				DESIGNED MC		DRAWN MC		DATE FEB 24		CHECKED MW		SIZE A3		SCALE AS SHOWN		CAD REF: C015039-01-DA-55			
ISSUED FOR DEVELOPMENT APPLICATION										29.02.24		B																			
ISSUED FOR DEVELOPMENT APPLICATION										15.02.24		A																			
AMENDMENTS										DATE		ISSUE		AMENDMENTS		DATE		ISSUE		AMENDMENTS		DATE		ISSUE		AMENDMENTS		DATE		ISSUE	



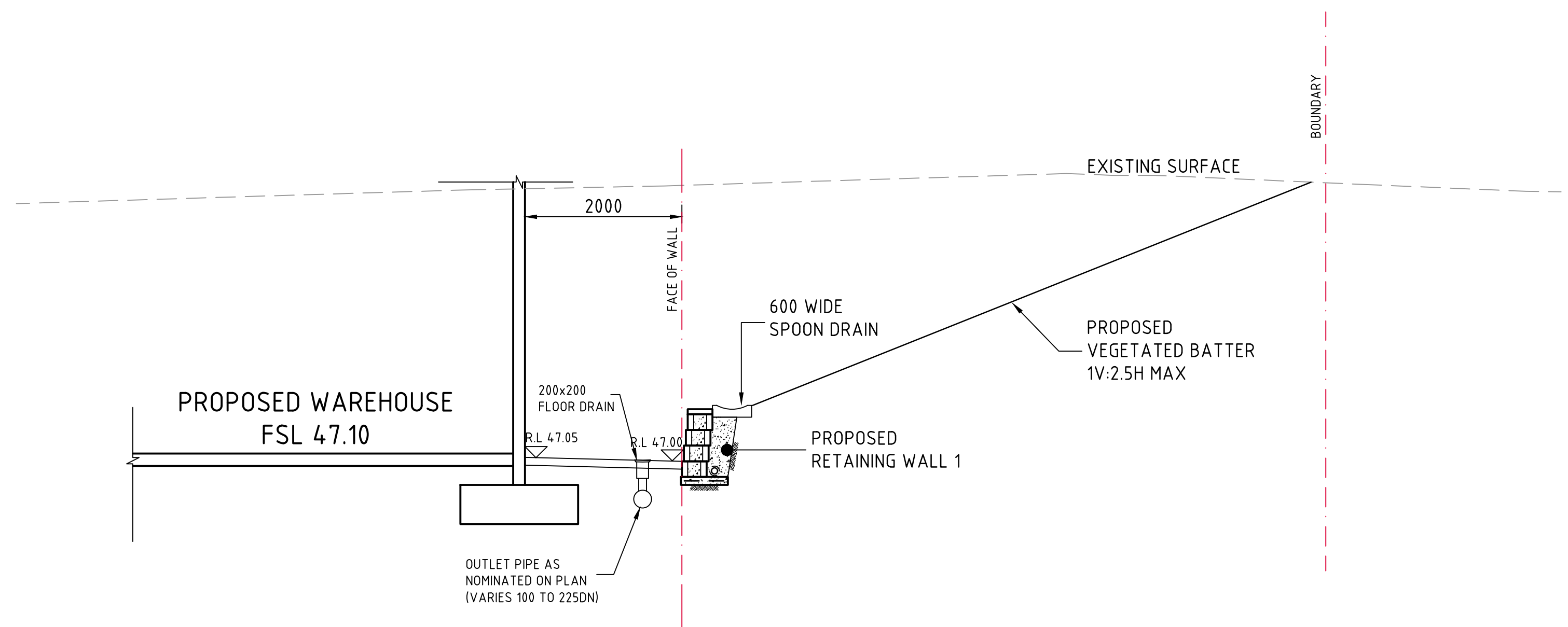
FOR DEVELOPMENT APPLICATION



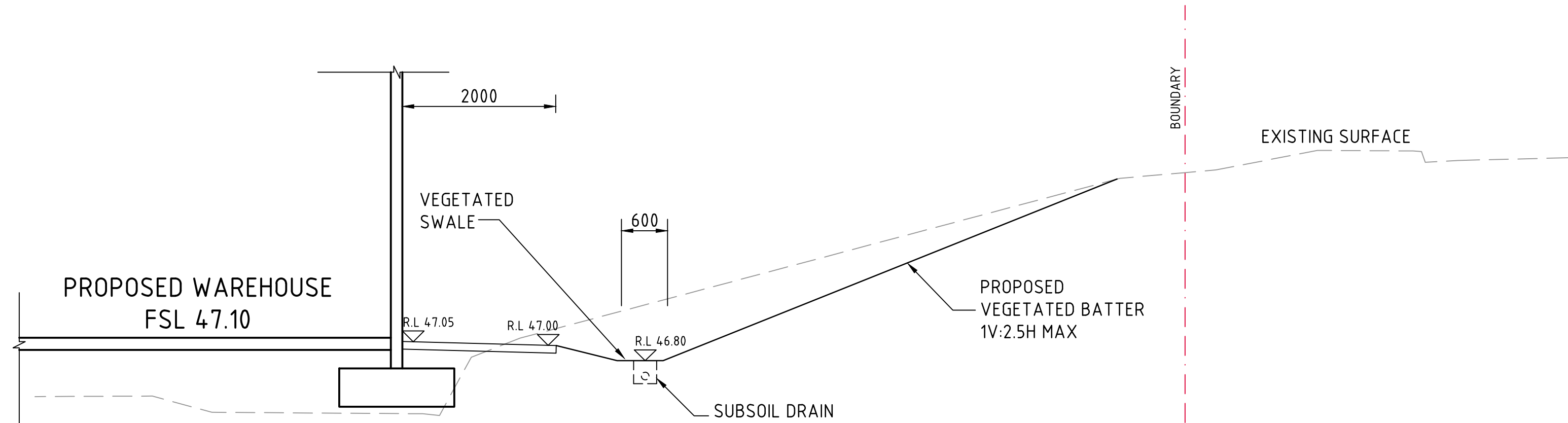
ISSUED FOR DEVELOPMENT APPLICATION 12.02.25 D ISSUED FOR DEVELOPMENT APPLICATION 06.06.24 C ISSUED FOR DEVELOPMENT APPLICATION 29.04.24 B ISSUED FOR DEVELOPMENT APPLICATION 15.02.24 A AMENDMENTS DATE ISSUE AMENDMENTS DATE ISSUE AMENDMENTS DATE ISSUE				ARCHITECT 		CLIENT Centuria		PROJECT PROPOSED WAREHOUSE 88 NEWTON ROAD, WETHERILL PARK NSW 2164		CONSULT AUSTRALIA Costin Roe Consulting Pty Ltd. ABN 50 003 696 446 PO Box 2419 Sydney NSW 1220 Level 4 4 Woodmill Street, Millers Point NSW 2000 p: +61 2 9251 7699 e: +61 2 9241 3731 e: mail@costinroe.com.au w: costinroe.com.au		CRC CIVIL & STRUCTURAL ENGINEERS		DRAWING TITLE TYPICAL SECTIONS-SHEET 2 DRAWING No C015039.01-DA56		ISSUE D
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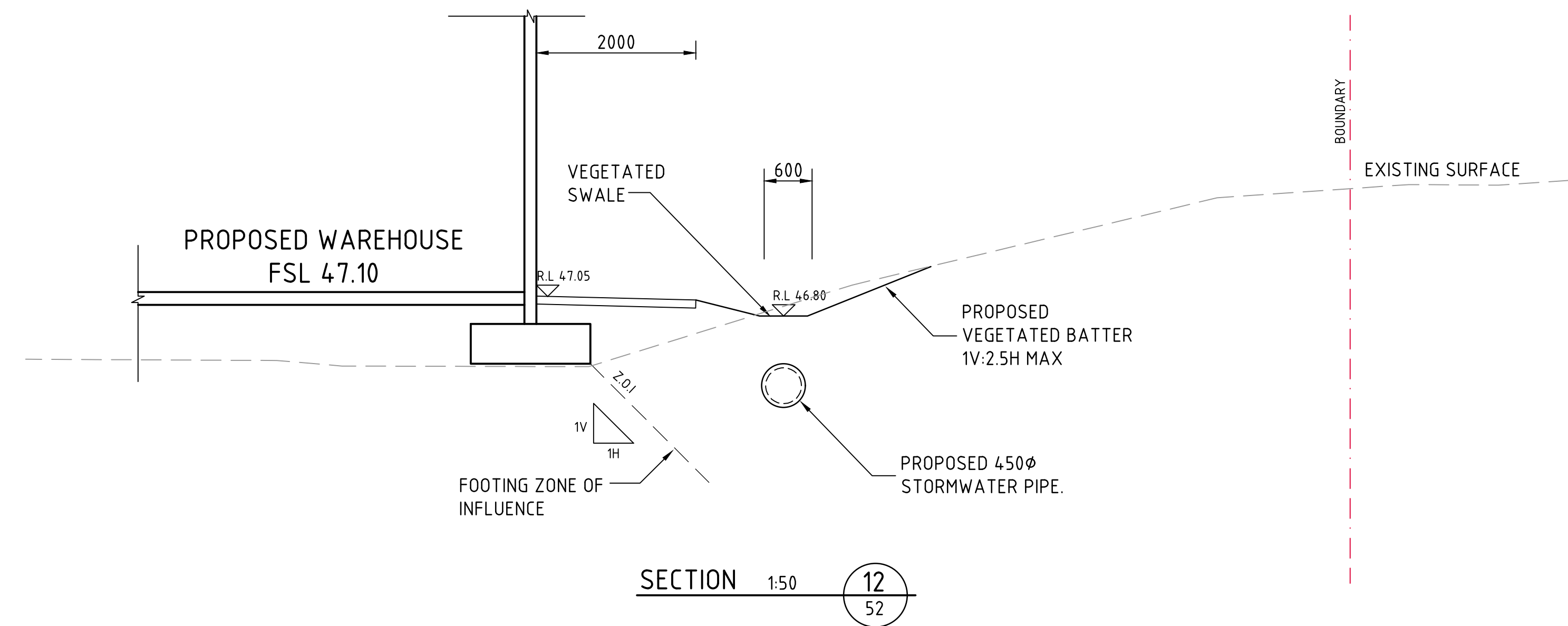
SECTION 150 9 51



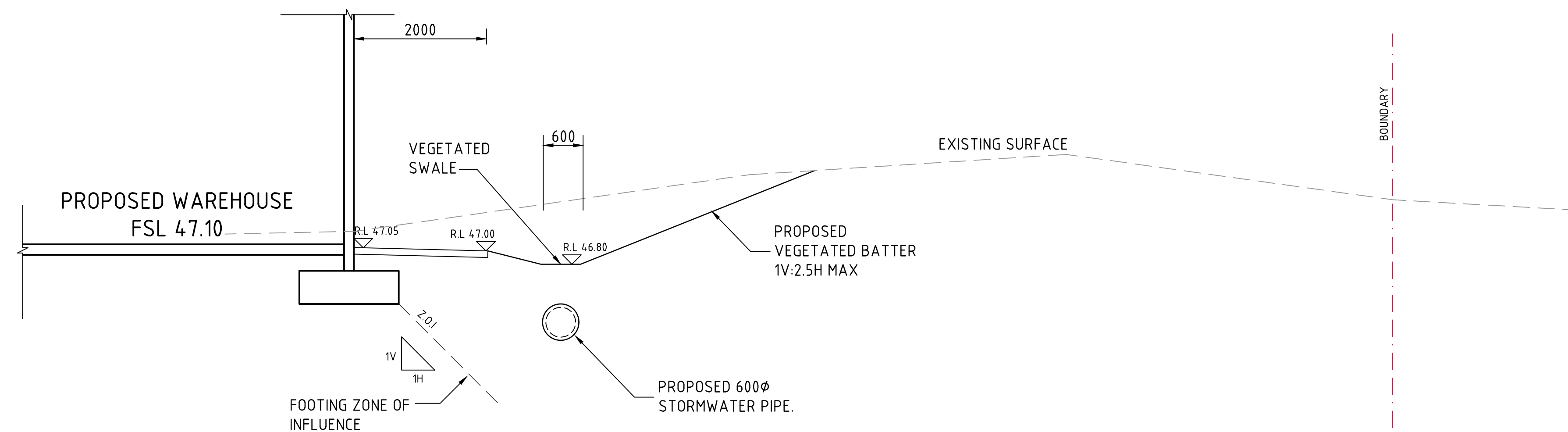
SECTION 150 10 51



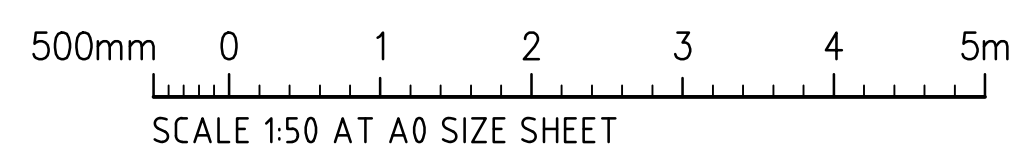
SECTION 150 11 51



SECTION 150 12 52



SECTION 150 13 52



FOR DEVELOPMENT APPLICATION

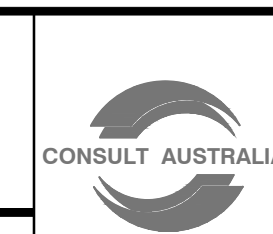
AMENDMENTS	DATE	ISSUE	AMENDMENTS	DATE	ISSUE	AMENDMENTS	DATE	ISSUE
ISSUED FOR DEVELOPMENT APPLICATION	12.02.25	C						
ISSUED FOR DEVELOPMENT APPLICATION	29.04.24	B						
ISSUED FOR DEVELOPMENT APPLICATION	15.02.24	A						



Centuria

PROJECT
PROPOSED WAREHOUSE
88 NEWTON ROAD, WETHERILL PARK NSW 2164

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF.
MC	MC	FEB 24	HW	A0	AS SHOWN	C015039.01-DA.51



Costin Roe Consulting Pty Ltd.
ABN 50 003 696 446
PO Box N419 Sydney NSW 1220
Levels 4 & 5 Westmill Street, Millers Point NSW 2000
p: +61 2 9251 7699 e: mail@costinroe.com.au w: costinroe.com.au



DRAWING TITLE
TYPICAL SECTIONS-SHEET 3

DRAWING No C015039.01-DA57

ISSUE
C