

# PROPOSED WAREHOUSE FACILITY

## LOT 4, BRINGELLY ROAD, HORNINGSEA PARK, NSW 2171

### CIVIL DRAWINGS FOR DEVELOPMENT APPLICATION

#### DRAWING LIST

DRAWING NO.	DRAWING TITLE
C011994.10-DA10	DRAWING LIST & GENERAL NOTES
C011994.10-DA20	EROSION AND SEDIMENT CONTROL PLAN
C011994.10-DA25	EROSION AND SEDIMENT CONTROL DETAILS
C011994.10-DA30	BULK EARTHWORKS PLAN
C011994.10-DA35	BULK EARTHWORKS SECTIONS - SHEET 1
C011994.10-DA36	BULK EARTHWORKS SECTIONS - SHEET 2
C011994.10-DA41	STORMWATER DRAINAGE PLAN - SHEET 1
C011994.10-DA42	STORMWATER DRAINAGE PLAN - SHEET 2
C011994.10-DA45	STORMWATER DRAINAGE DETAILS - SHEET 1
C011994.10-DA46	STORMWATER DRAINAGE DETAILS - SHEET 2
C011994.10-DA51	FINISHED LEVELS PLAN - SHEET 1
C011994.10-DA52	FINISHED LEVELS PLAN - SHEET 2
C011994.10-DA55	TYPICAL SECTIONS

#### GENERAL NOTES:

- G1 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.
- G2 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.
- G3 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.
- G4 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.
- G5 UNLESS NOTED OTHERWISE ALL LEVELS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES.
- G6 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.
- G7 DRAWING TO BE READ IN CONJUNCTION WITH ENGINEERING REPORT C011994-01-05.rpt

#### EROSION CONTROL NOTES :

- ALL CONTROL WORK INCLUDING DIVERSION BANKS AND CATCH DRAINS, V-DRAINS AND SILT FENCES SHALL BE COMPLETED DIRECTLY FOLLOWING THE COMPLETION OF THE EARTHWORKS.
- SILT FENCES AND SILT FENCE RETURNS SHALL BE ERECTED CONVEX TO THE CONTOUR TO POND WATER.
  - 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.
  - 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.
  - CLEAR WATER IS TO BE DIVERTED AWAY FROM DISTURBED GROUND AND INTO THE DRAINAGE SYSTEM.
  - THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AND PROVIDING ON GOING ADJUSTMENT TO EROSION CONTROL MEASURES AS REQUIRED DURING CONSTRUCTION.
  - 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.
  - ALL FINAL EROSION PREVENTION MEASURES INCLUDING THE ESTABLISHMENT OF GRASSING ARE TO BE MAINTAINED UNTIL THE END OF THE DEFECTS LIABILITY PERIOD.
  - ALL EARTHWORKS AREAS SHALL BE ROLLED ON A REGULAR BASIS TO SEAL THE EARTHWORKS.
  - 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.
  - 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.
  - ALL TOPSOIL STOCKPILES ARE TO BE SUITABLY COVERED TO THE SATISFACTION OF THE SITE MANAGER TO PREVENT WIND AND WATER EROSION.
  - ANY AREA THAT IS NOT APPROVED BY THE CONTRACT ADMINISTRATOR FOR CLEARING OR DISTURBANCE BY THE CONTRACTOR'S ACTIVITIES SHALL BE CLEARLY MARKED AND SIGN POSTED, FENCED OFF OR OTHERWISE APPROPRIATELY PROTECTED AGAINST ANY SUCH DISTURBANCE.
  - ALL STOCKPILE SITES SHALL BE SITUATED IN AREAS APPROVED 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.
  - 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.
  - THE CONTRACTOR IS TO ENSURE RUNOFF FROM ALL AREAS WHERE THE NATURAL SURFACE 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.
  - 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.

#### SITE PREPARATION NOTES :

- ALL EARTHWORKS SHALL BE COMPLETED GENERALLY IN ACCORDANCE WITH THE GUIDELINES SPECIFIED BY THE GEOTECHNICAL ENGINEER UNDER LEVEL 1 SUPERVISION
- EXISTING LEVELS ARE BASED ON INFORMATION PROVIDED BY AXIOM SPATIAL SURVEYORS REF 1938804.4 DATED 27/11/2019.
- STRIP ANY TOP SOIL OR DELETERIOUS MATERIAL AND DISPOSE OF FROM SITE OR STORE AS DIRECTED
- 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.
- PREPARE STEEP BATTERS TO RECEIVE FILL BY CONSTRUCTING BENCHING TO FACILITATE FILL PLACEMENT AND COMPACTION.
- AREAS TO RECEIVE FILL (THAT ARE NOT ON BENCHED 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 DESIGNER.
- SITE WON FILL SHALL BE COMPACTED IN MAXIMUM 300mm LAYERS AND TO DRY OR HLF DENSITY RATIOS (STANDARD COMPACTION) OF BETWEEN 98% AND 103%. THE PLACEMENT MOISTURE VARIATION OR HLF MOISTURE VARIATION SHALL BE CONTROLLED TO BE BETWEEN 2% DRY AND 2% WET.
- IMPORTED FILL SHALL BE COMPACTED IN MAXIMUM 300mm LAYERS AND TO DRY OR HLF DENSITY RATIOS (STANDARD COMPACTION) OF BETWEEN 98% AND 103%. THE PLACEMENT MOISTURE VARIATION OR HLF MOISTURE VARIATION SHALL BE CONTROLLED TO BE BETWEEN 2% DRY AND 2% WET.
- 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 (AS1289.5.4.1) OR HLF TEST METHOD (AS1289.5.7.1). 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 CONTRACTOR AFTER PLACEMENT AND COMPACTION.
- 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.
- PRIOR TO ANY EARTHWORKS, EROSION CONTROL AS OUTLINED IN THE EROSION AND SEDIMENTATION CONTROL PLAN SHALL BE COMPLETED.
- EXISTING ROCK, IF ANY, SHALL BE REMOVED BY HEAVY ROCK BREAKING OR RIPPING.
- MATCH EXISTING LEVELS AT BATTER INTERFACE.
- 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.
- 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.

#### 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.

#### STORMWATER DRAINAGE NOTES:

- ALL STORMWATER WORKS TO BE COMPLETED IN ACCORDANCE WITH AUSTRALIAN STANDARD AS3500.3 PLUMBING AND DRAINAGE, PART 3: STORMWATER DRAINAGE.
- 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.
- ALL FINISHED PAVEMENT LEVELS SHALL BE AS INDICATED ON FINISHED LEVELS PLANS DA51 & DA52.
- PIT SIZES SHALL BE AS INDICATED IN THE SCHEDULE WHILE PIPE SIZES AND DETAILS ARE PROVIDED ON PLAN.
- EXISTING STORMWATER PIT LOCATIONS AND INVERT LEVELS TO BE CONFIRMED BY SURVEY PRIOR TO COMMENCING WORKS ON SITE.
- ALL STORMWATER PIPES Ø375 OR GREATER SHALL BE CLASS 2 REINFORCED CONCRETE WITH RUBBER RING JOINTS UNLESS NOTED OTHERWISE.
- ALL PIPES UP TO AND INCLUDING Ø300 TO BE uPVC GRADE S8 UNO.
- PIPE CLASS NOMINATED ARE FOR IN-SERVICE LOADING CONDITIONS ONLY. CONTRACTOR IS TO MAKE ANY NECESSARY ADJUSTMENTS REQUIRED FOR CONSTRUCTION CONDITIONS.
- 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 Fc 25 MPA. PRECAST PITS MAY BE USED WITH THE APPROVAL OF THE ENGINEER.
- IN ADDITION TO ITEM 6 ABOVE, ALL CONCRETE PITS GREATER THAN 3000mm DEEP SHALL HAVE WALLS AND BASE THICKNESS INCREASED TO 200mm.
- 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.
- WHERE PIPE LINES ENTER PITS, PROVIDE 2m LENGTH OF STOCKING WRAPPED SLOTTED Ø100 uPVC TO EACH SIDE OF PIPE.
- 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.
- ALL PIPE GRADES 1 IN 100 MINIMUM UNO.
- PROVIDE STEP IRONS IN PITS DEEPER THAN 1000mm.
- MIN. 600 COVER TO PIPE OBVERT BENEATH ROADS & MIN. 400 COVER BENEATH LANDSCAPED AND PEDESTRIAN AREAS.
- PIT COVERS IN TRAFFICABLE PAVEMENT SHALL BE CLASS D 'HEAVY DUTY', THOSE IN CONTAINER PAVEMENT SHALL BE CLASS G 'HEAVY DUTY', AND THOSE LOCATED IN NON-TRAFFICABLE AREAS SHALL BE CLASS B 'MEDIUM DUTY' UNO.
- PROVIDE CLEANING EYES (RODDING POINTS) TO PIPES AT ALL CORNERS AND T-JUNCTIONS WHERE NO PITS ARE PRESENT.
- 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.
- 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.

#### FINISHED LEVELS PLAN NOTES:

- LEVELS DATUM IS A.H.D.
- ALL CONTOUR LINES & SPOT LEVELS INDICATE FINISHED PAVEMENT LEVELS U.N.O. ON PLAN.
- THE MAJOR CONTOUR INTERVAL IS 0.5m
- THE MINOR CONTOUR INTERVAL IS 0.1m.
- MINIMUM PAVEMENT GRADE IS TO BE 1:100 (1%).
- MAXIMUM PAVEMENT GRADE IS TO BE 1:20 (5%) IN CARPARKING AREAS AND 1:25 (4%) ELSEWHERE.
- MAXIMUM RAMP GRADES ARE TO BE 1:12 (8.3%) U.N.O. ON PLAN.
- PROVIDE MINIMUM 3.0m LONG TRANSITION WHERE CHANGES GRADE EXCEED 1:20 (5%).
- PERMANENT BATTER SLOPES ARE TO HAVE A MAXIMUM GRADE OF 1V:3H.
- 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.
- ALL FOOTPATHS ARE TO FALL AWAY FROM THE BUILDING AT 2.5% NOMINAL GRADE.
- ALL PAVEMENTS ARE TO BE SET AT 50mm BELOW THE FINISHED FLOOR LEVEL OF THE WAREHOUSE AND OFFICE AREAS.



FOR APPROVAL

									ARCHITECT			CLIENT			PROJECT			Costin Roe Consulting Pty Ltd. Consulting Engineers			DRAWING TITLE DRAWING LIST & GENERAL NOTES		
															LOT 4 WAREHOUSE FACILITY BRINGELLY ROAD, BUSINESS HUB HORNINGSEA PARK, NSW			Costin Roe Consulting			DRAWING NO. C011994.10-DA10		
																		Level 1, 8 Widdowall Street Wahah Bay, Sydney NSW 2000 Tel: (02) 8551-7000 Fax: (02) 9541-3721 email: mail@costinroe.com.au ©					
																		PRECISION   COMMUNICATION   ACCOUNTABILITY					



LEGEND:

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

- DENOTES SILT FENCE WITH CATCH DRAIN
- DENOTES SILT FENCE ONLY
- DENOTES DIVERSION DRAIN
- DENOTES DIRECTION OF FLOW

SEDIMENTATION BASIN NOTE:

FOR SEDIMENT & EROSION CONTROL DETAILS REFER TO DRAWING C011994.10-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 (24.4mm).

APPROXIMATE AREA OF DISTURBED SITE = 7.0 Ha

SEDIMENT BASIN 1:  
CATCHMENT AREA = 7.0 Ha  
REQUIRED BASIN VOLUME = 1640m<sup>3</sup>  
BASE DIMENSIONS (L X W) = 40.0m x 20.0m  
TOP DIMENSIONS (L X W) = 50.0m x 30.0m  
MAX SIDE SLOPE = 1V:3H  
DEPTH = 1.5m  
PROVIDED BASIN VOLUME = 1700m<sup>3</sup>

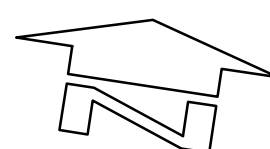
SEDIMENTATION BASINS TO COLLECT RUN-OFF IN EXTREME RAINFALL EVENTS.  
COLLECTED RUN-OFF TO BE ASSESSED BY A QUALIFIED LABORATORY FOR DOUSING RATES OF ALUM OR GYPSUM TO ENSURE COAGULATION OF SEDIMENTS PRIOR TO WATER BEING DISCHARGED TO COUNCIL STORMWATER SYSTEM.

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:

- ASSUME TYPE D SOIL (CLAY/SILTY CLAY)
- ASSUME GROUP D SOIL (HIGH PLASTICITY AND SHRINK/SWELL PROPERTIES)



EROSION & SEDIMENT CONTROL PLAN  
SCALE 1:500

FOR APPROVAL

5m 0 10 20 30 40 50m  
SCALE 1:500 AT A0 SIZE SHEET

REVISED AS CLOUDED	02.10.20	D
ISSUED FOR APPROVAL	14.08.20	C
REVISED AS CLOUDED	06.08.20	B
ISSUED FOR INFORMATION	24.07.20	A
AMENDMENTS	DATE	ISSUE

AMENDMENTS	DATE	ISSUE
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AMENDMENTS	DATE	ISSUE
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ARCHITECT	CLIENT
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PROJECT	LOT 4 WAREHOUSE FACILITY BRINGELLY ROAD, BUSINESS HUB HORNINGSEA PARK, NSW
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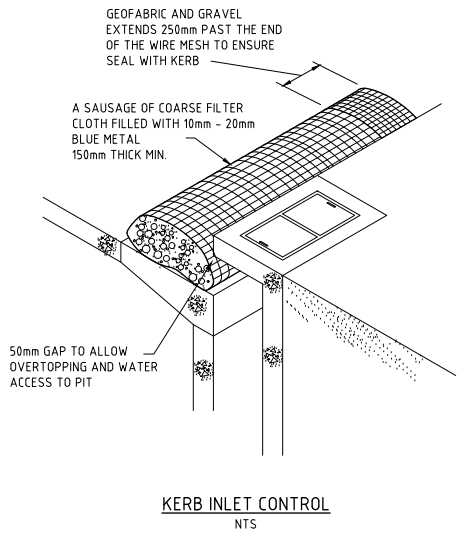
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1.0	1.0	JULY '20	M.W	A0	AS SHOWN	C011994.10-DA20

COSTIN ROE CONSULTING PTY LTD. Consulting Engineers Level 1, 8 Windmill Street Wahib Bay, Sydney NSW 2000 Tel: (02) 9251-7699 Fax: (02) 9241-3721 email: mail@costinroe.com.au ©
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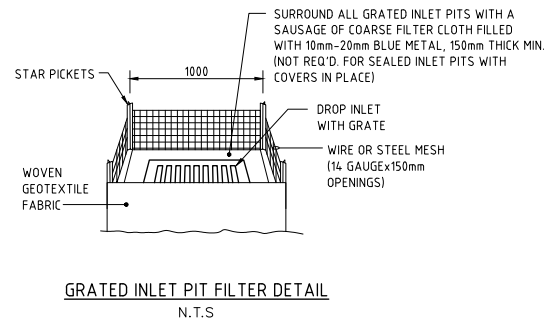
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DRAWING TITLE EROSION AND SEDIMENT CONTROL PLAN	DRAWING NO. C011994.10-DA20	ISSUE D
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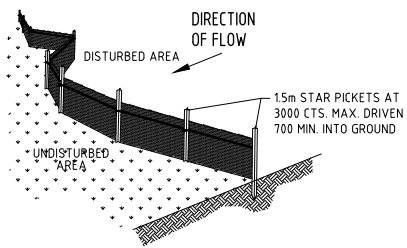


Kerb Inlet Control  
N.T.S.

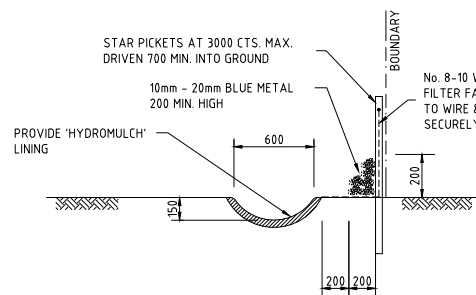


Grated Inlet Pit Filter Detail  
N.T.S.

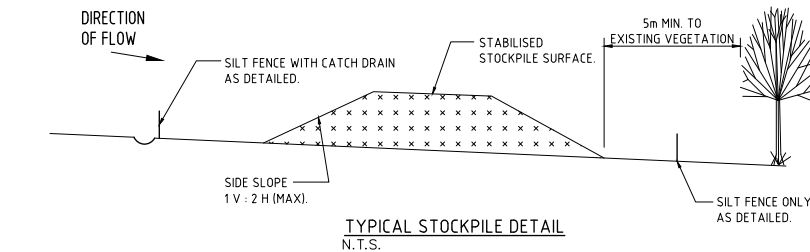
NOTE: ADOPT ABOVE DETAILS AROUND ALL PITS WITHIN AREA ENCOMPASSED BY SILT FENCE & TO PITS ON THE ROAD ADJACENT TO SITE BOUNDARY.



Typical Silt Fence Detail  
N.T.S.  
PROVIDE 1m RETURNS AT 30m INTERVALS.  
TYPICAL

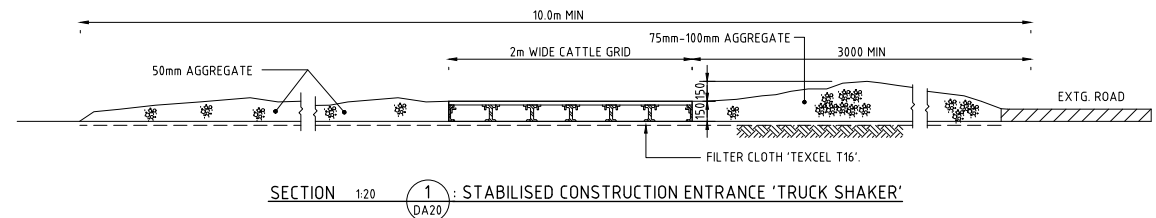


Typical Open Drain & Silt Fence  
SCALE 1:20

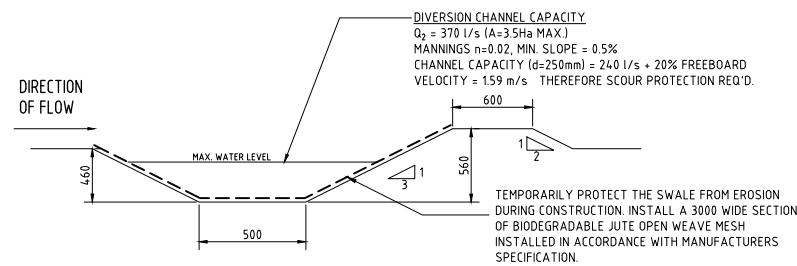


Typical Stockpile Detail  
N.T.S.

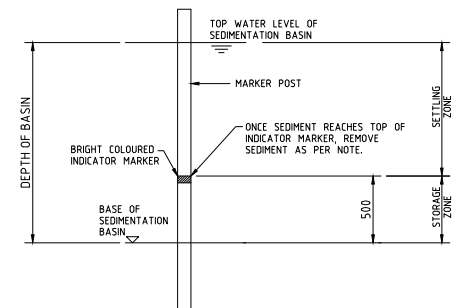
- STOCKPILE NOTES**
1. PLACE ALL STOCKPILES IN LOCATIONS MORE THAN 5m FROM EXISTING VEGETATION, ROADS & HAZARD AREAS.
  2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT ELONGATED MOUNDS. SIDE SLOPE TO BE 1V:2H MAX.
  3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2m IN HEIGHT.
  4. WHERE STOCKPILES ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE USING WOOD CHIP MULCH - 16 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.



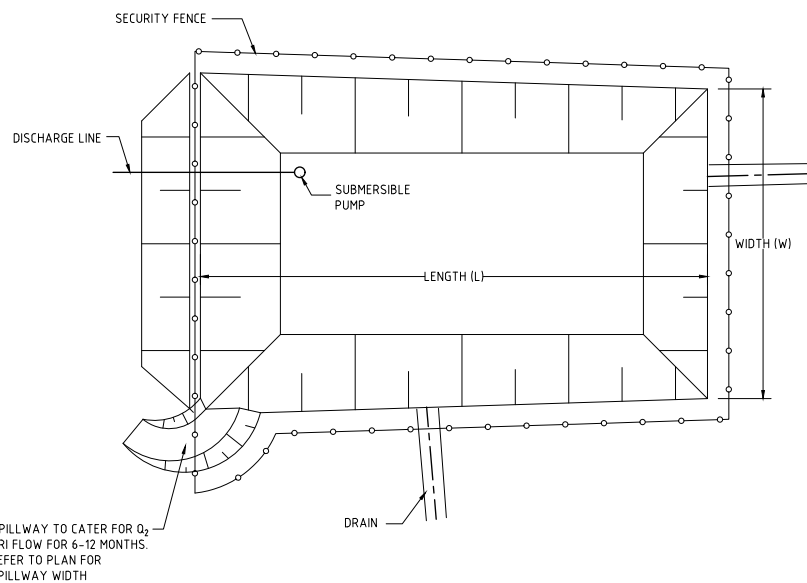
SECTION 1:20 : STABILISED CONSTRUCTION ENTRANCE 'TRUCK SHAKER'



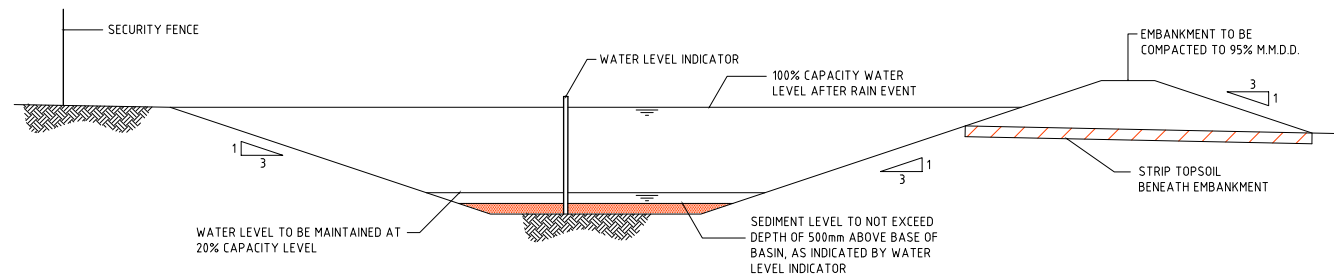
Diversion Drain Section  
SCALE 1:20



Sediment Storage Marker  
SCALE 1:20

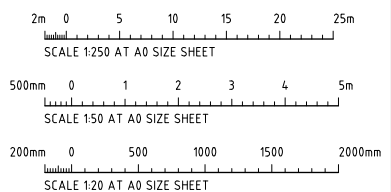


Typical Sediment Control Pond Plan  
SCALE 1:250



Typical Sediment Control Basin Section  
SCALE 1:50

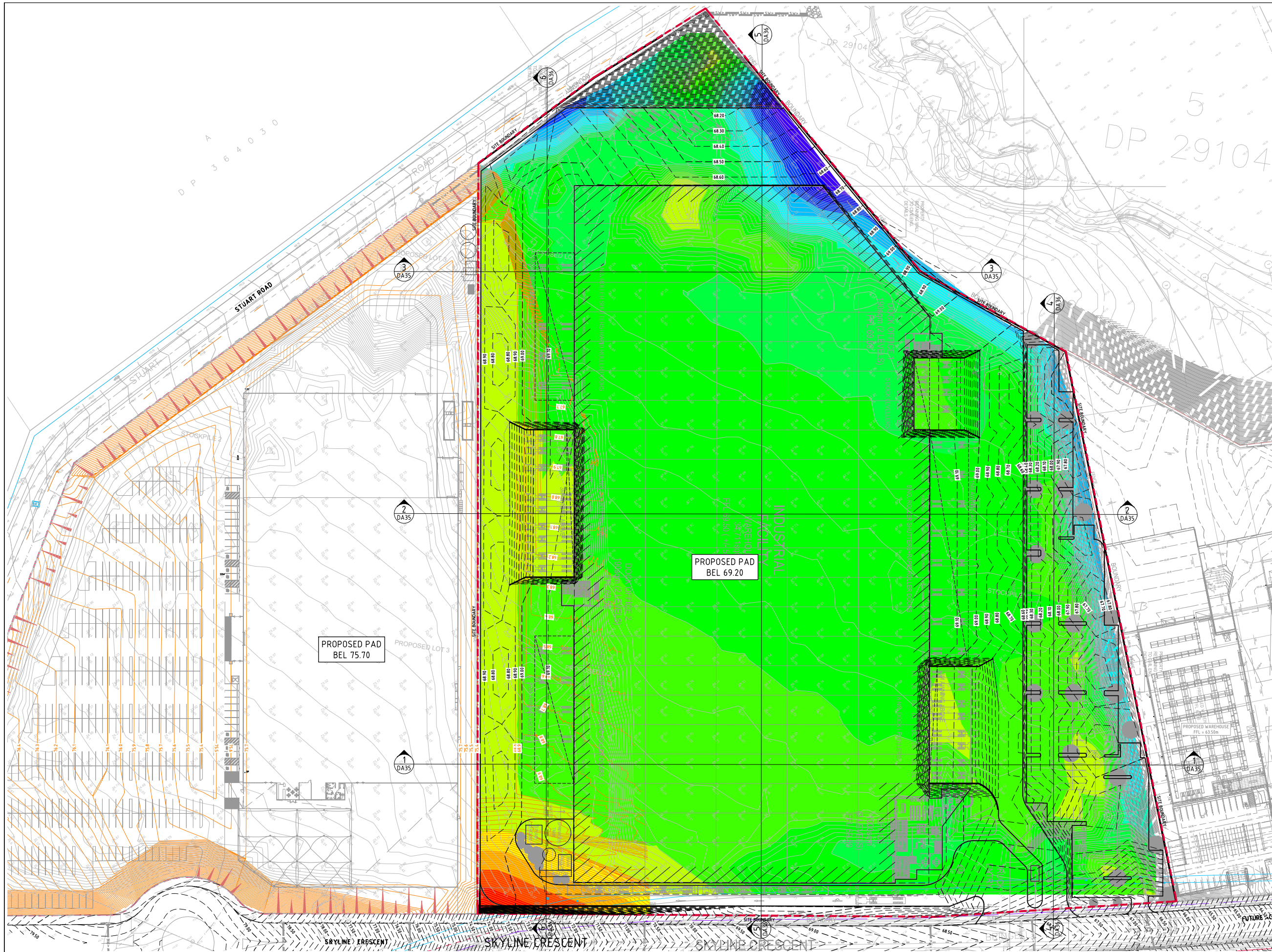
- NOTES:**
- ALL EROSION & SEDIMENT CONTROL MEASURES TO BE INSPECTED & MAINTAINED DAILY BY SITE MANAGER.
  - MINIMISE DISTURBED AREAS.
  - ROADS & FOOTPATHS TO BE SWEEP DAILY.
  - 12m TURF TO BE PLACED BEHIND KERBS.
  - DUST MINIMISATION CONTROL BY WATERING TO BE IMPLEMENTED BY SITE MANAGER AS REQUIRED OR AS DIRECTED BY THE EPA.



FOR APPROVAL

ISSUED FOR APPROVAL 14.08.20 C			ARCHITECT			CLIENT			PROJECT			Costin Roe Consulting Pty Ltd. Consulting Engineers Level 1, 8 Windmill Street Wahah Bay, Sydney NSW 2000 Tel: (02) 8551-7889 Fax: (02) 9541-3721 email: mail@costinroe.com.au			DRAWING TITLE EROSION & SEDIMENT CONTROL DETAILS		
REVISED AS CLOUED 06.08.20 B									LOT 4 WAREHOUSE FACILITY BRINGELLY ROAD, BUSINESS HUB HORNINGSEA PARK, NSW			PRECISION   COMMUNICATION   ACCOUNTABILITY			DRAWING No. C011994.10-DA25		
ISSUED FOR INFORMATION 24.07.20 A			AMENDMENTS			AMENDMENTS			DESIGNED: [NAME] DRAWN: [NAME] DATE: JULY 20 CHECKED: [NAME] SIZE: A0 SCALE: AS SHOWN CAD REF: C011994.10-DA25								
AMENDMENTS			DATE			DATE											





DEPTH RANGE			
No.	FROM DEPTH	TO DEPTH	COLOUR
1	-6.000	-5.000	Red
2	-5.000	-4.000	Orange
3	-4.000	-3.000	Yellow
4	-3.000	-2.000	Light Green
5	-2.000	-1.000	Green
6	-1.000	0.000	Light Blue
7	0.000	1.000	Blue
8	1.000	2.000	Dark Blue
9	2.000	3.000	Very Dark Blue
10	3.000	4.000	Black
11	4.000	5.000	White
12	5.000	6.000	Light Grey
13	6.000	7.000	Medium Grey
14	7.000	8.000	Dark Grey
15	8.000	9.000	Black
16	9.000	10.000	Black

**LEGEND**  
LEVELS DATUM IS AHD.

— 73.00 — - EXISTING CONTOUR  
— 73.00 — - PROPOSED ADJOINING EARTHWORKS LEVEL  
— 73.00 — - B.E.L. CONTOUR (MAJOR 0.50m)  
— 73.10 — - B.E.L. CONTOUR (MINOR 0.10m)

**NOMINATED B.E.L. DETAIL**  
N.T.S.

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

**PAVEMENT**  
BASE / SUBBASE  
COURSES  
SUBGRADE  
PAVEMENT FFL  
NOMINATED B.E. LEVEL

**EARTHWORKS VOLUMES ESTIMATE**

EARTHWORKS VOLUMES:

CUT MATERIAL = - 5,000m³  
FILL MATERIAL = + 96,000m³

DETAILED EXCAVATION = - 7,000m³ (1000m³/ha)  
OSD TANK = - 2,000m³  
RETAINING WALLS = - 15,000m³ (TBC BY D-C CONTRACTOR)

BALANCE = + 67,000m³ (IMPORT)

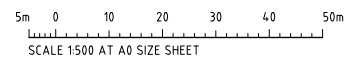
EARTHWORKS VOLUMES ARE APPROXIMATE ONLY AND ARE CALCULATED ASSUMING NO TOPSOIL STRIP AND A NOMINAL 300mm PAVEMENT THICKNESS. NO ALLOWANCE HAS BEEN MADE FOR EROSION AND SEDIMENT CONTROL, BULKING, COMPACTION OF FILLED SOILS.

REFER TO DRAWING DA20 FOR EROSION & SEDIMENT CONTROL PLAN.

THE EXISTING SURFACE IS BASED ON INFORMATION PROVIDED BY AXIOM SPATIAL SURVEYORS. THIS SURFACE USED IS THE MOST CURRENT AVAILABLE INFORMATION HOWEVER IT MAY NOT ACCURATELY REFLECT ACTUAL GROUND LEVELS OR STOCKPILES ETC ON SITE. IT IS THE CONTRACTORS RESPONSIBILITY TO CONFIRM VOLUMES AND ALLOWANCES FOR EARTHWORKS.

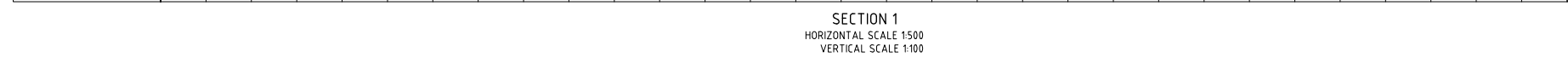
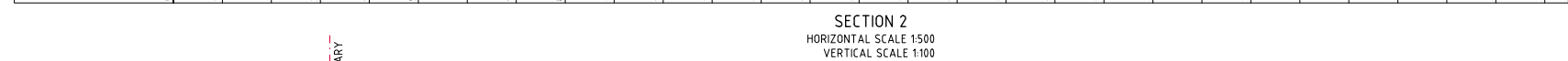
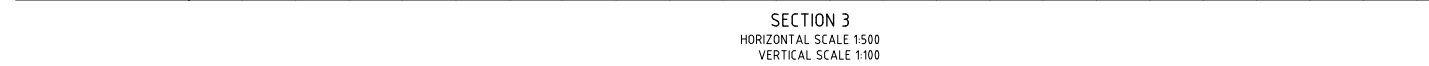
**BULK EARTHWORKS PLAN**  
SCALE 1:500

**FOR APPROVAL**



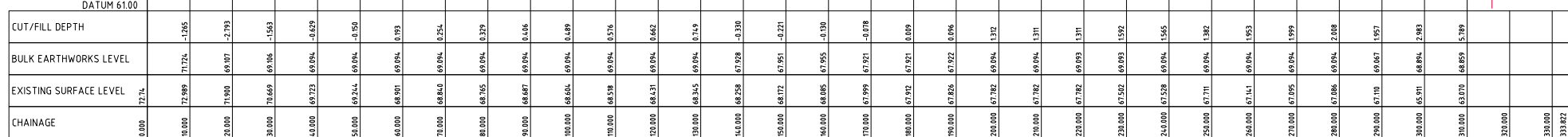
ISSUED FOR APPROVAL 14.08.20 B		ARCHITECT		CLIENT		PROJECT		DRAWING TITLE	
ISSUED FOR INFORMATION 06.08.20 A		AMENDMENTS		AMENDMENTS		LOT 4 WAREHOUSE FACILITY BRINGELLY ROAD, BUSINESS HUB HORNINGSEA PARK, NSW		BULK EARTHWORKS PLAN	
AMENDMENTS		DATE		DATE		DESIGNED (DRAWN) LO		DRAWING NO. C011994.10-DA30	
DATE		ISSUE		DATE		CHECKED M.W.		TRUCK	
DATE		ISSUE		DATE		SCALE AS SHOWN		B	
DATE		ISSUE		DATE		CNO REF: C011994.10-DA30			
DATE		ISSUE		DATE		COSTIN ROE CONSULTING PTY LTD. Consulting Engineers Level 1, 8 Windmill Street Wahia Bay, Sydney NSW 2000 Tel: (02) 8551-7000 Fax: (02) 8541-3721 email: mail@costinroe.com.au			
DATE		ISSUE		DATE		PRECISION   COMMUNICATION   ACCOUNTABILITY			
DATE		ISSUE		DATE					



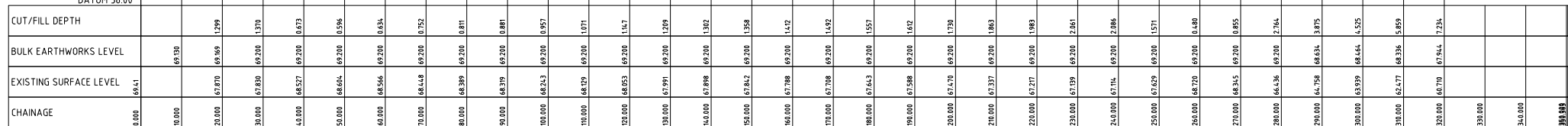


**FOR APPROVAL**

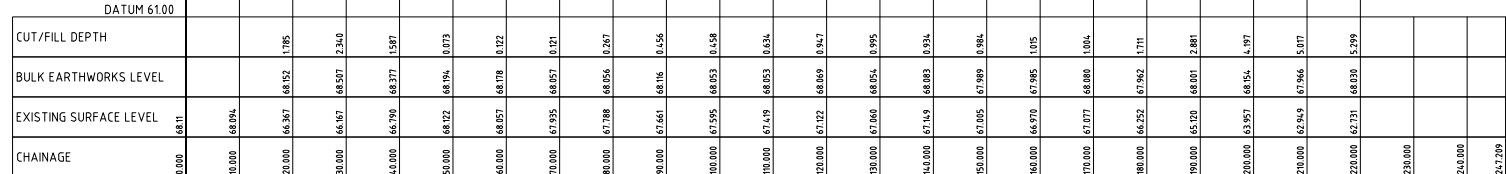




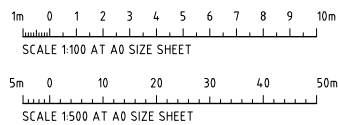
SECTION 6  
HORIZONTAL SCALE 1:500  
VERTICAL SCALE 1:100



SECTION 5  
HORIZONTAL SCALE 1:500  
VERTICAL SCALE 1:100



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



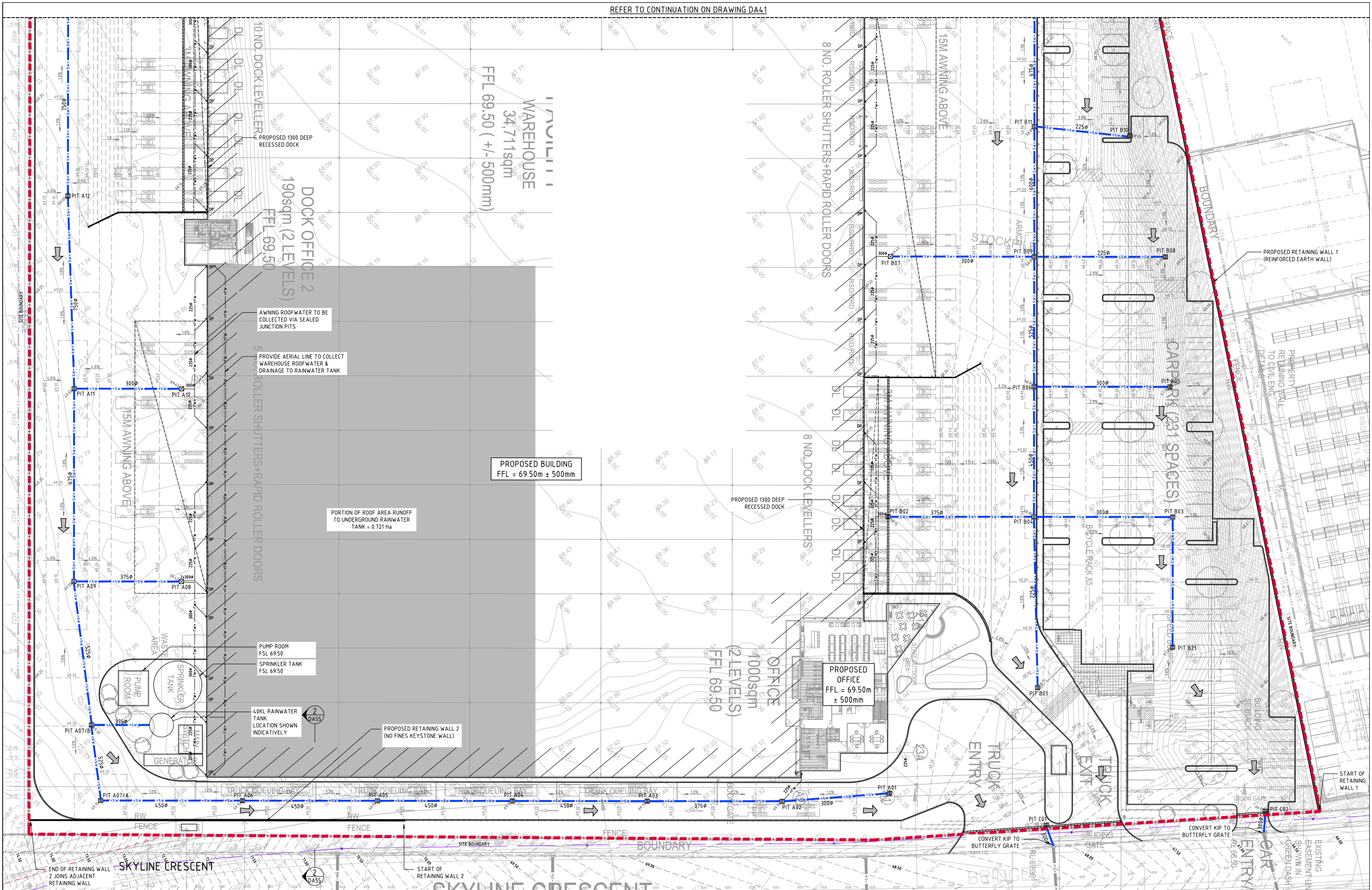
**FOR APPROVAL**

[illegible]



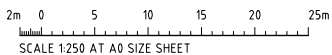






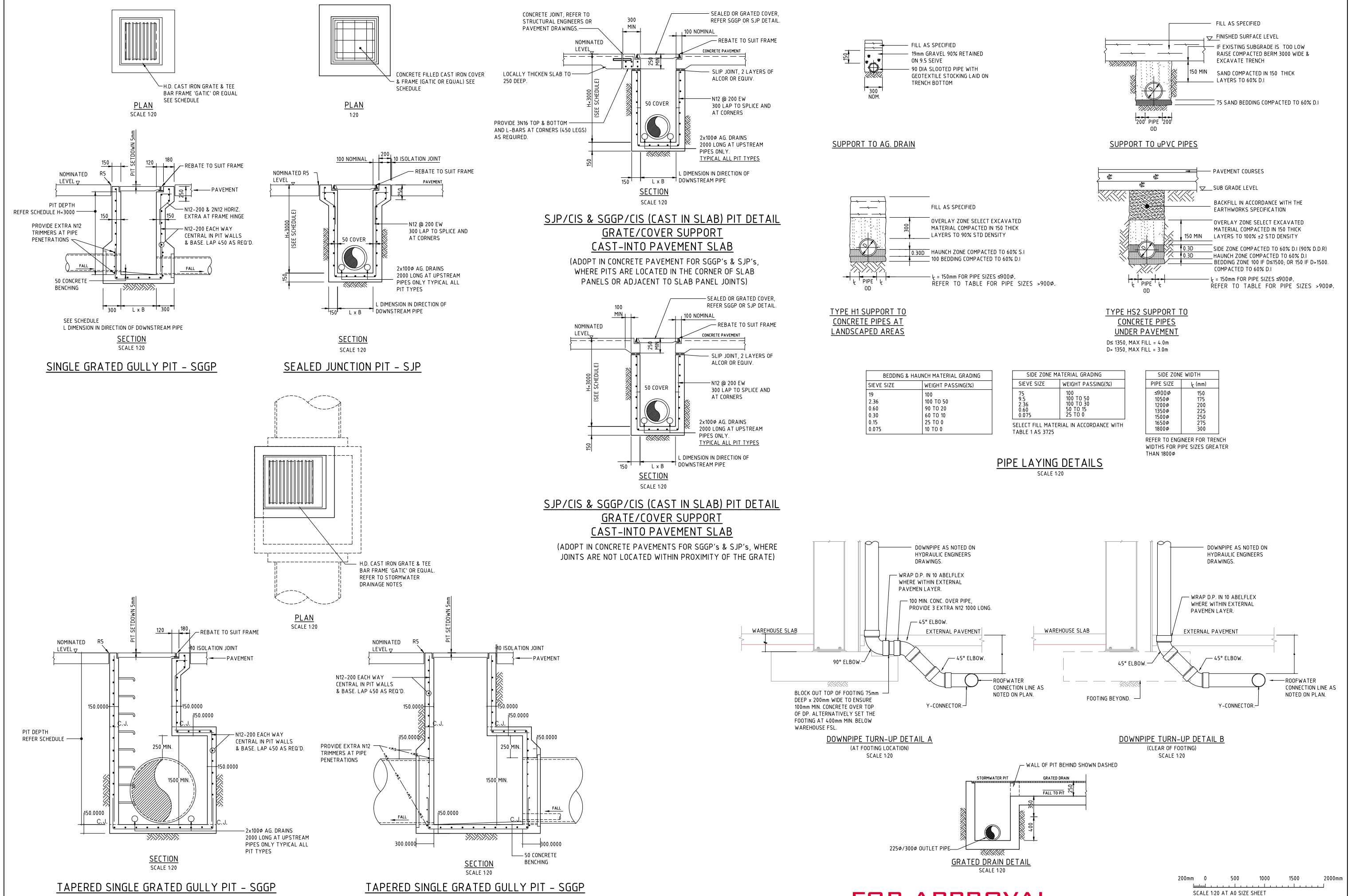
STORMWATER DRAINAGE PLAN - SHEET 2  
SCALE 1:250

FOR APPROVAL



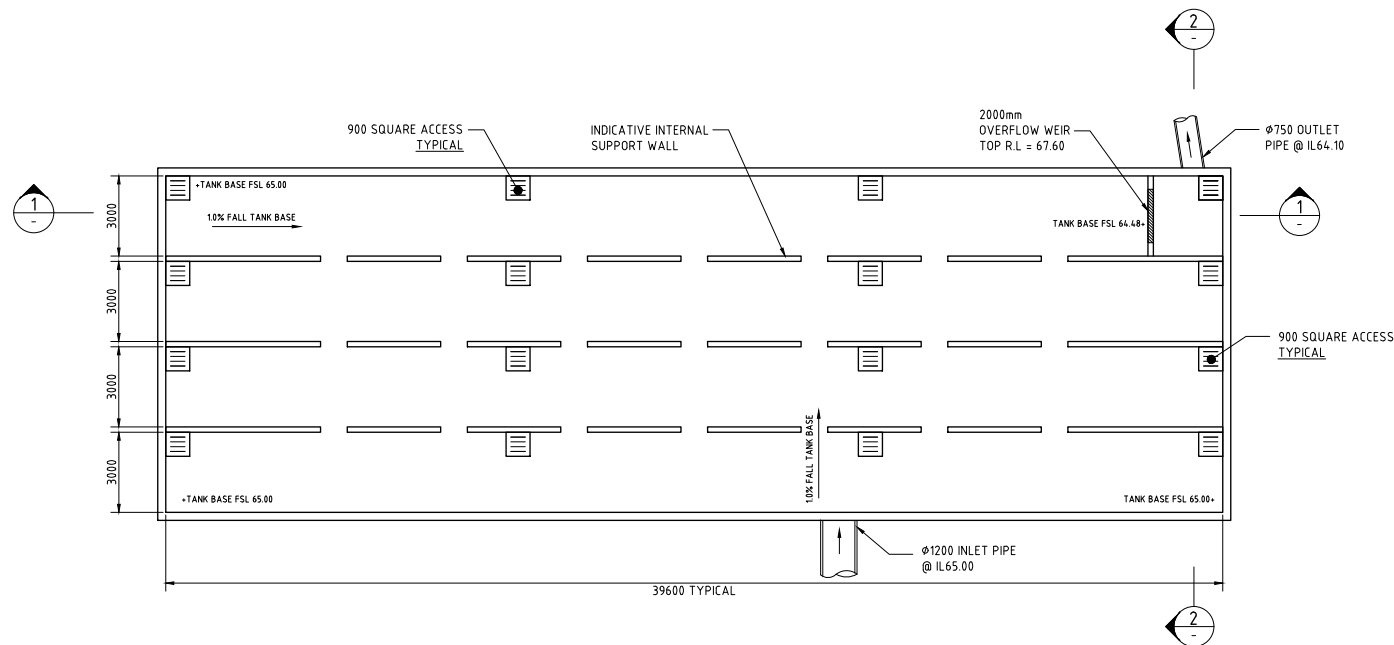
ISSUED FOR APPROVAL REVISED AS CLOURED ISSUED FOR INFORMATION			14.08.20 06.08.20 24.07.20			C B A			AMENDMENTS			DATE			ISSUE			AMENDMENTS			DATE			ISSUE		
ARCHITECT			CLIENT			PROJECT			DRAWING TITLE			DRAWING NO.			PROJECT			DRAWING TITLE			DRAWING NO.			PROJECT		
ESR			Lot 4 Warehouse Facility			Bringelly Road, Business Hub			Stormwater Drainage Plan			C011994.10-DA42			Lot 4 Warehouse Facility			Stormwater Drainage Plan			C011994.10-DA42			Lot 4 Warehouse Facility		
Costin Roe Consulting Pty Ltd.			Lot 4 Warehouse Facility			Bringelly Road, Business Hub			Stormwater Drainage Plan			C011994.10-DA42			Lot 4 Warehouse Facility			Stormwater Drainage Plan			C011994.10-DA42			Lot 4 Warehouse Facility		



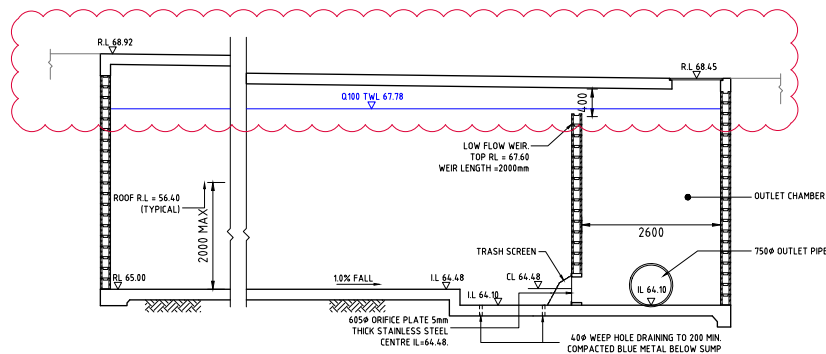


FOR APPROVAL

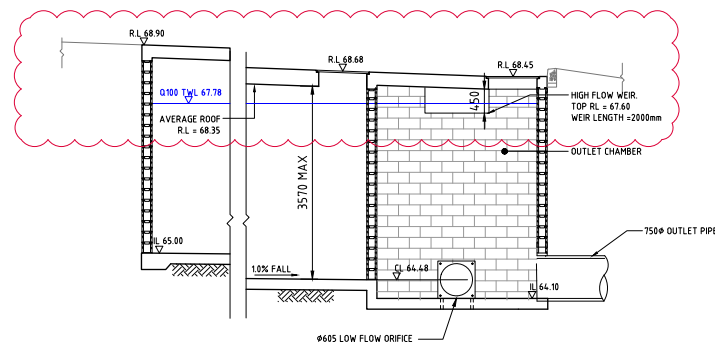




BELOW GROUND OSD TANK PLAN  
SCALE 1:100



SECTION 1:50 1: TYPICAL THRU' TANK



SECTION 1:50 2

#### OSD TANK DETAILS

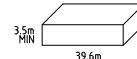
SITE AREA  
TOTAL SITE AREA 69 740m<sup>2</sup>

TOTAL SITE AREA DRAINING TO STORAGE  
(90% IMPERVIOUS) 64 870m<sup>2</sup>

#### STORAGE

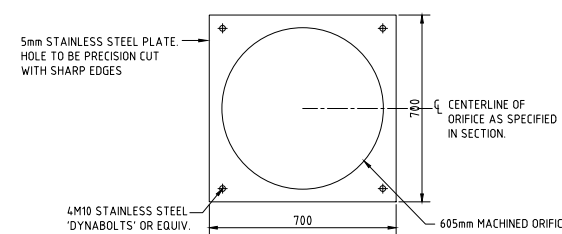
ORIFICE Ø 605mm  
STORAGE VOLUME 1,560m<sup>3</sup>

INTERNAL TANK DIMENSIONS  
(INC. HIGH FLOW CHAMBERS)



#### OSD HYDRAULIC DETAILS

STORM A.R.I. EVENT	STORM DURATION	PRE-DEVELOPMENT FLOW (m <sup>3</sup> /s)	POST-DEVELOPMENT FLOW (UN-ATTENUATED) (m <sup>3</sup> /s)	POST-DEVELOPMENT FLOW (ATTENUATED) (m <sup>3</sup> /s)	OSD TANK WATER DEPTH (mm)	OSD TANK STORAGE VOLUME (m <sup>3</sup> )
5 YEAR	1 HOUR	1.31	2.02	1.05	1660	790
20 YEAR	2 HOURS	1.78	2.37	1.25	2420	1160
100 YEAR	2 HOURS	2.24	2.88	1.64	3270	1560



#### ORIFICE PLATE DETAIL

1:10

NOTE:  
STRUCTURAL DESIGN OF TANK BY STRUCTURAL ENGINEER IN DETAIL DESIGN STAGE.

1m 0 1 2 3 4 5 6 7 8 9 10m

SCALE 1:100 AT A0 SIZE SHEET

500mm 0 1 2 3 4 5m

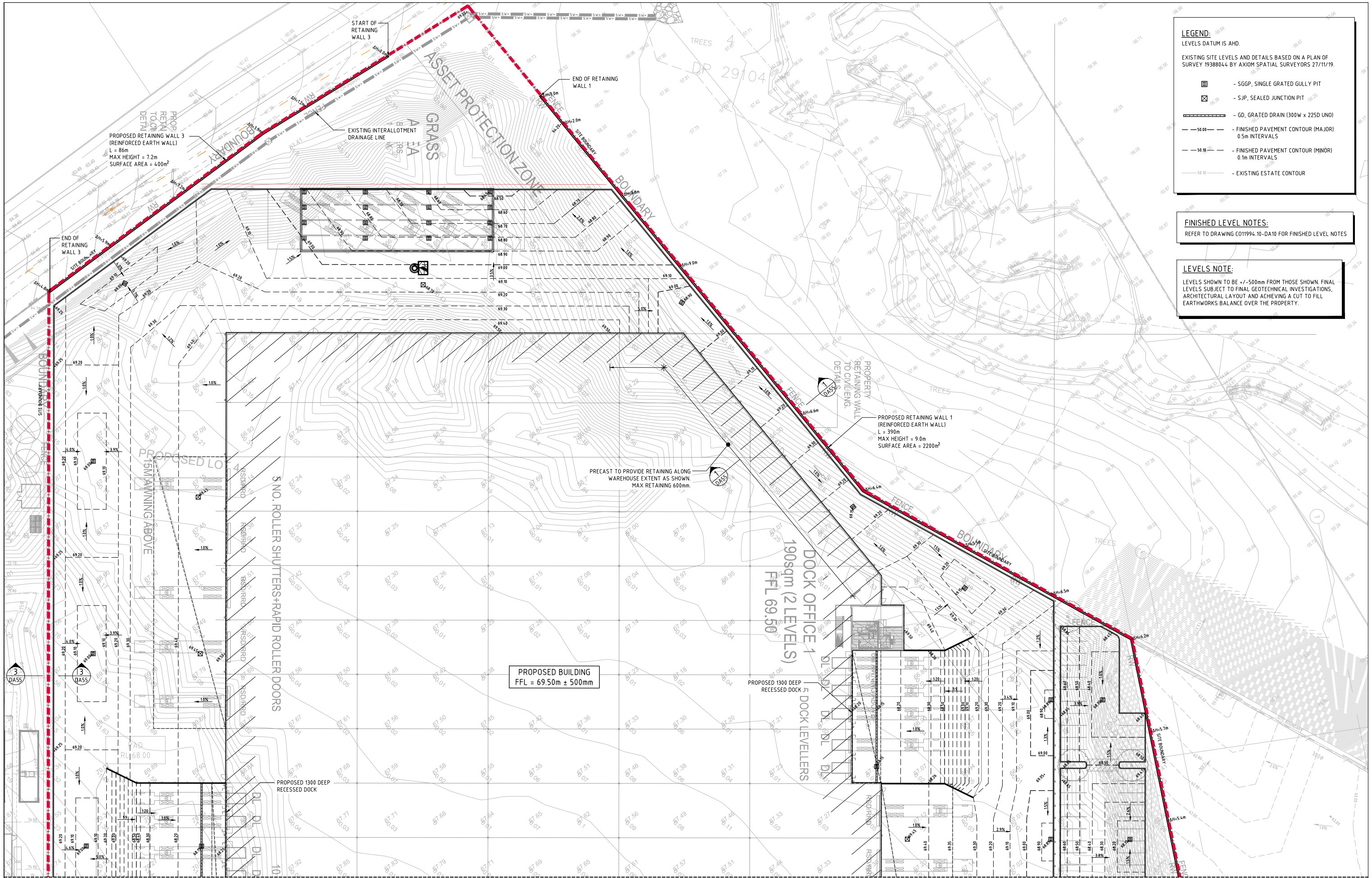
SCALE 1:50 AT A0 SIZE SHEET

100mm 0 200 400 600 800 1000mm

SCALE 1:10 AT A0 SIZE SHEET

FOR APPROVAL





**LEGEND:**  
LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON A PLAN OF SURVEY 19388044 BY AXIOM SPATIAL SURVEYORS 27/11/19.

- SGGP, SINGLE GRATED GULLY PIT
- SJP, SEALED JUNCTION PIT
- GD, GRATED DRAIN (300W x 225D UNO)
- FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS
- EXISTING ESTATE CONTOUR

**FINISHED LEVEL NOTES:**  
REFER TO DRAWING C011994.10-DA10 FOR FINISHED LEVEL NOTES

**LEVELS NOTE:**  
LEVELS SHOWN TO BE +/-500mm FROM THOSE SHOWN. FINAL LEVELS SUBJECT TO FINAL GEOTECHNICAL INVESTIGATIONS, ARCHITECTURAL LAYOUT AND ACHIEVING A CUT TO FILL EARTHWORKS BALANCE OVER THE PROPERTY.

REFER TO CONTINUATION ON DRAWING DA52



FINISHED LEVELS PLAN - SHEET 1  
SCALE 1:250

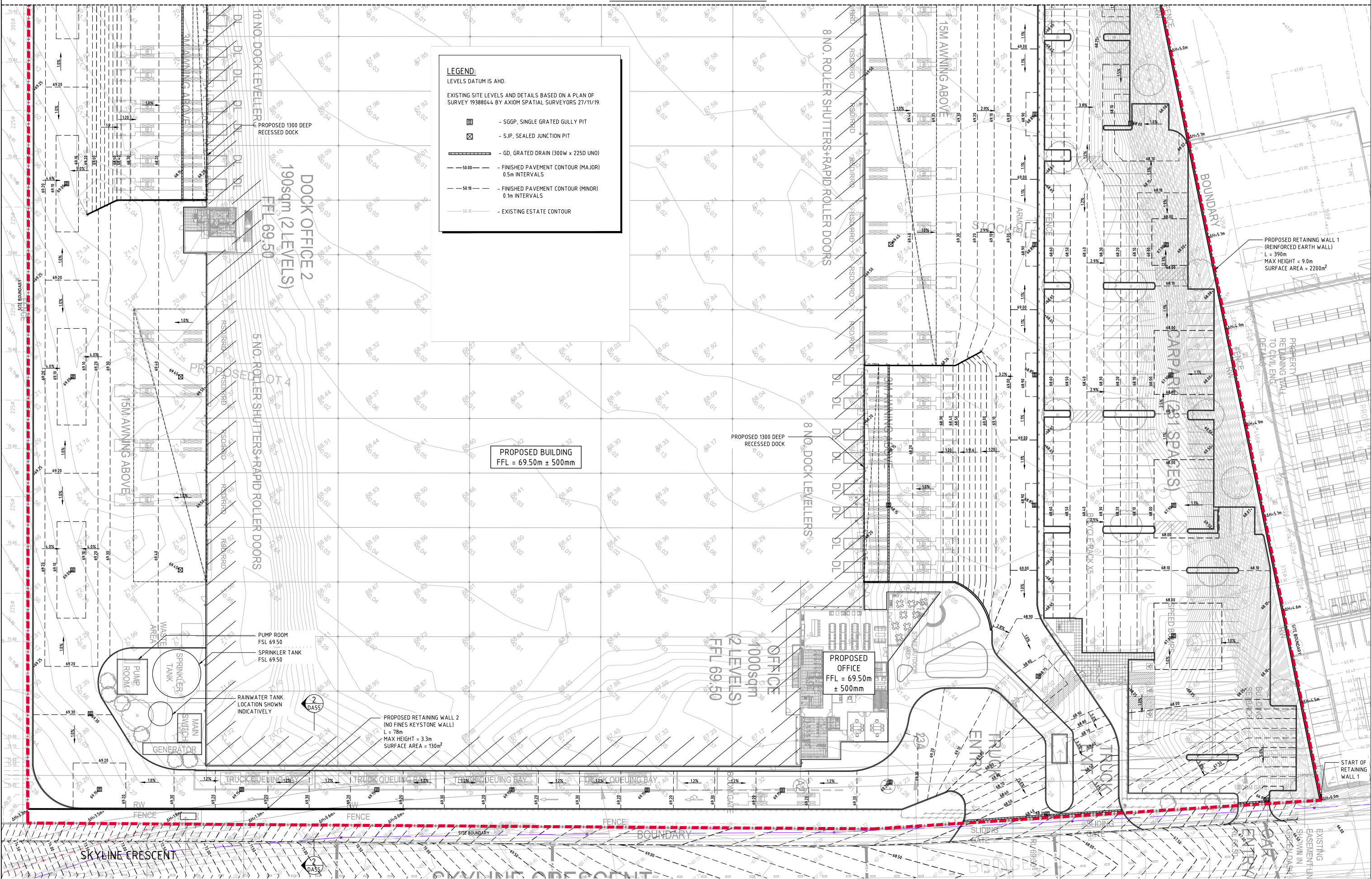
FOR APPROVAL

2m 0 5 10 15 20 25m  
SCALE 1:250 AT A0 SIZE SHEET

ISSUED FOR APPROVAL REVISED AS CLOURED ISSUED FOR INFORMATION			PROJECT LOT 4 WAREHOUSE FACILITY BRINGELLY ROAD, BUSINESS HUB HORNINGSEA PARK, NSW			CLIENT Costin Roe Consulting Pty Ltd. Consulting Engineers Level 1, 8 Windmill Street Wahah Bay, Sydney NSW 2000 Tel: (02) 8551-7000 Fax: (02) 8541-3721 email: mail@costinroe.com.au			DRAWING TITLE FINISHED LEVELS PLAN SHEET 1		
14.08.20	C		ARCHITECT			ESR			PRECISION   COMMUNICATION   ACCOUNTABILITY		
06.08.20	B		CLIENT								
24.07.20	A		PROJECT								
DATE	ISSUE	AMENDMENTS	DATE	ISSUE	AMENDMENTS	DATE	ISSUE	AMENDMENTS	DATE	ISSUE	AMENDMENTS

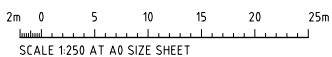


REFER TO CONTINUATION ON DRAWING DA51



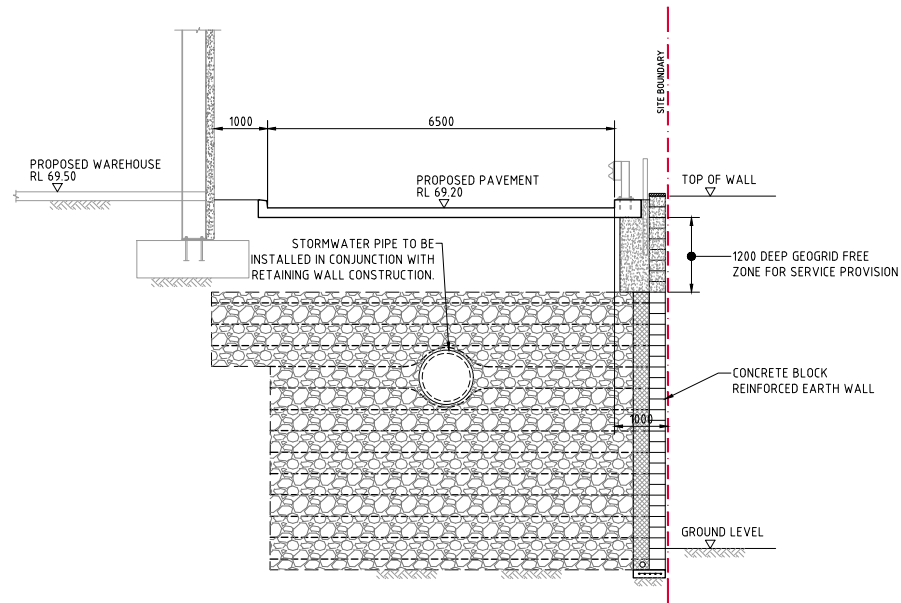
**FINISHED LEVELS PLAN - SHEET 2**  
SCALE 1:250

**FOR APPROVAL**

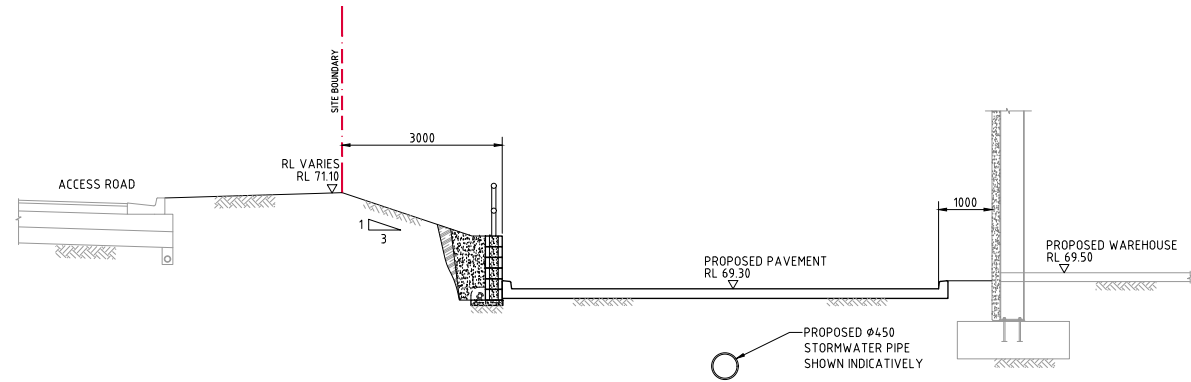


																				ARCHITECT										CLIENT										PROJECT										 										Costin Roe Consulting Pty Ltd. Consulting Engineers ***** Level 1, 8 Windmill Street Walsh Bay, Sydney NSW 2000 Tel: (02) 9551-7899 Fax: (02) 9541-3728 email: mail@costinroe.com.au ©																				DRAWING TITLE FINISHED LEVELS PLAN SHEET 2									
ISSUED FOR APPROVAL 14.08.20 C																																								DESIGNED 1.0										CNO REF: C011994.10-DA52										PRECISION   COMMUNICATION   ACCOUNTABILITY										DRAWING NO: C011994.10-DA52																			
REVISED AS CLOUSED 04.08.20 B																																								DRAWN 1.0																																																	
ISSUED FOR INFORMATION 24.07.20 A																																								DATE JULY 20																																																	
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DATE ISSUE										DATE ISSUE										DATE ISSUE										DATE ISSUE										SIZE A3																																																	

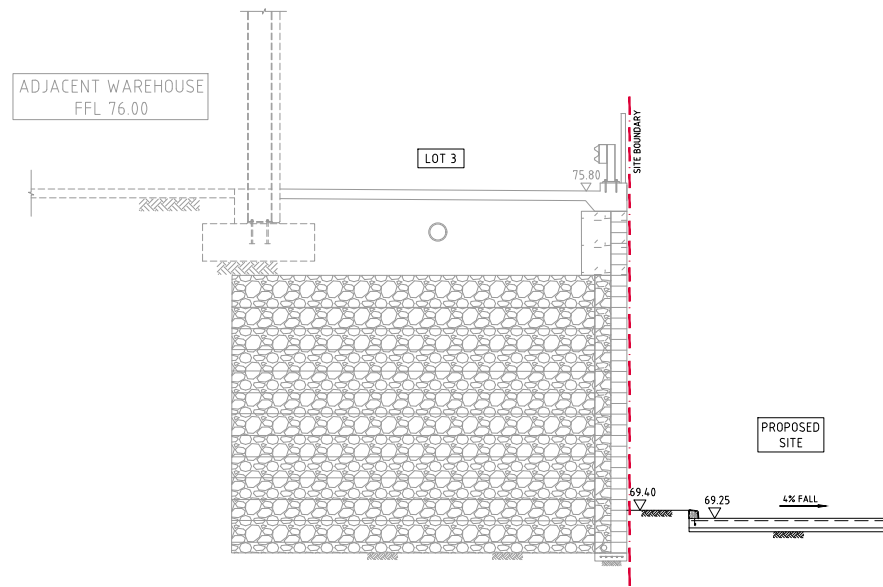




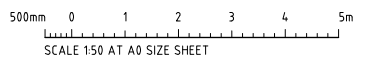
SECTION 1:50 1  
DA51



SECTION 2:50 2  
DA52



SECTION 3:50 3  
DA51



FOR APPROVAL

										ARCHITECT										CLIENT										PROJECT										COSTIN ROE CONSULTING PTY LTD.										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