

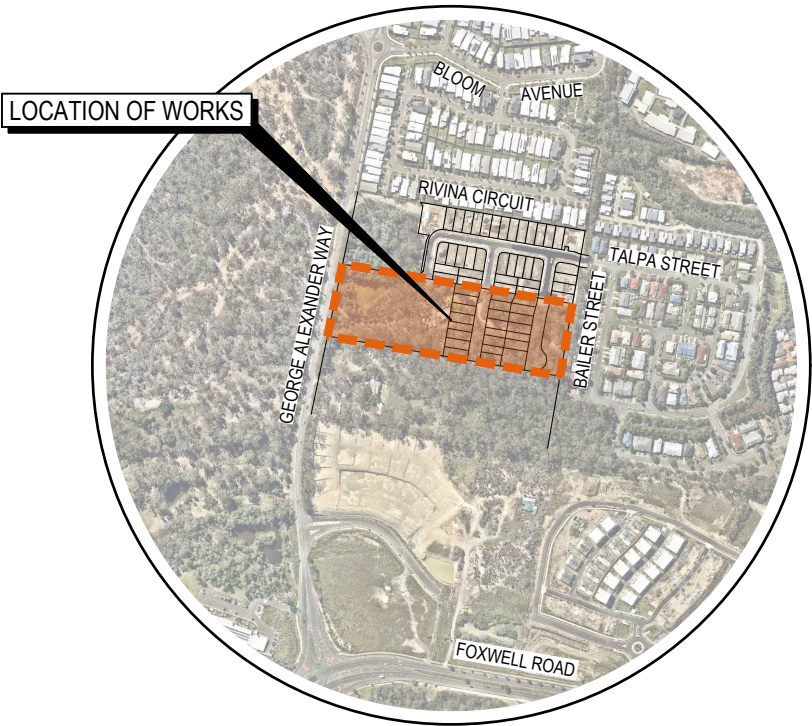
54 GEORGE ALEXANDER WAY, COOMERA

OPERATIONAL WORKS - BULK EARTHWORKS

CITY OF GOLD COAST

DRAWING SCHEDULE

DWG. No.	DESCRIPTION
GENERAL	
0001	COVER SHEET, LOCALITY PLAN & DRAWING SCHEDULE
0011	EXISTING FEATURES SURVEY PLAN
EARTHWORKS	
0101	BULK EARTHWORKS CUT AND FILL LAYOUT PLAN
0105	TYPICAL RETAINING WALL DETAILS
0111	BULK EARTHWORKS SECTIONS
0121	EROSION AND SEDIMENT CONTROL PLAN
0131	EROSION AND SEDIMENT CONTROL DETAILS SHEET 1
0132	EROSION AND SEDIMENT CONTROL DETAILS SHEET 2
0133	EROSION AND SEDIMENT CONTROL DETAILS SHEET 3
ROADWORKS	
0201	CONTROL LINE SETOUT PLAN
0202	CONTROL LINE SETOUT TABLE & TYPICAL ROAD CROSS SECTION
0221	PIONEER STREET AND MERCY STREET LONGITUDINAL SECTIONS
MISCELLANEOUS	
0601	HAZARD REGISTER



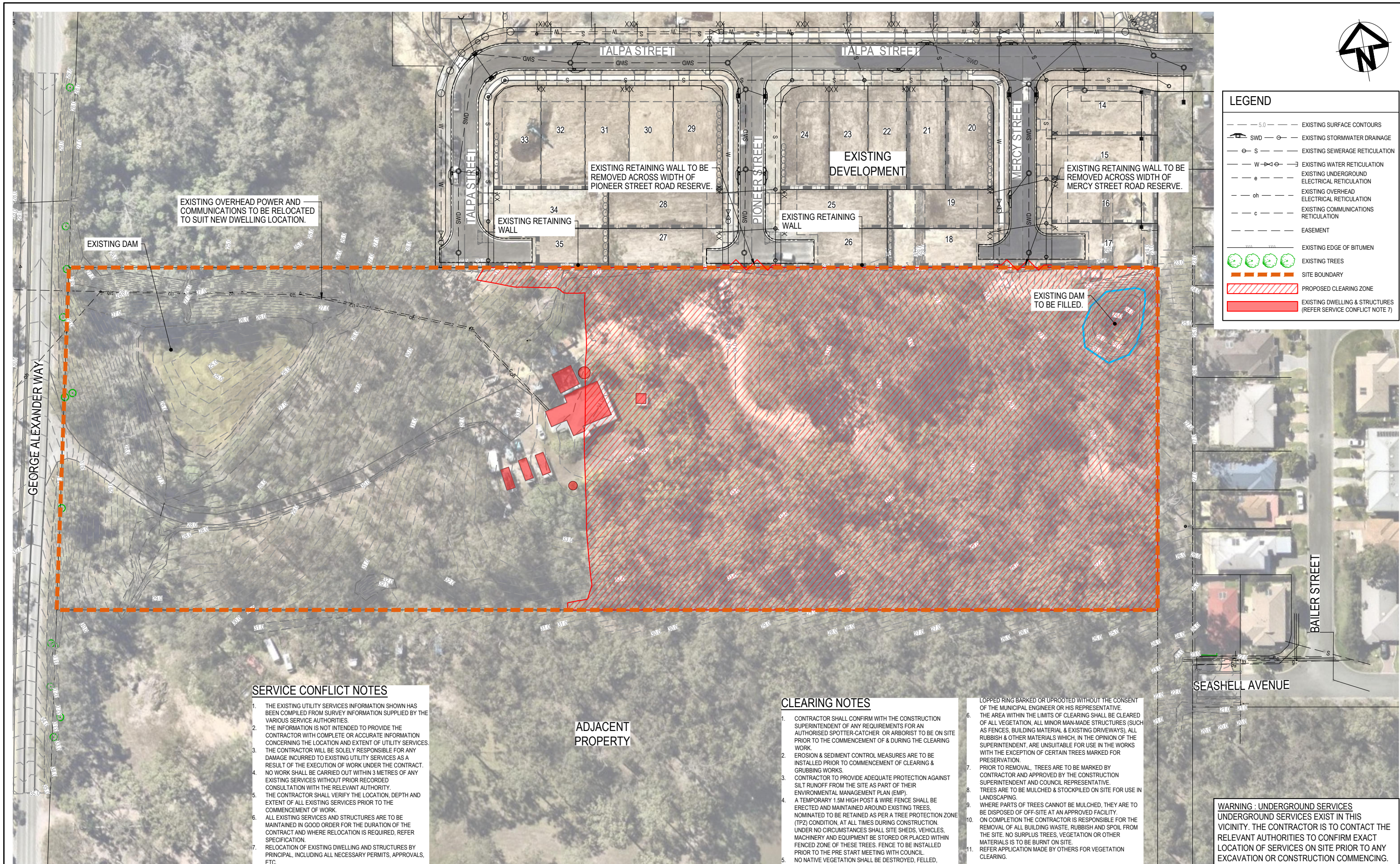
LEVELS & GRID
ORIGIN PM139395 RL 26.512
LEVEL TO AHD
(AUSTRALIAN HEIGHT DATUM)
GRID MGA (ZONE 56)

LOCALITY PLAN
1 : 5000

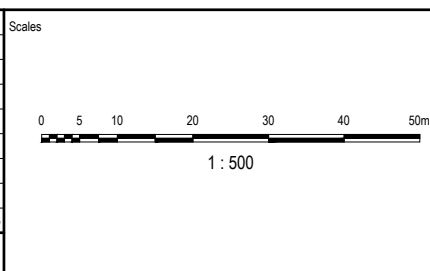
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					Scales 0 50 100 200 300 400 500m 1 : 5000					Surveyor saunders havill group					Client Coomera GA Pty Ltd ATF The Coomera GA Unit Trust Pty Ltd					Status FOR APPROVAL CONSTRUCTION SUBJECT TO APPROVAL © Copyright reserved Original Issue Signatures Drawn D. KEARNEY Original Size A1 Designed G. GESMUNDO Height Datum AHD Project Manager A. SHEPHERD Grid MGA (ZONE 56) Verified R. MULLIGAN R.P.E.Q. No: 7850 Date 19.12.2023 					Project 54 GEORGE ALEXANDER WAY, COOMERA Title COVER SHEET, LOCALITY PLAN & DRAWING SCHEDULE					 ARCADIS Arcadis Australia Pacific Pty Limited Level 7, Seabank Building, 12-14 Marine Parade SOUTHPORT QLD 4215 ABN 76 104 485 289 Tel No: +61 7 5503 4800 www.arcadis.com/au Project Number 30157884 Issue 01				
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Issue	Description	DR	CH	VE	Date																													



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Issue	Description	DR	CH	VE	Date



Client

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Designed	G. GESMUNDO
Project Manager	A. SHEPHERD
Verified	R. MULLIGAN
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Height Datum	AHD
Grid	MGA (ZONE 56)
R.P.E.Q. No.	7850
Date	19.12.2023

Project

54 GEORGE ALEXANDER WAY,
COOMERA

Title

EXISTING FEATURES
SURVEY PLAN

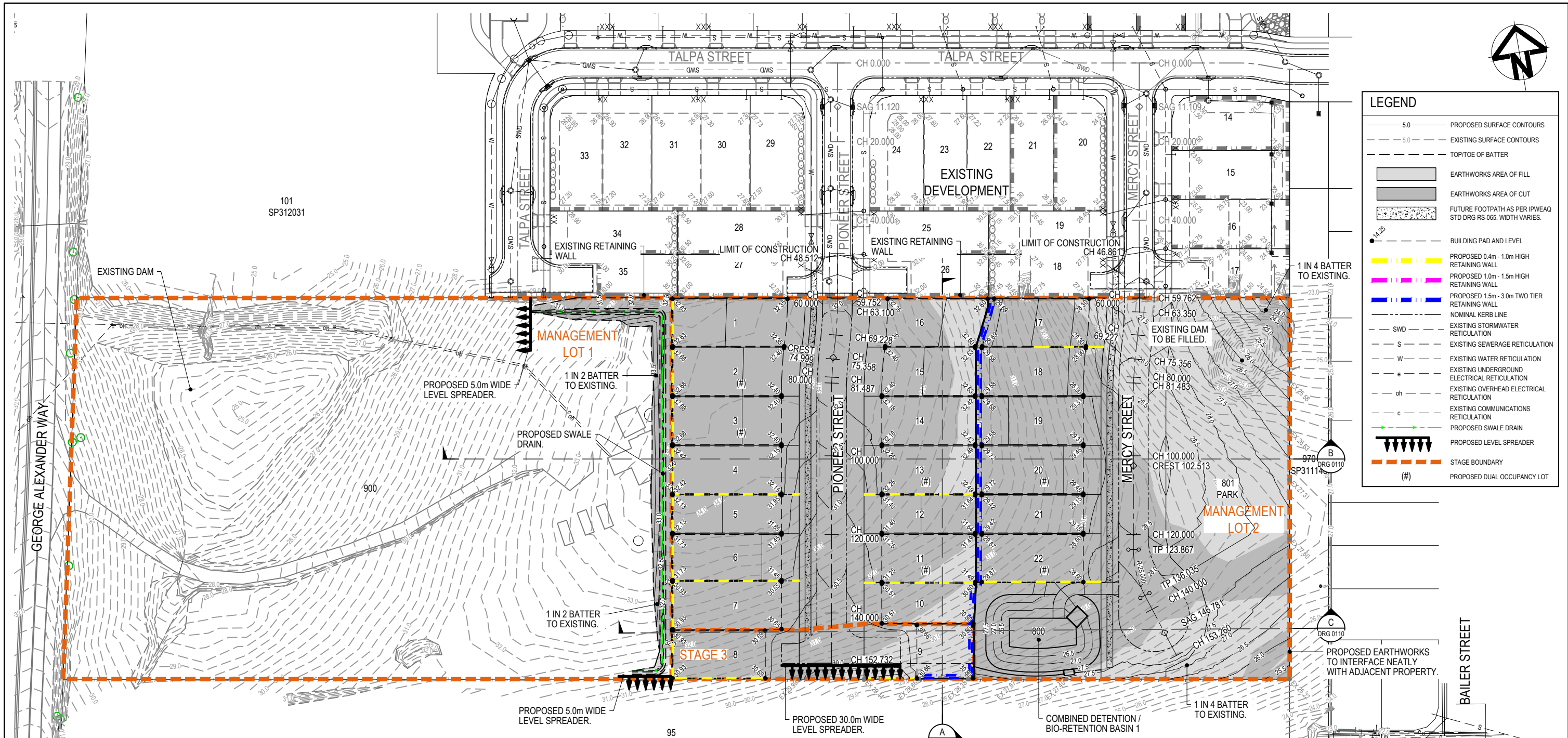
ARCADIS

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Drawing No. GAW-AAP-BE-00-DRG-CV-0011

Issue 01

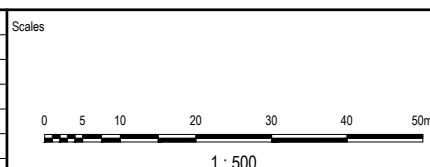


NOTES

- THE CONTRACTOR IS TO FENCE LIMIT OF WORKS PRIOR TO PRE START MEETING WITH COUNCIL.
- SEDIMENT & EROSION CONTROL MEASURES ARE TO BE INSTALLED PRIOR TO COMMENCEMENT OF CLEARING & GRUBBING WORKS.
- AN AUTHORISED SPOTTER-CATCHER IS TO BE ON SITE PRIOR TO THE COMMENCEMENT OF & DURING THE CLEARING WORK.
- ANY CLEARING REQUIRED TO BE UNDERTAKEN BY THE CONTRACTOR IS TO BE STRICTLY IN ACCORDANCE WITH THE COUNCIL APPROVED VEGETATION MANAGEMENT PLAN.
- THE AREA WITHIN THE LIMITS OF CLEARING SHALL BE CLEARED OF ALL VEGETATION, ALL MINOR MAN-MADE STRUCTURES (SUCH AS FENCES, BUILDING MATERIAL & EXISTING DRIVEWAYS), ALL RUBBISH & OTHER MATERIALS WHICH, IN THE OPINION OF THE SUPERINTENDENT, ARE UNSUITABLE FOR USE IN THE WORKS WITH THE EXCEPTION OF CERTAIN TREES MARKED FOR PRESERVATION.
- TREES ARE TO BE MULCHED & STOCKPILED ON SITE FOR USE IN LANDSCAPING. EXCESS TO BE REMOVED FROM SITE AT CONTRACTORS EXPENSE.
- WHERE PARTS OF TREES CANNOT BE MULCHED, THEY ARE TO BE DISPOSED OF OFF-SITE AT AN APPROVED FACILITY.
- ALL TOPSOIL FROM EARTHWORKS AREA SHALL BE STRIPPED & STOCKPILED PRIOR TO THE COMMENCEMENT OF ANY EARTHWORKS OPERATIONS.
- NOTWITHSTANDING THE LIMITS OF CUTTING & FILLING SHOWN ON THE DRAWINGS, THE ACTUAL LIMITS SHALL BE DETERMINED ON SITE BY THE ENGINEER DURING CONSTRUCTION. FINISHED SURFACE CONTOURS MAY BE ADJUSTED BY WRITTEN DIRECTION OF THE ENGINEER DURING CONSTRUCTION.
- FILL AREAS SHALL BE CONSTRUCTED IN LAYERS NOT EXCEEDING 300mm LOOSE DEPTH. THE FILL MATERIAL SHALL BE COMPACTED TO 95% (MINIMUM) OF THE MAXIMUM DRY DENSITY. TESTING SHALL BE IN ACCORDANCE WITH A.S.1289 (MODIFIED COMPACTION). THE CONTRACTOR SHALL SUPPLY TO THE ENGINEER CERTIFICATION OF THE COMPACTION ACHIEVED.
- ALL EARTHWORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH AS3798 UNDER LEVEL 1 SUPERVISION AND HAVE A FREQUENCY FIELD DENSITY TESTING RECORD IN ACCORDANCE WITH TABLE 8.1 OF AS3798.
- ALL FILL PLACED ON THE SITE IS TO COMPRISE OF ONLY NATURAL EARTH & ROCK & IS TO BE FREE OF ALL CONTAMINANTS (REFER TO THE ENVIRONMENTAL PROTECTION ACT 1994 SECTION 11). NO DEMOLITION MATERIAL IS TO BE USED.
- UNLESS DIRECTED OTHERWISE BY THE SUPERINTENDENT ALL FILL SHALL BE PLACED AT BETWEEN +2% & -2% OF OPTIMUM MOISTURE CONTENT.
- PROPOSED SURFACE CONTOURS ARE DESIGNED FINISHED SURFACE LEVELS. SPOT LEVELS ARE DESIGN FINISHED SURFACE LEVELS.
- ALL NEW WORKS TO MATCH NEATLY WITH EXISTING. THE CONTRACTOR SHALL CONFIRM LOCATION OF ALL EXISTING SERVICES & PROTECT THESE SERVICES DURING CONSTRUCTION. DAMAGED SERVICES SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.
- ALL OF THE SITE SHALL BE KEPT FREE DRAINING DURING ALL PHASES OF THE PROJECT.
- REFER TO ROAD CROSS SECTIONS FOR BATTER GRADES. WHERE GRADES ARE NOT SPECIFIED:-
FILL - 1 IN 4 CUT - 1 IN 4
- ALL ALLOTMENTS TO BE GRASS SEEDED WITH MINIMUM 80% COVERAGE. SEEDING TO OCCUR WITHIN 7 DAYS OF COMPLETION OF EARTHWORKS.
- FOR TYPICAL RETAINING WALL DETAILS REFER DRG 0105.

ADJACENT
PROPERTY

Issue	Description	DR	CH	VE	Date
01	ORIGINAL ISSUE	DK	AS	RM	19.12.2023



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Project Manager	A. SHEPHERD	Grid	MGA (ZONE 56)
Verified	R. MULLIGAN	R.P.E.Q. No: 7850 Date: 19.12.2023	

Project
54 GEORGE ALEXANDER WAY,
COOMERA

Title
BULK EARTHWORKS CUT & FILL
LAYOUT PLAN

Arcadis Australia Pacific Pty Limited
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Project Number	30157884
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LEGEND

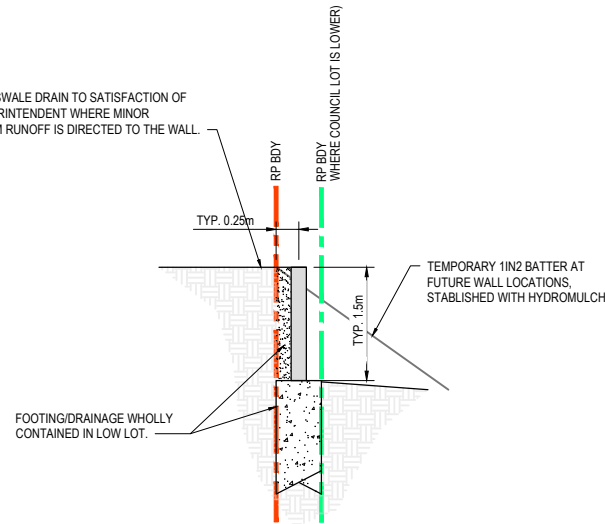
- 5.0 PROPOSED SURFACE CONTOURS
- 5.0 EXISTING SURFACE CONTOURS
- TOP/TOE OF BATTER
- EARTHWORKS AREA OF FILL
- EARTHWORKS AREA OF CUT
- FUTURE FOOTPATH AS PER IPWEAQ STD DRG RS-065. WIDTH VARIES.
- BUILDING PAD AND LEVEL
- PROPOSED 0.4m - 1.0m HIGH RETAINING WALL
- PROPOSED 1.0m - 1.5m HIGH RETAINING WALL
- PROPOSED 1.5m - 3.0m TWO TIER RETAINING WALL
- NOMINAL KERB LINE
- EXISTING STORMWATER RETICULATION
- EXISTING SEWERAGE RETICULATION
- EXISTING WATER RETICULATION
- EXISTING UNDERGROUND ELECTRICAL RETICULATION
- EXISTING OVERHEAD ELECTRICAL RETICULATION
- EXISTING COMMUNICATIONS RETICULATION
- PROPOSED SWALE DRAIN
- PROPOSED LEVEL SPREADER
- STAGE BOUNDARY
- PROPOSED DUAL OCCUPANCY LOT

CUT / FILL VOLUMES

CUT	-14,294.744m³
FILL	2,302.670m³
BALANCE (EXPORT)	-11,992.074m³

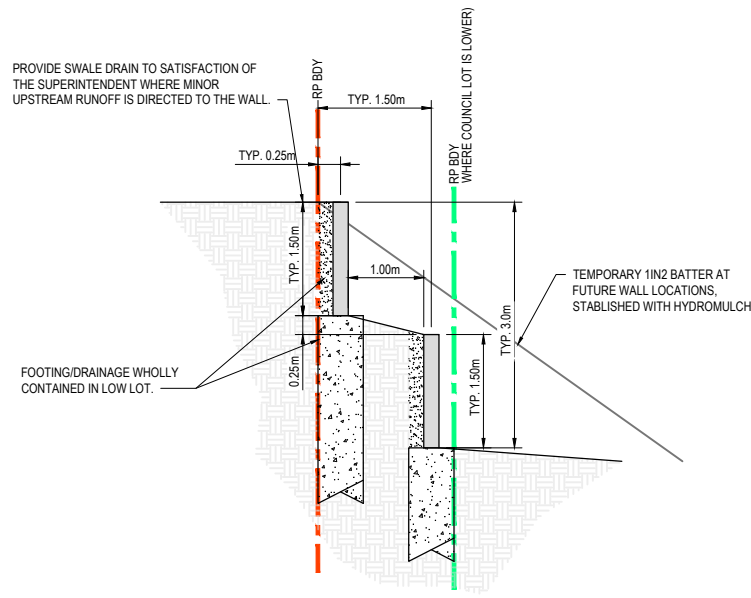
NOTE: NO TOPSOIL STRIP OF EXISTING AND TOPSOIL RE-SPREAD HAS BEEN APPLIED TO VOLUMES. NO COMPACTION OR BULKING FACTORS HAVE BEEN APPLIED.

PROVIDE SWALE DRAIN TO SATISFACTION OF THE SUPERINTENDENT WHERE MINOR UPSTREAM RUNOFF IS DIRECTED TO THE WALL.

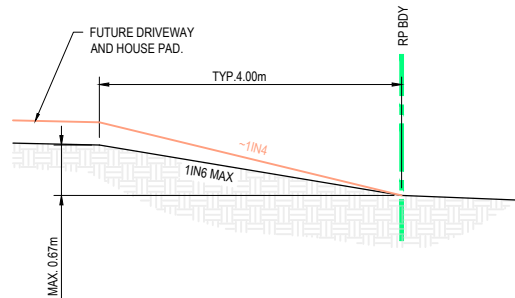


SINGLE TIER RETAINING WALL
CONCRETE SLEEPER
SCALE 1:50

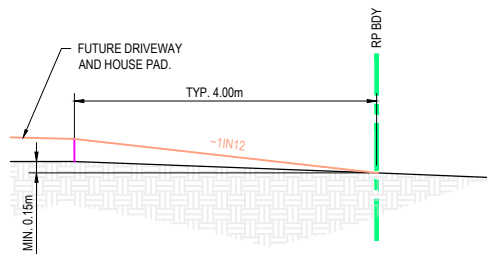
PROVIDE SWALE DRAIN TO SATISFACTION OF THE SUPERINTENDENT WHERE MINOR UPSTREAM RUNOFF IS DIRECTED TO THE WALL.



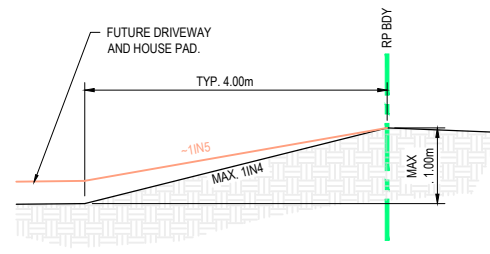
DOUBLE TIER RETAINING WALL (NO REAR SERVICE)
CONCRETE SLEEPER
SCALE 1:50



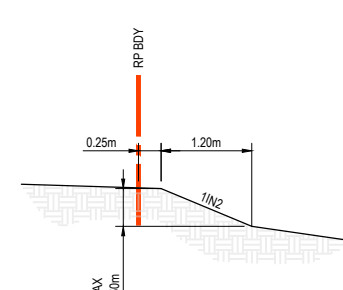
TYPICAL LOT SETBACK
HIGHER THAN VERGE TYPE 2
AT INDICATIVE DRIVEWAY LOCATION
SCALE 1:50



TYPICAL LOT SETBACK
HIGHER THAN VERGE TYPE 1
AT INDICATIVE DRIVEWAY LOCATION
SCALE 1:50



TYPICAL LOT SETBACK
LOWER THAN VERGE
AT INDICATIVE DRIVEWAY LOCATION
SCALE 1:50

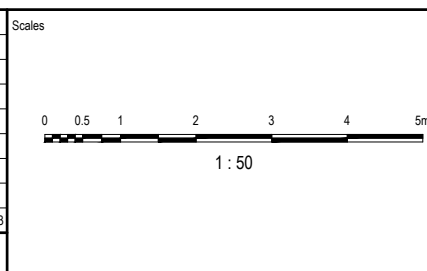


SIDE BOUNDARY BATTER
SCALE 1:50

TYPICAL SLEEPER RETAINING WALL NOTES

- DETAILS SHOWN ARE TYPICAL ONLY AND NOT FOR CONSTRUCTION. CONTRACTOR SHALL PROVIDE DESIGN DRAWINGS AND RPEQ RELEVANT CERTIFICATIONS TO THE SUPERINTENDED 10 WORKING DAYS PRIOR TO THE COUNCIL PRE-START MEETING (CONDITION 15.83). POST CONSTRUCTION CERTIFICATIONS MUST BE PROVIDED WITHIN 5 WORKING DAYS UPON COMPLETION OF THE WALL.
- WALLS SHALL BE DESIGNED IN ACCORDANCE WITH AS4678 AND THE DEVELOPMENT APPROVAL CONDITIONS 'EARTHWORKS - RETAINING STRUCTURES'.
- CONCRETE STANDARD IS AS3600 STANDARD DESIGN EXPOSURE CLASSIFICATION SLEEPERS AND POSTS - B1 AND FOOTINGS - A2.
- A MINIMUM SURCHARGE LOAD OF 10kPa SHALL BE USED WHERE THE RETAINING WALL IS BELOW AND ADJACENT TO ROAD RESERVE AND 5kPa ELSEWHERE. THE DESIGN MUST ALSO CONSIDER ANY CONSTRUCTION LOADING DURING BUILDING CONSTRUCTION.
- WALL SHALL BE DESIGNED TO BRIDGE ANY UNDERGROUND SERVICES, SO AS NOT TO IMPOSE ANY ADDITIONAL LOADINGS.
- ALL WALLS ADJACENT TO PROPERTY BOUNDARIES SHALL BE DESIGNED TO ALLOW FOR AND INSTALLED WITH FENCE BRACKETS. MINIMUM FENCE HEIGHT IS 1.8m EXCEPT WHERE VARIED BY THE CONDITIONS OF APPROVAL.
- SUBSOIL DRAINAGE BEHIND ALL WALLS TO INCLUDE DISCHARGE PIPE INTO THE NEAREST STORMWATER STRUCTURE (OR DEDICATED KERB ADAPTOR) AND BE FREE DRAINING. ALL WALL DRAINAGE LINES DISCHARGING THROUGH LOTS OR ROAD VERGE TO BE SOLID uPVC (NO SLOTS) AND MUST BE FREE DRAINING.
- TEMPORARY SAFETY BARRIER MESH FENCING SHALL BE PROVIDED AND MAINTAINED TO ALL WALLS 1.0m AND GREATER IN HEIGHT.
- RP BDY LINE LOCATIONS APPLY UNLESS NOTED OTHERWISE ON PLAN.

01	ORIGINAL ISSUE	DK	AS	RM	19.12.2023
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Verified	R. MULLIGAN	R.P.E.Q. No: 7850 Date: 19.12.2023	

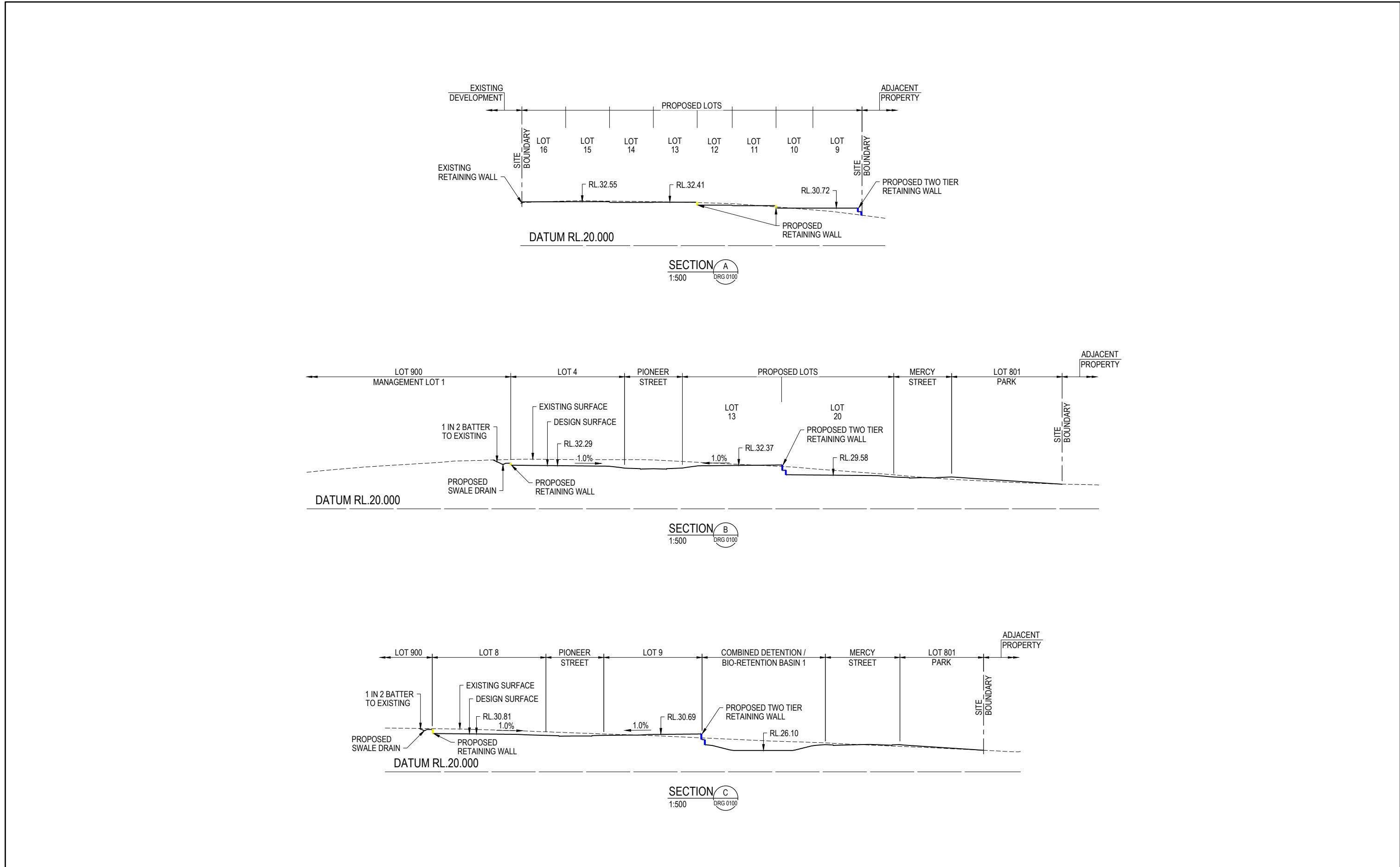
Project
54 GEORGE ALEXANDER WAY,
COOMERA

Title
TYPICAL RETAINING
WALL DETAILS

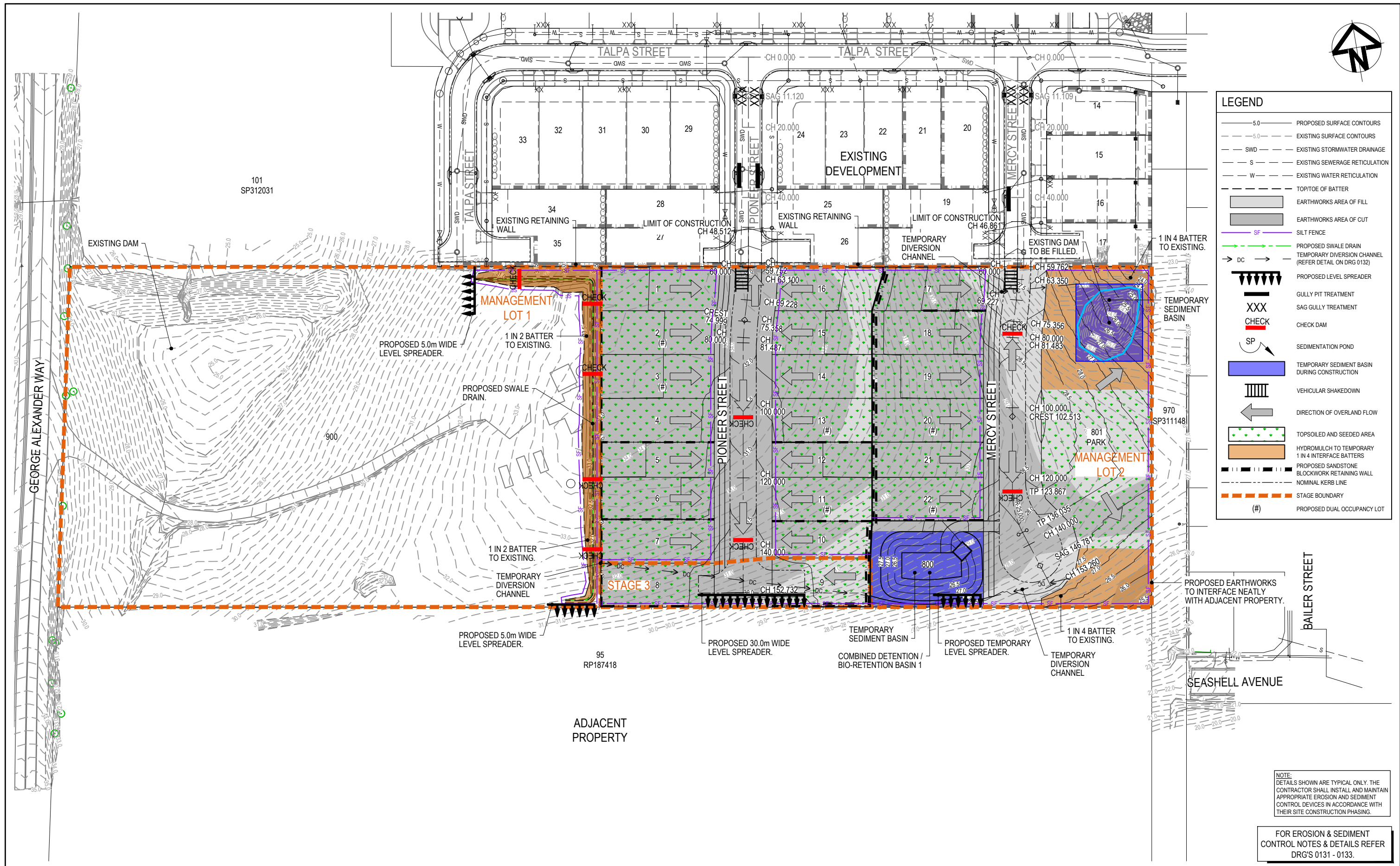
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Issue	01

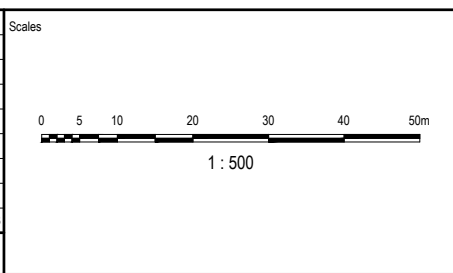
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					1 : 500				Coomera GA Pty Ltd ATF The Coomera GA Unit Trust Pty Ltd		FOR APPROVAL CONSTRUCTION SUBJECT TO APPROVAL		54 GEORGE ALEXANDER WAY, COOMERA							
											Original Issue Signatures		Title		BULK EARTHWORKS SECTIONS		GAW-AAP-BE-00-DRG-CV-0111			
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											Project Manager		Grid							
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01 ORIGINAL ISSUE					DK AS RM 19.12.2023															
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Verified	R. MULLIGAN	R.P.E.Q. No: 7850 Date: 19.12.2023	

Project

54 GEORGE ALEXANDER WAY,
COOMERA

Title

EROSION AND SEDIMENT
CONTROL PLAN

ARCADIS

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Project Number 30157884

Drawing No. GAW-AAP-BE-00-DRG-CV-0121

Issue 01

1. EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THE DRAWINGS ARE MINIMUM REQUIREMENTS BASED ON THE UNDERSTOOD CONSTRUCTION SCOPE AND METHODOLOGY. IT IS THE CONTRACTORS RESPONSIBILITY AT ALL TIMES TO EMPLOY APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES BASED ON THE CONSTRUCTION METHODOLOGY, SEQUENCING OF WORKS AND LOCAL SITE CONDITIONS TO THE APPROVAL OF THE AUTHORISING AUTHORITY.
2. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE INSPECTION, MAINTENANCE AND TESTING OF ALL DRAINAGE, EROSION AND SEDIMENT CONTROL MEASURES ARE UNDERTAKEN ON SITE.
3. ALL DRAINAGE, EROSION AND SEDIMENT CONTROL MEASURES MUST BE APPLIED AND MAINTAINED IN ACCORDANCE WITH THE LATEST INTERNATIONAL EROSION CONTROL ASSOCIATION (IECA) AUSTRALASIA BEST PRACTICE EROSION AND SEDIMENT CONTROL (BPESC) DOCUMENT.
4. REFER TO APPROVED PLANS FOR LOCATION, EXTENT, AND CONSTRUCTION DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, EXTENT, OR METHOD OF INSTALLATION, CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.
5. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MUST BE IMPLEMENTED AND A REVISED EROSION AND SEDIMENT CONTROL PLAN (ESCP) MUST BE SUBMITTED FOR APPROVAL IN THE EVENT THAT SITE CONDITIONS CHANGE SIGNIFICANTLY FROM THOSE CONSIDERED WITHIN THIS ESCP.
6. IN CIRCUMSTANCES WHERE IT IS CONSIDERED NECESSARY TO PREPARE AN AMENDED EROSION AND SEDIMENT CONTROL PLAN (ESCP), AND WHERE THE DELIVERY OF SUCH AN AMENDED ESCP IS NOT IMMEDIATE, THEN ALL NECESSARY NEW OR MODIFIED EROSION AND SEDIMENT CONTROL WORKS MUST BE IN ACCORDANCE WITH THE LATEST VERSION OF THE IECA BPESC DOCUMENT. UPON APPROVAL OF THE AMENDED ESCP, ALL WORKS MUST BE IMPLEMENTED IN ACCORDANCE WITH THE AMENDED PLAN.
7. WHERE THERE IS A HIGH PROBABILITY THAT SERIOUS OR MATERIAL ENVIRONMENTAL HARM MAY OCCUR AS A RESULT OF SEDIMENT LEAVING THE SITE, APPROPRIATE ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MUST BE IMPLEMENTED SUCH THAT ALL REASONABLE AND PRACTICABLE MEASURES ARE BEING TAKEN TO PREVENT OR MINIMISE SUCH HARM. ONLY THOSE WORKS NECESSARY TO MINIMISE OR PREVENT ENVIRONMENTAL HARM SHALL BE CONDUCTED ON-SITE PRIOR TO APPROVAL OF THE AMENDED EROSION AND SEDIMENT CONTROL PLAN (ESCP).
8. AT ALL TIMES THE CONTRACTOR SHALL MONITOR THE PREVAILING WEATHER CONDITIONS AND PROTECT ANY DOWNSTREAM CONSTRUCTION OR RECEIVING ENVIRONMENTS.
9. WORKS SHALL BE COMPLETED ON SITE GENERALLY IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:
 - (i) PRE CONSTRUCTION - CONSTRUCT SILT FENCES PRIOR TO PRE-START MEETING, WHICH WILL PROTECT EXISTING DOWNSTREAM PROPERTIES, PARKS OR ROAD RESERVES FROM SEDIMENTATION AND EROSION.
 - (ii) CLEARING AND BULK EARTHWORKS - CONSTRUCT AND MAINTAIN SILT FENCES WHICH CONTROL SEDIMENTATION AND EROSION DURING CLEARING AND BULK EARTHWORKS. ALL DISTURBED AREAS TO BE EITHER GRASS SEEDS OR TURFED, AS SPECIFIED, AS SOON AS POSSIBLE OR WITHIN 7 DAYS OF FINAL TRIMMING OF EARTHWORKS.
 - (iii) MAINTENANCE PERIOD - CONSTRUCT AND MAINTAIN SILT MANAGEMENT CONTROLS WHICH CONTROL SEDIMENTATION AND EROSION PRIOR TO THE ESTABLISHMENT OF GRASS COVER AND REHABILITATION, PROVIDE GRASS FILTER STRIPS IN LOCATIONS AS SHOWN ON EROSION AND SEDIMENT CONTROL PLANS.
10. EROSION AND SEDIMENT CONTROL PROTECTION MEASURES SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE CONTRACT.

1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND FUNCTIONAL PRIOR TO WORKS COMMENCING AND IN THE FOLLOWING SEQUENCE:
 - a. CONSTRUCT TEMPORARY STABILISED SITE ACCESS
 - b. PROVIDE INLET PROTECTION TO STORMWATER INLETS AND GULLIES ON ALL ROADS ADJOIN THE SITE.
 - c. CONSTRUCT BARRIER FENCING AROUND RESTRICTED 'NO-GO' ZONES OF THE RETAINED VEGETATION AND AREAS NOT TO BE DISTURBED AND AREAS WHICH REMAIN UN-WORKED.
 - d. INSTALL ALL TEMPORARY SEDIMENT FENCES
 - e. CONSTRUCT DIVERSION BANKS AS NECESSARY (PARALLEL TO CONTOURS) TO DIVERT RUNOFF FROM DISTURBED AREAS INTO THE SEDIMENT PONDS/BASINS
 - f. WORK AREAS TO BE DELINEATED BY BARRIER FENCING AND DIVERSION CHANNEL UPSLOPE AND SEDIMENT FENCING DOWNSLOPE.
 - g. MAINTAIN EXISTING SEDIMENT PONDS/BASINS AS LONG AS PRACTICALLY POSSIBLE
 - h. STABILISE ALL DISTURBED AREAS ASAP AND PROGRESSIVELY AS WORKS ARE COMPLETED.
 - i. TEMPORARY STABILISATION TO BE DONE USING MULCHING, HYDROMULCHING, HYDROSEEDING OR DIRECT SEEDING TO GIVE A 70% COVERAGE OF GROUND SURFACE WITHIN 14 DAYS OF WORKS COMPLETING (EVEN IF WORKS MAY CONTINUE LATER)
2. EROSION AND SEDIMENT CONTROL PROTECTION MEASURES MAY NEED TO BE REVISED AND UPDATED TO REFLECT THE SITE CONDITIONS AND PROGRESSION OF THE WORKS, I.E. MEASURES INCLUDING SEDIMENT FENCES SHOULD BE MOVED AND REINSTATED AS WORKS PROGRESS.

1. HIGH EFFICIENCY DUST CONTROL TECHNIQUES MUST BE EMPLOYED ON SITE ON AN AS NEEDS BASIS TO PREVENT THE EMISSION OF DUST FROM THE SITE. SUCH TECHNIQUES MUST BE APPLIED TO THE MOVEMENT OF SOIL, SAND, ALL EXCAVATED AREAS, STOCKPILES, HAUL ROADS AND RAMPS, AND TO ANY OTHER AREAS OR APPLICATIONS WHERE THE POTENTIAL FOR DUST GENERATION EXISTS. THESE CONTROL TECHNIQUES MAY INCLUDE THE USE OF WATER SPRAYS, APPLICATION OF DUST SUPPRESSANTS, SURFACE STABILIZATION OR COVERING EXPOSED SURFACES. DUST CONTROL TECHNIQUES MUST BE EMPLOYED ON SITE AT ALL TIMES INCLUDING OUTSIDE NORMAL WORKING HOURS, ALL PERMANENT ROADS AND TRAFFICABLE AREAS MUST BE SEALED OR HARD SURFACED TO MINIMISE DUST GENERATION .
2. ALL OFFICE FACILITIES AND OPERATIONAL ACTIVITIES MUST BE LOCATED SUCH THAT ANY LIQUID EFFLUENT (E.G. PROCESS WATER, WASH-DOWN WATER, EFFLUENT FROM EQUIPMENT CLEANING, OR PLANT WATERING), CAN BE TOTALLY CONTAINED AND TREATED WITHIN THE SITE.
3. THE CONSTRUCTION SCHEDULE MUST AIM TO MINIMISE THE DURATION THAT ANY AND ALL AREAS OF SOIL ARE EXPOSED TO THE EROSION EFFECTS OF WIND, RAIN AND SURFACE WATER.
4. LAND-DISTURBING ACTIVITIES MUST BE UNDERTAKEN IN ACCORDANCE WITH THE ESCP AND ASSOCIATED DEVELOPMENT CONDITIONS.
5. LAND-DISTURBING ACTIVITIES MUST BE UNDERTAKEN IN SUCH A MANNER THAT ALLOWS ALL REASONABLE AND PRACTICABLE MEASURES TO BE UNDERTAKEN TO:
 - (i) ALLOW STORMWATER TO PASS THROUGH THE SITE IN A CONTROLLED MANNER AND AT NON-EROSIVE FLOW VELOCITIES UP TO THE SPECIFIED DESIGN STORM DISCHARGE;
 - (ii) MINIMISE SOIL EROSION RESULTING FROM RAIN, WATER FLOW AND/OR WIND;
 - (iii) MINIMISE ADVERSE EFFECTS OF SEDIMENT RUNOFF, INCLUDING SAFETY ISSUES;
 - (iv) PREVENT, OR AT LEAST MINIMISE, ENVIRONMENTAL HARM RESULTING FROM WORK-RELATED SOIL EROSION AND SEDIMENT RUNOFF;
 - (v) ENSURE THAT THE VALUE AND USE OF LAND/PROPERTIES ADJACENT TO THE DEVELOPMENT (INCLUDING ROADS) ARE NOT DIMINISHED AS A RESULT OF THE ADOPTED ESC MEASURES.

- (i) THE DEVELOPMENT APPROVAL CONDITION ISSUED BY THE RELEVANT REGULATORY AUTHORITY; AND
 - (ii) THE APPROVED ESCP AND SUPPORTING DOCUMENTATION; OR
 - (iii) THE LATEST VERSION OF THE IECA BPESC DOCUMENT, IF THE STANDARDS AND SPECIFICATIONS ARE NOT CONTAINED IN THE APPROVED ESCP.
7. ANY WORKS THAT MAY CAUSE SIGNIFICANT SOIL DISTURBANCE AND ARE ANCILLARY TO ANY ACTIVITY FOR WHICH REGULATORY BODY APPROVAL IS REQUIRED, MUST NOT COMMENCE BEFORE THE ISSUE OF THAT APPROVAL.
 8. ADDITIONAL AND/OR ALTERNATIVE ESC MEASURES MUST BE IMPLEMENTED IN THE EVENT THAT SITE INSPECTIONS OF THE SITE'S MONITORING AND MAINTENANCE PROGRAM, OR THE REGULATORY AUTHORITY, IDENTIFIES THAT UNACCEPTABLE OFF-SITE SEDIMENTATION IS OCCURRING AS A RESULT OF THE WORK ACTIVITIES.
 9. LAND-DISTURBING ACTIVITIES MUST NOT CAUSE UNNECESSARY SOIL DISTURBANCE IF AN ALTERNATIVE CONSTRUCTION PROCESS IS AVAILABLE THAT ACHIEVES THE SAME OR EQUIVALENT OUTCOMES AT AN EQUIVALENT COST.
 10. SEDIMENT (INCLUDING CLAY, SILT, SAND, GRAVEL, SOIL, MUD, CEMENT AND CERAMIC WASTE) DEPOSITED OFF THE SITE AS A DIRECT RESULT OF AN ON-SITE ACTIVITY, MUST BE COLLECTED AND THE AREA APPROPRIATELY CLEANED/REHABILITATED AS SOON AS REASONABLE AND PRACTICABLE, AND IN A MANNER THAT GIVES APPROPRIATE CONSIDERATION TO THE SAFETY AND ENVIRONMENTAL RISKS ASSOCIATED WITH THE SEDIMENT DEPOSITION.
 11. WHEREVER REASONABLE AND PRACTICABLE, BRICK, TILE AND MASONRY CUTTING MUST BE CARRIED OUT ON A PERVIOUS SURFACE, SUCH AS GRASS, OR OPEN SOIL, OR IN SUCH A MANNER THAT ALL SEDIMENT-LADEN RUNOFF IS PREVENTED FROM DISCHARGING INTO A GUTTER, DRAIN, OR WATER BODY.
 12. ADEQUATE WASTE COLLECTION BINS MUST BE PROVIDED ON-SITE AND MAINTAINED SUCH THAT POTENTIAL AND ACTUAL ENVIRONMENTAL HARM RESULTING FROM SUCH MATERIAL WASTE IS MINIMISED.
 13. CONCRETE WASTE AND CHEMICAL PRODUCTS, INCLUDING PETROLEUM AND OIL-BASED PRODUCTS, MUST BE PREVENTED FROM ENTERING AN INTERNAL WATER BODY, OR AN EXTERNAL DRAIN, STORMWATER SYSTEM, OR WATER BODY.
 14. ALL FLAMMABLE AND COMBUSTIBLE LIQUIDS, INCLUDING ALL LIQUID CHEMICALS IF SUCH CHEMICALS COULD POTENTIALLY BE WASHED OR DISCHARGED FROM THE SITE, ARE STORED AND HANDLED ON-SITE IN ACCORDANCE WITH RELEVANT STANDARDS SUCH AS AS1940 THE STORAGE AND HANDLING OF FLAMMABLE AND COMBUSTIBLE LIQUIDS.
 15. TRENCHES NOT LOCATED WITHIN ROADWAYS MUST BE BACKFILLED AND COMPACTED TO 95% STANDARD COMPACTION, CAPPED WITH TOPSOIL, AND COMPACTED TO A LEVEL AT LEAST 75mm ABOVE ADJOINING GROUND LEVEL AND APPROPRIATELY STABILISED.
 16. ALL STORMWATER, SEWER LINE AND OTHER SERVICE TRENCHES, NOT LOCATED WITHIN ROADWAYS, MUST BE MULCHED AND SEEDED, OR OTHERWISE APPROPRIATELY STABILISED WITHIN 7 DAYS AFTER BACKFILL.
 17. NO MORE THAN 150m OF A STORMWATER, SEWER LINE OR OTHER SERVICE TRENCH MUST BE OPEN AT ANY ONE TIME.
 18. SITE SPOIL MUST BE LAWFULLY DISPOSED OF IN A MANNER THAT DOES NOT RESULT IN ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.
 19. ALL FILL MATERIAL PLACED ON SITE MUST COMPRISE ONLY NATURAL EARTH AND ROCK, AND IS TO BE FREE OF CONTAMINANTS, BE FREE DRAINING, AND BE COMPACTED IN LAYERS NOT EXCEEDING 300mm TO 95% STANDARD RELATIVE DRY DENSITY IN ACCORDANCE WITH AS1289.
 20. FOOT AND VEHICULAR TRAFFIC WILL BE RESTRICTED IN RECENTLY STABILISED AREAS INCLUDING THOSE HYDROSEEDED, TURFED OR GRASS SEEDED.
 21. TEMPORARY SITE STABILISATION PROCEDURES MUST COMMENCE AT LEAST 30 DAYS PRIOR TO THE NOMINATED SITE SHUTDOWN DATE. AT LEAST 70% STABLE COVER OF ALL UNSTABLE AND/OR DISTURBED SOIL SURFACES MUST BE ACHIEVED PRIOR TO SHUTDOWN. THE STABILISATION WORKS MUST NOT RELY UPON THE LONGEVITY OF NON-VEGETATED EROSION CONTROL BLANKETS, OR TEMPORARY SOIL BINDERS.
 22. IF BIO-RETENTION FILTER MEDIA IS INSTALLED PRIOR TO 80% OF THE UPSTREAM CATCHMENT BEING FULLY DEVELOPED, THE FILTER MEDIA SHALL BE PROTECTED WITH A LAYER OF GEOFABRIC WITH TURF ON TOP.

1. LAND CLEARING MUST BE DELAYED AS LONG AS PRACTICABLE AND MUST BE UNDERTAKEN IN CONJUNCTION WITH DEVELOPMENT OF EACH STAGE OF WORKS, UNLESS OTHERWISE APPROVED BY SUPERINTENDENT.
2. ALL REASONABLE AND PRACTICABLE EFFORTS MUST BE TAKEN TO DELAY THE REMOVAL OF, OR DISTURBANCE TO, EXISTING GROUND COVER (ORGANIC OR INORGANIC) PRIOR TO LAND-DISTURBING ACTIVITIES.
3. BULK TREE CLEARING MUST OCCUR IN A MANNER THAT MINIMISES DISTURBANCE TO EXISTING GROUND COVER (ORGANIC OR INORGANIC).
4. BULK TREE CLEARING AND GRUBBING OF THE SITE MUST BE IMMEDIATELY FOLLOWED BY SPECIFIED TEMPORARY STABILISATION MEASURES (E.G. TEMPORARY GRASSING, OR MULCHING) PRIOR TO COMMENCEMENT OF EACH STAGE OF CONSTRUCTION WORKS.
5. DISTURBANCE TO NATURAL WATERCOURSES (INCLUDING BED AND BANKS) AND THEIR ASSOCIATED RIPARIAN ZONES MUST BE LIMITED TO THE MINIMUM PRACTICABLE.
6. NO LAND CLEARING SHALL BE UNDERTAKEN UNLESS PRECEDED BY THE INSTALLATION OF ADEQUATE DRAINAGE AND SEDIMENT CONTROL MEASURES, UNLESS SUCH CLEARING IS REQUIRED FOR THE PURPOSE OF INSTALLING SUCH MEASURES, IN WHICH CASE, ONLY THE MINIMUM CLEARING REQUIRED TO INSTALL SUCH MEASURES SHALL OCCUR.
7. LAND CLEARING MUST BE LIMITED TO 2M FROM THE EDGE OF ANY ESSENTIAL CONSTRUCTION ACTIVITY, AS SHOWN ON THE ENGINEERING PLANS, UNLESS OTHERWISE APPROVED BY SUPERINTENDENT.
8. PRIOR TO LAND CLEARING, AREAS OF PROTECTED VEGETATION, AND SIGNIFICANT AREAS OF RETAINED VEGETATION MUST BE CLEARLY IDENTIFIED (E.G. WITH HIGH-VISIBILITY TAPE, OR LIGHT FENCING) FOR THE PURPOSES OF MINIMISING THE RISK OF UNNECESSARY LAND CLEARING.
9. ALL REASONABLE AND PRACTICABLE MEASURES MUST BE TAKEN TO MINIMISE THE REMOVAL OF, OR DISTURBANCE TO, THOSE TREES, SHRUBS AND GROUND COVERS (ORGANIC OR INORGANIC) THAT ARE INTENDED TO BE RETAINED.
10. ALL LAND CLEARING MUST BE IN ACCORDANCE WITH THE FEDERAL, STATE AND LOCAL GOVERNMENT VEGETATION PROTECTION/PRESERVATION REQUIREMENTS AND/OR POLICIES.
11. LAND CLEARING IS LIMITED TO THE MINIMUM PRACTICABLE DURING THOSE PERIODS WHEN SOIL EROSION DUE TO WIND, RAIN OR SURFACE WATER IS POSSIBLE.
12. LAND CLEARING MUST NOT EXTEND BEYOND THAT NECESSARY TO PROVIDE UP TO EIGHT (8) WEEKS OF SITE ACTIVITY DURING THOSE MONTHS WHEN THE ACTUAL OR AVERAGE RAINFALL IS LESS THAN 45mm, SIX (6) IF BETWEEN 45 AND 100mm, FOUR (4) WEEKS IF BETWEEN 100 AND 225mm, AND TWO (2) WEEKS IF GREATER THAN 225mm.
13. NATIVE SITE VEGETATION REQUIRED AND APPROVED FOR CLEARING SHOULD BE MULCHED AND STOCKPOLED FOR LATER USE IN LANDSCAPING, STABILISATION AND/OR SITE REHABILITATION WORKS.
14. SOIL DISTURBANCE ACTIVITIES ARE TO BE IN ACCORDANCE WITH CHAPTER 4.2 OF "MANAGING URBAN STORMWATER, SOILS AND CONSTRUCTION" LANDCOM 4TH EDITION, 2004. SLOPE LENGTHS ON BATTERS ARE NOT TO EXCEED THOSE SPECIFIED IN TSC DEVELOPMENT CODE D7.45 5.6.

1. PRIOR TO THE COMMENCEMENT OF SITE WORKS, THE LOCATION OF THE SITE ACCESS POINT(S) MUST BE VERIFIED WITH THE RELEVANT REGULATORY AUTHORITY.
2. SITE ACCESS MUST BE RESTRICTED TO A MAXIMUM OF 2 PRACTICAL LOCATIONS AS SHOWN ON THE ESCP AND SUBJECT TO THE APPROVAL OF COUNCIL.
3. SITE EXIT POINTS MUST BE APPROPRIATELY MANAGED TO MINIMISE THE RISK OF SEDIMENT BEING TRACKED ONTO

5. INSTALL SEDIMENT FENCING AND/OR BARRIER FENCING TO CONFINE INGRESS TO AND EGRESS FROM THE SITE TO STABILISED ACCESS POINTS ONLY.
4. STORMWATER RUNOFF FROM ACCESS ROADS AND STABILISED ENTRY/EXIT POINTS MUST DRAIN TO AN APPROPRIATE SEDIMENT CONTROL DEVICE.
18. IF AFTER USING SHAKEDOWN DEVICE, MATERIAL IS STILL ADHERING TO TRUCK WHEELS, AND BEING DEPOSITED ON PUBLIC ROADS, A WHEEL WASHING DEVICE MUST BE INSTALLED AND USED AT SITE EXIT LOCATIONS TO ENSURE NO FURTHER MATERIAL IS CARTED OFF SITE AND DEPOSITED ON PUBLIC ROADS.

1. THE SHAKEDOWN DEVICE SHALL BE EITHER:- a) A SHAKER GRID (METAL BAR CATTLE GRID MINIMUM LENGTH 7m) PLACED TO ENSURE VEHICLES CROSSING THE GRID HAVE SUFFICIENT SPEED TO SHAKE OFF MUD AND CONTAMINANTS OR b) A 15m LONG SHAKEDOWN AREA CONSTRUCTED WITH 75mm CRUSHED ROCK AS SPECIFIED FURTHER BELOW:

1. **ROCK:** WELL GRADED, HARD, ANGULAR, EROSION RESISTANT ROCK, NOMINAL DIAMETER OF 75mm (SMALL DISTURBANCES) OR 100 TO 150mm (LARGE DISTURBANCES). ALL REASONABLE MEASURES MUST BE TAKEN TO OBTAIN ROCK OF NEAR UNIFORM SIZE.
2. **FOOTPATH STABILISING AGGREGATE:** 25 TO 50mm GRAVEL OR AGGREGATE.
3. **GEOTEXTILE FABRIC:** HEAVY-DUTY, NEEDLE - PUNCHED, NON-WOVEN FILTER CLOTH ('BIDIM' A24 OR EQUIVALENT).

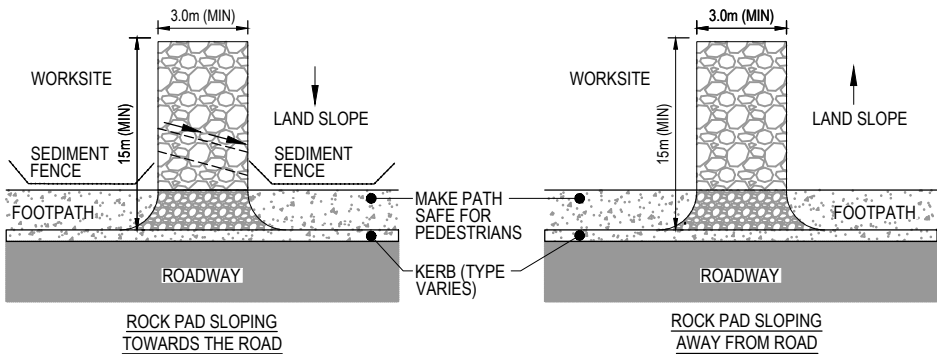
1. CLEAR THE LOCATION OF THE ROCK PAD, REMOVING STUMPS, ROOTS AND OTHER VEGETATION TO PROVIDE A FIRM FOUNDATION SO THAT THE ROCK IS NOT PRESSED INTO SOFT GROUND. CLEAR SUFFICIENT WIDTH TO ALLOW PASSAGE OF LARGE VEHICLES, BUT CLEAR ONLY THAT NECESSARY FOR THE EXIT. DO NOT CLEAR ADJACENT AREAS UNTIL THE REQUIRED EROSION AND SEDIMENT CONTROL DEVICES ARE IN PLACE.
2. IF THE EXPOSED SOIL IS SOFT, PLASTIC OR CLAYEY, PLACE A SUB-BASE OF CRUSHED ROCK OR A LAYER OF HEAVY-DUTY FILTER CLOTH TO PROVIDE A FIRM FOUNDATION.
3. PLACE THE ROCK PAD FORMING A MINIMUM 200mm THICK LAYER OF CLEAN, OPEN-VOID ROCK.
4. IF THE ASSOCIATED CONSTRUCTION SITE IS UP-SLOPE OF THE ROCKPAD, THUS CAUSING STORMWATER RUNOFF TO FLOW TOWARD THE ROCK PAD, THEN FORM A MINIMUM 300mm HIGH FLOW CONTROL BERM ACROSS THE ROCK PAD TO DIVERT SUCH RUNOFF TO A SUITABLE SEDIMENT TRAP.
5. THE LENGTH OF THE ROCK PAD SHOULD BE AT LEAST 15m WHERE PRACTICABLE, AND AS WIDE AS THE FULL WIDTH OF THE ENTRY OR EXIT AND AT LEAST 3m. THE ROCK PAD SHOULD COMMENCE AT THE EDGE OF THE OFF-SITE SEALED ROAD OR PAVEMENT.
6. FLARE THE END THE ROCK PAD WHERE IT MEETS THE PAVEMENT SO THAT THE WHEELS OF TURNING VEHICLES DO NOT TRAVEL OVER UNPROTECTED SOIL.
7. IF THE FOOTPATH IS OPEN TO PEDESTRIAN MOVEMENT, THEN COVER THE COARSE ROCK WITH FINE AGGREGATE OR GRAVEL, OR OTHERWISE TAKE WHATEVER MEASURES ARE NEEDED TO MAKE THE AREA SAFE.

1. TOPSOIL SHALL BE STRIPPED AND STOCKPILED FOR LATER USE ONSITE.
2. ALL REASONABLE AND PRACTICABLE MEASURES MUST BE TAKEN TO OBTAIN THE MAXIMUM BENEFIT FROM EXISTING TOPSOIL, INCLUDING:
 - (i) WHERE THE PROPOSED AREA OF SOIL DISTURBANCE DOES NOT EXCEED 2500m², AND THE TOPSOIL DOES NOT CONTAIN UNDESIRABLE WEED SEED, THE TOP 100mm OF SOIL LOCATED WITHIN AREAS OF PROPOSED SOIL DISTURBANCE (INCLUDING STOCKPILE AREAS) MUST BE STRIPPED AND STOCKPILED SEPARATELY FROM THE REMAINING SOIL.
 - (ii) WHERE THE PROPOSED AREA OF SOIL DISTURBANCE EXCEEDS 2500m², AND THE TOPSOIL DOES NOT CONTAIN UNDESIRABLE WEED SEED, THE TOP 50mm OF SOIL MUST BE STRIPPED AND STOCKPILED SEPARATELY FROM THE REMAINING TOPSOIL, AND SPREAD AS A FINAL SURFACE SOIL.
 - (iii) IN AREAS WHERE THE TOPSOIL CONTAINS UNDESIRABLE WEED SEED, THE AFFECTED SOIL MUST BE SUITABLY BURIED OR REMOVED FROM THE SITE.
3. STOCKPILES OF ERODABLE MATERIAL THAT HAS THE POTENTIAL TO CAUSE ENVIRONMENTAL HARM IF DISPLACED, MUST BE:
 - (i) APPROPRIATELY PROTECTED FROM WIND, RAIN, CONCENTRATED SURFACE FLOW AND EXCESSIVE UP-SLOPE STORMWATER SURFACE FLOWS.
 - (ii) LOCATED AT LEAST 2M (PREFERABLY 5M) FROM ANY HAZARDOUS AREA, RETAINED VEGETATION, ROADS AND CONCENTRATED WATER FLOW.
 - (iii) LOCATED UP-SLOPE OF AN APPROPRIATE SEDIMENT CONTROL SYSTEM.
 - (iv) PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC, MULCH OR VEGETATIVE) THAT REDUCES THE C-FACTOR ON BARE SURFACE AREAS TO 0.15 OR LESS AS DEFINED BY "MANAGING URBAN STORMWATER, SOILS AND CONSTRUCTION" LANDCOM 4TH EDITION, 2004 APPENDIX M. THIS EQUATES TO 50% GRASS COVER IF SOIL HAS BEEN RECENTLY DISTURBED.
 - (v) PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC, MULCH OR VEGETATIVE) IF THE MATERIALS ARE LIKELY TO BE STOCKPILED FOR MORE THAN 10 DAYS DURING THOSE MONTHS THAT HAVE A HIGH EROSION RISK.
 - (vi) PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC, MULCH OR VEGETATIVE) IF THE MATERIALS ARE LIKELY TO BE STOCKPILED FOR MORE THAN 5 DAYS DURING THOSE MONTHS THAT HAVE AN EXTREME EROSION RISK.
4. A SUITABLE FLOW DIVERSION SYSTEM MUST BE ESTABLISHED IMMEDIATELY UP-SLOPE OF A STOCKPILE OF ERODABLE MATERIAL THAT HAS THE POTENTIAL TO CAUSE ENVIRONMENTAL HARM IF DISPLACED, IF THE UP-SLOPE CATCHMENT AREA DRAINING TO THE STOCKPILE EXCEEDS 1500m².

1. SOCKS: MINIMUM Ø200mm SYNTHETIC OR BIODEGRADABLE TUBES MANUFACTURED FROM NON-WOVEN OR COMPOSITE FABRIC SUITABLE FOR THE "FILTRATION" OF COURSE SEDIMENT.
2. FILL MATERIALS: STRAW, CANE MULCH, COMPOSTED MATERIAL (AS4454), COARSE SAND, OR CLEAN AGGREGATE

1. ENSURE THE SOCKS ARE PLACED INDIVIDUALLY OR COLLECTIVELY (AS A SINGLE SEDIMENT TRAP) SUCH THAT:

- i) LEAKAGE AROUND OR UNDER THE SOCKS IS MINIMISED;
- ii) ADJOINING SOCKS ARE TIGHTLY BUTTED OR OVERLAPPED AT LEAST 450mm.
- iii) THE SURFACE AREA OF POTENTIAL WATER PONDING UP-SLOPE OF EACH SEDIMENT TRAP IS MAXIMISED.
- iv) TO THE MAXIMUM DEGREE PRACTICAL, ALL SEDIMENT-LADEN WATER WILL PASS THROUGH THE FORMED POND BEFORE FLOWING OVER THE DOWN-SLOPE END OF THE SEDIMENT TRAP.



TYPICAL STOCKPILE CONFIGURATION

NOT TO SCALE

Surveyor

SH saunders
havill
group

Client

Coomera GA Pty Ltd
ATF The Coomera
GA Unit Trust
Pty Ltd

Status			
FOR APPROVAL CONSTRUCTION SUBJECT TO APPROVAL			
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Original Issue Signatures			
Drawn	D. KEARNEY	Original Size	A1
Designed	G. GESMUNDO	Height Datum	AHD
Project Manager	A. SHEPHERD	Grid	MGA (ZONE 56)
Verified	R. MULLIGAN	R.P.E.Q. No: 7850 Date 19.12.2023	

Project	54 GEORGE ALEXANDER WAY, COOMERA
Title	EROSION AND SEDIMENT CONTROL DETAILS SHEET 1

Project Number	30157884
Issue	01

1. WHEREVER REASONABLE AND PRACTICABLE, STORMWATER RUNOFF ENTERING THE SITE FROM EXTERNAL AREAS, AND NON-SEDIMENT LADEN (CLEAN) STORMWATER RUNOFF ENTERING A WORK AREA OR AREA OF SOIL DISTURBANCE, MUST BE DIVERTED AROUND OR THROUGH THAT AREA IN A MANNER THAT MINIMISES SOIL EROSION AND THE CONTAMINATION OF THAT WATER FOR ALL DISCHARGES UP TO THE SPECIFIED DESIGN STORM DISCHARGE.
2. DURING THE CONSTRUCTION PERIOD, ALL REASONABLE AND PRACTICABLE MEASURES MUST BE IMPLEMENTED TO CONTROL FLOW VELOCITIES IN SUCH A MANNER THAT PREVENTS SOIL EROSION ALONG DRAINAGE PATHS AND AT THE ENTRANCE AND EXIT OF ALL DRAINS AND DRAINAGE PIPES DURING ALL STORMS UP TO THE RELEVANT DESIGN STORM DISCHARGE.
3. TO THE MAXIMUM DEGREE REASONABLE AND PRACTICABLE, ALL WATERS DISCHARGED DURING THE CONSTRUCTION PHASE MUST DISCHARGE ONTO STABLE LAND, IN A NON-EROSIVE MANNER, AND AT A LEGAL POINT OF DISCHARGE.
4. DURING THE CONSTRUCTION PERIOD, ROOF WATER MUST BE MANAGED IN A MANNER THAT MINIMISES SOIL EROSION THROUGHOUT THE SITE, AND SITE WETNESS WITHIN ACTIVE WORK AREAS.

1. CLEAR THE LOCATION FOR THE CHANNEL, CLEARING ONLY WHAT IS NEEDED TO PROVIDE ACCESS FOR PERSONNEL AND CONSTRUCTION EQUIPMENT.
2. REMOVE ROOTS, STUMPS, AND OTHER DEBRIS AND DISPOSE OF THEM PROPERLY. DO NOT USE DEBRIS TO BUILD ANY ASSOCIATED EMBANKMENTS.
3. EXCAVATE THE CHANNEL TO THE SPECIFIED SHAPE, ELEVATION AND GRADIENT (1% MIN). THE SIDES OF THE CHANNEL SHOULD BE STEEPER THAN A 2:1 (H:V) IF CONSTRUCTED IN EARTH, UNLESS SPECIFICALLY DIRECTED WITHIN THE APPROVED PLANS.
4. STABILISE THE CHANNEL AND BANKS IMMEDIATELY UNLESS IT WILL OPERATE FOR LESS THAN 30 DAYS. IN EITHER CASE, TEMPORARY EROSION PROTECTION (MATTING, ROCK, TURF, ETC.) WILL BE REQUIRED AS SPECIFIED WITHIN THE APPROVED PLANS OR AS DIRECTED.
5. IF THE CHANNEL IS CUT INTO A DISPERSIVE (SODIC) SOIL, THE EXPOSED DISPERSIVE SOIL MUST BE COVERED AND MAINTAINED WITH A MINIMUM 200mm THICK LAYER OF NON-DISPERSIVE SOIL PRIOR TO PLACEMENT OF EROSION PROTECTION MEASURES.
6. ENSURE THE CHANNEL DISCHARGES TO A STABLE AREA SUCH THAT SOIL EROSION WILL BE PREVENTED. SPECIFICALLY, ENSURE THE DRAIN DOES NOT DISCHARGE TO AN UNSTABLE FILL SLOPE.

1. THE APPLICATION OF LIQUID-BASED SOIL SUPPRESSION MEASURES MUST ENSURE THAT SEDIMENT-LADEN RUNOFF RESULTING FROM SUCH MEASURES DOES NOT CREATE A TRAFFIC OR ENVIRONMENTAL HAZARD.
2. ALL TEMPORARY EARTH BANS, FLOW DIVERSION SYSTEMS, AND EMBANKMENTS ASSOCIATED WITH CONSTRUCTED SEDIMENT BASINS MUST BE MACHINE-COMPACTED, SEEDED AND MULCHED FOR THE PURPOSE OF ESTABLISHING A TEMPORARY VEGETATIVE COVER WITHIN 10 DAYS AFTER GRADING.
3. UNPROTECTED SLOPE LENGTHS MUST NOT EXCEED 80M, OR AN EQUIVALENT VERTICAL FALL OF 3M.
4. THE CONSTRUCTION AND STABILISATION OF EARTH BATTERS STEEPER THAN 6:1 (H/V) MUST BE STAGED SUCH THAT NO MORE THAN 3 VERTICAL-METRES OF ANY BATTER IS EXPOSED TO RAINFALL AT ANY INSTANT.
5. SYNTHETIC REINFORCED EROSION CONTROL MATS AND BLANKETS MUST NOT BE PLACED WITHIN, OR ADJACENT TO, RIPARIAN ZONES AND WATERCOURSES IF SUCH MATERIALS ARE LIKELY TO CAUSE ENVIRONMENTAL HARM TO WILDLIFE OR WILDLIFE HABITATS.
6. A MINIMUM 60% GROUND COVER MUST BE ACHIEVED ON ALL NON-COMPLETED EARTHWORKS EXPOSED TO ACCELERATED SOIL EROSION IF FURTHER CONSTRUCTION ACTIVITIES OR SOIL DISTURBANCES ARE LIKELY TO BE SUSPENDED FOR MORE THAN 30 DAYS DURING THOSE MONTHS WHEN THE EXPECTED RAINFALL IS LESS THAN 30mm; MINIMUM 70% COVER WITHIN 30 DAYS IF BETWEEN 30 AND 45mm; MINIMUM 70% COVER WITHIN 20 DAYS IF BETWEEN 45 AND 100mm; MINIMUM 75% COVER WITHIN 10 DAYS IF BETWEEN 100 AND 225mm; AND MINIMUM 80% COVER WITHIN 5 DAYS IF GREATER THAN 225mm. (ALTERNATIVE TO ABOVE)

1. EROSION CONTROL MATS MUST BE STORED AWAY FROM DIRECT SUNLIGHT OR COVERED WITH ULTRAVIOLET PROTECTIVE SHEETING UNTIL THE SITE IS READY FOR THEIR INSTALLATION.
2. VEHICLES AND CONSTRUCTION EQUIPMENT MUST NOT BE PERMITTED TO MANEUVER OVER THE MATTING UNLESS IT HAS BEEN COVERED WITH A LAYER OF SOIL OR GRAVEL AT LEAST 150mm THICK.
3. IF THE CHANNEL IS TO BE GRASSED, PREPARE A SMOOTH SEED BED OF APPROXIMATELY 75mm OF TOPSOIL, SEED, FERTILISER, WATER AND RAKE TO REMOVE ANY REMAINING SURFACE IRREGULARITIES.
4. EXCAVATE A 300mm DEEP BY 150mm WIDE ANCHOR TRENCH ALONG THE FULL WIDTH OF THE UPSTREAM END OF THE AREA TO BE TREATED.
5. AT LEAST 300mm OF THE MAT MUST BE ANCHORED INTO THE TRENCH WITH THE ROLL OF MATTING RESTING ON THE GROUND UP-SLOPE OF THE TRENCH.
6. WHEN SPREADING THE MATS, AVOID STRETCHING THE FABRIC. THE MATS SHOULD REMAIN IN GOOD CONTACT WITH THE SOIL.
7. THE INSTALLATION PROCEDURE MUST ENSURE THAT THE MAT ACHIEVES AND RETAINS GOOD CONTACT WITH THE SOIL.
8. DAMAGED MATTING MUST BE REPAIRED OR REPLACED.

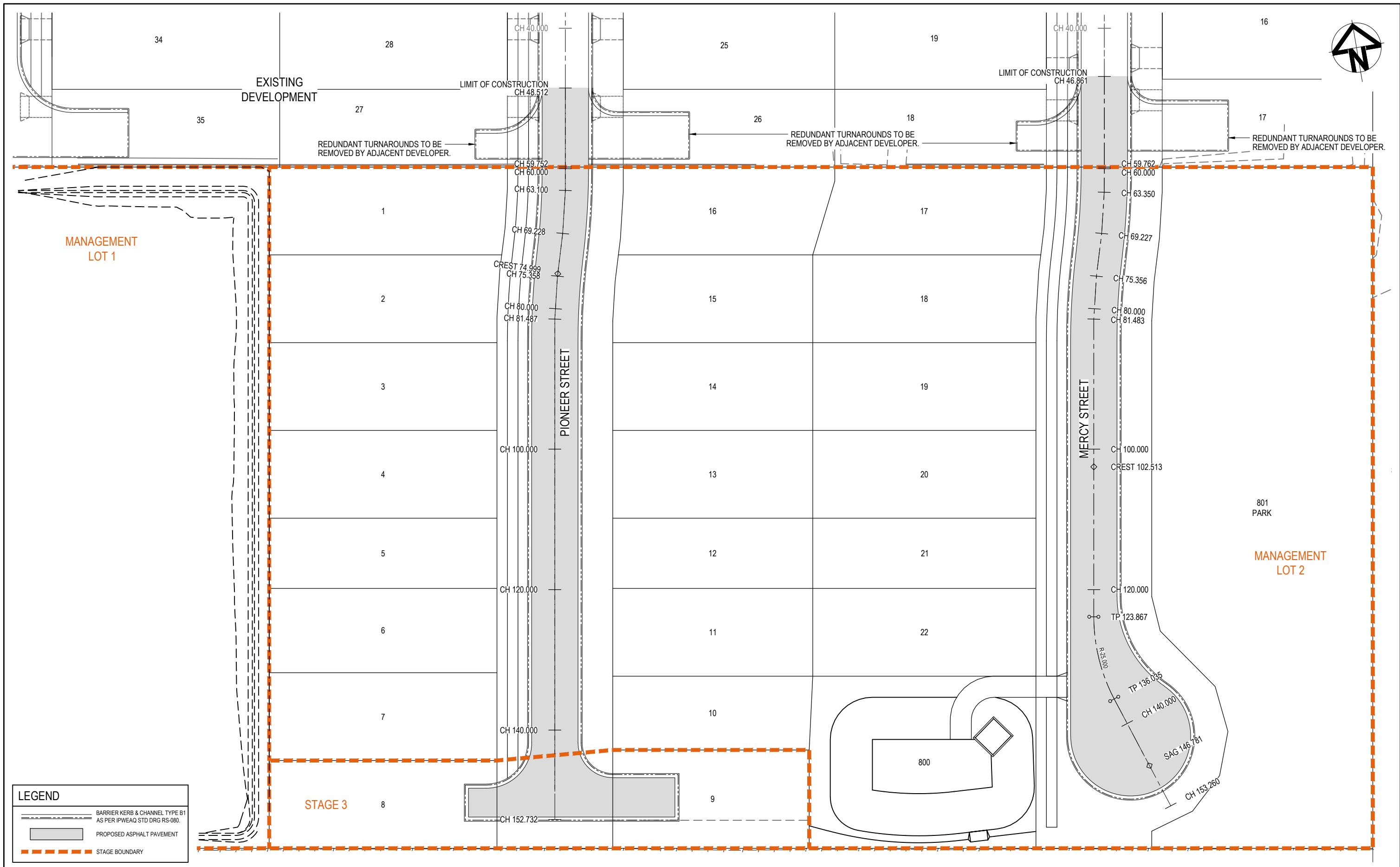
1. TURF SHOULD BE USED WITHIN 12 HOURS OF DELIVERY, OTHERWISE ENSURE THE TURF IS STORED IN CONDITIONS APPROPRIATE FOR THE WEATHER CONDITIONS (e.g. A SHADED AREA).
2. MOISTENING THE TURF AFTER IT IS UNROLLED WILL HELP MAINTAIN ITS VIABILITY.
3. TURF SHOULD BE LAID ON A MINIMUM 75mm BED OF ADEQUATELY FERTILISED TOPSOIL. RAKE THE SOIL SURFACE TO BREAK THE CRUST JUST BEFORE LAYING THE TURF.
4. DURING THE WARMER MONTHS, LIGHTLY IRRIGATE THE SOIL IMMEDIATELY BEFORE LAYING THE TURF.
5. ENSURE THE TURF IS NOT LAID ON GRAVEL, HEAVILY COMPACTED SOILS, OR SOILS THAT HAVE BEEN RECENTLY TREATED WITH HERBICIDES.
6. ENSURE THE TURF EXTENDS UP THE SIDES OF THE DRAIN AT LEAST 100mm ABOVE THE ELEVATION OF THE CHANNEL INVERT, OR AT LEAST TO A SUFFICIENT ELEVATION TO FULLY CONTAIN EXPECTED CHANNEL FLOW.
7. ON CHANNEL GRADIENTS OF 3:1(H:V) OR STEEPER, OR IN SITUATIONS WHERE HIGH FLOW VELOCITIES (i.e. VELOCITY >1.5m/s) ARE LIKELY WITHIN THE FIRST TWO WEEK FOLLOWING PLACEMENT, SECURE THE INDIVIDUAL TURF STRIPS WITH WOODEN OR PLASTIC PEGS.
8. ENSURE THAT INTIMATE CONTACT IS ACHIEVED AND MAINTAINED BETWEEN THE TURF AND THE SOIL SUCH THAT SEEPAGE FLOW BENEATH THE TURF IS AVOIDED.
9. WATER UNTIL THE SOIL IS WET 100mm BELOW THE TURF. THEREAFTER, WATERING SHOULD BE SUFFICIENT TO MAINTAIN AND PROMOTE HEALTHY GROWTH.

3. ALL ROCK MUST BE HARD, WEATHER RESISTANT, AND DURABLE AGAINST DISINTEGRATION UNDER CONDITIONS TO BE MET IN HANDLING, PLACEMENT AND OPERATION.
2. ALL ROCK MUST HAVE ITS GREATEST DIMENSION NOT GREATER THAN 3 TIMES ITS LEAST DIMENSIONS.
3. THE ROCK USED IN FORMATION OF THE DRAIN MUST BE EVENLY GRADED WITH 50% BY WEIGHT LARGER THAN THE SPECIFIED NOMINAL ROCK SIZE AND HAVE SUFFICIENT SMALL ROCK TO FILL THE VOIDS BETWEEN THE LARGER ROCK. DIRT, FINES, AND SMALLER ROCK MUST NOT EXCEED 5% BY WEIGHT.
4. THE DIAMETER OF THE LARGEST ROCK SIZE SHOULD BE NO LARGER THAN 1.5 TIMES THE NOMINAL ROCK SIZE. SPECIFIC GRAVITY TO BE AT LEAST 2.5.
5. FILTER CLOTH GEOTEXTILE FABRIC. HEAVY-DUTY, NEEDLE-PUNCHED, NON-WOVEN FILTER CLOTH, MINIMUM 'BIDIM' A24 OR EQUIVALENT.
6. PRIOR TO PLACEMENT, ALL ROCKS MUST BE VISUALLY CHECKED FOR SIZE, ELONGATION, CRACKS, DETEIORATION AND OTHER VISIBLE DEFECTS. THE DEGREE AND THOROUGHNESS OF SUCH CHECKING MUST BE APPROPRIATE FOR THE POTENTIAL CONSEQUENCES ASSOCIATED WITH FAILURE OF THE STRUCTURE OR PURPOSE FOR WHICH THE MATERIAL WILL BE USED.
7. IF A FILTER CLOTH UNDERLAY IS SPECIFIED, PLACE THE FILTER FABRIC DIRECTLY ON THE PREPARED FOUNDATION. IF MORE THAN ONE SHEET OF FILTER CLOTH IS REQUIRED OVER THE AREA, OVERLAP THE EDGE OF EACH SHEET AT LEAST 300mm, AND SECURE ANCHOR PINS AT MINIMUM 1M SPACING ALONG THE OVERLAP.
8. ENSURE THE FILTER CLOTH IS PROTECTED FROM PUNCHING OR TEARING DURING INSTALLATION OF THE FABRIC AND THE ROCK. REPAIR ANY DAMAGE BY REMOVING THE ROCK AND REPLACING WITH ANOTHER PIECE OF FILTER CLOTH OVER THE DAMAGED AREA OVERLAPPING THE EXISTING FABRIC A MINIMUM OF 300mm.
9. PLACEMENT OF ROCK SHOULD FOLLOW IMMEDIATELY AFTER PLACEMENT OF THE FILTER LAYER. PLACE ROCK SO THAT IT FORMS A DENSE, WELL-GRADED MASS OF ROCK WITH A MINIMUM OF VOIDS.
10. PLACE ROCK LINING TO THE EXTENT AND DEPTH INDICATED WITHIN THE APPROVED PLANS.
11. ENSURE THE ROCK IS PLACED IN AN APPROPRIATE MANNER TO AVOID DISPLACING UNDERLYING MATERIALS OR PLACING UNDUE IMPACT FORCE ON THE BEDDING MATERIALS.
12. ENSURE THE ROCK IS PLACED WITH A MINIMUM THICKNESS OF 1.5 TIMES THE NOMINAL ROCK SIZE (D50).
13. ENSURE MATERIALS THAT ARE D50 AND LARGER ARE POSITIONED FLUSH WITH THE TOP SURFACE WITH FACES AND SHAPES MATCHED TO MINIMISE VOIDS.
14. ENSURE PROJECTIONS ABOVE OR DEPRESSIONS UNDER THE SPECIFIED TOP SURFACE ARE LESS THAN 20% OF THE ROCK LAYER THICKNESS. THE AVERAGE SURFACE PLANE OF THE FINISHED ROCK IS DEFINED AS THE PLANE WHERE 50% OF THE TOPS OF ROCKS WOULD CONTACT.
15. ENSURE THE COMPLETED CHANNEL HAS SUFFICIENT DEPTH (AS SPECIFIED FOR THE TYPE OF CHANNEL) MEASURED FROM THE CHANNEL INVERT (AVERAGE SURFACE PLANE ALONG CHANNEL INVERT) TO THE TOP OF THE EMBANKMENT. THE AVERAGE SURFACE PLANE OF THE FINISHED ROCK IS DEFINED AS THE PLANE WHERE 50% OF THE TOPS OF ROCKS WOULD CONTACT.
16. TO THE MAXIMUM DEGREE PRACTICABLE, THE MATERIAL BETWEEN LARGER ROCK MUST NOT BE LOOSE OR EASILY DISPLACED BY THE EXPECTED FLOW.
17. AFTER PLACEMENT OF THE ROCK LINING, ENSURE THE DRAIN HAS A CONSTANT FALL IN THE DESIRED DIRECTION FREE OF OBSTRUCTIONS.

1. **ROCK:** 150 TO 300mm EQUIVALENT DIAMETER HARD EROSION RESISTANT ROCK.
2. **RECYCLED CONCRETE:** 150 TO 300mm EQUIVALENT DIAMETER FREE FROM FINES AND CEMENT DUST.
3. **SANDBAGS:** GEOTEXTILE BAGS (WOVEN SYNTHETIC, OR NON-WOVEN BIODEGRADABLE) FILLED WITH CLEAN COARSE SAND, CLEAN AGGREGATE, OR COMPOST.

1. PRIOR TO PLACEMENT OF THE SEDIMENT TRAP, ENSURE THE DRAINAGE CHANNEL IS DEEP ENOUGH TO PREVENT WATER BEING UNSAFELY DIVERTED OUT OF THE DRAIN ONCE THE CHECK DAMS ARE INSTALLED.
2. LOCATE EACH CHECK DAM SEDIMENT TRAP AS DIRECTED WITHIN THE APPROVED PLANS, OR OTHERWISE AT SUCH A SPACING TO ACHIEVE THE REQUIRED SEDIMENT TRAPPING OUTCOMES. REFER DETAIL.
3. PLACE EACH CHECK DAM SEDIMENT TRAP TO THE LINES AND PROFILE SHOWN IN THE APPROVED PLAN OR AS DIRECTED BY THE SITE SUPERVISOR.

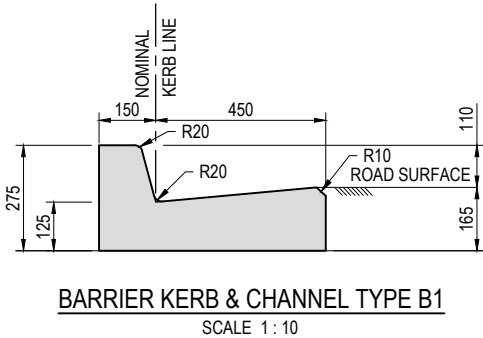
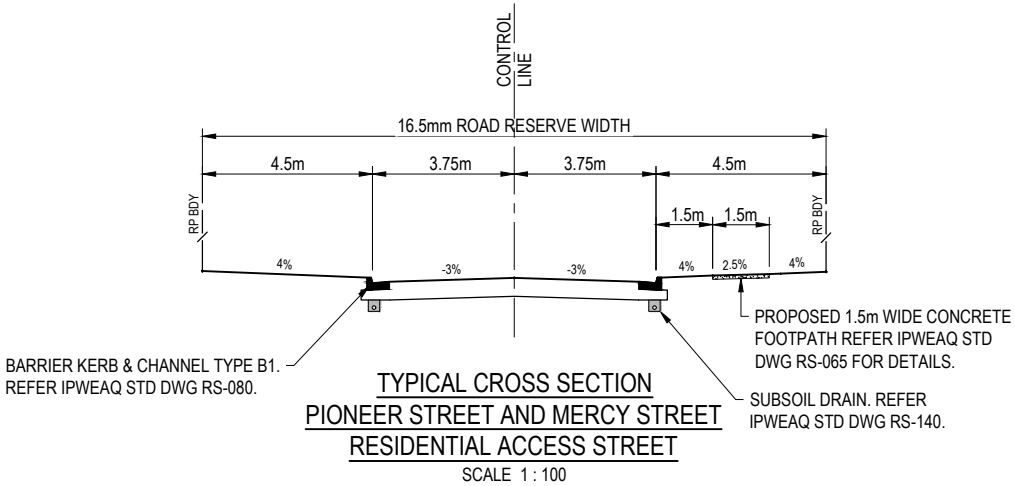
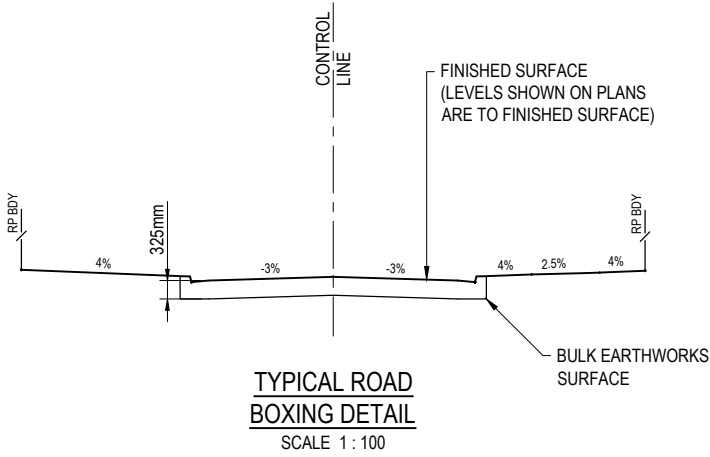
1. THE OUTLET SILL OF THE SPREADER SHOULD BE PROTECTED WITH EROSION CONTROL MATTING TO PREVENT EROSION DURING THE ESTABLISHMENT OF VEGETATION. THE MATTING SHOULD BE A MINIMUM OF 1200mm WIDE EXTENDING AT LEAST 300mm UPSTREAM OF THE EDGE OF THE OUTLET CREST AND BURIED AT LEAST 150mm IN A VERTICAL TRENCH. THE DOWNSTREAM EDGE SHOULD BE SECURELY HELD IN PLACE WITH CLOSELY SPACED HEAVY-DUTY WIRE STAPLES AT LEAST 150mm LONG.
2. ENSURE THAT THE OUTLET SILL (CREST) IS LEVEL FOR THE SPECIFIED LENGTH.
3. IMMEDIATELY AFTER CONSTRUCTION, TURF, OR SEED AND MULCH WHERE APPROPRIATE, THE LEVEL SPREADER.



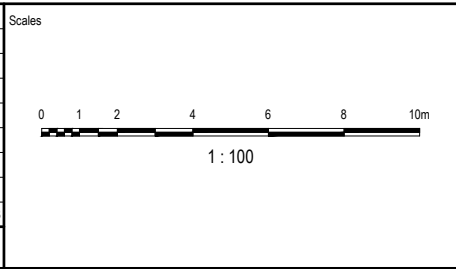
LEGEND BARRIER KERB & CHANNEL TYPE B1 AS PER IPWEAQ STD DRG RS-080. PROPOSED ASPHALT PAVEMENT STAGE BOUNDARY		Scale 0 5 10 15 20 25m 1 : 250		Surveyor 		Client Coomera GA Pty Ltd ATF The Coomera GA Unit Trust Pty Ltd		Status FOR APPROVAL CONSTRUCTION SUBJECT TO APPROVAL © Copyright reserved Original Issue Signatures Drawn: D. KEARNEY, Original Size: A1 Designed: G. GESMUNDO, Height Datum: AHD Project Manager: A. SHEPHERD, Grid: MGA (ZONE 56) Verified: R. MULLIGAN, R.P.E.Q. No: 7850, Date: 19.12.2023				Project 54 GEORGE ALEXANDER WAY, COOMERA CONTROL LINE SETOUT PLAN		 Arcadis Australia Pacific Pty Limited Level 7, Seabank Building, 12-14 Marine Parade SOUTHPORT QLD 4215 ABN 76 104 485 289 Tel No: +61 7 5503 4800 www.arcadis.com/au Project Number: 30157884 Issue: 01 Drawing No: GAW-AAP-BE-00-DRG-CV-0201	
01 ORIGINAL ISSUE Issue Description DR CH VE Date															

CONTROL LINE SETOUT - PIONEER STREET					
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING
IP 1	0.000	1841.724	9681.360	27.024	189°46'49.48"
IP 2	59.752	1831.574	9622.476	31.916	
IP 3	63.100	1831.005	9619.177	32.067	
IP 4	69.228	1829.596	9613.213	32.248	
IP 5	75.358	1827.824	9607.345	32.303	
IP 6	81.487	1826.415	9601.380	32.233	
IP 7	152.732	1814.313	9531.170	30.036	189°46'47.70"

CONTROL LINE SETOUT - MERCY STREET								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	1917.408	9668.313	22.552	189°46'50.43"			
IP 2	59.762	1907.256	9609.420	27.261				
IP 3	63.350	1906.631	9605.886	27.441				
IP 4	69.227	1905.280	9600.167	27.735				
IP 5	75.356	1903.508	9594.299	28.041				
IP 6	81.483	1902.100	9588.337	28.347				
TC	123.867	1894.900	9546.568	28.338	189°46'47.70"			
IP 7	129.951	1893.846	9540.452	28.106		R = -25.000	12.167	27°53'07.38"
CT	136.035	1895.775	9534.553	27.945	161°53'40.32"			
IP 8	153.260	1901.128	9518.180	27.873	161°53'40.32"			



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Designed	G. GESMUNDO	Height Datum	AHD
Project Manager	A. SHEPHERD	Grid	MGA (ZONE 56)
Verified	R. MULLIGAN	R.P.E.Q. No: 7850 Date 19.12.2023	

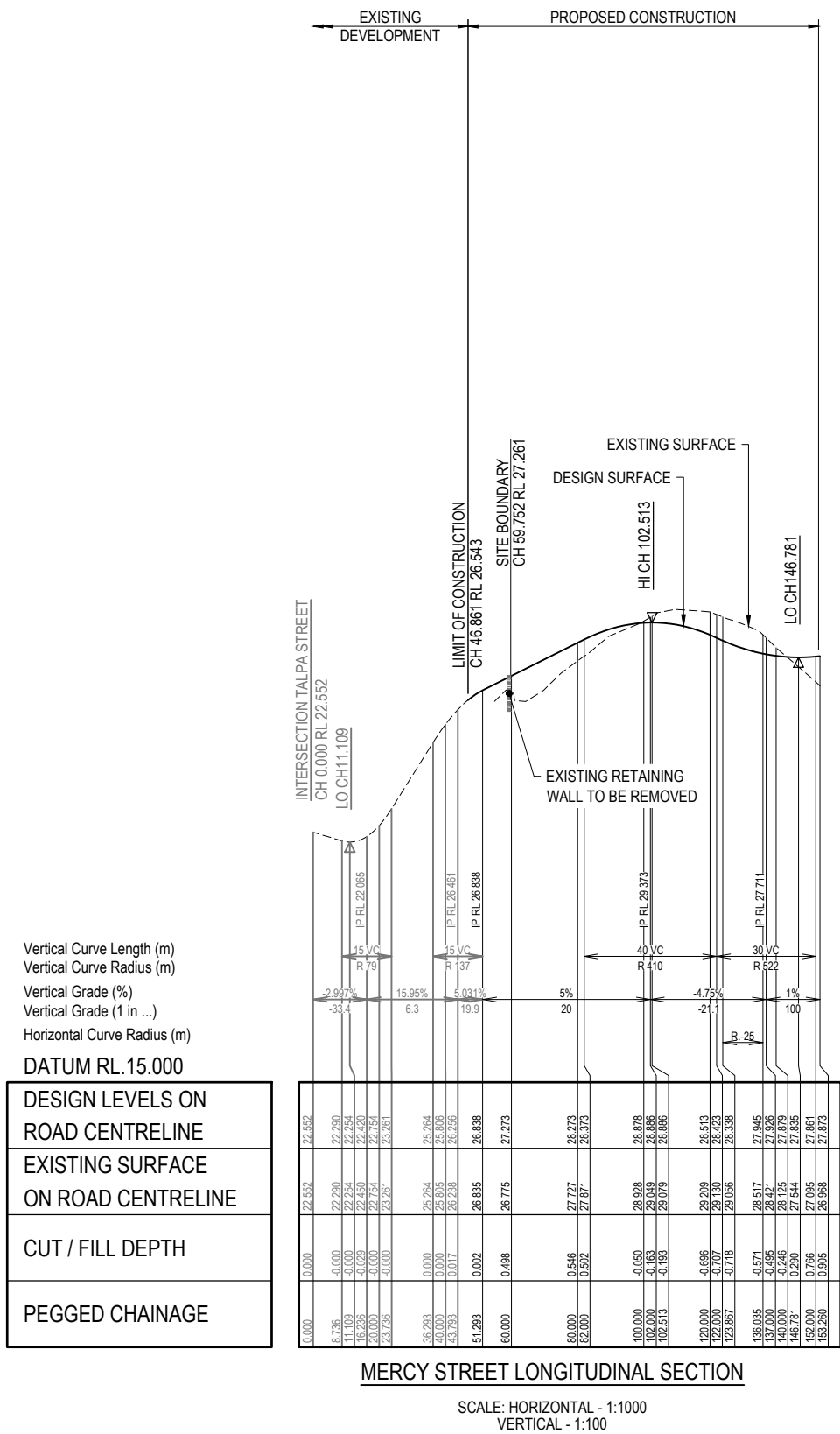
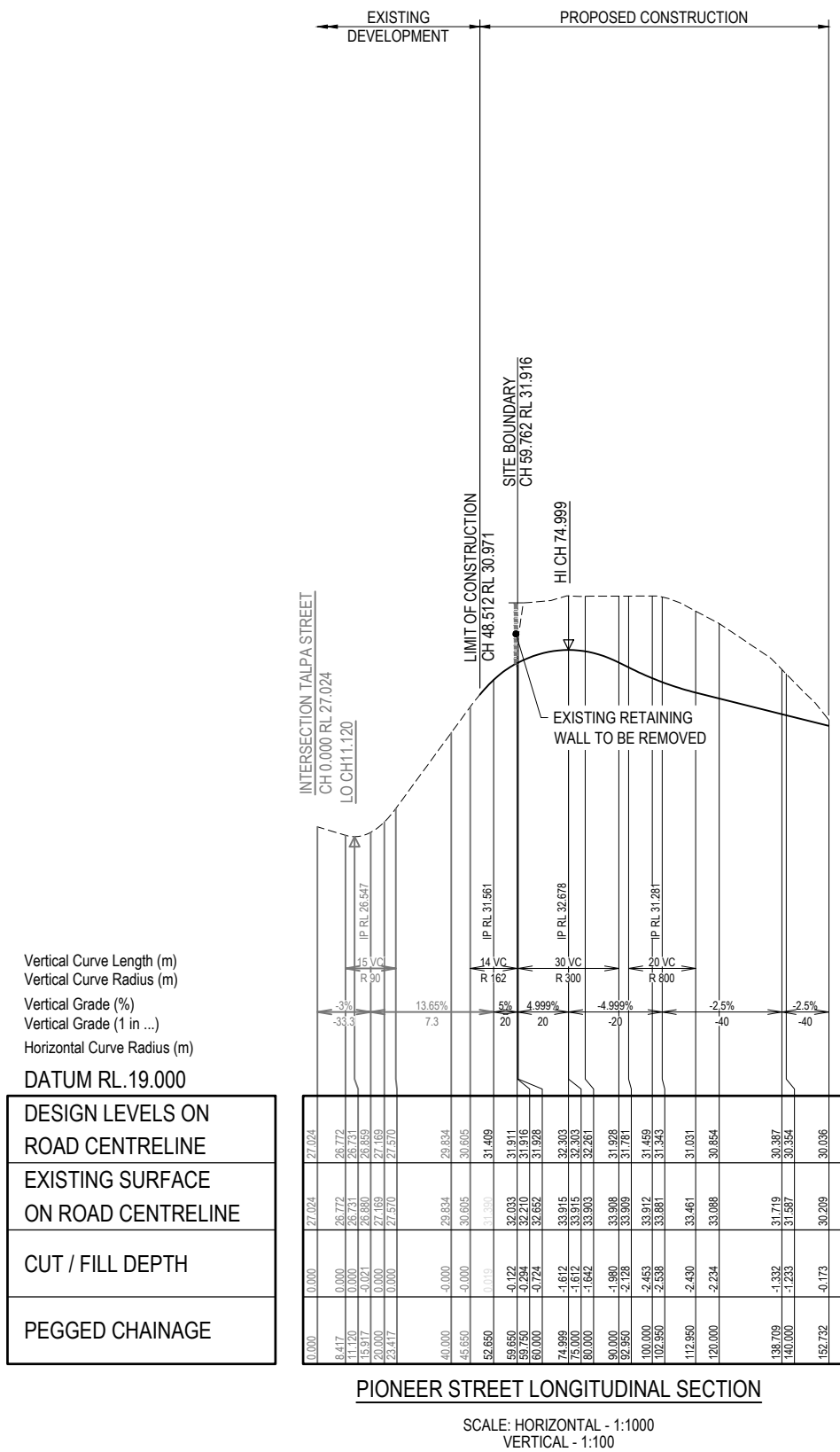
Project 54 GEORGE ALEXANDER WAY, COOMERA	
Title CONTROL LINE SETOUT TABLE & TYPICAL ROAD CROSS SECTION	



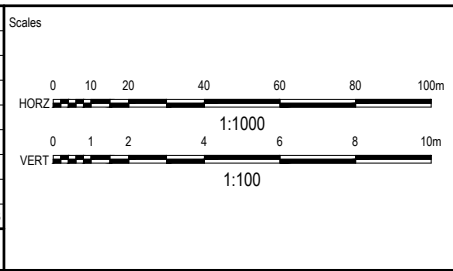
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Project Number	30157884
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01	ORIGINAL ISSUE	DK	AS	RM	19.12.2023
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Designed	G. GESMUNDO
Project Manager	A. SHEPHERD
Verified	R. MULLIGAN
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Grid	MGA (ZONE 56)
R.P.E.Q. No.	7850
Date	19.12.2023

Project

54 GEORGE ALEXANDER WAY,
COOMERA

Title

PIONEER STREET AND
MERCY STREET
LONGITUDINAL SECTIONS

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Issue	01

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