

GENERAL NOTES:

- G1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
- G2. STATIONS AND REDUCED LEVELS ARE IN METRES. REDUCED LEVELS ARE TO THE AUSTRALIAN HEIGHT DATUM.
- G3. THE CO-ORDINATE SYSTEM USED IN ALL DRAWINGS IS THE CANBERRA MAP GRID (STROMLO) - THE CO-ORDINATES SHOWN ARE IN METRES.
- G4. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH RELEVANT ROAD DESIGN, DRAINAGE, LANDSCAPE AND UTILITIES DRAWINGS.
- G5. FOR PLANTING AND LANDSCAPING DETAILS REFER TO LANDSCAPING DRAWINGS.
- G6. ALL LOCATIONS, ORIENTATIONS AND LEVELS SHALL BE VERIFIED ON SITE BEFORE COMMENCING ANY WORK.
- G7. ANY DISCREPANCIES OR OMISSIONS SHALL BE REFERRED TO THE DESIGNER FOR A DECISION BEFORE PROCEEDING WITH THE WORK.
- G8. ALL WORKMANSHIP AND MATERIALS SHALL COMPLY WITH THE APPROPRIATE CURRENT AUSTRALIAN STANDARDS, EXCEPT WHERE OTHERWISE SHOWN ON THE DRAWINGS.
- G9. CONSTRUCTION MUST AVOID DAMAGE TO ANY UNDERGROUND SERVICES OR DRAINAGE.
- G10. EXISTING AND PROPOSED UTILITIES FROM EXTERNAL AUTHORITIES (EG. ACTEW, TELSTRA). ARE SHOWN INDICATIVELY ON PLAN AND DO NOT NECESSARILY COINCIDE WITH FINAL DESIGN OR AS-BUILT LOCATIONS. FOR FURTHER DETAILS OF EXACT LOCATIONS OF UNDERGROUND UTILITIES, REFER TO RELEVANT AUTHORITIES DRAWINGS.
- G11. ALL SERVICES SHALL BE LOCATED AND MOVED, IF NECESSARY, PRIOR TO CONSTRUCTION.
- G12. CONTRACTOR SHALL BE RESPONSIBLE TO CONFIRM THE LOCATION OF ALL UNDERGROUND SERVICES AND DRAINAGE (BY POTHOLING OR OTHER MEANS) PRIOR TO COMMENCING WORK. UNDERGROUND SERVICES SHALL BE RELOCATED AS APPROPRIATE TO AVOID CLASH WITH RETAINING WALL ELEMENTS.
- G13. THE FOUNDATION MATERIAL BENEATH ALL RETAINING WALLS ARE TO BE VALIDATED ON SITE BY SQGE. ALL UNSUITABLE MATERIAL e.g TOP SOIL AND VEGETATION ARE TO BE REMOVED FROM RETAINING WALL FOUNDATION.
- G14. IF ENCOUNTERED GEOTECHNICAL CONDITIONS DEVIATE FROM THOSE SHOWN IN THESE DRAWINGS THE SQGE (SITE QUALIFIED GEOTECHNICAL ENGINEER) AND DESIGNER SHALL BE NOTIFIED. ADDITIONAL FOUNDATION TREATMENT SHALL BE SPECIFIED BY SQGE.
- G15. TEMPORARY EXCAVATION BATTER STABILITY SHALL BE ASSESSED BY SQGE.
- G16. ALL UTILITIES ADJACENT TO THE EXCAVATION OR SOIL NAIL LOCATION SHALL BE VALIDATED & RELOCATED AS APPROPRIATE.

TNSW QA SPECIFICATIONS

- B80 CONCRETE WORK FOR BRIDGES
- B115 PRECAST CONCRETE MEMBERS (NOT PRETENSIONED)
- B153 ERECTION OF PRECAST CONCRETE MEMBERS (NOT PRETENSIONED)
- R44 EARTHWORKS
- R57 DESIGN OF REINFORCED SOIL WALL
- R58 CONSTRUCTION OF REINFORCED SOIL WALL
- R63 GEOTEXTILE (SEPARATION & FILTRATION) RIGID AND FLEXIBLE STRIP FILTERS
- R64 SOIL NAILING
- R68 SHOTCRETE WORK WITHOUT STEEL FIBRES
- 3556 (GEOCOMPOSITE PLASTIC)

GEOTECHNICAL NOTES - REINFORCED SOIL WALL (MW1H)

- GT1. REINFORCED SOIL WALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH TFNSW R58.
- GT2. THE FOUNDATION MATERIAL BENEATH THE REINFORCED FILL ZONE SHALL BE EXAMINED BY SQGE TO ENSURE THAT THE FOUNDATION MATERIAL STRENGTH MEETS THE ASSUMED DESIGN STRENGTH AS SHOWN IN TABLE G-1. WALL DESIGNER SHALL BE CONSULTED. SHOULD ACTUAL CONDITIONS VARY FROM THOSE ASSUMED.
- GT3. MINIMUM EMBEDMENT OF THE WALL AS INDICATED IN TABLE 5 IN DRAWING NO 2302. MUST BE MET AND VERIFIED BY THE SQGE. THE MINIMUM EMBEDMENT OF RSW SHALL BE IN ACCORDANCE WITH REQUIREMENT OF TFNSW R57.
- GT4. BACKFILL MATERIAL AND WITHIN A DISTANCE OF H/2 OF THE REINFORCED SOIL BLOCK SHALL HAVE AN EFFECTIVE FRICTION ANGLE EQUAL TO OR GREATER THAN 28 DEGREES.
- GT5. THE PLACEMENT AND COMPACTION OF FILL MATERIALS WITHIN THE REINFORCED SOIL BLOCK SHALL BE IN ACCORDANCE WITH TNSW R58.
- GT6. FILL MATERIAL CLOSER THAN 1.5m FROM THE PRECAST CONCRETE PANELS MAY BE COMPACTED USING HAND OPERATED MECHANICAL EQUIPMENT SUCH AS A VIBRATING PLATE, TRENCH COMPACTOR OR SIMILAR.
- GT7. VERIFICATION OF ALL BACKFILL MATERIAL PROPERTIES SHALL BE IN ACCORDANCE WITH TNSW R58.
- GT8. THIS DESIGN DOES NOT ALLOW A WATER TABLE WITHIN THE REINFORCED EARTH BLOCK AND GENERAL BACKFILL.
- GT9. NO EXCAVATION SHALL BE PERMITTED IN FRONT OF REINFORCED EARTH WALL.

TABLE G-1

DESCRIPTION	UNIT WEIGHT (kN/m ³)	EFFECTIVE FRICTION ANGLE ϕ' DEG	EFFECTIVE COHESION (KPa)
VERY LOW TO LOW STRENGTH ROCK	22	35	10
RSW FILL	20	36	-
BACKFILL	20	30	-

GEOTECHNICAL NOTES - REINFORCED SOIL WALL MW1H (CONT'D)

- GT10. THE CONTRACTOR SHALL VERIFY THE WALL POSITION, DIMENSIONS AND LEVELS PRIOR TO THE START OF CONSTRUCTION. IF CHANGE TO WALL POSITION, DIMENSIONS OR LEVELS ARE REQUIRED, THESE MUST BE NOTIFIED TO THE DESIGNATED SITE SQGE TO ASSESS IF REDESIGN OF THE PROPOSED STRUCTURE IS REQUIRED.
- GT11. INTERNAL DESIGN OF THE WALL INCLUDING STRAPS SHALL BE UNDERTAKEN BY AN APPROVED RETAINING EARTH SYSTEM IN ACCORDANCE WITH TFNSW SPECIFICATION R57.

SOIL NAIL NOTES:(MW1D)

- S.1 SOIL NAIL MATERIAL SUPPLY AND INSTALLATION SHALL COMPLY WITH THE TNSW SPECIFICATION R64.
- S.2 SHOTCRETE SHALL COMPLY WITH THE PERFORMANCE REQUIREMENTS IN TNSW SPECIFICATION R68.
- S.3 SUITABILITY AND ACCEPTANCE TESTING SHALL BE UNDERTAKEN IN ACCORDANCE WITH TNSW SPECIFICATION R64.
- S.4 A TOTAL OF 3% OF PERMANENT NAILS MUST BE SUBJECTED TO ACCEPTANCE TESTS AS DIRECTED IN TNSW SPECIFICATION R64.
- S.5 MINIMUM NUMBER OF SUITABILITY TEST NAILS IS 3 FOR EVERY SOIL/ROCK TYPE.
- S.6 SOIL NAIL SPACING EMBEDMENT LENGTH, WORKING LOAD AND OTHER DETAILS SHALL BE AS SHOWN IN DRAWINGS.
- S.7 SOIL NAIL WALL MW1D, DESIGNED FOR NOMINAL SURCHARGE LOAD OF 20kPa (TRAFFICABLE) AND 10KPa (NON-TRAFFICABLE) AT THE TOP OF WALL FOR LONG TERM SCENARIO AND A CONSTRUCTION LOAD OF 10kPa DURING CONSTRUCTION.
- S.8 STRIP DRAINS SHALL BE INSTALLED ALONG FULL FACE OF THE SOIL NAIL WALL.
- S.9 SQGE SHALL BE IN FULL TIME ATTENDANCE DURING DRILLING OF SOIL NAIL HOLES TO LOG DRILLED MATERIAL.
- S.10 GEOTECHNICAL DESIGN PARAMETERS AND ASSUMED ULTIMATE NAIL BOND STRESS ARE AS FOLLOWS AND SHALL BE VALIDATED ONSITE BY SQGE.

MATERIAL	EFFECTIVE COHESION C' kPa	EFFECTIVE FRICTION ANGLE ϕ' DEG	ULTIMATE SOIL NAIL BOND STRESS (kPa)
VERY STIFF CLAY	5	28	70
VERY LOW TO LOW STRENGTH ROCK	10	35	120

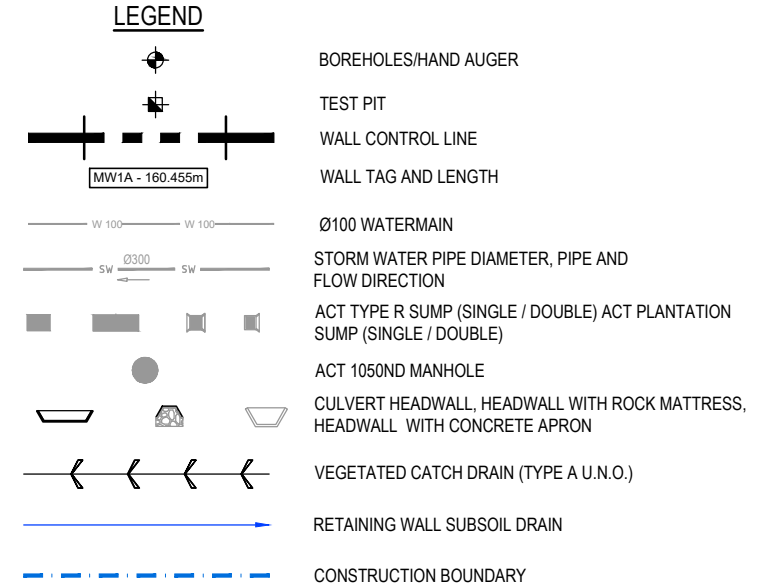
- S.11 CUT FACES SHALL BE INSPECTED BY SQGE FOLLOWING REMOVAL OF VEGETATION, TRIMMING AND REMOVAL OF UNSUITABLE MATERIAL. SQGE SHALL REASSESS ADDITIONAL SUPPORT REQUIREMENTS WHERE ADVERSE DEFECTS ARE ENCOUNTERED e.g. KINEMATICALLY UNSTABLE DEFECTS.
- S.12 ANY OVER EXCAVATION ON CUTTING FACE SHALL BE FILLED WITH SHOTCRETE.
- S.13 IF GROUNDWATER TABLE IS ENCOUNTERED, SQGE SHALL BE NOTIFIED.
- S.14 HORIZONTAL DRAINS OR WEEP HOLES SHALL BE INSTALLED AS ADVISED BY SQGE.
- S.15 RETAINING WALL MW1D SHALL BE COMPLETED PRIOR TO CONSTRUCTION OF RETAINING WALL MW1E.

CONCRETE NOTES:

- C1. CONCRETE EXPOSURE CLASSIFICATION : CONCRETE IN CONTACT WITH EXISTING GROUND AND UNCONTAMINATED MATERIALS - B1 IN ACCORDANCE WITH TNSW QA SPECIFICATION B80. CONCRETE IN CONTACT WITH SHOTCRETE AND MASS CONCRETE - B1 IN ACCORDANCE WITH TNSW QA SPECIFICATION B80.

CONCRETE ELEMENT	MINIMUM 28 DAY COMPRESSIVE STRENGTH (MPa)
CAST IN-SITU CONCRETE	40
SOIL NAIL GROUT STRENGTH	40
BLINDING AND MASS CONCRETE ON SOIL	20
BLINDING AND MASS CONCRETE ON ROCK	40

- C2. ALL CONCRETE MIXES SHALL BE IN ACCORDANCE WITH TNSW QA SPECIFICATION B80.
- C3. GROUT SHALL HAVE A MINIMUM SLUMP OF 200mm.
- C4. ALL CURING SHALL BE IN ACCORDANCE WITH TNSW QA SPECIFICATION B80.
- C5. CURING TO BE APPLIED WITHIN 6 HOURS OF FINISHING CONCRETE.
- C6. WET CURING PERIOD OF 14 DAYS MINIMUM.
- C7. EDGES SHALL BE CHAMFERED 20x20 AND RE-ENTRANT ANGLES FILLETED 20x20 UNLESS SPECIFIED OTHERWISE.



BACKFILL NOTES:

- B1. FILTER MATERIAL BEHIND THE RETAINING WALL MUST BE IN ACCORDANCE WITH TNSW SPECIFICATION 3580 UNLESS NOTED OTHERWISE.
- B2. EXCAVATION AND BACKFILL MUST BE IN ACCORDANCE WITH TNSW SPECIFICATION B30.
- B3. FILL MUST NOT BE PLACED AGAINST CONCRETE UNTIL 21 DAYS AFTER CONCRETE HAS BEEN PLACED OR THE SPECIFIED 28 DAY COMPRESSIVE STRENGTH HAS BEEN REACHED.
- B4. BACKFILL MUST BE PLACED IN 300mm MAXIMUM LAYERS AND COMPACTED USING A PEDESTRIAN ROLLER OR PLATE COMPACTOR GIVING AN EFFECTIVE LINE LOAD OF NOT MORE THAN 20kN/m.

PRECAST CONCRETE NOTES:

- 1. THE PRECAST FASCIA PANELS HAVE BEEN DESIGNED FOR IN-SERVICE LOADING CONDITIONS ONLY. ADDITIONAL REINFORCEMENT FOR TRANSPORTATION AND LIFTING IF REQUIRED SHALL BE SPECIFIED BY THE PRECAST MANUFACTURER.
- 2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREPARATION OF PRECAST PANEL SHOP DRAWINGS. SHOP DRAWING INCLUDING THE TEMPORARY WORKS DESIGN FOR THE HANDLING, TRANSPORTATION AND ERECTION OF THE PANELS SHALL BE SUBMITTED TO THE PRINCIPAL FOR APPROVAL PRIOR TO FABRICATION OF THE PANELS.
- 3. CAST-IN LIFTING AND SUPPORT DEVICES SHALL BE HOT DIPPED GALVANISED IN ACCORDANCE WITH TNSW SPECIFICATION B201. LOCATION OF CAST-IN LIFTING ANCHORS INCLUDING POSSIBLE FRONT FACE LIFTING ANCHORS AND SUPPORT DEVICES SHALL BE SPECIFIED BY THE PRECAST MANUFACTURER TO SUIT PROPOSED ERECTION METHODOLOGY.
- 4. ALL MANUFACTURING, HANDLING AND ERECTION SHALL COMPLY WITH THE REQUIREMENTS OF TNSW SPECIFICATION B115.
- 5. PRECAST FASCIA PANELS SHALL BE PREMIUM SPECIAL BLACK AT 4.15%. SAMPLE PANELS SHALL BE PROVIDED FOR REVIEW BY THE URBAN DESIGNER. ALL PANELS PROVIDED THEREAFTER SHOULD BE OF EQUIVALENT QUALITY TO THE APPROVED PANELS.
- 6. CONCRETE EXPOSURE CLASSIFICATION FOR PRECAST CONCRETE TO BE B1.
- 7. MINIMUM 28 DAY COMPRESSIVE STRENGTH FOR PRECAST CONCRETE SHALL BE 50 MPa.
- 8. COVER TO REINFORCEMENT TO BE 30mm UNO.
- 9. MINIMUM TOTAL BINDER CONTENT SHALL BE 465 Kg/m³ WITH TYPE GB CEMENT WITH 20% FLY ASH.

150 mm ON ORIGINAL
A1

DRAWING FILE LOCATION / NAME V:\Vault\Projects\3002750\CAD\DWG\17_Sc_Struct\RETAINING_WALLS\3002750-RW-1962.dwg				PLOT DATE 29 Feb 2024		TIME 19:18:44	
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				WVR No.	0036	APPROVAL	T.VN
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				TITLE	DRAFTING CHECK: <i>V. RAMAMURTHY</i>		
				TITLE	DESIGNER: <i>S. MONTGOMERY</i>		
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				TITLE	PROJECT MANAGER: <i>K. DECANHA</i>		
				TITLE	PROJECT DIRECTOR: <i>T. VAN NIEKERK</i>		
				SCALES AT A1 SIZE DRAWING			
				DESIGNER: SMEC Member of the Surbana Jurong Group ABN 47 065 475 149			
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				PROJECT TITLE: WILLIAM HOVELL DRIVE DUPLICATION			
				STRUCTURES AND RETAINING WALLS GENERAL NOTES SHEET 1			
SCALE AS SHOWN		PHASE DETAIL DESIGN		PROJECT / DRAWING No. 3002750-RW-1962		REVISION A	

DR