SHOTCRETE: (MW1D)

SH1. SHOTCRETE MATERIAL SUPPLY AND INSTALLATION SHALL COMPLY WITH THE TfNSW SPECIFICATION R68 (ANY ADMIXTURES AND THEIR ADDITION TO THE MIX SHALL COMPLY WITH TfNSW SPECIFICATION R68).
SH.2 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 5100 CURRENT EDITION WITH AMENDMENTS, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
SH.3 EXPOSURE CLASSIFICATION SHALL BE B1.
SH.4 MINIMUM 28 DAY COMPRESSIVE STRENGTH OF SHOTCRETE SHALL BE 40 MPa
SH.5 NO ADMIXTURES CONTAINING CHLORIDES SHALL BE USED.
SH.6 PROJECT ASSESSMENT OF THE SUPPLIED CONCRETE IS REQUIRED IN ACCORDANCE WITH TFNSW SPECIFICATION B80.
SH.7 UNLESS NOTED OTHERWISE CLEAR CONCRETE COVER TO ALL REINFORCEMENT SHALL BE AS FOLLOWS:

ELEMENT	COVER (mm)
CAST AGAINST GROUND	75
EXPOSED TO THE AIR	45

SH.8 COVER TO REINFORCEMENT SHALL BE OBTAINED BY THE USE OF APPROVED BAR CHAIRS. STEEL BAR CHAIRS SHALL NOT BE USED. ALL CHAIRS SHALL BE SPACED AT 750 CTS MAXIMUM.
SH.9 NO HOLES, CHASES OR EMBEDMENT OF PIPES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER
SH.10 CONSTRUCTION JOINTS WHERE NOT SHOWN, SHALL BE LOCATED TO APPROVAL OF THE ENGINEER. ALL CONSTRUCTION JOINTS SHALL BE SCRABBLED OVER THE WHOLE FACE AND ANY UNSOUND MATERIAL REMOVED.
SH.11 INSPECTION OF REINFORCEMENT PRIOR TO PLACING SHOTCRETE WILL BE CARRIED OUT BY THE CONTRACTOR IN ACCORDANCE WITH AN APPROVED QUALITY MANAGEMENT SYSTEM.
SH.12 A MINIMUM OF 48 HOURS NOTICE IS REQUIRE FOR ANY INSPECTION THE CONTRACTOR REQUIRES OF THE STRUCTURAL DESIGNER.
SH.13 MINIMUM BINDER CONTENT OF SHOTCRETE SHALL BE 400 kg/m^3.
SH.14 SHOTCRETE SHALL CONTAIN MAXIMUM 25% FLYASH.
SH.15 MINIMUM OF 4 DAYS WET CURING OR 7 DAYS SEALED CURING SHALL BE IMPLEMENTED FOLLOWING SHOTCRETING.

REINFORCEMENT NOTES:

R1. ALL REINFORCEMENT BARS TO BE GRADE D500N TO AS/NZS 4671.
NOMINAL COVER TO REINFORCEMENT NEAREST TO CONCRETE SURFACE SHALL BE:

	EXPOSURE CLASSIFICATION /NOMINAL COVER (mm)
CONCRETE - ATMOSPHERIC EXPOSURE OR ON MASS CONCRETE	B1/45
CONCRETE IN CONTACT WITH SOIL	B1/75

R2. UNLESS SPECIFIED OTHERWISE , THE MINIMUM LAP LENGTHS SHALL BE AS TABULATED BELOW AND THE DEVELOPMENT LENGTHS SHALL BE 80% OF THE VALUES TABULATED BELOW:

BAR SIZE:	N12	N16	N20	N24
a) HORIZONTAL BARS WITH >300mm OF CONCRETE CAST BELOW THE BAR	580	760	960	1240
b) OTHER BARS	450	580	760	960

R3. WHERE MORE THAN 50% OF BARS ARE TO BE LAPPED IN ANY ONE CROSS SECTION THE LAPS SHOWN IN THE TABLE ABOVE SHALL BE INCREASED BY A FACTOR OF 1.3.

R4. CLEAR DISTANCE BETWEEN LAPPED BARS SHALL NOT EXCEED 3 x THE SMALLEST BAR DIAMETER. REINFORCEMENT MAY BE DISPLACED SLIGHTLY WHERE NECESSARY TO CLEAR DOWELS, ANCHORS, LIFTING ANCHORS, DUCTS, DRAINAGE LINES AND GENERAL FITMENTS.

STEEL WORK:

SW1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE TfNSW B201 SPECIFICATION AND AS4100.
SW2 ALL STEEL PLATES SHALL BE GRADE 250 TO AS/NZS 3678 U.N.O.
SW3 ALL CHS, RHS & SHS SECTIONS SHALL BE GRADE 350LO OR 450LO TO AS/NZS 1163 U.N.O.
SW4 ALL STEEL SECTIONS SHALL BE GRADE 300 TO AS/NZS 3679.1 U.N.O.
SW5 ALL WELDING SYMBOLS CONFORM TO AS/NZS 1101.3
SW6. ALL WELD SHALL BE 6mm CONTINUOUS FILLET-USING 48XX OR W50 CONSUMABLES. WELD ON BOTH SIDES OF PLATES IF ACCESSIBLE. ALL SEAMS & JOINTS SHALL BE FULLY SEAL WELDED.
SW7. ALL WELDING CONSUMABLES MUST BE IN ACCORDANCE WITH AS1554.1 CL 2.3.
SW8. WELDING SHALL BE PERFORMED BY QUALIFIED WELDERS USING A PREQUALIFIED PROCEDURE IN ACCORDANCE WITH AS1554.
SW9. ALL WELDS SHALL BE CATEGORY SP TO AS/NZS 1554.1
SW10. BOLTING CATEGORY FOR COMMERCIAL BOLTS SHALL BE 4.6/S AND THAT FOR HIGH STRENGTH BOLTS SHALL BE 8.8/S IN ACCORDANCE WITH AS 4100
SW11. BOLT DESIGNATION

4.6/S REFERS TO COMMERCIAL BOLTS OF STRENGTH GRADE 4.6 TO AS 1111 TIGHTENED TO A SNUG TIGHT CONDITION

8.8/S REFERS TO HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS 1252 TIGHTENED TO A SNUG TIGHT CONDITION

8.8/TB REFERS TO HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS 1252 FULLY TENSIONED TO AS 1511 AS A BEARING JOINT

8.8/TF REFERS TO HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS 1252 FULLY TENSIONED TO AS 4100 AS A FRICTION JOINT

SW12. ALL BOLTS AND NUTS SHALL BE HOT DIP GALVANISED TO AS/NZS 1214. WASHERS SHALL BE HOT DIP GALVANISED IN ACCORDANCE WITH AS/NZS 4680.
SW13. ALL BREATHER HOLES FOR HOT DIP GALVANISING TO BE IN ACCORDANCE WITH AS/ NZS 4680.
ALL STEELWORK SHALL BE HOT DIP GALVANISED AFTER PICKLE OR ABRASIVE BLAST TO CLASS 3, TO COMPLY WITH AS4680. THE CONTINUOUS AVERAGE ZINC COATING MASS SHALL BE 600g/ sqm.
SW13. DAMAGED GALVANISED SURFACES SHALL BE RENOVATED WITH APPROVED TWO PACK ORGANIC ZINC RICH PRIMER IN ACCORDANCE WITH TfNSW SPECIFICATION B220.
SW14. EDGES TO BE PROTECTIVE TREATED SHALL BE ROUNDED TO A RADIUS OF 1.5mm U.N.O.
SW15. NO FLAME CUTTING OF BASE PLATES OR OTHER STRUCTURAL STEELWORK TO CORRECT LACK OF FIT.
SW16. BOLTS MUST PROJECT A MINIMUM OF TWO THREADS ABOVE THE NUTS.
SW17. BOLTS MUST NOT BE CRANKED ON SITE TO SUIT LACK OF FIT.

CONSTRUCTION SEQUENCE FOR SOIL NAIL WALL:(MW1D)

THE FOLLOWING CONSTRUCTION SEQUENCE HAS BEEN ASSUMED FOR THE SOIL NAIL WALL DESIGN. DEVIATION FROM THIS SEQUENCE MAY POTENTIALLY AFFECT THE WALL LOADING ASSUMPTIONS AND SHALL BE SUBMITTED TO DESIGNER FOR REVIEW PRIOR TO COMMENCEMENT OF CONSTRUCTION. THIS CONSTITUTES A HOLD POINT.

SQGE SHALL BE IN FULL TIME ATTENDANCE DURING DRILLING OF SOIL NAIL HOLES TO LOG DRILLED MATERIAL.

CONSTRUCTION SEQUENCE FOR SOIL NAIL WALL
CS.1 EXCAVATE MINIMUM REQUIRED DEPTH TO CONSTRUCT CAPPING BEAM.
CS.2 SQGE TO INSPECT EXPOSED CAPPING BEAM FOUNDATIONS WITHIN 48 HRS AND CONFIRM GEOTECHNICAL MODELS AND DESIGN ASSUMPTIONS.
CS.3 CONSTRUCT CAPPING BEAM WITH CAST-IN SLEEVE.
CS.4 INSTALL FIRST ROW SOIL NAILS.
CS.5 WAIT UNTIL GROUT ACHIEVES A MINIMUM STRENGTH OF 40 MPa AND CARRY OUT ACCEPTANCE TESTS WHERE REQUIRED.
CS.6 EXCAVATE TO 1.5m BELOW THE SECOND ROW OF SOIL NAILS.
CS.7 SQGE TO INSPECT EXCAVATED CUT SURFACE AND CONDUCT GEOLOGICAL MAPPING, CONFIRM GEOTECHNICAL MODELS AND DESIGN ASSUMPTIONS.
CS.8 INSTALL STRIP DRAINS AS SPECIFIED AND AS PER MANUFACTURER'S INSTRUCTIONS.
CS.9 DRILL AND INSTALL SUB-HORIZONTAL DRAINS AS SPECIFIED OR NOMINATED BY THE SQGE.
CS.10 INSTALL REINFORCEMENT AROUND SOIL NAIL HEAD AND MESH FOR SHOTCRETE.
CS.11 SHOTCRETE TO BASE OF EXCAVATION LIFT.
CS.12 WAIT UNTIL SHOTCRETE ACHIEVES A MINIMUM STRENGTH OF 21 MPa.
CS.13 REPEAT STEPS CS.5 TO CS.12 UNTIL FINAL EXCAVATION LEVEL IS ACHIEVED.
CS.14 CONSTRUCT OTHER ELEMENTS INCLUDING RETAINING WALL MW1E ON TOP OF THE SOIL NAIL WALL.

DESIGN LOADS

1. DESIGN LIFE OF THE STRUCTURAL CONCRETE WORKS SHOWN IN THESE DRAWINGS IS 100 YEARS.
2. THE STRUCTURAL WORKS SHOWN ON THESE DRAWINGS HAVE BEEN DESIGNED FOR THE FOLLOWING LOADS:

SOIL LOAD
22kN/m^3 - SOIL BACK FILL

LIVE LOADS
MW1A: 20kPa (TRAFFICABLE)
MW1C: 20kPa (TRAFFICABLE)
MW1D: 20kPa (TRAFFICABLE)
MW1E: 20kPa (TRAFFICABLE)
MW1H: 20kPa (TRAFFICABLE)

EARTHQUAKE LOADS (AS5100.2)

STRUCTURE CLASSIFICATION:	BEDC3
ANNUAL PROBABILITY OF EXCEEDANCE (P):	1:1000
PROBABILITY FACTOR (kp):	1.3
HAZARD FACTOR (Z):	0.09
SITE SUBSOIL CLASS :	Be
DUCTILITY FACTOR (μ):	1.25

WIND LOADS

IMPORTANCE LEVEL:	3
DESIGN LIFE:	100 YEARS
REGION:	A3
DESIGN ULTIMATE WIND SPEED:	48 m/s

CONSTRUCTION LOADING:
COMPACTION: 20kPa
SURCHARGE: 10kPa

TRAFFIC BARRIER PERFORMANCE LEVEL:

MW1A : REGULAR
MW1C : REGULAR
MW1D : REGULAR

DESIGN STANDARDS

AS5100.2 BRIDGE DESIGN: DESIGN LOADS
AS5100.3 BRIDGE DESIGN: FOUNDATION AND SOIL SUPPORTING STRUCTURES
AS5100.5 BRIDGE DESIGN: CONCRETE

150 mm ON ORIGINAL
A1

DRAWING FILE LOCATION / NAME: V:_Vault\Projects\3002750\CAD\DWG\17_SC_Struct\RETAINING_WALLS\3002750-RW-1963.dwg
PLOT DATE: 29 Feb 2024 TIME: 19:19:16

DR

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL	TITLE	NAME
K_3002750_SMEC_stl K_WHD_RET_WALLS_NOTES_GEN	A	29.02.2024	DRAFT DOCUMENT READINESS (DR) SUBMISSION	0036	T.VN	DRAFTER	M.SURESH
						DRAFTING CHECK	V. RAMAMURTHY
						DESIGNER	S.MONTGOMERY
						DESIGN CHECK	R. HUNTER
						PROJECT MANAGER	K. DECANHA
						PROJECT DIRECTOR	T. VAN NIEKERK

SCALES AT A1 SIZE DRAWING

DESIGNER: SMEC Member of the Surbana Jurong Group ABN 47 065 475 149 LEVEL 9, 12 MOORE STREET CANBERRA ACT 2601 AUSTRALIA SMEC PROJECT No 3002750

CLIENT: ACT Government Transport Canberra & City Services

PROJECT TITLE: WILLIAM HOVELL DRIVE DUPLICATION

STRUCTURES AND RETAINING WALLS GENERAL NOTES SHEET 2

SCALE	PHASE	PROJECT / DRAWING No.	REVISION
AS SHOWN	DETAIL DESIGN	3002750-RW-1963	A