GENERAL

- G1 STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE SPECIFICATION, ARCHITECTURAL, CIVIL AND ENGINEERING SERVICES DOCUMENTS.
- 62 FOR SETTING OUT DIMENSIONS REFER TO ARCHITECTURAL DRAWINGS NO DIMENSIONS ARE TO BE OBTAINED FROM SCALING DRAWINGS. DO NOT SCALE DRAWINGS.
- G3 UNLESS OTHERWISE NOTED ALL LEVELS ARE IN METRES AND ALL DIMENSIONS IN MILLIMETRES.
- G4 THE BUILDER SHALL BE RESPONSIBLE FOR MAINTAINING THE STABILITY OF THE STRUCTURE UNTIL ITS COMPLETION AND SHALL ENSURE THAT NO PART OF THE STRUCTURE IS OVERSTRESSED BY EXCESSIVE LOADING
- G5 ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CURRENT CODES OF PRACTICE EXCEPT WHERE VARIED BY THE SPECIFICATION AND / OR DRAWINGS.
 - AS 3600 CONCRETE STRUCTURES CODE.
 - AS/NZS 4671 STEEL REINFORCING MATERIALS
 - AS 1170 (Pt 1-4) SAA LOADING CODE
 - AS 1170 (Pt 0) STRUCTURAL DESIGN ACTION
 - AS/NZS 3679 HOT ROLLED AND WELDED SECTIONS
 - AS 4100 STFFL STRUCTURES CODE.
 - AS/NZS 1163 STRUCTURAL STEEL HOLLOW SECTIONS.
 - AS/N7S 1554 STRUCTURAL STEEL WELDING
 - AS 1684 NATIONAL TIMBER FRAMING CODES
 - AS 1720 TIMBER STRUCTURES CODE.
 - AS 1289 METHODS OF TESTING SOILS FOR ENGINEERING PURPOSES.
 - AS 3700 MASONRY CODE.
 - AS/NZS 4600 COLD FORMED STEEL STRUCTURES
 - AS 1657 FIXED PLATFORMS, WALKWAYS, STAIRWAYS AND LADDERS CODE
- AS/NZS 4455 MASONRY UNITS AND SEGMENTAL PAVERS
 G6 ALL DISCREPANCIES SHALL BE REFERRED TO THE ARCHITECT/ SUPERINTENDENT FOR DECISIONS BEFORE PROCEEDING WITH THE WORK.

G7 ABBREVIATIONS:

- UNO UNLESS NOTED OTHERWISE
- EF EACH FACE
- FF FAR FACE
- G8 PROVIDE CLAY 'PLUG' TO ALL SERVICE TRENCHES WHERE ANY PIPE, DUCT OR CABLE ENTERS THE BUILDING TO PREVENT INGRESS OF WATER UNDER BUILDING
- G9 UNDER PART 4 OF THE BUILDING ACT 1993 THE BUILDER IS REQUIRED TO NOTIFY THE RELEVANT BUILDING SURVEYOR OF EACH MANDATORY INSPECTION STAGE. PLEASE ENSURE THAT THEY ARE NOTIFIED.
- G10 THE BUILDER SHALL GIVE AT LEAST 48 HOURS NOTICE PRIOR TO INSPECTION OF ALL STRUCTURAL WORKS
- G11 BUILDER TO ALLOW IN HIS TENDER FOR ALL ADDITIONAL COST ASSOCIATED WITH THE PROPOSED LOCATION OF CRANF(S) AND RELATED SUPPORT STRUCTURES.

G12 FIXING POINTS & SUPPORTS FOR BUILDING MAINTENANCE EQUIPMENT:

BUILDER TO MAKE DUE ALLOWANCE IN HIS TENDER FOR ALL CAST—IN INSERTS, STEEL CONNECTION PLATES, ACCESS HOOKS, SAFETY HARNESS PLATES, STATIC LINE SUPPORTS ETC. REQUIRED AS ABSEILING FIXING POINTS TO THE PERIMETER OF THE ROOF, EXTERNAL WALLS AND GROUND SLABS.

WHERE IT IS PROPOSED TO ALSO USE A SWING-STAGE THE BUILDER IS TO MAKE ADDITIONAL ALLOWANCE FOR DAVIT ARMS, NEEDLES AND ASSOCIATED RESTRAINT SYSTEMS ETC. TO THE PERIMETER OF THE ROOF AND ALSO ANY FIXING POINTS REQUIRED ALONG THE EXTERNAL WALLS AND GROUND SLAB.

ALL STRUCTURAL FIXING REQUIREMENTS ASSOCIATED WITH BUILDING MAINTENANCE ARE TO BE DESIGNED AND DOCUMENTED BY A SPECIALIST ENGINEER ENGAGED BY THE BUILDER. BUILDER TO ALLOW IN HIS TENDER FOR ALL COSTS AND FEES ASSOCIATED WITH THIS ENGINEERING WORK. BUILDER TO MAKE THE ABOVE ALLOWANCES FOR ALL

- G13 SUBSTITUTION SHALL NOT BE PERMITTED WITHOUT THE APPROVAL OF THE ENGINEER
- G14 PROVIDE 10mm ABLEFLEX OR APPROVED EQUIVALENT AROUND COLUMNS, EDGE THICKENINGS & EXTERNAL PAVEMENTS, PROVIDE CAULKING AS REQUIRED.
- G15 THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND OBTAIN THE SERVICE OF AN INDEPENDENT TEMPORARY WORKS ENGINEER AS NECESSARY FOR THE PREPARATION AND EXECUTION OF A COMPREHENSIVE SAFE ERECTION PROCEDURE THAT WILL AT ALL TIMES ENSURE THE STABILITY OF THE WORKS. SAFETY OF ALL PERSONNEL AND PROTECTION OF SURROUNDING PROPERTY INCLUDING THE DESIGN, CERTIFICATION AND PROVISION OF ALL NECESSARY TEMPORARY BRACING AND SUPPORT.
- G16 EXTERNAL INSULATION AND FINISHING SYSTEMS, WALL PANELLING, CLADDING OR FACADE MATERIAL FMG ENGINEERING HAS NOT CARRIED OUT A REVIEW WITH RESPECT TO COMBUSTIBILITY, FIRE RESISTANCE OR FIRE SAFETY PROVISIONS OF THE EXTERNAL INSULATION AND FINISHING SYSTEM, WALL PANELLING, CLADDING OR FACADE MATERIAL OR ANY ASSOCIATED FIXING SYSTEM THAT IS TO BE OR THAT MAY BE APPLIED TO THIS PROJECT. CLADDING SYSTEMS MUST COMPLY WITH THE BUILDING CODE OF AUSTRALIA, THE NCC, RELEVANT AUSTRALIAN STANDARDS AND ANY OTHER APPLICABLE REGULATIONS AND TEST REQUIREMENTS. FMG ADVISES THAT PROJECT SPECIFIC ADVICE WITH RESPECT TO FITNESS FOR PURPOSE AND STATUTORY COMPLIANCE OF ANY PROPOSED CLADDING MATERIALS SHALL BE SOUGHT FROM A SUITABLY QUALIFIED AND EXPERIENCED MATERIALS OR FIRE SERVICES ENGINEER.

DEMOLITION

- D1 PRIOR TO DEMOLISHING ANY WALLS CHECK THAT THE WALLS ARE NON LOADBEARING OR THE WALLS ARE TO BE SUPPORTED BY A NEW LINTEL/BEAM. REFER PROCEDURES FOR DEMOLITION OF WALLS.
- D2 ALL DEMOLITION WORK IS TO BE IN ACCORDANCE WITH AS2601. THE CONTRACTOR IS TO ENGAGE A COMPETENT PERSON TO PREPARE A DEMOLITION WORK PLAN IN ACCORDANCE WITH AS 2601.
- D3 SHOP DRAWINGS INDICATING THE LOCATION OF SERVICES PENETRATIONS ARE TO BE SUBMITTED AND APPROVAL OBTAINED PRIOR TO ANY PENETRATIONS BEING MADE.
- D4 THE CONTRACTOR IS TO ENSURE THE STRUCTURE IS IN A STABLE CONDITION AT ALL TIMES.
- D5 REFER TO SECTIONS AND PLANS ON DRAWINGS FOR SUGGESTED DEMOLITION PROCEDURES FOR CERTAIN AREAS.
 D6 WHERE TEMPORARY PROPPING IS SPECIFIED, PROPS ARE TO BE TIGHTENED SUFFICIENTLY TO SUPPORT DEAD LOADS
- FROM ABOVE. TRANSFER ALL PROPPING FORCES INTO THE GROUND AND PROVIDE ADEQUATE SOLEPLATES OR FOOTINGS TO SAFELY SUPPORT THESE FORCES WITHOUT EXCESSIVE SETTLEMENT UNLESS CALCULATIONS ARE PROVIDED TO SHOW THE STRUCTURE IS CAPABLE OF SUPPORTING THE LOADS.
- D7 PROVIDE NEW WALL BRACING OF THE SAME TYPE AND LENGTH. TO REPLACE ANY THAT IS REMOVED DURING THE DEMOLITION OF WALLS.
- D8 ALL BRACING TO BE DESIGNED FOR WIND CLASSIFICATION N1 TO AS1684 PART 4.

HEALTH AND SAFETY

- HS1 IT IS THE RESPONSIBILITY OF THE BUILDER TO ENSURE ALL WORKS ARE CARRIED OUT IN A SAFE MANNER. THE WORKS SHALL COMPLY WITH ALL APPLICABLE HEALTH AND SAFETY LEGISLATION INCLUDING CODES OF PRACTICE, AUSTRALIAN STANDARDS, GUIDANCE NOTES AND WORKSAFE REQUIREMENTS.
- HS2 THE BUILDER SHALL ENSURE A RISK ASSESSMENT HAS BEEN CARRIED OUT AND DOCUMENTED FOR ALL ACTIVITIES PERFORMED ON THE SITE. SAFE WORK PROCEDURES MUST BE DOCUMENTED AS REQUIRED BY LEGISLATION AND RELEVANT AUTHORITIES. THE BUILDER MAY NEED TO ENGAGE SUITABLY EXPERIENCED CONSULTANTS TO PREPARE A SAFE WORK PROCEDURE IF THE BUILDER IS INEXPERIENCED IN THIS FIELD OR IF THEY ARE NOT SATISFIED WITH THE METHOD PROPOSED BY THE CONTRACTOR

CONCRETE

C1 CONCRETE SHALL COMPLY WITH THE SPECIFICATION UNLESS OTHERWISE NOTED. ALL CONCRETE SHALL BE AS FOLLOWS <u>UNLESS NOTED ON DRAWINGS.</u>

ELEMENT	GRADE (MPa)	SLUMP (mm)	MAX. AGG. (mm)
BLINDING	N15	80	20
STRIP FOOTINGS AND PAD FOOTINGS	N32	80	20
SLAB ON GROUND	N32	80	20
BORED PIERS	N32	80	20
COLUMNS AND PEDESTALS	N40	80	20
SUSPENDED SLABS/BEAMS	N32	80	20
WALLS	N40	80	20

C2 CONCRETE SHALL CONFORM TO THE FOLLOWING:

IN BEAMS AND SLABS AS FOLLOWS:

- a) CEMENT TYPE GP COMPLYING TO / WITH AS 1379 AND AS 3600
- C3 SIZES OF CONCRETE ELEMENTS DO NOT INCLUDE THICKNESS OF APPLIED FINISHES.
- C4 BEAM DEPTHS ARE NOTED FIRST AND INCLUDE THICKNESS OF SLAB IF ANY. C5 CONSTRUCTION JOINTS WHERE NOT SHOWN ON DRAWINGS SHALL BE LOCATED TO THE APPROVAL OF THE
- SUPERINTENDENT/ENGINEER. TENDERS SHALL ALLOW FOR ALL SUCH CONSTRUCTION JOINTS
- C6 NO PENETRATIONS. CHASES OR EMBEDMENTS OF PIPES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR APPROVAL OF THE SUPERINTENDENT/ENGINEER. C7 ALL FORMWORK AND PROPPING UNDER SUSPENDED CONCRETE WORKS SHALL BE REMOVED BEFORE ANY MASONRY WORK
- IS BUILT ABOVE. C8 CAMBERS, UNLESS NOTED OTHERWISE ON THE DRAWINGS AND EXCEPT FOR PRESTRESSED WORK SHALL BE PROVIDED
 - i) SPANS GENERALLY 0.002 x SPAN.

ii) CANTILEVERS - 0.004 x CANTILEVER LENGTH.

CAMBERS SHALL BE CHECKED BEFORE AND AFTER DEPROPPING TO DETERMINE THE DEFLECTION OF THE MEMBERS UNDER THEIR SELF WEIGHT. PROVISION SHALL BE MADE IN THE FORMWORK SYSTEM FOR THE STRUCTURAL ENGINEER TO VARY THE SPECIFIED CAMBERS ON THE BASIS OF THIS INFORMATION.

C9 SHRINKAGE: MAXIMUM DRYING SHRINKAGE STRAIN MEASURED IN ACCORDANCE WITH AS 1012 PART 13 SHALL NOT EXCEED

650 x 10-6/ AT 8 WEEKS C10 CHAMFERS:
PROVIDE CHAMFERS TO BEAMS WHERE SPECIFIED BY ARCHITECT

C11 SHE-BOLT LOCATIONS:

SHE-BOLT HOLE LOCATIONS IN EXPOSED (VISIBLE) SURFACES ARE TO BE POSITIONED IN ACCORDANCE WITH THE ARCHITECT'S INSTRUCTIONS

- C12 ALL CONCRETE PLACED IN POSITION IS TO BE ADEQUATELY VIBRATED USING MECHANICAL VIBRATORS.
- C13 ALL CONCRETE SHALL BE CURED FOR AT LEAST 7 DAYS AFTER CONCRETING. DURING CURING, ALL EXPOSED CONCRETE SURFACES SHALL BE PROTECTED AND KEPT MOIST BY PONDING, COVERING WITH WET HESSIAN OR SPRAYED WITH AN APPROVED CURING COMPOUND.
- C14 PROPPING (INCLUDING STRIPPING AND BACKPROPPING) SHALL BE IN ACCORDANCE WITH THE AUSTRALIAN STANDARDS AS A MINIMUM THE FOLLOWING SHALL APPLY:

FORMWORK SHALL NOT BE STRIPPED UNTIL THE FOLLOWING NUMBER OF DAYS AFTER CONCRETING:

BEAM SIDES, VERTICAL WALLS AND COLUMNS - 5 DAYS SLABS AND BEAM SOFFITS - 14 DAYS

C15 ALL SUSPENDED SLABS AND BEAMS SHALL REMAIN PROPPED FOR THE FOLLOWING NUMBER OF DAYS AFTER CONCRETING: SLAB - 21 DAYS BEAMS - 28 DAYS

C16 CONCRETE TESTING SHALL BE IN ACCORDANCE WITH AS 1379, METHOD OF TESTING AND ASSESSMENT SHALL BE "PROJECT ASSESSMENT" METHOD.

REINFORCEMENT

R1 ALL REINFORCEMENT SHALL BE AS FOLLOWS

SYMBOL	STRUCTURAL GRADE	DUCTILITY CLASS
R	STRUCTURAL GRADE PLAIN BARS TO AS 1302 (250 MPa)	N
S	STRUCTURAL GRADE DEFORMED BARS TO AS 1302 (250 MPa)	N
Υ	DEFORMED BARS GRADE 400 Y TO AS 1302 (400MPa)	N
N	DEFORMED BARS GRADE 500 Y TO AS/NZS 4671 (500MPa)	N
RN SN	FABRIC TO AS/NZS 4671 (500MPa)	N
RL SL	FABRIC TO AS/NZS 4671 (500MPa)	L
N	OTE: THE NUMBER FOLLOWING R,S,Y,N AND RL/SL IS THE BAR DIAMETER IN MIL	LIMETRES

R2 LOW DUCTILITY DEFORMED BARS (DUCTILITY CLASS L) SHALL NOT BE USED UNDER ANY CIRCUMSTANCES (FXCFPT FOR FABRIC)

R3 U.N.O. TABLE OF MINIMUM CLEAR CONCRETE COVER TO REINFORCEMENT SHALL BE AS FOLLOWS:

CLEAR COVER (mm)				
LOCATION	TOP	BOTTOM	SIDES INTERNAL	SIDES EXTERNAL
SLAB INTERNAL	25	30		
SLAB EXTERNAL	40	40		
STRIP FOOTINGS	65	65		
COLUMNS			40	40
GROUND BEAMS	30	40	40	40
BORED PIERS			50	50

TOLERANCES TO FORMWORK AND CONCRETE SHALL BE IN ACCORDANCE WITH CLAUSE 4.4.2 OF AS1509-1974, UNLESS NOTED OTHERWISE.

- R4 DISTRIBUTION BARS TO MAIN REINFORCEMENT IN SLABS SHALL BE N12 AT 300mm CENTRES UNLESS NOTED OTHERWISE.
- R5 NO REINFORCEMENT SPLICES SHALL BE MADE, OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS, WITHOUT THE PRIOR APPROVAL OF THE SUPERINTENDENT/ ENGINEER. MINIMUM LAP FOR FABRIC SHALL BE ONE SQUARE OF MESH
- R6 WELDING OF REINFORCEMENT IS NOT PERMITTED UNLESS SHOWN ON THE DRAWINGS OR APPROVED BY THE
- UPERINTENDENT/ENGINEER. DEFORMED BARS SHALL BE COLD ROLLED ONLY
- R7 TOP AND BOTTOM REINFORCEMENT IN SLABS SHALL BE SUPPORTED IN BOTH DIRECTIONS AT MAXIMUM CENTRES OF 1000mm IN BOTH DIRECTIONS. FOR EXTERNAL SURFACES, USE PLASTIC CHAIRS.
- R8 THE MINIMUM CLEAR SPACING BETWEEN CONDUITS, CABLES, PIPES AND BARS TO BE AS REQUIRED BY AS 3600 BUT NOT LESS THAN THREE DIAMETERS. CONDUITS IN SLABS TO BE PLACED ABOVE BOTTOM REINFORCEMENT AND BELOW
- R9 HOOKS LAPS SPLICES AND BENDS TO BE IN ACCORDANCE WITH AS 3600

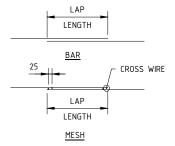
R10 ABBREVIATIONS USED FOR REINFORCEMENT LOCATION:

BOTTOM BOTTOM - BB TOP TOP - TT

BOTTOM TOP

- R11 ALL REINFORCEMENT BARS SHALL BE HANDLED ON SITE INCLUDING STORAGE, FIXING AND WELDING STRICTLY IN ACCORDANCE WITH RELEVANT MANUFACTURERS REQUIREMENTS AND RECOMMENDATIONS. BUILDER AND HIS CONTRACTORS TO OBTAIN ALL RELEVANT INFORMATION FROM MANUFACTURERS AND FAMILIARIZE WITH SUCH REQUIREMENTS.
- R12 BARS ARE DETAILED ON THE DRAWING IN THE FOLLOWING MANNER:-
- 20N12-300 DENOTES 20No. 500N GRADE (500MPa) BARS OF 12mm DIA. AT 300mm CENTRES.
- R13 ALL FABRIC SHALL HAVE A MINIMUM LAP OF 300mm, UNLESS NOTED OTHERWISE. R14 REINFORCEMENT IN THE DIRECTION OF THE SPAN SHALL BE NEARER TO THE ADJACENT SURFACE. UNLESS NOTED
- R15 THE CONTRACTOR SHALL GIVE THE ENGINEER 48 HOURS NOTICE TO INSPECT REINFORCEMENT PRIOR TO PLACEMENT
- OF CONCRETE.
- R16 THE FOLLOWING CONCRETE EXPOSURE CLASSIFICATIONS FOR DURABILITY WERE USED IN THE DESIGN:-- IN CONTACT WITH THE GROUND A2
- INTERIOR
- R17 'BONDEK' OR EQUIVALENT FORMWORK DECKING SHALL BE FIXED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS. (U.N.O) ALL 'BONDEK' OR EQUIVALENT FORMWORK DECKING SLABS SHALL BE BACKPROPPED AT LEAST OVER TWO LEVELS WITH MINIMUM TWO ROWS OF PROPS.
- R18 PROVIDE 3N12 RE-ENTRANT CORNER BARS x 2000mm LONG TYPICAL AROUND COLUMNS & CORNERS.
- R19 RFINFORCEMENT LAP LENGTHS

BAR SIZE	LAP LENGTH	
MESH	2 x CROSS WIRES + 25mm	
N12	550	
N16	800	
N20	1100	
N24	1300	
N28	1600	
N32	1900	



TENDER ISSUE **NOT FOR CONSTRUCTION**

DRAWING INDEX

S01 GENERAL NOTES AND INDEX

S10 PLAN. SECTION AND DETAILS

TENDER ISSUE 26.08.2023 DESCRIPTION INIT APP DATE

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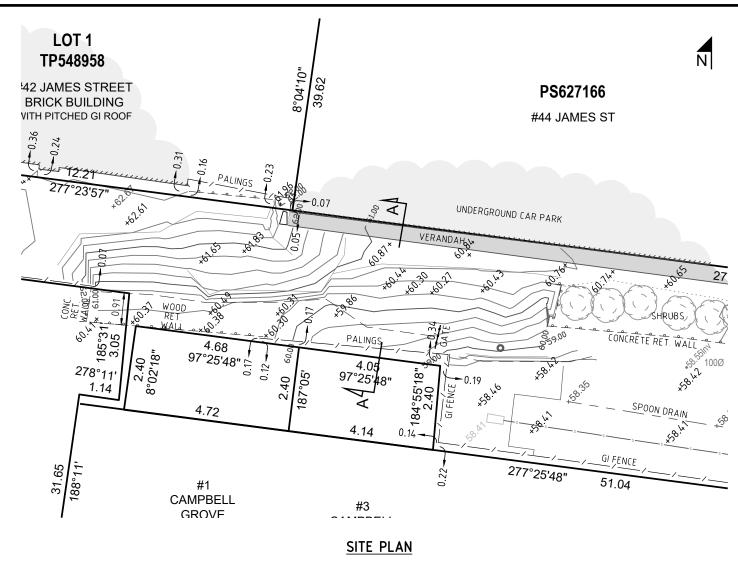
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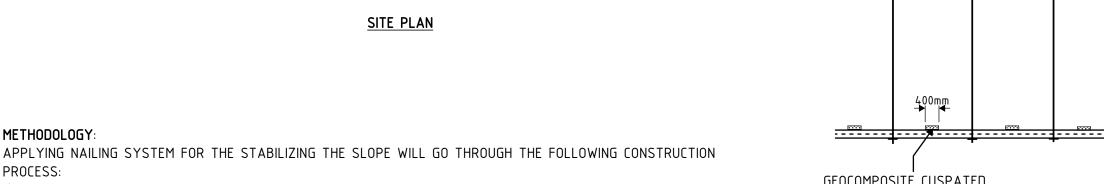
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City of Darebin RETAINING WALL 42 James Street, NORTHCOTE, VIC 3070 GENERAL NOTES AND INDEX

HECKEL No. OF SHEETS MS N.T.S @ A3 24.08.2022 SITE ID & JOB No. REV. S44580-281686 S01

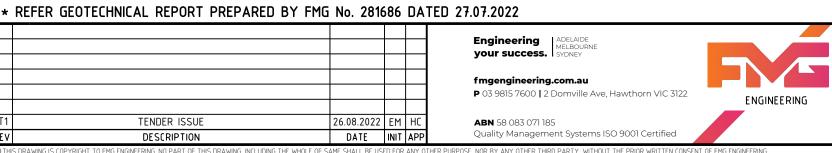


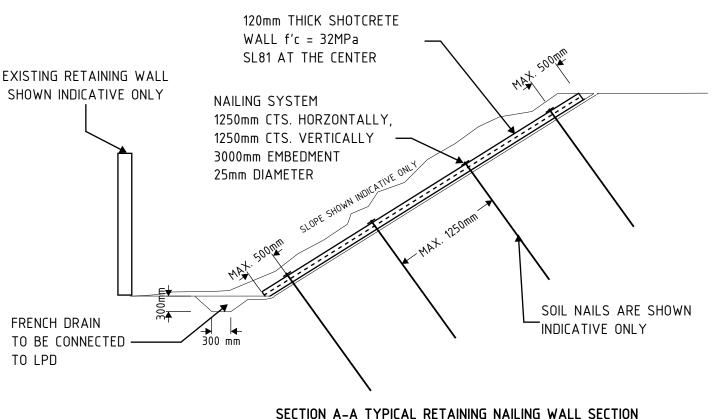


METHODOLOGY:

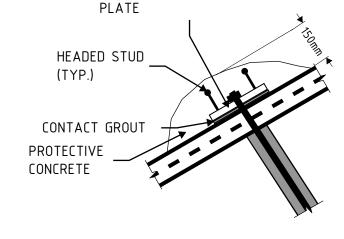
PROCESS:

- 1) PROVIDE THE TEMPORARY ACCESS AS REQUIRED.
- 2) PROVIDE STRIP DRAIN 1250mm CTS.(GEOCOMPOSITE CUSPATED STRIP FILTER DRAINS OR SIMILAR PRODUCT)
- 3) INSTALLING STEEL MESH (SL81) TO BE PLACES CENTRALLY
- 4) APPLY THE SHOTCRETE TO THE SURFACE OF THE REINFORCED AREA TO CREATE A 120 mm THICK OF WITH F'C=28 MPa
- 5) DRILLING HOLES WITH A DEPTH OF AROUND 3000mm METRES IN THE SOIL ALMOST PERPENDICULAR TO THE SOIL SURFACE IN A PATTERN OF 1250mm CTS. HORZONTALLY, 1250mm CTS. VERTICALLY.
- 6) INSTALLING THE PREPARED NAILS, INJECTING THE CEMENT GROUT TO THE ANNULAR BETWEEN THE NAILS AND THE HOLE.
- 7) APPLYING STEEL END PLATES TO THE NAIL HEADS AND APPLYING THE PROTECTIVE CONCRETE ON IT.
- 8) PROVIDE A CONNECTION AT THE BOTTON FROM THE STRIP DRAIN TO A FRENCH DRAIN





GEOCOMPOSITE CUSPATED STRIP FILTER DRAINS OR SIMILAR PRODUCT AT 1250 CTS.



200x200x20mm MIN. WASHER

TYPICAL DRAINAGE SYSTEM **PLAN VIEW**

TYPICAL CROSS-SECTION OF SOIL NAIL WALL

TENDER ISSUE

NOT FOR CONSTRUCTION

City of Darebin HC RETAINING WALL N.T.S @ A3 | DATE STARTED 24.08.2022 42 James Street, NORTHCOTE, VIC 3070 S44580-281686 S10 PLAN, SECTION AND DETAIL