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Department of Transport and Planning

ELTHAM - YARRA GLEN ROAD BRIDGE
MELWAY 266H10

YARRA GLEN, VICTORIA
STRUCTURE STRENGTHENING OPTION

DRAWING INDEX

DRAWING No.	DRAWING TITLE
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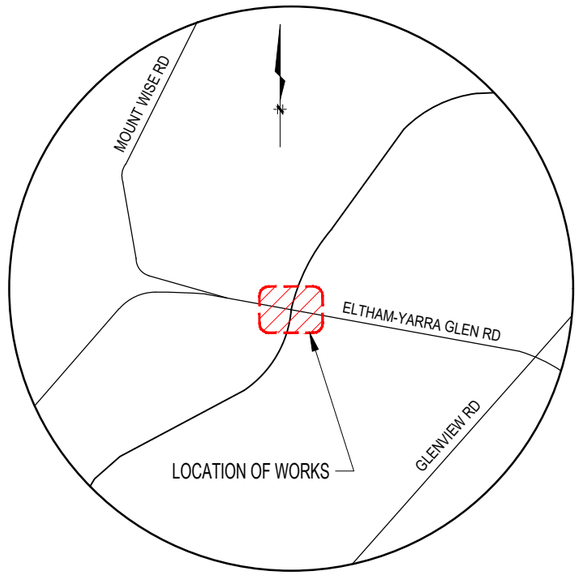

LOCALITY PLAN

ISSUE FOR TENDER

Revised By	In Serv	Rev.	Date	Description	Designed	Checked	Ind. Review	Approved
HATCH		C	26/06/24	IFC CHECK PRINT	A.Z.	A.C.		S.S.
HATCH		B	04/06/24	ISSUED FOR REVIEW	A.Z.	A.C.		S.S.
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Consultant: HATCH

Franchisee / Lessee: VICTORIA State Government | Department of Transport and Planning

STRUCTURAL

YARRA GLEN
ELTHAM - YARRA GLEN ROAD BRIDGE
MELWAY 266H10
DRAWING INDEX & LOCALITY PLAN

Up Location	Down Location	Datum
East. North. ID#	East. North. ID#	

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Drawn By	Designed By
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Checked By	**Ind. Review**
A. CHAUDRY	
Approved	**Approval Date**
S. SALIM	

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NOTES:

G1. THE DRAWINGS SHALL BE READ IN CONJUNCTION WITH RELEVANT AUSTRALIAN STANTARDS AND VICROADS SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE WORK. ANY DISCREPANCY SHALL BE REFERRED TO THE NOMINATED AUTHORITY BEFORE PROCEEDING WITH THE WORK. IN CASE OF DISCREPANCY, PRECEDENCE IS GIVEN TO DRAWINGS, NOTES THEN SPECIFICATION.

G2. G3. DEFINITIONS:

UD = URBAN DESIGN	AS = AUSTRALIAN STANDARD	SLS = SERVICEABILITY LIMIT STATE
C/C = CENTRE TO CENTRE	RFP = REQUEST FOR PROPOSAL	SOP = SETTING OUT POINT
CJ = CONSTRUCTION JOINT	ESL = EXISTING SURFACE LEVEL	SUP = SHARED USE PATH
CTJ = CONTRACTION JOINT	FSL = FINISHED SURFACE LEVEL	TYP = TYPICAL
DSL = DESIGN SURFACE LEVEL	MPL = MEDIUM PERFORMANCE LEVEL	ULS = ULTIMATE LIMIT STATE
F = FREE MOVEMENT	LV = LENGTH VARIES	U.N.O. = UNLESS NOTED OTHERWISE
HPL = HIGH PERFORMANCE LEVEL	N/A = NOT APPLICABLE	UTS = ULTIMATE TENSILE STRENGTH
SH = SHOULDER	NSL = NATURAL SURFACE LEVEL	MIN = MINIMUM
TL = TRAFFIC LANE	NOM = NOMINAL	MAX = MAXIMUM
EJ = EXPANSION JOINT	PC = PRECAST CONCRETE	CL = CENTRE LINE
ITP = INSPECTION TEST PLAN	PSC = PRESTRESSED CONCRETE	NTS = NOT TO SCALE
VIC = VICTORIA	R = RESTRAINED MOVEMENT	GALV = GALVANISED
RC = REINFORCED CONCRETE	No. = NUMBERS OFF	RL = REDUCED LEVEL
RL = REDUCED LEVEL	SDL = SUPERIMPOSED DEAD LOAD	DTP = DEPARTMENT OF TRANSPORT AND PLANNING
C/W = COMPLETE WITH		

G3. UNLESS NOTED OTHERWISE:
ALL DIMENSIONS ARE IN MILLIMETRES.
ALL REDUCED LEVELS ARE IN METRES.
ALL SET OUT CO-ORDINATES ARE TO MAP GRID AUSTRALIA ZONE 55 (GDA94).
ALL LEVELS ARE TO AUSTRALIAN HEIGHT DATUM (AHD).
ALL CHAINAGES REFER TO THE ROAD DESIGN LINE AND ARE NOTED IN METRES.

G4. ALL DIMENSIONS RELEVANT TO SETTING OUT AND OFF-SITE WORK SHALL BE CONFIRMED AND VERIFIED BY THE CONTRACTOR BEFORE CONSTRUCTION AND FABRICATION IS COMMENCED. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE NOMINATED AUTHORITY. THE DRAWINGS SHALL NOT BE SCALED.

G5. WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE, AUSTRALIAN STANDARDS (INCLUDING ALL AMENDMENTS), VICROADS STANDARD SPECIFICATIONS AND THE REQUIREMENTS OF ANY OTHER RELEVANT STATUTORY AUTHORITIES. CURRENT AT THE COMMENCEMENT OF CONTRACT.

G6. IF THE CONTRACTOR INTENDS TO VARY THE SCOPE OR METHOD OF WORKS OR MATERIALS USED, THE CONTRACTOR SHALL SUBMIT FULL DETAILS OF THE PROPOSAL TO THE SUPERINTENDENT FOR REVIEW AND APPROVAL BEFORE THE WORK IS COMMENCED.

G7. THE STRUCTURAL DRAWINGS DO NOT SHOW ALL DETAILS OF FIXTURES, INSERTS, SLEEVES, OPENINGS, ETC. REQUIRED BY THE VARIOUS TRADES FOR ANY TEMPORARY WORK UNLESS NOTED OTHERWISE IN THE DRAWINGS. ALL SUCH DETAILS, INCLUDING RECESSES AND CHASES, MUST BE APPROVED BY THE SUPERINTENDENT BEFORE PROCEEDING WITH CONSTRUCTION.

G8. OBTAIN NECESSARY PERMITS AND APPROVALS FROM RELEVANT AUTHORITIES BEFORE WORK ON SITE IS COMMENCED

G9. SUPPLY RELEVANT SECTIONS OF THESE GENERAL NOTES AND THE SPECIFICATION TO SUB-CONTRACTORS

G10. THE CONTRACTOR RETAINS RESPONSIBILITY OF THE WORKS REGARDLESS OF ANY INSPECTION CARRIED OUT BY OTHERS.

G11. THESE DRAWINGS HAVE BEEN PREPARED BASED ON THE CONSTRUCTION PROCEDURE AND PARTICULAR CONSTRUCTION LOADS ANY PROPOSED CHANGES TO THESE SHALL BE PROVIDED TO THE DESIGNER, THE PROOF ENGINEER (WHERE REQUIRED) AND RELEVANT TEMPORARY WORKS DESIGNER FOR APPROVAL PRIOR TO THE COMMENCING THE WORKS.

G12. THE DESIGN PRESENTED HEREIN DOES NOT COVER THE TEMPORARY WORKS REQUIRED TO SUPPORT CONSTRUCTION ACTIVITIES. DETERMINATION OF THE REQUIREMENT OF TEMPORARY WORKS, THEIR DESIGN AND PROVISION TO RETAIN THE ORIGINAL STRUCTURE IN PLACE DURING CONSTRUCTION AND TO SUPPORT CONSTRUCTION WORKS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

PROPRIETARY ITEMS

P1. ALL PROPRIETARY PRODUCTS SHALL BE INSTALLED STRICTLY IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS. NOMINATION OF PROPRIETARY ITEMS DOES NOT INDICATE EXCLUSIVE PREFERENCE BUT INDICATES THE REQUIRED PROPERTIES OF THE ITEM. SIMILAR ALTERNATIVES HAVING REQUIRED PROPERTIES MAY BE OFFERED TO THE SUPERINTENDENT AND DESIGNER FOR APPROVAL.

EXISTING SERVICES

U1. DUE ATTENTION AND CARE SHALL BE MAINTAINED BY THE CONTRACTOR REGARDING CARRYING OUT OF CONSTRUCTION ACTIVITIES IN AREAS CONTAINING EXISTING SERVICES.

U2. THE LOCATIONS OF ALL EXISTING UNDERGROUND SERVICES IDENTIFIED ON THE DRAWINGS ARE INDICATIVE ONLY. ALL EXISTING SERVICES LOCATIONS SHALL BE VERIFIED ON SITE AND ALL AFFECTED SERVICES SHALL BE PROTECTED BY THE CONTRACTOR BEFORE COMMENCING WORK. THE CONTRACTOR SHALL SATISFY THEMSELVES THAT THE LOCATION OF ALL SERVICES THAT MAY BE AFFECTED BY THE WORKS HAS BEEN CORRECTLY IDENTIFIED.

U3. PRIOR TO ANY EXCAVATION, PILING OR CONSTRUCTION ON THE SITE, THE CONTRACTOR SHALL CHECK WITH ALL RELEVANT AUTHORITIES AND OBTAIN ALL NECESSARY PERMITS AND BY SITE EXPLORATION TO DETERMINE THE LOCATION OF ANY EXISTING SERVICES WHICH MAY AFFECT THE WORKS. IF SERVICES ARE FOUND TO EXIST, THEN THE CONTRACTOR SHALL NOTIFY THE NOMINATED AUTHORITY ON THE ITP AND OBTAIN INSTRUCTIONS PRIOR TO PROCEEDING. EXCAVATION GREATER THAN 1.5m REQUIRE NOTIFICATION TO WORKSAFE VIC AT LEAST 3 DAYS PRIOR TO WORKS

U4. ALL EXCAVATIONS IN THE VICINITY OF KNOWN UTILITY SERVICE LOCATIONS OR IN LOCATIONS WHERE THE EXACT UTILITY SERVICE LOCATION HAS NOT BEEN ESTABLISHED, SHALL BE CARRIED OUT SUCH THAT NO DAMAGE TO THE UTILITY SERVICE OCCURS

U5. ALL EXCAVATIONS SHALL BE CARRIED OUT FOLLOWING THE REGULATIONS SET OUT BY EACH INDIVIDUAL UTILITY SERVICE AUTHORITY. IT IS THE CONTRACTORS RESPONSIBILITY TO OBTAIN THESE REGULATIONS AND TO COMPLY WITH THEM.

U6. THE CONTRACTOR SHALL BE AWARE OF AND COMPLY WITH ALL UTILITY SERVICE REGULATIONS AND STANDARDS IN RELATION TO THE USE OF MACHINERY AND EQUIPMENT IN THE VICINITY OF SERVICES.

U7. UNCHARTED UTILITY SERVICES MAY BE PRESENT ON SITE. THE CONTRACTOR SHALL MAKE ALL EFFORTS TO IDENTIFY THE PRESENCE OF UTILITY SERVICES ON THE SITE AND ARRANGE FOR RELOCATION OR PROTECTION AS NECESSARY TO SUIT THE WORKS IN CONJUNCTION WITH THE RELEVANT SERVICE AUTHORITY.

U8. THE CONTRACTOR SHALL LOCATE AND SEAL ALL SERVICE OPENINGS IF IN CONFLICT WITH THE OPERATIONS SO AS TO PREVENT THE POSSIBLE INTRUSION OF GROUT INTO ANY EXISTING SERVICES.

TEMPORARY WORKS

TW1. THESE DRAWINGS DETAIL TEMPORARY WORKS ONLY IMPACTING THE PERMANENT WORK OR CAST IN THE PERMANENT WORKS TO FACILITATE CONSTRUCTION. ANY OTHER TEMPORARY WORKS ARE THE RESPONSIBILITY OF THE TEMPORARY WORK CONTRACTOR

TW2. DURING CONSTRUCTION, CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STRUCTURE IN A STABLE CONDITION AND ENSURING NO PART IS OVER STRESSED UNDER CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL INSTALL TEMPORARY BRACING, FALSEWORK AND FORMWORK AS INDICATED IN THESE DRAWINGS AND ALL RELEVANT TEMPORARY WORKS AS REQUIRED.

TW3. STRUCTURES HAVE BEEN ASSESSED ONLY FOR ANY PERMANENT STRESSES CREATED BY TEMPORARY STAGES (i.e. LIFTING OR SEGMENTAL CONSTRUCTION). THE CONTRACTOR SHALL PROVIDE FOR THE METHOD OF CONSTRUCTION AND THE MAINTENANCE OF SAFETY DURING CONSTRUCTION. IF ANY STRUCTURAL ELEMENT PRESENTS DIFFICULTY IN CONSTRUCTABILITY OR SAFETY, THE MATTER SHALL BE REFERRED TO THE DESIGNER FOR RESOLUTION BEFORE PROCEEDING WITH THE WORK.

TW4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT THE MELBOURNE WATER AQUEDUCT FROM CONTAMINATION RESULTING FROM CONSTRUCTION WORKS. ANY COVERINGS/HOARDINGS/SCAFFOLDING SYSTEM AND / OR TEMPORARY PIPES ETC, REQUIRED TO BE PROVIDED FOR THIS PURPOSE, WILL HAVE TO BE DESIGNED AND ARRANGED BY THE CONTRACTOR. THE DETAILS AND DESIGNS SHALL BE APPROVED BY MELBOURNE WATER BEFORE COMMENCEMENT

DEMOLITION

D1. DEMOLITION (IF ANY) SHALL BE AS PER AS 2601. TAKE PRECAUTIONS NECESSARY FOR PROTECTION OF PERSONS AND PROPERTY. OBTAIN NECESSARY PERMITS AND APPROVALS FROM RELEVANT AUTHORITIES BEFORE COMMENCING WORK ON SITE

D2. DO NOT USE EXPLOSIVES FOR ANY DEMOLITION WORK. CARE SHALL BE TAKEN TO RETAIN THE INTEGRITY OF EXISTING ELEMENTS BEING RETAINED/INCORPORATED INTO THE PROJECT WORKS. DAMAGED COMPONENTS SHALL BE REPORTED TO THE ENGINEER AND NOMINATED AUTHORITY AND SHALL BE RECTIFIED TO THE SATISFACTION OF THE INDIVIDUALS.

D3. THE CONTRACTOR SHALL DEMONSTRATE THAT ALL DEMOLITION WORKS SHALL NOT CRACK OR OTHERWISE DAMAGE REMAINING STRUCTURAL COMPONENTS. METHOD STATEMENT FOR DEMOLITION SHALL BE SUBMITTEDTO THE NOMINATED AUTHORITY FOR APPROVAL PRIOR TO STARTING DEMOLITION

FORMWORK AND FALSEWORK

FM1. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, PROOF ENGINEER CERTIFICATION, CONSTRUCTION, INSPECTION AND PERFORMANCE OF THE FORMWORK AND FALSEWORK, EXCEPT TO THE EXTENT THAT FORMWORK DESIGN IS SHOWN ON THE STRUCTURAL DRAWINGS.

FM2. DESIGN AND CONSTRUCTION AND STRIPPING TIMES SHALL COMPLY WITH VICROADS SPECIFICATIONS 614, 610 AND AS 5100 UNLESS OTHERWISE APPROVED BY THE SUPERINTENDENT.

FM3. THE FORMWORK SHALL NOT BE DESIGNED TO RELY ON RESTRAINT OR SUPPORT FROM THE PERMANENT STRUCTURE WITHOUT PRIOR APPROVAL FROM THE DESIGN ENGINEER AND THE SUPERINTENDENT.

FM5. ALL FORMED EXPOSED EDGES AND RE-ENTRANT CORNERS SHALL BE CHAMFERED OR FILLETED 20 x 20mm UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS OR VARIED BY THE PROJECT REQUIREMENTS.

FM6. DIMENSIONAL TOLERANCES SHALL COMPLY WITH THE STANDARD SPECIFICATIONS.

CONSTRUCTION METHODOLOGY

CM1. THE CONSTRUCTION METHODOLOGY FOR THE WORKS SHALL BE PREPARED BY THE CONTRACTOR AND GOTTEN APPROVED FROM THE SUPERINTENDENT PRIOR TO COMMENCEMENT OF THE CONSTRUCTION ACTIVITIES

DESIGN SPECIFICATION

DS1. DESIGN STANDARDS: AS 5100 BRIDGE DESIGN

DS2. DESIGN LIFE 100 YEARS

DS3. LIVE LOAD: SM1600 AND HS20 TO AS 5100 BRIDGE DESIGN STANDARDS. THESE LOADINGS WILL BE TAKEN BY THE COMBINED ACTION OF THE NEW CONCRETE STRUCTURE AND THE EXISTING MASONRY ARCH

CONCRETE

C1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 5100 AND VICROADS SPECIFICATION FOR BRIDGE WORKS .

C2. IF ABBREVIATIONS OTHER THAN THOSE IN ACCORDANCE WITH AS 1100.501 ARE USED AND THEIR MEANING IS
NOT EXPLICITLY SHOWN ON DRAWINGS, REFER TO SUPERINTENDENT FOR CLARIFICATION PRIOR TO PROCEEDING.

C3. CONCRETE SHALL BE FROM AN APPROVED SOURCE AND SHALL COMPLY WITH THE REQUIREMENTS OF THE FOLLOWING STANDARDS,
AS 5100.5 BRIDGE DESIGN PART 5 CONCRETE
AS 3972 GENERAL PURPOSE AND BLENDED CEMENT
AS 1379 SPECIFICATION AND SUPPLY OF CONCRETE
AS 2758.1 AGGREGATES AND ROCK FOR ENGINEERING PURPOSES
VICROADS STANDARD SPECIFICATION FOR ROADS AND BRIDGEWORKS SECTION 610 STRUCTURAL CONCRETE
VICROADS STANDARD SPECIFICATION FOR ROADS AND BRIDGEWORKS SECTION 606 BORED CIP PILE

C4. CONCRETE SHALL BE SPECIAL CLASS PERFORMANCE CONCRETE AS SPECIFIED IN VICROADS STANDARD SPECIFICATION FOR ROADS AND BRIDGEWORKS SECTION 610. CONCRETE GRADE AND MINIMUM COVER TO REINFORCEMENT SHALL BE AS PER THE TABLE BELOW UNLESS NOTED OTHERWISE ON THE DRAWINGS

ELEMENT	CONCRETE GRADE	MINIMUM 28 DAY COMPRESSIVE STRENGTH (MPa)	MINIMUM COVER (mm)
BORED PILES	VR400/40	40	75
CAST-IN-SITU	VR450/50	50	40

NOTES:
A. COVER IS THE CLEAR DISTANCE BETWEEN ANY REINFORCING INCLUDING FITMENTS AND THE FACE OF THE STRUCTURAL ELEMENT.
B. FOR ALL EXTERNAL SURFACES, PROVIDE APPROVED BAR CHAIRS. TIE WIRE SHALL NOT BE NAILED TO THE FORMS. REINFORCING BARS SHALL NOT BE USED TO KEEP FORMS APART AND A THROUGH TIE STEEL SYSTEM SHALL BE USED TO TIE THE FORMS.
C. THE COVERS SHALL BE MAINTAINED USING APPROVED BAR CHAIRS AT MAX 800mm CENTRES (BOTH WAYS U.N.O. IN SLABS BAR CHAIRS SHALL BE AT 800 x 800mm MAXIMUM CENTRES. BAR CHAIRS SHALL BE PROVIDED ALONG THE EDGES OF ALL CONSTRUCTION JOINTS.
D. EXTERNAL ELEMENTS ARE THOSE EXPOSED TO WEATHER, RAIN AND WATER PENETRATION AND ARE CLASSIFIED B1 UNLESS VARIED BY THE PROJECT REQUIREMENTS.
E. THE MAXIMUM SIZE OF AGGREGATE IN THE CONCRETE SHALL BE NOT MORE THAN 14mm.
F. USE OF CURING COMPOUND IS NOT ALLOWED

C5. THE CONCRETE USED SHALL BE SELF COMPACTING CONCRETE PRODUCED AND PLACED IN LINE WITH THE REQUIREMENTS OF VICROADS STANDARD SPECIFICATION 610. THE USE OF MECHANICAL VIBRATORS IS NOT ALLOWED. THIS IS REQUIRED TO ENSURE THAT NO VIBRATION EFFECTS ARE IMPARTED TO THE EXISTING MASONRY ARCH.

C6. THE FINISHED CONCRETE SHALL BE A DENSE HOMOGENEOUS MASS, COMPLETELY FILLING THE FORMWORK THOROUGHLY EMBEDDING THE REINFORCEMENT AND FREE OF AIR POCKETS. ALL CONCRETE INCLUDING SLABS ON GROUND AND FOOTINGS SHALL BE COMPACTED WITH MECHANICAL VIBRATORS.

C7. NO HOLES, CHASES OR EMBEDMENT OF PIPES AND CONDUITS OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT PRIOR APPROVAL OF THE NOMINATED AUTHORITY.

C8. CONSTRUCTION JOINTS SHALL BE LOCATED AND DETAILED AS SHOWN ON THE DRAWINGS OR SHALL BE LOCATED AND FORMED TO THE APPROVAL OF THE SUPERINTENDENT. CONCRETE AGAINST WHICH NEW CONCRETE IS TO BE PLACED SHALL BE INTENTIONALLY ROUGHENED IN ACCORDANCE WITH VICROADS STANDARD SPECIFICATION FOR ROADS AND BRIDGEWORKS SECTION 610 TO EXPOSE THE COARSE AGGREGATE TO ENSURE A SATISFACTORY BOND BETWEEN ADJACENT CONCRETE SURFACES. U.N.O. ALL CONCRETE SURFACES SHALL BE CLEAN AND FREE OF LAITANCE. THOROUGHLY MOISTEN THE ROUGHENED SURFACE IMMEDIATELY PRIOR TO PLACING CONCRETE.

C9. CURING OF CONCRETE SHALL COMMENCE IMMEDIATELY AFTER FINISHING OPERATIONS HAVE BEEN COMPLETED. THE CONCRETE SHALL BE CURED IN ACCORDANCE WITH VICROADS STANDARD SPECIFICATION FOR ROADS AND BRIDGEWORKS SECTION 610.

C10. ALL CONCRETE SURFACE FINISHES ARE TO BE IN ACCORDANCE WITH VICROADS STANDARD SPECIFICATION FOR ROADS AND BRIDGEWORKS SECTION 610.

C11. CONCRETE SIZES DO NOT INCLUDE THICKNESS OF APPLIED FINISHES.

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Consultant: HATCH

Franchisee / Lessee: VICTORIA State Government | Department of Transport and Planning

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ELTHAM - YARRA GLEN ROAD BRIDGE
MELWAY 266H10
GENERAL NOTES - SHEET 1 OF 2

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CONCRETE (CONTINUED)

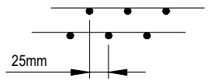
C12. UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWING OR VARIED BY THE PROJECT REQUIREMENTS ALL CONCRETE EDGES HAVING A CONTAINED ANGLE LESS THAN 120° SHALL BE PROVIDED WITH 20mm FILLETS OR CHAMFERS AS APPROPRIATE. MAINTAIN COVER TO REINFORCEMENT AT THESE LOCATIONS.
C13. BEFORE PLACING CONCRETE, REMOVE ALL WATER, DUST AND DEBRIS FROM THE FORMWORK.
C14. FILL ALL HOLES LEFT BY FORM TIE BOLTS WITH MORTAR MATCHING THE SURFACE COLOUR OF THE FINISHED SURFACE.

REINFORCEMENT

R1. REINFORCEMENT SHALL BE FROM AN APPROVED SOURCE AND SHALL COMPLY WITH AS 4671, AND SECTION 611 OF VICROADS STANDARD SPECIFICATIONS.
R2. REINFORCEMENT SHOWN ON THE DRAWINGS IS REPRESENTED DIAGRAMMATICALLY AND NOT NECESSARILY SHOWN IN TRUE POSITION. FOR CLARITY, BAR LOCATIONS MAY BE EXAGGERATED.
R3. REINFORCEMENT ANCHORAGE DETAILING SHALL COMPLY WITH THE AS 5100.5. MINIMUM SPLICE LENGTHS OF DEFORMED BARS ARE AS FOLLOWS U.N.O.:

MINIMUM DEVELOPMENT AND SPLICING LENGTHS FOR HORIZONTAL BARS WITH MORE THAN 300mm OF CONCRETE CAST BELOW, U.N.O.		
BAR SIZE	f'c = 40 MPa (45mm COVER)	f'c = 50 MPa (30/40mm COVER)
N12	650	650
N16	850	850
N20	1050	1050
N24	1250	1250
N28	1575	1460
N32	1935	1770
N36	2320	2145
MINIMUM DEVELOPMENT AND SPLICING LENGTHS FOR OTHER BARS THAN THOSE SPECIFIED ABOVE U.N.O.		
BAR SIZE	f'c = 40 MPa (45mm COVER)	f'c = 50 MPa (30/40mm COVER)
N12	500	500
N16	650	650
N20	800	800
N24	960	960
N28	1210	1120
N32	1485	1360
N36	1785	1650

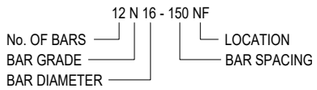
MINIMUM MESH REINFORCEMENT LAP SHALL BE 1 SPACE + 25mm



LAP NOTES

A. WHERE THE BAR SIZES AT A LAP VARY, THE LAP LENGTH SHALL BE BASED ON THE SIZE OF SMALLER BAR.
B. DECREASE THE LENGTHS BY 25% FOR STAGGERED SPLICE IF NOT MORE THAN 50% OCCUR AT ANY LOCATION FOR ALL BARS INCLUDING AMD ABOVE N20.
C. THE LAP LENGTH OF BUNDLED BARS SHALL BE INCREASED BY THE VALUES SHOWN BELOW:
   - 3 BAR BUNDLE 20%
   - 4 BAR BUNDLE 33%
D. INDIVIDUAL BARS WITHIN A BUNDLE SHALL BE TERMINATED AT DIFFERENT POINTS STAGGERED AND SHALL NOT OVERLAP, EXCEPT PILE REINFORCEMENT TERMINATING INTO PILE CAP.
E. SPLICES IN THE REINFORCEMENT SHALL BE MADE ONLY AT LOCATION SHOWN ON THE DRAWINGS OR OTHERWISE APPROVED BY THE ENGINEER.
F. REINFORCEMENT SYMBOLS:
   N GRADE 500 DEFORMED REINFORCING BARS, DUCTILITY CLASS N TO AS 4671.
   R GRADE 250 PLAIN REINFORCING BARS, DUCTILITY CLASS N TO AS 4671.
   W HARD DRAWN STEEL REINFORCING WIRE, GRADE 500 DUCTILITY CLASS L TO AS 4671.

R4. NOTATION FOR REINFORCEMENT:



STANDARD ABBREVIATIONS:

NF	-	NEAR FACE	EW	-	EACH WAY
FF	-	FAR FACE	LV	-	LENGTH VARIES
T	-	TOP	ABR	-	ALTERNATE BARS REVERSED
CP	-	CENTRALLY PLACED	ALT	-	ALTERNATE BARS
B	-	BOTTOM	NSOP	-	NOT SHOWN ON PLAN
EF	-	EACH FACE			

R5. REINFORCEMENT SPACING NOT SHOWN SHALL BE TAKEN AS EQUAL.
R6. REINFORCING BARS SHOWN MAY REPRESENT MORE THAN ONE LENGTH AND/OR PROFILE.
R7. ALL HOOKS, BENDS AND COGS ARE STANDARD AND SHALL BE IN ACCORDANCE WITH AS 5100.5 UNLESS NOTED OTHERWISE. TERMINATE ENDS OF COLUMN AND BEAM LIGATURES IN A HOOK OF AT LEAST 135 DEGREES. PROVIDE FIRST LIGATURE WITHIN 50mm OF FACE OF SUPPORT.
R8. WELDING OF REINFORCEMENT IS NOT PERMITTED UNLESS SHOWN ON THE DRAWINGS OR APPROVED BY THE NOMINATED AUTHORITY.
R9. ALL REINFORCEMENT SHALL BE SECURELY TIED WITH WIRE TIES AND ALL TIE ENDS SHALL BE TURNED INTO THE MEMBER CLEAR OF THE COVER ZONE. MESH SHALL BE SUPPORTED ON CONCRETE CHAIRS AT 800mm MAXIMUM CENTRES.
R10. ALL RE-ENTRANT CORNERS OF PENETRATIONS THROUGH SLABS SHALL BE TRIMMED USING MINIMUM 2N16 DIAGONAL CORNER BARS 1500mm LONG EACH FACE.
R11. REINFORCEMENT SHALL NOT BE CUT OR BENT ON SITE UNLESS APPROVED BY THE NOMINATED AUTHORITY.
R12. AT SLAB EDGES INCLUDING CONSTRUCTION AND OTHER JOINTS, AT LEAST ONE REINFORCING BAR SHALL BE LOCATED PARALLEL TO AND WITHIN 75mm OF THE SLAB EDGE.
R13. AT PENETRATIONS WITH DIMENSIONS LESS THAN 200mm DO NOT CUT REINFORCEMENT, RATHER GATHER REINFORCEMENT TO EACH SIDE OF PENETRATION U.N.O. ON THE PLANS. AT PENETRATIONS WITH DIMENSIONS LESS THAN 600mm PLACE REINFORCEMENT IN REQUIRED POSITION AND CUT OUT TO SUIT PENETRATION. PROVIDE ADDITIONAL BARS TO MATCH THE SIZE, LENGTH AND NUMBER OF BARS CUT, AND PLACE EQUALLY ON EACH SIDE OF THE PENETRATION U.N.O. ON PLANS. PROVIDE 2N16 DIAGONAL BARS ACROSS PENETRATION CORNERS OR THE 4 DIAGONAL SIDES OF CIRCULAR/ELLIPTICAL PENETRATIONS U.N.O. ON THE DRAWINGS.

BORED PILES

BP1. CONSTRUCTION OF BORED PILES AND TOLERANCES SHALL BE IN ACCORDANCE WITH VICROADS STANDARD SPECIFICATIONS SECTION 606, 608, 610, AS 2159 AND AS 5100 U.N.O.
BP2. THE EXCAVATION OF PILES SHALL BE OBSERVED BY A QUALIFIED GEOTECHNICAL ENGINEER TO VERIFY CONSISTENCY BETWEEN DESIGN SUBSURFACE PROFILE AND ENCOUNTERED CONDITION. PILING RECORD SHALL BE MAINTAINED IN ACCORDANCE WITH VICROADS SECTION 606 AND AS 2159.
BP3. CONCRETE SHALL BE PLACED AS SOON AS POSSIBLE AFTER BORING AND AFTER FOUNDING LEVEL AND MATERIAL HAS BEEN VERIFIED BY THE GEOTECHNICAL ENGINEER AND OBTAINED REQUIRED APPROVAL FROM THE SUPERINTENDENT IF NECESSARY. TEMPORARY LINING SHALL BE USED TO PREVENT ANY WATER LEAKAGE AND SOIL COLLAPSE AS REQUIRED.
BP4. THE BASE OF THE PILE SHALL BE FOUNDED IN ORIGINAL UNDISTURBED MATERIAL. THE BASE SHALL BE CLEANED OUT OF ALL LOOSE AND DISTURBED MATERIAL PRIOR TO PLACING CONCRETE. CARE SHALL BE TAKEN TO PREVENT LOOSE SURFACE MATERIAL FALLING INTO THE HOLE.
BP5. PROPER SAFETY PRECAUTIONS SHALL BE TAKEN TO AVOID INJURY TO PEOPLE. ANY UNATTENDED HOLES SHALL BE COVERED OR FENCED OFF AT ALL TIMES.
BP6. WHERE THE FINAL CUT-OFF LEVEL IS ABOVE NATURAL GROUND LEVEL, THE PILES MUST BE FORMED TO THE CORRECT LEVEL BY USING TEMPORARY LINERS.
BP7. CONCRETE MUST BE PLACED THROUGH A TREMIE TUBE AND MUST NOT BE DROPPED FROM A HEIGHT GREATER THAN 2m THROUGH AIR. CONCRETE WHICH IS BEING DISCHARGED FROM A TREMIE MUST BE POSITIVELY GUIDED AWAY FROM THE PILE REINFORCEMENT SO THAT SEGREGATION IS NOT CAUSED BY THE FLOW OF CONCRETE IMPINGING ON THE REINFORCEMENT.
BP8. PROPER DRILLING AND PILE INSTALLATION METHODOLOGY NEEDS TO BE APPLIED BY THE PILING CONTRACTOR TO AVOID COLLAPSE OF THE DRILLED HOLE. THIS MIGHT REQUIRE THE USE OF SUPPORT FLUID IN CONJUNCTION WITH TEMPORARY CASING. IF SUPPORT FLUIDS ARE USED, PRESSURE HEAD DIFFERENCE OF MINIMUM 3m ABOVE STANDING GROUND WATER LEVEL IS RECOMMENDED.
BP9. WHERE PILES ARE TO BE FOUNDED IN ROCK, THEY MUST EXTEND A MINIMUM OF ROCK SOCKET LENGTH AS NOMINATED ON THE DRAWINGS.
BP10. NO PILE CONSTRUCTION MUST BE COMMENCED WITHIN 2.5m CLEAR DISTANCE OF A NEWLY CAST PILE UNTIL THE CONCRETE IN THE PILE HAS ATTAINED A STRENGTH OF 15 MPa. REFER TO SECTION 606.04 OF VICROADS STANDARD SPECIFICATION FOR OTHER REQUIREMENTS ON PROTECTION OF ADJACENT PILES.
BP11. PILE TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH VICROADS STANDARD SPECIFICATION SECTION 606 OR 608 AS APPROPRIATE.
BP12. PILES SHALL BE INSTALLED TO THE TOE LEVEL THAT SATISFY THE GEOTECHNICAL REQUIREMENTS. LEVEL, ROCK, QUALITY, ROCK SOCKET LENGTH AND PILE BORE ROUGHNESS SHALL BE CONFIRMED DURING PILE CONSTRUCTION BY A GEOTECHNICAL ENGINEER IN ACCORDANCE WITH AN APPROVED CONSTRUCTION METHOD. THE GEOTECHNICAL ENGINEER SHALL BE INFORMED PRIOR TO ANY DRILLING TAKING PLACE. PILE DRILLING SHALL BE WITNESSED BY THE GEOTECHNICAL ENGINEER.
BP13. ALLOWANCE SHOULD BE MADE BY THE PILING CONTRACTOR FOR SPLICING OF ADDITIONAL CAGE LENGTHS IN THE CASE WHERE FOUNDING MATERIALS ARE DEEPER THAN EXPECTED REQUIRING INCREASED PILE LENGTH.
BP14. FOR GEOTECHNICAL INFORMATION REFER TO THE GEOTECHNICAL INTERPRETATIVE REPORT PREPARED BY CIVILTEST (REPORT No. 1321612-1)

BACKFILL

B1. THE BACKFILL SHALL BE TYPE A FILL AS PER VICROADS SPECIFICATION 204 WITHIN THE EXTENTS SHOWN IN THE DRAWINGS.
B2. THE FILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 150mm COMPACTED THICKNESS INLINE WITH VICROADS SPECIFICATION 204.11.
B3. NO DRAINAGE LAYER SHALL BE PROVIDED BEHIND THE CONCRETE STRUCTURE AS PART OF THE BACKFILL LAYER.
B4. UPON COMPLETION OF THE BACKFILL, INSTALL PAVEMENT AND COVER IT WITH ASPHALT LAYER TO MATCH THE ADJACENT ROAD LEVEL.

ISSUE FOR TENDER

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Consultant: HATCH

Franchisee / Lessee: VICTORIA State Government — Department of Transport and Planning

STRUCTURAL

YARRA GLEN
ELTHAM - YARRA GLEN ROAD BRIDGE
MELWAY 266H10
GENERAL NOTES - SHEET 2 OF 2

Up Location	Down Location	Datum
East. North. ID#	East. North. ID#	

File Name: H372089-STR01-230-251-1003.DWG
Sheet No.: 03 of 12
In Serv.
Scale: N.T.S.
Sheet Size: A3

Project Drawing Number: H372089-STR01-230-251-1003

Drawn By	Designed By
M. SIMMONS	A. ZABIHI
Checked By	Ind. Review
A. CHAUDRY	
Approved	Approval Date
S. SALIM	
Drawing Number	Revision
	C

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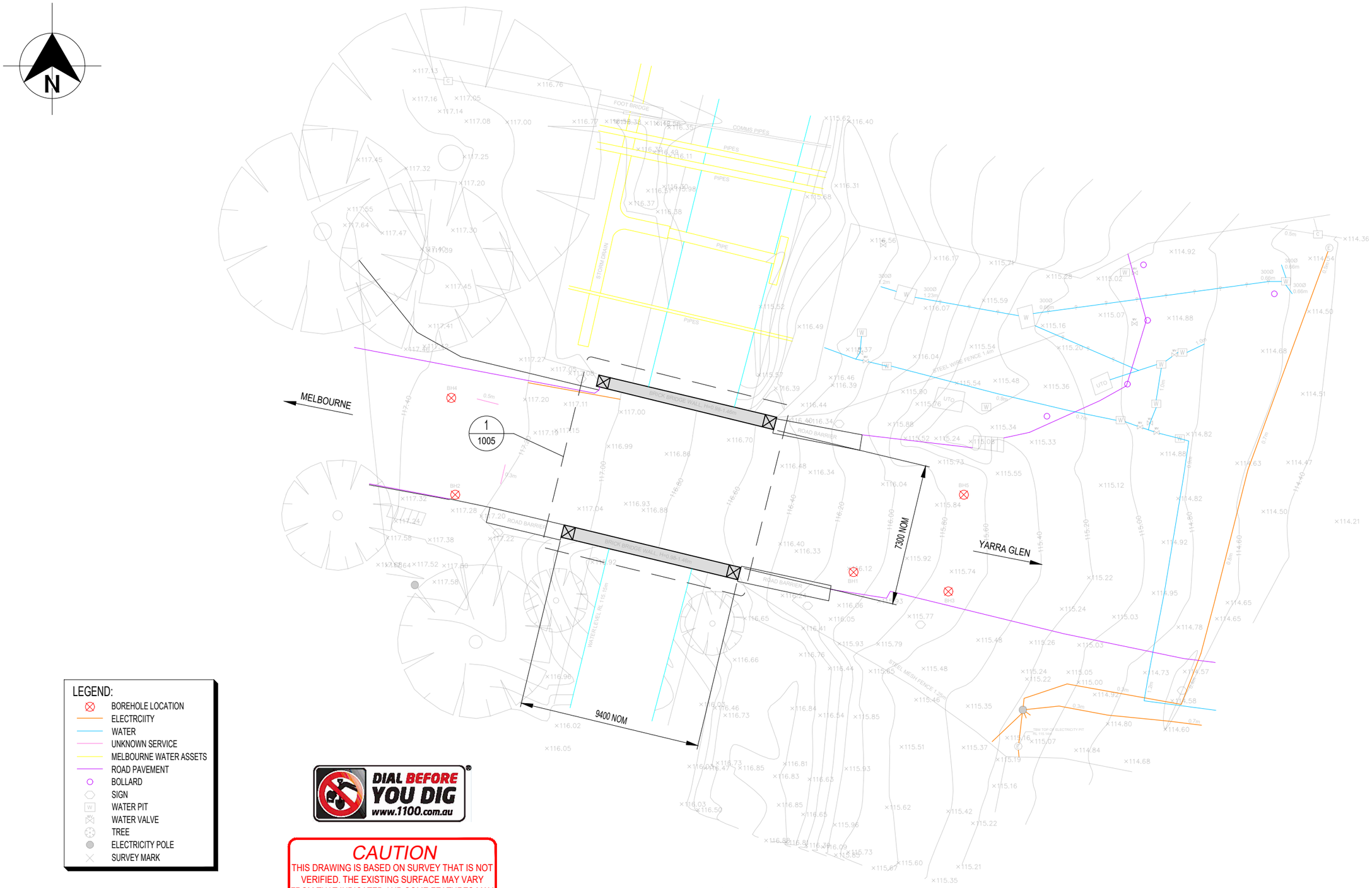

LEGEND:
- BOREHOLE LOCATION
- ELECTRCIITY
- WATER
- UNKNOWN SERVICE
- MELBOURNE WATER ASSETS
- ROAD PAVEMENT
- BOLLARD
- SIGN
- WATER PIT
- WATER VALVE
- TREE
- ELECTRICITY POLE
- SURVEY MARK

2000 1000 0 2000 4000 6000 8000 10000mm

SCALE: 1:200

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PLAN - EXISTING STRUCTURE

1:200

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STRUCTURAL

YARRA GLEN

ELTHAM - YARRA GLEN ROAD BRIDGE
MELWAY 266H10
SITE PLAN

Up Location	Down Location	Datum
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File Name: H372089-STR01-230-251-1004.DWG

Sheet No.: 04 of 12

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Scale: 1:200 | Sheet Size: A3

Project Drawing Number	
H372089-STR01-230-251-1004	
Drawn By: M. SIMMONS	Designed By: A. ZABIHI
Checked By: A. CHAUDRY	Ind. Review
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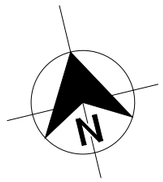
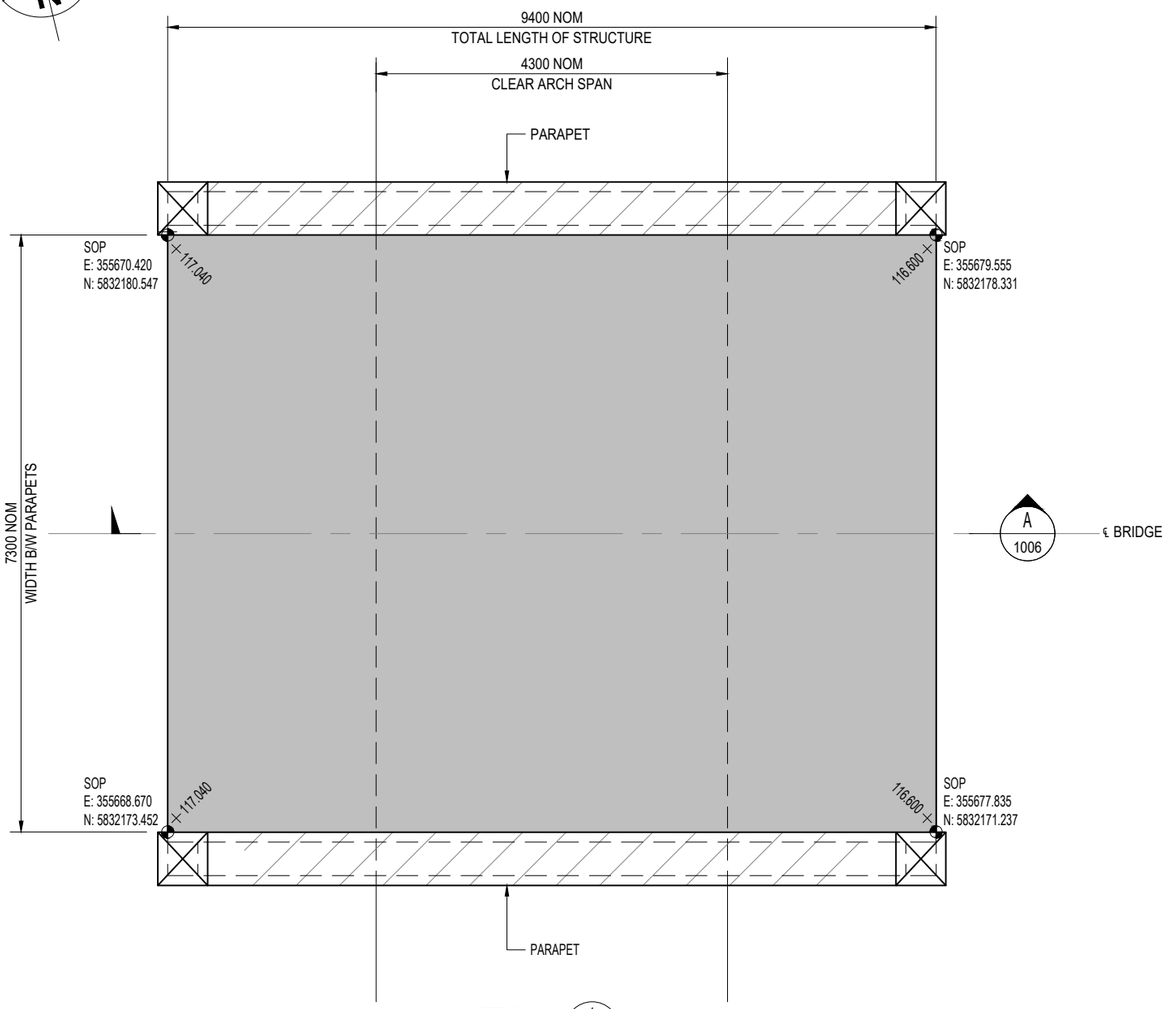
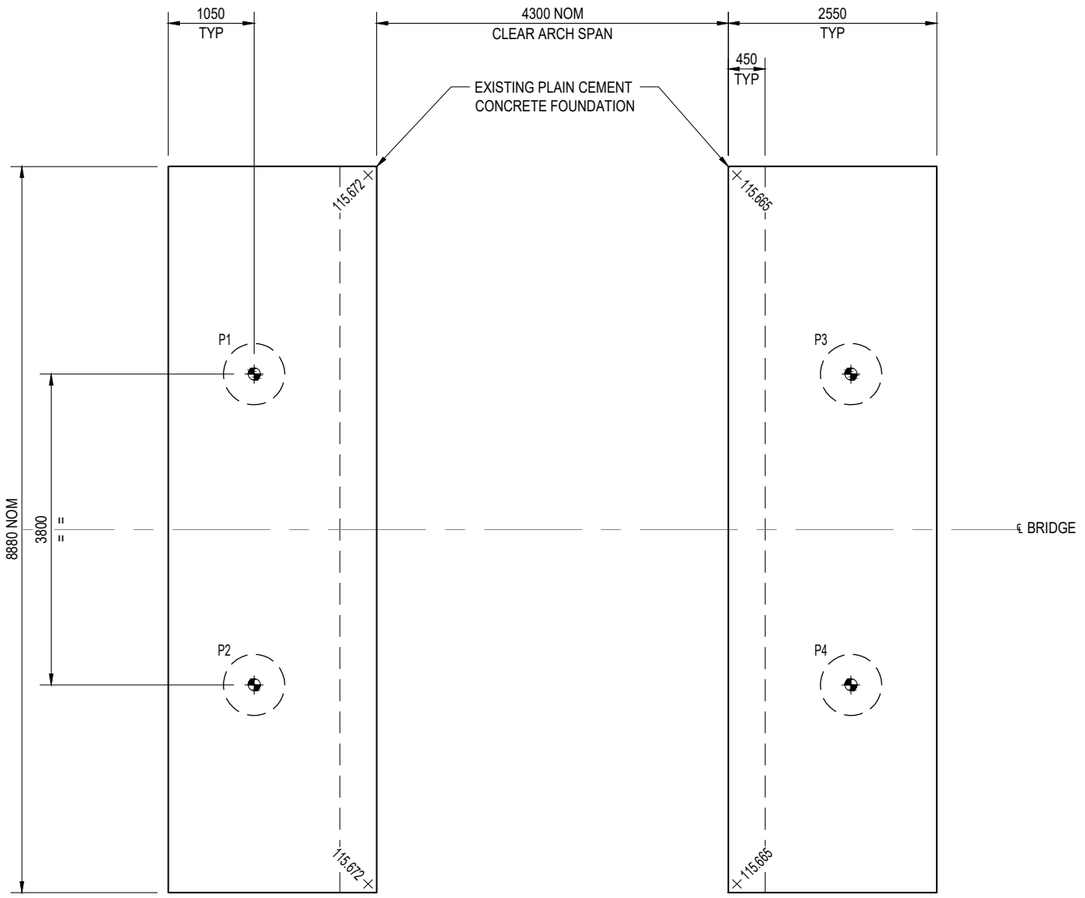




DETAIL 1:75 — 1/1004

PROPOSED CONCRETE ARCH



FOOTING PLAN

1:75

LEGEND:

- CONCRETE ARCH STRUCTURE
- CAST IN-SITU PILES
- SET OUT POINT

500 375 0 750 1500 2250 3000 3750mm

SCALE: 1:75

PILE SCHEDULE						
PILE I.D.	EASTING (mm)	NORTHING (mm)	PILE DIAMETER (mm)	MINIMUM PILE LENGTH (m)	TOP OF PILE LEVEL (m)	BOTTOM OF PILE LEVEL (m)
P1	355671.028	5832178.599	750	12.000	116.000	104.000
P2	355670.136	5832174.906	750	12.000	116.000	104.000
P3	355678.123	5832176.878	750	12.000	116.000	104.000
P4	355677.227	5832173.185	750	12.000	116.000	104.000

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NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE.
2. FIVE CONCRETE COMPRESSIVE STRENGTH CORES OF 75MM DIAMETER AND 150MM DEPTH WERE SAMPLED THROUGH THE NORTHWEST FOUNDATION AND TESTED AS PER AS1012. AVERAGE CONCRETE COMPRESSIVE STRENGTH IS OBTAINED TO BE 19.6 MPa.

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Consultant

HATCH

Franchisee / Lessee

VICTORIA State Government — Department of Transport and Planning

STRUCTURAL

YARRA GLEN

ELTHAM - YARRA GLEN ROAD BRIDGE
MELWAY 266H10
GENERAL ARRANGEMENT - PLAN

Up Location	Down Location	Datum
East. North. ID#	East. North. ID#	

File Name: H372089-STR01-230-251-1005.DWG

Sheet No.: 05 of 12

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A. CHAUDRY	
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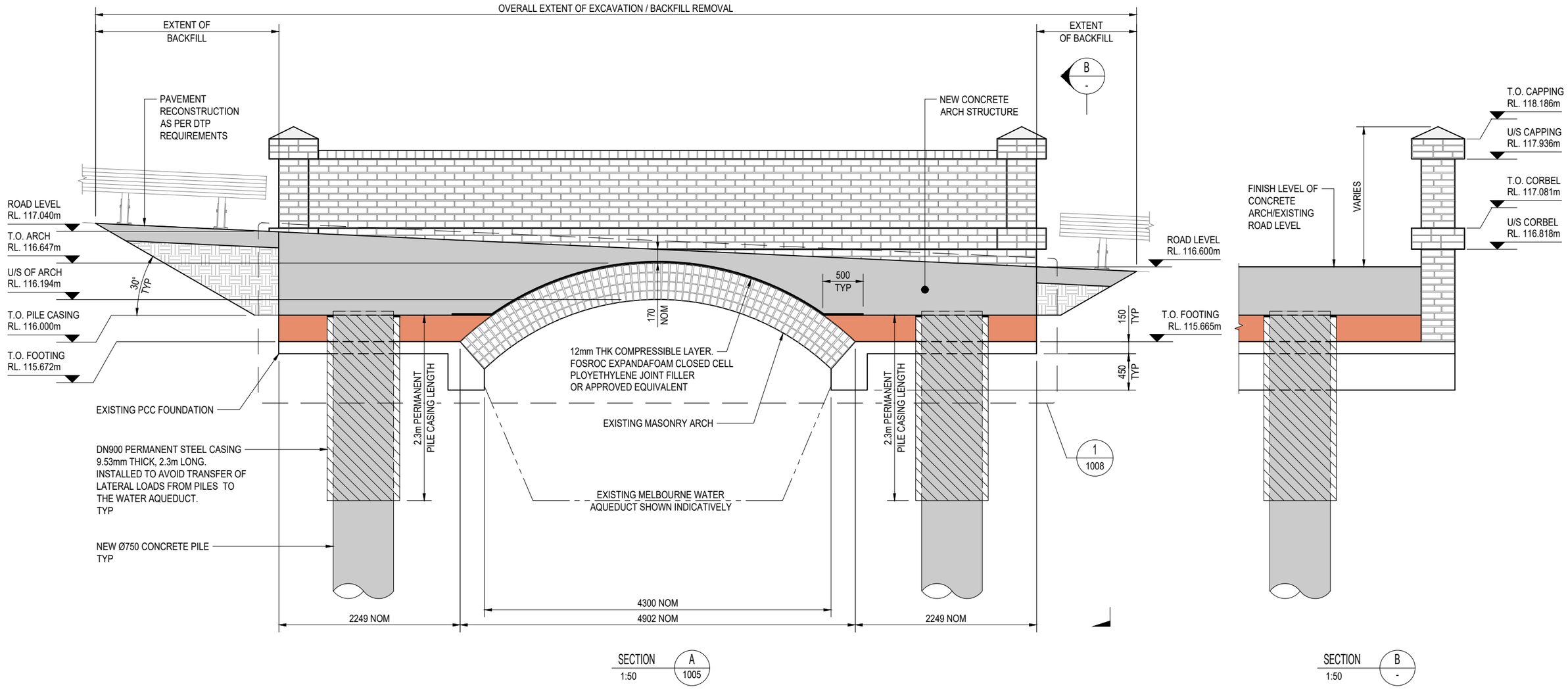

500 250 0 500 1000 1500 2000 2500mm

SCALE: 1:50

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Consultant

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VICTORIA State Government | Department of Transport and Planning

STRUCTURAL

YARRA GLEN

ELTHAM - YARRA GLEN ROAD BRIDGE
MELWAY 266H10
GENERAL ARRANGEMENT - ELEVATION

Up Location	Down Location	Datum
East. North. ID#	East. North. ID#	

File Name: H372089-STR01-230-251-1006.DWG

Sheet No.: 06 of 12

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Scale: 1:50 | Sheet Size: A3

Project Drawing Number: H372089-STR01-230-251-1006

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A. CHAUDRY	
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S. SALIM	

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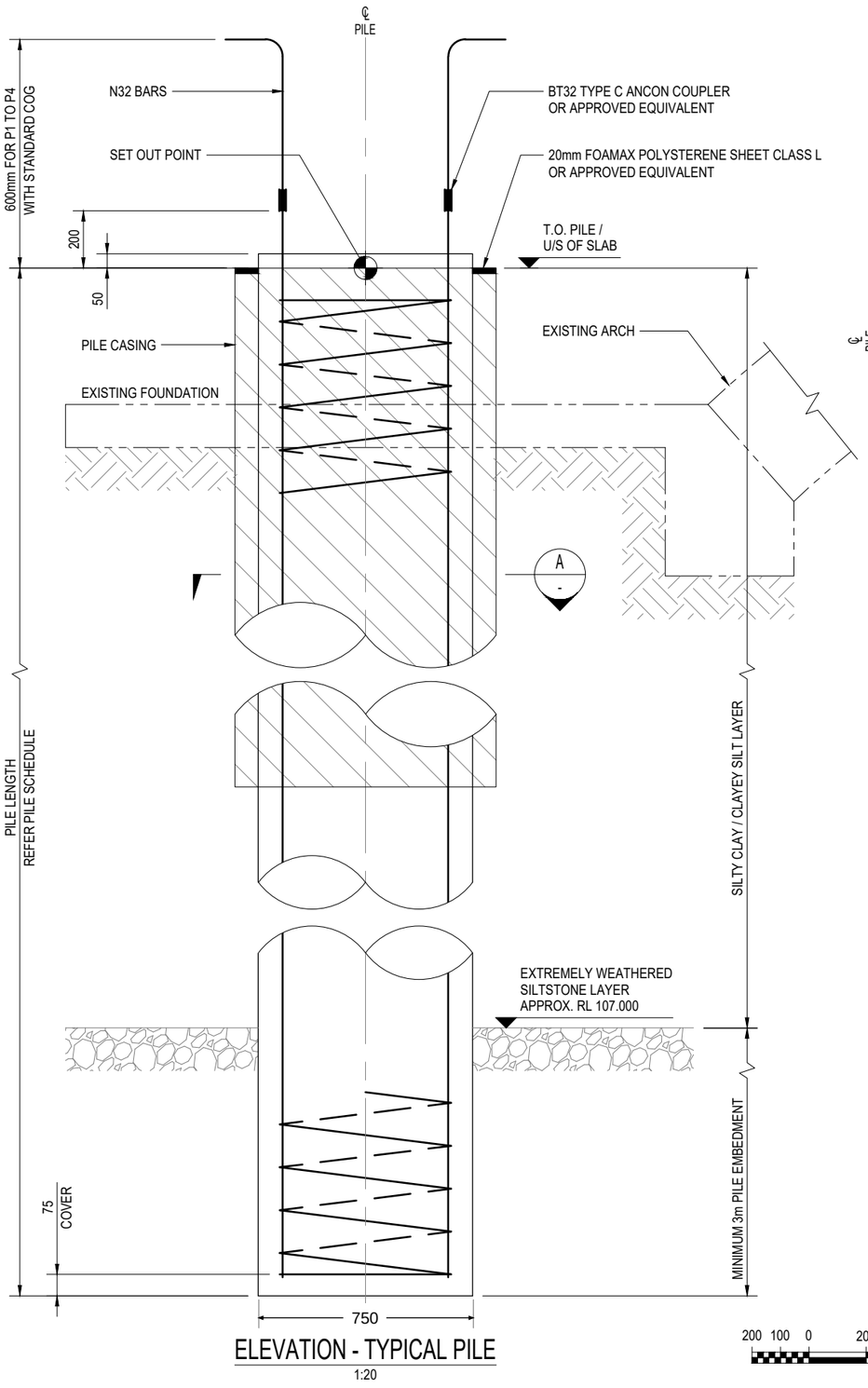
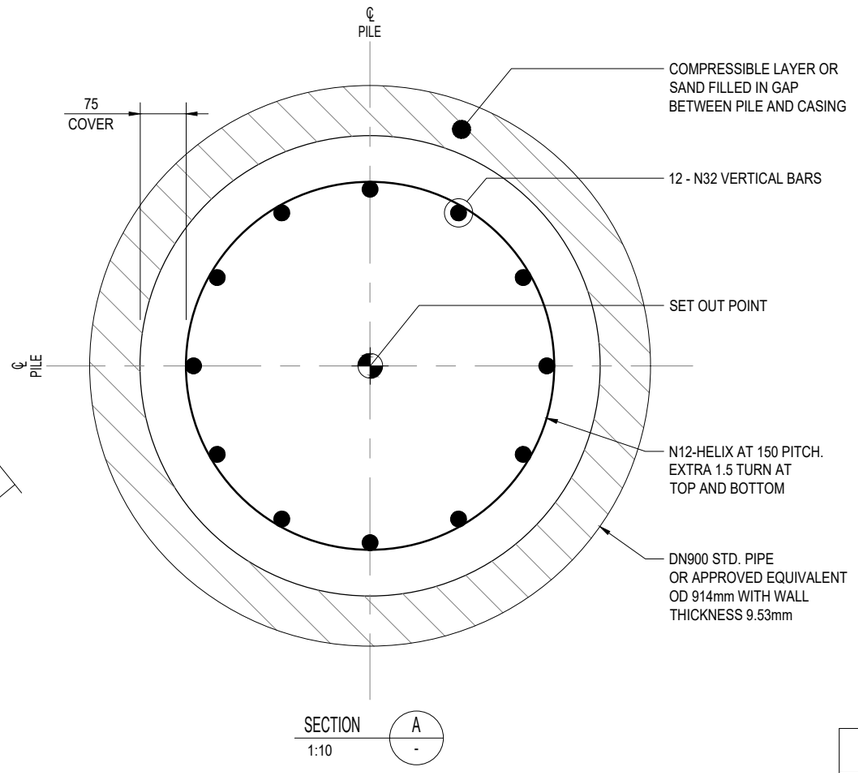


ELEVATION - TYPICAL PILE
1:20



SECTION A - A
1:10

200 100 0 200 400 600 800 1000mm
SCALE: 1:20

100 50 0 100 200 300 400 500mm
SCALE: 1:10

BORED PILE NOTES:

1. FOR GENERAL NOTES REFER TO H372089-STR01-230-251-1002 TO 1003
2. HELICAL REINFORCEMENT SHALL BE ANCHORED AT ITS END BY ONE AND ON HALF EXTRA TURNS OF THE HELIX. HELICAL REINFORCEMENT SHALL BE SPLICED WITHIN ITS LENGTH BY LAPPING THE HELIX ONE TURN AND BENDING THE HELIX END INTO THE COLUMN CORE FOR AN EXTENTION OF 25x THE HELIX BAR DIAMETER.
3. STOCK LENGTHS SHALL BE USED FOR BARS.
4. ALL BORED PILES SHALL BE CONSTRUCTED TO A POSITION TOLERANCE OF 75mm AND VERTICALLY OF 1 IN 100 IN ACCORDANCE WITH VICROADS SPECIFICATIONS SECTION 606.
5. BORED PILE TOE LEVELS ARE INDICATIVE ONLY. LEVELS SHALL BE CONFIRMED DURING PILE CONSTRUCTION BY SUITABLY QUALIFIED GEOTECHNICAL ENGINEER IN ACCORDANCE WITH AN APPROVED CONSTRUCTION METHOD. GEOTECHNICAL ENGINEER SHALL BE INFORMED PRIOR TO ANY DRILLING TAKING PLACE TO CONFIRM THE ASSUMED GEOTECHNICAL PARAMETERS USED IN THE DESIGN.
6. PILE MUST BE SOCKETED INTO THE ASSUMED GROUND CONDITIONS. IF OTHER MATERIALS ARE FOUND WITHIN THE ROCK SOCKET, THE DESIGN GEOTECHNICAL ENGINEER SHALL BE ADVISED TO CONFIRM IF THE PILE IS REQUIRED TO BE EXTENDED.
7. BORED PILE EXPOSURE CLASSIFICATION: B1
8. INCASE OF VARIATION OF THE ROCK LEVEL, IT SHOULD BE ENSURED THAT THE PROVIDED PILE LENGTH MEETS BOTH REQUIREMENTS OF MINIMUM PILE LENGTH AND MINIMUM EMBEDMENT IN ROCK.
9. IF THE ROCK LAYER LEVEL VARIES MORE THAN 1m FROM THE SPECIFIED LEVEL, THE PILE DESIGN SHOULD BE REFERRED TO THE DESIGNER PRIOR TO ITS CASTING
10. PILES HAVE BEEN DESIGNED USING A GEOTECHNICAL REDUCTION FACTOR OF 0.4

GEOTECHNICAL PARAMETERS:

1. FOR GEOTECHNICAL INFORMATION REFER TO GEOTECHNICAL REPORT PREPARED BY CIVILTEST (REPORT No. 1231612-1)
2. PILE SOCKET LENGTH AND SOCKET ROCK CLASS SHALL BE VERIFIED BY A QUALIFIED GEOTECHNICAL ENGINEER DURING PILE INSTALLATION.

MATERIAL	γ (kN/m^3)	ϕu (deg)	ϕ' (deg)	Cu (kPa)	C' (kPa)	E (MPa)	v
CRUSHED ROCK FILL	20.0	35	40	1	0	40	0.35
SILTY CLAY FILL	19.0	15	22	25	3	20	0.42
CLAYEY SILT	19.0	18	26	25	8	20	0.41
SILTY CLAY	20.0	20	26	70-120	10/15	30	0.40
EXTREMELY WEATHERED SILTSTONE ROCK VERY LOW STRENGTH	21.5	-	32	-	-	100-500	0.25

WHERE
γ = UNIT WEIGHT OF THE SOIL UNDRAINED ANGLE OF SHEARING
ϕu = RESISTANCE IN THE ENCOUNTERED UNSATURATED CONDITION
ϕ' = EFFECTIVE ANGLE OF SHEARING RESISTANCE
Cu = UNDRAINED COHESION IN THE ENCOUNTERED UNSATURATED CONDITION
C' = EFFECTIVE COHESION
E = ELASTIC (YOUNG'S) MODULUS
v = POISSON'S RATIO

ULS PILE ACTION AT TOP OF PILE	
MOMENT	470 kN-m
SHEAR	100 kN
AXIAL	1290 kN

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Consultant: HATCH

Franchisee / Lessee: VICTORIA State Government — Department of Transport and Planning

STRUCTURAL

YARRA GLEN
ELTHAM - YARRA GLEN ROAD BRIDGE
MELWAY 266H10
TYPICAL PILE DETAILS

Up Location	Down Location	Datum
East. North. ID#	East. North. ID#	

File Name: H372089-STR01-230-251-1007.DWG
Sheet No.: 07 of 12
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Scale: 1:20
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Project Drawing Number: H372089-STR01-230-251-1007

Drawn By	Designed By
M. SIMMONS	A. ZABIHI
Checked By	Ind. Review
A. CHAUDRY	
Approved	Approval Date
S. SALIM	

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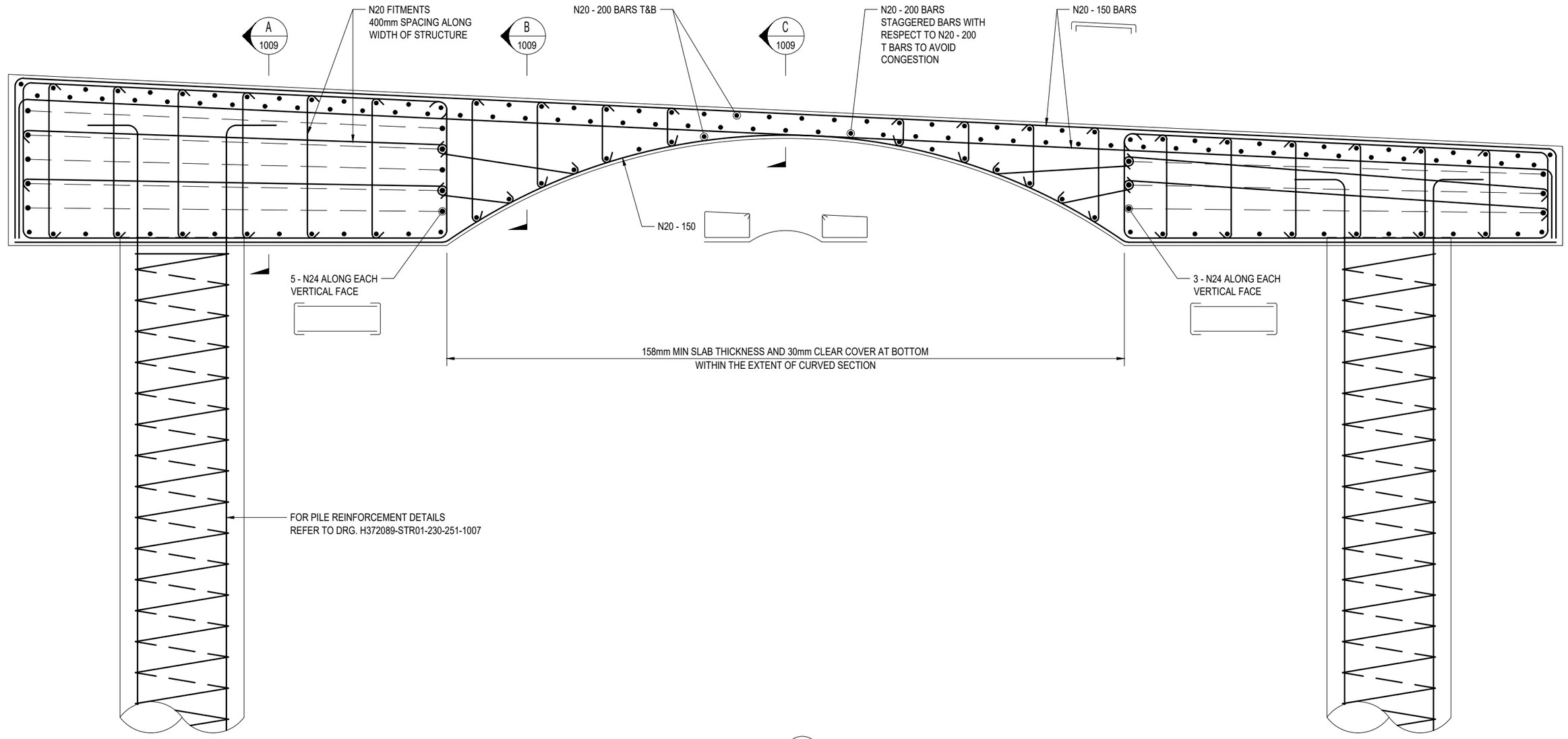

DETAIL 1 / 1006
1:25

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SCALE: 1:25

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STRUCTURAL

YARRA GLEN

ELTHAM - YARRA GLEN ROAD BRIDGE
MELWAY 266H10
REINFORCEMENT DETAILS - SHEET 1 OF 2

Up Location	Down Location	Datum
East.	East.	
North.	North.	
ID#	ID#	

File Name: H372089-STR01-230-251-1008.DWG
Sheet No.: 08 of 12
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Scale: N.T.S.
Sheet Size: A3

Project Drawing Number: H372089-STR01-230-251-1008

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M. SIMMONS	A. ZABIHI
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A. CHAUDRY	
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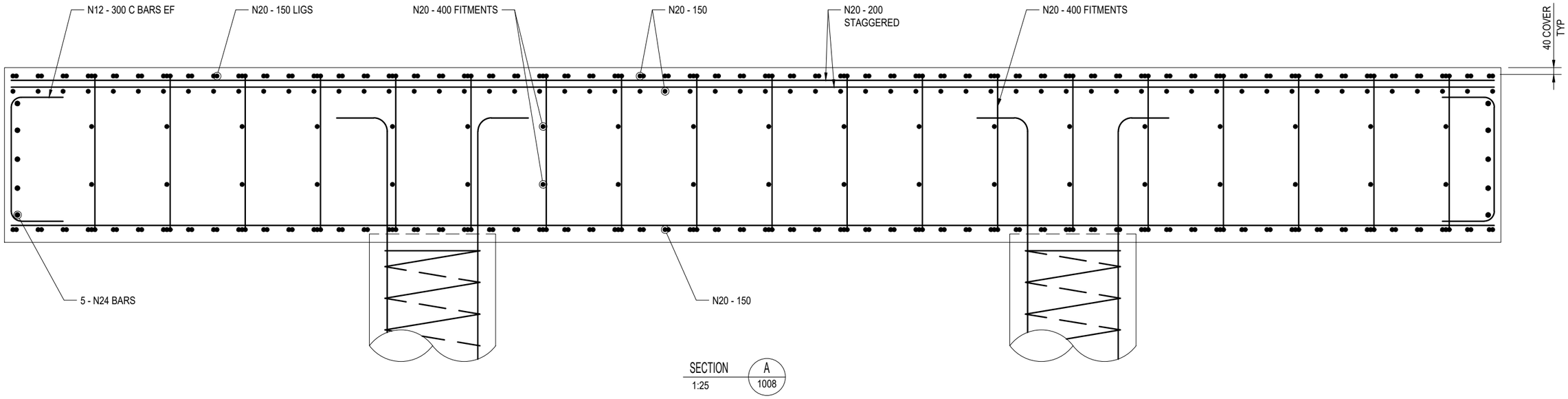
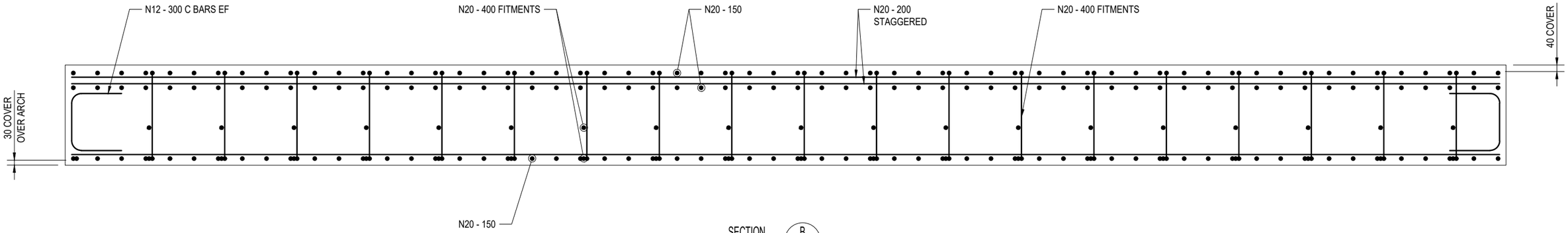


SECTION A
1:25
1008



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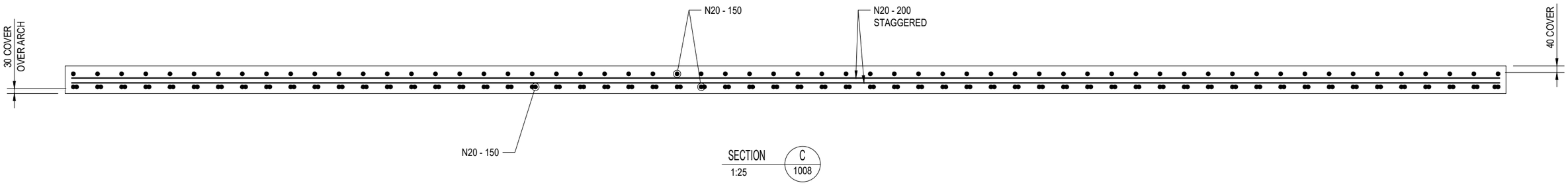

SECTION C
1:25
1008

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SCALE: 1:25

ISSUE FOR TENDER

HATCH		C	26/06/24	IFC CHECK PRINT	A.Z.	A.C.		S.S.
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Consultant

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VICTORIA State Government | Department of Transport and Planning

STRUCTURAL

YARRA GLEN

ELTHAM - YARRA GLEN ROAD BRIDGE
MELWAY 266H10
REINFORCEMENT DETAILS - SHEET 2 OF 2

Up Location	Down Location	Datum
East. North. ID#	East. North. ID#	

File Name: H372089-STR01-230-251-1009.DWG

Sheet No.: 09 of 12

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M. SIMMONS	A. ZABIHI
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Approved	Approval Date
S. SALIM	

Drawing Number

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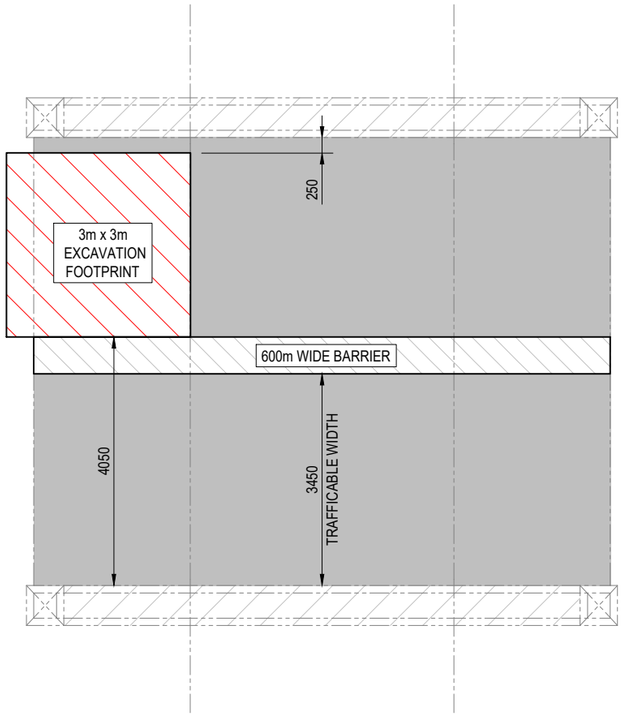

FIGURE 1.A

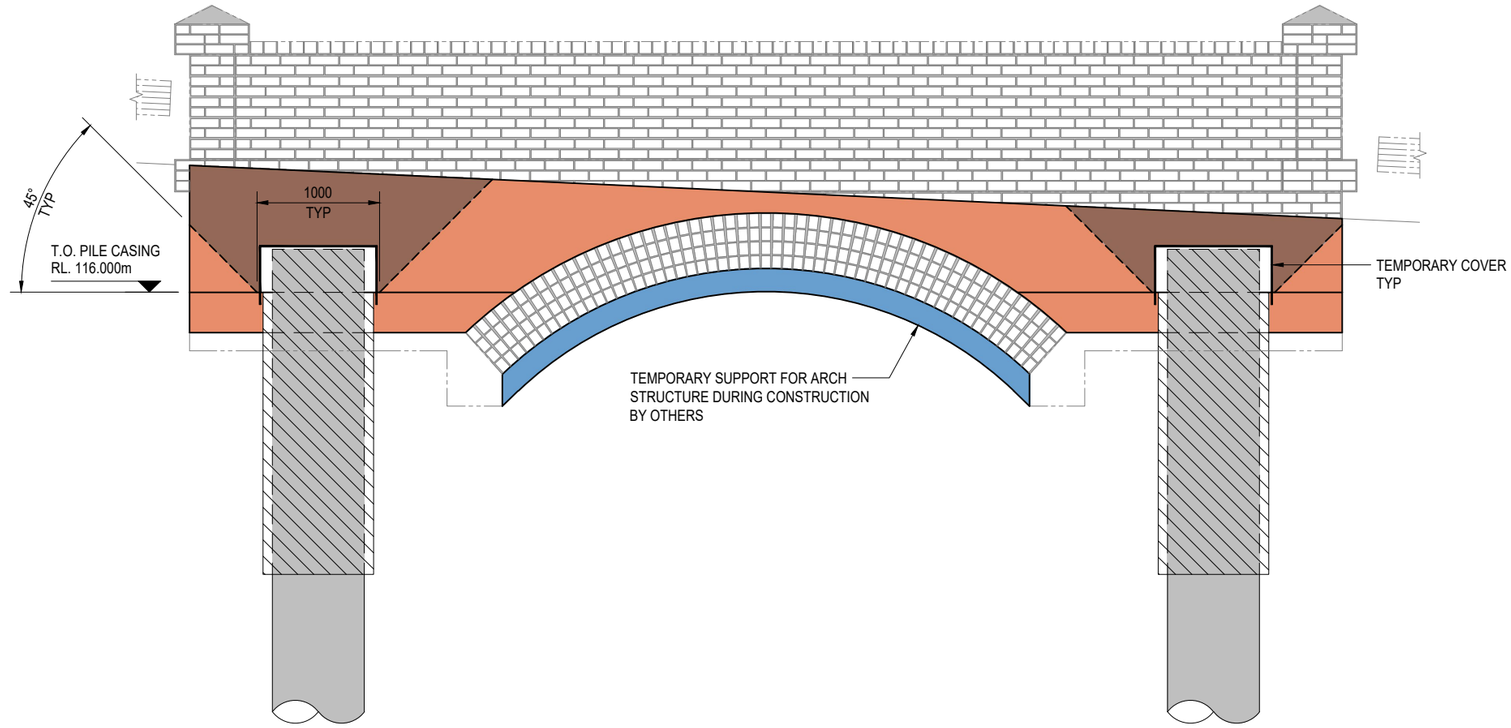

FIGURE 1.B

STAGE 1 - INSTALLATION OF PILES

1. INSTALL TEMPORARY SUPPORT STRUCTURE FOR THE MASONRY ARCH. THE STRUCTURE SHALL BE DESIGNED TO PROVIDE UNIFORM SUPPORT TO THE ENTIRE MASONRY ARCH SURFACE AND TO TAKE THE FULL LOAD OF THE WET CONCRETE ALONG WITH THE LOAD OF WORKERS AND ANY LIGHT MACHINERY USED DURING ALL STAGES OF CONSTRUCTION ACTIVITIES.
2. CLOSE SECTION OF THE BRIDGE TO PROVIDE ACCESS FOR CONSTRUCTION MACHINERY FOR INSTALLATION WORKS OF PILE P1. BASED ON THE EXCAVATION REQUIREMENTS, APPROXIMATELY 3.45m BRIDGE WIDTH WOULD BE AVAILABLE FOR TRAFFIC MOVEMENT. FIGURE 1.A.
3. THE DRILLING RIG SHALL BE STATIONED MIN 1m AWAY FROM THE EXCAVATION EDGE.
4. INSTALL PERMANENT CASING TO THE REQUIRED DEPTH BY BORING THROUGH THE EXISTING FOUNDATION. THE FOUNDATION SHOULD BE CAREFULLY DRILLED THROUGH WITH SLOW MOTION OF THE RIG. REAM OUT INSIDE OF CASING TO ITS BASE.
5. DRILL 750mm DIA PILE FROM THE BASE OF THE PERMANENT CASING TO THE REQUIRED DEPTH. THE DRILLING OPERATIONS FOR BOTH THE CASING AND PILES SHALL BE CARRIED OUT IN THE PRESENCE OF SUITABLY QUALIFIED GEOTECHNICAL ENGINEER WHO CAN ALSO VERIFY THE SITE CONDITIONS AND DESIGN ASSUMPTIONS.
6. INSTALL INNER CASING I.E. FORMATUBE / FORMWORK WITHIN THE EXTENT OF PERMANENT CASING FOR CASTING THE PILE AND ENSURE IT IS HELD IN PLACE VERTICALLY AT THE REQUIRED CENTRAL LOCATION BY SUITABLE MEANS.
7. INSTALL PILE REINFORCEMENT IN THE INNER CASING AND POUR CONCRETE TO MIN 300mm ABOVE THE TOP OF PILE LEVEL. CARE MUST BE TAKEN TO ENSURE NOTHING GETS DEPOSITED IN THE SPACE BETWEEN THE OUTER AND INNER CASINGS.
8. COVER THE PILE AND OUTER CASING BY SUITABLE MEANS AND BACKFILL USING 1:5 CEMENT STABLIISED SAND. THE PROVIDED COVER SHOULD ENSURE NO BACKFILL IS DEPOSITED IN THE SPACE BETWEEN THE TWO CASINGS.
9. REPEAT STEPS 2 TO 8 FOR INSTALLATION OF PILES P2 TO P4.

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YARRA GLEN

ELTHAM - YARRA GLEN ROAD BRIDGE
MELWAY 266H10
CONSTRUCTION SEQUENCE - SHEET 1 OF 3

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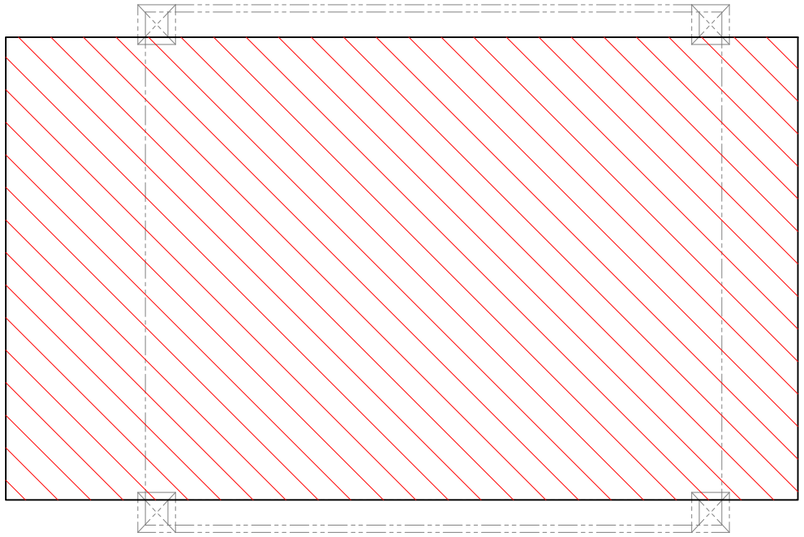

FIGURE 2.A

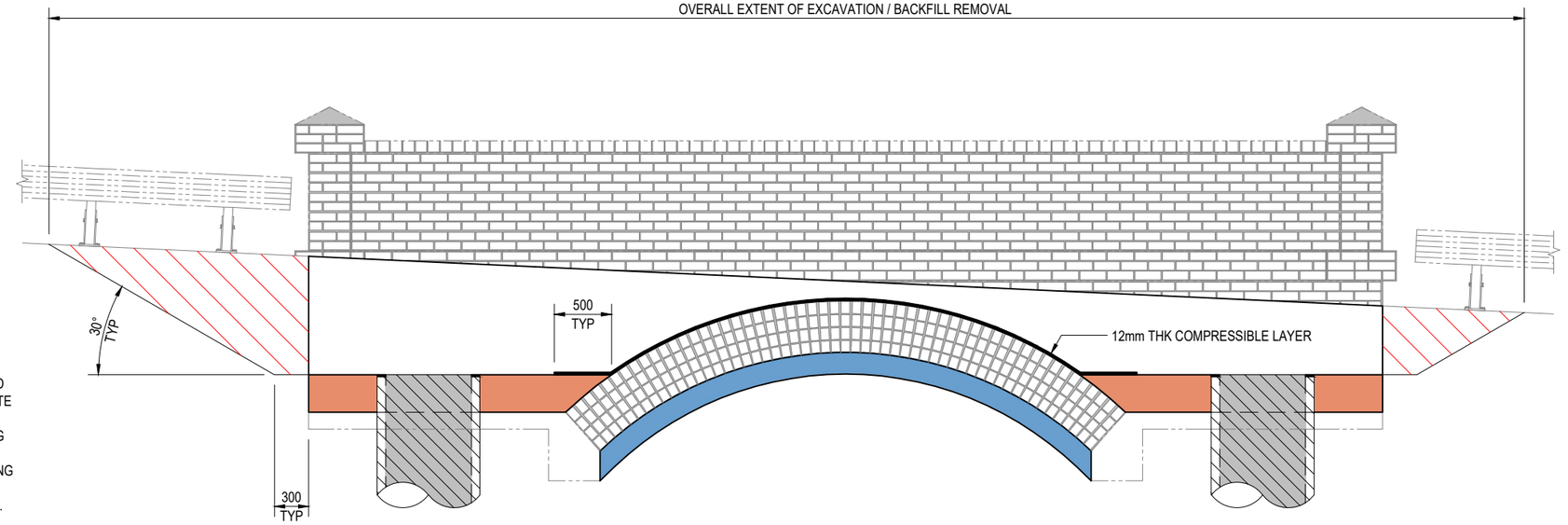

FIGURE 2.B

STAGE 2 - EXCAVATION AND BACKFILL REMOVAL

1. CLOSE THE STRUCTURE FOR TRAFFIC MOVEMENT. SUFFICIENT SIGNAGE SHALL BE INSTALLED AND PROVIDED BY CONTRACTOR TO WARN THE TRAFFIC OF ONGOING WORKS AND ALTERNATE ROUTE TO BE ADOPTED.
2. EXCAVATE AND REMOVE BACKFILL OVER THE EXISTING ARCH MOVING STRUCTURE STARTING FROM CENTER OF THE ARCH TOWARDS ITS OUTER ENDS UP TO THE EXTENT SHOWN. THE CONTRACTOR SHALL UTILISE AN EXCAVATION METHOD THAT LIMITS POTENTIAL FOR DAMAGING THE EXISITING MASONRY ARCH BY LIMITING VIBRATION, IMPACTS AND RISK OF OVER EXCAVATION. IT IS EXPECTED THAT EXCAVATION WILL BE LIMITED TO HAND HELD EQUIPMENT. USE OF HEAVY EQUIPMENT LIKE EXCAVATORS IS NOT PERMITTED. THE METHODOLOGY SHALL BE AGREED WITH THE SUPERINTENDENT BEFORE WORKS PROCEED.
3. EXCAVATE DOWN TO RL 116.000 ON BOTH SIDES OF THE ARCH. HAND COMPACT ANY MATERIAL THAT HAS COME LOOSE
4. UNCOVER THE PILES, CUT THE PERMATUBE TO 20mm BELOW RL 116.000.
5. BREAK BACK THE PILE TO 50mm ABOVE RL 116.000, EXPOSING THE COUPLERS. INSTALL PILE EMBEDMENT REINFORCEMENT TO SPECIFIED LENGTHS USING THE COUPLERS.
6. INSTALL COMPRESSIBLE MATERIAL LAYER WITHIN THE EXTENTS SHOWN

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STRUCTURAL

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CONSTRUCTION SEQUENCE - SHEET 2 OF 3

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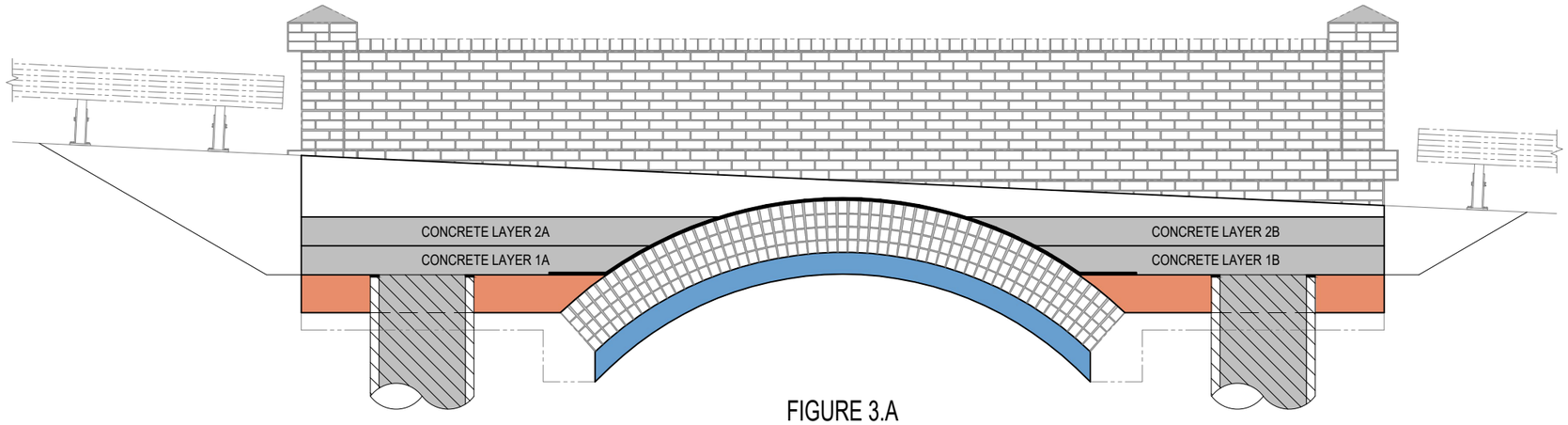

FIGURE 3.A

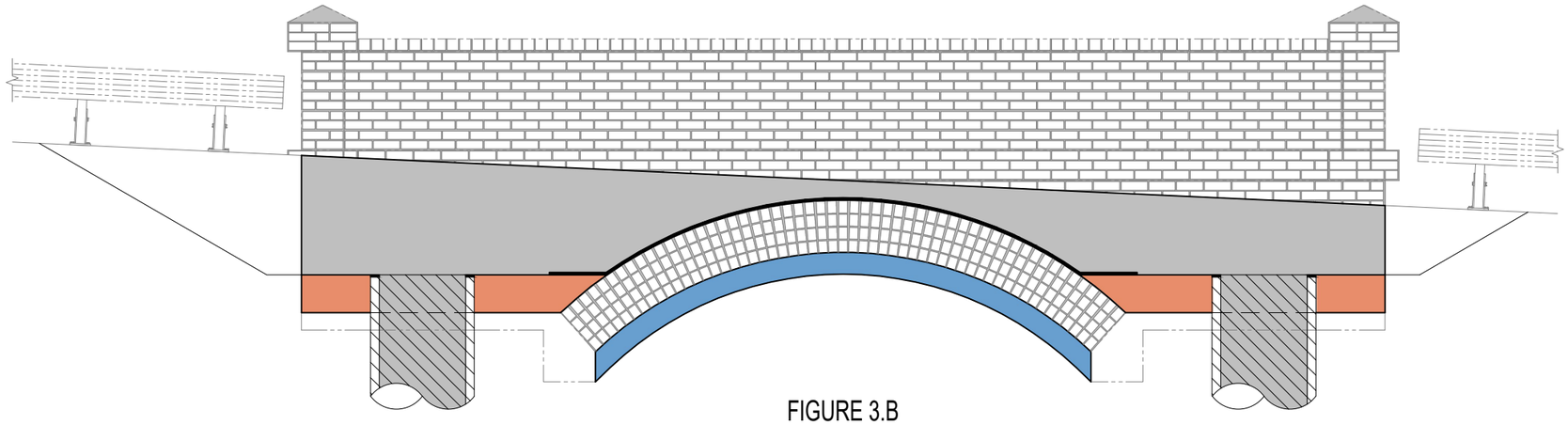

FIGURE 3.B

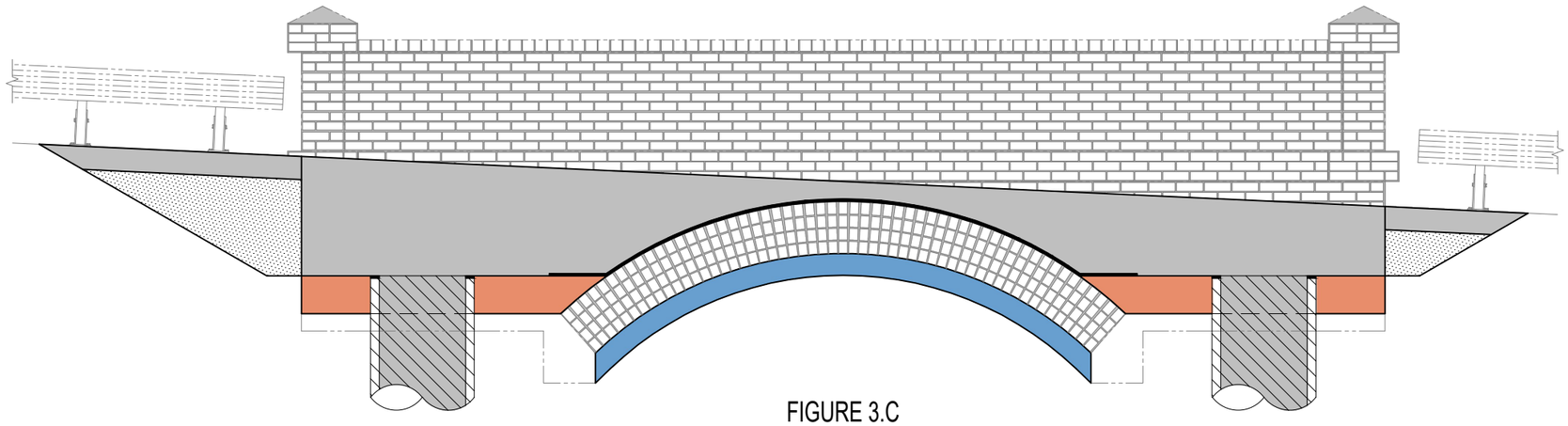

FIGURE 3.C

STAGE 3 - CASTING OF CONCRETE ARCH

1. INSTALL REINFORCEMENT FOR THE CONCRETE ARCH
2. INSTALL FORMWORK FOR CONCRETE POUR
3. POUR CONCRETE IN LAYERS AS ILLUSTRATED IN FIGURE 3A. LAYER 1A WILL BE POURED FIRST FOLLOWED BY LAYER 1B. BOTH LAYERS ARE REQUIRED TO HAVE THE SAME THICKNESS. LAYER 1 WILL BE FOLLOWED BY LAYER 2 WHICH WILL AGAIN BE POURED AS LAYER 2A FOLLOWED BY LAYER 2B AND SO ON. THIS SEQUENCE IS REQUIRED TO BALANCE THE CONCRETE LOADING ON THE MASONRY ARCH. THICKNESS OF LAYER 1 AND LAYER 2 CAN BE DIFFERENT WITH THE MAXIMUM THICKNESS OF A SINGLE LAYER NOT EXCEEDING 350mm, THE MAXIMUM THICKNESS SPECIFIED FOR COMPACTION AS PER VICROADS SPECIFICATION 610.
4. ONCE THE CONCRETE HAS ATTAINED A MIN STRENGTH OF 15 MPa, REMOVE THE FORMWORK.
5. BACKFILL ON BOTH SIDES OF THE NEW CONCRETE STRCUTRE IN LINE WITH THE REQUIREMETNS OF VICROADS SPECIFICATION 204
6. REINSTATE PAVEMENT WITHIN THE BACKFILL EXTENT
7. REMOVE TEMPORARY SUPPORT FROM UNDERNEATH THE MASONRY STRUCTURE.
8. LIGHT CONSTRUCTION VEHICLES CAN MOVE ON THE STRUCTURE ONCE IT HAS GAINED A STRENGTH OF 32 MPa
9. OPEN THE STRUCTURE FOR TRAFFIC ONCE IT HAS ACHIEVED A STRENGTH OF 50 MPa

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