

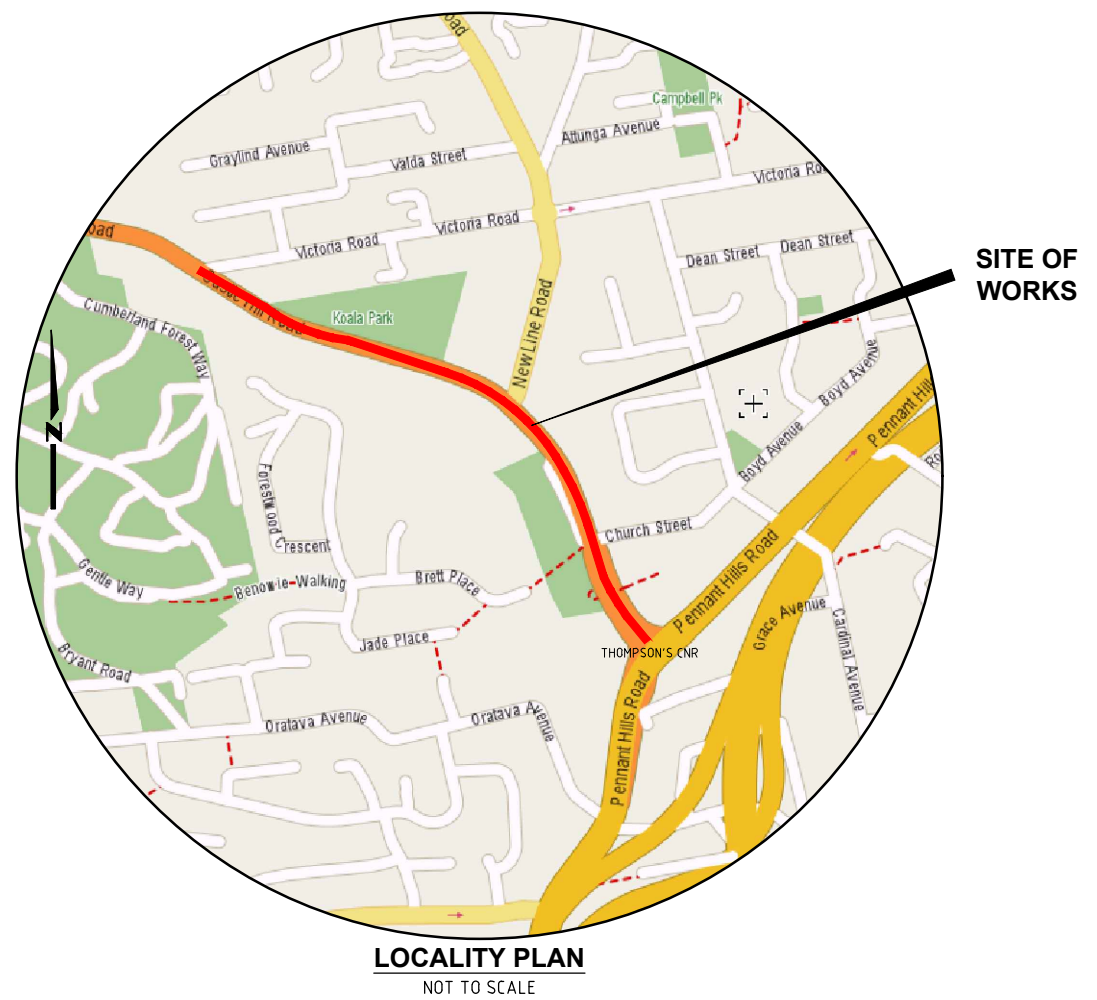
CASTLE HILL ROAD, WEST PENNANT HILLS PROPOSED SHARED PATH VICTORIA ROAD TO PENNANT HILLS ROAD

LEGEND

	EXISTING KERB & GUTTER.
	EXISTING CONCRETE PATH EDGE.
	EXISTING POWER POLE.
	EXISTING TREE.
	EXISTING TELSTRA PIT.
	EXISTING GAS VALVE.
	EXISTING WATER MAIN.
	EXISTING U/G TELSTRA CABLES.
	EXISTING U/G NBN CABLES.
	EXISTING U/G OPTUS CABLES.
	EXISTING U/G ELECTRICAL CABLES.
	EXISTING GAS MAIN.
	EXTENT OF NEW SHARED PATH.
	EXTENT OF BUS SHELTER SLAB.
	DESIGN SETOUT POINT.

DRAWING SCHEDULE		
SHEET No.	TITLE	ISSUE
1	DRAWING SCHEDULE, LOCALITY PLAN & LEGEND.	1
2	PROJECT NOTES.	1
3	SHARED PATH TYPICAL SECTIONS.	1
4	CONCRETE PATH JOINT DETAILS.	1
5	TYPICAL UTILITY & SERVICE LID COVER DETAILS.	1
6	TYPICAL FENCING DETAILS.	1
7	OVERALL LAYOUT PLAN.	1
8	GENERAL WORKS & SERVICES PLAN - SHEET 1 OF 4.	1
9	GENERAL WORKS & SERVICES PLAN - SHEET 2 OF 4.	1
10	GENERAL WORKS & SERVICES PLAN - SHEET 3 OF 4.	1
11	GENERAL WORKS & SERVICES PLAN - SHEET 4 OF 4.	1
12	BUS SHELTER PLAN, SECTION & SETOUT DETAILS	1
13	BUS SHELTER ENLARGED PLAN & SECTIONAL ELEVATION OF RETAINING WALL.	1
14	RETAINING WALL JOINTING DETAILS & SECTIONS.	1

SUPPLEMENTARY DRAWING SCHEDULE		
SHEET No.	TITLE - ADSHEL BUS SHELTER DETAILS	ISSUE
1	FEDERATION AD (MAINS) DIGITAL - C-010-100149-01.	-
2	FEDERATION AD (MAINS) DIGITAL - C-010-100149-01.	-
3	DIGITAL READY G-BOX - 000 G-BOX (DIGITAL)STATIC(FSU) 01	-



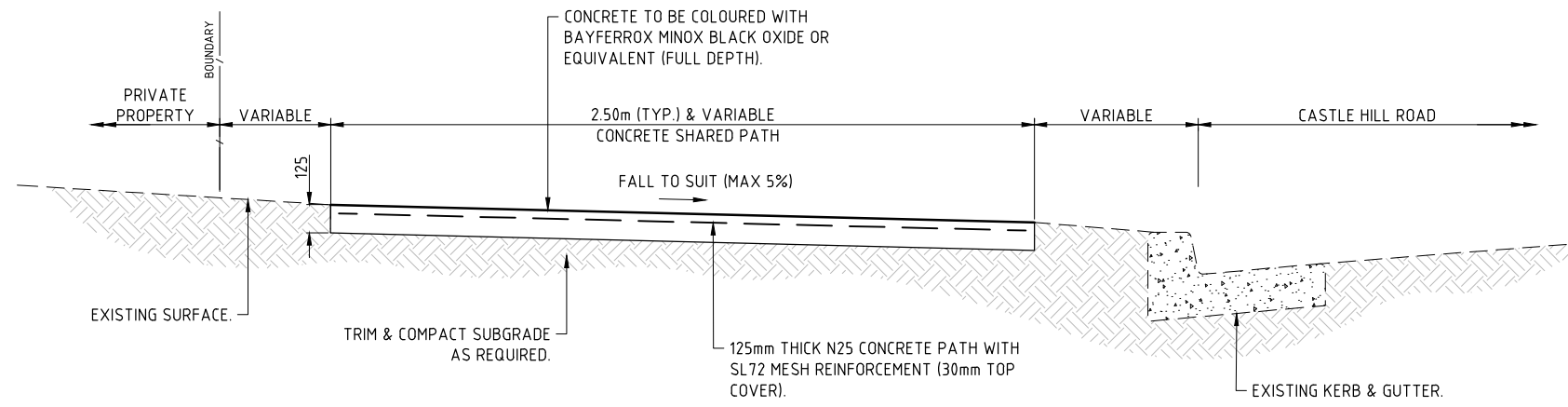
**Hornsby Shire Council
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Designer X. ZHENG	Design Checked-Design Team Leader Signed:				
Drawn X. ZHENG	Drawing Checked Signed:				
Surveyor J. HART	NA Field Book	NA Level Book	AHD Datum		
Project Identifier\CAD File Name H:\Castle Hill Rd Shared Path_TR_100952\Castle Hill.dwg					
1	ISSUED FOR CONSTRUCTION	M. DRAKE			
Issue	Description	Name	Initial	Date	
Design not to be amended without authorisation by Manager Design & Construction					

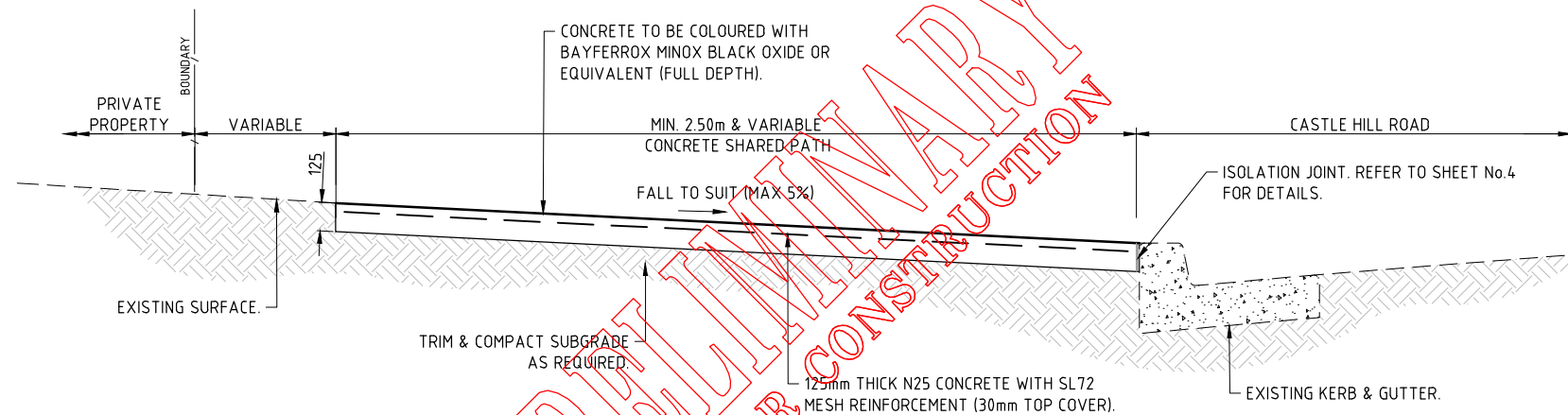
Bar Scales
NOT TO SCALE
DRAFT
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**CASTLE HILL ROAD, WEST PENNANT HILLS
PROPOSED SHARED PATH - VICTORIA ROAD
TO PENNANT HILLS ROAD**
DRAWING SCHEDULE, LOCALITY PLAN & LEGEND

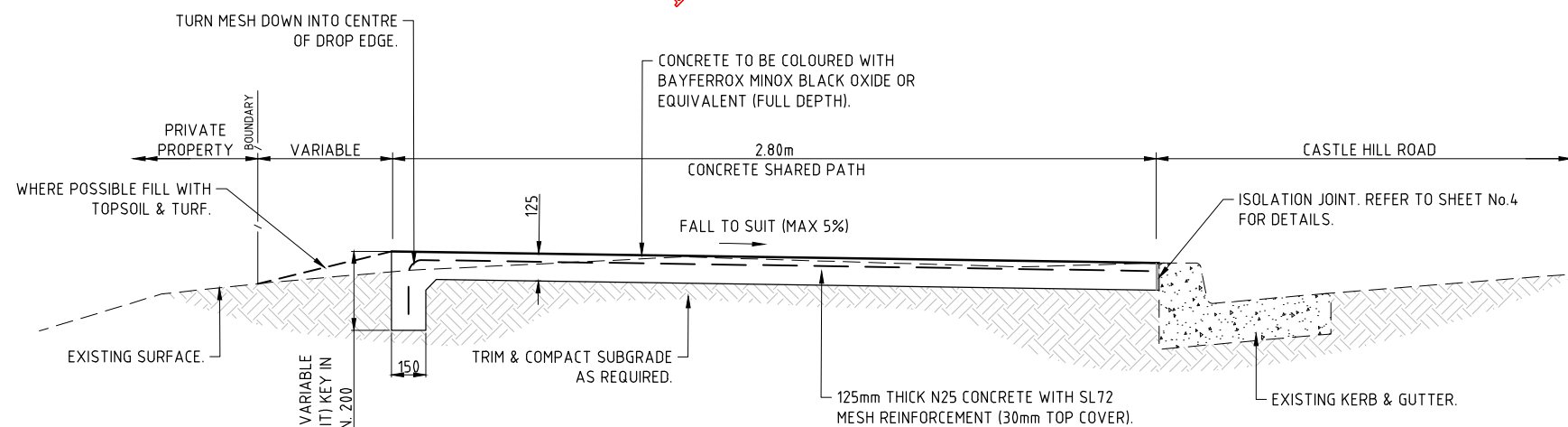
TRAFFIC & ROAD SAFETY BRANCH		
Senior Traffic Engineer Name: R. ZARZYCKI Telephone: 9847 6524 Accepted as complying with the general intent of the design brief Signed: _____ Date: _____		
Project Number 100952		
Sheet 1	of 14	Issue 1
HSC Drawing Number 156.20		



SHARED PATH TYPICAL SECTION
N.T.S.



SHARED PATH TYPICAL SECTION (KERBSIDE)
N.T.S.



SHARED PATH TYPICAL SECTION (KERBSIDE WITH EDGE THICKENING)
N.T.S.

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Authorised for release - Manager Design & Construction
Name: R. RAJCA Signed: Date:

Designer	X. ZHENG		
Design Checked-Design Team Leader	Signed:		
Drawn	X. ZHENG		
Surveyor	J. HART		
Project Identifier\VCAD File Name	NA	NA	AHD
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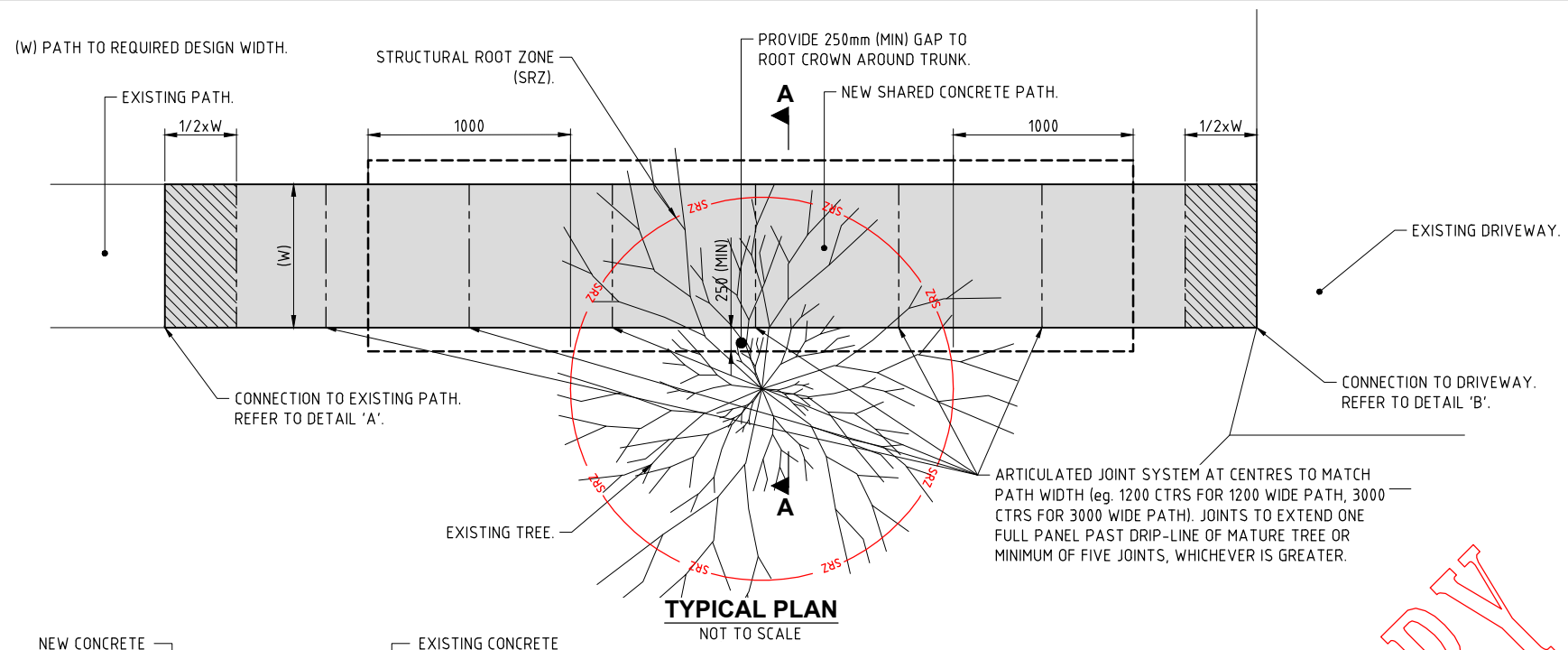
1	ISSUED FOR CONSTRUCTION	M. DRAKE		
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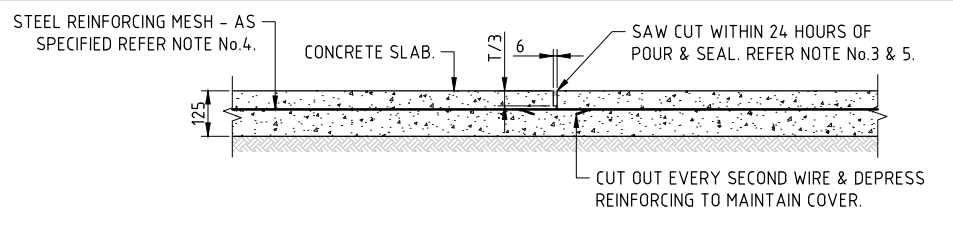
**CASTLE HILL ROAD, WEST PENNANT HILLS
PROPOSED SHARED PATH - VICTORIA ROAD
TO PENNANT HILLS ROAD**

SHARED PATH TYPICAL SECTIONS

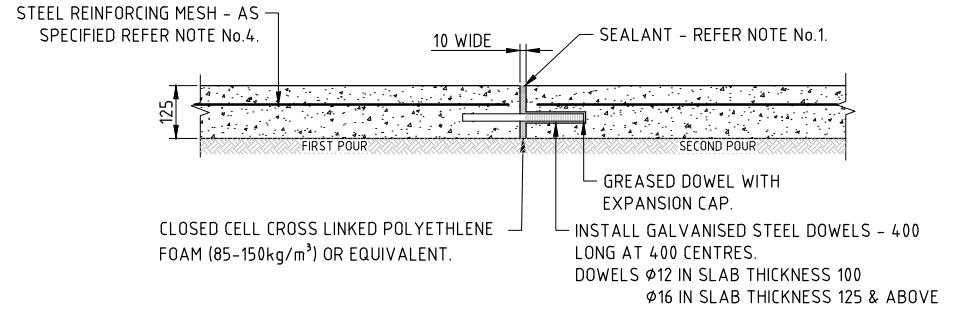
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Sheet of	3	14	1
HSC Drawing Number	156.20		



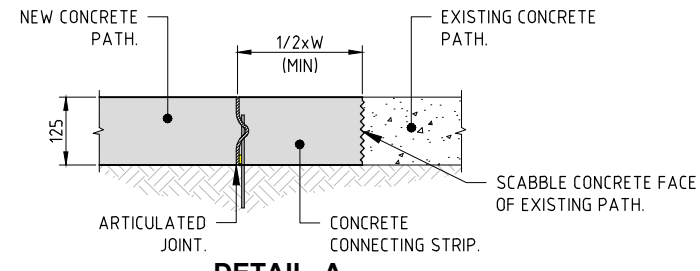
TYPICAL PLAN
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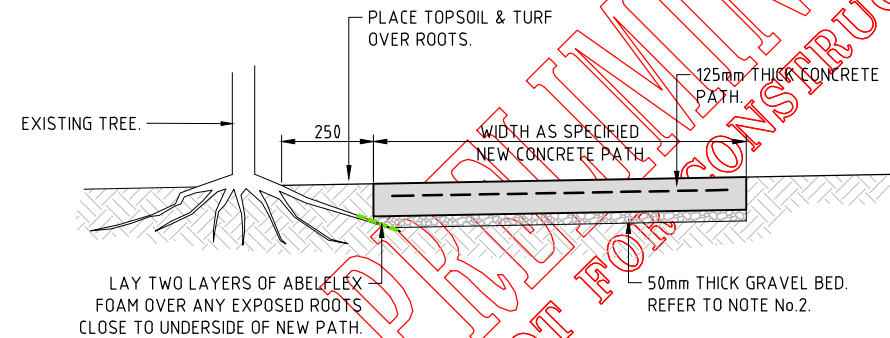
CONTROL JOINT DETAIL (CJ)
(3.0 METRE MAX. SPACING)



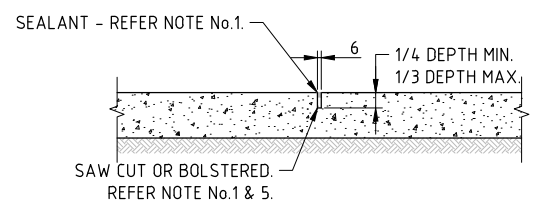
DOWELLED EXPANSION JOINT DETAIL (DEJ)
(12.0 METRE MAX. SPACING)



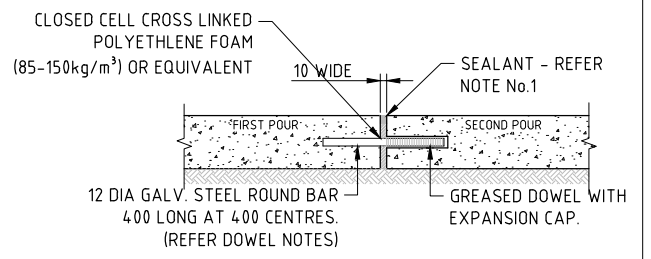
DETAIL A
CONNECTION TO EXISTING PATH



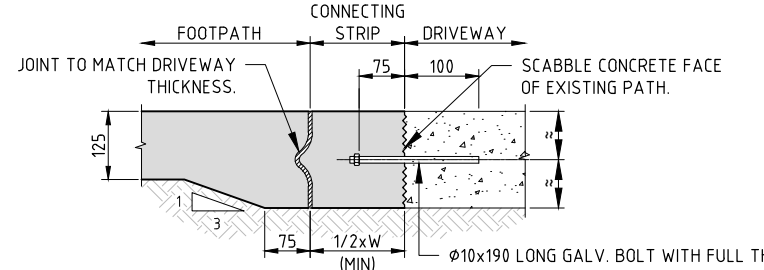
SECTION A-A
NOT TO SCALE



CONTROL JOINT UNREINFORCED CONCRETE (CJU)



DOWELLED EXPANSION JOINT UNREINFORCED CONCRETE (DEJU)

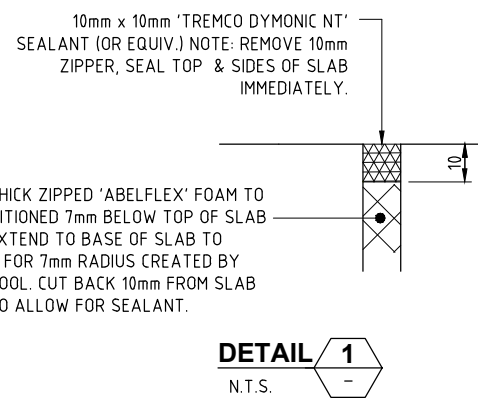


DETAIL B
CONNECTION TO DRIVEWAY

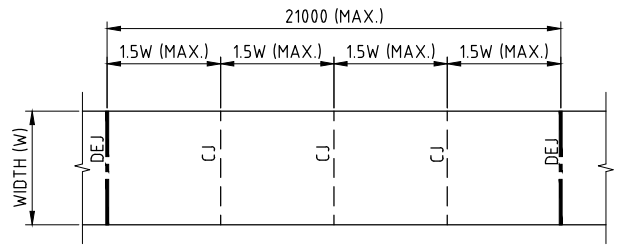
JOINTING DETAILS FOR PATH NEAR TREES

NOTES:

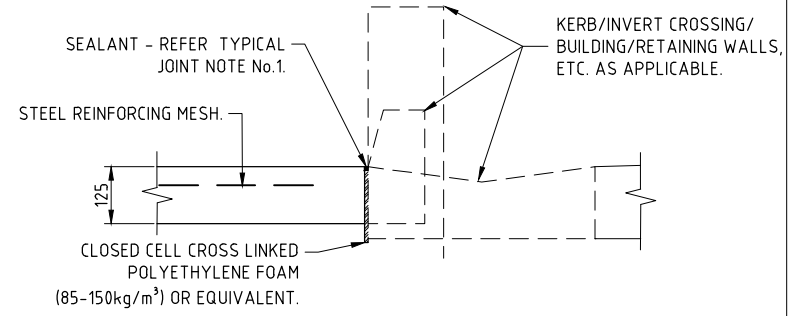
- ARTICULATED JOINT SYSTEM (TRIPSTOP OR APPROVED ALTERNATIVE) INSTALLED AT CENTRES TO MATCH PATH WIDTH (e.g. 1200 CTRS FOR 1200 WIDE PATH, 3000 CTRS FOR 3000 WIDE PATH). JOINTS TO EXTEND ONE FULL PANEL PAST DRIP-LINE OF MATURE TREE OR MINIMUM OF FIVE JOINTS, WHICHEVER IS GREATER.
- GRAVEL BED 50 THICK TO EXTEND MINIMUM 1000 PAST DRIP-LINE OF TREE & MINIMUM 200 EITHER SIDE OF PATH. GRAVEL BEDS INSTALLED AS REQUIRED OR DIRECTED TO ALLOW EASE OF ROOT TRAVEL BELOW CONCRETE PATH. MATERIAL FOR GRAVEL BED TO BE NOMINAL 5mm ROUNDED STONE/GRAVEL, UNIFORMLY GRADED.
- FOR LOCATIONS WITH EXISTING TREES, A QUALIFIED ARBORIST IS REQUIRED TO BE CONSULTED TO CHECK ROOT SYSTEM BEFORE INSTALLATION OF PATH. ROOT TRIMMING OR PRUNING IS ONLY TO BE CONSIDERED AS A LAST OPTION WITH APPROVAL OF ARBORIST.
- THIS STANDARD DOES NOT APPLY TO HIGHLY SIGNIFICANT TREES. CONTACT COUNCIL'S PROJECT MANAGER FOR SPECIAL REQUIREMENTS AT THESE LOCATIONS.
- REFER TO PROJECT DRAWINGS FOR ACTUAL ALIGNMENT, WIDTH, THICKNESS & OTHER DETAILS.
- REFER www.tripstop.net FOR SUPPLIER LOCATIONS & INSTALLATION REQUIREMENTS.



DETAIL 1
N.T.S.



TYPICAL JOINT LAYOUT (U.N.O.)
N.T.S.



ISOLATION JOINT (I.J.)
N.T.S.

- DOWEL NOTES:**
- GREASE DOWEL IN SECOND POUR.
 - ENSURE DOWELS ARE STRAIGHT, PERPENDICULAR TO JOINT & CAPPED. (USE OF PROPRIETARY SLEEVE MAY BE REQUIRED).
 - DO NOT DISPLACE DURING POUR.

TYPICAL JOINTING DETAILS FOR PATH

TYPICAL JOINT NOTES:

- EXPANSION JOINTS & CONTROL JOINTS ARE TO BE SEALED WITH A LOW MODULUS SELF PRIMING SEALANT TO THE MANUFACTURERS SPECIFICATION. THE COLOUR OF THE SEALANT SHALL MATCH THE ADJOINING SURFACE FINISH.
- ALL CONCRETE CONSTRUCTION TO COMPLY WITH THE REQUIREMENTS OF AS 3600 - CONCRETE CODE.
- CONTROL JOINTS TO BE SQUARE TO SIDES.
- WHERE SPECIFIED, STEEL REINFORCEMENT MESH TO COMPLY WITH AS/NZS 4671.
- CONTROL JOINTS ARE TO BE SAWCUT WITHIN 24 HOURS OF POUR & THEN SEALED. REFER NOTE No.3.

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Name: R. RAJCA Signed: Date:

Designer X ZHENG	Design Checked-Design Team Leader		
Drawn X ZHENG	Signed:		
Surveyor J HART	NA	NA	AHD
Field Book	Level Book	Datum	
Project Identifier\\CAD File Name H:\CasHe Hill Rd Shared Path_TR_100952\CasHe Hill.dwg	1		
TRM Document Number XXX	Issue	ISSUED FOR CONSTRUCTION	M. DRAKE
		Description	Name Initial Date
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Bar Scales

NOT TO SCALE

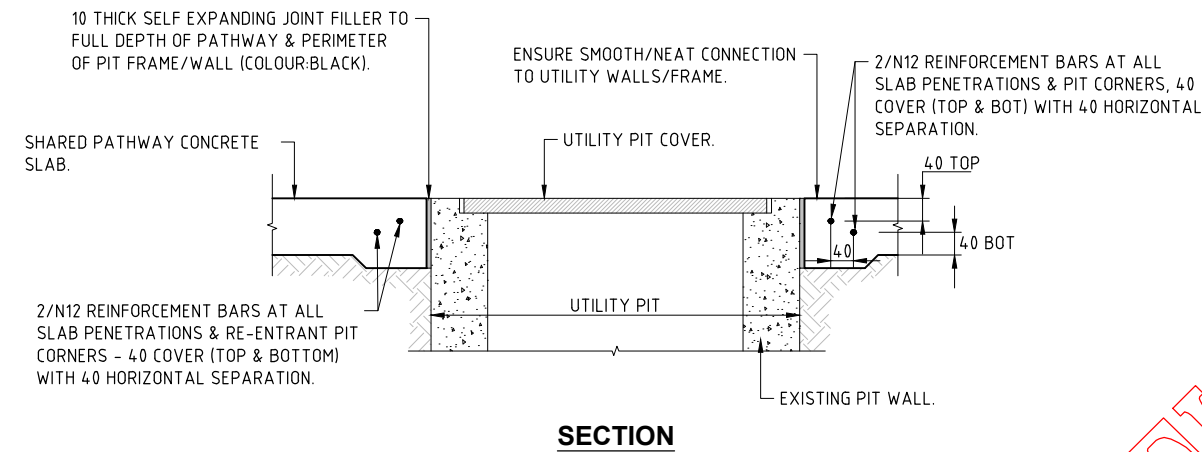
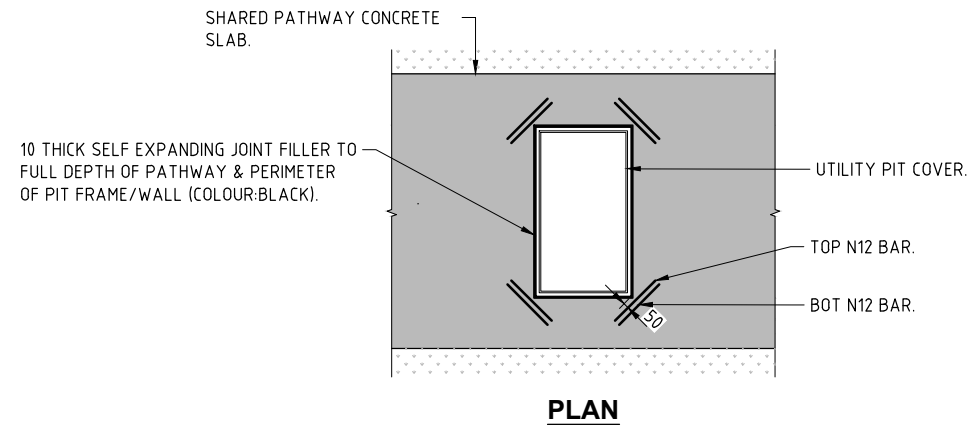
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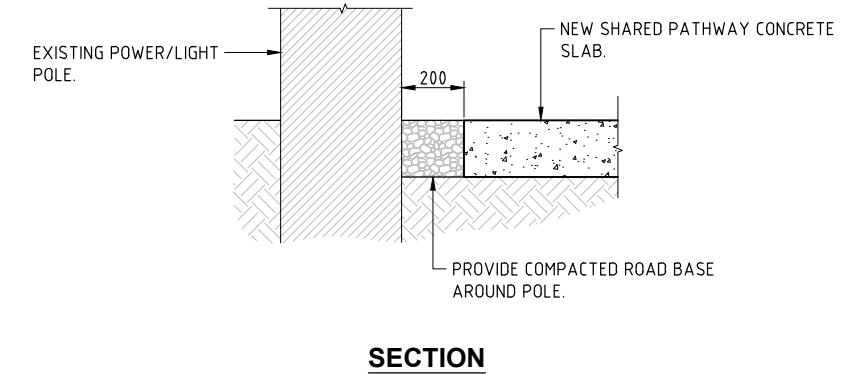
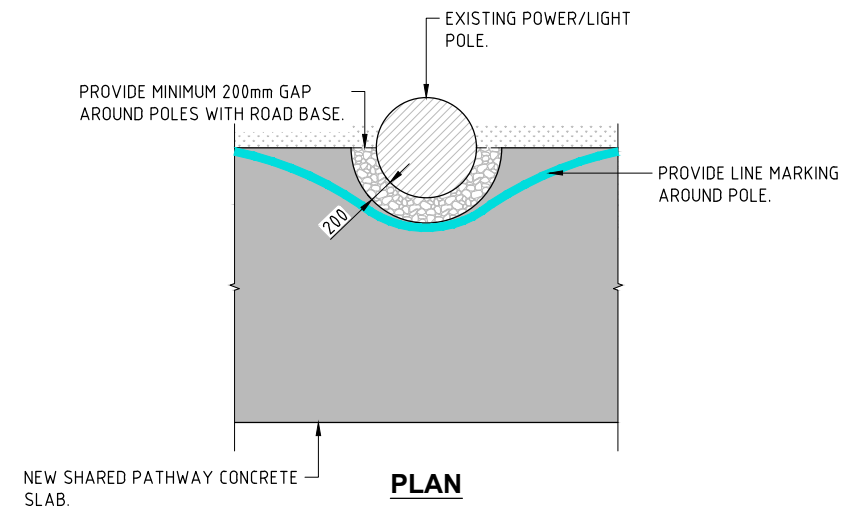
CASTLE HILL ROAD, CHERRYBROOK
PROPOSED SHARED PATH - COUNTY DRIVE
TO VICTORIA ROAD

CONCRETE PATH JOINT DETAILS

Project Number 100676	Sheet of 4 14	Issue 1
HSC Drawing Number 156.19		

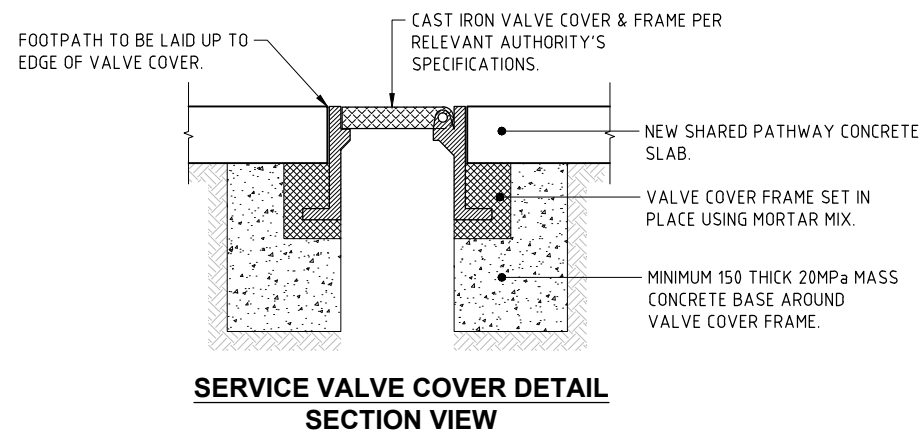


TYPICAL UTILITY PIT COVER DETAIL



TYPICAL POWER/LIGHT POLE DETAIL

PRELIMINARY
NOT FOR CONSTRUCTION



NOTES:

1. THE CONSTRUCTOR SHALL TAKE DUE CARE TO ENSURE THAT THE ABSOLUTE MINIMUM AREA FOR CONSTRUCTION IS DISTURBED.
2. CLEAN PIT LIDS WITH WIRE BRUSH & THEN WITH SOFT BRUSH TO REMOVE RUST/FOREIGN MATERIAL FROM LID SURFACE.
3. USE CEMENT MORTAR WITH FORTIFYING COMPOUND (ARDEX OR APPROVED EQUIVALENT) AS JOINTING MATERIAL.
4. GAPS ON ALL SIDES SHOULD BE GROUTED WITH RICH CEMENT:SAND MIX WITH FORTIFYING COMPOUND (ARDEX OR APPROVED EQUIVALENT).
5. TO ENSURE THE SERVICE PITS ARE STILL ACCESSIBLE & FIT FOR USE AFTER CONCRETING.
6. ALL CONCRETE CONSTRUCTION TO COMPLY WITH THE REQUIREMENTS OF AS3600 - CONCRETE CODE.
7. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

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Name: R. RAJCA Signed: Date:

Designer X. ZHENG	Design Checked-Design Team Leader		
Drawn X. ZHENG	Signed:		
Surveyor J. HART	NA Field Book	NA Level Book	AHD Datum
Project Identifier\ACAD File Name H:\Castle Hill Rd Shared Path_TR_100952\Castle Hill.dwg			
TRIM Document Number	1	ISSUED FOR CONSTRUCTION	M. DRAKE
	Issue	Description	Name Initial Date

Design not to be amended without authorisation by Manager Design & Construction			
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Bar Scales

NOT TO SCALE

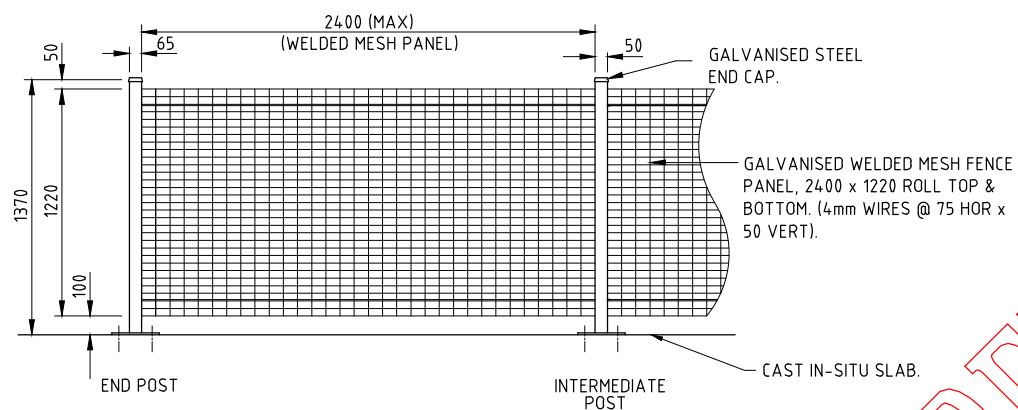
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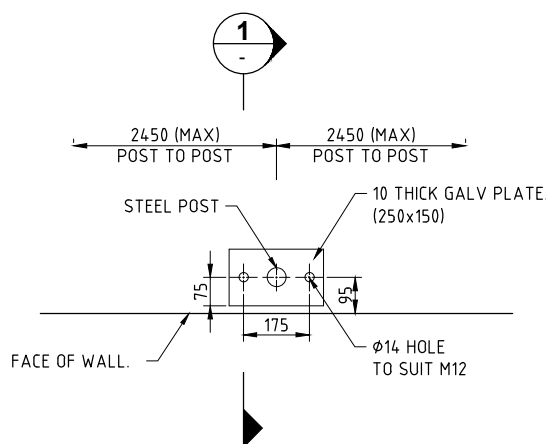
**CASTLE HILL ROAD, WEST PENNANT HILLS
PROPOSED SHARED PATH - VICTORIA ROAD
TO PENNANT HILLS ROAD**

TYPICAL UTILITY & SERVICE LID COVER DETAILS

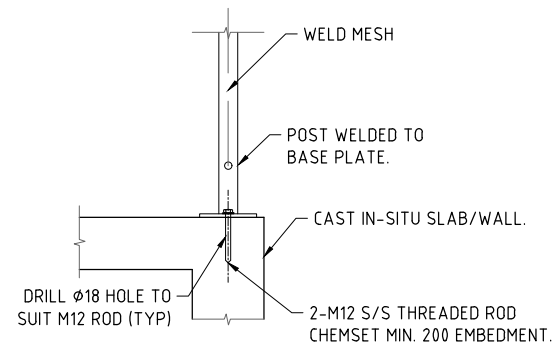
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Sheet of	5	14	1
HSC Drawing Number	156.20		



FENCE - TYPICAL SECTIONAL ELEVATION
NOT TO SCALE

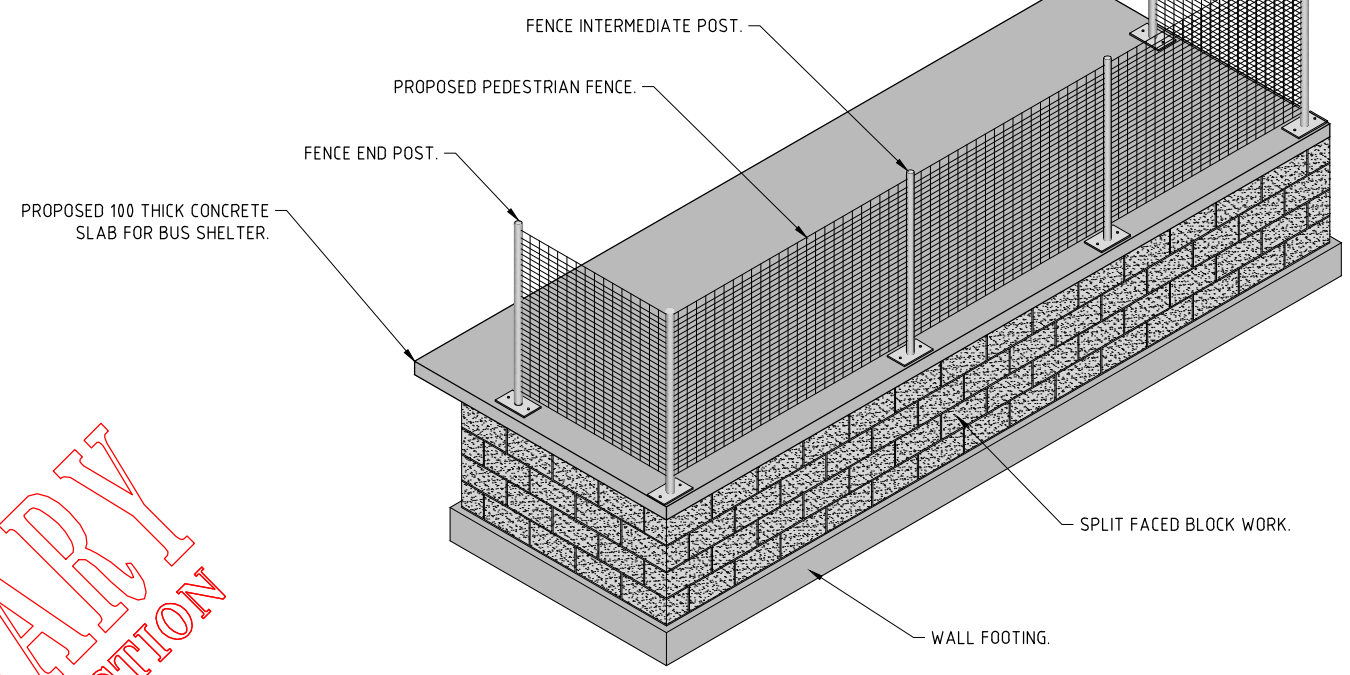


PLAN
SCALE 1:10



SECTION 1
SCALE 1:10

FENCE FIXING DETAIL
SCALE 1:10



ISOMETRIC VIEW OF FENCE & RETAINING WALL
NOT TO SCALE

PRELIMINARY
NOT FOR CONSTRUCTION

FENCING NOTES:

1. END POSTS TO BE 65 x 65 x 2 GALVANISED R.H.S. (REFER TO AS 1163).
2. INTERMEDIATE POSTS TO BE 50 x 50 x 2 GALVANISED R.H.S. (REFER TO AS 1163).
3. PANELS TO BE FIXED TO POSTS IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
4. WELDED MESH PANELS TO BE ARC 'ACACIA' OR EQUIVALENT, MANUFACTURED IN ACCORDANCE WITH AS 3902.
5. ALL GALVANISING TO BE IN ACCORDANCE WITH AS/NZS 4680.
6. ALL POSTS TO BE SET VERTICALLY IN CONCRETE GRADE N25.
7. NUTS TO BE SPOTS WELDED TO BOLTS & COLD GALVANISED AS AN ANTI-THEFT DETERRENT.
8. THIS FENCE IS INTENDED AS A PEDESTRIAN BARRIER & NOT A RESTRAINT FOR MOTOR VEHICLES.
9. CONCRETE ANCHORS IN HEADWALLS SHALL BE 12mm DIA STAINLESS STEEL CHEMICAL ANCHORS.
10. USE PAN-HEAD SECURITY TEK-SCREWS (14-10 x 25G 410 PSECTEK).
11. DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

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**CASTLE HILL ROAD, WEST PENNANT HILLS
PROPOSED SHARED PATH - VICTORIA ROAD
TO PENNANT HILLS ROAD**
TYPICAL FENCING DETAILS

Project Number 100952	Sheet of 6 14	Issue 1
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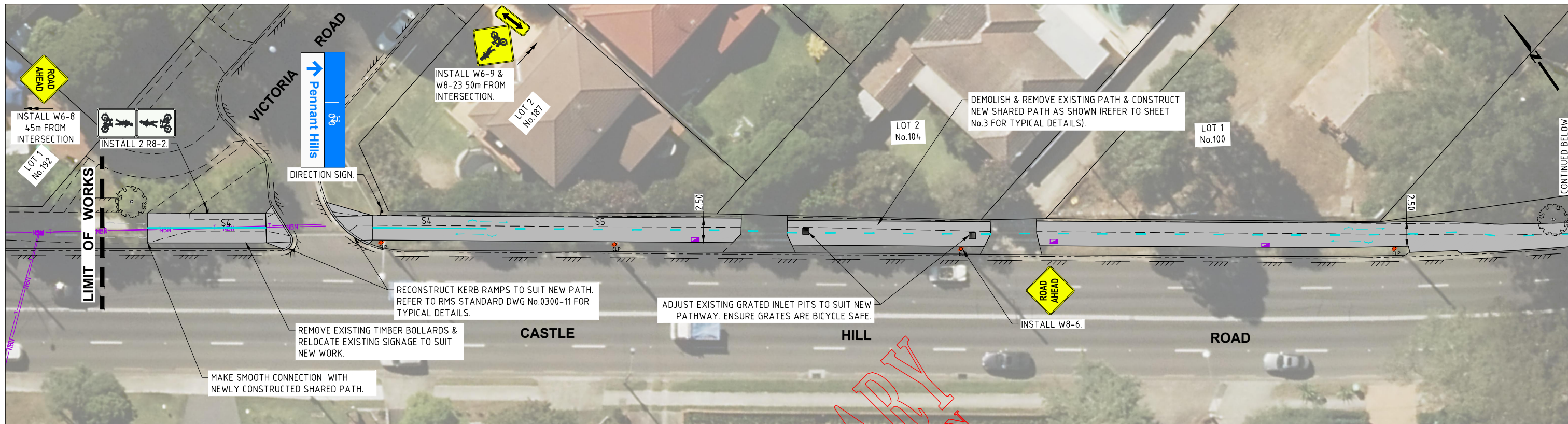
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**CASTLE HILL ROAD, WEST PENNANT HILLS
PROPOSED SHARED PATH - VICTORIA ROAD
TO PENNANT HILLS ROAD**

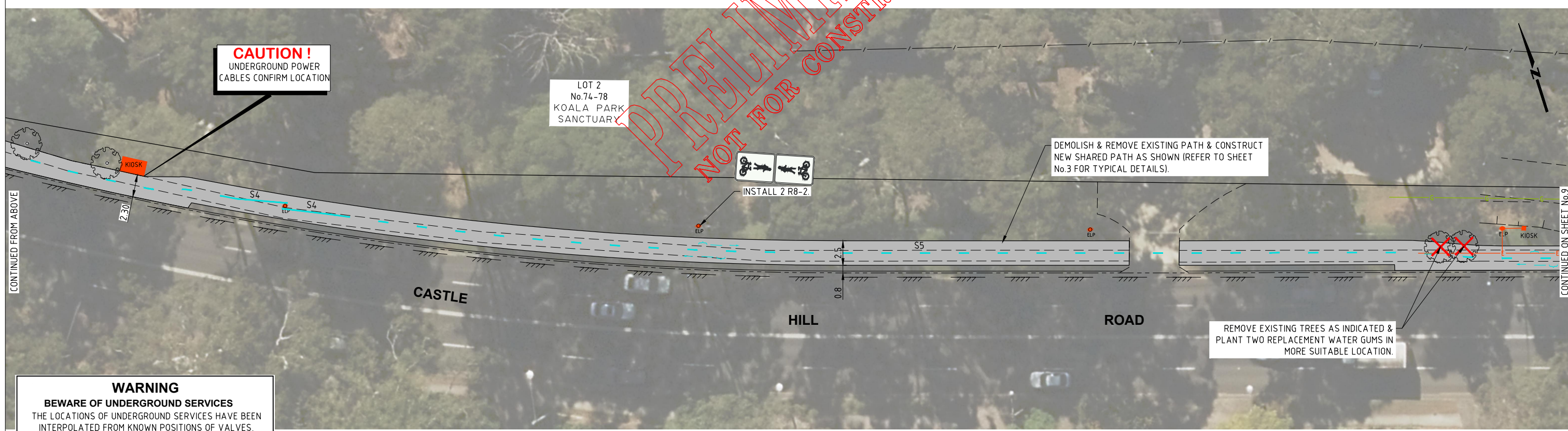
OVERALL LAYOUT PLAN

Project Number	100952		
Sheet of	7	14	Issue 1
HSC Drawing Number	156.20		



PLAN
SCALE 1:200

INSTALL ARTICULATED JOINT SYSTEM (TRIP STOP OR EQUIVALENT) IN PATH IN AREAS OF HIGH VEGETATION OR WHERE DIRECTED BY SUPERVISING ENGINEER.



PLAN
SCALE 1:200

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES HAVE BEEN INTERPOLATED FROM KNOWN POSITIONS OF VALVES, MANHOLES ETC. AND/OR INFORMATION SUPPLIED BY SERVICE AUTHORITIES. NO RESPONSIBILITY IS TAKEN FOR THE ACCURACY OF THE INTERPOLATED INFORMATION SUPPLIED. ENSURE ALL SERVICES ARE ACCURATELY LOCATED PRIOR TO COMMENCEMENT OF WORK.

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SCALE 1:200 @ A1

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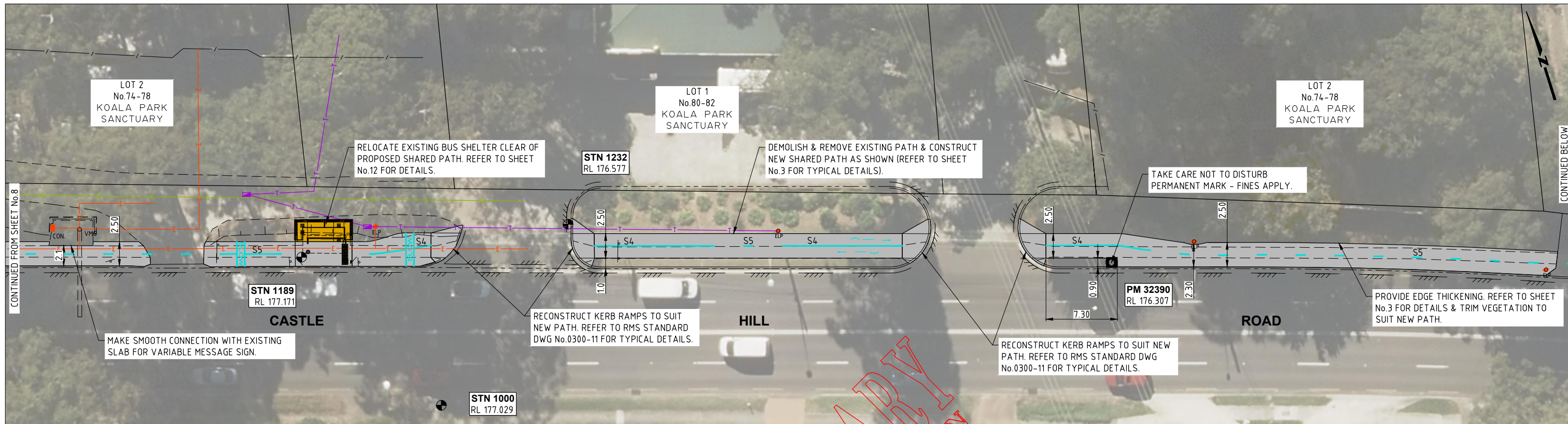
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CASTLE HILL ROAD, WEST PENNANT HILLS PROPOSED SHARED PATH - VICTORIA ROAD TO PENNANT HILLS ROAD

GENERAL WORKS & SERVICES PLAN
SHEET 1 OF 4

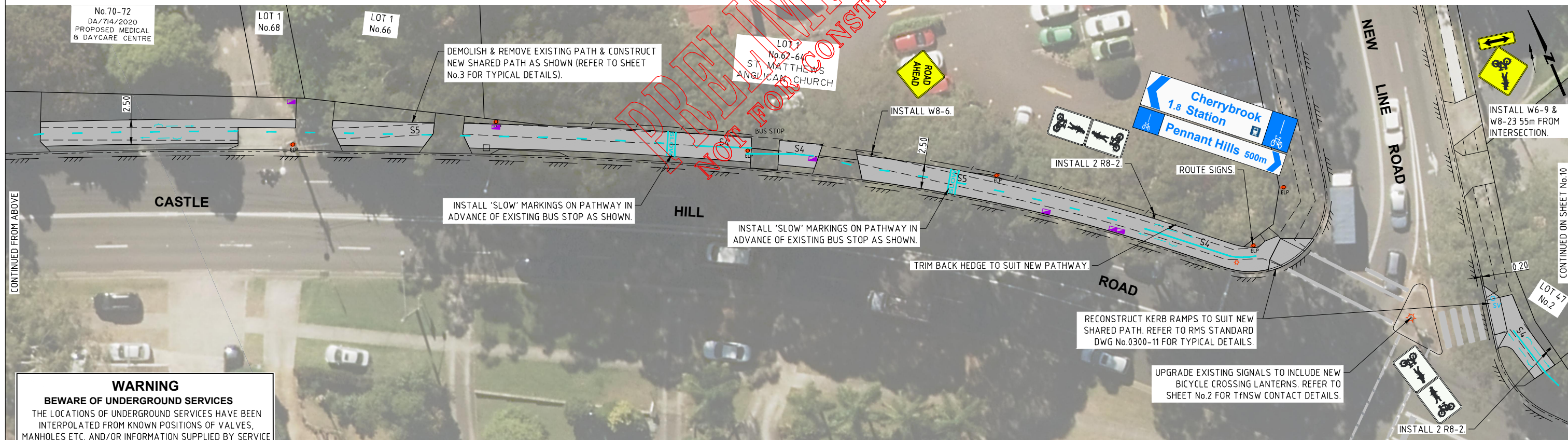
Project Number 100952	Sheet of 8 14	Issue 1
HSC Drawing Number 156.20		

Design not to be amended without authorisation by Manager Design & Construction



PLAN
SCALE 1:200

INSTALL ARTICULATED JOINT SYSTEM (TRIP STOP OR EQUIVALENT) IN PATH IN AREAS OF HIGH VEGETATION OR WHERE DIRECTED BY SUPERVISING ENGINEER.



PLAN
SCALE 1:200

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Bar Scales
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SCALE 1:200
@ A1

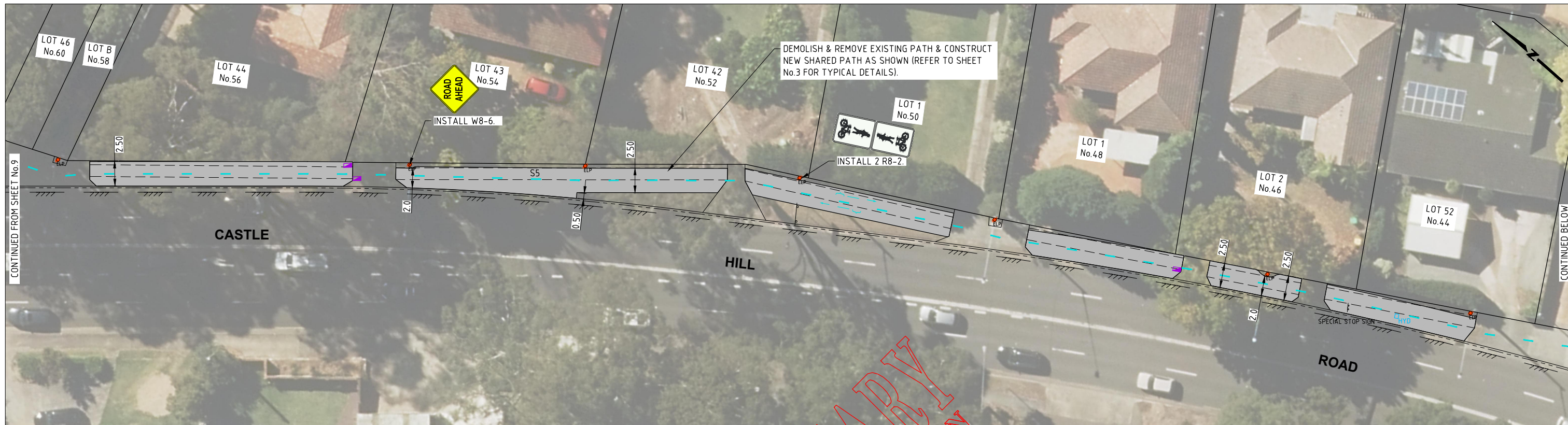
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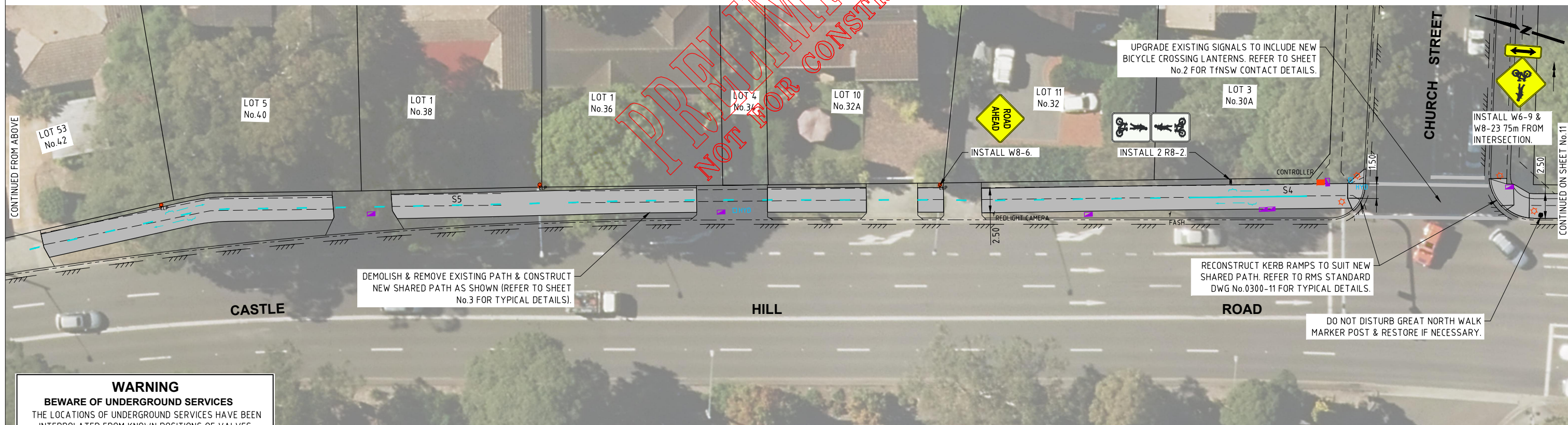
CASTLE HILL ROAD, WEST PENNANT HILLS
PROPOSED SHARED PATH - VICTORIA ROAD
TO PENNANT HILLS ROAD

GENERAL WORKS & SERVICES PLAN
SHEET 2 OF 4

Project Number	100952		
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HSC Drawing Number	156.20		



PLAN
SCALE 1:200



PLAN
SCALE 1:200

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**Hornsby Shire Council
Design & Construction
Branch**

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Authorised for release - Manager Design & Construction
Name: R. RAJCA Signed: Date:

Designer X. ZHENG	Design Checked-Design Team Leader Signed:				
Drawn X. ZHENG	Drawing Checked Signed:				
Surveyor J. HART	NA Field Book	NA Level Book	AHD Datum		
Project Identifier\VCAD File Name H:\Castle Hill Rd Shared Path_TR_100952\Castle Hill.dwg					
TRIM Document Number	1	ISSUED FOR CONSTRUCTION	M. DRAKE		
	Issue	Description	Name	Initial	Date
Design not to be amended without authorisation by Manager Design & Construction					

Bar Scales
0 2 4 6 8 10m
SCALE 1:200
@ A1

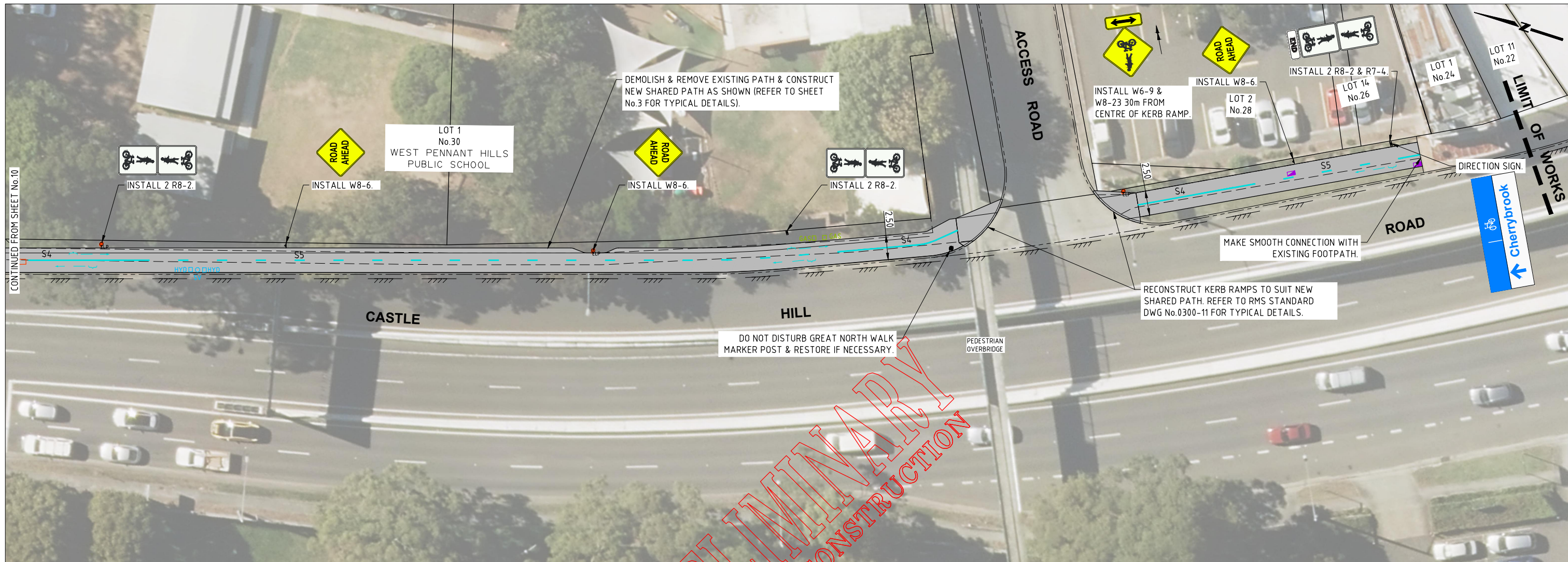
DRAFT
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HORNSBY SHIRE COUNCIL
PO BOX 37, HORNSBY NSW 1630

**CASTLE HILL ROAD, WEST PENNANT HILLS
PROPOSED SHARED PATH - VICTORIA ROAD
TO PENNANT HILLS ROAD**

GENERAL WORKS & SERVICES PLAN
SHEET 3 OF 4

Project Number 100952	Sheet of 10 14		Issue 1
HSC Drawing Number 156.20			



PLAN
SCALE 1:200

PRELIMINARY
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INSTALL ARTICULATED JOINT SYSTEM (TRIP STOP OR EQUIVALENT) IN PATH IN AREAS OF HIGH VEGETATION OR WHERE DIRECTED BY SUPERVISING ENGINEER.

WARNING
BEWARE OF UNDERGROUND SERVICES
 THE LOCATIONS OF UNDERGROUND SERVICES HAVE BEEN INTERPOLATED FROM KNOWN POSITIONS OF VALVES, MANHOLES ETC. AND/OR INFORMATION SUPPLIED BY SERVICE AUTHORITIES. NO RESPONSIBILITY IS TAKEN FOR THE ACCURACY OF THE INTERPOLATED INFORMATION SUPPLIED. ENSURE ALL SERVICES ARE ACCURATELY LOCATED PRIOR TO COMMENCEMENT OF WORK.

SIGNAGE NOTES:

1. SIGN TO BE INSTALLED IN ACCORDANCE WITH MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES/AS1742.2 REQUIREMENTS.
2. WHERE POSSIBLE EXISTING SIGNS TO BE CLEANED & RELOCATED TO SUIT NEW WORK.
3. REMOVE REDUNDANT SIGNAGE.
4. SHARED ROUTE & DIRECTIONAL SIGNAGE TO BE IN ACCORDANCE WITH AUSTRROADS BICYCLE WAYFINDING RESEARCH REPORT AP-R492-15.
5. WHERE POSSIBLE SIGNS WITH MULTIPLE POSTS SHOULD BE REPLACED WITH SINGLE POSTS TO REDUCE PATHWAY OBSTRUCTION. REFER TO TfNSW STANDARD DRAWINGS & TECHNICAL DIRECTIVES FOR DETAILS.

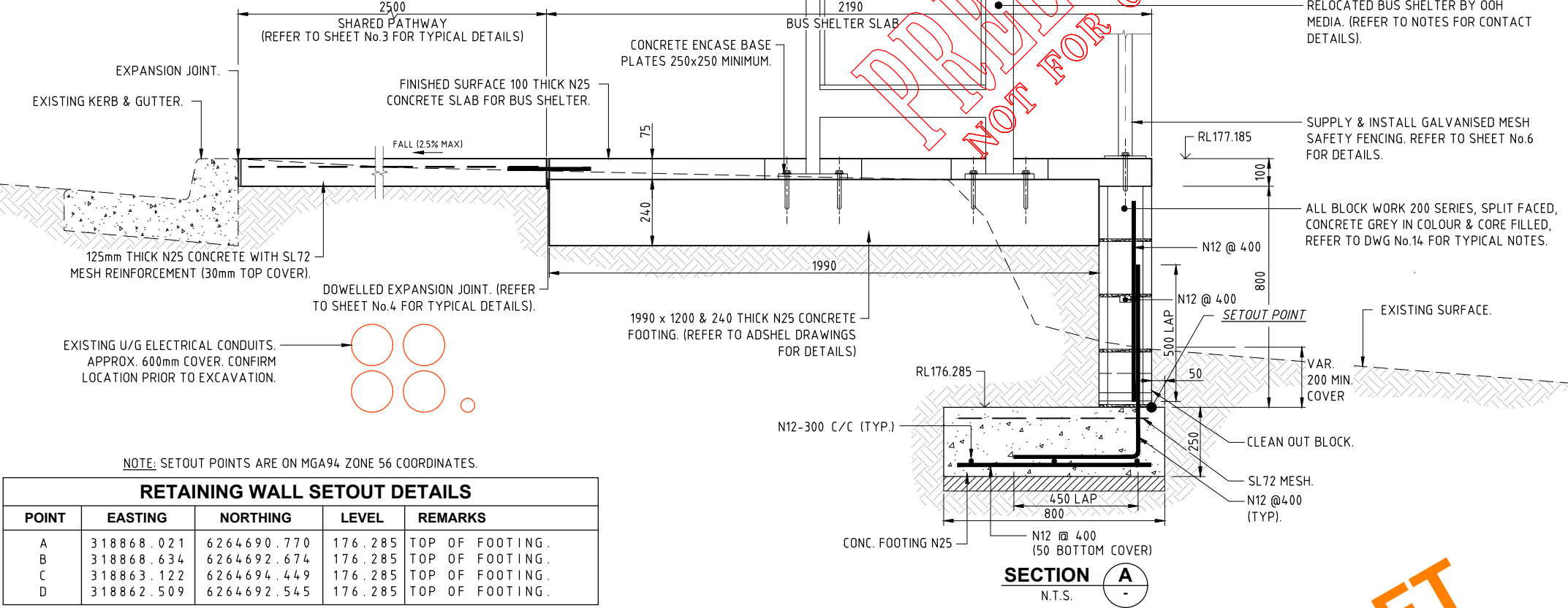
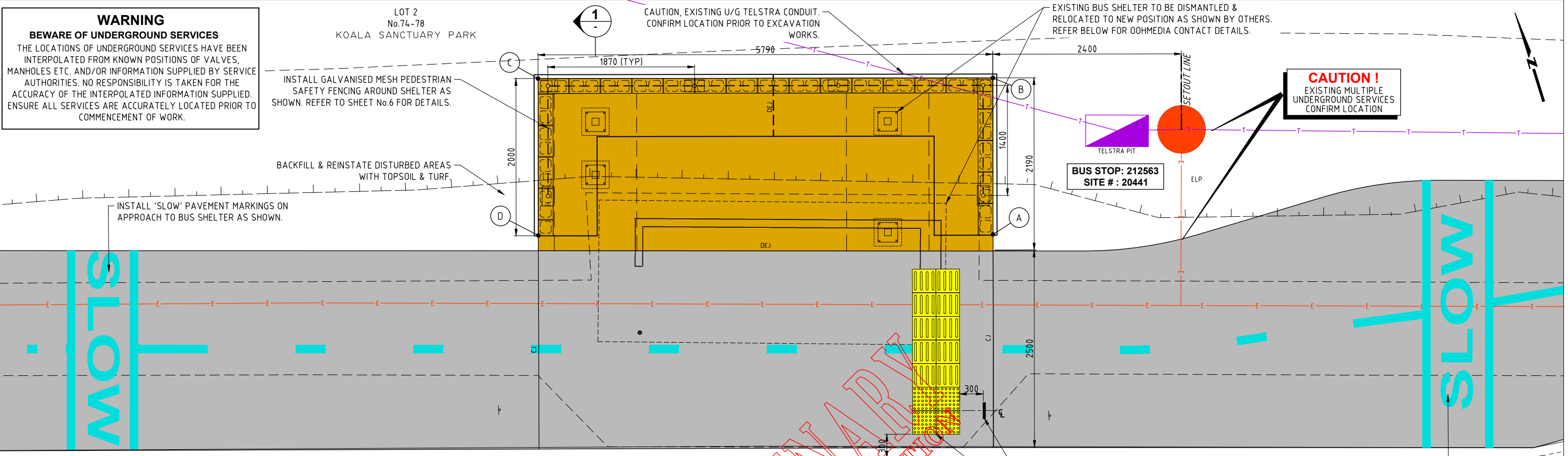
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CASTLE HILL ROAD, WEST PENNANT HILLS PROPOSED SHARED PATH - VICTORIA ROAD TO PENNANT HILLS ROAD
 GENERAL WORKS & SERVICES PLAN
 SHEET 4 OF 4

Project Number 100952	Sheet of 11 of 14	Issue 1
HSC Drawing Number 156.20		



- BUS SHELTER GENERAL NOTES:**
- ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS & SPECIFICATIONS OF HORNSBY SHIRE COUNCIL, TRANSPORT FOR NSW & OOH MEDIA.
 - LEVELS SHALL BE OBTAINED FROM ESTABLISHED BENCH MARKS & NOT FROM SURVEY PEGS.
 - DISCONNECTION & RECONNECTION OF ELECTRICAL SERVICES TO SHELTER SHALL BE UNDERTAKEN BY AN APPROVED LEVEL 2 ELECTRICAL CONTRACTOR.
 - PROVIDE TRAFFIC MANAGEMENT, LINE MARKING & SIGNAGE IN ACCORDANCE WITH THE TfNSW "TRAFFIC CONTROL AT WORK SITES" TECHNICAL MANUAL & AS1742.3 REQUIREMENTS.
 - SERVICES SHOWN ON THESE PLANS HAVE BEEN LOCATED FROM INFORMATION SUPPLIED FROM THE RELEVANT AUTHORITIES VIA A "DIAL BEFORE YOU DIG" ENQUIRY. THE LOCATION OF SERVICES SHOWN ON THESE DRAWINGS HAVE BEEN PLOTTED AS ACCURATELY AS POSSIBLE FROM DIAGRAMS PROVIDED BY SERVICE AUTHORITIES & FIELD INVESTIGATIONS & ARE TO BE VERIFIED PRIOR TO CONSTRUCTION.
 - EROSION & SEDIMENT CONTROL MEASURES ARE TO BE INSTALLED IN ACCORDANCE WITH THE LANDCOM PUBLICATION-- "MANAGING URBAN STORMWATER, SOILS & CONSTRUCTION" Vol. 1, 4th EDITION.
 - ALL DISTURBED AREAS OF THE SITE ARE TO BE REINSTATED WITH EXISTING OR MATCHING MATERIALS UNLESS NOTED OTHERWISE AT THE COMPLETION OF THE WORKS.
 - IF SET-OUT IS REQUIRED BY HORNSBY SHIRE COUNCIL DESIGN & CONSTRUCTION BRANCH SURVEYOR. NOTIFY ENGINEERING SURVEYOR A MINIMUM OF 24 HOURS IN ADVANCE.
 - OOH MEDIA CONTACT DETAILS FOR BUS SHELTER:
NAME: BRIAN PANELO PH: 0467 727 886 EMAIL: Brian.Panelo@oohmedia.com.au

NOTE: SETOUT POINTS ARE ON MGA94 ZONE 56 COORDINATES.

POINT	EASTING	NORTHING	LEVEL	REMARKS
A	318868.021	6264690.770	176.285	TOP OF FOOTING.
B	318868.634	6264692.674	176.285	TOP OF FOOTING.
C	318863.122	6264694.449	176.285	TOP OF FOOTING.
D	318862.509	6264692.545	176.285	TOP OF FOOTING.

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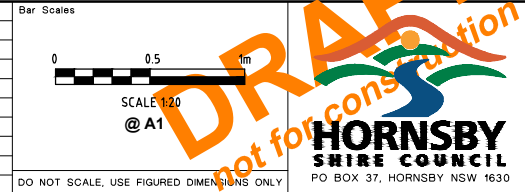
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Signed: X. ZHENG
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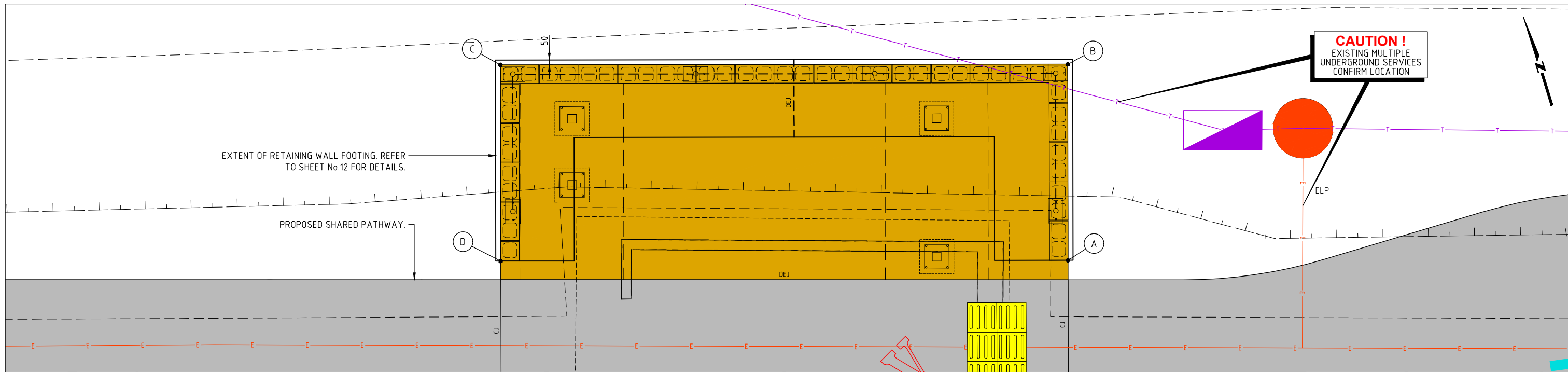
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**CASTLE HILL ROAD, WEST PENNANT HILLS
PROPOSED SHARED PATH - VICTORIA ROAD
TO PENNANT HILLS ROAD**

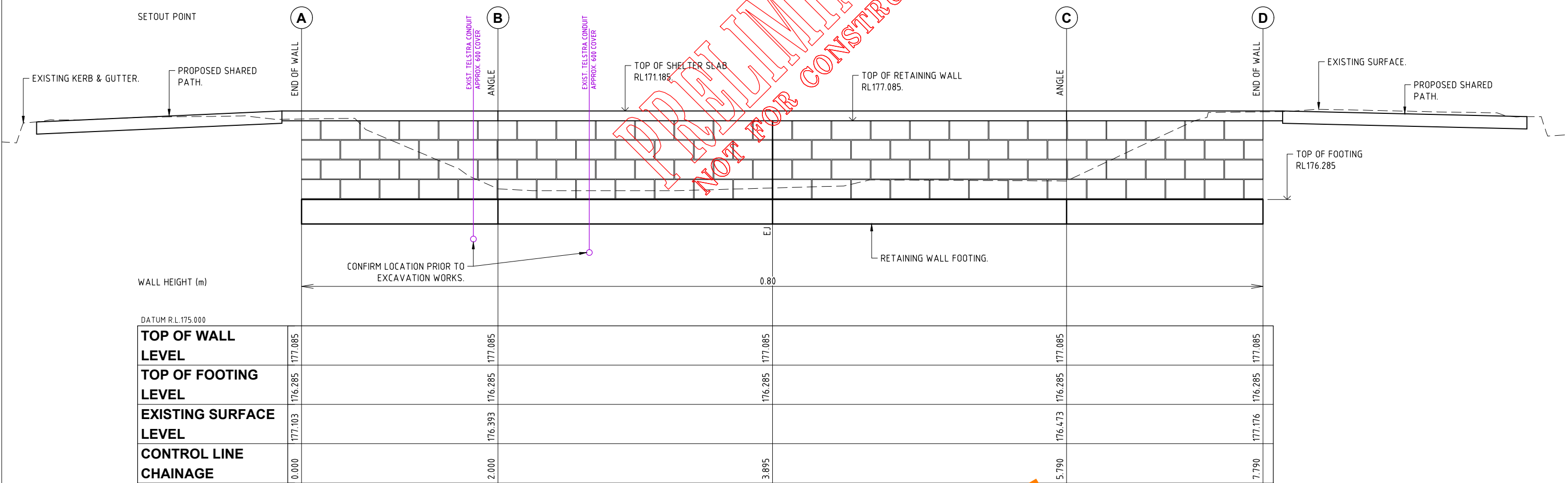
BUS SHELTER PLAN, SECTION & SETOUT DETAILS

Project Number: 100952
Sheet of: 12 of 14
Issue: 1
HSC Drawing Number: 156.20



PLAN
SCALE 1:20

PRELIMINARY
 NOT FOR CONSTRUCTION



SECTIONAL ELEVATION OF RETAINING WALL
SCALE 1:20 NATURAL

	A	B	C	D
TOP OF WALL LEVEL	177.085	177.085	177.085	177.085
TOP OF FOOTING LEVEL	176.285	176.285	176.285	176.285
EXISTING SURFACE LEVEL	177.103	176.393	176.473	177.176
CONTROL LINE CHAINAGE	0.000	2.000	3.895	5.790

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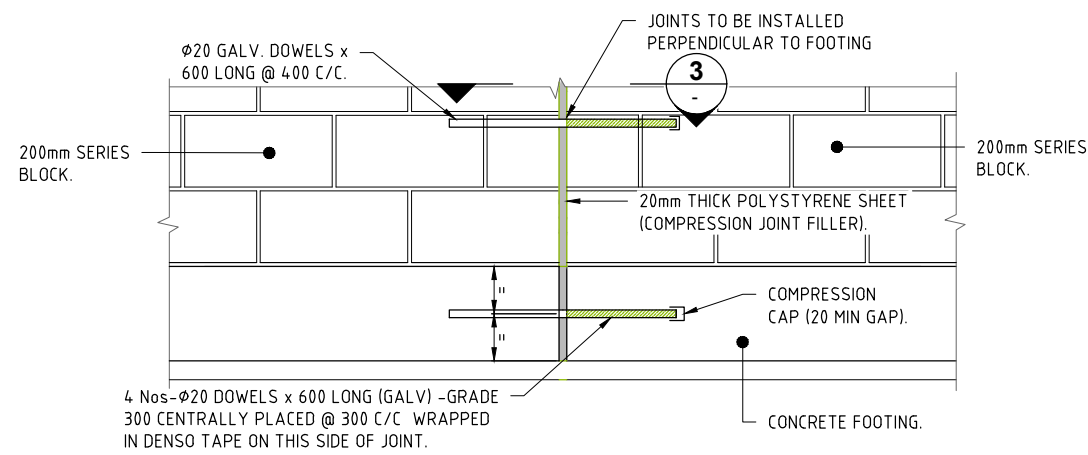
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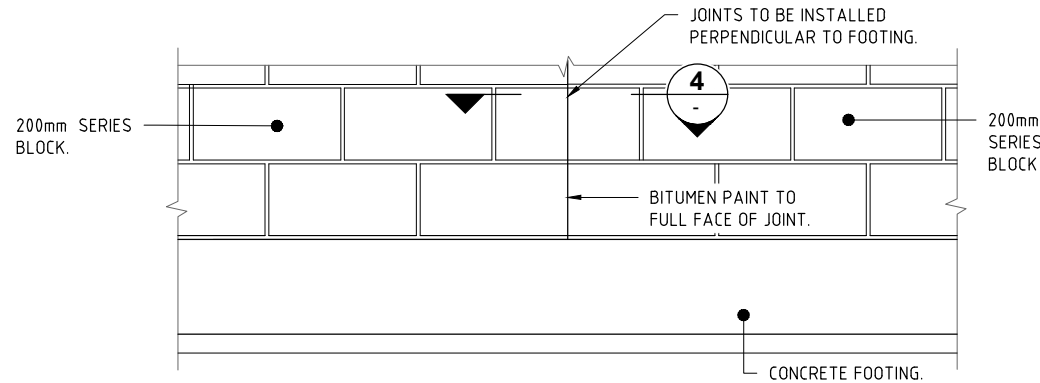
**CASTLE HILL ROAD, WEST PENNANT HILLS
 PROPOSED SHARED PATH - VICTORIA ROAD
 TO PENNANT HILLS ROAD**
 BUS SHELTER ENLARGED PLAN & SECTIONAL ELEVATION
 OF RETAINING WALL

Project Number	100952		
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EXPANSION JOINT (EJ) DETAIL

SCALE 1:10



CONTRACTION JOINT (CJ) DETAIL

SCALE 1:10

GENERAL:

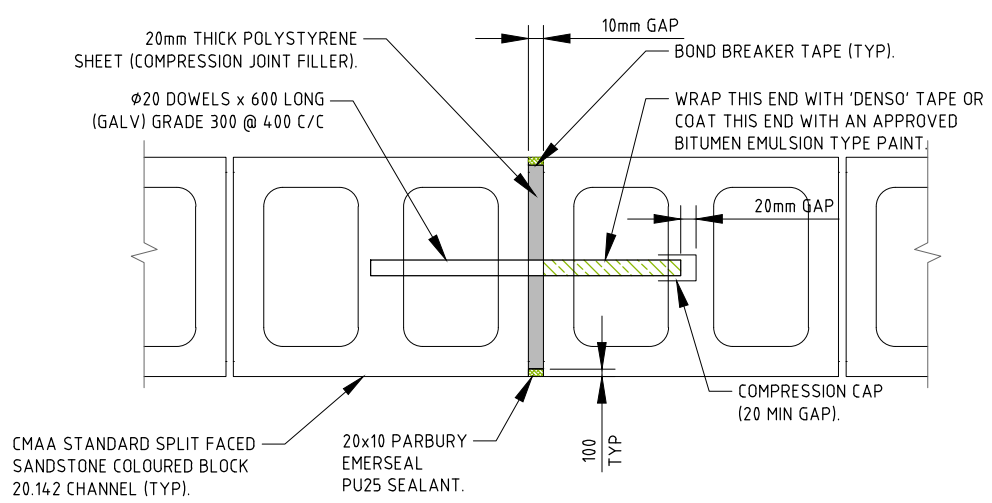
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS & SPECIFICATIONS.
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE.

FOUNDATION AND BACKFILL:

- CONCRETE FOUNDATIONS SHALL BE FOUNDED ON AN EXCAVATED SURFACE OR COMPACTED BACKFILL HAVING AN ALLOWABLE BEARING CAPACITY MINIMUM 150kPa. BEFORE ANY CONCRETE OR REINFORCEMENT IS PLACED THE EXCAVATION SHALL BE APPROVED BY AN EXPERIENCED GEO-TECHNICAL ENGINEER.
- ANY AREA OF SOFT OR UNSUITABLE GROUND FOUND TO BE PRESENT BELOW THE UNDERSIDE OF FOOTING LEVEL SHALL BE REMOVED DOWN TO ACCEPTABLE BEARING & BE BACKFILLED WITH LEAN MIX OF GRADE 20 CONCRETE.

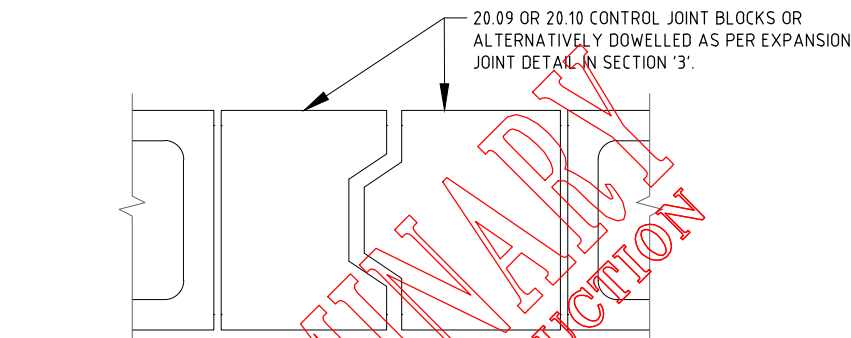
CONCRETE:

- CONCRETE EXPOSURE CLASSIFICATION B1.
- NOMINAL 28 DAYS CHARACTERISTIC COMPRESSIVE STRENGTH SHALL BE:
CAST IN-SITU CONCRETE = 40MPa
BLINDING CONCRETE = 20MPa.
- NOMINAL COVER OF REINFORCEMENT NEAREST TO THE CONCRETE SURFACE SHALL BE:
CAST IN-SITU CONCRETE = 40mm
(CAST AGAINST STANDARD FORMWORK OR BLINDING)
CAST IN SITU CONCRETE = 70mm
- CONSTRUCTION JOINTS SHALL BE PROPERLY FORMED & USED ONLY WHERE SHOWN ON THE DRAWINGS OR SPECIFICALLY APPROVED BY THE DESIGNER. FURTHERMORE, CONCRETE SURFACES AGAINST WHICH NEW CONCRETE IS TO BE PLACED, SHALL BE CLEAN, FREE OF ALL LAITANCE, PROVIDED WITH A MINIMUM 6mm RELIEF & BE DAMPENED DOWN PRIOR TO COMMENCEMENT OF POURING NEW CONCRETE.
- EDGES SHALL BE CHAMFERED 20x20 & RE-ENTRANT ANGLES. FILLETED 20x20 UNLESS SPECIFIED OTHERWISE.
- NCF DENOTES NO CHAMFER OR FILLET.



SECTION 3

SCALE 1:5



SECTION 4

SCALE 1:5

STEEL REINFORCEMENT:

- ALL REINFORCEMENT SHALL COMPLY WITH AS4671.
- REINFORCEMENT SHALL NOT HAVE A PROTECTIVE COATING UNLESS NOTED OTHERWISE.
- ALL REINFORCEMENT SHALL BE FIRMLY SUPPORTED ON PLASTIC CHAIRS WITH FLAT BASES AT NOT GREATER THAN 1200 CENTRES BOTH WAYS. BARS SHALL BE TIED AT ALTERNATE INTERSECTIONS.
- BAR NOTATION GIVES THE FOLLOWING INFORMATION:
5 N16 @ 150 EF (NF) (FF)
No OFF | | EACH FACE / (NEAR FACE) / (FAR FACE)
BAR SIZE | | BAR CENTRES
- LAPS NOT SHOWN ON THE DRAWINGS SHALL BE STAGGERED SO THAT NO MORE THAN 50% OF BARS ARE LAPPED IN ANY ONE CROSS SECTION.
- REINFORCEMENT MAY BE DISPLACED SLIGHTLY WHERE NECESSARY TO CLEAR RECESSES.
- UNLESS NOTED OTHERWISE THE MINIMUM DEVELOPMENT LENGTHS & LENGTHS OF LAPS FOR GRADES 500N BAR.

CONCRETE GRADE 40MPa				
BAR SIZE:	N12	N16	N20	N24
a) HORIZONTAL BARS WITH >300mm OF CONCRETE CAST BELOW THE BAR	475	800	1125	1200
b) OTHER BARS	375	625	900	950

* TOLERANCES ON NOMINAL COVER OF -5mm HAS BEEN ASSUMED FOR CONCRETE ELEMENTS CAST AGAINST FORMWORK OR BLINDING.

- WHERE MORE THAN 50% OF BARS ARE LAPPED IN ANY ONE CROSS SECTION THE LAPS SHOWN IN THE TABLE ABOVE SHALL BE INCREASED BY A MULTIPLE FACTOR OF 1.3.
- REINFORCEMENT SHOWN ON THE DRAWINGS IS REPRESENTED DIAGRAMMATICALLY AND NOT NECESSARILY SHOWN IN TRUE PROJECTION.

CONCRETE BLOCK MASONRY WALL:

- ENSURE WORKMANSHIP & MATERIALS CONFORM TO THE CURRENT EDITION OF AS 3700 AND ITS REFERENCED STANDARDS.
- FULLY BED FACE SHELLS & PERPENDS.
- PROVIDE CLEANOUT HOLES/BLOCKS AT BASE OF ALL WALLS & ROD CORE HOLES TO REMOVE PROTRUDING MORTAR FINS. TIE VERTICAL REINFORCEMENT TO STARTER BARS.
- FILL ALL CORES OF REINFORCED WALLS WITH THOROUGHLY COMPACTED 20MPa GROUT, 10mm MAXIMUM AGG, 250 SLUMP & MINIMUM 300KG/m3 OF TYPE GP ELEMENT, UNO.
- DO NOT CUT CHASES INTO LOAD BEARING BLOCKWORK, OR NON LOAD BEARING BLOCKWORK, WITHOUT WRITTEN APPROVAL FROM PRINCIPAL THROUGH SUPERINTENDENT. ALLOW FOR SERVICES PRIOR TO CONSTRUCTING BLOCKWORK.
- DO NOT USE MORTAR ADMIXTURES WITHOUT WRITTEN APPROVAL.
- PROVIDE 20mm GAP TO TOP OF NON LOAD BEARING WALLS TO ALLOW SEALANT AS SPECIFIED.
- SCHEDULE:

ELEMENT	UNIT STRENGTH	GROUT STRENGTH	MORTAR CEMENT/LIME/SAND
RETAINING WALLS	15MPa	20MPa	M4 1:0.5:4.5

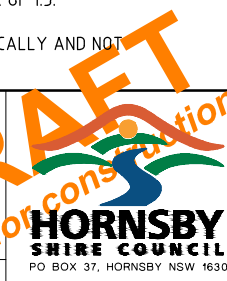
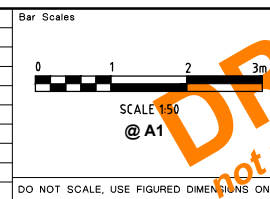
REINFORCED MASONRY BLOCKWORK NOTES

- MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF:-
AS 3700 MASONRY STRUCTURES
AS/NZS 4455 MASONRY UNITS AND SEGMENTAL PAVERS
AS 2701 METHODS OF SAMPLING AND TESTING MORTAR FOR MASONRY CONSTRUCTIONS AS 3600 CONCRETE STRUCTURES CODE.
- CONCRETE MASONRY UNITS TO BE f_{uc} = 15MPa TO AS 3700.
- MORTAR MIX (CEMENT : LIME : SAND):-
RETAINING WALLS - 1 : 0.5 : 4.5
LOAD BEARING WALLS - 1 : 1 : 6
NON LOAD BEARING WALLS - 1 : 2 : 9
ALTERNATIVELY USE EQUIVALENT CEMENT SAND MORTAR WITH PLASTICISER. DO NOT USE MORTAR ADMIXTURES WITHOUT WRITTEN APPROVAL FROM SUPERINTENDENT (SUPERVISING OFFICER).
- MORTAR COMPRESSIVE STRENGTH TO BE 12 MPa AT 28 DAYS.
- MAXIMUM OF 6 COURSES HEIGHT TO BE PLACED AT ANY ONE TIME.
- PROVIDE CLEAN-OUT BLOCKS TO THE BASE OF ALL REINFORCED CORES.
- ALL MORTAR DROPPINGS TO BE REMOVED FROM BOTTOM OF CAVITY, THROUGH CLEAN-OUT BLOCKS, BEFORE CONCRETING.
- COVER TO REINFORCEMENT REFER TO DETAILS.
- REINFORCEMENT MUST BE POSITIONED ACCURATELY & TIED SECURELY BEFORE PLACING GROUT. VERTICAL BARS, INCLUDING STARTER BARS, SHOULD BE AS CLOSE TO REAR BLOCK FACE OF WALL AS POSSIBLE, CONSISTENT WITH COVER REQUIREMENTS.
- CONSTRUCT VERTICAL CONTROL JOINTS IN WALLS AT EXPANSION AND CONSTRUCTION JOINTS IN SLABS, SLAB ENDINGS AND DIFFERENT SUPPORT LEVELS, OR AT 6m MAX. CENTRES U.N.O.
- GROUT MIX USED TO FILL CAVITY TO HAVE:-
ULTIMATE CRUSHING STRENGTH (f_c) OF 20 MPa
SLUMP 230mm TO 250mm
MAXIMUM AGGREGATE SIZE OF 10mm.
MINIMUM 300kg/m³ OF TYPE GP CEMENT.
- ALL CORES ARE TO BE WETTED PRIOR TO GROUTING.
- GROUT MIX TO BE THOROUGHLY COMPACTED EITHER BY RODDING OR BY PENCIL VIBRATOR. ALL CORES TO BE FILLED TO A MAXIMUM OF 3m HIGH FREE DROP IN ANY ONE POUR. STOP POUR 50mm BELOW TOP OF BLOCK TO PROVIDE KEY FOR FOLLOWING POUR.
- RETAINING WALL DRAINAGE TO BE 100mm DIA. SLOTTED PVC PIPE ENCLOSED IN AN APPROVED FILTER SOCK WITH 150mm THICK, 20mm GRAVEL U.N.O.. GRADE DRAINAGE AT 1 IN 200 MIN. TO SUITABLE OUTLET.
- BACKFILL RETAINING WALL, ON SUPERINTENDENT'S APPROVAL, WITH APPROVED CLEAN GRANULAR MATERIAL, FREE FROM CLAY OR OTHER ORGANIC MATTER. COMPACT BACKFILL IN LAYERS NOT EXCEEDING 200mm TO 95% STANDARD COMPACTION (AS 1289). DO NOT COMPACT UNTIL 7 DAYS AFTER PLACEMENT OF THE FILLING CONCRETE.
- BLOCK WALL TO BE COATED WITH 'SILASKIN' ANTI-GRAFFITI PRODUCT (OR EQUIVALENT) IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

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TO PENNANT HILLS ROAD**

RETAINING WALL JOINTING DETAILS & SECTIONS

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