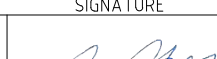




SHEET NO.	SHEET TITLE	REVISION
01	COVER SHEET	3
02	TYPICAL CROSS SECTION	3
03	GENERAL NOTES	2
04	OVERALL LAYOUT PLAN	2
05	PLAN AND LONG SECTION - SHEET 01	3
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FOR APPROVAL

				SURVEY DATA	SOILCO	COVER SHEET				P0 Box 554 Beaudesert QLD 4285 (07) 5541 3500 www.acsengineers.com.au	 CIVIL ENVIRONMENTAL PROJECT MANAGEMENT	
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				GDA2020								
				MAP GRID								
				MGA56	BROMELTON DEVELOPMENT							
3	BATTER CHUTES ADDED. CROSS SECTION AND ESC UPDATES	NJF	03/10/24	HEIGHT ORIGIN								
2	PLANS UPDATED AS PER SRRC RFI	NJF	06/09/24	AHD								
1	FOR APPROVAL	NJF	30/06/24	SURVEY BOOKS	260 MITCHELL ROAD, BROMELTON QLD 4285							
						#	FIELD	NAME	SIGNATURE	DATE	DRAWING NUMBER	REVISION
						13697	CIVIL	S. SHAY		23/10/24	ACS-220089-ROAD-01	3
REVISION/DETAILS				DWN	DATE							
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GENERAL NOTES

1. THE BILL OF QUANTITIES (BOQ) IS PROVIDED AS A GUIDE ONLY. THE CONTRACTOR IS TO REVIEW THIS BOQ AGAINST THE PLANS AND VERIFY QUANTITIES AS A PART OF THEIR DUE DILIGENCE IN TENDERING. ANY DISCREPANCIES ARE TO BE REFERRED TO ACS ENGINEERS FOR CLARIFICATION.
2. THE CONTRACTOR IS RESPONSIBLE FOR ACCURATELY ASCERTAINING THE LOCATION OF EXISTING UNDERGROUND AND OVERHEAD SERVICES PRIOR TO THE COMMENCEMENT OF WORKS.
3. REFER ANY DISCREPANCY TO THE PRINCIPLE ENGINEER BEFORE PROCEEDING WITH THE WORK.
4. PRIOR TO CONSTRUCTION LOCATE ALL EXISTING SERVICES IN THE VICINITY THAT MAY BE AFFECTED BY THE PROPOSED CONSTRUCTION.
5. DESIGN LEVELS TO BE CONFIRMED ON SITE PRIOR TO COMMENCING CONSTRUCTION.
6. CONCRETE ELEMENTS INCLUDING KERBS, FOOTPATHS, DRIVEWAYS ETC. SHALL BE SAW CUT WHERE REQUIRED AND SHALL BE REPLACED WITH MATCHING SURFACE TEXTURE AND TREATMENT AS ADJOINING SURFACES OR AS SPECIFIED IN THE DRAWINGS. NEW SURFACE SHALL MATCH SMOOTHLY WITH ADJOINING SURFACES.
7. DRAINAGE STRUCTURES TO BE CONSTRUCTED IN ACCORDANCE WITH SD1305 & SD1359 OF TMR STANDARD DRAWINGS.

SURVEY:

1. THE DATUM FOR ALL LEVELS IS THE AUSTRALIAN HEIGHT DATUM IN METRES AND PROJECTIONS ARE BASED ON MGA 2020 ZONE 56 COORDINATE SYSTEM.
2. DETAILED SURVEY WAS CARRIED OUT BY TJ KELLYS SURVEYS REF: 4497-02. THE ACCURACY OF PROPERTY BOUNDARIES IS NOT TO BE RELIED UPON AND SHOULD BE VERIFIED BY THE SURVEYOR.
3. SOME SERVICES HAVE BEEN EXPOSED AND LOCATED BUT OTHER SERVICE POSITIONS ARE DERIVED FROM SURFACE FEATURES ONLY. PRIOR TO EXCAVATION THE RELEVANT AUTHORITY SHOULD BE CONTACTED FOR DETAILED LOCATION OF ALL SERVICES.

SITE ACCESS:

1. PRIOR TO THE COMMENCEMENT OF SITE WORKS, THE LOCATION OF THE SITE ACCESS POINT MUST BE VERIFIED WITH RELEVANT AUTHORITY.
2. SITE ACCESS IS RESTRICTED TO ONE LOCATION.
3. SITE EXIT POINT MUST BE APPROPRIATELY MANAGED TO MINIMISE THE RISK OF SEDIMENT BEING TRACKED ONTO SEALED PUBLIC ROADWAYS.
4. STORMWATER RUNOFF FROM ACCESS ROADS AND STABILISED ENTRY/EXIT POINTS MUST DRAIN TO AN APPROPRIATE SEDIMENT CONTROL DEVICE.

EARTHWORKS - GENERAL

1. THE CONTRACTOR IS TO STRIP THE CONSTRUCTION AREA OF ALL GRASS, SHRUBS, RUBBISH, DELETERIOUS MATERIAL AND UNSUITABLE TOPSOIL AS NOMINATED BY THE ENGINEER.
2. DISPOSAL OF UNSUITABLE MATERIAL IS TO BE ONSITE. TOPSOIL APPROVED BY THE CLIENT FOR REUSE, IS TO BE STOCKPILED ON SITE AS DIRECTED.
3. BULK EARTHWORKS IS TO BE CARRIED OUT IN ACCORDANCE WITH SRRC AND TMR STANDARDS AND THE REQUIREMENTS OF AS3798.
4. THE CONTRACTOR SHALL PROVIDE DETAILS OF ALL TESTING TO THE SUPERVISING ENGINEER PROGRESSIVELY THROUGH THE WORKS AND NOTIFY THE ENGINEER OF ANY NON-CONFORMANCES. ALL NON CONFORMING WORK IS TO BE RECTIFIED.
5. PRIOR TO WORKS PROCEEDING, REMOVE SOFT AND OR COMPRESSIBLE ZONES AND REPLACE WITH SELECT SITE MATERIAL COMPACTED TO A DENSITY CONSISTENT WITH THAT NOTED FOR THE PROPOSED FILLING.
6. IT IS THE CONTRACTORS RESPONSIBILITY TO PROTECT THE SITE AND SURROUNDING AREAS FROM DAMAGE RESULTING FROM STORMWATER RUNOFF. TEMPORARY DIVERSION DRAINS AND OR OTHER DRAINAGE CONTROL DEVICES ARE TO BE IMPLEMENTED BY THE CONTRACTOR DURING CONSTRUCTION TO MINIMISE THE EFFECTS OF WEATHER.
7. ALL FILL MATERIAL PLACED ON THE SITE COMPRISING ONLY NATURAL EARTH AND ROCK IS TO BE FREE OF CONTAMINANTS (AS DEFINED BY SECTION 11 OF THE ENVIRONMENTAL PROTECTION ACT (EPA) 1994), NOXIOUS, HAZARDOUS, DELETERIOUS AND ORGANIC MATERIALS.
8. IMPORTED FILL FOR BUILDING PAD SHALL MEET THE REQUIREMENTS OF AS3798 FOR IMPORTED FILL.
9. BUILDING PAD TO BE KEYED INTO NATURAL SURFACE AFTER TOPSOIL STRIP.

EARTHWORKS - ROADWAYS

1. CLEARING AND GRUBBING SHALL BE LIMITED TO THOSE AREAS REQUIRED TO CONSTRUCT THE WORKS AND/OR MEET VISIBILITY REQUIREMENTS.
2. CLEARED AND GRUBBED MATERIAL OTHER THAN THAT MULCHED SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
3. WHERE WHEREVER PRACTICAL TOPSOIL SHALL BE TRANSFERRED DIRECTLY TO PLACEMENT AS PLANTING MEDIA. WHERE STOCKPILING OF TOPSOIL IS REQUIRED, IT SHALL BE CARRIED OUT IN A MANNER WHICH ENSURES THE PROPERTIES OF THE TOPSOIL ARE NOT PERMITTED TO DEGRADE SUCH THAT IT BECOMES UNSUITABLE AS PLANTING MEDIA.
4. WHERE UNSUITABLE MATERIAL MATERIAL IS ENCOUNTERED ONSITE, THE FOREMAN SHALL NOTIFY THE PROJECT ENGINEER BEFORE PROCEEDING TO REMOVE OR COVER SUCH MATERIAL.
5. MATERIAL USED FOR CONSTRUCTION OF SUBGRADE IN ROAD EMBANKMENT, WHERE DIRECTED, SHALL BE GENERAL FILL MATERIAL SUITABLE FOR PLACEMENT USING THE COMPACTED LAYER METHOD AND HAS A MAXIMUM STONE SIZE OF 75mm.

EXCAVATION ADJACENT TO POWER POLES:

1. POSSIBLE TRENCH SHORING REQUIREMENTS NEAR POWER POLES TO BE COORDINATED WITH ENERGEX AND THE APPROPRIATE APPROVALS TO BE OBTAINED FROM ENERGEX PRIOR TO CONSTRUCTION COMMENCEMENT.
2. ANY TRENCHING REQUIREMENTS ADJACENT TO EXISTING POWER POLES SHALL HAVE THE POWER POLES ADEQUATELY SUPPORTED DURING TRENCHING AND BACKFILLING OPERATIONS. A CERTIFIED ENGINEERING ASSESSMENT OF THE COMPACTION OF BACKFILL MATERIAL IS TO BE PROVIDED TO AND ASSESSED BY ENERGEX TO ENSURE POLE STABILITY BEFORE REMOVAL OF ADDITIONAL SUPPORT.
3. ALL CONSTRUCTION WITHIN 3m OF OVERHEAD POWER LINES REQUIRE 'SAFETY ADVICE ON WORKING AROUND ELECTRICAL POSTS' FORM BS00014.05F108 FROM ENERGEX.

TABLE 4.1 – SPACING OF GUIDE POSTS ON CURVES

CURVE RADIUS (NOTE 1)	SPACING (NOTE 2)	
	ON OUTSIDE OF CURVE	ON INSIDE OF CURVE (NOTE 3)
100	6	12
100-199	10	20
200-299	15	30
300-399	20	40
400-599	30	60
600-699	40	60
800-1999	60	60
1200-2000	90 (NOTE 4)	90 (NOTE 4)
> 2000 (INCL. STRAIGHTS)	150 (SEE NOTE 4)	150 (SEE NOTE 4)

NOTES:

1. WHERE THE RADIUS OF AN EXISTING CURVE IS NOT AVAILABLE FROM RECORDS, IT MAY BE DETERMINED APPROXIMATELY BY MEASURING THE MIDDLE ORDINATE OFFSET FROM A CHORD OF KNOWN LENGTH USING EITHER THE EDGE OF PAVEMENT OR A MARKING LONGITUDINAL LINE AS A GUIDE.
2. ON GUARD FENCE, SPACING SHOULD BE ADJUSTED, IF NECESSARY, TO THE NEAREST MULTIPLE OF POST SPACING.
3. EACH POST ON THE INSIDE OF A CURVE IS PLACE OPPOSITE TO A POST ON THE OUTSIDE OF THE CURVE WHEREVER PRACTICABLE.
4. SPACING IS REDUCED TO 75m IN AREAS SUBJECT TO FOG.
5. THE SPACING GIVEN IN THIS TABLE ARE BASED ON APPROXIMATIONS OF THE FOLLOWING FORMULAE:
 CURVE RADII UP TO 150m.....S = 0.03R + 5
 CURVE RADII 150m TO 2000m.....S = 0.06R
 WHERE
 S = SPACING IN METERS
 R = CURVE RADIUS IN METERS

CONSTRUCTION NOTES

1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ENGINEERS AND OTHER CONSULTANT'S DRAWINGS AND SPECIFICATIONS AND WITH OTHER SUCH WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCIES SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
2. NO RESPONSIBILITY WILL BE TAKEN FOR DIMENSIONS OBTAINED BY SCALING THESE DRAWINGS.
3. ALL DIMENSIONS SHALL BE VERIFIED ON SITE BY THE CONTRACTOR WHO SHALL BE RESPONSIBLE FOR THEIR CORRECTNESS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STRUCTURE AND NEIGHBOURING STRUCTURES IN A SAFE AND STABLE CONDITION DURING CONSTRUCTION. NO PART SHALL BE OVER STRESSED.
5. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT S.R.R.C SPECS AND THE BY-LAWS AND ORDINANCES OF THE RELEVANT GOVERNMENT AUTHORITY.
6. THE CONTRACTOR SHALL PROVIDE TRAFFIC MANAGEMENT FOR THE DURATION OF CONSTRUCTION IN ACCORDANCE WITH "THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES - PART 3" AS1742.1:2021 MUTCD, IF REQUIRED.
7. THE CONTRACTOR IS TO LOCATE, IDENTIFY AND ESTABLISH THE CONNECTIVITY OF ALL EXISTING SERVICES WITHIN THE LIMITS OF THE WORKS AND CONFIRM THIS INFORMATION WITH THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
8. PROPERTY BOUNDARIES ARE SUBJECT TO CONFIRMATION BY FIELD SURVEY CARRIED OUT BY A REGISTERED SURVEYOR.
9. ALL WORK SHALL BE JOINED NEATLY TO EXISTING FEATURES.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL MEASURING DEVICES, SAFETY EQUIPMENT AND MACHINERY REQUIRED TO CARRY OUT INSPECTIONS AS SPECIFIED OR REQUESTED.
11. THE CONTRACTOR SHALL RESTORE ALL EXTERNAL AREAS TO THE SITE, TO THEIR ORIGINAL CONDITION UPON COMPLETION OF THE WORKS.

PAVEMENT NOTES:

1. BASE GRAVEL TO BE TYPE 2 MATERIAL WITH MINIMUM CBR80 AND SUB-BASE GRAVEL TO BE TYPE 2 MATERIAL WITH MINIMUM CBR45 IN ACCORDANCE WITH MAIN ROADS SPECIFICATION MRTS05 UNBOUND PAVEMENTS.
2. COMPACTION STANDARD OF SUB-BASE & BASE PAVEMENTS SHALL ACHIEVE A CHARACTERISTIC VALUE OF THE RELATIVE DRY DENSITY NOT LESS THAN 100%.
3. THE PAVEMENT SHALL BE CONSTRUCTED SO AS NOT TO DEPART FROM THE WIDTHS, LENGTHS, HEIGHTS AND SHAPES SPECIFIED IN THESE PLANS UNLESS AUTHORISED BY PROJECT ENGINEER. THE WIDTHS, HEIGHTS AND SHAPES OF LAYERS OTHER THAN THE FINAL LAYER SHALL BE CALCULATED USING THE COMPLETED PAVEMENT SURFACE AND THE DEPTH TO SURFACE OF THE PARTICULAR LAYER WITHIN THE PAVEMENT.
4. COMPACTED LAYER THICKNESS SHALL NOT BE GREATER THAN 200mm OR LESS THAN 100mm.
5. ROAD SURFACE TO BE CLEAN AND DRY PRIOR TO PLACING SEAL.
6. TWO COAT BITUMENT SEAL EXCEPT AT PROPERTY ACCESS WHICH IS TO BE 50mm ASPHALT AC14.

DELINEATION:

1. WHERE PAVEMENT IS 6.8m WIDE OR GREATER, GUIDE POSTS SHALL BE USED ON UNDIVIDED RURAL ROADS AT, OR NEAR, THE EDGE OF FORMATION AND AT A CONSTANT DISTANCE (GENERALLY BETWEEN 1.2m AND 3.0m) FROM THE PAVEMENT EDGE.
2. NOMINAL SPACING OF GUIDE POSTS ON A STRAIGHT SECTION OF ROAD SHALL BE 150m, WITH THE POSTS IN PAIRS, ONE EACH SIDE OF THE FORMATION. THE SPACING MAY BE REDUCED TO 75m IN AREAS SUBJECT TO FREQUENT FOGS.
3. THE SPACING OF GUIDE POSTS ON CURVES SHALL BE AS GIVEN IN THE TABLE 4.1 ON THIS SHEET.
4. LINEMARKING (EDGE LINE, CENTRE LINE ETC) TO BE PROVIDED IN ACCORDANCE WITH AS1742.1:2021 MUTCD.

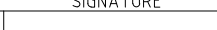
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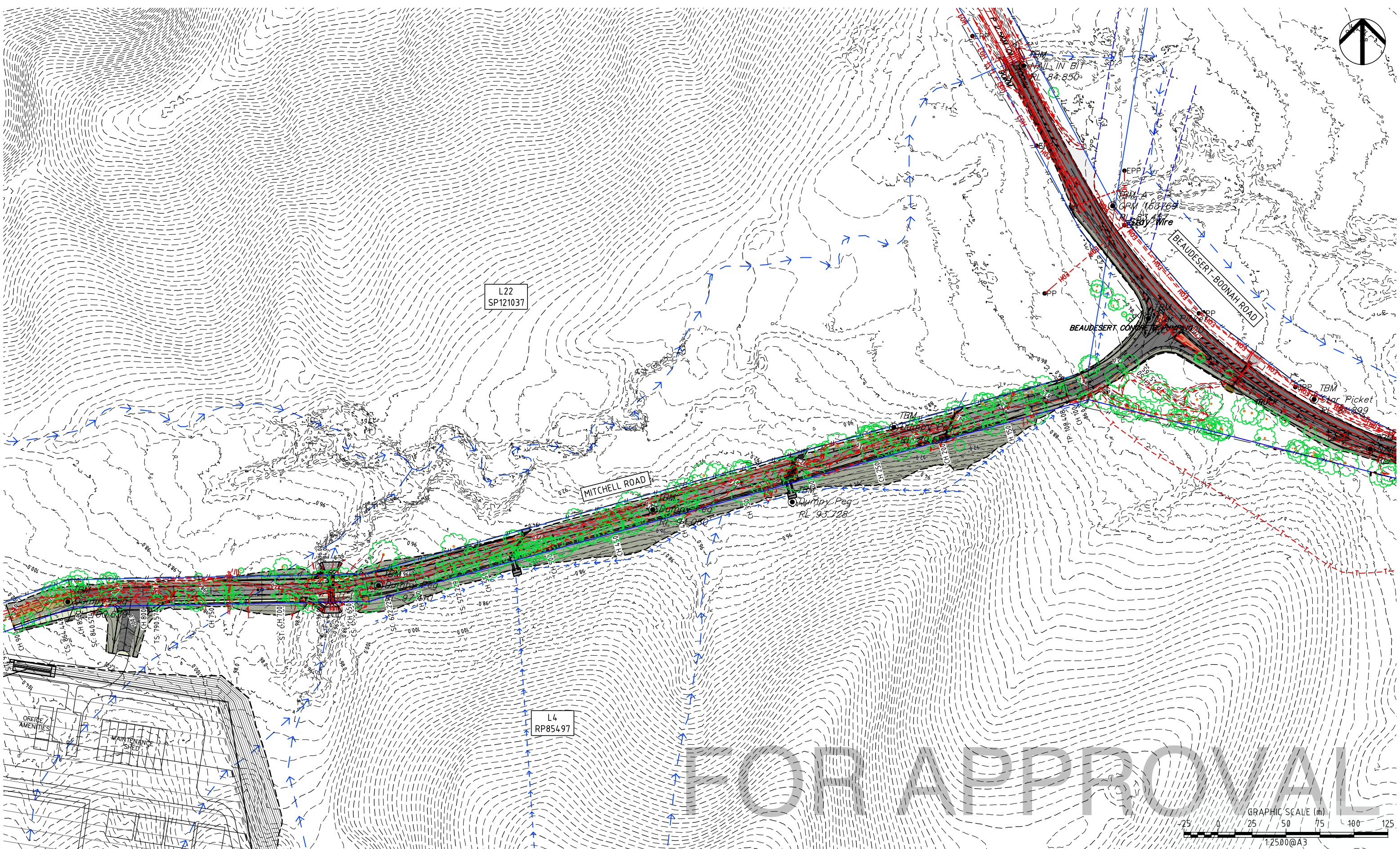
1. THE EXTENT OF CLEARING OF VEGETATION SHALL BE KEPT TO THE ABSOLUTE MINIMUM NECESSARY TO UNDERTAKE THE WORKS.
2. SILTATION CONTROLS, SITE REVEGETATION AND ENVIRONMENTAL REQUIREMENTS SHALL BE CARRIED OUT TO THE SATISFACTION OF THE PRINCIPAL.

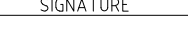
OTHER:

1. THE CONTRACTOR IS TO TAKE ALL NECESSARY PRECAUTIONS TO CONTROL EROSION AND DOWNSTREAM SEDIMENTATION DURING ALL STAGES OF CONSTRUCTION INCLUDING THE MAINTENANCE PERIOD.
2. ALL SEDIMENT CONTROL DEVICES SHALL BE MONITORED, CLEANED AND/OR REPAIRED WHENEVER THE ACCUMULATED SEDIMENT REDUCES THE CAPACITY BY 50%.
3. THE EXTENT OF GRASSING SHALL BE DETERMINED BY THE SUPERINTENDENT AND SHALL BE SEEDED, AS SPECIFIED, WITHIN SEVEN DAYS OF FINAL TRIMMING.
4. EXTENT AND POSITION OF SILT FENCE CONTROL MEASURES TO BE DETERMINED ON SITE BY SUPERINTENDENT.
5. MEASURES SHOWN ON THIS DRAWING ARE MINIMUM REQUIREMENTS ONLY.
6. SCOUR PROTECTION AND SILT MANAGEMENT MEASURES TO BE PROVIDED AT STORMWATER OUTLET HEADWALLS.
7. PROVISION TO BE MADE FOR DIRT/SAND REMOVAL FROM CONSTRUCTION VEHICLES PRIOR TO TRAVEL ON PUBLIC ROADS. METHOD TO BE APPROVED BY SUPERINTENDENT PRIOR TO COMMENCEMENT OF WORK.
8. ANY SILT OR SEDIMENT CAUSED BY CONSTRUCTION TRAFFIC ON EXISTING ROADS IS TO BE REMOVED DAILY.
9. THE CONTRACTOR SHALL IMPLEMENT EROSION AND SEDIMENT CONTROL PROCEDURES DURING CONSTRUCTION AND MAINTENANCE STAGES OF THE DEVELOPMENT AND SHALL TAKE ALL NECESSARY ACTIONS TO COMPLY WITH THE POLICY OBJECTIVES OF QUEENSLAND TRANSPORT AND MAIN ROADS - EROSION AND SEDIMENT CONTROL.
10. A SCHEDULE SHALL BE SUBMITTED FOR THE APPROVAL OF TMR'S REPRESENTATIVE AT THE PRE-START MEETING FOR THE FIELD IMPLEMENTATION OF EROSION AND SEDIMENT CONTROL, DETAILING THE STAGES AT WHICH VARIOUS MANAGEMENT TECHNIQUES WOULD BE IN PLACE AND AUDITING PROCEDURES.
11. FINAL FORM OF SEDIMENT EROSION CONTROL TO BE DECIDED ON SITE BY THE SUPERINTENDENT.
12. THE CONTRACTOR IS TO ENSURE THAT NO SILT REACHES THE DOWNSTREAM WATER COURSE AND IS TO PROVIDE ADEQUATE PROTECTION TO PREVENT THIS OCCURRING.
13. CULVERT AT CH. 665 MUST NOT OCCUR UNTIL REQUIRED NOTIFICATION HAS BEEN MADE TO DAF IN ACCORDANCE WITH ACCEPTED DEVELOPMENT GUIDELINES FOR WATERWAY BARRIER WORKS.

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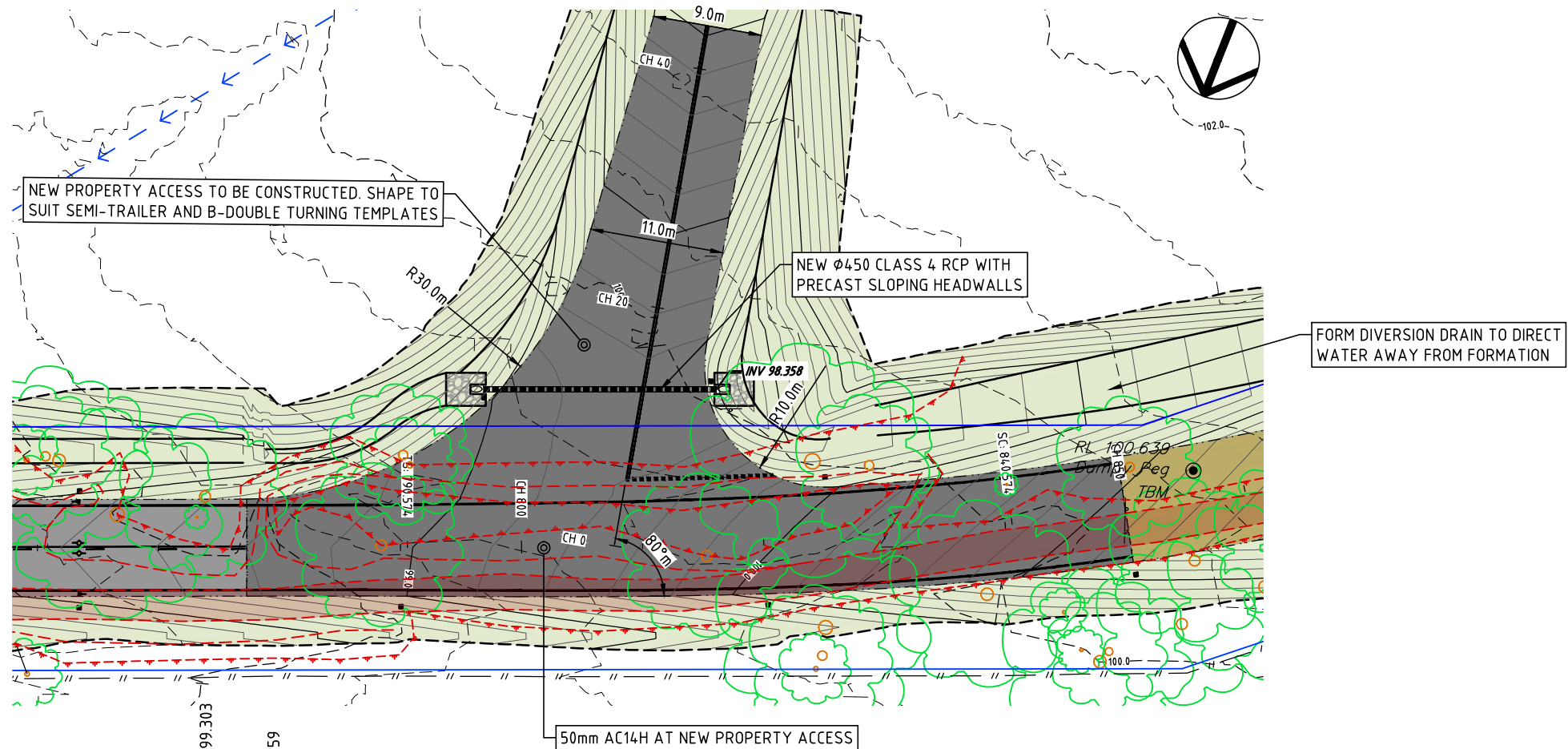
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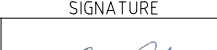
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1	SHEET ADDED TO SET		NJF	06/09/24														NJF		30/06/24	
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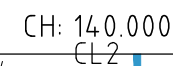
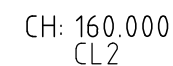
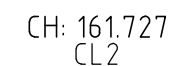
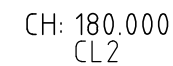
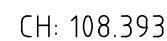
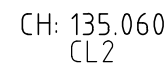
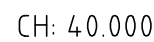
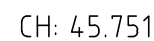
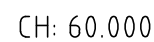
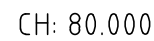


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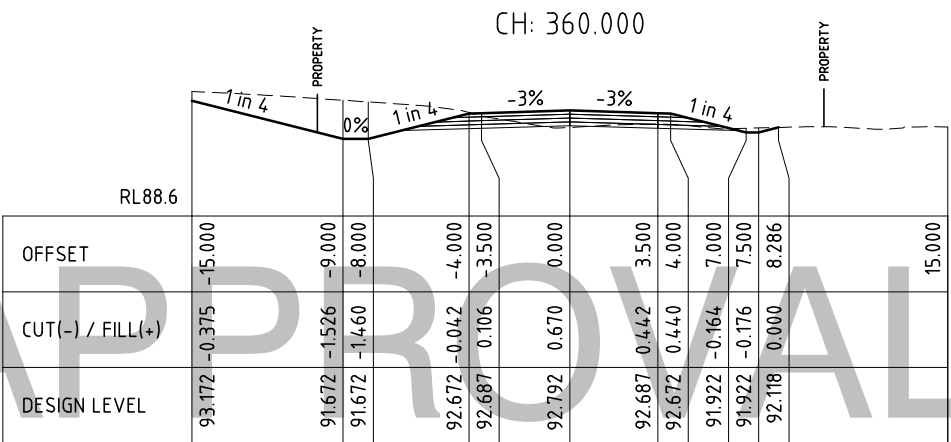
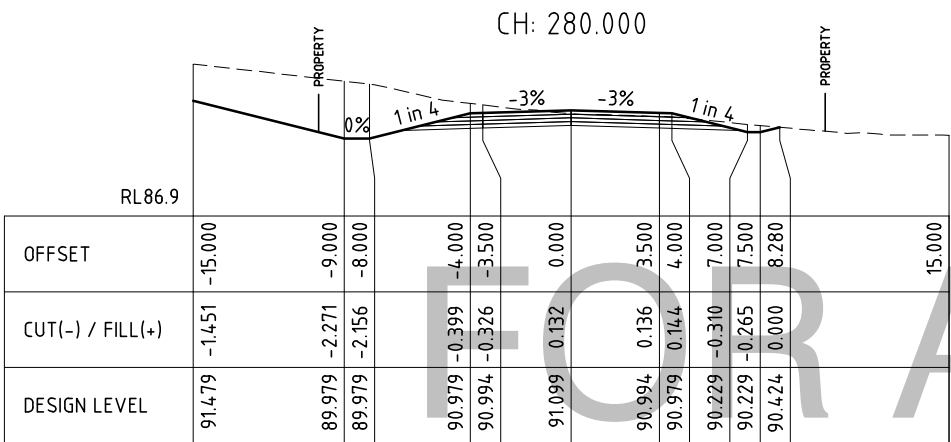
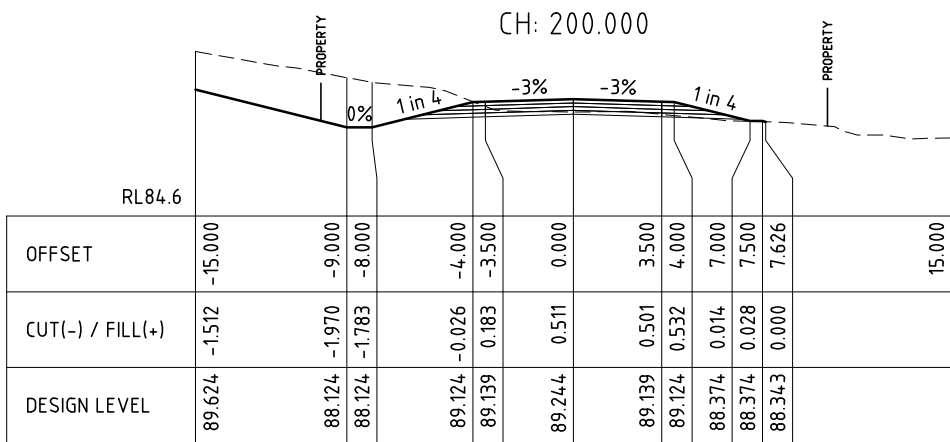
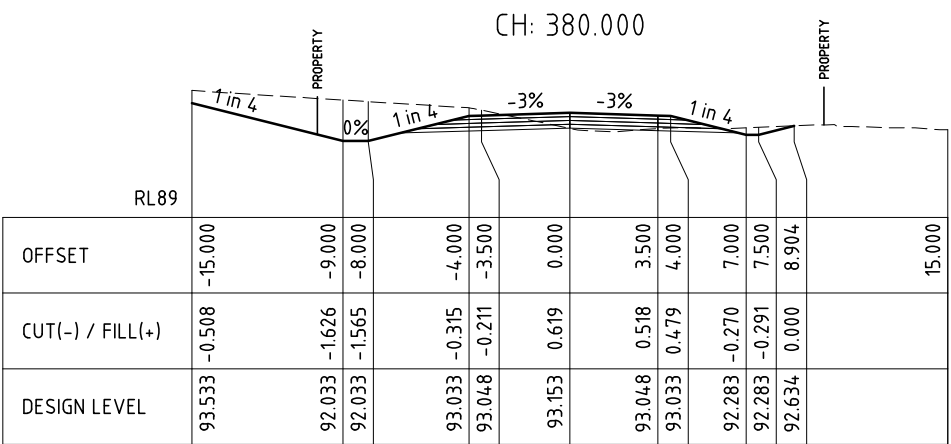
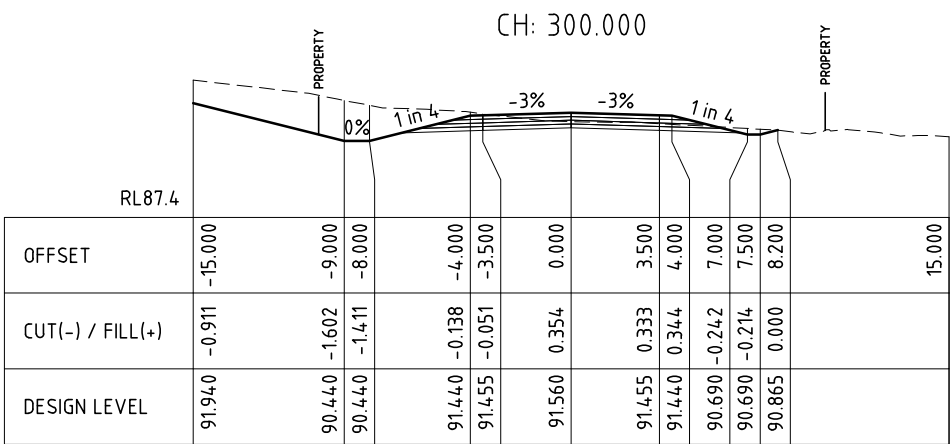
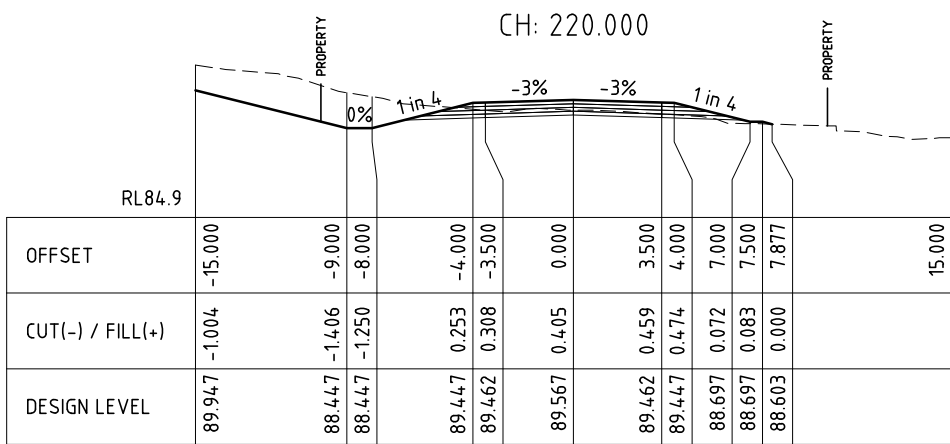
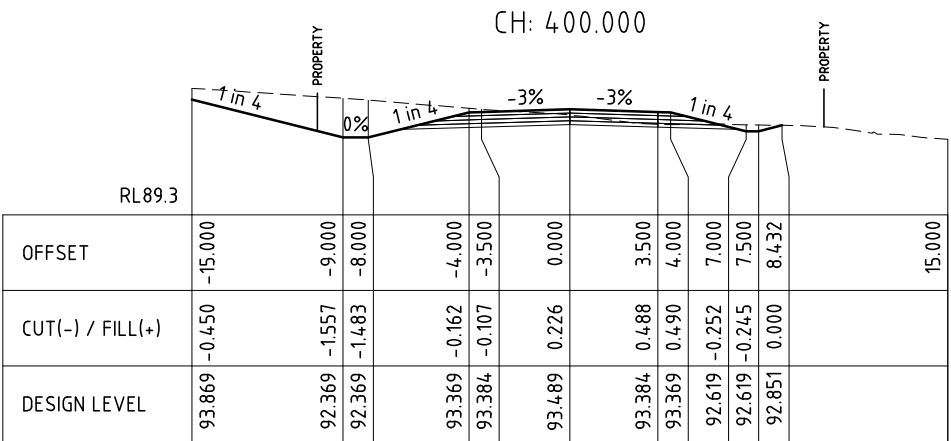
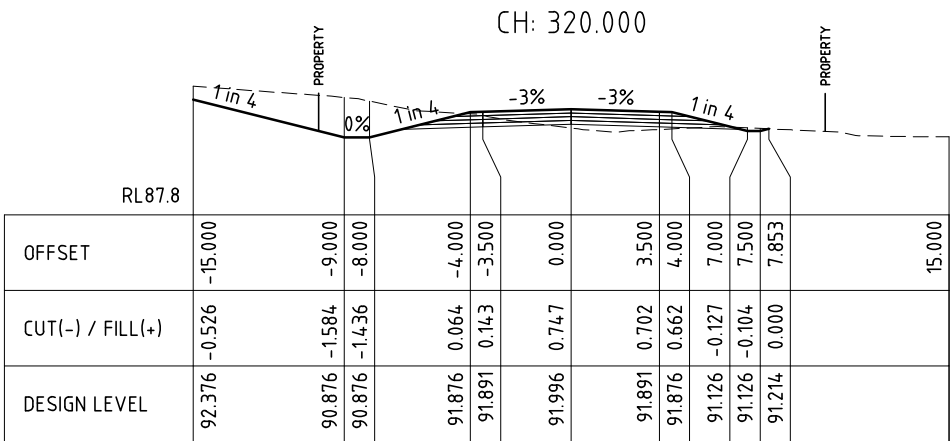
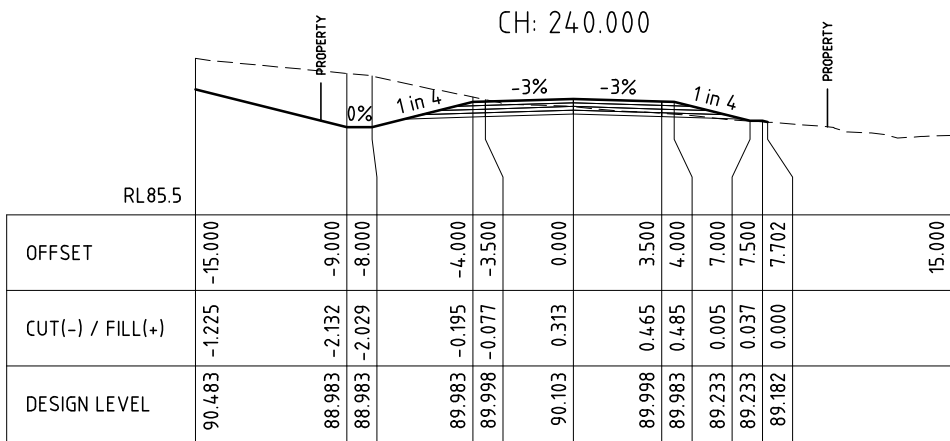
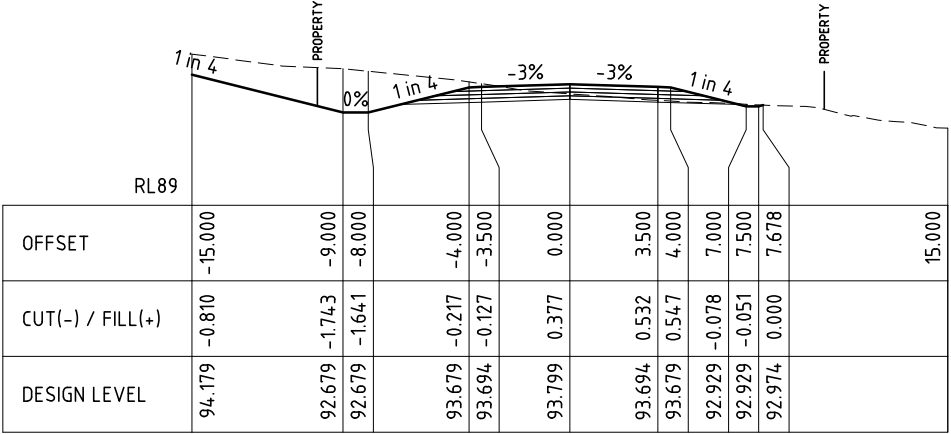
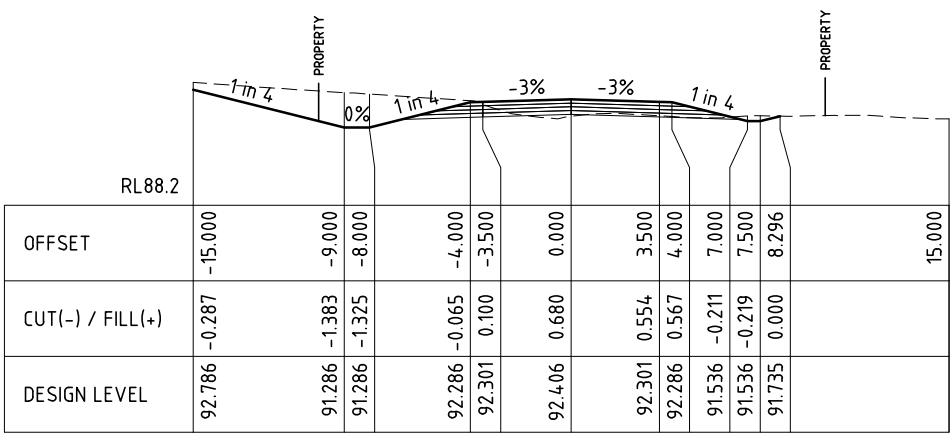
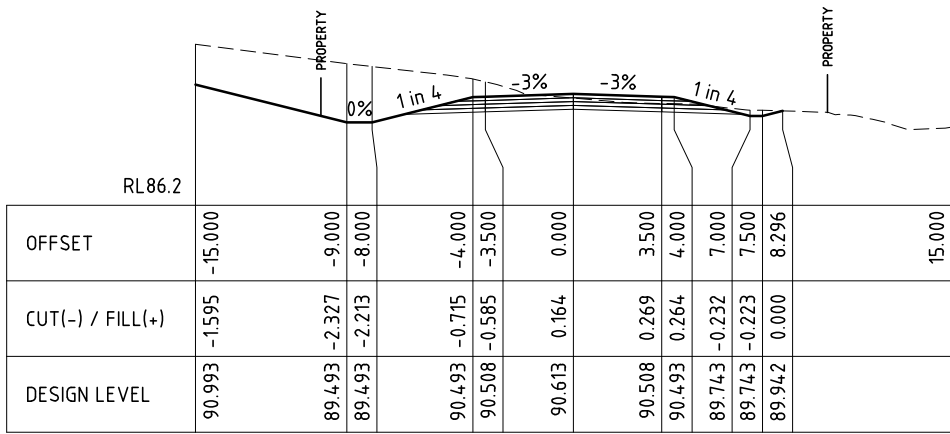


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				SURVEY DATA		SOILCO		PROPERTY ACCESS LAYOUT				P0 Box 554 Beaudesert QLD 4285		ACS Engineers CIVIL ENVIRONMENTAL PROJECT MANAGEMENT		
				DATUM		PO BOX 199, UNANDERRA NSW 2526										
				GDA2020												
				MAP GRID												
				MGA56		BROMELTON DEVELOPMENT		ENGINEERING CERTIFICATION (RPEQ)				DRAWING NUMBER		REVISION		
3	INTERSECTION ANGLE NOTED	NJF	23/09/24	HEIGHT ORIGIN				#	FIELD	NAME	SIGNATURE					DATE
2	PLANS UPDATED AS PER SRRC RFI	NJF	06/09/24	AHD												
1	FOR APPROVAL	NJF	30/06/24	SURVEY BOOKS												
				NJF	30/06/24	260 MITCHELL ROAD, BROMELTON QLD 4285		13697	CIVIL	S. SHAY		23/10/24	ACS-220089-ROAD-08		3	
FILE: C:\Y2D5\DATA\ACSSYN\220089 SOILCO BROMELTON DEVELOPMENT - 260 MITCHELL ROAD_596\DESIGN\DRAWING FILES\ACS-220089-GEN.DWG PLOT TIME: 23/10/2024 - 10:41AM BY USER: NICHOLAS FALVEY																



SCALES: HORIZONTAL 1:300 VERTICAL 1:300

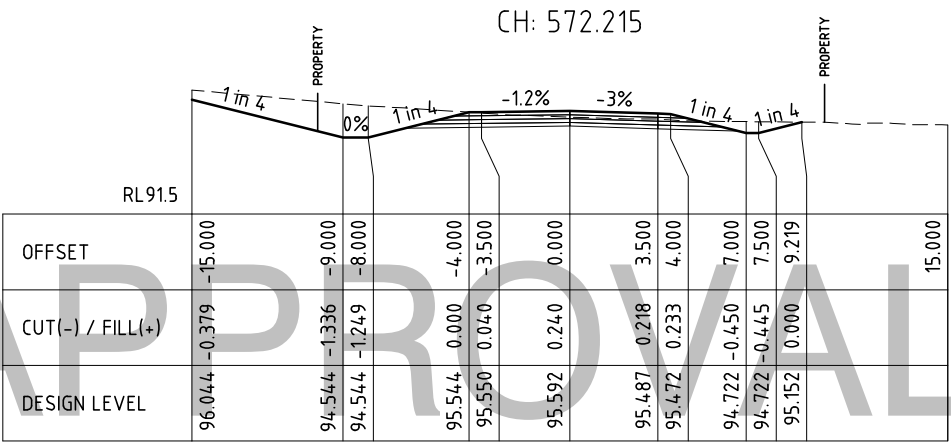
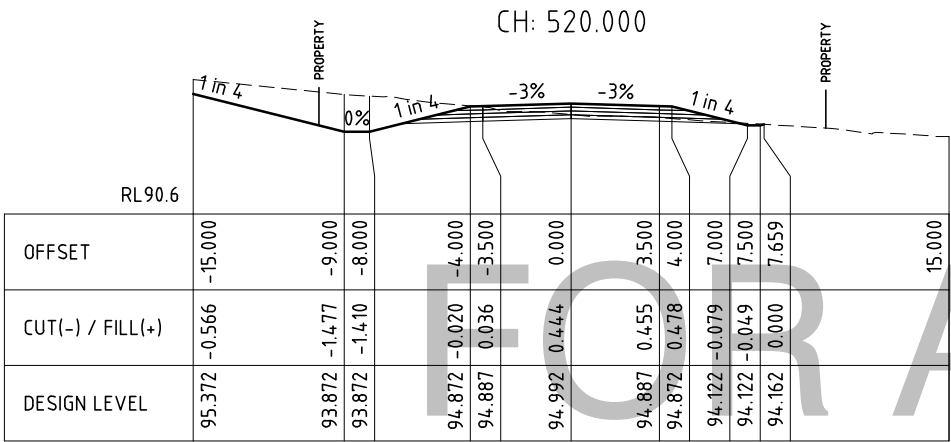
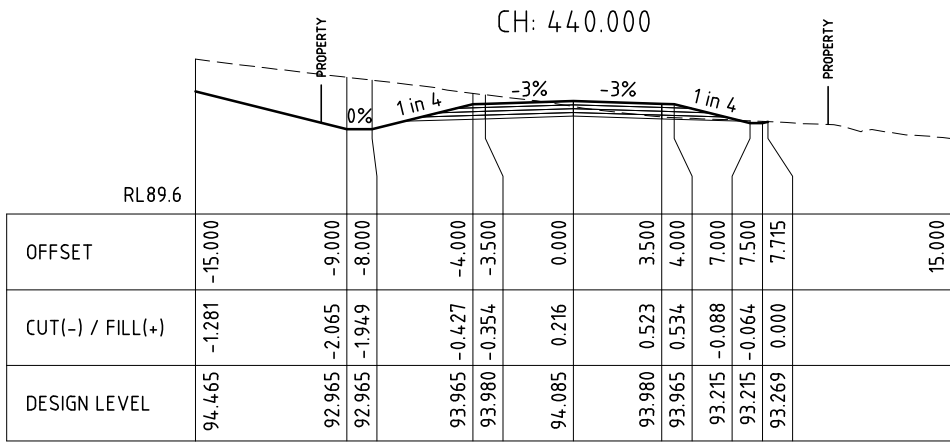
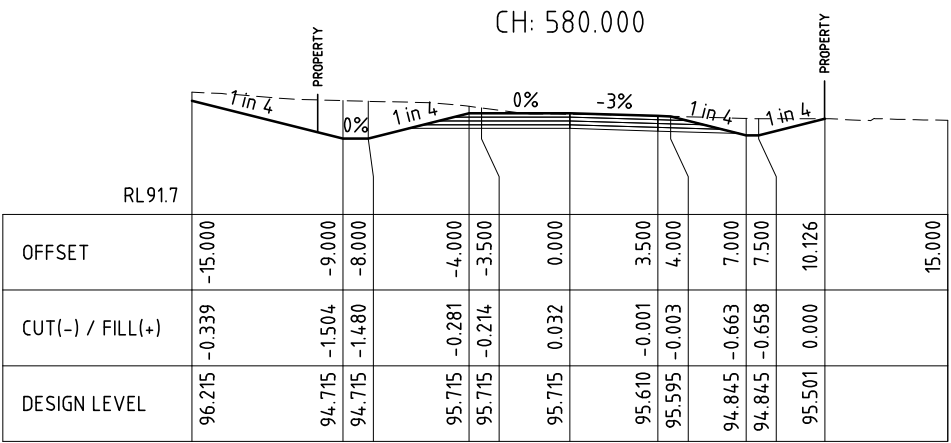
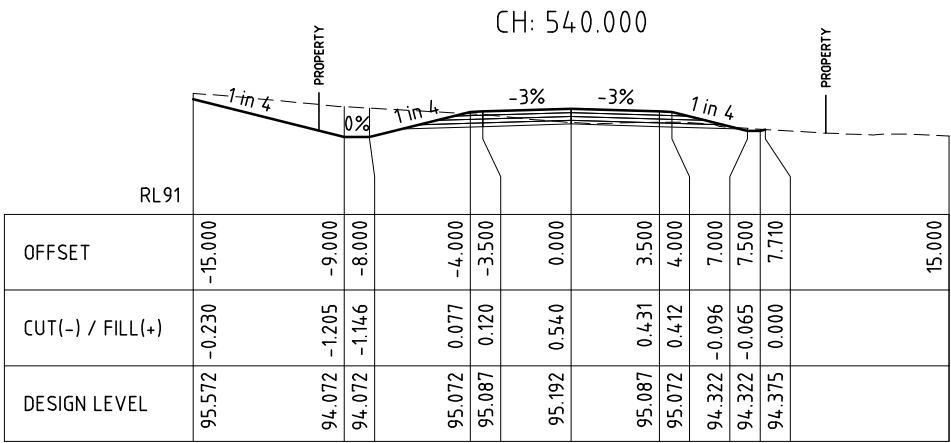
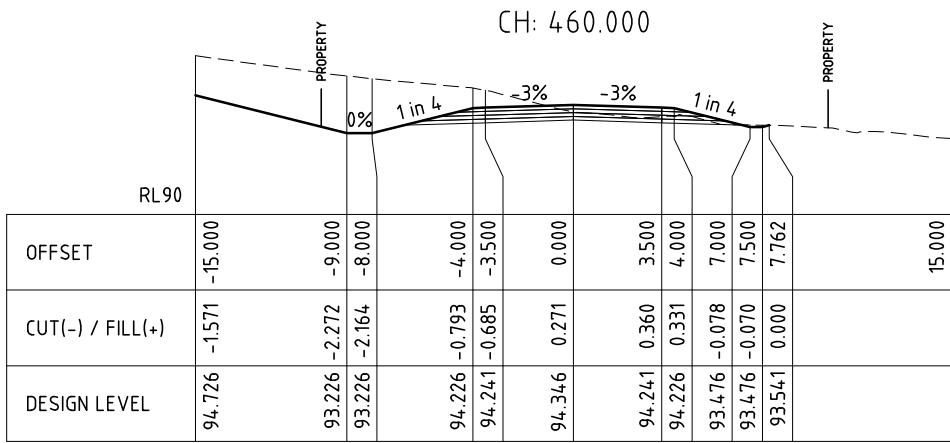
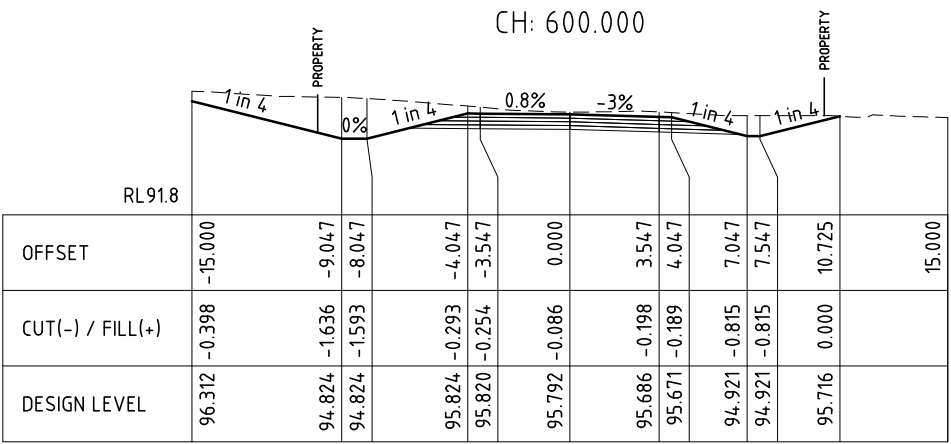
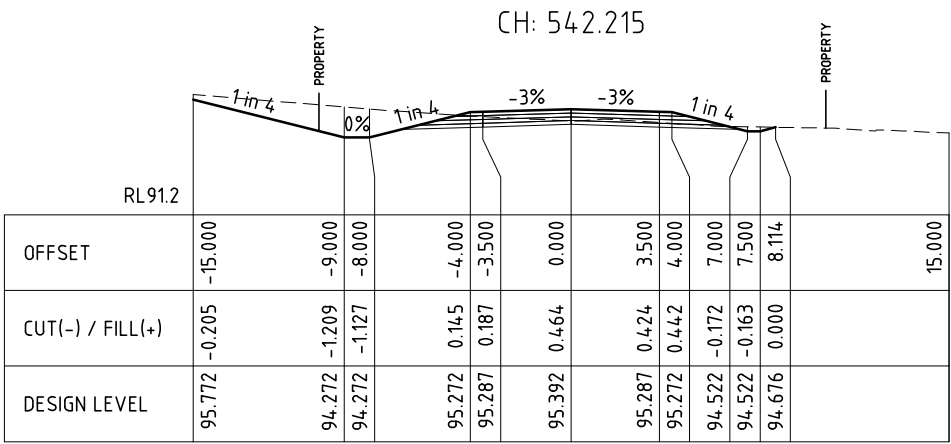
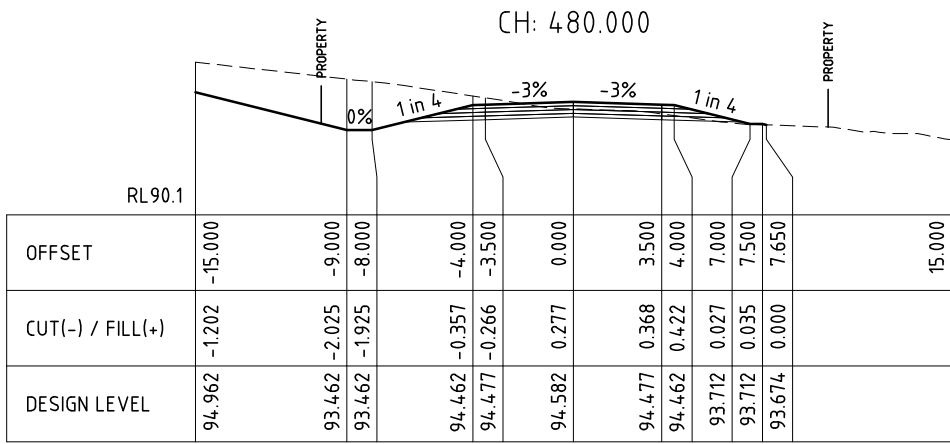
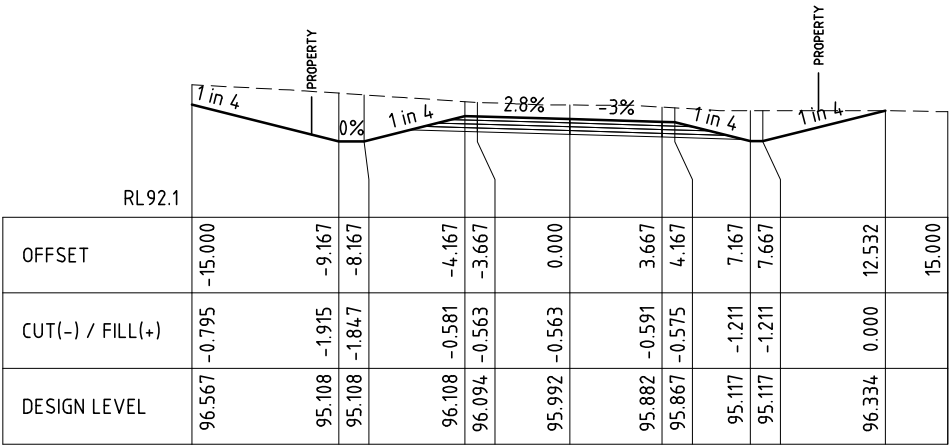
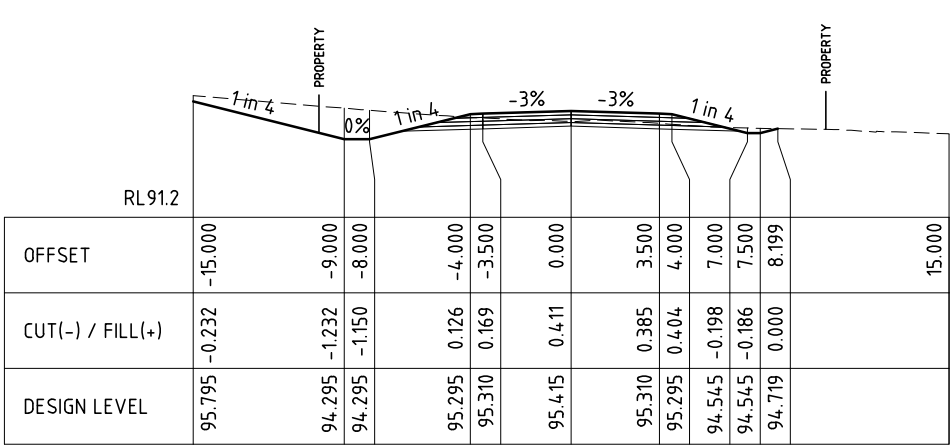
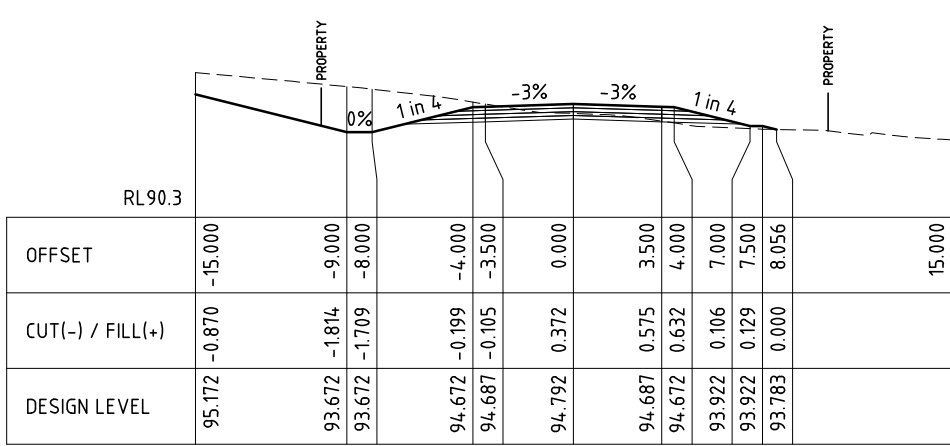


CH: 188.393			REVISION/DETAILS		
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2	PLANS UPDATED AS PER SRRC RFI	NJF	06/09/24	DES	DATE
1	FOR APPROVAL	NJF	30/06/24	DES	DATE

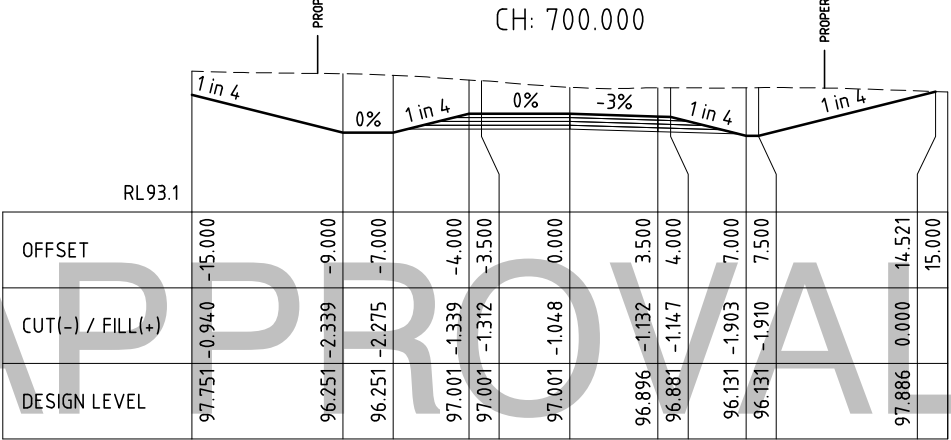
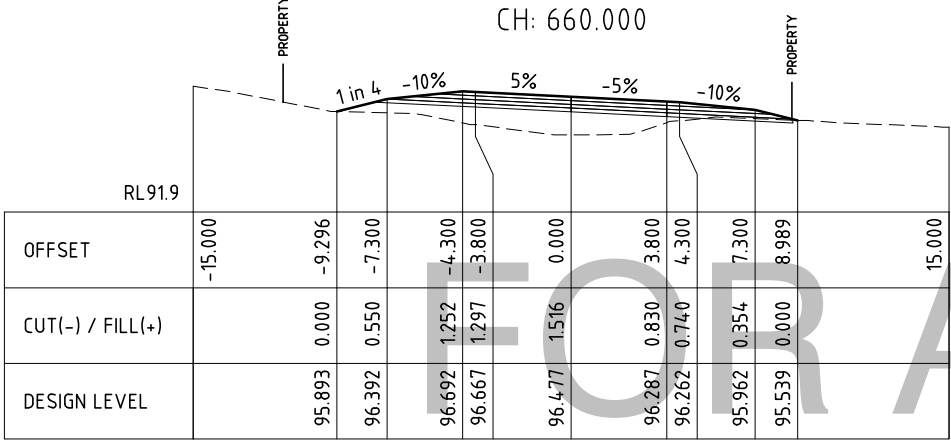
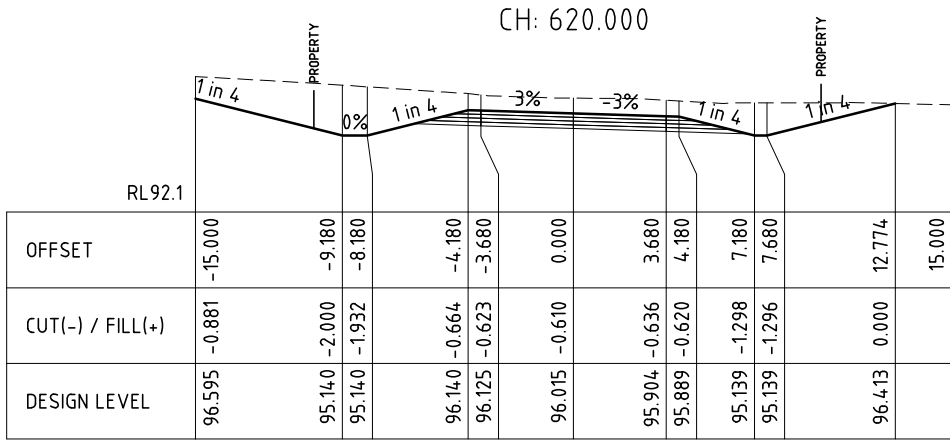
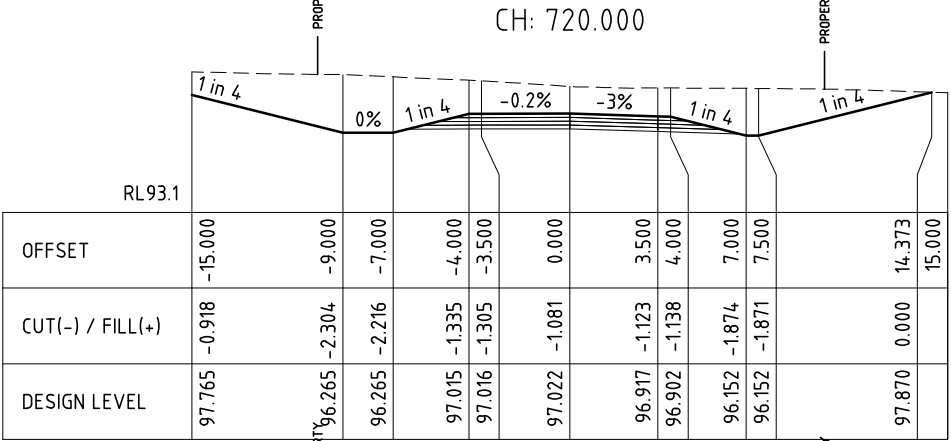
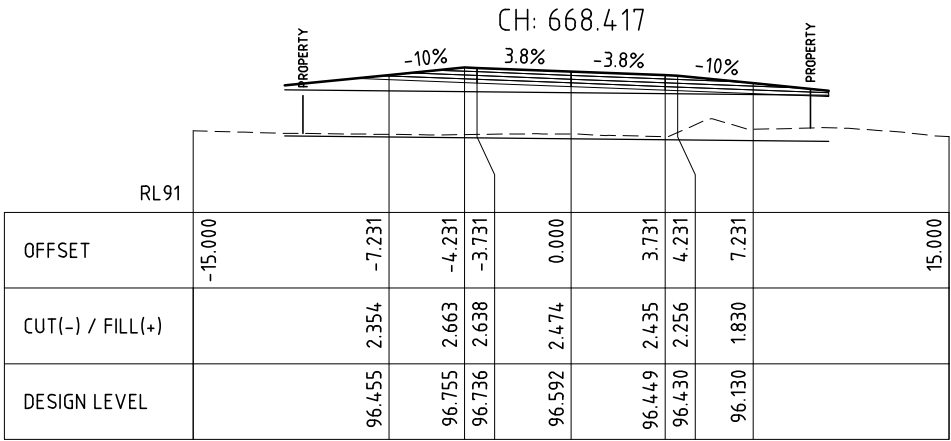
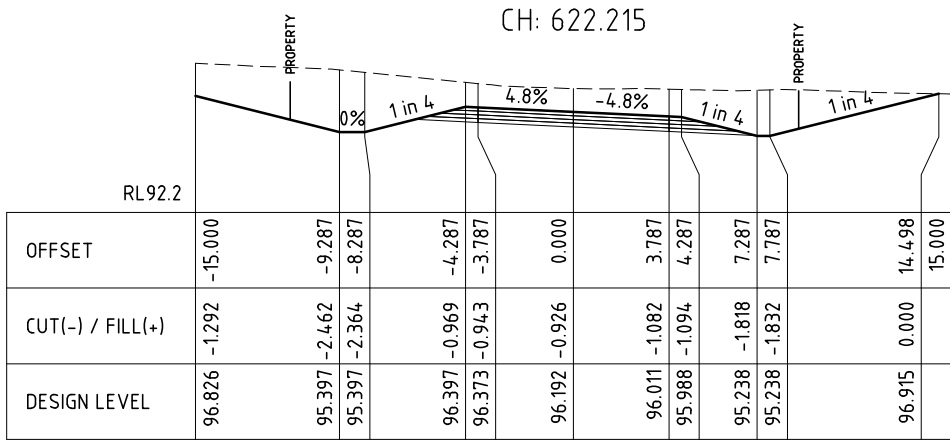
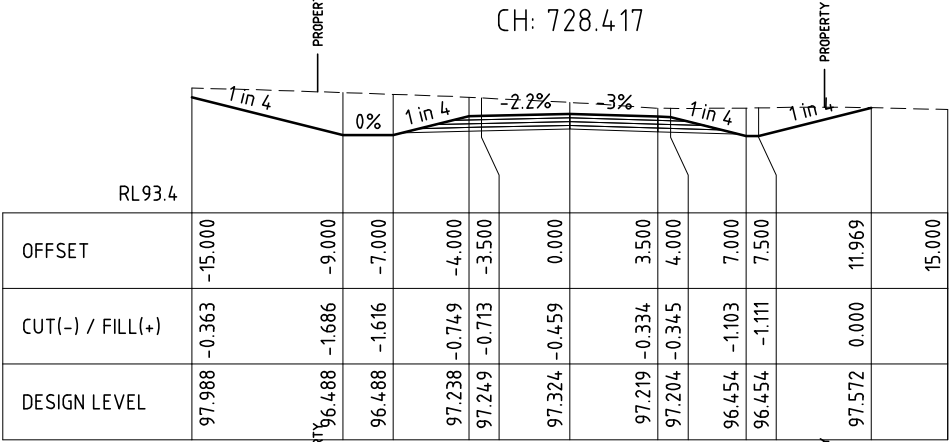
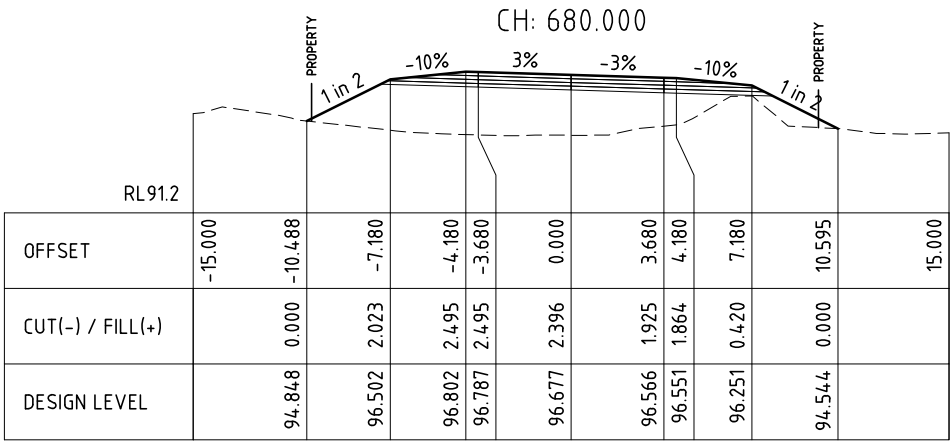
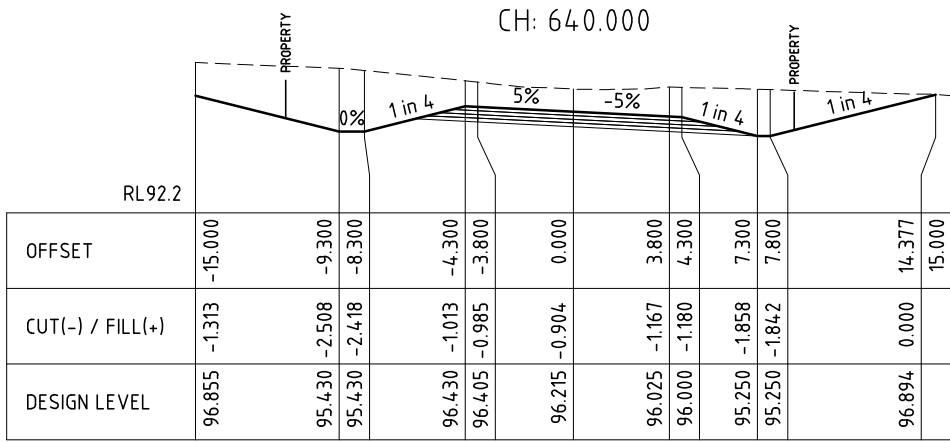
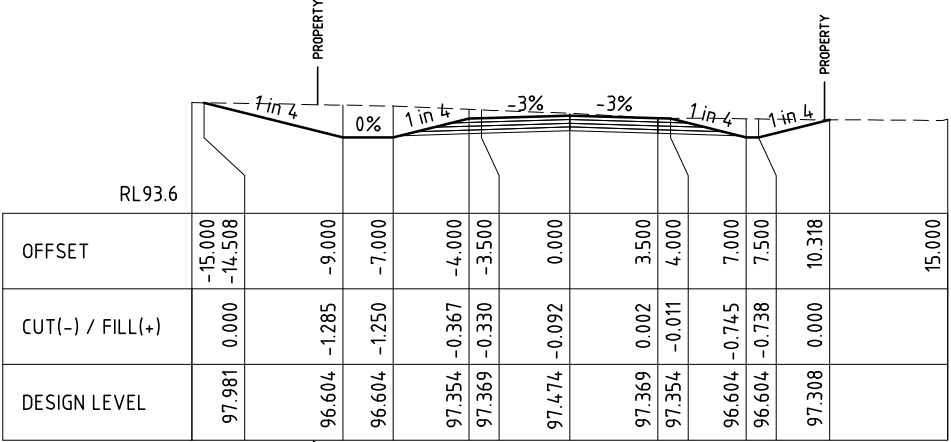
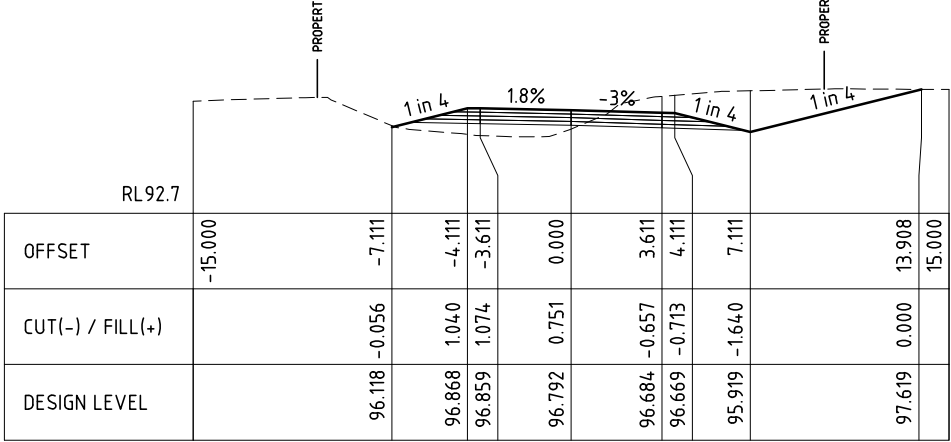
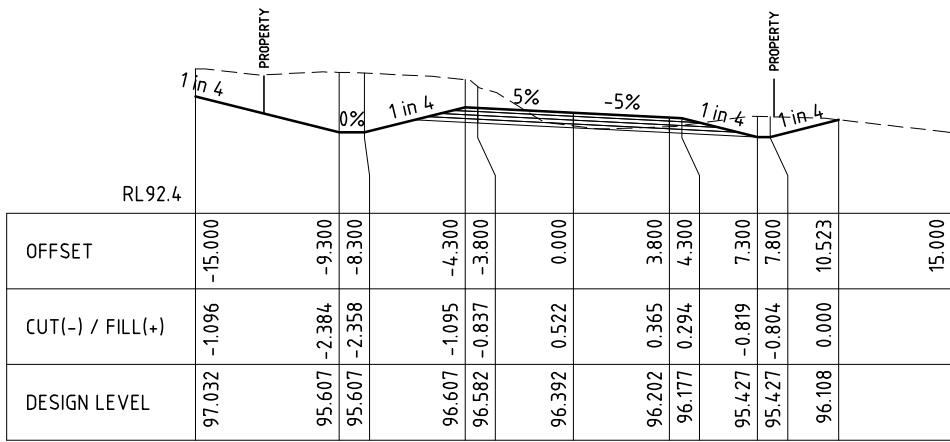
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DATUM	GDA2020	PO BOX 199, UNANDERRA NSW 2526	
MAP GRID	MGA56	BROMELTON DEVELOPMENT	
HEIGHT ORIGIN	AHD	260 MITCHELL ROAD, BROMELTON QLD 4285	
SURVEY BOOKS	NJF		
	30/06/24		

SCALES: HORIZONTAL 1:300 VERTICAL 1:300			
CROSS SECTIONS - SHEET 02			
ENGINEERING CERTIFICATION (RPEQ)			
#	FIELD	NAME	SIGNATURE
13697	CIVIL	S. SHAY	23/10/24

P.O. Box 554 Beaudesert QLD 4285 (07) 5541 3500 www.acsengineers.com.au		ACS Engineers CIVIL / ENVIRONMENTAL / PROJECT MANAGEMENT	
DRAWING NUMBER		REVISION	
ACS-220089-ROAD-10		3	



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				GDA2020													
				MAP GRID													
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3	LEFT HAND TABLE DRAIN EXTENDED	NJF	03/10/24	HEIGHT ORIGIN				#	FIELD	NAME	SIGNATURE	DATE	ACS-220089-ROAD-11		3		
2	PLANS UPDATED AS PER SRRC RFI	NJF	06/09/24	AHD				13697	CIVIL	S. SHAY		23/10/24					
1	FOR APPROVAL	NJF	30/06/24	SURVEY BOOKS													
				NJF	30/06/24	260 MITCHELL ROAD, BROMELTON QLD 4285											
				REVISION/DETAILS	DWN	DATE	DES	DATE									
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CH: 680.000

CH: 728.417

CH: 622.215

CH: 668.417

CH: 720.000

CH: 620.000

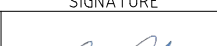
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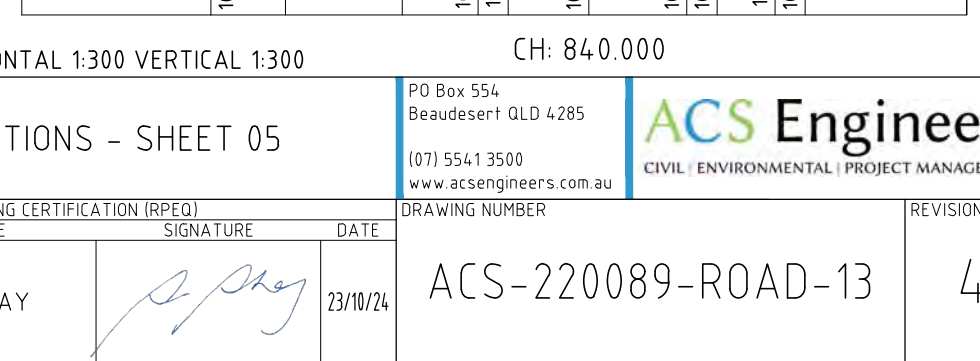
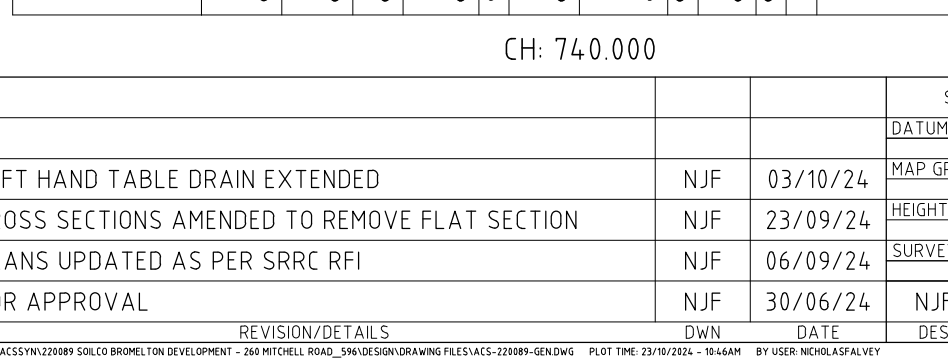
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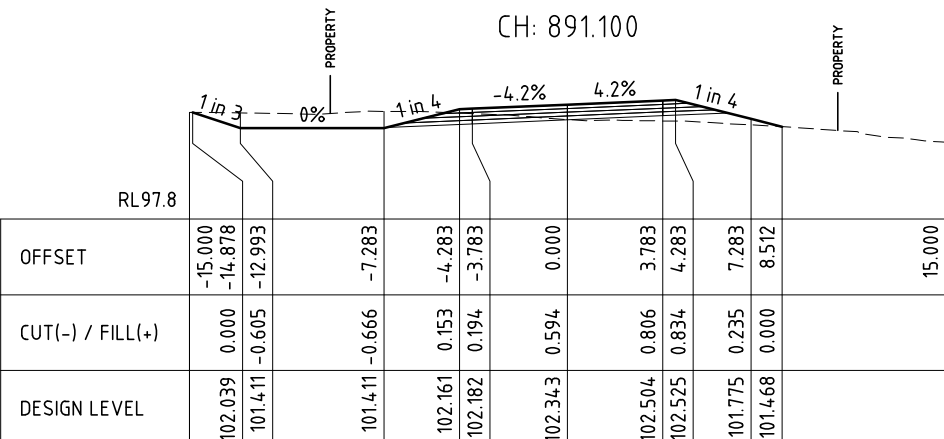
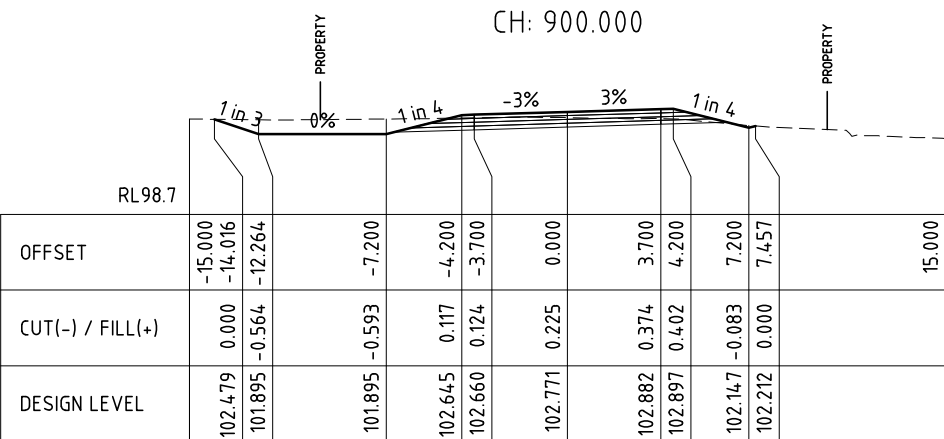
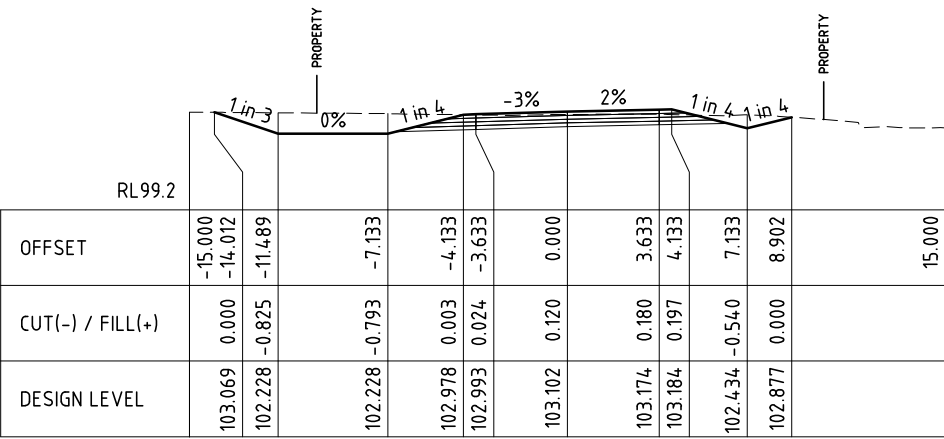
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CH: 648.417

CH: 698.417

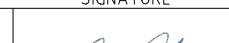
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				GDA2020																	
				MAP GRID																	
				MGA56		BROMELTON DEVELOPMENT		ENGINEERING CERTIFICATION (RPEQ)					DRAWING NUMBER		REVISION						
				HEIGHT ORIGIN				#	FIELD	NAME	SIGNATURE	DATE	ACS-220089-ROAD-12		3						
				AHD				13697	CIVIL	S. SHAY		23/10/24									
				SURVEY BOOKS																	
3	LEFT HAND TABLE DRAIN EXTENDED. CULVERT EXTENDED		NJF	03/10/24			260 MITCHELL ROAD, BROMELTON QLD 4285														
2	PLANS UPDATED AS PER SRRC RFI		NJF	06/09/24																	
1	FOR APPROVAL		NJF	30/06/24	NJF	30/06/24															
REVISION/DETAILS					DWN	DATE	DES	DATE													
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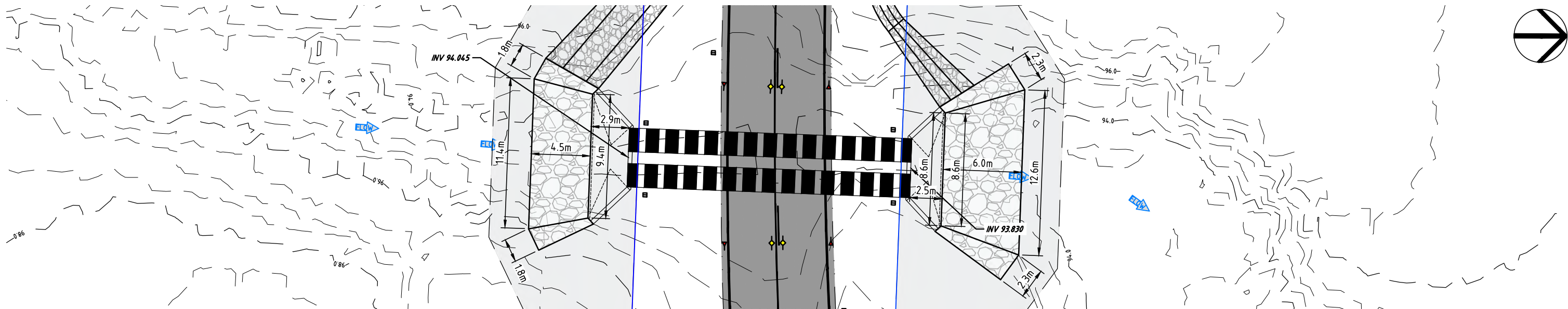




CH: 880.000					
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				DATUM	
				GDA2020	
				MAP GRID	
				MGA56	
				HEIGHT ORIGIN	
				AHD	
				SURVEY BOOKS	
3	CROSS SECTIONS AMENDED TO REMOVE FLAT SECTION	NJF	23/09/24	NJF	30/06/24
2	PLANS UPDATED AS PER SRRC RFI	NJF	06/09/24	NJF	30/06/24
1	FOR APPROVAL	NJF	30/06/24	NJF	30/06/24
REVISION/DETAILS		DWN		DATE	
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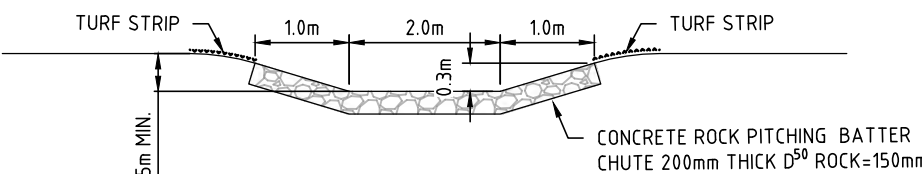
FOR APPROVAL

				SURVEY DATA		SOILCO		CROSS SECTIONS - SHEET 06			PO Box 554 Beaudesert QLD 4285		ACS Engineers CIVIL ENVIRONMENTAL PROJECT MANAGEMENT				
				DATUM		PO BOX 199, UNANDERRA NSW 2526					(07) 5541 3500 www.acsengineers.com.au						
				GDA2020													
				MAP GRID													
				MGA56		BROMELTON DEVELOPMENT			ENGINEERING CERTIFICATION (RPEQ)				DRAWING NUMBER		REVISION		
3	CROSS SECTIONS AMENDED TO REMOVE FLAT SECTION	NJF	23/09/24	HEIGHT ORIGIN					#	FIELD	NAME	SIGNATURE	DATE	ACS-220089-ROAD-14		3	
2	PLANS UPDATED AS PER SRRC RFI	NJF	06/09/24	AHD					13697	CIVIL	S. SHAY		23/10/24				
1	FOR APPROVAL	NJF	30/06/24	SURVEY BOOKS													
						260 MITCHELL ROAD, BROMELTON QLD 4285											
				REVISION/DETAILS		DWN	DATE	DES	DATE	FILE: C:\2205\DATA\ACSSYN\220089 SOILCO BROMELTON DEVELOPMENT - 260 MITCHELL ROAD_596\DESIGN\DRAWING FILES\ACSS-220089-GEN.DWG PLOT TIME: 23/10/2024 - 10:46AM BY USER: NICHOLAS FALVEY							

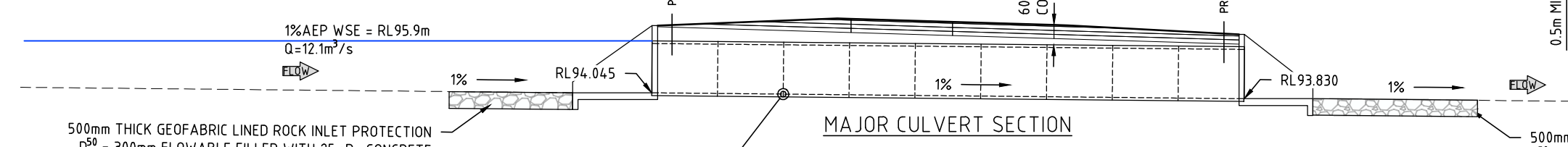


MAJOR CULVERT PLAN - CH:660

SCALE 1:300

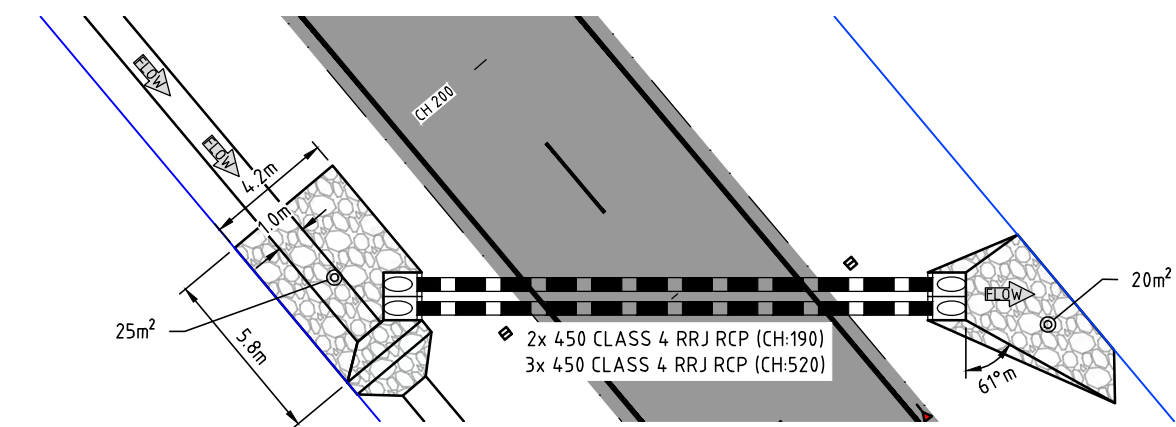


TYPICAL BATTER CHUTE



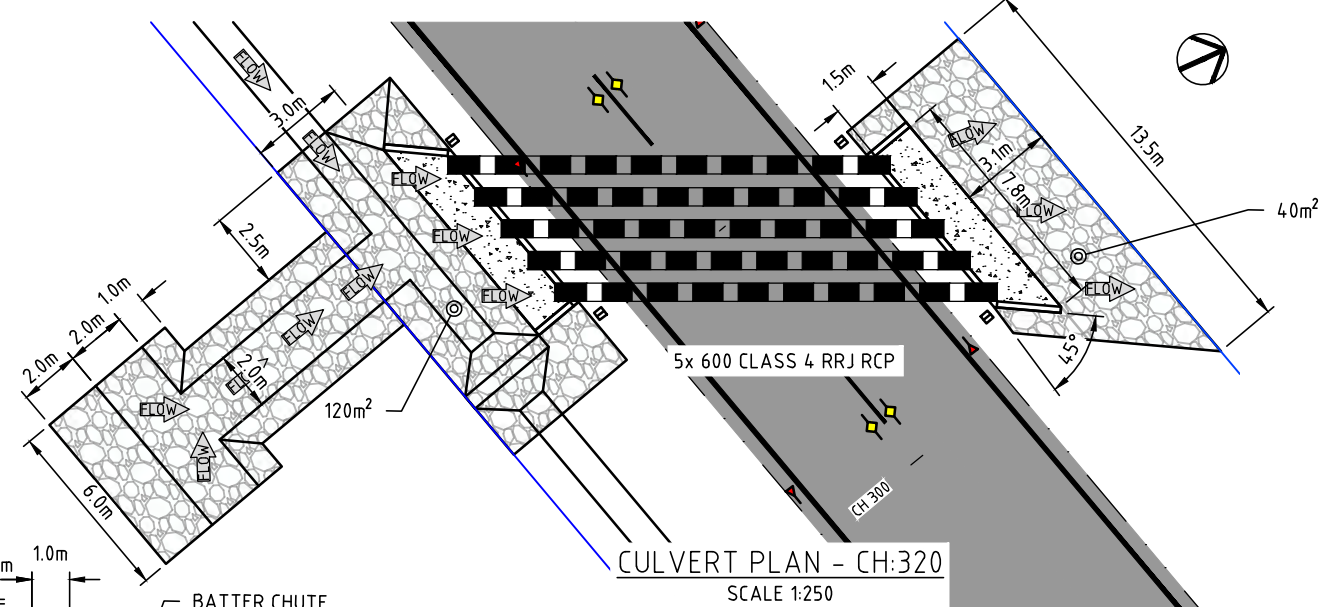
MAJOR CULVERT SECTION

2x1800Ø RCP CLASS 2 CULVERTS 21.6m LONG AND CAST IN-SITU HEADWALLS TO BE INSTALLED IN ACCORDANCE WITH TMR STANDARD DRAWINGS SD1304 AND SD1359



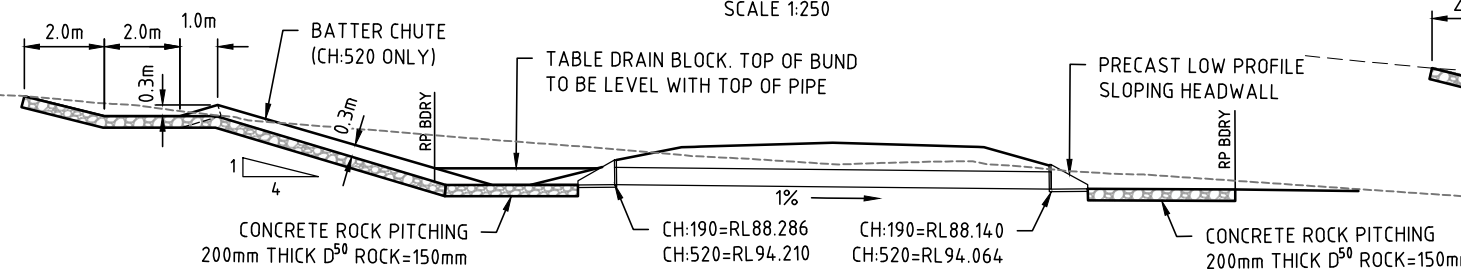
CULVERT PLAN CH:190 & CH:520

SCALE 1:250

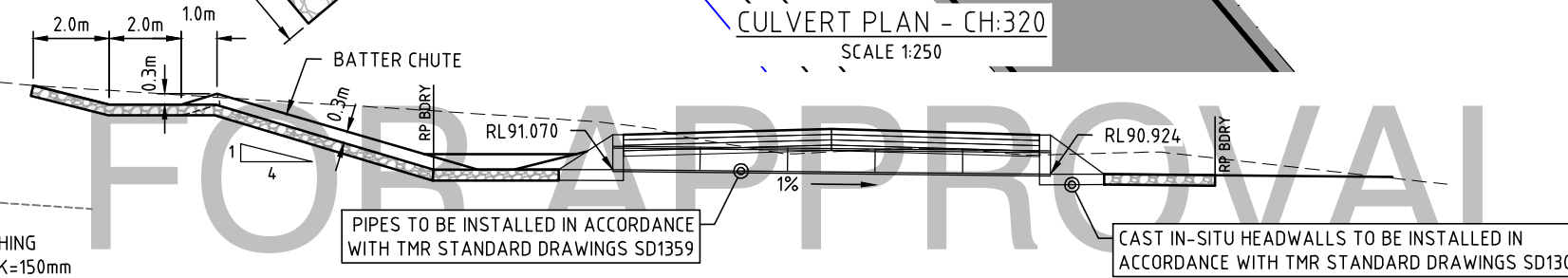


CULVERT PLAN - CH:320

SCALE 1:250



CULVERT SECTION - CH:190 & CH:520



CULVERT SECTION - CH:310

				SURVEY DATA		SOILCO		CULVERT DETAILS				P0 Box 554 Beaudesert QLD 4285		ACS Engineers CIVIL ENVIRONMENTAL PROJECT MANAGEMENT			
				DATUM		PO BOX 199, UNANDERRA NSW 2526											
				GDA2020													
				MAP GRID													
				MGA56		BROMELTON DEVELOPMENT		ENGINEERING CERTIFICATION (RPEQ)				DRAWING NUMBER		REVISION			
3	BATTER CHUTES ADDED TO SECTIONS		03/10/24	HEIGHT ORIGIN				#	FIELD	NAME	SIGNATURE					DATE	
2	PLANS UPDATED AS PER SRRC RFI	NJF	06/09/24	AHD				13697	CIVIL	S. SHAY						23/10/24	
1	FOR APPROVAL	NJF	30/06/24	SURVEY BOOKS													
				NJF	30/06/24	260 MITCHELL ROAD, BROMELTON QLD 4285						ACS-220089-ROAD-16		3			
				DES	DATE												
				DWN	DATE												
FILE: C:\1205\DATA\ACSSYN\220089 SOILCO BROMELTON DEVELOPMENT - 260 MITCHELL ROAD_596\DESIGN\DRAWING FILES\ACS-220089-GEN.DWG														PLOT TIME: 23/10/2024 - 10:57AM		BY USER: NICHOLAS FALVEY	

SEDIMENT AND EROSION CONTROL - GENERAL NOTES:

1. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MUST BE IMPLEMENTED AND A REVISED EROSION AND SEDIMENT CONTROL PLAN (ESCP) MUST BE SUBMITTED FOR APPROVAL IN THE EVENT THAT SITE CONDITIONS CHANGE SIGNIFICANTLY FROM THOSE CONSIDERED WITHIN THE CURRENT ESCP.
2. WHERE THERE IS A HIGH PROBABILITY THAT SERIOUS OR MATERIAL ENVIRONMENTAL HARM MAY OCCUR AS A RESULT OF CURRENT SEDIMENT LEAVING THE SITE, APPROPRIATE ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MUST BE IMPLEMENTED SUCH THAT ALL REASONABLE AND PRACTICABLE MEASURES ARE BEING TAKEN TO PREVENT OR MINIMISE SUCH HARM. ONLY THOSE WORKS NECESSARY TO MINIMISE OR PREVENT ENVIRONMENTAL HARM SHALL BE CONDUCTED ON-SITE PRIOR TO APPROVAL OF THE AMENDED EROSION AND SEDIMENT CONTROL PLAN (ESCP).
3. IN CIRCUMSTANCES WHERE IT IS CONSIDERED NECESSARY TO PREPARE AN AMENDED EROSION AND SEDIMENT CONTROL PLAN (ESCP), AND WHERE THE DELIVERY OF SUCH AN AMENDED ESCP IS NOT IMMINENT, THEN ALL NECESSARY NEW OR MODIFIED EROSION AND SEDIMENT CONTROL WORKS MUST BE IN ACCORDANCE TO WITH IECA (2008) BEST PRACTICE EROSION & SEDIMENT CONTROL. UPON APPROVAL OF THE AMENDED ESCP ALL WORKS MUST BE IMPLEMENTED IN ACCORDANCE WITH THE AMENDED PLAN.

SITE ACCESS:

1. PRIOR TO THE COMMENCEMENT OF SITE WORKS, THE LOCATION OF THE SITE ACCESS POINT MUST BE VERIFIED WITH RELEVANT LOCAL AUTHORITY.
 2. SITE ACCESS IS RESTRICTED TO ONE LOCATION.
 3. SITE EXIT POINT MUST BE APPROPRIATELY MANAGED TO MINIMISE THE RISK OF SEDIMENT BEING TRACKED ONTO SEALED PUBLIC ROADWAYS.
- STORMWATER RUNOFF FROM ACCESS ROADS AND STABILISED ENTRY/EXIT POINTS MUST DRAIN TO AN APPROPRIATE SEDIMENT CONTROL DEVICE.

LAND CLEARING

1. LAND CLEARING MUST BE DELAYED AS LONG AS PRACTICABLE AND MUST BE UNDERTAKEN IN CONJUNCTION WITH DEVELOPMENT, UNLESS OTHERWISE APPROVED BY THE SUPERINTENDENT.
2. ALL REASONABLE AND PRACTICABLE EFFORTS MUST BE TAKEN TO DELAY THE REMOVAL OF, OR DISTURBANCE TO, EXISTING GROUND COVER (ORGANIC OR INORGANIC) PRIOR TO LAND-DISTURBING ACTIVITIES.
3. BULK TREE CLEARING MUST OCCUR IN A MANNER THAT MINIMISES DISTURBANCE TO EXISTING GROUND COVER (ORGANIC OR INORGANIC).
4. BULK TREE CLEARING AND GRUBBING OF THE SITE MUST BE IMMEDIATELY FOLLOWED BY SPECIFIED TEMPORARY STABILISATION MEASURES (E.G. TEMPORARY GRASSING, OR MULCHING) PRIOR TO COMMENCEMENT OF EACH STAGE OF CONSTRUCTION WORKS.
5. DISTURBANCE TO NATURAL WATERCOURSES (INCLUDING BED AND BANKS) AND THEIR ASSOCIATED RIPARIAN ZONES MUST BE LIMITED TO THE MINIMUM PRACTICABLE.
6. NO LAND CLEARING SHALL BE UNDERTAKEN UNLESS PRECEDED BY THE INSTALLATION OF ADEQUATE DRAINAGE AND SEDIMENT CONTROL MEASURES, UNLESS SUCH CLEARING IS REQUIRED FOR THE PURPOSE OF INSTALLING SUCH MEASURES, IN WHICH CASE, ONLY THE MINIMUM CLEARING REQUIRED TO INSTALL SUCH MEASURES SHALL OCCUR.
7. LAND CLEARING MUST BE LIMITED TO 5m FROM THE EDGE OF PROPOSED CONSTRUCTED WORKS, 2m OF ESSENTIAL CONSTRUCTION TRAFFIC ROUTES, AND A TOTAL OF 10m WIDTH FOR CONSTRUCTION ACCESS, UNLESS OTHERWISE APPROVED BY THE SUPERINTENDENT.
8. PRIOR TO LAND CLEARING, AREAS OF PROTECTED VEGETATION, AND SIGNIFICANT AREAS OF RETAINED VEGETATION MUST BE CLEARLY IDENTIFIED (E.G. WITH HIGH-VISIBILITY TAPE, OR LIGHT FENCING) FOR THE PURPOSES OF MINIMISING THE RISK OF UNNECESSARY LAND CLEARING.
9. ALL REASONABLE AND PRACTICABLE MEASURES MUST BE TAKEN TO MINIMISE THE REMOVAL OF, OR DISTURBANCE TO, THOSE TREES, SHRUBS AND GROUND COVERS (ORGANIC OR INORGANIC) THAT ARE INTENDED TO BE RETAINED.
10. ALL LAND CLEARING MUST BE IN ACCORDANCE WITH THE FEDERAL, STATE AND LOCAL GOVERNMENT VEGETATION PROTECTION/PRESERVATION REQUIREMENTS AND/OR POLICIES.
11. LAND CLEARING IS LIMITED TO THE MINIMUM PRACTICABLE DURING THOSE PERIODS WHEN SOIL EROSION DUE TO WIND, RAIN OR SURFACE WATER IS POSSIBLE.
12. LAND CLEARING MUST NOT EXTEND BEYOND THAT NECESSARY TO PROVIDE UP TO EIGHT (8) WEEKS OF SITE ACTIVITY DURING THOSE MONTHS WHEN THE ACTUAL OR AVERAGE RAINFALL IS LESS THAN 45mm, SIX (6) IF BETWEEN 45 AND 100mm, FOUR (4) WEEKS IF BETWEEN 100 AND 225mm, AND TWO (2) WEEKS IF GREATER THAN 225mm.

SOIL AND STOCKPILE MANAGEMENT:

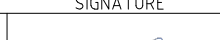
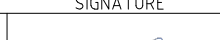
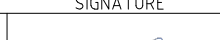
1. ALL REASONABLE AND PRACTICABLE MEASURES MUST BE TAKEN TO OBTAIN THE MAXIMUM BENEFIT FROM EXISTING TOPSOIL, INCLUDING:
 - (i) WHERE THE PROPOSED AREA OF SOIL DISTURBANCE DOES NOT EXCEED 2500m², AND THE TOPSOIL DOES NOT CONTAIN UNDESIRABLE WEED SEED, THE TOP 100mm OF SOIL LOCATED WITHIN AREAS OF PROPOSED SOIL DISTURBANCE (INCLUDING STOCKPILE AREAS) MUST BE STRIPPED AND STOCKPILED SEPARATELY FROM THE REMAINING SOIL.
 - (ii) WHERE THE PROPOSED AREA OF SOIL DISTURBANCE EXCEEDS 2500m², AND THE TOPSOIL DOES NOT CONTAIN UNDESIRABLE WEED SEED, THE TOP 50mm OF SOIL MUST BE STRIPPED AND STOCKPILED SEPARATELY FROM THE REMAINING TOPSOIL, AND SPREAD AS A FINAL SURFACE SOIL.
 - (iii) IN AREAS WHERE THE TOPSOIL CONTAINS UNDESIRABLE WEED SEED, THE AFFECTED SOIL MUST BE SUITABLY BURIED OR REMOVED FROM THE SITE.
2. STOCKPILES OF ERODIBLE MATERIAL THAT HAS THE POTENTIAL TO CAUSE ENVIRONMENTAL HARM IF DISPLACED MUST BE:
 - (i) APPROPRIATELY PROTECTED FROM WIND, RAIN, CONCENTRATED SURFACE FLOW AND EXCESSIVE UP-SLOPE STORMWATER SURFACE FLOWS.
 - (ii) LOCATED AT LEAST 2m FROM ANY HAZARDOUS AREA, RETAINED VEGETATION OR CONCENTRATED DRAINAGE LINE.
 - (iii) LOCATED UP-SLOPE OF AN APPROPRIATE SEDIMENT CONTROL SYSTEM.
 - (iv) PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC, MULCH OR VEGETATIVE) IF THE MATERIALS ARE LIKELY TO BE STOCKPILED FOR MORE THAN 28 DAYS.
 - (v) PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC, MULCH OR VEGETATIVE) IF THE MATERIALS ARE LIKELY TO BE STOCKPILED FOR MORE THAN 10 DAYS DURING THOSE MONTHS THAT HAVE A HIGH EROSION RISK.
 - (vi) PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC, MULCH OR VEGETATIVE) IF THE MATERIALS ARE LIKELY TO BE STOCKPILED FOR MORE THAN 5 DAYS DURING THOSE MONTHS THAT HAVE A EXTREME EROSION RISK.
3. A SUITABLE FLOW DIVERSION SYSTEM MUST BE ESTABLISHED IMMEDIATELY UP-SLOPE OF A STOCKPILE OF ERODIBLE MATERIAL THAT HAS THE POTENTIAL TO CAUSE ENVIRONMENTAL HARM IF DISPLACED IF THE UP-SLOPE CATCHMENT AREA DRAINING TO THE STOCKPILE EXCEEDS 1500m².

SITE MANAGEMENT:

1. ALL OFFICE FACILITIES AND OPERATIONAL ACTIVITIES MUST BE LOCATED SUCH THAT ANY LIQUID EFFLUENT (E.G. PROCESS WATER, WASH-DOWN WATER, EFFLUENT FROM EQUIPMENT CLEANING, OR PLANT WATERING), CAN BE TOTALLY CONTAINED AND TREATED WITHIN THE SITE.
2. THE CONSTRUCTION SCHEDULE MUST AIM TO MINIMISE THE DURATION THAT ANY AND ALL AREAS OF SOIL ARE EXPOSED TO THE EROSION EFFECTS OF WIND, RAIN AND SURFACE WATER.
3. LAND-DISTURBING ACTIVITIES MUST BE UNDERTAKEN IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL PLAN (ESCP) AND ASSOCIATED DEVELOPMENT CONDITIONS.
4. LAND-DISTURBING ACTIVITIES MUST BE UNDERTAKEN IN SUCH A MANNER THAT ALLOWS ALL REASONABLE AND PRACTICABLE MEASURES TO BE UNDERTAKEN TO:
 - (i) ALLOW STORMWATER TO PASS THROUGH THE SITE IN A CONTROLLED MANNER AND AT NON-EROSIVE FLOW VELOCITIES UP TO THE SPECIFIED DESIGN STORM DISCHARGE;
 - (ii) MINIMISE SOIL EROSION RESULTING FROM RAIN, WATER FLOW AND/OR WIND;
 - (iii) MINIMISE ADVERSE EFFECTS OF SEDIMENT RUNOFF, INCLUDING SAFETY ISSUES;
 - (iv) PREVENT OR AT LEAST MINIMISE, ENVIRONMENTAL HARM RESULTING FROM WORK-RELATED SOIL EROSION AND SEDIMENT RUNOFF;
 - (v) ENSURE THAT THE VALUE AND USE OF LAND/PROPERTIES ADJACENT TO THE DEVELOPMENT (INCLUDING ROADS) ARE NOT DIMINISHED AS A RESULT OF THE ADOPTED ESC MEASURES.
5. ALL EROSION AND SEDIMENT CONTROL MEASURES MUST CONFORM TO THE STANDARDS AND SPECIFICATIONS CONTAINED IN:
 - (i) THE DEVELOPMENT APPROVAL CONDITION ISSUED BY RELEVANT LOCAL AUTHORITY; AND/OR
 - (ii) THE APPROVED ESCP AND SUPPORTING DOCUMENTATION; OR
 - (iii) THE LATEST VERSION OF IECA (2008) BEST PRACTICE EROSION & SEDIMENT CONTROL IF THE STANDARDS AND SPECIFICATIONS ARE NOT CONTAINED IN THE APPROVED ESCP.
6. ANY WORKS THAT MAY CAUSE SIGNIFICANT SOIL DISTURBANCE AND ARE ANCILLARY TO ANY ACTIVITY FOR WHICH REGULATORY BODY APPROVAL IS REQUIRED, MUST NOT COMMENCE BEFORE THE ISSUE OF THAT APPROVAL.
7. ADDITIONAL AND/OR ALTERNATIVE ESC MEASURES MUST BE IMPLEMENTED IN THE EVENT THAT THE RELEVANT AUTHORITY IDENTIFIES THAT UNACCEPTABLE OFF-SITE SEDIMENTATION IS OCCURRING AS A RESULT OF THE WORK ACTIVITIES.
8. LAND-DISTURBING ACTIVITIES MUST NOT CAUSE UNNECESSARY SOIL DISTURBANCE IF AN ALTERNATIVE CONSTRUCTION PROCESS IS AVAILABLE THAT ACHIEVES THE SAME OR EQUIVALENT OUTCOMES AT AN EQUIVALENT COST.
9. SEDIMENT (INCLUDING CLAY, SILT, SAND, GRAVEL, SOIL, MUD, CEMENT AND CERAMIC WASTE) DEPOSITED OFF THE SITE AS A DIRECT RESULT OF AN ON-SITE ACTIVITY, MUST BE COLLECTED AND THE AREA APPROPRIATELY CLEANED/REHABILITATED AS SOON AS REASONABLE AND PRACTICABLE, AND IN A MANNER THAT GIVES APPROPRIATE CONSIDERATION TO THE SAFETY AND ENVIRONMENTAL RISKS ASSOCIATED WITH THE SEDIMENT DEPOSITION.
10. ALL WASTE INCLUDING PETROLEUM AND OIL-BASED PRODUCTS, MUST BE PREVENTED FROM ENTERING AN INTERNAL WATER BODY, OR AN EXTERNAL DRAIN, STORMWATER SYSTEM, OR WATER BODY.
11. ALL FLAMMABLE AND COMBUSTIBLE LIQUIDS, INCLUDING ALL LIQUID CHEMICALS IF SUCH CHEMICALS COULD POTENTIALLY BE WASHED OR DISCHARGED FROM THE SITE, ARE STORED AND HANDLED ON-SITE IN ACCORDANCE WITH RELEVANT STANDARDS SUCH AS AS1940 THE STORAGE AND HANDLING OF FLAMMABLE AND COMBUSTIBLE LIQUIDS.
12. NO MORE THAN 150m OF A STORMWATER, SEWER LINE OR OTHER SERVICE TRENCH MUST TO BE OPEN AT ANY ONE TIME.
13. SITE SPOIL MUST BE LAWFULLY DISPOSED OF IN A MANNER THAT DOES NOT RESULT IN ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.
14. ALL FILL MATERIAL PLACED ON SITE MUST COMPRISE ONLY NATURAL EARTH AND ROCK, AND IS TO BE FREE OF CONTAMINANTS, BE FREE DRAINING, AND BE COMPACTED IN LAYERS NOT EXCEEDING 300mm TO 90% MODIFIED MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS1289.

DRAINAGE CONTROL:

1. ALL DRAINAGE CONTROL MEASURES MUST BE APPLIED AND MAINTAINED IN ACCORDANCE WITH THE CONSTRUCTION PLANS.
2. WHEREVER REASONABLE AND PRACTICABLE, STORMWATER RUNOFF ENTERING THE SITE FROM EXTERNAL AREAS, AND NON-SEDIMENT LADEN (CLEAN) STORMWATER RUNOFF ENTERING A WORK AREA OR AREA OF SOIL DISTURBANCE, MUST BE DIVERTED AROUND OR THROUGH THAT AREA IN A MANNER THAT MINIMISES SOIL EROSION AND THE CONTAMINATION OF THAT WATER FOR ALL DISCHARGES UP TO THE SPECIFIED DESIGN STORM DISCHARGE.
3. DURING THE CONSTRUCTION PERIOD, ALL REASONABLE AND PRACTICABLE MEASURES MUST BE IMPLEMENTED TO CONTROL FLOW VELOCITIES IN SUCH A MANNER THAN PREVENTS SOIL EROSION ALONG DRAINAGE PATHS AND AT THE ENTRANCE AND EXIT OF ALL DRAINS AND DRAINAGE PIPES DURING ALL STORMS UP TO THE RELEVANT DESIGN STORM DISCHARGE.
4. TO THE MAXIMUM DEGREE REASONABLE AND PRACTICABLE, ALL WATERS DISCHARGED DURING THE CONSTRUCTION PHASE MUST DISCHARGE ONTO STABLE LAND, IN A NON-EROSIVE MANNER, AND AT A LEGAL POINT OF DISCHARGE.
5. WHEREVER REASONABLE AND PRACTICABLE, "CLEAN" SURFACE WATERS MUST BE DIVERTED AWAY FROM SEDIMENT CONTROL DEVICES AND ANY UNTREATED, SEDIMENT-LADEN WATERS.
6. DURING THE CONSTRUCTION PERIOD, ROOF WATER MUST BE MANAGED IN A MANNER THAT MINIMISES SOIL EROSION THROUGHOUT THE SITE, AND SITE WETNESS WITHIN ACTIVE WORK AREAS.
7. DRAINS ARE TO BE SIZED AND CONSTRUCTED TO ALLOW WATER TO DRAIN. THIS MAY INCLUDE CUTTING INTO THE EARTH TO OBTAIN THE REQUIRED FALL TO PERMIT DRAINAGE. DIMENSIONS GIVEN ARE A MINIMUM.

				SURVEY DATA		SOILCO		ESC NOTES - PAGE 1				PO Box 554 Beaudesert QLD 4285		ACS Engineers CIVIL ENVIRONMENTAL PROJECT MANAGEMENT															
				DATUM		PO BOX 199, UNANDERRA NSW 2526																							
				GDA2020				BROMELTON DEVELOPMENT				ENGINEERING CERTIFICATION (RPEQ) <table><tr><th>#</th><th>FIELD</th><th>NAME</th><th>SIGNATURE</th><th>DATE</th></tr><tr><td>13697</td><td>CIVIL</td><td>S. SHAY</td><td></td><td>23/10/24</td></tr></table>				#	FIELD	NAME	SIGNATURE	DATE	13697	CIVIL	S. SHAY		23/10/24	DRAWING NUMBER ACS-220089-ROAD-17		REVISION 2	
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EROSION CONTROL:

1. ALL EROSION CONTROL MEASURES MUST BE APPLIED AND MAINTAINED IN ACCORDANCE WITH IECA (2008) BEST PRACTICE EROSION & SEDIMENT CONTROL.
2. THE APPLICATION OF LIQUID-BASED DUST SUPPRESSION MEASURES MUST ENSURE THAT SEDIMENT-LADEN RUNOFF RESULTING FROM SUCH MEASURES DOES NOT CREATE A TRAFFIC OR ENVIRONMENTAL HAZARD.
3. ALL TEMPORARY EARTH BANKS, FLOW DIVERSION SYSTEMS, AND EMBANKMENTS ASSOCIATED WITH CONSTRUCTED SEDIMENT BASINS MUST BE MACHINE-COMPACTED, SEEDED AND MULCHED FOR THE PURPOSE OF ESTABLISHING A TEMPORARY VEGETATIVE COVER WITHIN 10 DAYS AFTER GRADING.
4. UNPROTECTED SLOPE LENGTHS MUST NOT EXCEED 80m, OR AN EQUIVALENT VERTICAL FALL OF 3m DURING THE CONSTRUCTION PERIOD.
5. THE CONSTRUCTION AND STABILISATION OF EARTH BATTERS STEEPER THAN 6:1 (H:V) MUST BE STAGED SUCH THAT NO MORE THAN 3 VERTICAL-METRES OF ANY BATTER IS EXPOSED TO RAINFALL AT ANY INSTANT.
6. SYNTHETIC REINFORCED EROSION CONTROL MATS AND BLANKETS MUST NOT BE PLACED WITHIN, OR ADJACENT TO, RIPARIAN ZONES AND WATERCOURSES IF SUCH MATERIALS ARE LIKELY TO CAUSE ENVIRONMENTAL HARM TO WILDLIFE OR WILDLIFE HABITATS.
7. A MINIMUM 60% GROUND COVER MUST BE ACHIEVED ON ALL NON-COMPLETED EARTHWORKS EXPOSED TO ACCELERATED SOIL EROSION IF FURTHER CONSTRUCTION ACTIVITIES OR SOIL DISTURBANCES ARE LIKELY TO BE SUSPENDED FOR MORE THAN 30 DAYS DURING THOSE MONTHS WHEN THE EXPECTED RAINFALL IS LESS THAN 30mm; MINIMUM 70% COVER WITHIN 30 DAYS IF BETWEEN 30 AND 45mm; MINIMUM 70% COVER WITHIN 20 DAYS IF BETWEEN 45 AND 100mm; MINIMUM 75% COVER WITHIN 10 DAYS IF BETWEEN 100 AND 225mm; AND MINIMUM 80% COVER WITHIN 5 DAYS IF GREATER THAN 225mm. (ALTERNATIVE TO ABOVE)

SEDIMENT CONTROL:

1. ALL SEDIMENT CONTROL MEASURES MUST BE APPLIED AND MAINTAINED IN ACCORDANCE WITH IECA (2008) BEST PRACTICE EROSION & SEDIMENT CONTROL.
2. OPTIMUM BENEFIT MUST BE MADE OF EVERY OPPORTUNITY TO TRAP SEDIMENT WITHIN THE WORK SITE, AND AS CLOSE AS PRACTICABLE TO ITS SOURCE.
3. SEDIMENT TRAPS MUST BE INSTALLED AND OPERATED TO BOTH COLLECT AND RETAIN SEDIMENT.
4. THE POTENTIAL SAFETY RISK OF A PROPOSED SEDIMENT TRAP TO SITE WORKERS AND THE PUBLIC MUST BE GIVEN APPROPRIATE CONSIDERATION, ESPECIALLY THOSE DEVICES LOCATED WITHIN PUBLICLY ACCESSIBLE AREAS.
5. ALL REASONABLE AND PRACTICABLE MEASURES MUST BE TAKEN TO PREVENT, OR AT LEAST MINIMISE, THE RELEASE OF SEDIMENT FROM THE SITE.
6. SUITABLE ALL-WEATHER MAINTENANCE ACCESS MUST BE PROVIDED TO ALL SEDIMENT CONTROL DEVICES.
7. SEDIMENT CONTROL DEVICES MUST BE DE-SILTED AND MADE FULLY OPERATIONAL AS SOON AS REASONABLE AND PRACTICABLE AFTER A SEDIMENT-PRODUCING EVENT, WHETHER NATURAL OR ARTIFICIAL, IF THE DEVICE'S SEDIMENT RETENTION CAPACITY REDUCES BY 30% OF DESIGN CAPACITY.
8. MATERIALS, WHETHER LIQUID OR SOLID, REMOVED FROM SEDIMENT CONTROL DEVICES DURING MAINTENANCE OR DECOMMISSIONING, MUST BE DISPOSED OF IN A MANNER THAT DOES NOT CAUSE ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.

ROADWORKS:

1. VEGETATION REMOVED DURING ROAD WORKS MUST BE RE-USED TO THE MAXIMUM POSSIBLE EXTENT TO MINIMISE SHORT AND LONG-TERM SOIL EROSION. NON-SALVAGEABLE DEBRIS MUST BE DISPOSED OF IN A MANNER THAT DOES NOT CAUSE ONGOING ENVIRONMENTAL HARM.
2. SOIL DISTURBANCES MUST BE STAGED INTO MANAGEABLY-SIZED AREAS OF NO GREATER THAN TEN (10) HECTARES TO ENSURE ADEQUATE ESC MANAGEMENT AND PROGRESSIVE STABILISATION OF DISTURBED SURFACES.
3. NEWLY CONSTRUCTED SPRAY-SEALED ROADS MUST BE SWEEPED THOROUGHLY AS SOON AS POSSIBLE AFTER GRAVELLING TO PREVENT EXCESS GRAVEL ENTERING STORMWATER DRAINS OR WATERWAYS.
4. DURING THE CONSTRUCTION PERIOD, ALL UNSTABLE FILL EMBANKMENTS ARE TO BE LEFT WITH A LIP (WINDROW) AT THE TOP OF THE SLOPE AT THE END OF EACH DAY'S OPERATION, OR OTHER APPROPRIATE DRAINAGE CONTROL MEASURES, TO PREVENT BANK EROSION.
5. ALL CUT AND FILL EARTH BATTERS ARE TO BE TOPSOILED, AND GRASS SEED/ED/HYDROMULCHED WITHIN TEN (10) DAYS OF COMPLETION OF GRADING.

SITE REHABILITATION:

1. ALL DISTURBED AREAS IDENTIFIED AS VERY LOW, LOW, MEDIUM, HIGH, OR EXTREME EROSION RISK MUST BE SUITABLY STABILISED WITHIN 30, 30, 20, 10 OR 5 DAYS RESPECTIVELY, OR PRIOR TO ANTICIPATED RAINFALL, WHICHEVER IS THE GREATER, FROM THE DAY THAT SOIL DISTURBANCES ON THE AREA HAVE BEEN FINALISED.
2. A MINIMUM 60% GROUND COVER MUST BE ACHIEVED ON ALL COMPLETED EARTHWORKS EXPOSED TO ACCELERATED SOIL EROSION WITHIN 30 DAYS DURING THOSE MONTHS WHEN THE EXPECTED RAINFALL IS LESS THAN 30mm; MINIMUM 70% COVER WITHIN 30 DAYS IF BETWEEN 30 AND 45mm; MINIMUM 70% COVER WITHIN 20 DAYS IF BETWEEN 45 AND 100mm; MINIMUM 75% COVER WITHIN 10 DAYS IF BETWEEN 100 AND 225mm; AND MINIMUM 80% COVER WITHIN 5 DAYS IF GREATER THAN 225mm. (ALTERNATIVE TO ABOVE)
3. NO COMPLETED EARTHWORK SURFACE MUST REMAIN DENUDED FOR LONGER THAN 60 DAYS.
4. THE TYPE OF GROUND COVER APPLIED TO COMPLETED EARTHWORKS IS COMPATIBLE WITH THE ANTICIPATED LONG-TERM LAND USE, ENVIRONMENTAL RISK, AND SITE REHABILITATION MEASURES.
5. UNLESS OTHERWISE DIRECTED BY THE SUPERINTENDENT OR WHERE DIRECTED BY THE APPROVED REVEGETATION PLAN, TOPSOIL MUST BE PLACED AT A MINIMUM DEPTH OF 75mm ON SLOPES 4:1 (H:V) OR FLATTER, AND 50mm ON SLOPES STEEPER THAN 4:1.
6. SOIL AMELIORANTS MUST BE ADDED TO THE SOIL IN ACCORDANCE WITH THE APPROVED LANDSCAPE/REVEGETATION PLANS AND/OR SOIL ANALYSIS.
7. TEMPORARY SITE STABILISATION PROCEDURES MUST COMMENCE AT LEAST 30 DAYS PRIOR TO THE NOMINATED SITE SHUTDOWN DATE. AT LEAST 70% STABLE COVER OF ALL UNSTABLE AND/OR DISTURBED SOIL SURFACES MUST BE ACHIEVED PRIOR TO ANY SHUTDOWN. THE STABILISATION WORKS MUST NOT RELY UPON THE LONGEVITY OF NON-VEGETATED EROSION CONTROL BLANKETS, OR TEMPORARY SOIL BINDERS.
8. ALL UNSTABLE OR DISTURBED SOIL SURFACES MUST BE ADEQUATELY STABILISED AGAINST EROSION (MINIMUM 70%) PRIOR TO COMMENCEMENT OF USE, OR SURVEY PLAN ENDORSEMENT.

SITE MAINTENANCE:

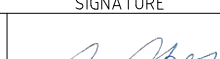
1. ENSURE EROSION AND SEDIMENT CONTROL MEASURES ARE ON SITE AT ALL TIMES.
2. ALL EROSION AND SEDIMENT CONTROL MEASURES, INCLUDING DRAINAGE CONTROL MEASURES, MUST BE MAINTAINED IN PROPER WORKING ORDER AT ALL TIMES DURING THEIR OPERATIONAL LIVES.
3. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES, INCLUDING DRAINAGE CONTROL MEASURES, MUST BE FULLY OPERATIONAL AND MAINTAINED IN PROPER WORKING ORDER AT ALL TIMES DURING THE MAINTENANCE PERIOD AS SPECIFIED BY RELEVANT AUTHORITY.
4. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES, INCLUDING DRAINAGE CONTROL MEASURES, MUST BE REMOVED AFTER ACHIEVING A SATISFACTORY "OFF-MAINTENANCE INSPECTION" BY THE RELEVANT AUTHORITY.
5. ALL DRAINAGE, EROSION AND SEDIMENT CONTROL MEASURES MUST BE INSPECTED:
 - (i) AT LEAST DAILY (WHEN WORK IS OCCURRING ON-SITE);
 - (ii) AT LEAST WEEKLY (WHEN WORK IS NOT OCCURRING ON-SITE);
 - (iii) WITHIN 24 HOURS OF EXPECTED RAINFALL; AND
 - (iv) WITHIN 18 HOURS OF A RAINFALL EVENT OF SUFFICIENT INTENSITY AND DURATION TO CAUSE RUNOFF ON-SITE).IF FAILURE HAS BEEN FOUND, IMMEDIATE REMEDIATIONS ARE REQUIRED AND TO A STANDARD WHICH ENSURES THE FAILURE DOES NOT CONTINUALLY OCCUR UNDER DESIGN RAINFALL CONDITIONS.
6. WASHING/FLUSHING OF SEALED ROADWAYS MUST ONLY OCCUR WHERE SWEEPING HAS FAILED TO REMOVE SUFFICIENT SEDIMENT AND THERE IS A COMPELLING NEED TO REMOVE THE REMAINING SEDIMENT (E.G. FOR SAFETY REASONS). IN SUCH CIRCUMSTANCES, ALL REASONABLE AND PRACTICABLE SEDIMENT CONTROL MEASURES MUST BE USED TO PREVENT, OR AT LEAST MINIMISE, THE RELEASE OF SEDIMENT INTO RECEIVING WATERS. ONLY THOSE MEASURES THAT WILL NOT CAUSE SAFETY AND PROPERTY FLOODING ISSUES SHALL BE EMPLOYED. SEDIMENT REMOVED FROM ROADWAYS MUST BE DISPOSED OF IN A LAWFUL MANNER THAT DOES NOT CAUSE ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.
7. SEDIMENT REMOVED FROM SEDIMENT TRAPS AND PLACES OF SEDIMENT DEPOSITION MUST BE DISPOSED OF IN A LAWFUL MANNER THAT DOES NOT CAUSE ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.
8. MAINTENANCE IS TO OCCUR ON ALL EROSION AND SEDIMENT CONTROL MEASURES WHEN CAPACITY REDUCES BY 30%.
9. MAINTENANCE MOWING OF ALL ROAD SHOULDERS, TABLE DRAINS, BATTERS AND OTHER SURFACES LIKELY TO EXPERIENCE ACCELERATED SOIL EROSION MUST AIM TO LEAVE THE GRASS LENGTH NO SHORTER THAN 50mm WHERE REASONABLE AND PRACTICABLE.
10. MAINTENANCE MOWING MUST BE DONE IN A MANNER THAT WILL NOT DAMAGE THE PROFILE OF FORMED, SOFT EDGES, SUCH AS THE CREST OF EARTH EMBANKMENTS.
11. ENSURE RECORDS ARE KEPT OF DATES OF MAINTENANCE AND THE PERSONNEL RESPONSIBLE FOR UNDERTAKING THE MAINTENANCE.
12. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE SOIL EROSION IS LIMITED AS MUCH AS POSSIBLE. THE TECHNIQUES USED IN THE DESIGN SHOULD NOT BE TAKEN AS THE MAXIMUM CONTROLS ALLOWABLE, AND THE CONTRACTOR MAY ADD CONTROLS AS NECESSARY TO LIMIT SOIL EROSION AND SEDIMENTATION.
13. MONITORING SHALL BE UNDERTAKEN BY A PERSON WITH EXPERIENCE IN EROSION AND SEDIMENT CONTROL MONITORING. MONITORING IS TO BE UNDERTAKEN IN A MANNER WHICH COMPLIES WITH IECA GUIDELINES 2008, CHAPTER 7. SITE INSPECTION.

OTHER:

1. THE CONTRACTOR IS TO TAKE ALL NECESSARY PRECAUTIONS TO CONTROL EROSION AND DOWNSTREAM SEDIMENTATION DURING ALL STAGES OF CONSTRUCTION INCLUDING THE MAINTENANCE PERIOD.
2. ALL SEDIMENT CONTROL DEVICES SHALL BE MONITORED, CLEANED AND/OR REPAIRED WHENEVER THE ACCUMULATED SEDIMENT REDUCES THE CAPACITY BY 30%.
3. THE EXTENT OF GRASSING SHALL BE DETERMINED BY THE SUPERINTENDENT AND SHALL BE SEEDED, AS SPECIFIED, WITHIN SEVEN DAYS OF FINAL TRIMMING.
4. EXTENT AND POSITION OF SILT FENCE CONTROL MEASURES TO BE DETERMINED ON SITE BY SUPERINTENDENT.
5. MEASURES SHOWN ON THIS DRAWING ARE MINIMUM REQUIREMENTS ONLY.
6. SCOUR PROTECTION AND SILT MANAGEMENT MEASURES TO BE PROVIDED AT STORMWATER OUTLET HEADWALLS.
7. PROVISION TO BE MADE FOR DIRT/SAND REMOVAL FROM CONSTRUCTION VEHICLES PRIOR TO TRAVEL ON PUBLIC ROADS. METHOD TO BE APPROVED BY SUPERINTENDENT PRIOR TO COMMENCEMENT OF WORK.
8. ANY SILT OR SEDIMENT CAUSED BY CONSTRUCTION TRAFFIC ON EXISTING ROADS IS TO BE REMOVED DAILY.
9. THE CONTRACTOR SHALL IMPLEMENT EROSION AND SEDIMENT CONTROL PROCEDURES DURING CONSTRUCTION AND MAINTENANCE STAGES OF THE DEVELOPMENT AND SHALL TAKE ALL NECESSARY ACTIONS TO COMPLY WITH THE POLICY OBJECTIVES OF COUNCIL'S LOCAL PLANNING POLICY - EROSION AND SEDIMENT CONTROL.
10. A SCHEDULE SHALL BE SUBMITTED FOR THE APPROVAL OF COUNCIL'S REPRESENTATIVE AT THE PRE-START MEETING FOR THE FIELD IMPLEMENTATION OF EROSION AND SEDIMENT CONTROL, DETAILING THE STAGES AT WHICH VARIOUS MANAGEMENT TECHNIQUES WOULD BE IN PLACE AND AUDITING PROCEDURES.
11. FINAL FORM OF SEDIMENT EROSION CONTROL TO BE DECIDED ON SITE BY THE SUPERINTENDENT.
12. THE CONTRACTOR IS TO ENSURE THAT NO SILT REACHES THE DOWNSTREAM WATER COURSE AND IS TO PROVIDE ADEQUATE PROTECTION TO PREVENT THIS OCCURRING.

ROCK CHECK DAMS, SAND BAG CHECK DAMS AND COIR LOGS:

1. TO BE LOCATED AS DIRECTED ON SITE AND SPACED TO SUIT SETOUT DETAIL, REFER DRG 04.
2. MAINTENANCE OF CHECK DAMS TO BE IN ACCORDANCE WITH 'IECA BEST PRACTICE EROSION AND SEDIMENT CONTROL BOOK 6 STANDARD DRAWINGS'.

				SURVEY DATA		SOILCO		ESC NOTES - PAGE 2				PO Box 554 Beaudesert QLD 4285		ACS Engineers CIVIL ENVIRONMENTAL PROJECT MANAGEMENT															
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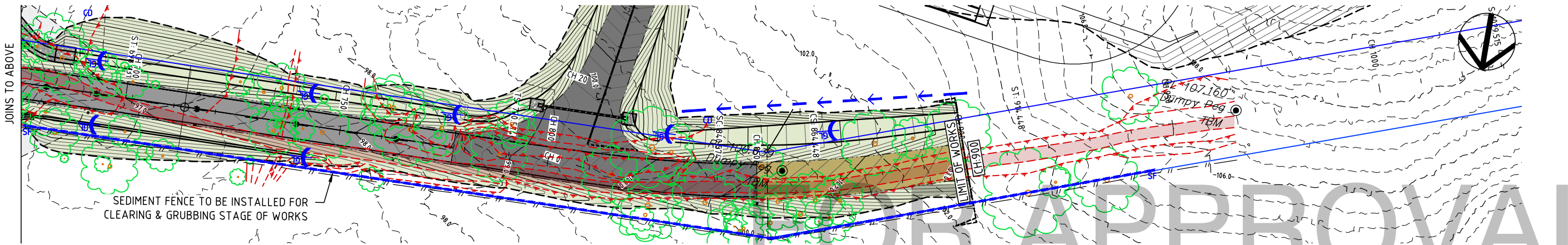
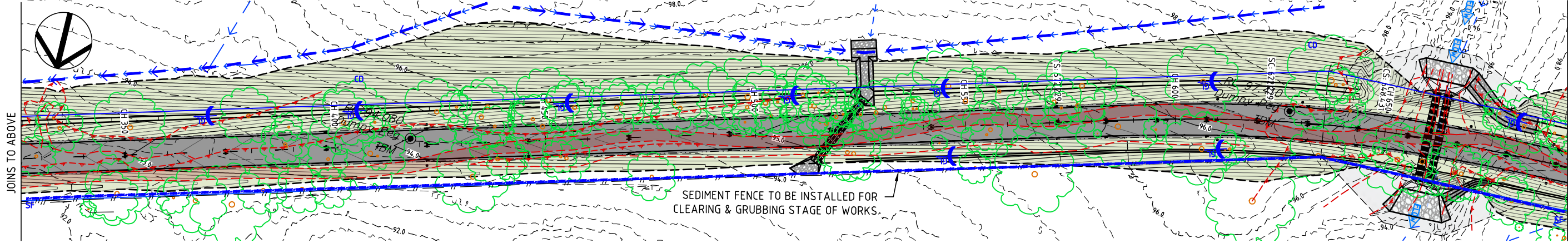
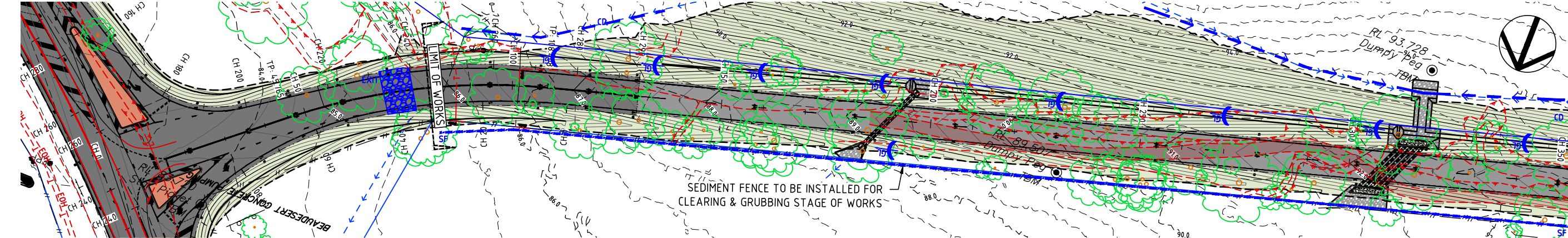
LEGEND:



ROCK SHAKE DOWN
COIR/GEIO LOGS
CATCH DRAIN



SEDIMENT FENCE
FLOW ARROWS
HYDROSEEDING



				SURVEY DATA		SOILCO		ESC LAYOUT PLAN			PO Box 554 Beaudesert QLD 4285		ACS Engineers CIVIL ENVIRONMENTAL PROJECT MANAGEMENT				
				DATUM		PO BOX 199, UNANDERRA NSW 2526									(07) 5541 3500		
				GDA2020											www.acsengineers.com.au		
				MAP GRID													
				MGA56		BROMELTON DEVELOPMENT		ENGINEERING CERTIFICATION (RPEQ)					DRAWING NUMBER		REVISION		
3	UPDATES TO ESC PLAN	NJF	03/10/24	HEIGHT ORIGIN				#		FIELD	NAME		SIGNATURE	DATE	ACS-220089-ROAD-20		3
2	PLANS UPDATED AS PER SRRC RFI	NJF	06/09/24	AHD													
				SURVEY BOOKS													
1	FOR APPROVAL	NJF	30/06/24	NJF		30/06/24		260 MITCHELL ROAD, BROMELTON QLD 4285		13697	CIVIL	S. SHAY					
				REVISION/DETAILS		DWN		DATE		DES		DATE					
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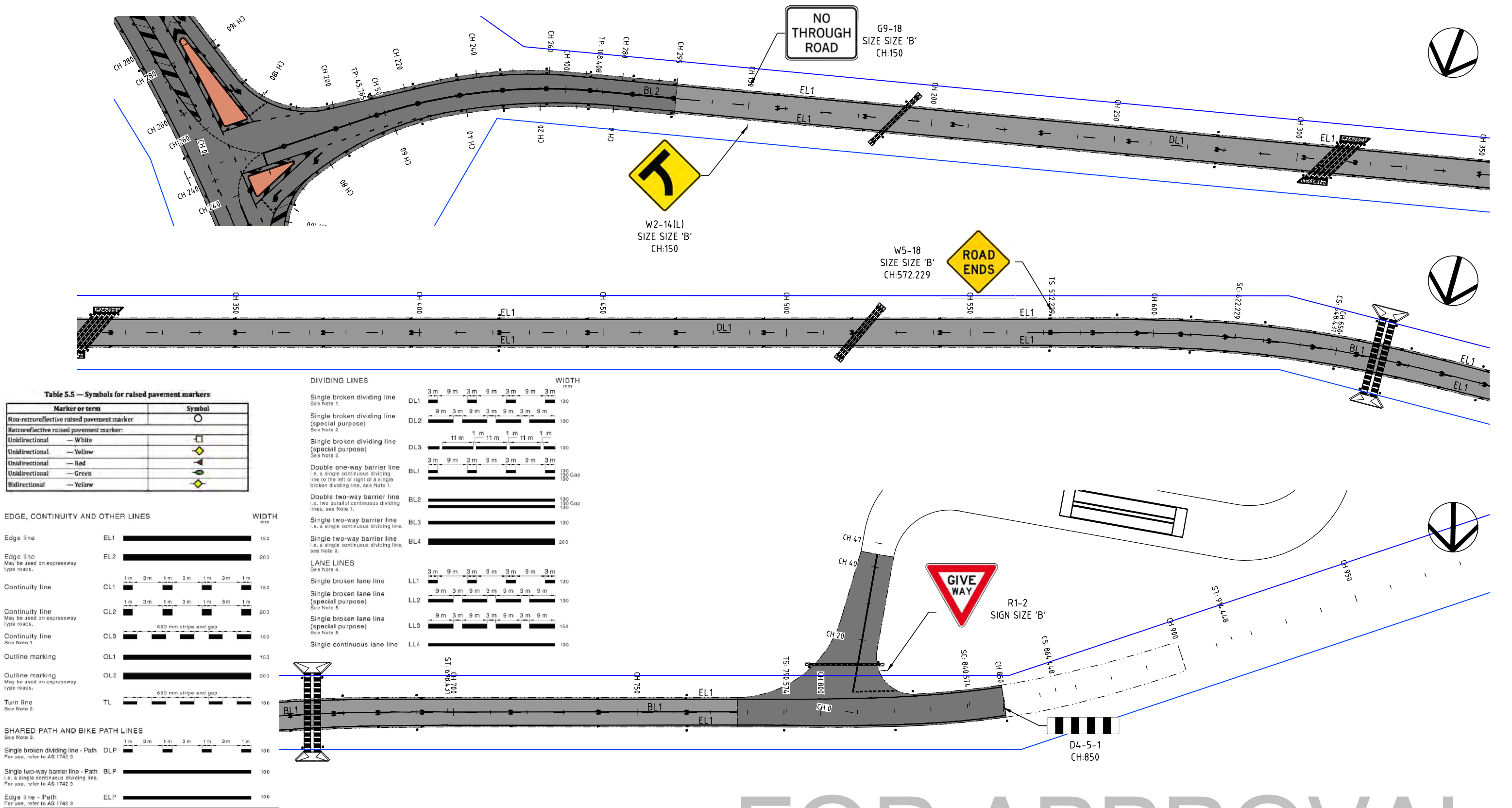


Table 5.5 — Symbols for raised pavement markers

Marker or term	Symbol
Non-retroreflective raised pavement marker	○
Retroreflective raised pavement marker:	
Unidirectional — White	◀
Unidirectional — Yellow	◀
Unidirectional — Red	◀
Unidirectional — Green	◀
Bidirectional — Yellow	◀

EDGE, CONTINUITY AND OTHER LINES

Line	Symbol	WIDTH (mm)
Edge line	EL1	150
Edge line	EL2	200
Continuity line	CL1	150
Continuity line	CL2	200
Continuity line	CL3	150
Outline marking	OL1	150
Outline marking	OL2	200
Turn line	TL	100

SHARED PATH AND BIKE PATH LINES

Line	Symbol	WIDTH (mm)
Single broken dividing line - Path	DLP	100
Single two-way barrier line - Path	BLP	100
Edge line - Path	ELP	100

DIVIDING LINES

Line	Symbol	WIDTH (mm)
Single broken dividing line	DL1	100
Single broken dividing line (special purpose)	DL2	100
Single broken dividing line (special purpose)	DL3	100
Double one-way barrier line	BL1	100
Double two-way barrier line	BL2	100
Single two-way barrier line	BL3	100
Single two-way barrier line	BL4	200

LANE LINES

Line	Symbol	WIDTH (mm)
Single broken lane line	LL1	100
Single broken lane line (special purpose)	LL2	100
Single broken lane line (special purpose)	LL3	150
Single continuous lane line	LL4	100

FOR APPROVAL

				SURVEY DATA		SOILCO		SIGN AND LINEMARKNG PLAN				P0 Box 554 Beaudesert QLD 4285		ACS Engineers CIVIL ENVIRONMENTAL PROJECT MANAGEMENT			
				DATUM		PO BOX 199, UNANDERRA NSW 2526						P0 Box 554 Beaudesert QLD 4285					
				GDA2020								(07) 5541 3500					
				MAP GRID								www.acsengineers.com.au					
				MGA56													
				HEIGHT ORIGIN		BROMELTON DEVELOPMENT		ENGINEERING CERTIFICATION (RPEQ)				DRAWING NUMBER		REVISION			
				AHD				#	FIELD	NAME	SIGNATURE	DATE					
2	PLANS UPDATED AS PER SRRC RFI	NJF	06/09/24	SURVEY BOOKS				13697	CIVIL	S. SHAY		23/10/24	ACS-220089-ROAD-21		2		
1	FOR APPROVAL	NJF	30/06/24		NJF	30/06/24	260 MITCHELL ROAD, BROMELTON QLD 4285										
				REVISION/DETAILS		DWN		DATE		DES		DATE					
FILE: C:\V2DS\DATA\ACSSYN\220089 SOILCO BROMELTON DEVELOPMENT - 260 MITCHELL ROAD_596\DESIGN\DRAWING FILES\ACS-220089-GEN.DWG PLOT TIME: 23/10/2024 - 11:06AM BY USER: NICHOLAS FALVEY																	



The diagram illustrates the typical cross-section of Beaudesert-Boonah Road. It features a central painted median flanked by two 3.5m traffic lanes. Each traffic lane is bordered by a 1.2m shoulder. The total width of the road, including shoulders, is 2.0m (MIN). The road is shown with a 6% cross-slope on both sides of the median, transitioning to a 1 in 4 slope on the right side. The pavement structure includes a 50mm AC wearing course, 250mm plant mixed foam bitumen stabilised granular pavement, and imported fill (min. CBR 10). The existing pavement is shown in grey, and the new pavement is shown in orange. The road is labeled 'TYPICAL CROSS SECTION - BEAUDESERT-BOONAH ROAD' and 'SCALE 1:200'.

2.0m (MIN.)

1.2m

3.5m - TRAFFIC LANE

PAINTED MEDIAN

3.5m TRAFFIC LANE

1.2m

1.0m SHOULDER

1.0m SHOULDER

6%

6%

6%

1 in 4

NATURAL SURFACE

PROFILE EXISTING SEAL AND REPLACE WITH 50mm ASPHALT. EXISTING PAVEMENT TO REMAIN.

PROFILE EXISTING SEAL AND REPLACE WITH 50mm ASPHALT. EXISTING PAVEMENT TO REMAIN. PLANT MIXED FOAM BITUMEN STABILISED GRANULAR PAVEMENT TO BE PLACED WHERE EXISTING PAVEMENT LEVELS ARE LOWER THAN BOTTOM OF ASPHALT LAYER. MIN. THICKNESS 125mm

PAVEMENT WIDENING

50mm AC WEARING COURSE

250mm PLANT MIXED FOAM BITUMEN STABILISED GRANULAR PAVEMENT

IMPORTED FILL MIN. CBR 10

OVER

OVER

TYPICAL CROSS SECTION - BEAUDESERT-BOONAH ROAD

SCALE 1:200



FOR APPROVAL

B	UPDATED PAVEMENT DESIGN	MLS	10/04/25	
A	FOR APPROVAL	MLS	27/02/25	SURVEY DATA
5	UPDATES AS PER TMR COMMENTS	MLS	21/02/25	DATUM
4	UPDATES AS PER TMR COMMENTS	NJF	14/01/25	MAP GRID
3	PLAN UPDATES AS PER RFI	NJF	17/07/24	MOA592
2	FOR APPROVAL	NJF	02/20/24	MG56
1	CONCEPT PLAN	NJF	01/20/24	HEIGHT DESIGN
				AHD
				SURVEY BOOKS
	REVISION/DETAILS	OWN	DATE	DJS
				30/06/24

SOILCO		COVER SHEET					PO Box 554 Beaudesert QLD 4285 (07) 5541 3500 www.acsengineers.com.au		 ACS Engineers CIVIL · ENVIRONMENTAL · PROJECT MANAGEMENT	
PO BOX 199, UNANDERRA NSW 2526							DRAWING NUMBER		REVISION	
BROMELTON DEVELOPMENT		ENGINEERING CERTIFICATION (RPEQ)					ACS-220089-INT-01		B	
		#	FIELD	NAME	SIGNATURE	DATE				
260 MITCHELL ROAD, BROMELTON QLD 4285		13697	CIVIL	S. SHAY		10/04/25				

GENERAL NOTES

- THE BILL OF QUANTITIES (BOQ) IS PROVIDED AS A GUIDE ONLY. THE CONTRACTOR IS TO REVIEW THIS BOQ AGAINST THE PLANS AND VERIFY QUANTITIES AS A PART OF THEIR DUE DILIGENCE IN TENDERING. ANY DISCREPANCIES ARE TO BE REFERRED TO ACS ENGINEERS FOR CLARIFICATION.
- THE CONTRACTOR IS RESPONSIBLE FOR ACCURATELY ASCERTAINING THE LOCATION OF EXISTING UNDERGROUND AND OVERHEAD SERVICES PRIOR TO THE COMMENCEMENT OF WORKS.
- REFER ANY DISCREPANCY TO THE PRINCIPLE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- PRIOR TO CONSTRUCTION LOCATE ALL EXISTING SERVICES IN THE VICINITY THAT MAY BE AFFECTED BY THE PROPOSED CONSTRUCTION.
- DESIGN LEVELS TO BE CONFIRMED ON SITE PRIOR TO COMMENCING CONSTRUCTION.
- CONCRETE ELEMENTS INCLUDING KERBS, FOOTPATHS, DRIVEWAYS ETC. SHALL BE SAW CUT WHERE REQUIRED AND SHALL BE REPLACED WITH MATCHING SURFACE TEXTURE AND TREATMENT AS ADJOINING SURFACES OR AS SPECIFIED IN THE DRAWINGS. NEW SURFACE SHALL MATCH SMOOTHLY WITH ADJOINING SURFACES.

SURVEY:

- THE DATUM FOR ALL LEVELS IS THE AUSTRALIAN HEIGHT DATUM IN METRES AND PROJECTIONS ARE BASED ON MGA 2020 ZONE 56 COORDINATE SYSTEM.
- DETAILED SURVEY WAS CARRIED OUT BY TJ KELLYS SURVEYS REF: 4497-02. THE ACCURACY OF PROPERTY BOUNDARIES IS NOT TO BE RELIED UPON AND SHOULD BE VERIFIED BY THE SURVEYOR.
- SOME SERVICES HAVE BEEN EXPOSED AND LOCATED BUT OTHER SERVICE POSITIONS ARE DERIVED FROM SURFACE FEATURES ONLY. PRIOR TO EXCAVATION THE RELEVANT AUTHORITY SHOULD BE CONTACTED FOR DETAILED LOCATION OF ALL SERVICES.

SITE ACCESS:

- PRIOR TO THE COMMENCEMENT OF SITE WORKS, THE LOCATION OF THE SITE ACCESS POINT MUST BE VERIFIED WITH RELEVANT AUTHORITY.
- SITE ACCESS IS RESTRICTED TO ONE LOCATION.
- SITE EXIT POINT MUST BE APPROPRIATELY MANAGED TO MINIMISE THE RISK OF SEDIMENT BEING TRACKED ONTO SEALED PUBLIC ROADWAYS.
- STORMWATER RUNOFF FROM ACCESS ROADS AND STABILISED ENTRY/EXIT POINTS MUST DRAIN TO AN APPROPRIATE SEDIMENT CONTROL DEVICE.

EARTHWORKS - GENERAL

- THE CONTRACTOR IS TO STRIP THE CONSTRUCTION AREA OF ALL GRASS, SHRUBS, RUBBISH, DELETERIOUS MATERIAL AND UNSUITABLE TOPSOIL AS NOMINATED BY THE ENGINEER.
- DISPOSAL OF UNSUITABLE MATERIAL IS TO BE ONSITE. TOPSOIL APPROVED BY THE CLIENT FOR REUSE, IS TO BE STOCKPILED ON SITE AS DIRECTED.
- BULK EARTHWORKS IS TO BE CARRIED OUT IN ACCORDANCE WITH TMR STANDARDS AND THE REQUIREMENTS OF AS3798.
- ALL FILL UNDER FOOTINGS AND SLABS SHALL BE COMPACTED IN LAYERS NOT GREATER THAN 200mm TO 98% STANDARD COMPACTION FOR COHESIVE MATERIALS OR A DENSITY INDEX OF NOT LESS THAN 70% FOR NON COHESIVE MATERIALS.
- ALL EARTHWORKS ARE TO BE UNDERTAKEN UNDER THE LEVEL 1 INSPECTION AND TESTING REQUIREMENTS OUTLINED IN AS3798.
- THE CONTRACTOR SHALL PROVIDE DETAILS OF ALL TESTING TO THE SUPERVISING ENGINEER PROGRESSIVELY THROUGH THE WORKS AND NOTIFY THE ENGINEER OF ANY NON-CONFORMANCES. ALL NON CONFORMING WORK IS TO BE RECTIFIED.
- PRIOR TO WORKS PROCEEDING, REMOVE SOFT AND OR COMPRESSIBLE ZONES AND REPLACE WITH SELECT SITE MATERIAL COMPACTED TO A DENSITY CONSISTENT WITH THAT NOTED FOR THE PROPOSED FILLING.
- IT IS THE CONTRACTORS RESPONSIBILITY TO PROTECT THE SITE AND SURROUNDING AREAS FROM DAMAGE RESULTING FROM STORMWATER RUNOFF. TEMPORARY DIVERSION DRAINS AND OR OTHER DRAINAGE CONTROL DEVICES ARE TO BE IMPLEMENTED BY THE CONTRACTOR DURING CONSTRUCTION TO MINIMISE THE EFFECTS OF WEATHER.
- ALL FILL MATERIAL PLACED ON THE SITE COMPRISING ONLY NATURAL EARTH AND ROCK IS TO BE FREE OF CONTAMINANTS (AS DEFINED BY SECTION 11 OF THE ENVIRONMENTAL PROTECTION ACT (EPA) 1994), NOXIOUS, HAZARDOUS, DELETERIOUS AND ORGANIC MATERIALS.
- IMPORTED FILL FOR BUILDING PAD SHALL MEET THE REQUIREMENTS OF AS3798 FOR IMPORTED FILL.
- BUILDING PAD TO BE KEYED INTO NATURAL SURFACE AFTER TOPSOIL STRIP.

EARTHWORKS - ROADWAYS

- CLEARING AND GRUBBING SHALL BE LIMITED TO THOSE AREAS REQUIRED TO CONSTRUCT THE WORKS AND/OR MEET VISIBILITY REQUIREMENTS.
- CLEARED AND GRUBBED MATERIAL OTHER THAN THAT MULCHED SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
- WHERE WHEREVER PRACTICAL TOPSOIL SHALL BE TRANSFERRED DIRECTLY TO PLACEMENT AS PLANTING MEDIA. WHERE STOCKPILING OF TOPSOIL IS REQUIRED, IT SHALL BE CARRIED OUT IN A MANNER WHICH ENSURES THE PROPERTIES OF THE TOPSOIL ARE NOT PERMITTED TO DEGRADE SUCH THAT IT BECOMES UNSUITABLE AS PLANTING MEDIA.
- WHERE UNSUITABLE MATERIAL MATERIAL IS ENCOUNTERED ONSITE, THE FOREMAN SHALL NOTIFY THE PROJECT ENGINEER BEFORE PROCEEDING TO REMOVE OR COVER SUCH MATERIAL.
- MATERIAL USED FOR CONSTRUCTION OF SUBGRADE IN ROAD EMBANKMENT, WHERE DIRECTED, SHALL BE GENERAL FILL MATERIAL SUITABLE FOR PLACEMENT USING THE COMPACTED LAYER METHOD AND HAS A MAXIMUM STONE SIZE OF 75mm.

EXCAVATION ADJACENT TO POWER POLES:

- POSSIBLE TRENCH SHORING REQUIREMENTS NEAR POWER POLES TO BE COORDINATED WITH ENERGEX AND THE APPROPRIATE APPROVALS TO BE OBTAINED FROM ENERGEX PRIOR TO CONSTRUCTION COMMENCEMENT.
- ANY TRENCHING REQUIREMENTS ADJACENT TO EXISTING POWER POLES SHALL HAVE THE POWER POLES ADEQUATELY SUPPORTED DURING TRENCHING AND BACKFILLING OPERATIONS. A CERTIFIED ENGINEERING ASSESSMENT OF THE COMPACTION OF BACKFILL MATERIAL IS TO BE PROVIDED TO AND ASSESSED BY ENERGEX TO ENSURE POLE STABILITY BEFORE REMOVAL OF ADDITIONAL SUPPORT.
- ALL CONSTRUCTION WITHIN 3m OF OVERHEAD POWER LINES REQUIRE 'SAFETY ADVICE ON WORKING AROUND ELECTRICAL POSTS' FORM BS0001405F108 FROM ENERGEX.

CONSTRUCTION NOTES

- THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ENGINEERS AND OTHER CONSULTANT'S DRAWINGS AND SPECIFICATIONS AND WITH OTHER SUCH WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCIES SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- NO RESPONSIBLTY WILL BE TAKEN FOR DIMENSIONS OBTAINED BY SCALING THESE DRAWINGS.
- ALL DIMENSIONS SHALL BE VERIFIED ON SITE BY THE CONTRACTOR WHO SHALL BE RESPONSIBLE FOR THEIR CORRECTNESS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STRUCTURE AND NEIGHBOURING STRUCTURES IN A SAFE AND STABLE CONDITION DURING CONSTRUCTION. NO PART SHALL BE OVER STRESSED.
- ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT S.R.R.C SPECS AND THE BY-LAWS AND ORDINANCES OF THE RELEVANT GOVERNMENT AUTHORITY.
- THE CONTRACTOR SHALL PROVIDE TRAFFIC MANAGEMENT FOR THE DURATION OF CONSTRUCTION IN ACCORDANCE WITH "THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES - PART 3 2017", IF REQUIRED.
- THE CONTRACTOR IS TO LOCATE, IDENTIFY AND ESTABLISH THE CONNECTIVITY OF ALL EXISTING SERVICES WITHIN THE LIMITS OF THE WORKS AND CONFIRM THIS INFORMATION WITH THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
- PROPERTY BOUNDARIES ARE SUBJECT TO CONFIRMATION BY FIELD SURVEY CARRIED OUT BY A REGISTERED SURVEYOR.
- ALL WORK SHALL BE JOINED NEATLY TO EXISTING FEATURES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL MEASURING DEVICES, SAFETY EQUIPMENT AND MACHINERY REQUIRED TO CARRY OUT INSPECTIONS AS SPECIFIED OR REQUESTED.
- THE CONTRACTOR SHALL RESTORE ALL EXTERNAL AREAS TO THE SITE, TO THEIR ORIGINAL CONDITION UPON COMPLETION OF THE WORKS.

PAVEMENT NOTES:

- BASE GRAVEL TO BE TYPE 2 MATERIAL WITH MINIMUM CBR80 AND SUB-BASE GRAVEL TO BE TYPE 2 MATERIAL WITH MINIMUM CBR45 IN ACCORDANCE WITH MAIN ROADS SPECIFICATION MRTS05 UNBOUND PAVEMENTS.
- COMPACTION STANDARD OF SUB-BASE & BASE PAVEMENTS SHALL ACHIEVE A CHARACTERISTIC VALUE OF THE RELATIVE DRY DENSITY NOT LESS THAN 100%.
- THE PAVEMENT SHALL BE CONSTRUCTED SO AS NOT TO DEPART FROM THE WIDTHS, LENGTHS, HEIGHTS AND SHAPES SPECIFIED IN THESE PLANS UNLESS AUTHORISED BY PROJECT ENGINEER. THE WIDTHS, HEIGHTS AND SHAPES OF LAYERS OTHER THAN THE FINAL LAYER SHALL BE CALCULATED USING THE COMPLETED PAVEMENT SURFACE AND THE DEPTH TO SURFACE OF THE PARTICULAR LAYER WITHIN THE PAVEMENT.
- COMPACTED LAYER THICKNESS SHALL NOT BE GREATER THAN 200mm OR LESS THAN 100mm.
- ROAD SURFACE TO BE CLEAN AND DRY PRIOR TO PLACING SEAL.
- SEAL TO CONSIST ASPHALT AC14 A15E OVER SINGLE COAT BITUMEN SEAL.

DELINEATION:

- WHERE PAVEMENT IS 6.8m WIDE OR GREATER, GUIDE POSTS SHALL BE USED ON UNDIVIDED RURAL ROADS AT, OR NEAR, THE EDGE OF FORMATION AND AT A CONSTANT DISTANCE (GENERALLY BETWEEN 1.2m AND 3.0m) FROM THE PAVEMENT EDGE.
- NOMINAL SPACING OF GUIDE POSTS ON A STRAIGHT SECTION OF ROAD SHALL BE 150m, WITH THE POSTS IN PAIRS, ONE EACH SIDE OF THE FORMATION. THE SPACING MAY BE REDUCED TO 75M IN AREAS SUBJECT TO FREQUENT FOGS.
- THE SPACING OF GUIDE POSTS ON CURVES SHALL BE AS GIVEN IN THE TABLE 4.1 ON THIS SHEET.

ENVIRONMENTAL:

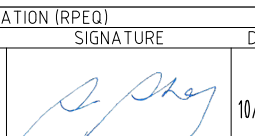
- THE EXTENT OF CLEARING OF VEGETATION SHALL BE KEPT TO THE ABSOLUTE MINIMUM NECESSARY TO UNDERTAKE THE WORKS.
- SILTATION CONTROLS, SITE REVEGETATION AND ENVIRONMENTAL REQUIREMENTS SHALL BE CARRIED OUT TO THE SATISFACTION OF THE PRINCIPAL.

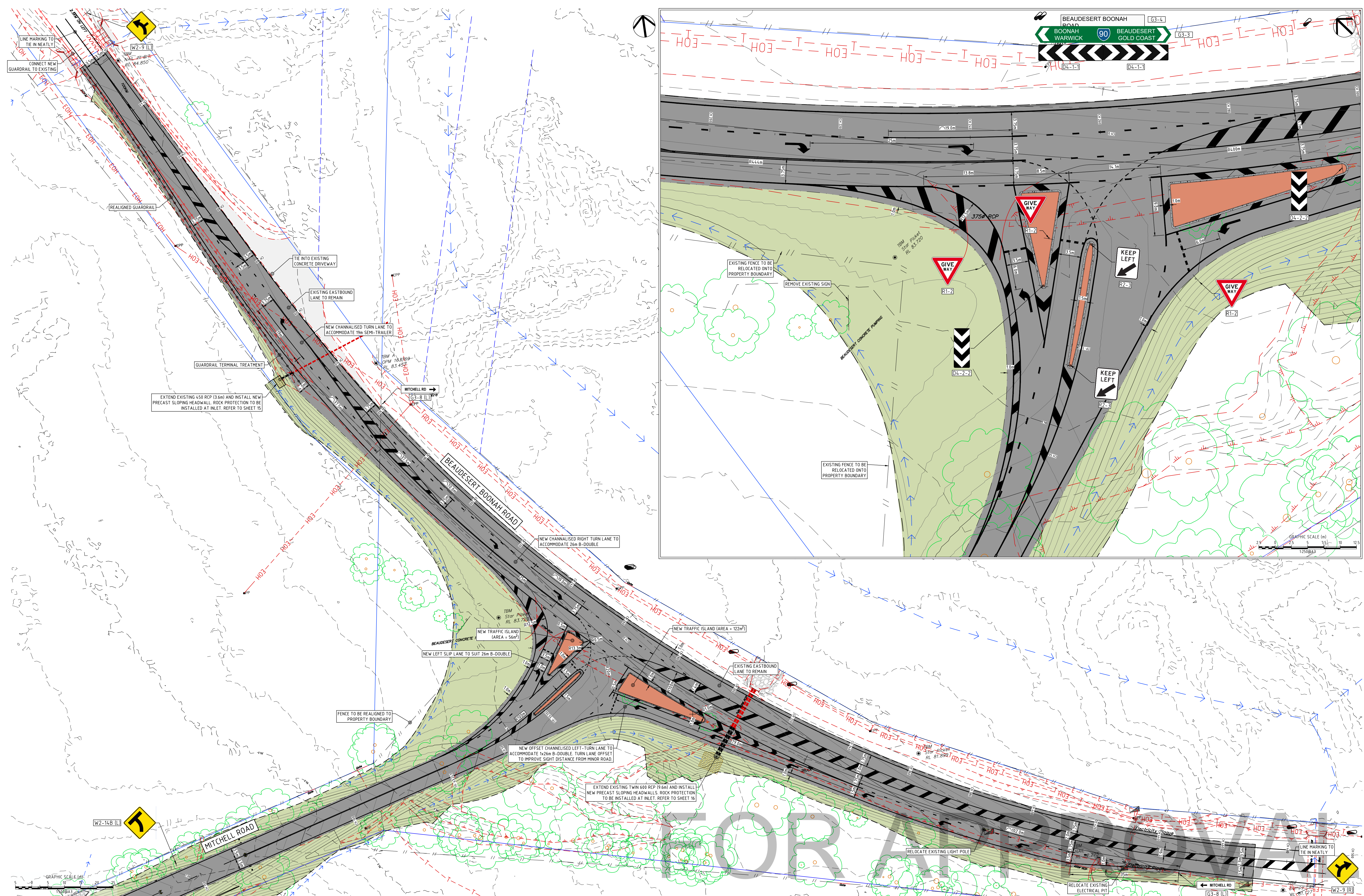
OTHER:

- THE CONTRACTOR IS TO TAKE ALL NECESSARY PRECAUTIONS TO CONTROL EROSION AND DOWNSTREAM SEDIMENTATION DURING ALL STAGES OF CONSTRUCTION INCLUDING THE MAINTENANCE PERIOD.
- ALL SEDIMENT CONTROL DEVICES SHALL BE MONITORED, CLEANED AND/OR REPAIRED WHENEVER THE ACCUMULATED SEDIMENT REDUCES THE CAPACITY BY 50%.
- THE EXTENT OF GRASSING SHALL BE DETERMINED BY THE SUPERINTENDENT AND SHALL BE SEEDED, AS SPECIFIED, WITHIN SEVEN DAYS OF FINAL TRIMMING.
- EXTENT AND POSITION OF SILT FENCE CONTROL MEASURES TO BE DETERMINED ON SITE BY SUPERINTENDENT.
- MEASURES SHOWN ON THIS DRAWING ARE MINIMUM REQUIREMENTS ONLY.
- SCOUR PROTECTION AND SILT MANAGEMENT MEASURES TO BE PROVIDED AT STORMWATER OUTLET HEADWALLS.
- PROVISION TO BE MADE FOR DIRT/SAND REMOVAL FROM CONSTRUCTION VEHICLES PRIOR TO TRAVEL ON PUBLIC ROADS. METHOD TO BE APPROVED BY SUPERINTENDENT PRIOR TO COMMENCEMENT OF WORK.
- ANY SILT OR SEDIMENT CAUSED BY CONSTRUCTION TRAFFIC ON EXISTING ROADS IS TO BE REMOVED DAILY.
- THE CONTRACTOR SHALL IMPLEMENT EROSION AND SEDIMENT CONTROL PROCEDURES DURING CONSTRUCTION AND MAINTENANCE STAGES OF THE DEVELOPMENT AND SHALL TAKE ALL NECESSARY ACTIONS TO COMPLY WITH THE POLICY OBJECTIVES OF QUEENSLAND TRANSPORT AND MAIN ROADS - EROSION AND SEDIMENT CONTROL.
- A SCHEDULE SHALL BE SUBMITTED FOR THE APPROVAL OF TMR'S REPRESENTATIVE AT THE PRE-START MEETING FOR THE FIELD IMPLEMENTATION OF EROSION AND SEDIMENT CONTROL, DETAILING THE STAGES AT WHICH VARIOUS MANAGEMENT TECHNIQUES WOULD BE IN PLACE AND AUDITING PROCEDURES.
- FINAL FORM OF SEDIMENT EROSION CONTROL TO BE DECIDED ON SITE BY THE SUPERINTENDENT.
- THE CONTRACTOR IS TO ENSURE THAT NO SILT REACHES THE DOWNSTREAM WATER COURSE AND IS TO PROVIDE ADEQUATE PROTECTION TO PREVENT THIS OCCURRING.

FOR APPROVAL

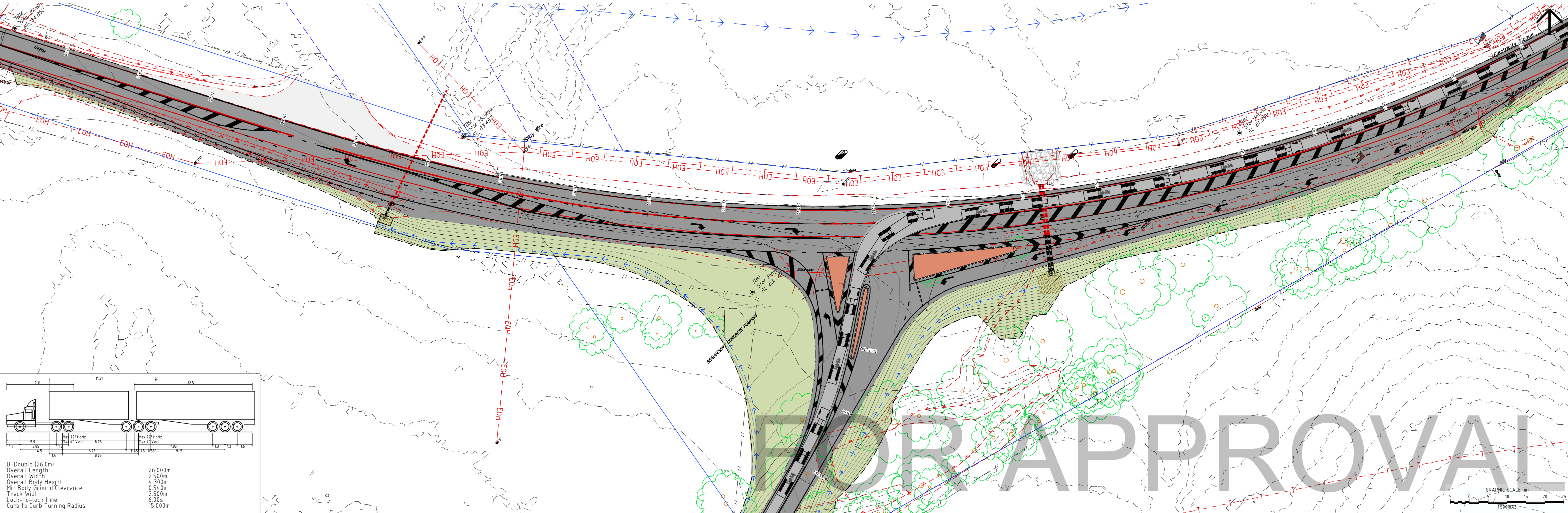
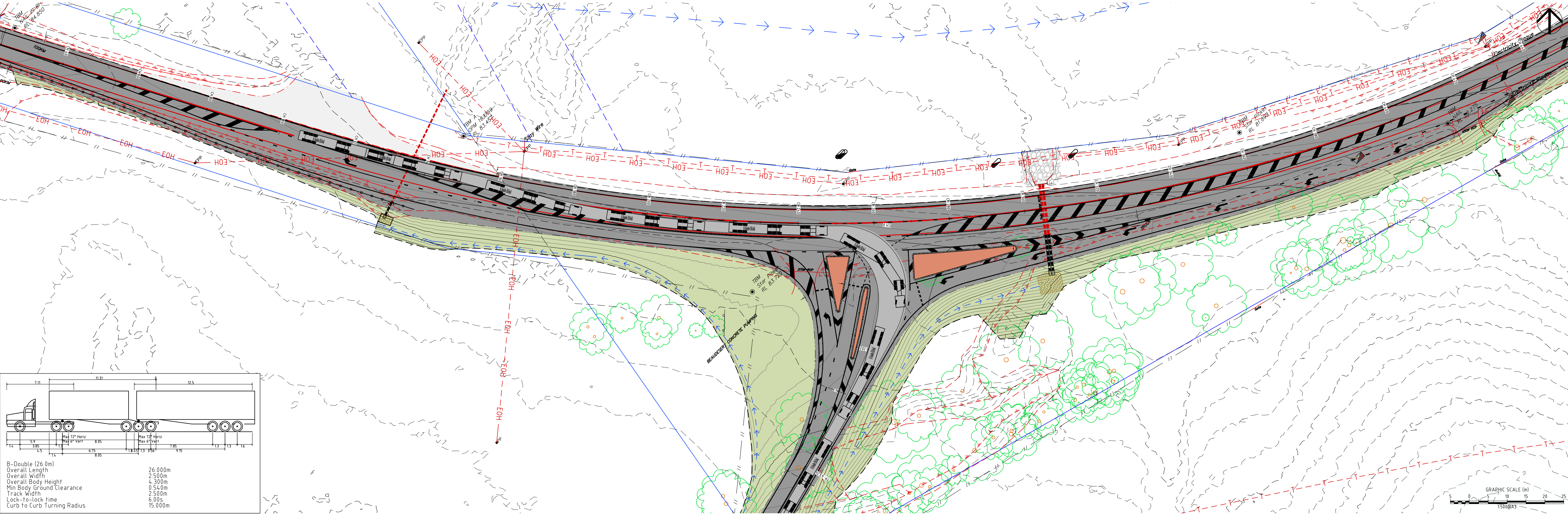
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REVISION/DETAILS					
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SOILCO		GENERAL NOTES				PO Box 554 Beaudesert QLD 4285 (07) 5561 3500 www.acsengineers.com.au	 ACS Engineers CIVIL / ENVIRONMENTAL / PROJECT MANAGEMENT	
PO BOX 199, UNANDERRA NSW 2526								
BROMELTON DEVELOPMENT		ENGINEERING CERTIFICATION (RPEQ)				DRAWING NUMBER		
		#	FIELD	NAME	SIGNATURE	DATE	REVISION	
260 MITCHELL ROAD, BROMELTON QLD 4285		13697	CIVIL	S. SHAY		10/04/25	ACS-220089-INT-02	
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2	FOR APPROVAL	NJF	02/2024	SURVEY BOOKS
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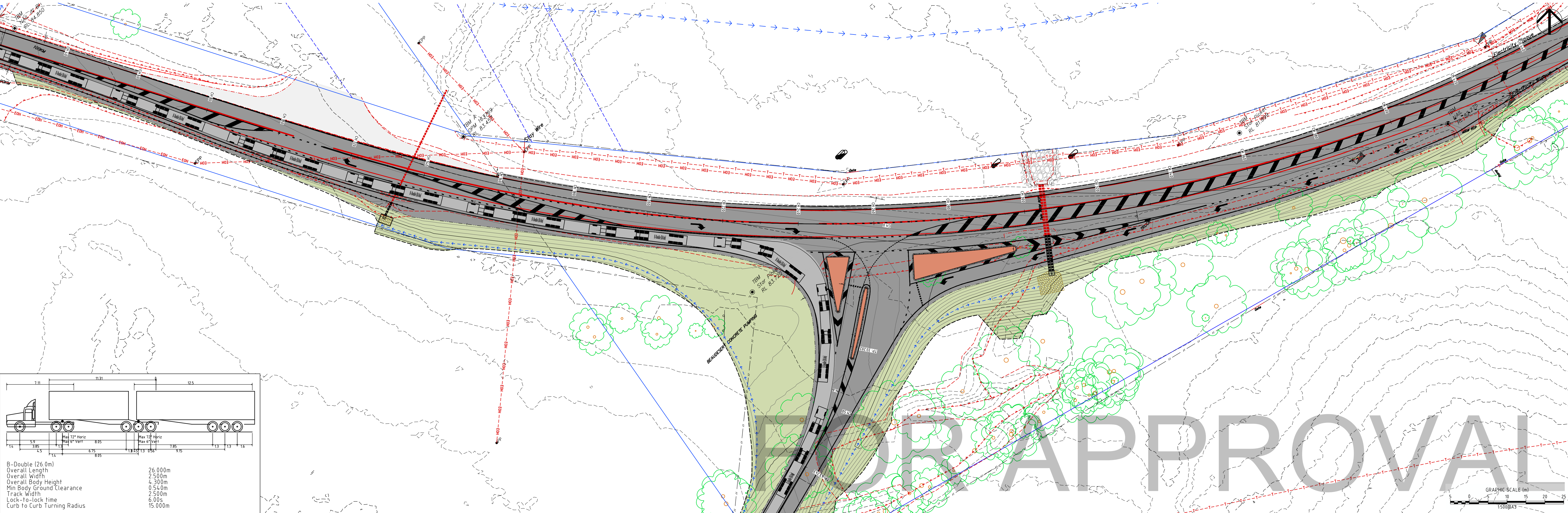
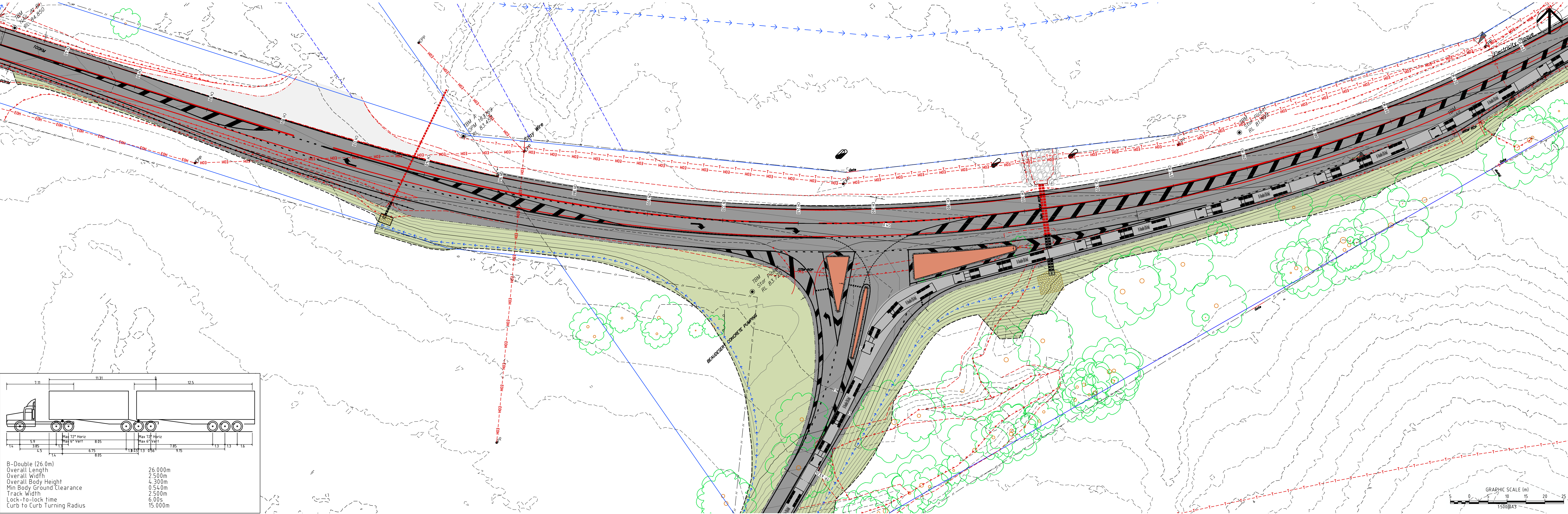
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BROMELTON DEVELOPMENT		260 MITCHELL ROAD, BROMELTON QLD 4285		ENGINEERING CERTIFICATION (IPQI)		DRAWING NUMBER		CIVIL - ENVIRONMENTAL PROJECT MANAGEMENT	
13697		CIVIL		NAME		SIGNATURE		DATE	
S. SHAY		10/04/25		DATE		PROJECT NUMBER		REVISION	
ACS-220089-INT-03		A		PROJECT NUMBER		REVISION		PROJECT NUMBER	



A	FOR APPROVAL	MLS	27/02/25	SURVEY DATA
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1	CONCEPT PLAN	NJF	01/2024	NJF
REVISION/DATE		OWN	DATE	DES
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SOILCO	TURNING PATHS - SHEET 01	PO BOX 554 Beaudesert QLD 4285 (07) 5561 3500 www.acsengineers.com.au	ACS Engineers CIVIL ENVIRONMENTAL PROJECT MANAGEMENT
PO BOX 199, UNANDERRA NSW 2526	TURNING PATHS - SHEET 01	ENGINEERING CERTIFICATION (RPEQ)	DRAWING NUMBER
BROMELTON DEVELOPMENT	FIELD	NAME	SIGNATURE
260 MITCHELL ROAD, BROMELTON QLD 4285	13697	CIVIL	S. SHAY

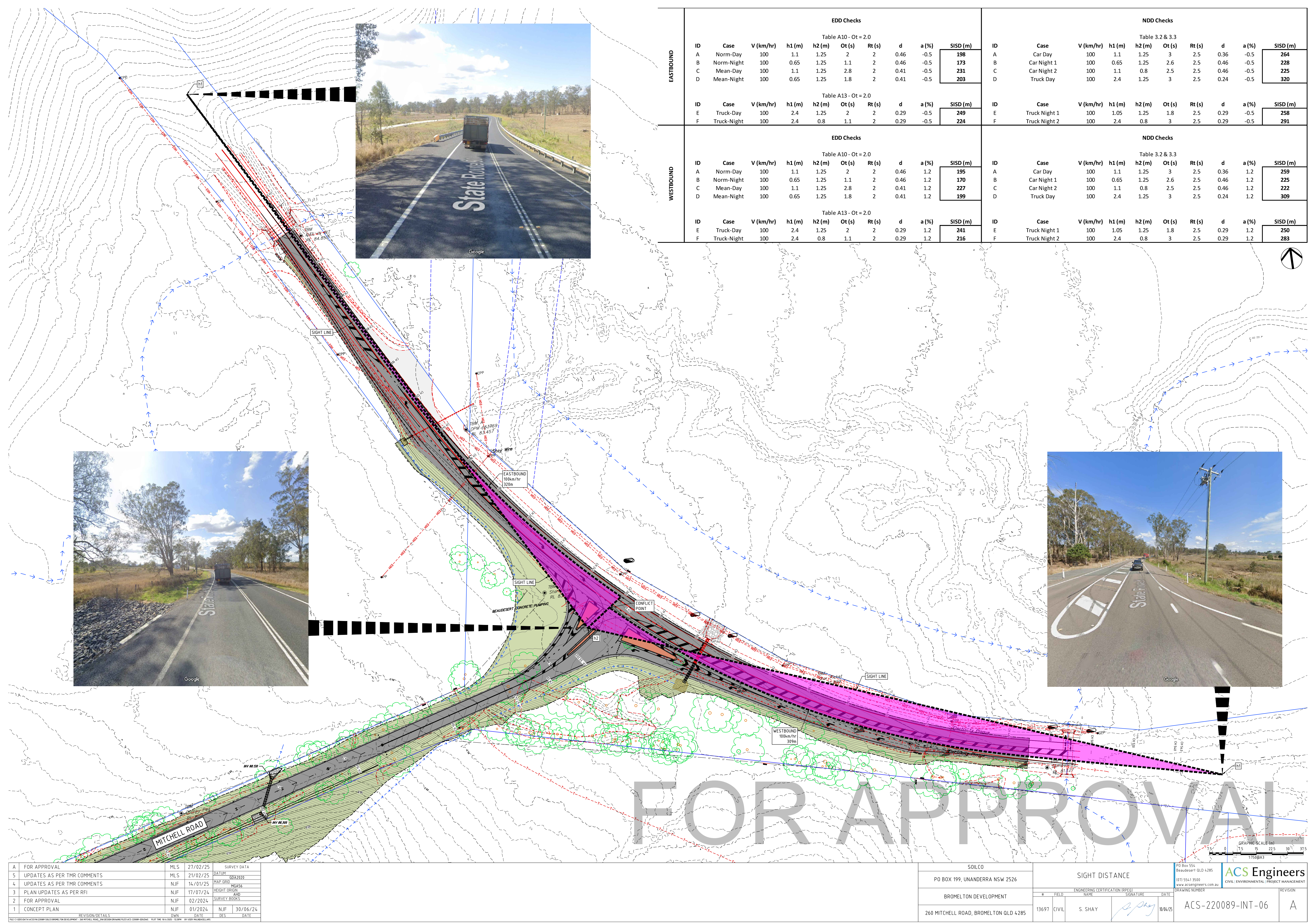
10/04/25	ACS-220089-INT-04	A
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A	FOR APPROVAL	MLS	27/02/25	SURVEY DATA
5	UPDATES AS PER TMR COMMENTS	MLS	21/02/25	DATUM: GDA2020
4	UPDATES AS PER TMR COMMENTS	NJF	14/01/25	MAP GRID: MG456
3	PLAN UPDATES AS PER RFI	NJF	17/07/24	HEIGHT ORIGIN: AHD
2	FOR APPROVAL	NJF	02/2024	SURVEY BOOKS
1	CONCEPT PLAN	NJF	01/2024	NJF 30/06/24
REVISION/DETAILS		OWN	DATE	DSS DATE

FILE C:\GSD\DATA\ACS\220089\BROMELTON DEVELOPMENT - 260 MITCHELL ROAD - 2024\DWG\DRAWING\PLANS\220089-02.DWG PLOT TIME: 2025/02/25 10:00 PM BY USER: MARGARET GILLIES

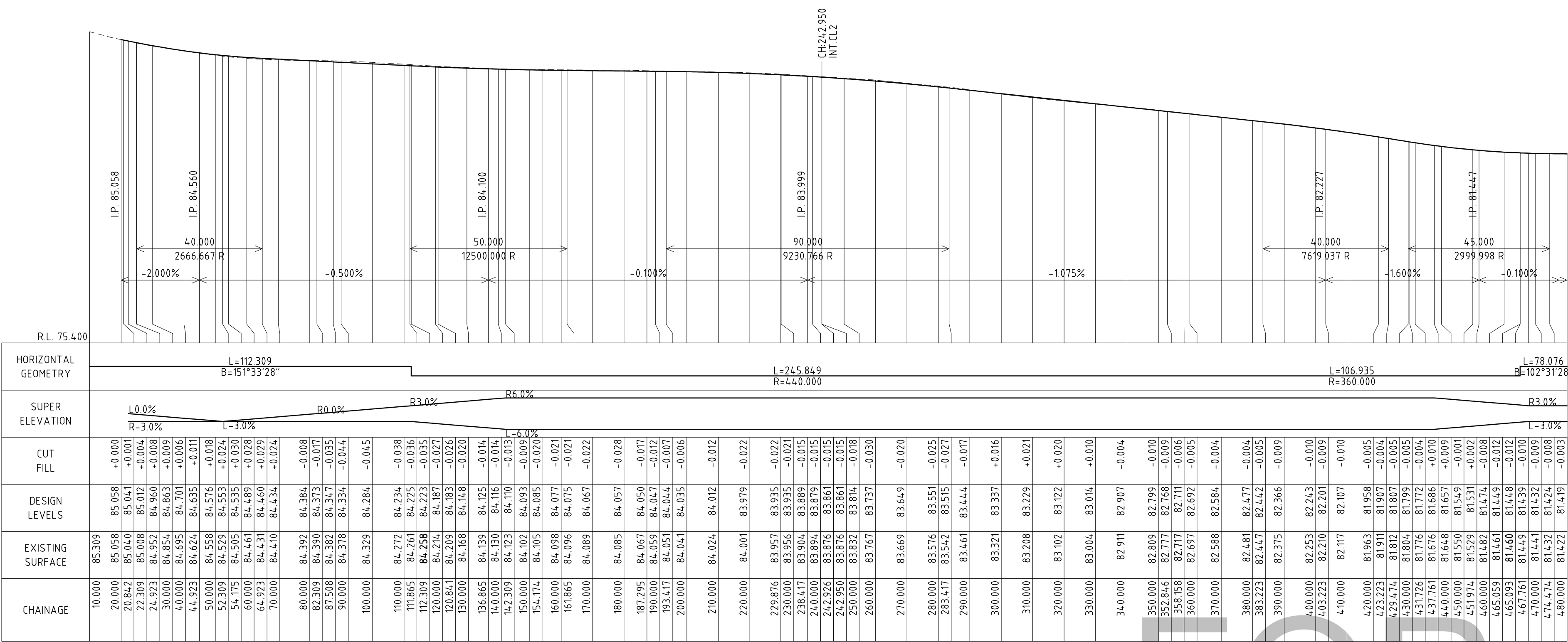
SOILCO	TURNING PATHS - SHEET 02	PO Box 554 Beaudesert QLD 4285 071 5541 3500 www.acsengineers.com.au	ACS Engineers CIVIL, ENVIRONMENTAL, PROJECT MANAGEMENT
PO BOX 199, UNANDERRA NSW 2526	ENGINEERING CERTIFICATION (SPEL)	DRAWING NUMBER	REVISION
BROMELTON DEVELOPMENT	# FIELD NAME SIGNATURE DATE	ACS-220089-INT-05	A
260 MITCHELL ROAD, BROMELTON QLD 4285	13697 CIVIL S. SHAY 10/04/25		



EASTBOUND	EDD Checks										NDD Checks									
	Table A10 - Ot = 2.0										Table 3.2 & 3.3									
	ID	Case	V (km/hr)	h1 (m)	h2 (m)	Ot (s)	Rt (s)	d	a (%)	SISD (m)	ID	Case	V (km/hr)	h1 (m)	h2 (m)	Ot (s)	Rt (s)	d	a (%)	SISD (m)
	A	Norm-Day	100	1.1	1.25	2	2	0.46	-0.5	198	A	Car Day	100	1.1	1.25	3	2.5	0.36	-0.5	264
WESTBOUND	Table A13 - Ot = 2.0										Table 3.2 & 3.3									
	ID	Case	V (km/hr)	h1 (m)	h2 (m)	Ot (s)	Rt (s)	d	a (%)	SISD (m)	Table 3.2 & 3.3									
	ID	Case	V (km/hr)	h1 (m)	h2 (m)	Ot (s)	Rt (s)	d	a (%)	SISD (m)	ID	Case	V (km/hr)	h1 (m)	h2 (m)	Ot (s)	Rt (s)	d	a (%)	SISD (m)
	B	Norm-Night	100	0.65	1.25	1.1	2	0.46	-0.5	173	B	Car Night 1	100	0.65	1.25	2.6	2.5	0.46	-0.5	228
EASTBOUND	Table A10 - Ot = 2.0										Table 3.2 & 3.3									
	ID	Case	V (km/hr)	h1 (m)	h2 (m)	Ot (s)	Rt (s)	d	a (%)	SISD (m)	Table 3.2 & 3.3									
	ID	Case	V (km/hr)	h1 (m)	h2 (m)	Ot (s)	Rt (s)	d	a (%)	SISD (m)	ID	Case	V (km/hr)	h1 (m)	h2 (m)	Ot (s)	Rt (s)	d	a (%)	SISD (m)
	C	Mean-Day	100	1.1	1.25	2.8	2	0.41	-0.5	231	C	Car Night 2	100	1.1	0.8	2.5	2.5	0.46	-0.5	225
WESTBOUND	Table A13 - Ot = 2.0										Table 3.2 & 3.3									
	ID	Case	V (km/hr)	h1 (m)	h2 (m)	Ot (s)	Rt (s)	d	a (%)	SISD (m)	Table 3.2 & 3.3									
	ID	Case	V (km/hr)	h1 (m)	h2 (m)	Ot (s)	Rt (s)	d	a (%)	SISD (m)	ID	Case	V (km/hr)	h1 (m)	h2 (m)	Ot (s)	Rt (s)	d	a (%)	SISD (m)
	D	Mean-Night	100	0.65	1.25	1.8	2	0.41	-0.5	203	D	Truck Day	100	2.4	1.25	3	2.5	0.24	-0.5	320
EASTBOUND	Table A10 - Ot = 2.0										Table 3.2 & 3.3									
	ID	Case	V (km/hr)	h1 (m)	h2 (m)	Ot (s)	Rt (s)	d	a (%)	SISD (m)	Table 3.2 & 3.3									
	ID	Case	V (km/hr)	h1 (m)	h2 (m)	Ot (s)	Rt (s)	d	a (%)	SISD (m)	ID	Case	V (km/hr)	h1 (m)	h2 (m)	Ot (s)	Rt (s)	d	a (%)	SISD (m)
	E	Truck-Day	100	2.4	1.25	2	2	0.29	-0.5	249	E	Truck Night 1	100	1.05	1.25	1.8	2.5	0.29	-0.5	258
WESTBOUND	Table A13 - Ot = 2.0										Table 3.2 & 3.3									
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	ID	Case	V (km/hr)	h1 (m)	h2 (m)	Ot (s)	Rt (s)	d	a (%)	SISD (m)	ID	Case	V (km/hr)	h1 (m)	h2 (m)	Ot (s)	Rt (s)	d	a (%)	SISD (m)
	F	Truck-Night	100	2.4	0.8	1.1	2	0.29	-0.5	224	F	Truck Night 2	100	2.4	0.8	3	2.5	0.29	-0.5	291

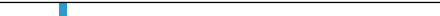
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4	UPDATES AS PER TMR COMMENTS	NJF	14/01/25	MAP GRID
3	PLAN UPDATES AS PER RFI	NJF	17/01/24	HEIGHT ORIGIN
2	FOR APPROVAL	NJF	02/2024	SURVEY BOOKS
1	CONCEPT PLAN	NJF	01/2024	NJF
REVISION/DETAILS		DATE	DATE	DATE
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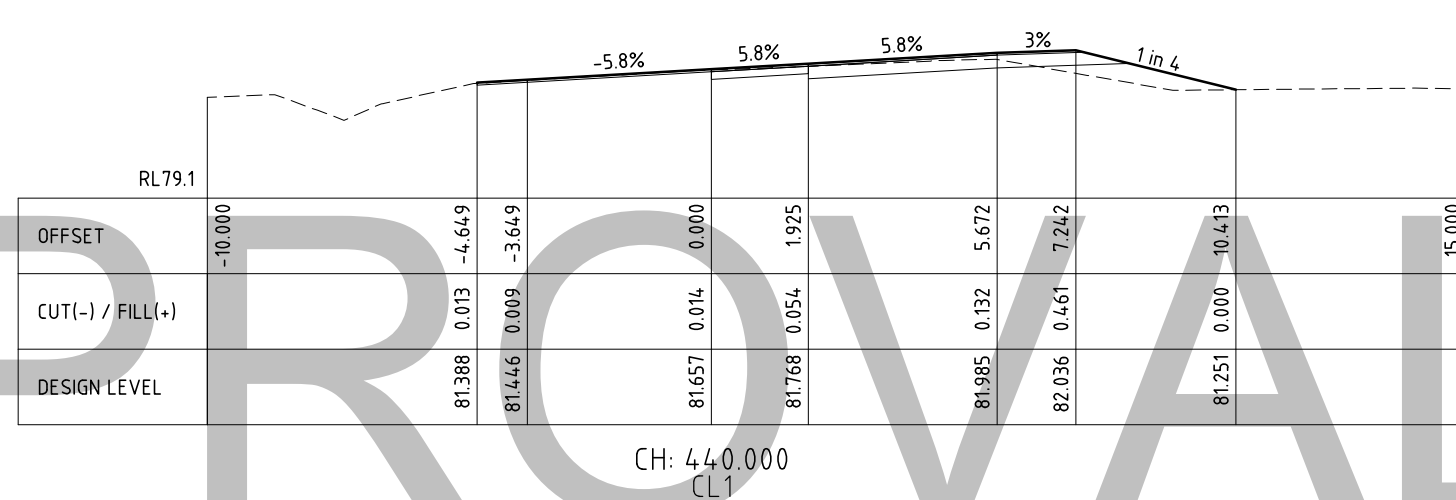
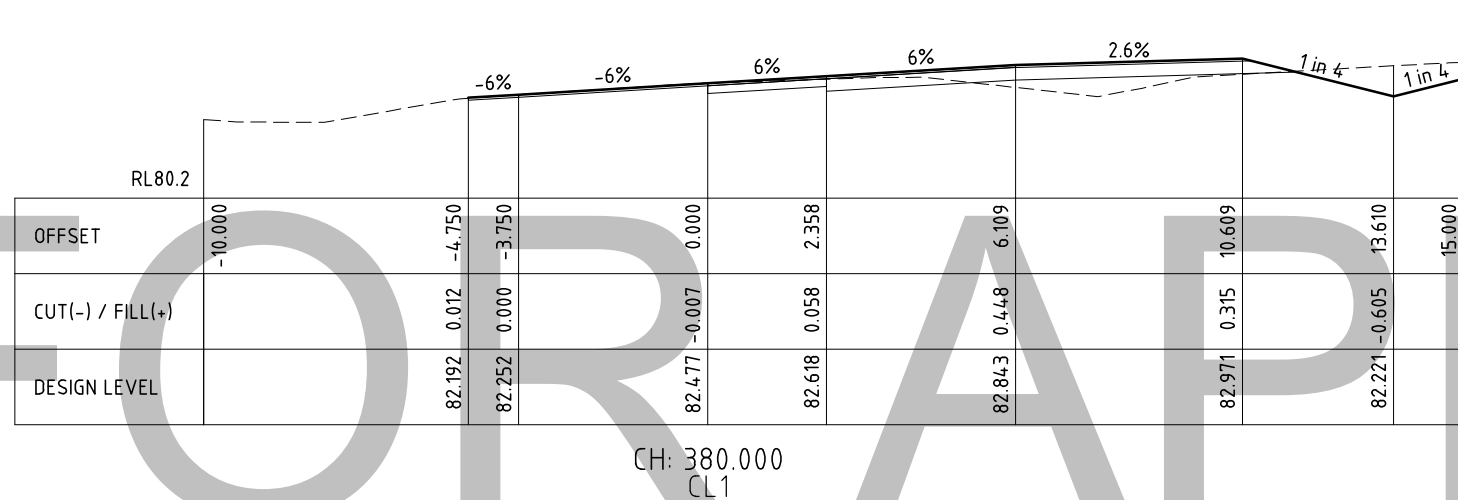
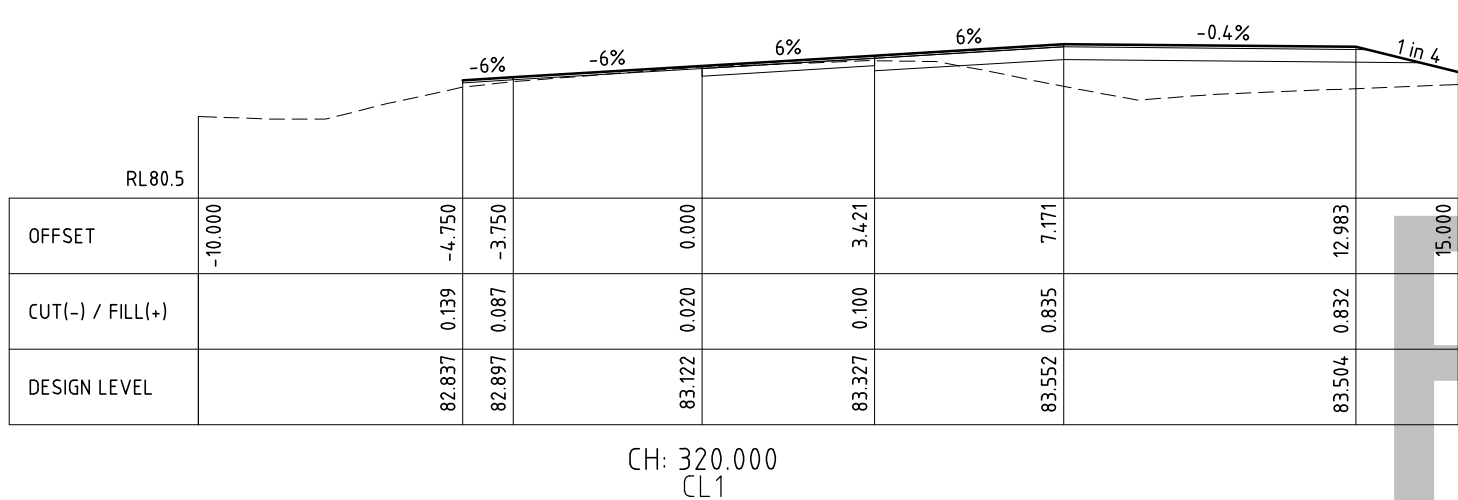
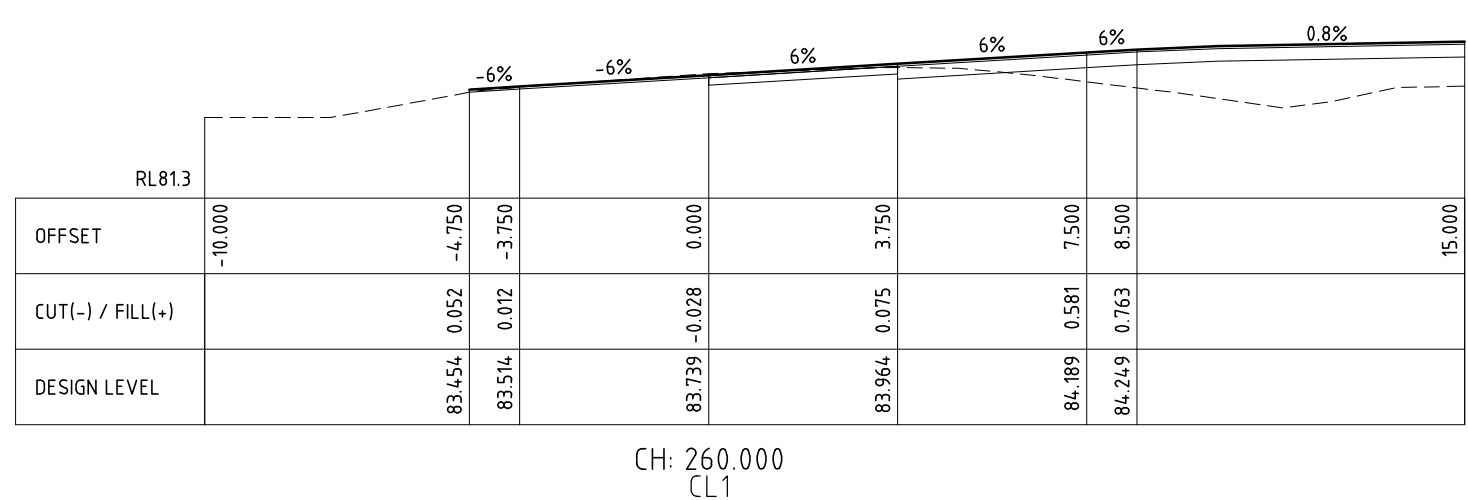
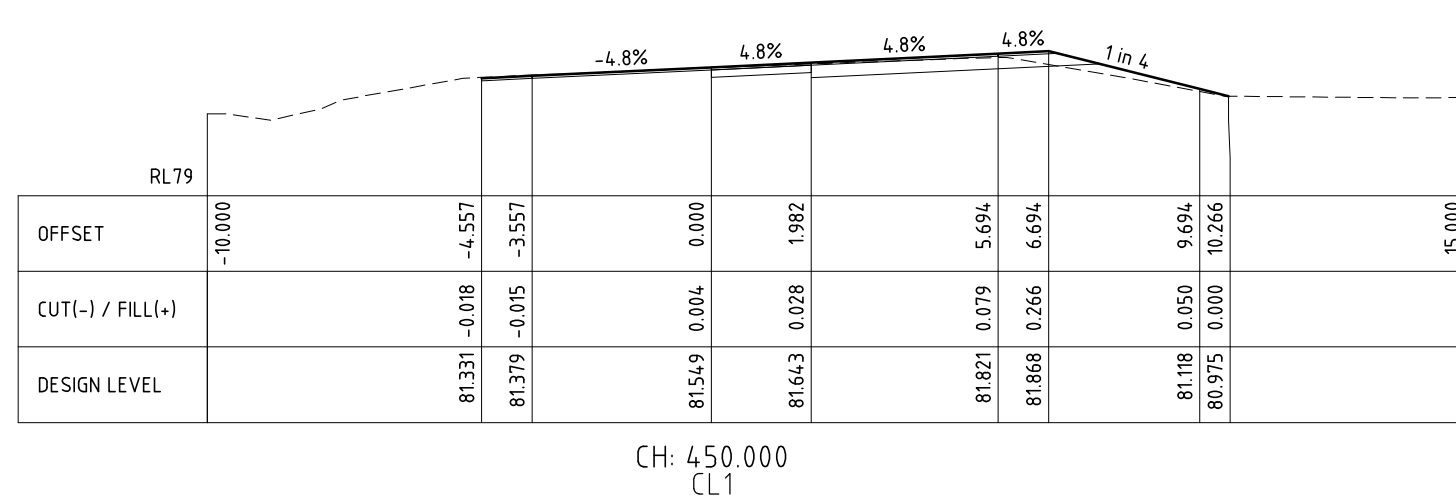
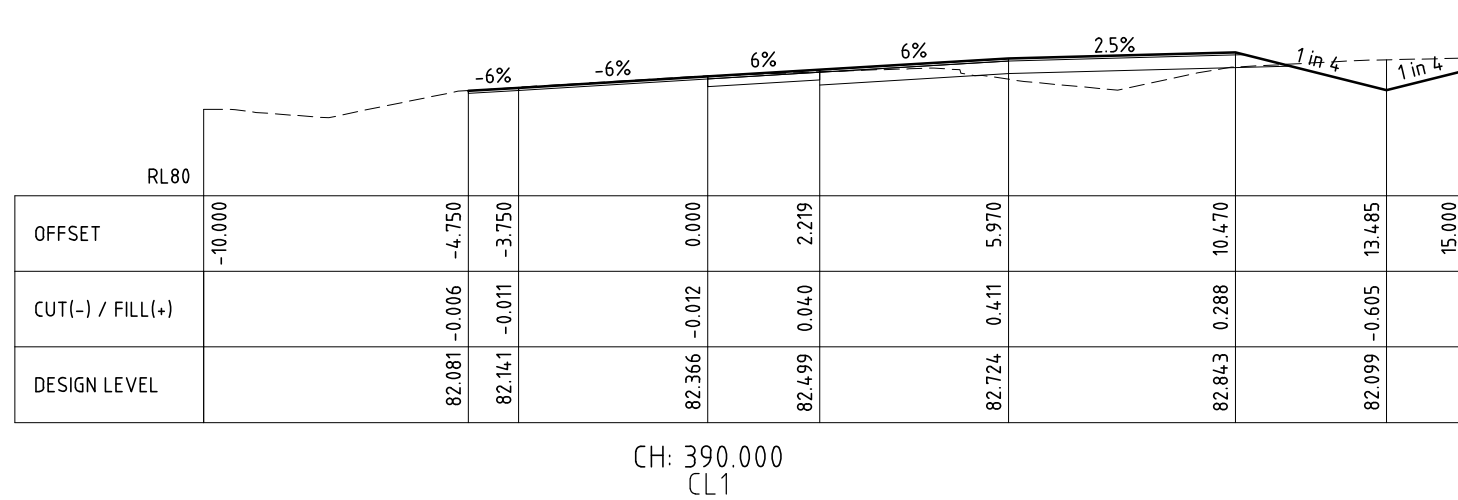
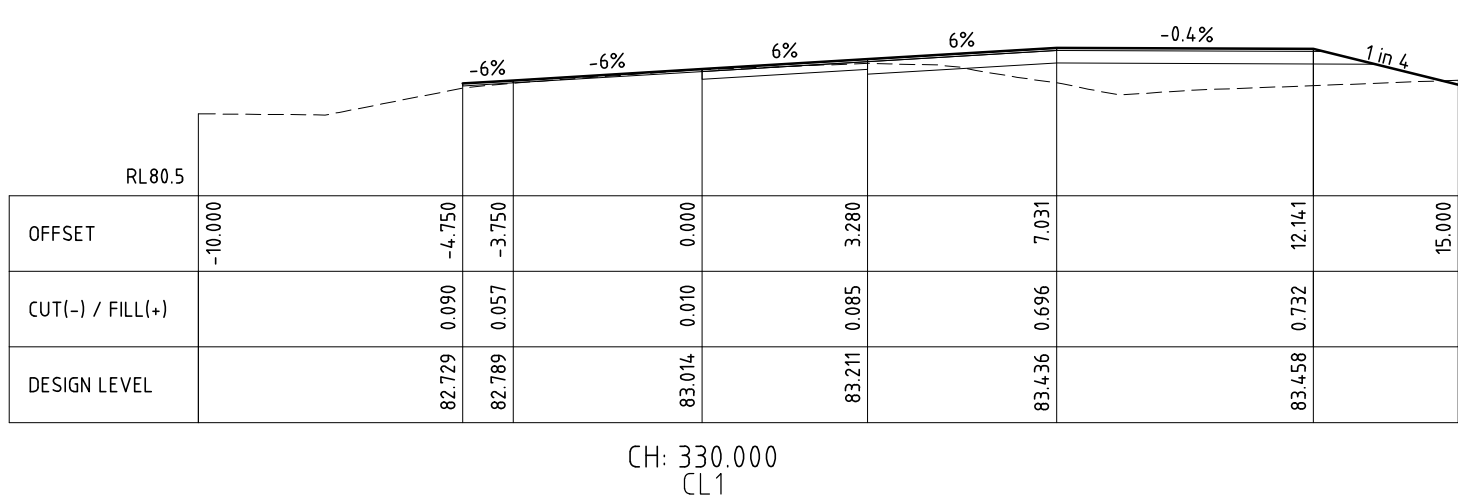
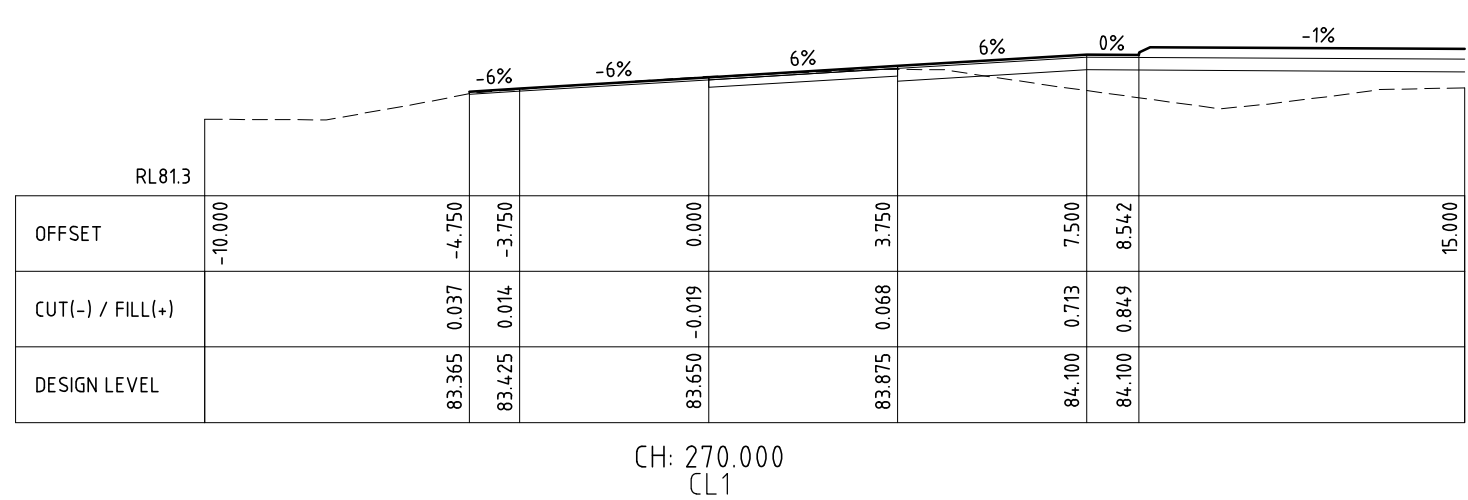
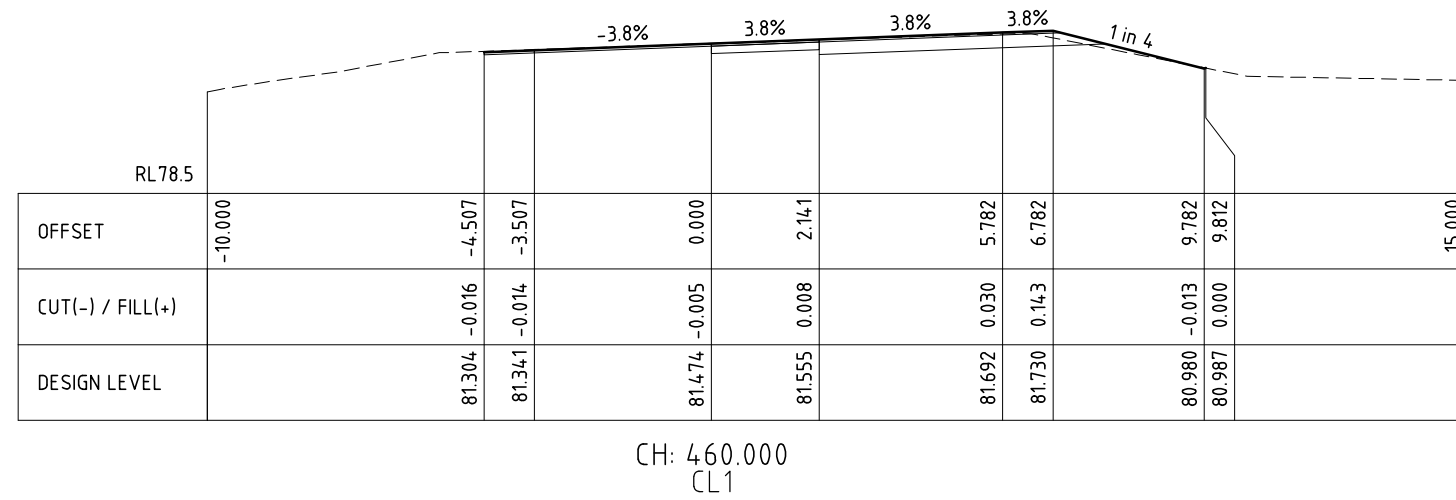
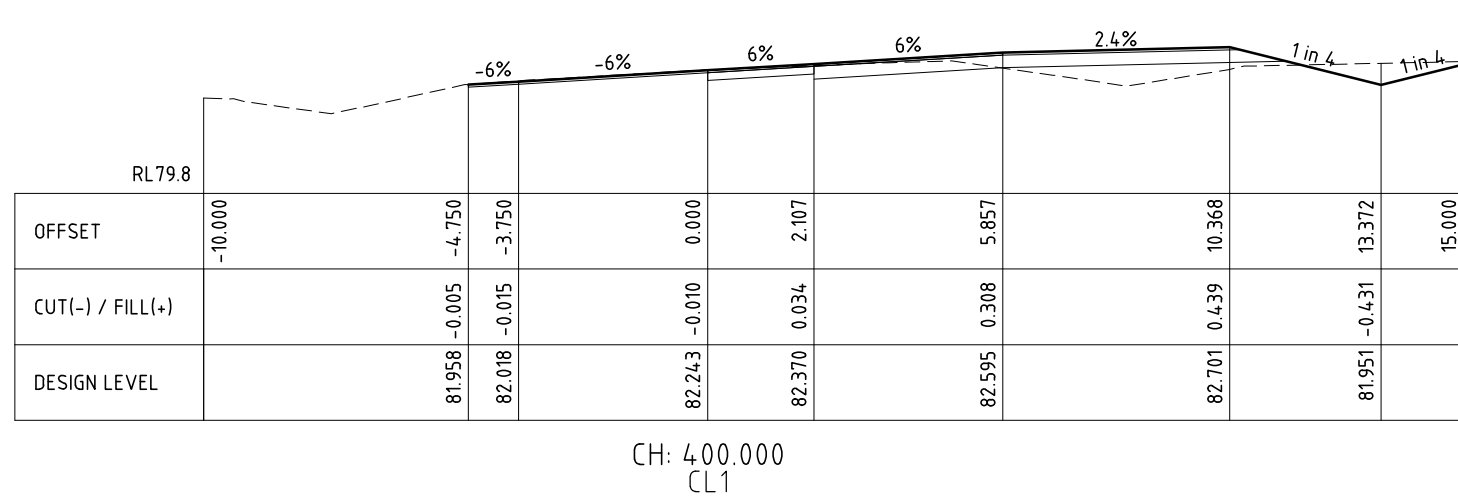
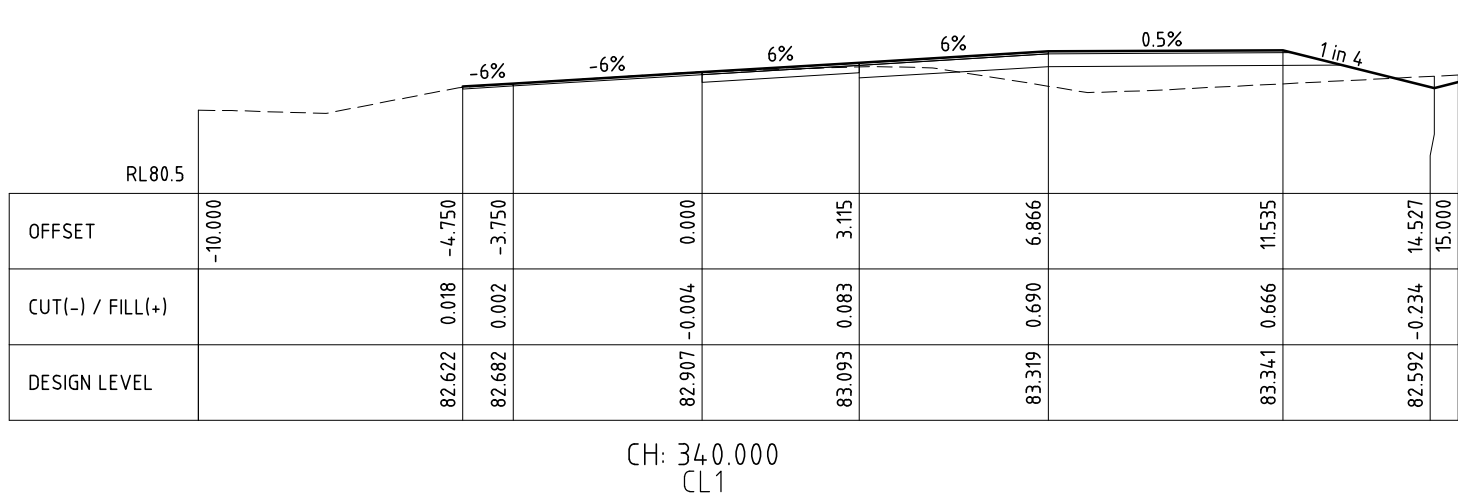
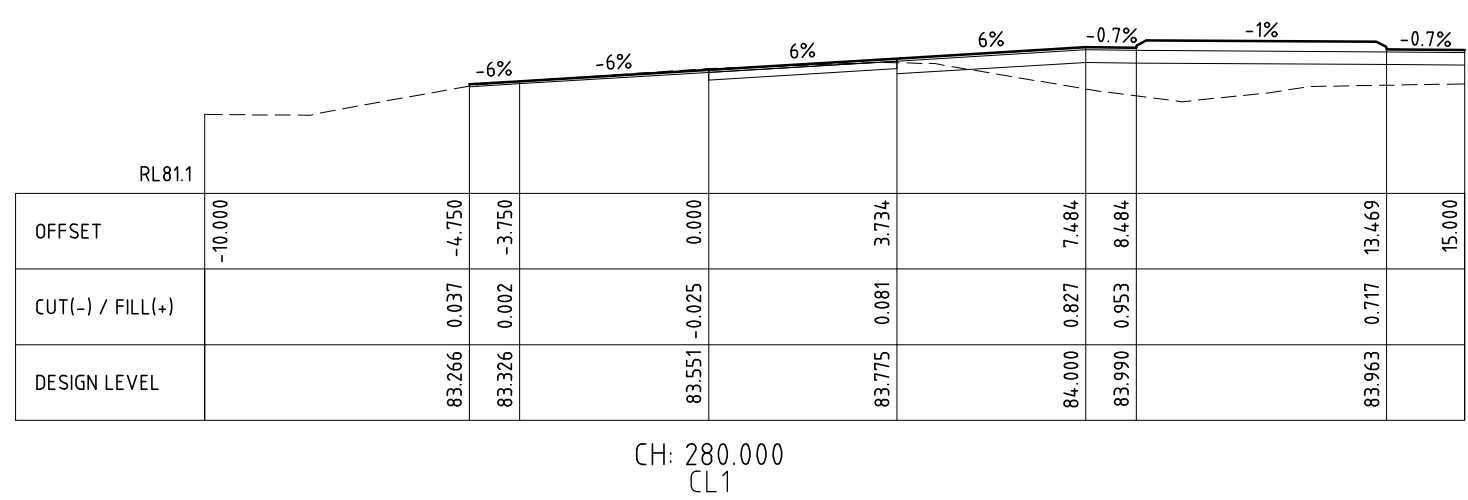
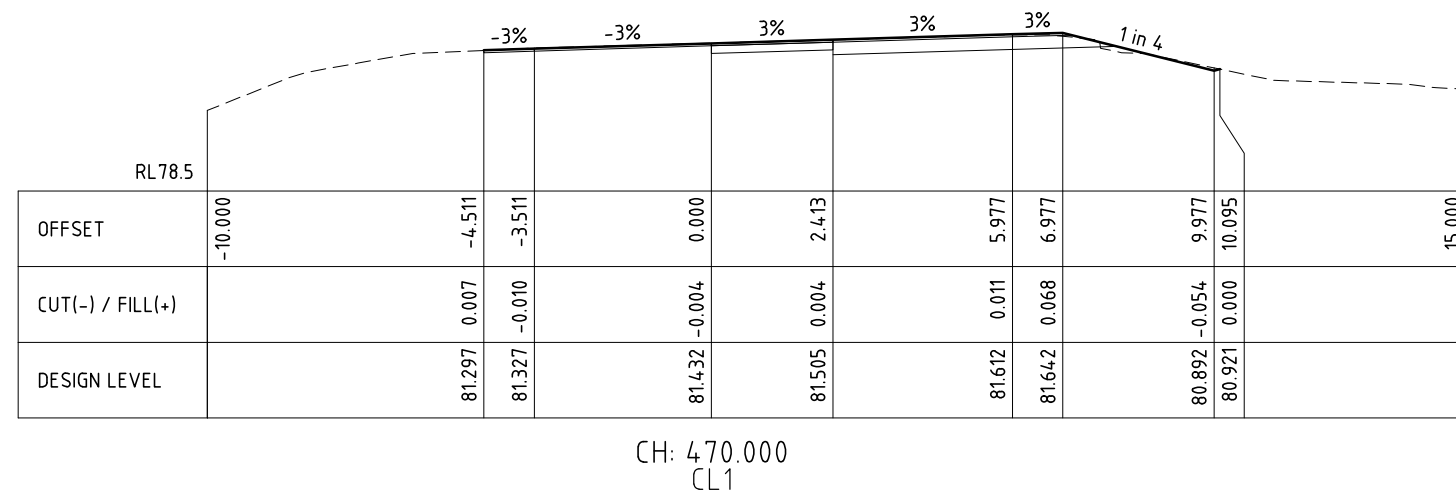
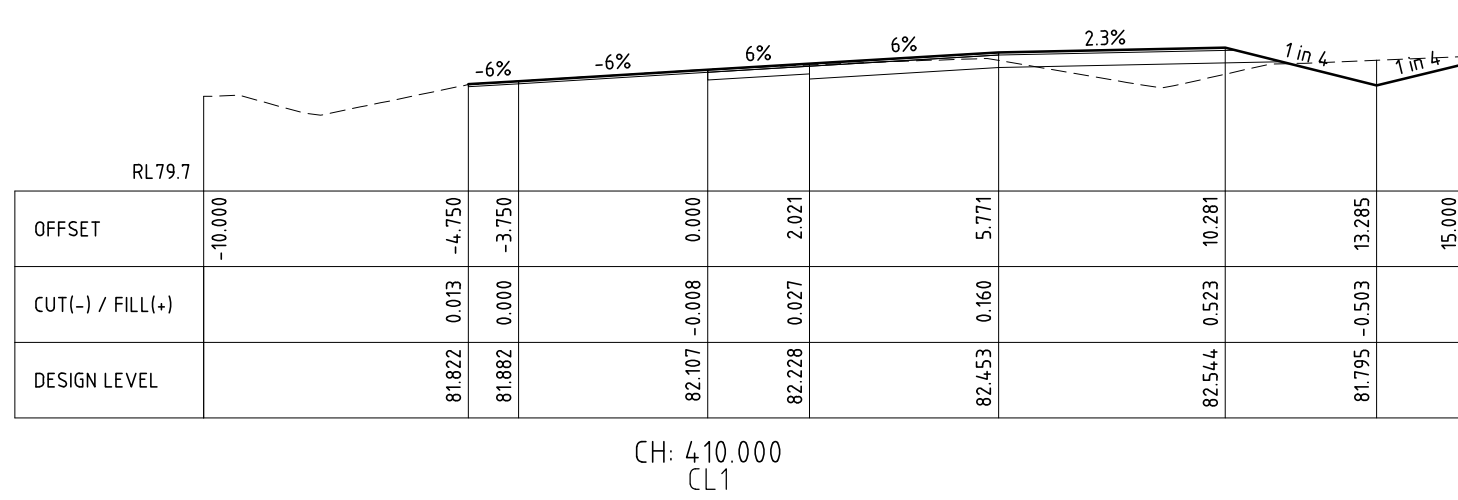
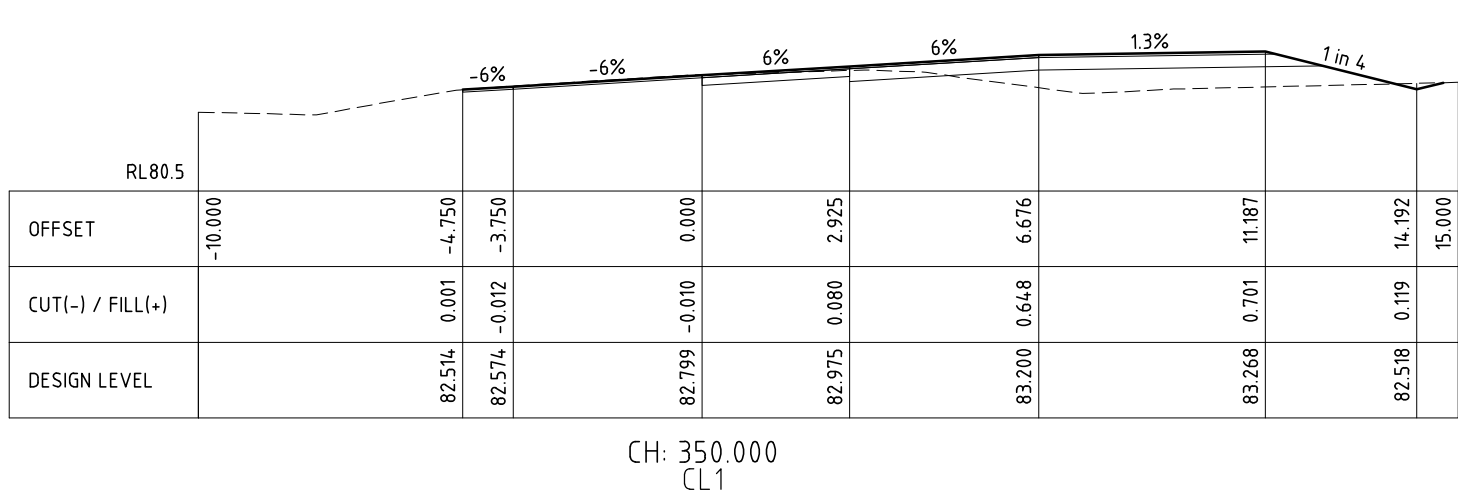
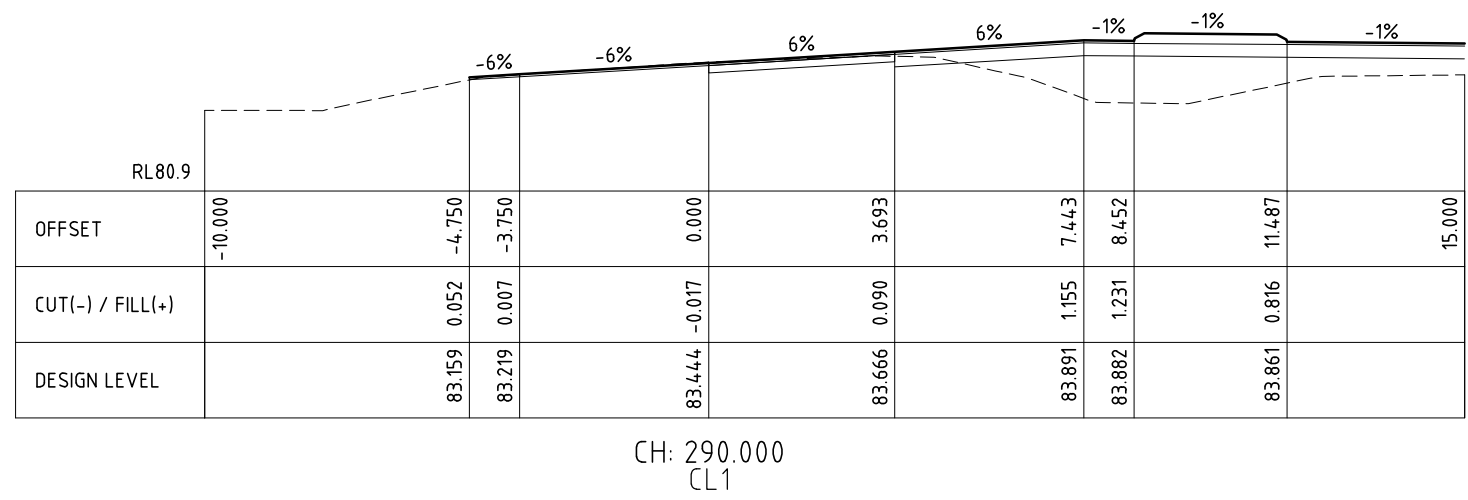
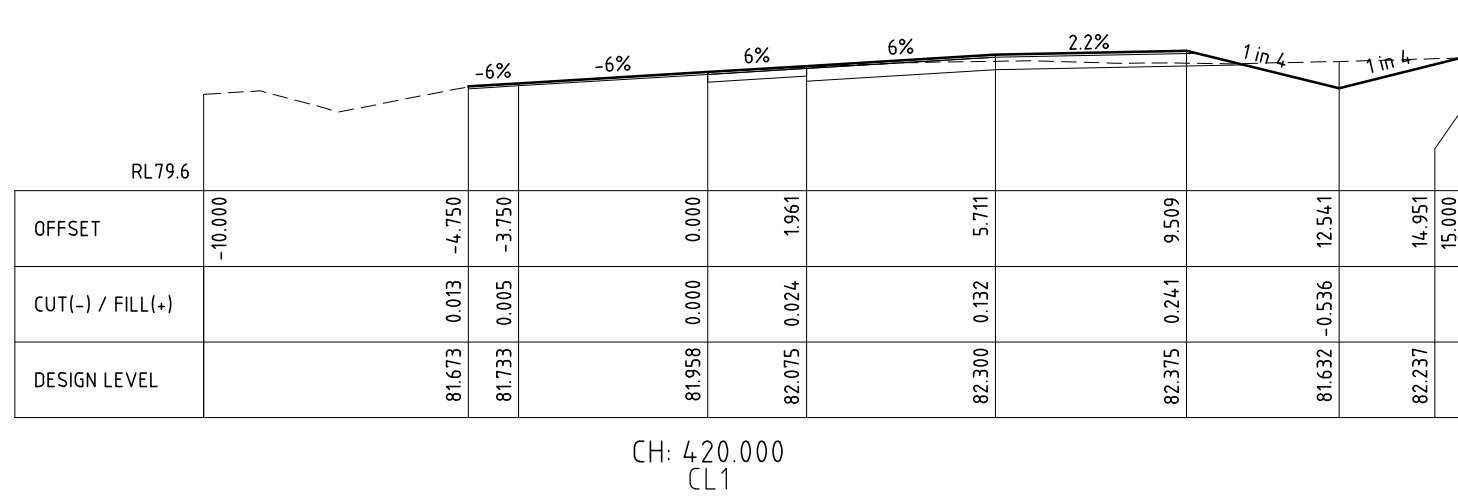
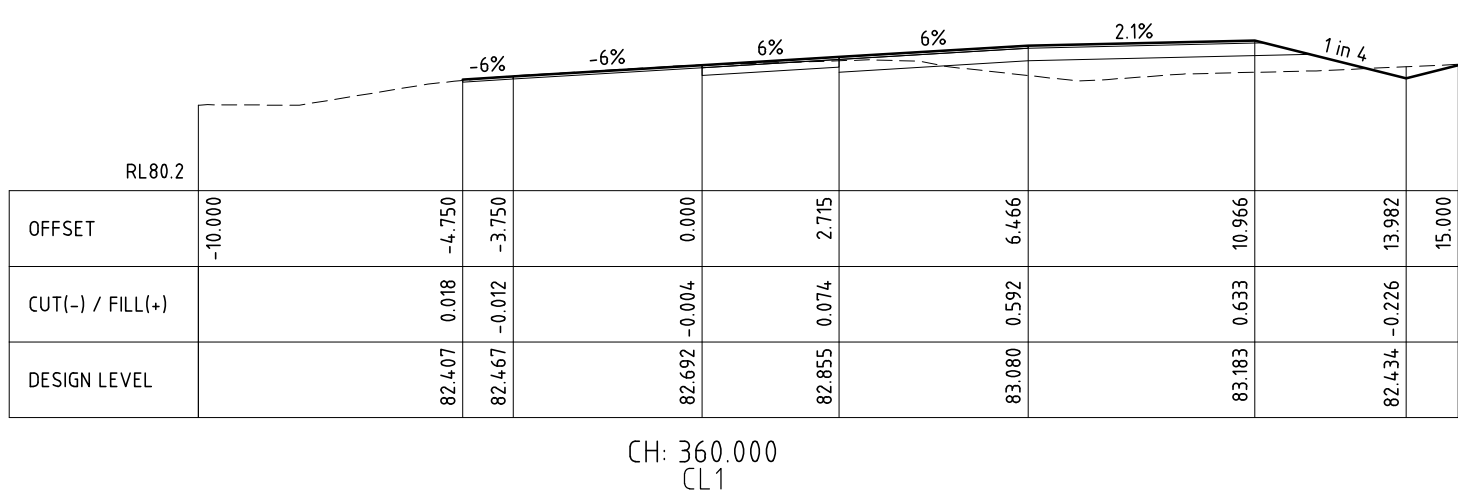
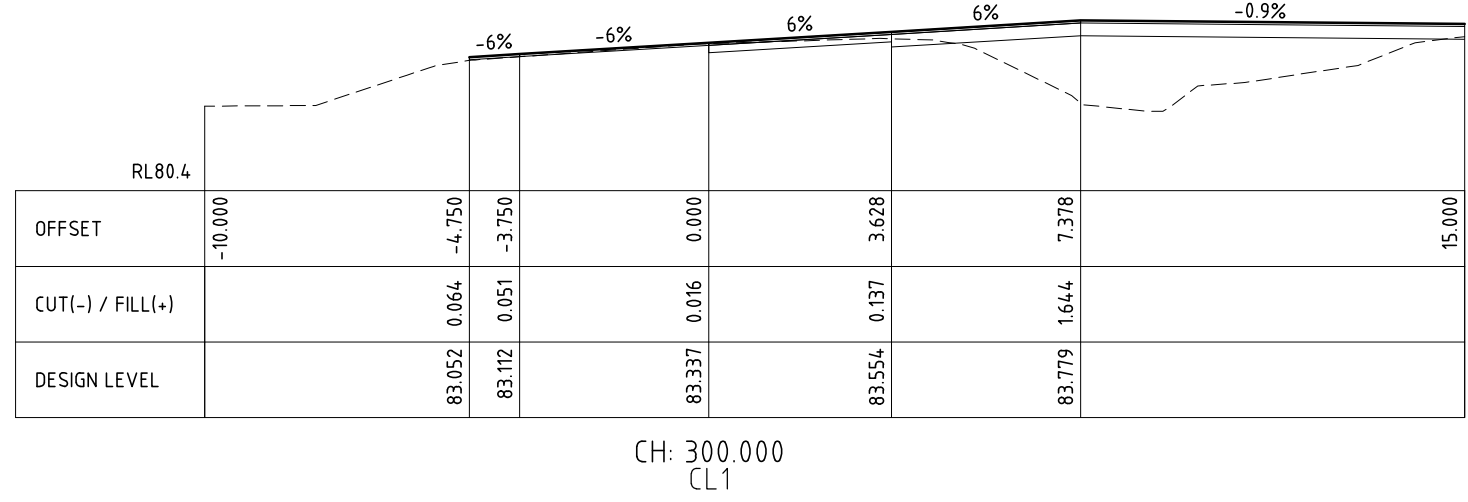
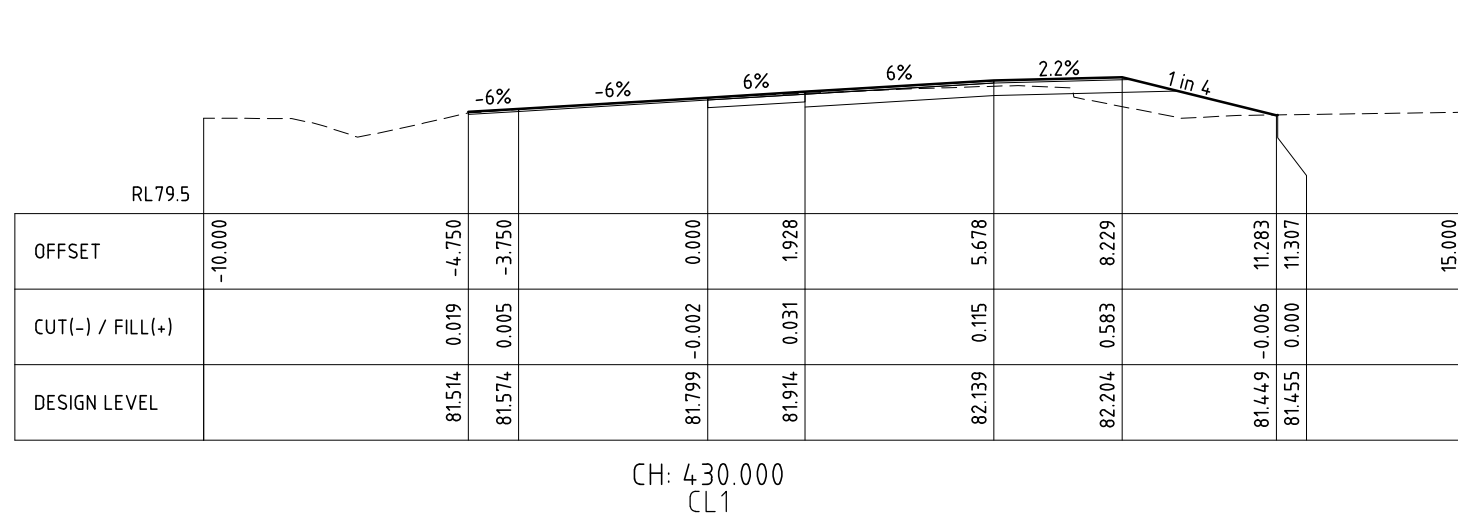
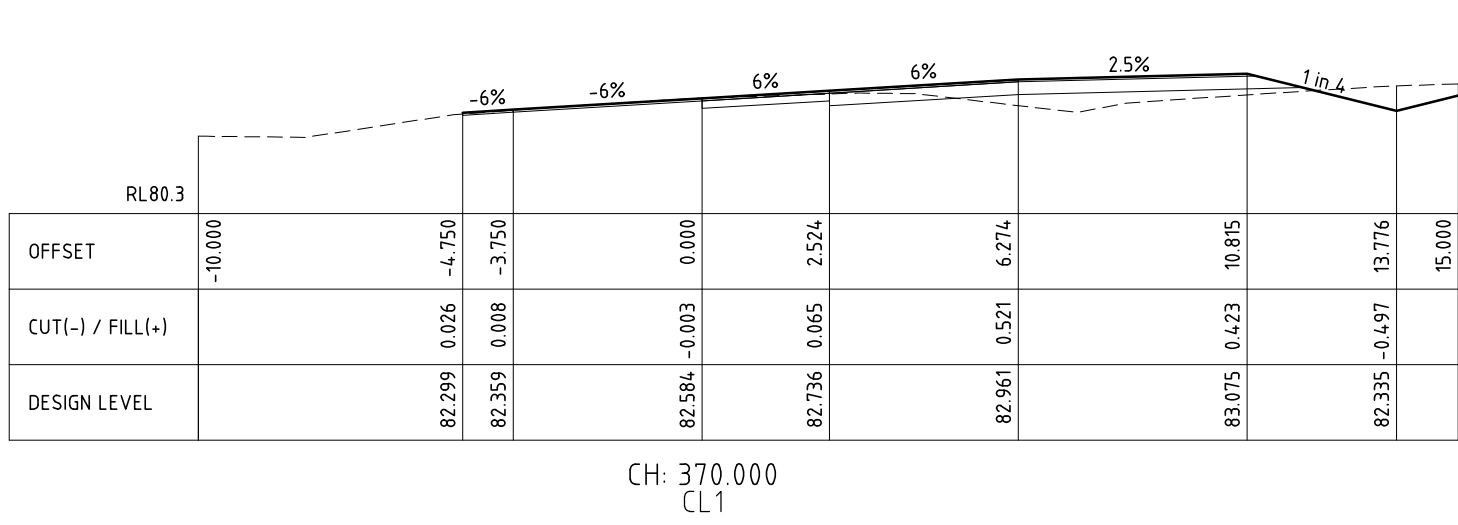
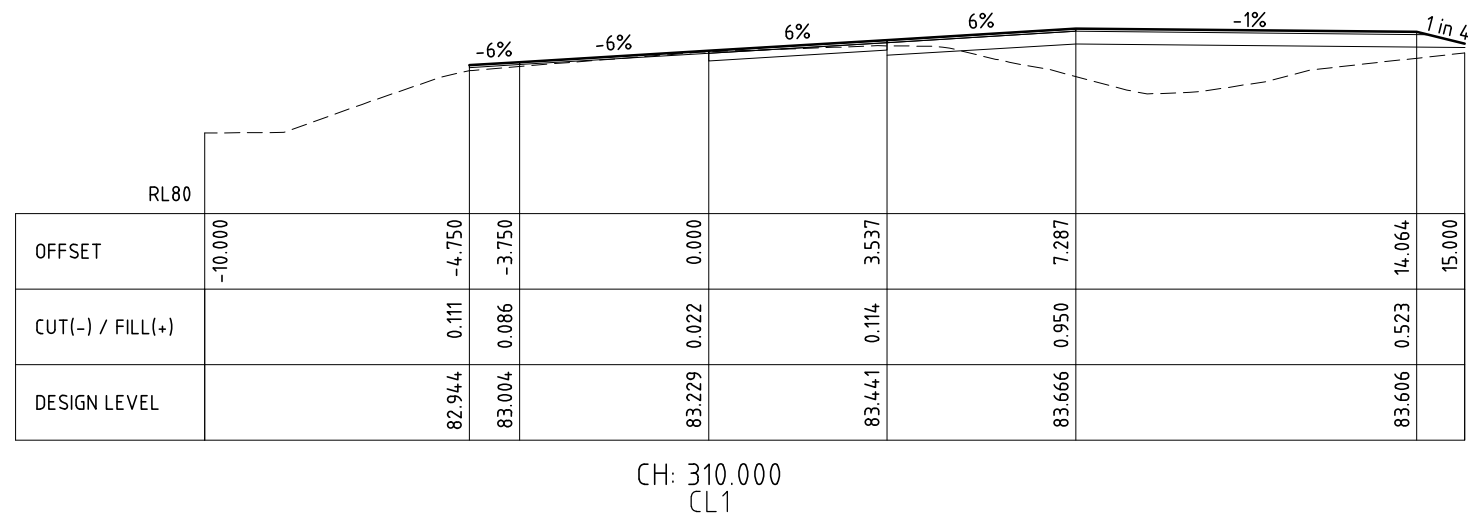
SOILCO		SIGHT DISTANCE		PO BOX 554, Beaudesert QLD 4285		ACS Engineers	
PO BOX 199, UNANDERRA NSW 2526		ENGINEERING CERTIFICATION (RPEP)		071 5541 3500		CIVIL / ENVIRONMENTAL / PROJECT MANAGEMENT	
BROMELTON DEVELOPMENT		W	FIELD	NAME	SIGNATURE	DATE	REVISION
260 MITCHELL ROAD, BROMELTON QLD 4285		13697	CIVIL	S. SHAY		10/04/25	ACS-220089-INT-06
						A	



CL1 CH 10.000 TO CH 480.000
SCALE: HORIZONTAL 1:1000 VERTICAL 1:100

A	FOR APPROVAL	MLS	27/02/25	SURVEY DATA
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4	UPDATES AS PER TMR COMMENTS	NJF	14/01/25	MAP GRID
3	PLAN UPDATES AS PER RFI	NJF	17/07/24	HEIGHT ORIGIN
2	FOR APPROVAL	NJF	02/2024	SURVEY BOOKS
1	CONCEPT PLAN	NJF	01/2024	NJF
REVISION/DETAILS		DATE	DATE	DATE
FILE C:\COURTNEY\ACSEN\220089\BROMELTON DEVELOPMENT - 260 MITCHELL ROAD_S&P\DESIGN\DRAWING\PLATCS-220089-001.DWG		PLT	THE 26/02/25 - 10:00PM	BY USER: HANGLIS

SOILCO		LONGITUDINAL SECTIONS				PG Box 554 Beaudesert QLD 4285 (07) 5541 3500 www.acsengineers.com.au		 CIVIL, ENVIRONMENTAL, PROJECT MANAGEMENT	
PO BOX 199, UNANDERRA NSW 2526									
BROMELTON DEVELOPMENT		DRAWING NUMBER						REVISION	
260 MITCHELL ROAD, BROMELTON QLD 4285		ACS-220089-INT-07						A	



B	UPDATED PAVEMENT DESIGN	MLS	10/04/25	
A	FOR APPROVAL	MLS	27/02/25	SURVEY DATA
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REVISION DETAILS			DOWN DATE	DES DATE
FILE C:\PROJECTS\TRAFFIC\2025\GOLD-BRONZE\BROOKLYN\DEVELOPMENT\10-TRAFFIC\DESIGN\2025\GOLD-BRONZE\TRAFFIC\2025-DESIGN\PLAN THE TRAIL OF GOLD-BRONZE.DWG				

SOILCO		CROSS SECTIONS - SHEET 02				PO Box 554 Beaudesert QLD 4285 (07) 5541 3500 www.soilcoengineers.com.au		 ACS Engineers CIVIL · ENVIRONMENTAL · PROJECT MANAGEMENT	
PO BOX 199, UNANDERRA NSW 2526						DRAWING NUMBER		REVISION	
BROMELTON DEVELOPMENT		#		FIELD	NAME	SIGNATURE	DATE	ACS-220089-INT-09	
260 MITCHELL ROAD, BROMELTON QLD 4285		13697	CIVIL		S. SHAY		18/04/25	B	

SEDIMENT AND EROSION CONTROL – GENERAL NOTES:

1. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MUST BE IMPLEMENTED AND A REVISED EROSION AND SEDIMENT CONTROL PLAN (ESCP) MUST BE SUBMITTED FOR APPROVAL IN THE EVENT THAT SITE CONDITIONS CHANGE SIGNIFICANTLY FROM THOSE CONSIDERED WITHIN THE CURRENT ESCP.
2. WHERE THERE IS A HIGH PROBABILITY THAT SERIOUS OR MATERIAL ENVIRONMENTAL HARM MAY OCCUR AS A RESULT OF CURRENT SEDIMENT LEAVING THE SITE, APPROPRIATE ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MUST BE IMPLEMENTED SUCH THAT ALL REASONABLE AND PRACTICABLE MEASURES ARE BEING TAKEN TO PREVENT OR MINIMISE SUCH HARM. ONLY THOSE WORKS NECESSARY TO MINIMISE OR PREVENT ENVIRONMENTAL HARM SHALL BE CONDUCTED ON-SITE PRIOR TO APPROVAL OF THE AMENDED EROSION AND SEDIMENT CONTROL PLAN (ESCP).
3. IN CIRCUMSTANCES WHERE IT IS CONSIDERED NECESSARY TO PREPARE AN AMENDED EROSION AND SEDIMENT CONTROL PLAN (ESCP), AND WHERE THE DELIVERY OF SUCH AN AMENDED ESCP IS NOT IMMINENT, THEN ALL NECESSARY NEW OR MODIFIED EROSION AND SEDIMENT CONTROL WORKS MUST BE IN ACCORDANCE TO WITH IECA (2008) BEST PRACTICE EROSION & SEDIMENT CONTROL. UPON APPROVAL OF THE AMENDED ESCP ALL WORKS MUST BE IMPLEMENTED IN ACCORDANCE WITH THE AMENDED PLAN.

SITE ACCESS:

1. PRIOR TO THE COMMENCEMENT OF SITE WORKS, THE LOCATION OF THE SITE ACCESS POINT MUST BE VERIFIED WITH RELEVANT LOCAL AUTHORITY.
2. SITE ACCESS IS RESTRICTED TO ONE LOCATION.
3. SITE EXIT POINT MUST BE APPROPRIATELY MANAGED TO MINIMISE THE RISK OF SEDIMENT BEING TRACKED ONTO SEALED PUBLIC ROADWAYS.
4. STORMWATER RUNOFF FROM ACCESS ROADS AND STABILISED ENTRY/EXIT POINTS MUST DRAIN TO AN APPROPRIATE SEDIMENT CONTROL DEVICE.

LAND CLEARING

1. LAND CLEARING MUST BE DELAYED AS LONG AS PRACTICABLE AND MUST BE UNDERTAKEN IN CONJUNCTION WITH DEVELOPMENT, UNLESS OTHERWISE APPROVED BY THE SUPERINTENDENT.
2. ALL REASONABLE AND PRACTICABLE EFFORTS MUST BE TAKEN TO DELAY THE REMOVAL OF, OR DISTURBANCE TO, EXISTING GROUND COVER (ORGANIC OR INORGANIC) PRIOR TO LAND-DISTURBING ACTIVITIES.
3. BULK TREE CLEARING MUST OCCUR IN A MANNER THAT MINIMISES DISTURBANCE TO EXISTING GROUND COVER (ORGANIC OR INORGANIC).
4. BULK TREE CLEARING AND GRUBBING OF THE SITE MUST BE IMMEDIATELY FOLLOWED BY SPECIFIED TEMPORARY STABILISATION MEASURES (E.G. TEMPORARY GRASSING, OR MULCHING) PRIOR TO COMMENCEMENT OF EACH STAGE OF CONSTRUCTION WORKS.
5. DISTURBANCE TO NATURAL WATERCOURSES (INCLUDING BED AND BANKS) AND THEIR ASSOCIATED RIPARIAN ZONES MUST BE LIMITED TO THE MINIMUM PRACTICABLE.
6. NO LAND CLEARING SHALL BE UNDERTAKEN UNLESS PRECEDED BY THE INSTALLATION OF ADEQUATE DRAINAGE AND SEDIMENT CONTROL MEASURES, UNLESS SUCH CLEARING IS REQUIRED FOR THE PURPOSE OF INSTALLING SUCH MEASURES, IN WHICH CASE, ONLY THE MINIMUM CLEARING REQUIRED TO INSTALL SUCH MEASURES SHALL OCCUR.
7. LAND CLEARING MUST BE LIMITED TO 5m FROM THE EDGE OF PROPOSED CONSTRUCTED WORKS, 2m OF ESSENTIAL CONSTRUCTION TRAFFIC ROUTES, AND A TOTAL OF 10m WIDTH FOR CONSTRUCTION ACCESS, UNLESS OTHERWISE APPROVED BY THE SUPERINTENDENT.
8. PRIOR TO LAND CLEARING, AREAS OF PROTECTED VEGETATION, AND SIGNIFICANT AREAS OF RETAINED VEGETATION MUST BE CLEARLY IDENTIFIED (E.G. WITH HIGH-VISIBILITY TAPE, OR LIGHT FENCING) FOR THE PURPOSES OF MINIMISING THE RISK OF UNNECESSARY LAND CLEARING.
9. ALL REASONABLE AND PRACTICABLE MEASURES MUST BE TAKEN TO MINIMISE THE REMOVAL OF, OR DISTURBANCE TO, THOSE TREES, SHRUBS AND GROUND COVERS (ORGANIC OR INORGANIC) THAT ARE INTENDED TO BE RETAINED.
10. ALL LAND CLEARING MUST BE IN ACCORDANCE WITH THE FEDERAL, STATE AND LOCAL GOVERNMENT VEGETATION PROTECTION/PRESERVATION REQUIREMENTS AND/OR POLICIES.
11. LAND CLEARING IS LIMITED TO THE MINIMUM PRACTICABLE DURING THOSE PERIODS WHEN SOIL EROSION DUE TO WIND, RAIN OR SURFACE WATER IS POSSIBLE.
12. LAND CLEARING MUST NOT EXTEND BEYOND THAT NECESSARY TO PROVIDE UP TO EIGHT (8) WEEKS OF SITE ACTIVITY DURING THOSE MONTHS WHEN THE ACTUAL OR AVERAGE RAINFALL IS LESS THAN 45mm, SIX (6) IF BETWEEN 45 AND 100mm, FOUR (4) WEEKS IF BETWEEN 100 AND 225mm, AND TWO (2) WEEKS IF GREATER THAN 225mm.

SOIL AND STOCKPILE MANAGEMENT:

1. ALL REASONABLE AND PRACTICABLE MEASURES MUST BE TAKEN TO OBTAIN THE MAXIMUM BENEFIT FROM EXISTING TOPSOIL, INCLUDING:
 - (i) WHERE THE PROPOSED AREA OF SOIL DISTURBANCE DOES NOT EXCEED 2500m², AND THE TOPSOIL DOES NOT CONTAIN UNDESIRABLE WEED SEED, THE TOP 100mm OF SOIL LOCATED WITHIN AREAS OF PROPOSED SOIL DISTURBANCE (INCLUDING STOCKPILE AREAS) MUST BE STRIPPED AND STOCKPILED SEPARATELY FROM THE REMAINING SOIL.
 - (ii) WHERE THE PROPOSED AREA OF SOIL DISTURBANCE EXCEEDS 2500m², AND THE TOPSOIL DOES NOT CONTAIN UNDESIRABLE WEED SEED, THE TOP 50mm OF SOIL MUST BE STRIPPED AND STOCKPILED SEPARATELY FROM THE REMAINING TOPSOIL, AND SPREAD AS A FINAL SURFACE SOIL.
 - (iii) IN AREAS WHERE THE TOPSOIL CONTAINS UNDESIRABLE WEED SEED, THE AFFECTED SOIL MUST BE SUITABLY BURIED OR REMOVED FROM THE SITE.
2. STOCKPILES OF ERODIBLE MATERIAL THAT HAS THE POTENTIAL TO CAUSE ENVIRONMENTAL HARM IF DISPLACED MUST BE:
 - (i) APPROPRIATELY PROTECTED FROM WIND, RAIN, CONCENTRATED SURFACE FLOW AND EXCESSIVE UP-SLOPE STORMWATER SURFACE FLOWS.
 - (ii) LOCATED AT LEAST 2m FROM ANY HAZARDOUS AREA, RETAINED VEGETATION OR CONCENTRATED DRAINAGE LINE.
 - (iii) LOCATED UP-SLOPE OF AN APPROPRIATE SEDIMENT CONTROL SYSTEM.
 - (iv) PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC, MULCH OR VEGETATIVE) IF THE MATERIALS ARE LIKELY TO BE STOCKPILED FOR MORE THAN 28 DAYS.
 - (v) PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC, MULCH OR VEGETATIVE) IF THE MATERIALS ARE LIKELY TO BE STOCKPILED FOR MORE THAN 10 DAYS DURING THOSE MONTHS THAT HAVE A HIGH EROSION RISK.
 - (vi) PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC, MULCH OR VEGETATIVE) IF THE MATERIALS ARE LIKELY TO BE STOCKPILED FOR MORE THAN 5 DAYS DURING THOSE MONTHS THAT HAVE A EXTREME EROSION RISK.
3. A SUITABLE FLOW DIVERSION SYSTEM MUST BE ESTABLISHED IMMEDIATELY UP-SLOPE OF A STOCKPILE OF ERODIBLE MATERIAL THAT HAS THE POTENTIAL TO CAUSE ENVIRONMENTAL HARM IF DISPLACED IF THE UP-SLOPE CATCHMENT AREA DRAINING TO THE STOCKPILE EXCEEDS 1500m².

SITE MANAGEMENT:

1. ALL OFFICE FACILITIES AND OPERATIONAL ACTIVITIES MUST BE LOCATED SUCH THAT ANY LIQUID EFFLUENT (E.G. PROCESS WATER, WASH-DOWN WATER, EFFLUENT FROM EQUIPMENT CLEANING, OR PLANT WATERING), CAN BE TOTALLY CONTAINED AND TREATED WITHIN THE SITE.
2. THE CONSTRUCTION SCHEDULE MUST AIM TO MINIMISE THE DURATION THAT ANY AND ALL AREAS OF SOIL ARE EXPOSED TO THE EROSIIVE EFFECTS OF WIND, RAIN AND SURFACE WATER.
3. LAND-DISTURBING ACTIVITIES MUST BE UNDERTAKEN IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL PLAN (ESCP) AND ASSOCIATED DEVELOPMENT CONDITIONS.
4. LAND-DISTURBING ACTIVITIES MUST BE UNDERTAKEN IN SUCH A MANNER THAT ALLOWS ALL REASONABLE AND PRACTICABLE MEASURES TO BE UNDERTAKEN TO:
 - (i) ALLOW STORMWATER TO PASS THROUGH THE SITE IN A CONTROLLED MANNER AND AT NON-EROSIVE FLOW VELOCITIES UP TO THE SPECIFIED DESIGN STORM DISCHARGE;
 - (ii) MINIMISE SOIL EROSION RESULTING FROM RAIN, WATER FLOW AND/OR WIND;
 - (iii) MINIMISE ADVERSE EFFECTS OF SEDIMENT RUNOFF, INCLUDING SAFETY ISSUES;
 - (iv) PREVENT OR AT LEAST MINIMISE, ENVIRONMENTAL HARM RESULTING FROM WORK-RELATED SOIL EROSION AND SEDIMENT RUNOFF;
 - (v) ENSURE THAT THE VALUE AND USE OF LAND/PROPERTIES ADJACENT TO THE DEVELOPMENT (INCLUDING ROADS) ARE NOT DIMINISHED AS A RESULT OF THE ADOPTED ESC MEASURES.
5. ALL EROSION AND SEDIMENT CONTROL MEASURES MUST CONFORM TO THE STANDARDS AND SPECIFICATIONS CONTAINED IN:
 - (i) THE DEVELOPMENT APPROVAL CONDITION ISSUED BY RELEVANT LOCAL AUTHORITY; AND/OR
 - (ii) THE APPROVED ESCP AND SUPPORTING DOCUMENTATION; OR
 - (iii) THE LATEST VERSION OF IECA (2008) BEST PRACTICE EROSION & SEDIMENT CONTROL IF THE STANDARDS AND SPECIFICATIONS ARE NOT CONTAINED IN THE APPROVED ESCP.
6. ANY WORKS THAT MAY CAUSE SIGNIFICANT SOIL DISTURBANCE AND ARE ANCILLARY TO ANY ACTIVITY FOR WHICH REGULATORY BODY APPROVAL IS REQUIRED, MUST NOT COMMENCE BEFORE THE ISSUE OF THAT APPROVAL.
7. ADDITIONAL AND/OR ALTERNATIVE ESC MEASURES MUST BE IMPLEMENTED IN THE EVENT THAT THE RELEVANT AUTHORITY IDENTIFIES THAT UNACCEPTABLE OFF-SITE SEDIMENTATION IS OCCURRING AS A RESULT OF THE WORK ACTIVITIES.
8. LAND-DISTURBING ACTIVITIES MUST NOT CAUSE UNNECESSARY SOIL DISTURBANCE IF AN ALTERNATIVE CONSTRUCTION PROCESS IS AVAILABLE THAT ACHIEVES THE SAME OR EQUIVALENT OUTCOMES AT AN EQUIVALENT COST.
9. SEDIMENT (INCLUDING CLAY, SILT, SAND, GRAVEL, SOIL, MUD, CEMENT AND CERAMIC WASTE) DEPOSITED OFF THE SITE AS A DIRECT RESULT OF AN ON-SITE ACTIVITY, MUST BE COLLECTED AND THE AREA APPROPRIATELY CLEANED/REHABILITATED AS SOON AS REASONABLE AND PRACTICABLE, AND IN A MANNER THAT GIVES APPROPRIATE CONSIDERATION TO THE SAFETY AND ENVIRONMENTAL RISKS ASSOCIATED WITH THE SEDIMENT DEPOSITION.
10. ALL WASTE INCLUDING PETROLEUM AND OIL-BASED PRODUCTS, MUST BE PREVENTED FROM ENTERING AN INTERNAL WATER BODY, OR AN EXTERNAL DRAIN, STORMWATER SYSTEM, OR WATER BODY.
11. ALL FLAMMABLE AND COMBUSTIBLE LIQUIDS, INCLUDING ALL LIQUID CHEMICALS IF SUCH CHEMICALS COULD POTENTIALLY BE WASHED OR DISCHARGED FROM THE SITE, ARE STORED AND HANDLED ON-SITE IN ACCORDANCE WITH RELEVANT STANDARDS SUCH AS AS1940 THE STORAGE AND HANDLING OF FLAMMABLE AND COMBUSTIBLE LIQUIDS.
12. NO MORE THAN 150m OF A STORMWATER, SEWER LINE OR OTHER SERVICE TRENCH MUST TO BE OPEN AT ANY ONE TIME.
13. SITE SPOIL MUST BE LAWFULLY DISPOSED OF IN A MANNER THAT DOES NOT RESULT IN ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.
14. ALL FILL MATERIAL PLACED ON SITE MUST COMPRISE ONLY NATURAL EARTH AND ROCK, AND IS TO BE FREE OF CONTAMINANTS, BE FREE DRAINING, AND BE COMPACTED IN LAYERS NOT EXCEEDING 300mm TO 90% MODIFIED MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS1289.

DRAINAGE CONTROL:

1. ALL DRAINAGE CONTROL MEASURES MUST BE APPLIED AND MAINTAINED IN ACCORDANCE WITH THE CONSTRUCTION PLANS.
2. WHEREVER REASONABLE AND PRACTICABLE, STORMWATER RUNOFF ENTERING THE SITE FROM EXTERNAL AREAS, AND NON-SEDIMENT LADEN (CLEAN) STORMWATER RUNOFF ENTERING A WORK AREA OR AREA OF SOIL DISTURBANCE, MUST BE DIVERTED AROUND OR THROUGH THAT AREA IN A MANNER THAT MINIMISES SOIL EROSION AND THE CONTAMINATION OF THAT WATER FOR ALL DISCHARGES UP TO THE SPECIFIED DESIGN STORM DISCHARGE.
3. DURING THE CONSTRUCTION PERIOD, ALL REASONABLE AND PRACTICABLE MEASURES MUST BE IMPLEMENTED TO CONTROL FLOW VELOCITIES IN SUCH A MANNER THAN PREVENTS SOIL EROSION ALONG DRAINAGE PATHS AND AT THE ENTRANCE AND EXIT OF ALL DRAINS AND DRAINAGE PIPES DURING ALL STORMS UP TO THE RELEVANT DESIGN STORM DISCHARGE.
4. TO THE MAXIMUM DEGREE REASONABLE AND PRACTICABLE, ALL WATERS DISCHARGED DURING THE CONSTRUCTION PHASE MUST DISCHARGE ONTO STABLE LAND, IN A NON-EROSIVE MANNER, AND AT A LEGAL POINT OF DISCHARGE.
5. WHEREVER REASONABLE AND PRACTICABLE, “CLEAN” SURFACE WATERS MUST BE DIVERTED AWAY FROM SEDIMENT CONTROL DEVICES AND ANY UNTREATED, SEDIMENT-LADEN WATERS.
6. DURING THE CONSTRUCTION PERIOD, ROOF WATER MUST BE MANAGED IN A MANNER THAT MINIMISES SOIL EROSION THROUGHOUT THE SITE, AND SITE WETNESS WITHIN ACTIVE WORK AREAS.
7. DRAINS ARE TO BE SIZED AND CONSTRUCTED TO ALLOW WATER TO DRAIN. THIS MAY INCLUDE CUTTING INTO THE EARTH TO OBTAIN THE REQUIRED FALL TO PERMIT DRAINAGE. DIMENSIONS GIVEN ARE A MINIMUM.

FOR APPROVAL

FOR APPROVAL		MLS	27/02/25	SURVEY DATA	
5	UPDATES AS PER TMR COMMENTS	MLS	21/02/25	DATUM	GDA2022
4	UPDATES AS PER TMR COMMENTS	NJF	14/01/25	MAP GRID	HG456
3	PLAN UPDATES AS PER RFI	NJF	17/07/24	HEIGHT ORIGIN	AHD
2	FOR APPROVAL	NJF	02/2024	SURVEY BOOKS	
1	CONCEPT PLAN	NJF	01/2024	NJF	30/06/24
REVISION DETAILS		DWN	DATE	DES	DATE
FILE C:\COURTNEY\ACSEN\2089\BROMELTON\BROMELTON\DEVELOPMENT - 260 MITCHELL ROAD - 2089\BROMELTON\DRAWING FILES\ACS-220089-INT-01.DWG PLOT THE TALYDOW - 020M BY USER: MARGARET.LALIS					

SOILCO		ESC NOTES - SHEET 01		PO Box 554 Beaudesert QLD 4285 (07) 5541 3500 www.acsengineers.com.au		ACS Engineers CIVIL / ENVIRONMENTAL PROJECT MANAGEMENT	
PO BOX 199, UNANDERRA NSW 2526				DRAWING NUMBER		REVISION	
BROMELTON DEVELOPMENT		ENGINEERING CERTIFICATION (RPEQ)					
		#	FIELD	NAME	SIGNATURE	DATE	
260 MITCHELL ROAD, BROMELTON QLD 4285		13697	CIVIL	S. SHAY		10/04/25	
		ACS-220089-INT-10				A	

EROSION CONTROL:

- ALL EROSION CONTROL MEASURES MUST BE APPLIED AND MAINTAINED IN ACCORDANCE WITH IECA (2008) BEST PRACTICE EROSION & SEDIMENT CONTROL.
- THE APPLICATION OF LIQUID-BASED DUST SUPPRESSION MEASURES MUST ENSURE THAT SEDIMENT-LADEN RUNOFF RESULTING FROM SUCH MEASURES DOES NOT CREATE A TRAFFIC OR ENVIRONMENTAL HAZARD.
- ALL TEMPORARY EARTH BANKS, FLOW DIVERSION SYSTEMS, AND EMBANKMENTS ASSOCIATED WITH CONSTRUCTED SEDIMENT BASINS MUST BE MACHINE-COMPACTED, SEEDED AND MULCHED FOR THE PURPOSE OF ESTABLISHING A TEMPORARY VEGETATIVE COVER WITHIN 10 DAYS AFTER GRADING.
- UNPROTECTED SLOPE LENGTHS MUST NOT EXCEED 80m, OR AN EQUIVALENT VERTICAL FALL OF 3m DURING THE CONSTRUCTION PERIOD.
- THE CONSTRUCTION AND STABILISATION OF EARTH BATTERS STEEPER THAN 6:1 (H:V) MUST BE STAGED SUCH THAT NO MORE THAN 3 VERTICAL-METRES OF ANY BATTER IS EXPOSED TO RAINFALL AT ANY INSTANT.
- SYNTHETIC REINFORCED EROSION CONTROL MATS AND BLANKETS MUST NOT BE PLACED WITHIN, OR ADJACENT TO, RIPARIAN ZONES AND WATERCOURSES IF SUCH MATERIALS ARE LIKELY TO CAUSE ENVIRONMENTAL HARM TO WILDLIFE OR WILDLIFE HABITATS.
- A MINIMUM 60% GROUND COVER MUST BE ACHIEVED ON ALL NON-COMPLETED EARTHWORKS EXPOSED TO ACCELERATED SOIL EROSION IF FURTHER CONSTRUCTION ACTIVITIES OR SOIL DISTURBANCES ARE LIKELY TO BE SUSPENDED FOR MORE THAN 30 DAYS DURING THOSE MONTHS WHEN THE EXPECTED RAINFALL IS LESS THAN 30mm; MINIMUM 70% COVER WITHIN 30 DAYS IF BETWEEN 30 AND 45mm; MINIMUM 70% COVER WITHIN 20 DAYS IF BETWEEN 45 AND 100mm; MINIMUM 75% COVER WITHIN 10 DAYS IF BETWEEN 100 AND 225mm; AND MINIMUM 80% COVER WITHIN 5 DAYS IF GREATER THAN 225mm. (ALTERNATIVE TO ABOVE)

SEDIMENT CONTROL:

- ALL SEDIMENT CONTROL MEASURES MUST BE APPLIED AND MAINTAINED IN ACCORDANCE WITH IECA (2008) BEST PRACTICE EROSION & SEDIMENT CONTROL.
- OPTIMUM BENEFIT MUST BE MADE OF EVERY OPPORTUNITY TO TRAP SEDIMENT WITHIN THE WORK SITE, AND AS CLOSE AS PRACTICABLE TO ITS SOURCE.
- SEDIMENT TRAPS MUST BE INSTALLED AND OPERATED TO BOTH COLLECT AND RETAIN SEDIMENT.
- THE POTENTIAL SAFETY RISK OF A PROPOSED SEDIMENT TRAP TO SITE WORKERS AND THE PUBLIC MUST BE GIVEN APPROPRIATE CONSIDERATION, ESPECIALLY THOSE DEVICES LOCATED WITHIN PUBLICLY ACCESSIBLE AREAS.
- ALL REASONABLE AND PRACTICABLE MEASURES MUST BE TAKEN TO PREVENT, OR AT LEAST MINIMISE, THE RELEASE OF SEDIMENT FROM THE SITE.
- SUITABLE ALL-WEATHER MAINTENANCE ACCESS MUST BE PROVIDED TO ALL SEDIMENT CONTROL DEVICES.
- SEDIMENT CONTROL DEVICES MUST BE DE-SILTED AND MADE FULLY OPERATIONAL AS SOON AS REASONABLE AND PRACTICABLE AFTER A SEDIMENT-PRODUCING EVENT, WHETHER NATURAL OR ARTIFICIAL, IF THE DEVICE'S SEDIMENT RETENTION CAPACITY REDUCES BY 30% OF DESIGN CAPACITY.
- MATERIALS, WHETHER LIQUID OR SOLID, REMOVED FROM SEDIMENT CONTROL DEVICES DURING MAINTENANCE OR DECOMMISSIONING, MUST BE DISPOSED OF IN A MANNER THAT DOES NOT CAUSE ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.

ROADWORKS:

- VEGETATION REMOVED DURING ROAD WORKS MUST BE RE-USED TO THE MAXIMUM POSSIBLE EXTENT TO MINIMISE SHORT AND LONG-TERM SOIL EROSION. NON-SALVAGEABLE DEBRIS MUST BE DISPOSED OF IN A MANNER THAT DOES NOT CAUSE ONGOING ENVIRONMENTAL HARM.
- SOIL DISTURBANCES MUST BE STAGED INTO MANAGEABLY-SIZED AREAS OF NO GREATER THAN TEN (10) HECTARES TO ENSURE ADEQUATE ESC MANAGEMENT AND PROGRESSIVE STABILISATION OF DISTURBED SURFACES.
- NEWLY CONSTRUCTED SPRAY-SEALED ROADS MUST BE SWEEPED THOROUGHLY AS SOON AS POSSIBLE AFTER GRAVELLING TO PREVENT EXCESS GRAVEL ENTERING STORMWATER DRAINS OR WATERWAYS.
- DURING THE CONSTRUCTION PERIOD, ALL UNSTABLE FILL EMBANKMENTS ARE TO BE LEFT WITH A LIP (WINDROW) AT THE TOP OF THE SLOPE AT THE END OF EACH DAY'S OPERATION, OR OTHER APPROPRIATE DRAINAGE CONTROL MEASURES, TO PREVENT BANK EROSION.
- ALL CUT AND FILL EARTH BATTERS ARE TO BE TOPSOILED, AND GRASS SEEDED/HYDROMULCHED WITHIN TEN (10) DAYS OF COMPLETION OF GRADING.

SITE REHABILITATION:

- ALL DISTURBED AREAS IDENTIFIED AS VERY LOW, LOW, MEDIUM, HIGH, OR EXTREME EROSION RISK MUST BE SUITABLY STABILISED WITHIN 30, 30, 20, 10 OR 5 DAYS RESPECTIVELY, OR PRIOR TO ANTICIPATED RAINFALL, WHICHEVER IS THE GREATER, FROM THE DAY THAT SOIL DISTURBANCES ON THE AREA HAVE BEEN FINALISED.
- A MINIMUM 60% GROUND COVER MUST BE ACHIEVED ON ALL COMPLETED EARTHWORKS EXPOSED TO ACCELERATED SOIL EROSION WITHIN 30 DAYS DURING THOSE MONTHS WHEN THE EXPECTED RAINFALL IS LESS THAN 30mm; MINIMUM 70% COVER WITHIN 30 DAYS IF BETWEEN 30 AND 45mm; MINIMUM 70% COVER WITHIN 20 DAYS IF BETWEEN 45 AND 100mm; MINIMUM 75% COVER WITHIN 10 DAYS IF BETWEEN 100 AND 225mm; AND MINIMUM 80% COVER WITHIN 5 DAYS IF GREATER THAN 225mm. (ALTERNATIVE TO ABOVE)
- NO COMPLETED EARTHWORK SURFACE MUST REMAIN DENUDED FOR LONGER THAN 60 DAYS.
- THE TYPE OF GROUND COVER APPLIED TO COMPLETED EARTHWORKS IS COMPATIBLE WITH THE ANTICIPATED LONG-TERM LAND USE, ENVIRONMENTAL RISK, AND SITE REHABILITATION MEASURES.
- UNLESS OTHERWISE DIRECTED BY THE SUPERINTENDENT OR WHERE DIRECTED BY THE APPROVED REVEGETATION PLAN, TOPSOIL MUST BE PLACED AT A MINIMUM DEPTH OF 75mm ON SLOPES 4:1 (H:V) OR FLATTER, AND 50mm ON SLOPES STEEPER THAN 4:1.
- SOIL AMELIORANTS MUST BE ADDED TO THE SOIL IN ACCORDANCE WITH THE APPROVED LANDSCAPE/REVEGETATION PLANS AND/OR SOIL ANALYSIS.
- TEMPORARY SITE STABILISATION PROCEDURES MUST COMMENCE AT LEAST 30 DAYS PRIOR TO THE NOMINATED SITE SHUTDOWN DATE. AT LEAST 70% STABLE COVER OF ALL UNSTABLE AND/OR DISTURBED SOIL SURFACES MUST BE ACHIEVED PRIOR TO ANY SHUTDOWN. THE STABILISATION WORKS MUST NOT RELY UPON THE LONGEVITY OF NON-VEGETATED EROSION CONTROL BLANKETS, OR TEMPORARY SOIL BINDERS.
- ALL UNSTABLE OR DISTURBED SOIL SURFACES MUST BE ADEQUATELY STABILISED AGAINST EROSION (MINIMUM 70%) PRIOR TO COMMENCEMENT OF USE, OR SURVEY PLAN ENDORSEMENT.

SITE MAINTENANCE:

- ENSURE ESC PLANS ARE ON SITE AT ALL TIMES.
- ALL EROSION AND SEDIMENT CONTROL MEASURES, INCLUDING DRAINAGE CONTROL MEASURES, MUST BE MAINTAINED IN PROPER WORKING ORDER AT ALL TIMES DURING THEIR OPERATIONAL LIVES.
- ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES, INCLUDING DRAINAGE CONTROL MEASURES, MUST BE FULLY OPERATIONAL AND MAINTAINED IN PROPER WORKING ORDER AT ALL TIMES DURING THE MAINTENANCE PERIOD AS SPECIFIED BY RELEVANT AUTHORITY.
- ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES, INCLUDING DRAINAGE CONTROL MEASURES, MUST BE REMOVED AFTER ACHIEVING A SATISFACTORY "OFF-MAINTENANCE INSPECTION" BY THE RELEVANT AUTHORITY.
- ALL DRAINAGE, EROSION AND SEDIMENT CONTROL MEASURES MUST BE INSPECTED:
 - AT LEAST DAILY (WHEN WORK IS OCCURRING ON-SITE);
 - AT LEAST WEEKLY (WHEN WORK IS NOT OCCURRING ON-SITE);
 - WITHIN 24 HOURS OF EXPECTED RAINFALL; AND
 - WITHIN 18 HOURS OF A RAINFALL EVENT OF SUFFICIENT INTENSITY AND DURATION TO CAUSE RUNOFF ON-SITE).IF FAILURE HAS BEEN FOUND, IMMEDIATE REMEDIATIONS ARE REQUIRED AND TO A STANDARD WHICH ENSURES THE FAILURE DOES NOT CONTINUALLY OCCUR UNDER DESIGN RAINFALL CONDITIONS.
- WASHING/FLUSHING OF SEALED ROADWAYS MUST ONLY OCCUR WHERE SWEEPING HAS FAILED TO REMOVE SUFFICIENT SEDIMENT AND THERE IS A COMPELLING NEED TO REMOVE THE REMAINING SEDIMENT (E.G. FOR SAFETY REASONS). IN SUCH CIRCUMSTANCES, ALL REASONABLE AND PRACTICABLE SEDIMENT CONTROL MEASURES MUST BE USED TO PREVENT, OR AT LEAST MINIMISE, THE RELEASE OF SEDIMENT INTO RECEIVING WATERS. ONLY THOSE MEASURES THAT WILL NOT CAUSE SAFETY AND PROPERTY FLOODING ISSUES SHALL BE EMPLOYED. SEDIMENT REMOVED FROM ROADWAYS MUST BE DISPOSED OF IN A LAWFUL MANNER THAT DOES NOT CAUSE ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.
- SEDIMENT REMOVED FROM SEDIMENT TRAPS AND PLACES OF SEDIMENT DEPOSITION MUST BE DISPOSED OF IN A LAWFUL MANNER THAT DOES NOT CAUSE ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.
- MAINTENANCE IS TO OCCUR ON ALL EROSION AND SEDIMENT CONTROL MEASURES WHEN CAPACITY REDUCES BY 30%.
- MAINTENANCE MOWING OF ALL ROAD SHOULDERS, TABLE DRAINS, BATTERS AND OTHER SURFACES LIKELY TO EXPERIENCE ACCELERATED SOIL EROSION MUST AIM TO LEAVE THE GRASS LENGTH NO SHORTER THAN 50mm WHERE REASONABLE AND PRACTICABLE.
- MAINTENANCE MOWING MUST BE DONE IN A MANNER THAT WILL NOT DAMAGE THE PROFILE OF FORMED, SOFT EDGES, SUCH AS THE CREST OF EARTH EMBANKMENTS.
- ENSURE RECORDS ARE KEPT OF DATES OF MAINTENANCE AND THE PERSONNEL RESPONSIBLE FOR UNDERTAKING THE MAINTENANCE.
- IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE SOIL EROSION IS LIMITED AS MUCH AS POSSIBLE. THE TECHNIQUES USED IN THE DESIGN SHOULD NOT BE TAKEN AS THE MAXIMUM CONTROLS ALLOWABLE, AND THE CONTRACTOR MAY ADD CONTROLS AS NECESSARY TO LIMIT SOIL EROSION AND SEDIMENTATION.
- MONITORING SHALL BE UNDERTAKEN BY A PERSON WITH EXPERIENCE IN EROSION AND SEDIMENT CONTROL MONITORING. MONITORING IS TO BE UNDERTAKEN IN A MANNER WHICH COMPLIES WITH IECA GUIDELINES 2008, CHAPTER 7. SITE INSPECTION.

OTHER:

- THE CONTRACTOR IS TO TAKE ALL NECESSARY PRECAUTIONS TO CONTROL EROSION AND DOWNSTREAM SEDIMENTATION DURING ALL STAGES OF CONSTRUCTION INCLUDING THE MAINTENANCE PERIOD.
- ALL SEDIMENT CONTROL DEVICES SHALL BE MONITORED, CLEANED AND/OR REPAIRED WHENEVER THE ACCUMULATED SEDIMENT REDUCES THE CAPACITY BY 30%.
- THE EXTENT OF GRASSING SHALL BE DETERMINED BY THE SUPERINTENDENT AND SHALL BE SEEDED, AS SPECIFIED, WITHIN SEVEN DAYS OF FINAL TRIMMING.
- EXTENT AND POSITION OF SILT FENCE CONTROL MEASURES TO BE DETERMINED ON SITE BY SUPERINTENDENT.
- MEASURES SHOWN ON THIS DRAWING ARE MINIMUM REQUIREMENTS ONLY.
- SCOUR PROTECTION AND SILT MANAGEMENT MEASURES TO BE PROVIDED AT STORMWATER OUTLET HEADWALLS.
- PROVISION TO BE MADE FOR DIRT/SAND REMOVAL FROM CONSTRUCTION VEHICLES PRIOR TO TRAVEL ON PUBLIC ROADS. METHOD TO BE APPROVED BY SUPERINTENDENT PRIOR TO COMMENCEMENT OF WORK.
- ANY SILT OR SEDIMENT CAUSED BY CONSTRUCTION TRAFFIC ON EXISTING ROADS IS TO BE REMOVED DAILY.
- THE CONTRACTOR SHALL IMPLEMENT EROSION AND SEDIMENT CONTROL PROCEDURES DURING CONSTRUCTION AND MAINTENANCE STAGES OF THE DEVELOPMENT AND SHALL TAKE ALL NECESSARY ACTIONS TO COMPLY WITH THE POLICY OBJECTIVES OF QUEENSLAND TRANSPORT AND MAIN ROADS - EROSION AND SEDIMENT CONTROL.
- A SCHEDULE SHALL BE SUBMITTED FOR APPROVAL AT THE PRE-START MEETING FOR THE FIELD IMPLEMENTATION OF EROSION AND SEDIMENT CONTROL, DETAILING THE STAGES AT WHICH VARIOUS MANAGEMENT TECHNIQUES WOULD BE IN PLACE AND AUDITING PROCEDURES.
- FINAL FORM OF SEDIMENT EROSION CONTROL TO BE DECIDED ON SITE BY THE SUPERINTENDENT.
- THE CONTRACTOR IS TO ENSURE THAT NO SILT REACHES THE DOWNSTREAM WATER COURSE AND IS TO PROVIDE ADEQUATE PROTECTION TO PREVENT THIS OCCURRING.

ROCK CHECK DAMS, SAND BAG CHECK DAMS AND COIR LOGS:

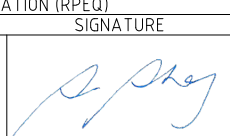
- TO BE LOCATED AS DIRECTED ON SITE AND SPACED TO SUIT SETOUT DETAIL, REFER DRG 04.
- MAINTENANCE OF CHECK DAMS TO BE IN ACCORDANCE WITH 'IECA BEST PRACTICE EROSION AND SEDIMENT CONTROL BOOK 6 STANDARD DRAWINGS'.

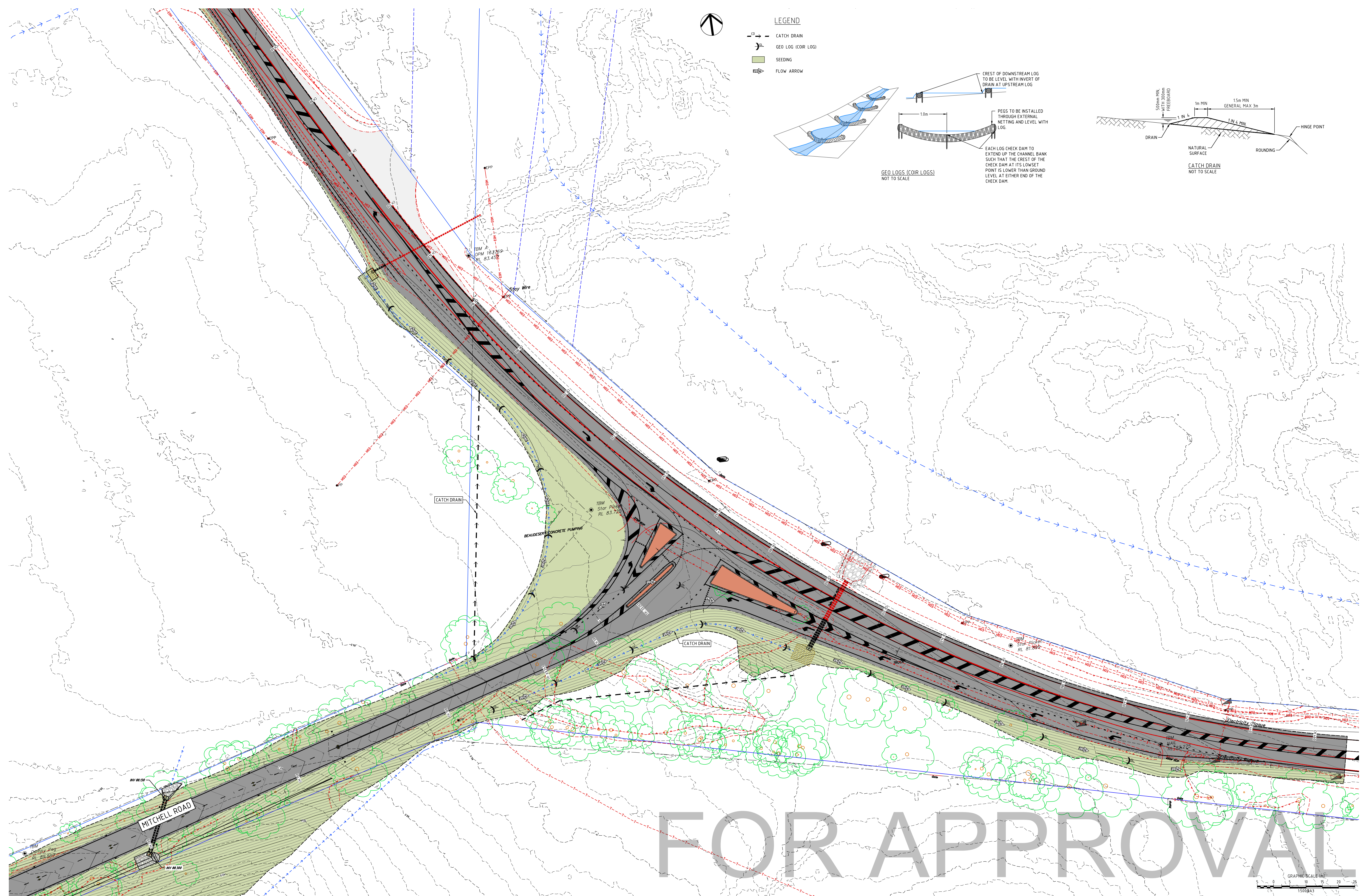
LEVEL SPREADERS:

- TO BE LOCATED AS DIRECTED ON SITE, TYPICALLY MAX. SPACING OF 120m. MAINTENANCE OF CHECK DAMS TO BE IN ACCORDANCE WITH 'IECA BEST PRACTICE EROSION AND SEDIMENT CONTROL BOOK 6 STANDARD DRAWINGS'.

FOR APPROVAL

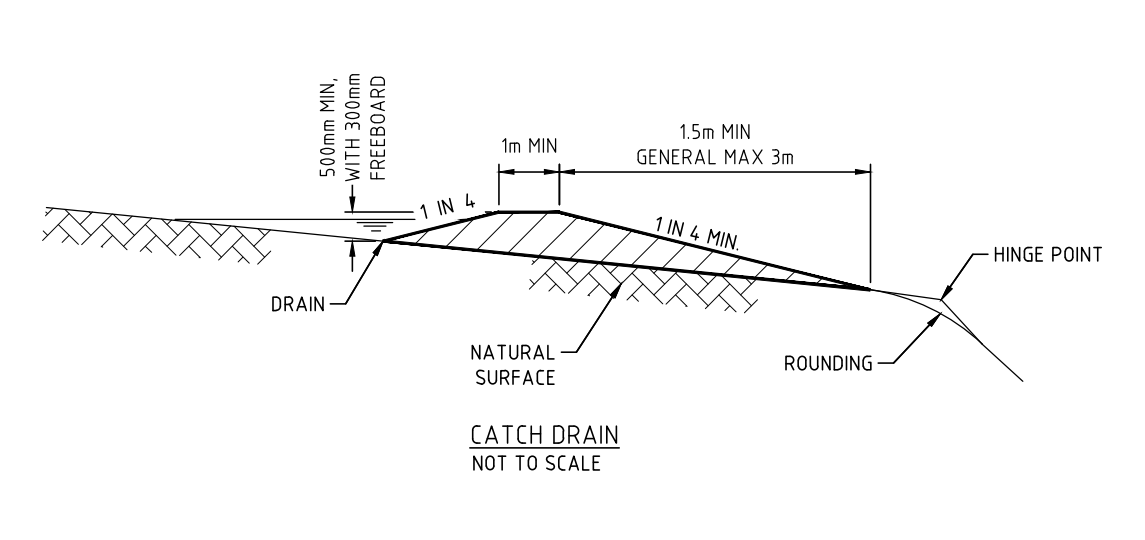
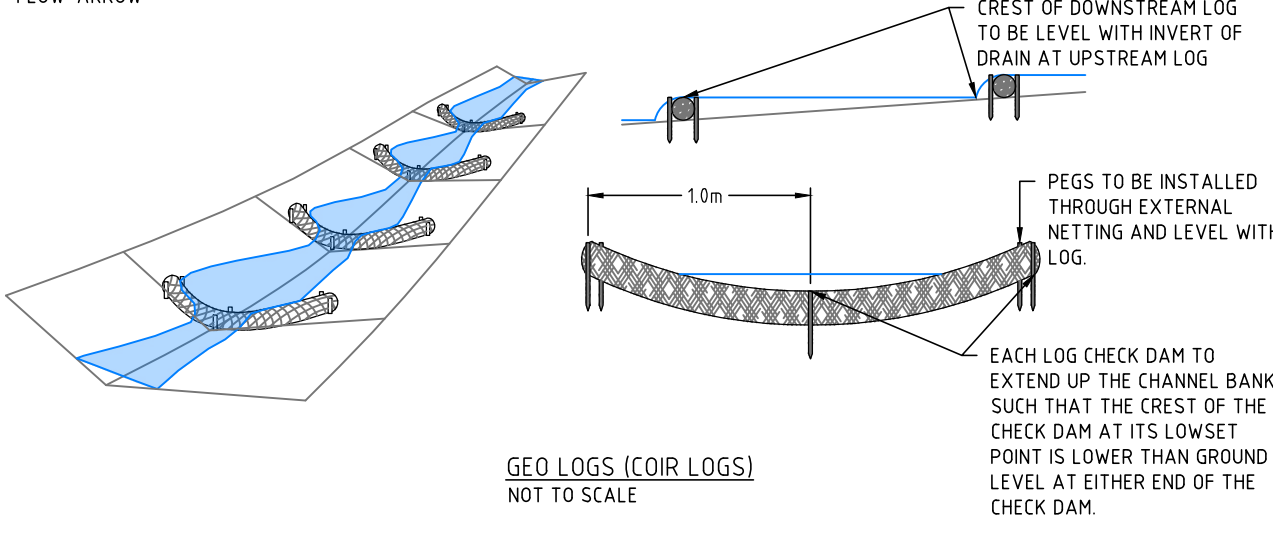
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4 UPDATES AS PER TMR COMMENTS	NJF	14/01/25	MAP GRID	MGA56
3 PLAN UPDATES AS PER RFI	NJF	17/07/24	HEIGHT ORIGIN	MHO
2 FOR APPROVAL	NJF	02/2024	SURVEY BOOKS	
1 CONCEPT PLAN	NJF	01/2024	NJF	30/06/24
REVISION/DETAILS			OWN	DATE
FILE C:\COURTNEY\ACSEN\20089\BROMELTON\BROMELTON DEVELOPMENT - 260 MITCHELL ROAD - 260MITCHELL.DWG				
PLOT THE 'B1\20089 - 0200M' BY USER: MARGARET KILLICK				

SOILCO	ESC NOTES - SHEET 02	PO Box 554 Beaudesert QLD 4205 0871 5561 3500 www.acsengineers.com.au		CIVIL / ENVIRONMENTAL / PROJECT MANAGEMENT	
PO BOX 199, UNANDERRA NSW 2526					
BROMELTON DEVELOPMENT	ENGINEERING CERTIFICATION (RPEQ)		DRAWING NUMBER	REVISION	
	#	FIELD	NAME	SIGNATURE	DATE
260 MITCHELL ROAD, BROMELTON QLD 4285	13697	CIVIL	S. SHAY		10/04/25
			ACS-220089-INT-11		A



LEGEND

- CATCH DRAIN
- GEO LOG (COIR LOG)
- SEEDING
- FLOW ARROW

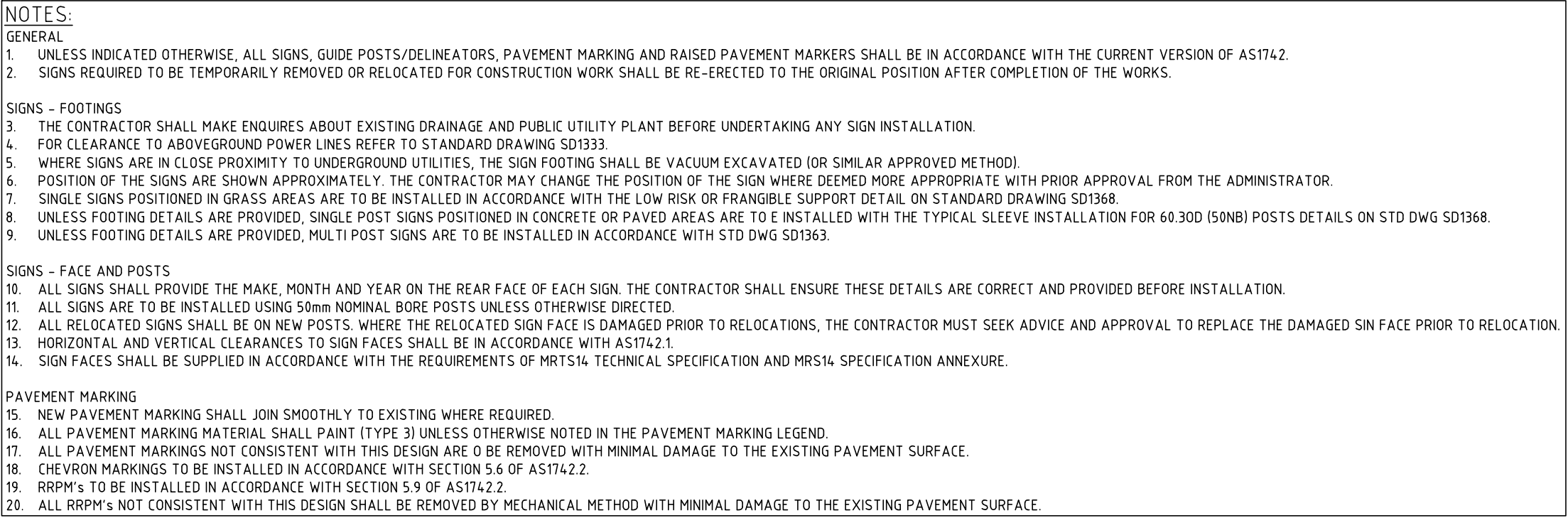


FOR APPROVAL

A	FOR APPROVAL	MLS	27/02/25	SURVEY DATA
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4	UPDATES AS PER TMR COMMENTS	NJF	14/01/25	MAP GRID
3	PLAN UPDATES AS PER RFI	NJF	17/07/24	HEIGHT ORIGIN
2	FOR APPROVAL	NJF	02/2024	AND SURVEY BOOKS
1	CONCEPT PLAN	NJF	01/2024	NJF
REVISION/DETAILS		DATE	DATE	DATE

SOILCO		ESC - LAYOUT PLAN		PO BOX 554 Beaudesert QLD 4285 071 5541 3500 www.acsengineers.com.au		ACS Engineers CIVIL ENVIRONMENTAL PROJECT MANAGEMENT	
PO BOX 199, UNANDERRA NSW 2526		BROMELTON DEVELOPMENT		13697		CIVIL	
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13697		CIVIL	
10/04/25		ACS-220089-INT-12	
A		A	



Single broken dividing line
See Note 1.

DL1 100

Single broken dividing line
(special purpose)
See Note 2.

Single broken dividing line
(special purpose)
See Note 2.

DL3 11 11 11 11 100

Double one-way barrier line
i.e. a single continuous dividing line to the left or right of a single broken dividing line, see Note 1.

BL1

100
100 Gap
100

Double two-way barrier line
i.e. two parallel continuous dividing
lines, see Note 1.

BL2  100
100 Gap
100

Single two-way barrier line BL3 100
i.e. a single continuous dividing line.

Single two-way barrier line i.e. a single continuous dividing line, see Note 3.	BL4		200
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Single broken lane line LL1 100

Single broken lane line

See Note 5.

Single broken lane line
(special purpose)
See Note 5.

LL3 150

5m 5m 5m 5m 5m 5m 5m

Single continuous lane line LL4 100

Edge-View			Fig. 10
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Edge line	EL2		200
May be used on expressway type roads.			

Continuity line

CL1

150

Continuity line
May be used on expressway

Continuity line
See Note 1.

CL3 150

600 mm stripe and gap

Outline marking	OL1		150
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Outline marking May be used on expressway	OL2		200
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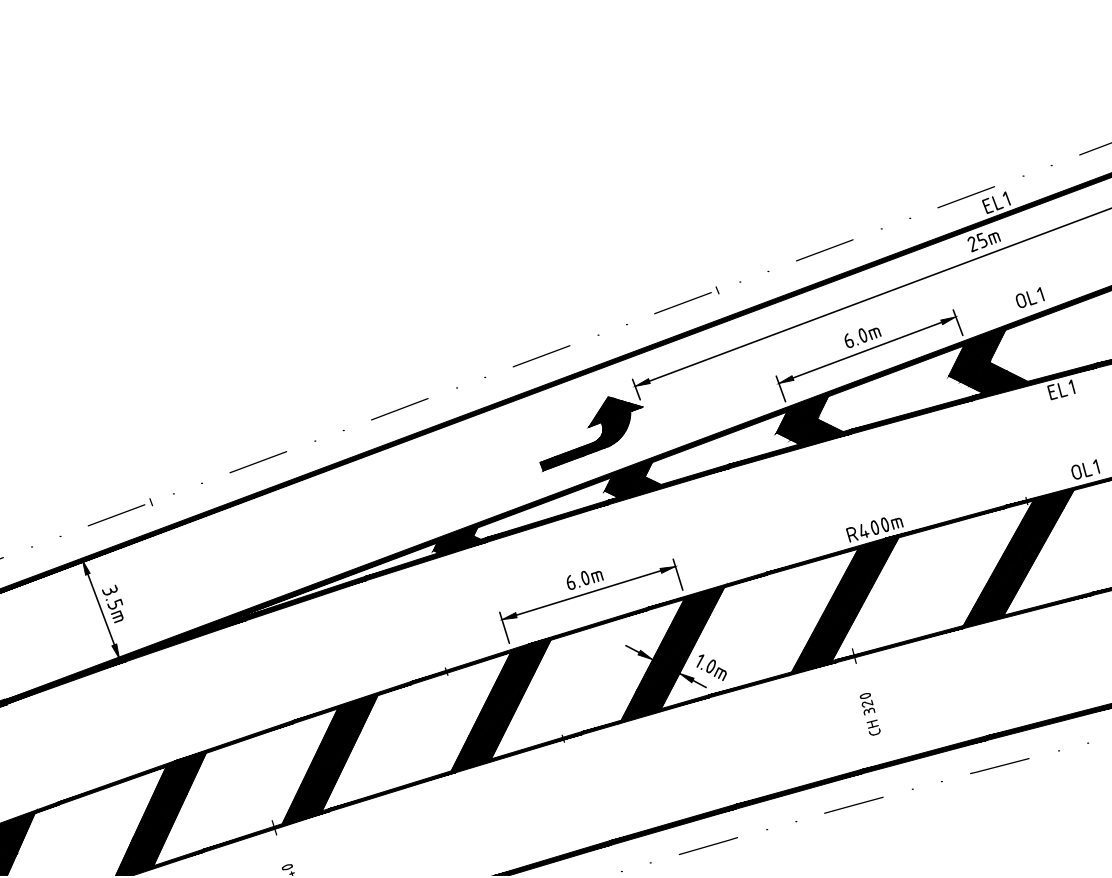
TL  100

Single broken dividing line: Path D1, B

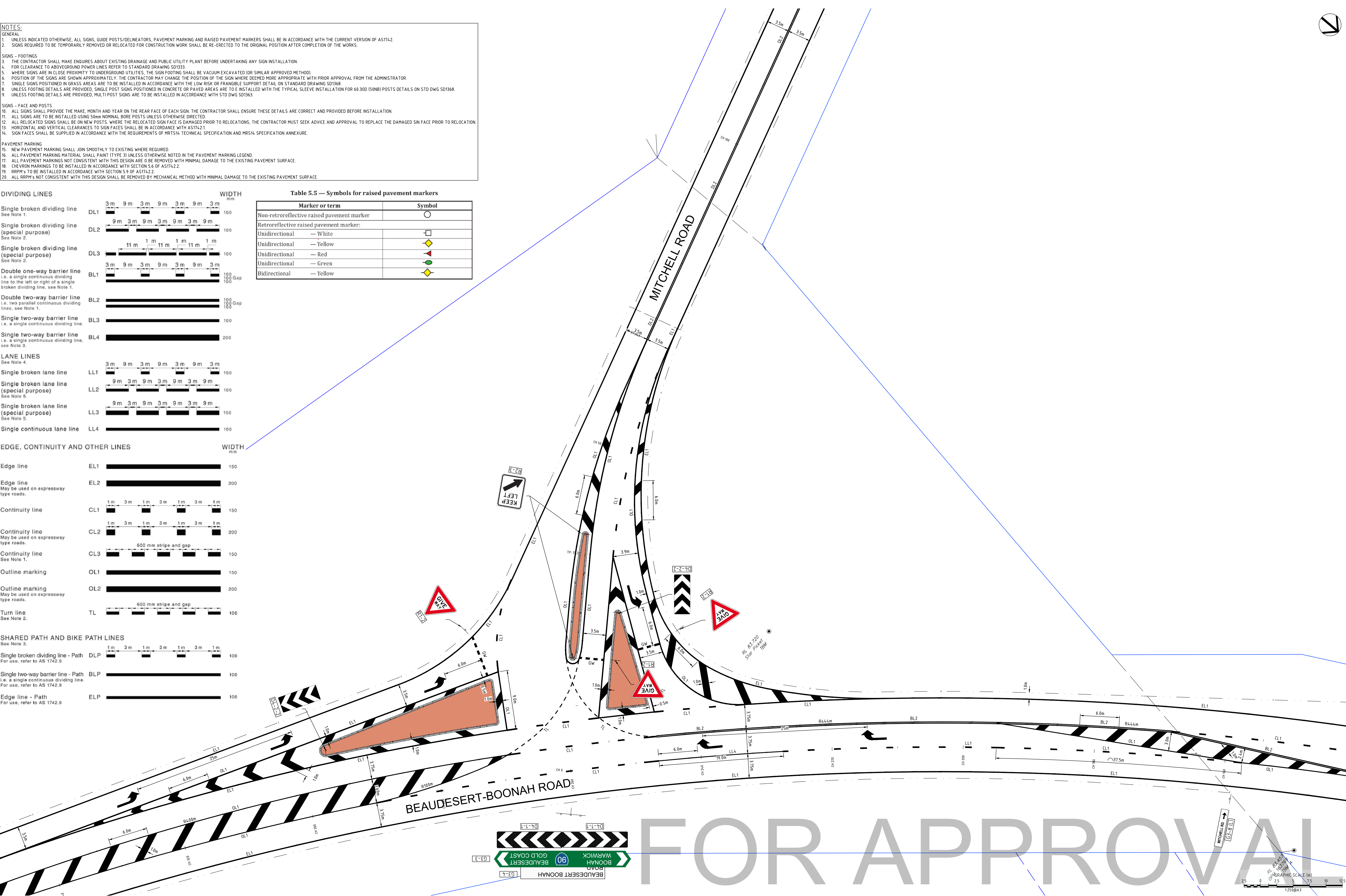
For use, refer to AS 1742.9

Single two-way barrier line - Path BLP 100
i.e. a single continuous dividing line.
For use, refer to AS 1742.9

Edge line - Path ELP 100

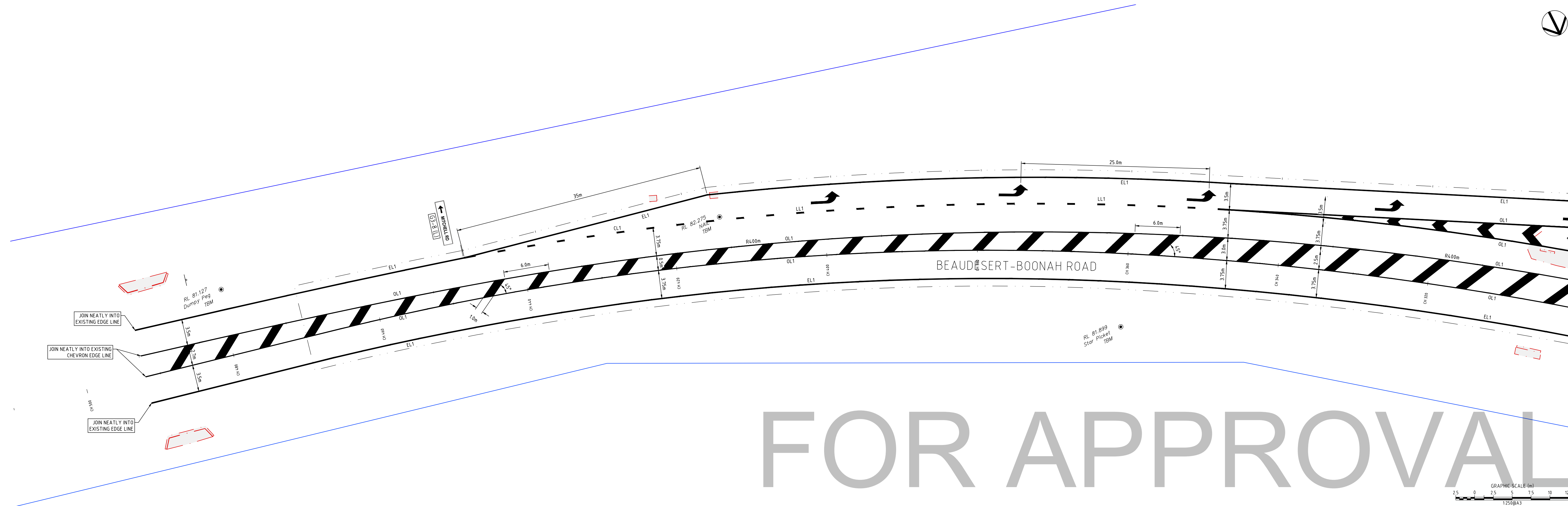
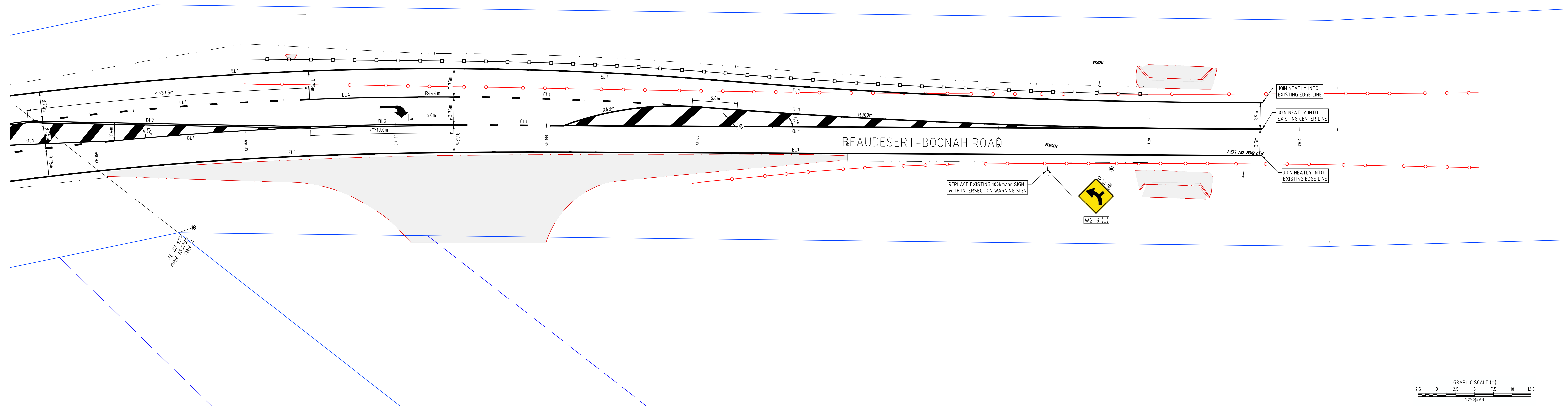


Marker or term	Symbol
Non-retroreflective raised pavement marker	○
Retroreflective raised pavement marker:	
Unidirectional — White	◻
Unidirectional — Yellow	◼
Unidirectional — Red	◼
Unidirectional — Green	◼
Bidirectional — Yellow	◼

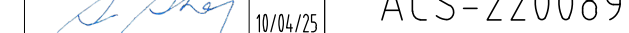


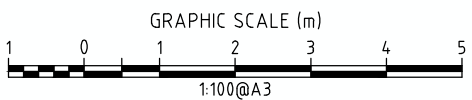
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2	UPDATES AS PER TMR COMMENTS	NJF	04/01/25	HEIGHT ORIGIN	AHD
1	FOR APPROVAL	NJF	17/07/24	SURVEY BOOKS	30/06/24
	REVISION/DETAILS	DWN	DATE	NJS	DATE

SOILCO		LINEMARKING & SIGNAGE PLAN - SHEET 01				PO Box 554 Beaudesert QLD 4285 071 5541 3500 www.acsengineers.com.au		 ACS Engineers CIVIL, ENVIRONMENTAL, PROJECT MANAGEMENT	
PO BOX 199, UNANDERRA NSW 2526						DRAWING NUMBER		REVISION	
BROMELTON DEVELOPMENT		#	FIELD	NAME	SIGNATURE	DATE	ACS-220089-INT-13		A
260 MITCHELL ROAD, BROMELTON QLD 4285		13697	CIVIL	S. SHAY		10/04/25			



FOR APPROVAL

						SURVEY DATA												SOILCO		LINEMARKING & SIGNAGE PLAN - SHEET 02		PO Box 554 Beaudesert QLD 4285 (07) 5541 3500 www.acsengineers.com.au		ACS Engineers CIVIL / ENVIRONMENTAL / PROJECT MANAGEMENT			
						DATUM												PO BOX 199, UNANDERRA NSW 2526									
A	FOR APPROVAL	MLS	27/02/25	MAP GRID		GOA2020												BROMELTON DEVELOPMENT		ENGINEERING CERTIFICATION (RPEQ)		DRAWING NUMBER		REVISION			
3	UPDATES AS PER TMR COMMENTS	MLS	21/02/25	HEIGHT ORIGIN		MG456														#	FIELD	NAME	SIGNATURE	DATE			
2	UPDATES AS PER TMR COMMENTS	NJF	04/01/25	SURVEY BOOKS																13697	CIVIL	S. SHAY		10/04/25	ACS-220089-INT-14		A
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REVISIONS/DETAILS				DWN	NJF	DES	DATE																				
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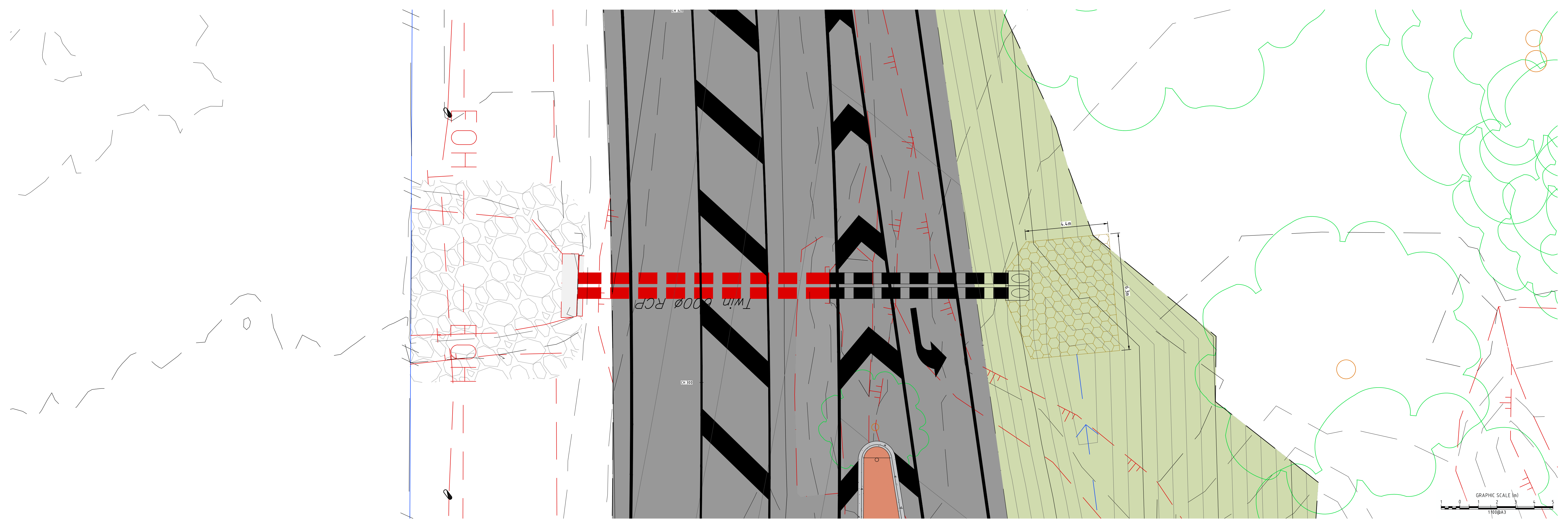


MINOR CULVERT PLAN
SCALE 1:200

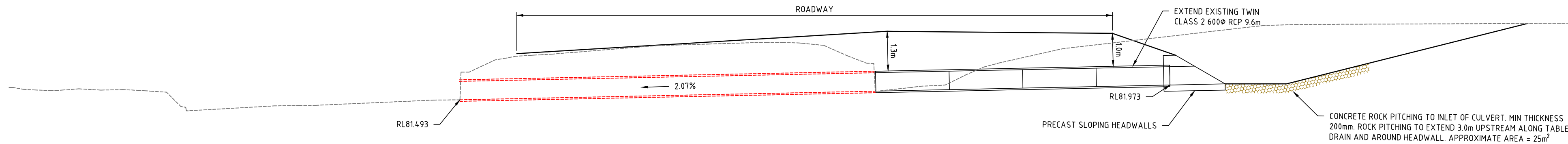


FOR APPROVAL

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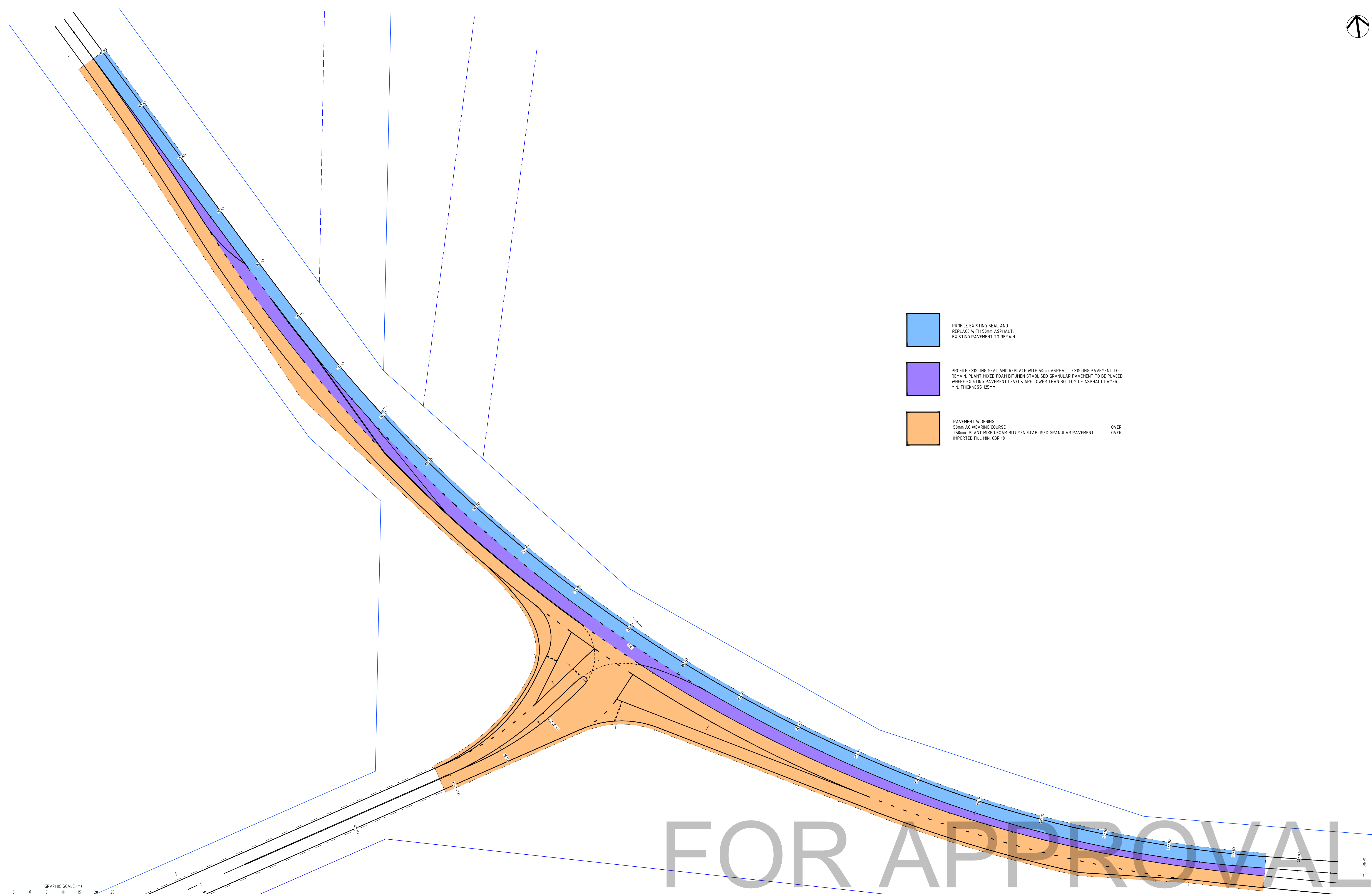
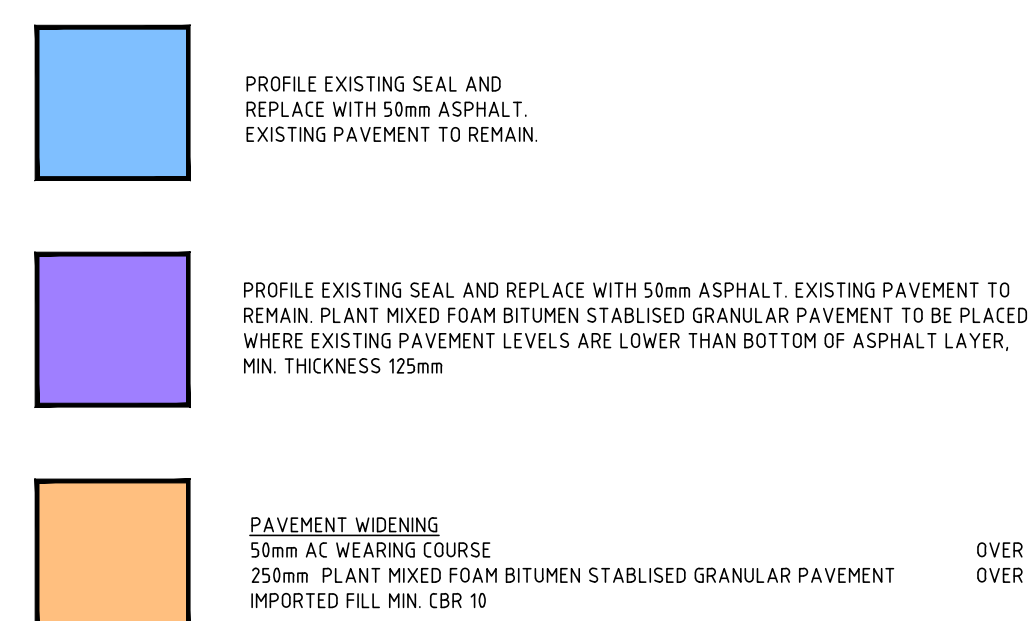
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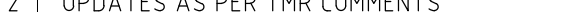


MINOR CULVERT SECTION

FOR APPROVAL

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3	UPDATES AS PER TMR COMMENTS	MLS	21/02/25	HEIGHT ORIGIN	AHD
2	UPDATES AS PER TMR COMMENTS	NJF	04/01/25	SURVEY BOOKS	
1	FOR APPROVAL	NJF	17/07/24	NJF	30/06/24
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				SOILCO	
				PO BOX 199, UNANDERRA NSW 2526	
				BROMELTON DEVELOPMENT	
				260 MITCHELL ROAD, BROMELTON QLD 4285	
				CULVERT DETAILS - SHEET 02	
				ENGINEERING CERTIFICATION (RPEO)	
				FIELD	NAME
				SIGNATURE	DATE
				13697	CIVIL
				S. SHAY	10/04/25
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6ha

Our ref: 12626213

17 April 2025

Dave Schumacher
Soilco Developments Pty Ltd
3/132 W Dapto Road
Kembla Grange, NSW 2526

Office of the Coordinator-General: Information Request – MCU for Special Industry (Reference: OUT24/5995) – Response Letter

Dear Dave,

SOILCO Developments Pty Ltd (SOILCO) submitted a Material Change of Use (MCU) Development Application (DA) (Reference: OUT24/5995) on October 2025. An Information Request letter was issued from the Office of the Coordinator-General (OCG) dated 6 January 2025 (Reference D24/202645).

OCG has advised that additional information is required in order for an assessment of the application to be completed and have provided items for clarification. Responses to OCG's information request have been provided below. SOILCO and GHD attended a meeting with the OCG and Department of Environment, Tourism, Science and Innovation (DETSI) on 24 February 2025 to clarify the RFI items and to discuss GHD's approach to address the RFI items. Following from the meeting, the following actions were addressed by GHD:

- Additional modelling has been completed.
- Odour survey at Bromelton were completed.
- The Air Quality Impact Assessment has been updated and finalised (refer to Attachment 1).

Responses to the RFI items 6 to 21 are presented in the sections below.

OCG Information Request

Site operations

Item 6: Windrow surface area

Request:

The proponent is requested to provide detailed information on how the surface areas were estimated for individual odour sources used in the development of the emission inventory.

Response

In the Air Quality Impact Assessment, the season with maximum quantities of organics has been modelled and the maximum area has been assumed to occur all year long, which is therefore conservative as in winter volume and surface area would be less. The crest and sides of the windrow has been modelled. The reference report that the Queensland Government referred to stated that the majority of odour occurred from the crest of the windrow, and the updated modelled considered both crest and side, which is also conservative.

Additional clarity surrounding estimation of windrow surface areas is provided in section 4.2.3 of the Air Quality Impact Assessment and windrow dimensions used to calculate surface area have been provided in Appendix C1.

Odour mitigation

Item 7: Receival building

Request:

The proponent is requested to provide:

- a. the proposed best practice odour controls required to mitigate potential odour impacts as a result of receiving, mechanically reprocessing and mixing feedstocks.
- b. the proposed maintenance of these measures to manage the risk of odour impacts from the activity.

Response:

For the receival building, the migration measure outlined in Table 7.3 of the Air Quality Impact Assessment will be implemented, specifically Items AQ,3, AQ6-AQ16 as shown in Table 1.

Table 1 *Environmental controls for the receival building*

No.	Outcome	Mitigation measure	Timing
AQ3	Dust emissions are minimised during construction and operation	Undertake dust suppression, as required, using water sprays, water extension agents, soil stabilising polymers or other media on: Unpaved work areas subject to traffic or wind. Spoil and aggregate stockpiles. Sand and soil stockpiles During the loading and unloading of dust generating materials. Unpaved access tracks.	Construction and operation
AQ6	Ignition risk, spills, and air emissions are minimised during construction and operation.	Maintain plant and equipment in good condition to minimise ignition risk of fuel or chemicals, spills, and air emissions that may cause nuisance.	Construction and operation
AQ7	Odour emissions are minimised during operation	Establish an onsite meteorological station to inform operational activities and identify odour sources in the event of a complaint.	Operation
AQ8	Odour emissions are minimised during operation	Mixing putrescible feedstock materials immediately into the compost process, if not pre-treated or dried	Operation
AQ9	Odour emissions are minimised during operation	Implementing a management strategy for turning open windrows to prevent anaerobic conditions which is determined by an experienced operator through site trials and measurements	Operation
AQ10	Odour emissions are minimised during operation	Minimising turning events for open windrows, especially during the first 7-10 days of composting, with only the minimum turning required to support pasteurisation and moisture redistribution	Operation
AQ11	Odour emissions are minimised during operation	Install and operate as needed an aerator in the leachate pond to reduce the odour potential from the stored leachate. Leachate is expected to be aerated 4 hours per day.	Operation
AQ12	Odour emissions are minimised during operation	Scheduling activities for times when they will have least impact (e.g. avoid undertaking odour-generating activities such as turning windrows of compost at times when it is windy, and the odour might carry to a sensitive or commercial place.	Operation
AQ13	Odour emissions are minimised during operation	If site activities are emitting odour at concentrations which are observed offsite, the odour generating activities should be modified or stopped until the odour is reduced to an acceptable level.	Operation
AQ14	Odour emissions are minimised during operation	Train staff (internal and contractors) on odour management strategy and all relevant procedures.	Operation
AQ15	Odour emissions are minimised during operation	An Odour Management Plan to be developed prior to the activity commencing which includes: Identification of all odour sources, and potential odour sources at the site, including odours and potential odours generated from the activity; and A requirement that odour investigations be completed by an appropriately qualified person; and An analysis of routine and non-routine processes and operating conditions that could result in, and potentially result in, odour emissions; and Measures to avoid the generation and minimise the impacts of odours; and At a minimum, annual reviews of the effectiveness of the measures.	Operation
AQ16	Odour emissions are minimised during operation	Upon receipt of a verified odour complaint, engage a suitable experienced odour professional to conduct odour surveillance (odour surveys) to determine the extent of odour from the site and investigate what site activities led to elevated odour.	Operation

Item 8: Odour data

Request:

The proponent is requested to provide a detailed analysis of the measured odour data from similar composting facilities to demonstrate that an appropriate emission inventory has been developed. This must include:

- a. an assessment of the odour sampling methodology
- b. the composition of waste
- c. age of waste
- d. time of day and the season that the sampling was undertaken.

Response:

Additional information regarding odour sampling methodology, composition of waste and age of waste at time of sampling has been added to Appendix C of the Air Quality Impact Assessment.

DETSI have also raised concerns about different odour sampling methodologies for use on active surfaces such as aerated static pads (ASP). The studies referred to in the DETSI RFI that may demonstrate variability in odour results, have not been repeated, and are considered research trials only. The test methods used in the trials are very difficult to repeat and results presented show a large variability in odour results. We would encourage DETSI to undertake a research study over a number of QLD composting plants over several years to help determine a suitable, credible, repeatable test method and modelling method that provides industry with an appropriate way to estimate odour emissions from active and permeable sources, that also matches observed off-site impacts.

We acknowledge that IFC may underestimate odour from some surfaces however we also include certain conservatism in the assessment to address this. The same research that DETSI refers to also shows that most odour is limited to the crest of the windrow with very little on the sides – we have conservatively applied the same SOER across the whole windrow. In order to address the potential concerns for any underestimation from IFC, we have undertaken a sensitivity analysis from active FOGO sources at the site.

Sensitivity analysis has been undertaken using conservative odour data referenced in the assessment and measured OER data from Wogamia to demonstrate sufficient conservatism in assessment and results. See below in Table 2 for results of the sensitivity analysis. Predicted odour concentrations at the most impacted sensitive receptor R6 (refer to the Air Quality Impact Assessment report) are still well below the criteria of 2.5 OU assuming an additional 300% increase in odour emissions from the FOGO ASP. The predicted odour concentration is even lower if we were to use the lower, less conservative odour data from the SOILCO Wogamia site.

Modelling odour levels from active composting up to 300% higher than the measured data is not considered to be representative of operations at any SOILCo site, as they do not experience any odour issues or offsite impacts. We would encourage DETSI to undertake a site visit to the Wogamia or Stotts Creek facilities to observe SOILCo's operations and how controlled these sites are.

Results of the sensitivity analysis demonstrate the low odour risk of the facility.

Table 2 **Sensitivity analysis results**

Receptor ID	Receptor sensitive? y/n	Predicted odour concentration (OU)					
		Conservative reference site emission rate			Wogamia Emission Rate		
		Base case	200% increase in ASP emissions	300% increase in ASP emissions	Base case	200% increase in ASP emissions	300% increase in ASP emissions
R1	n	3.9	5.0	6.0	3.7	4.4	5.1
R2	n	2.4	2.9	3.4	2.2	2.6	2.9
R3	n	2.3	2.9	3.5	2.2	2.6	3.0
R4	n	1.3	1.6	1.9	1.2	1.5	1.7
R5	y	0.4	0.4	0.5	0.4	0.4	0.4
R6	y	1.3	1.7	2.1	1.2	1.5	1.7
R7	n	0.7	0.8	1.0	0.7	0.7	0.9
R8	n	0.6	0.8	1.0	0.6	0.7	0.9
R9	n	1.0	1.2	1.4	0.9	1.1	1.3
R10	y	1.2	1.5	1.9	1.0	1.3	1.6

Item 9: Odour monitoring period

Request:

The proponent is requested to:

- confirm what time of year monitoring was undertaken to determine the odour emission rates used in the AQIA and
- if monitoring was undertaken in winter, provide an updated AQIA that assess worst-case impact for the facility during summer.

Response:

Additional information regarding timing of odour monitoring has been added to Appendix C of the Air Quality Impact Assessment.

Item 10: Odour emission rate calculations

Request:

The proponent is requested to:

- review the OERs that have been calculated and confirm their accuracy
- where required, provide an updated emission inventory and dispersion modelling results that accurately represent the proposed activities and potential extent of impact.

Response:

OER's have been reviewed and emission rates updated. Modelling results have also been updated.

Item 11: Emission scaling factor

Request:

The proponent is requested to provide detailed information of how the emission scaling factors have been developed for each of the odour emission sources.

Response:

Additional clarity has been added to Appendix C regarding derivation of odour emission rates in the Air Quality Impact Assessment.

Item 12: Emissions during windrow turning

Request:

The proponent is requested to:

- a. review the SOER calculations for the turning of windrows to confirm their accuracy and update where required
- b. provide an updated emission inventory and dispersion modelling results that includes all potential odour emission sources.

Response:

The tables have been revised to emphasize that windrow turning emission factors are additive, on top of the base line emission factor. Windrow SOER calculations have been reviewed, tables have been updated for clarity.

Item 13: Shredding and screening emissions source

Request:

The proponent is requested to provide:

- a. a detailed summary of the emission source parameters to demonstrate how this odour source has been represented in the dispersion model
- b. an updated emission inventory and dispersion modelling results that accurately represent the proposed activities and potential extent of impact.

Response:

Added additional table to Appendix C with source parameters in the Air Quality Impact Assessment.

Item 14: Decontamination and material processing emission source

Request:

The proponent is requested to provide:

- a. a detailed summary of the emission source parameters to demonstrate how this odour source has been represented in the dispersion model
- b. an updated emission inventory and dispersion modelling results that includes all potential odour emission sources.

Response:

Added detail to emission parameters and inventory as seen in Appendix C in the Air Quality Impact Assessment.

Item 15: Animal manure odour emissions

Request:

The proponent is requested to provide:

- a. an updated AQIA that includes the receipt and storage of animal manure as an odour emission source
- b. an updated site plan that identifies the location for the receipt and storage of manure

- c. the proposed storage method (covered, within a three walled bunker etc.) and approximately how long manure will be stored prior to being blended with the compost
- d. the proposed mitigation measures to ensure odours are minimised from the receipt, storage and blending of manure with compost.

Response:

Added manure to dispersion modelling scenarios and emissions inventory in the Air Quality Impact Assessment.

Item 16: CALMET Grid Origin and Domain

Request:

The proponent is requested to review the modelling files and confirm the CALMET grid origin and domain size that has been included in the modelling.

Response:

Amended CALMET modelling parameters in Appendix A-3 as requested in the Air Quality Impact Assessment.

Item 17: Modelling grid resolution

Request:

The proponent is requested to:

- a. update the meteorological and dispersion modelling grid to be a finer resolution (e.g. 100m)
- b. provide an amended AQIA report with the revised results.

Response:

Added to Air Quality Impact Assessment as requested.

Item 18: Model generated methodology

Request:

The proponent is requested to provide a detailed analysis of the CALMET generated meteorological dataset (e.g. time of day and seasonal windroses, stability class, mixing height etc.) and an assessment against the Beaudesert BoM station data.

Response:

Analysis of CALMET data has been added to Appendix A as requested in the Air Quality Impact Assessment.

Item 19: Dispersion modelling parameters

Request:

The proponent is requested to provide:

- a. a summary of the CALPUFF dispersion model parameters that have been selected
- b. details of how each of the emission sources are represented in the dispersion model
- c. coordinates and figures that show the locations of the CALPUFF emission sources.

Response:

CALPUFF dispersion modelling parameters have been added as requested to Appendix B in the Air Quality Impact Assessment.

Item 20: Cumulative odour assessment***Request:***

The proponent is requested to provide an assessment of cumulative odour impacts either through a dispersion modelling exercise or field odour surveys.

Response:

Odour dispersion modelling demonstrates odour from the Project is predicted to be below the relevant criteria. Odour surveys did not identify odour of similar character to the Project at nearby sensitive receptors.

Particulate matter**Item 21: Particulate matter risk*****Request:***

The proponent is requested to provide potential mitigation measures to control particulate matter emissions associated with windrow turning activities.

Response:

Additional mitigation measure has been added to the Air Quality Impact Assessment, recommending spraying to control particulate matter during windrow turning.

Closing

I trust that the above information addresses all the required information outlined in the OCG's information request, is to the OCG's satisfaction, and sufficient to allow assessment of the development application to proceed to the next phase. Should you have any queries relating to this response, please do not hesitate to contact the undersigned.

Regards,

Sarah Wilson

Team Leader and Technical Director - Planning

+61 7 54138133

sarah.wilson@ghd.com