

## DRAWING SHEET INDEX

## NOTES

SHEET	TITLE
1	SHEET INDEX, NOTES & PILE DEPTH INVESTIGATION
2	BARRIER SET OUT PLAN
3	RAIL, CAMBER AND SPLICE DETAILS
4	RHS-BACKED W-BEAM FOOTING AND RAIL CONNECTION DETAILS
5	RHS-BACKED THRIE-BEAM FOOTING AND RAIL CONNECTION DETAILS
6	APPROACH POST DETAILS
7	TYPICAL BACKING RAIL DETAILS

BARRIER PERFORMANCE LEVEL

1. A RHS-BACKED W-BEAM CAN BE USED FOR SITES WITH A COMMERCIAL VEHICLE (CV) CONTENT LESS THAN OR EQUAL TO 15%. FOR SITES WITH A CV CONTENT GREATER THAN 15% A RHS-BACKED THRIE-BEAM CAN BE USED.

### PILE DEPTH INVESTIGATION

1. TO DETERMINE THE PILE DEPTH REQUIRED FOR THE BOX BEAM BARRIER, A MINOR SITE SPECIFIC GEOTECHNICAL INVESTIGATION IS REQUIRED. THE TYPICAL REQUIREMENTS FOR THE INVESTIGATION ARE OUTLINED BELOW:
  - a. CARRY OUT DESKTOP STUDY, WHICH INCLUDES A DIAL BEFORE YOU DIG ASSESSMENT AND REVIEWING ANY DRAWINGS FOR THE EXISTING STRUCTURE TO ENSURE NO POTENTIAL CLASHES FOR THE NEW PILES WITH THE EXISTING STRUCTURE.
  - b. PERFORM DYNAMIC CONE PENETRATION TEST (DCP) AT EVERY PILE LOCATION UP TO 2M DEEP OR REFUSAL (TRAFFIC CONTROL AND SERVICE LOCATION MAY BE REQUIRED PRIOR TO DCP TESTING)
  - c. MEASURE EMBANKMENT SLOPE WITHIN 1M OF EACH SIDE OF THE PILE
  - d. OBSERVATIONS OF THE IMMEDIATE EXPOSED GEOLOGICAL SITE CONDITIONS NEED TO BE UNDERTAKEN
2. WHERE SIGNIFICANT VARIATIONS IN TOPOGRAPHY ARE NOTED (I.E. LEVEL CHANGES, DIFFERENCES IN DEPTH OF FILL ETC.) THEN AN ADDITIONAL GEOTECHNICAL INVESTIGATION MAY BE REQUIRED; THIS REQUIREMENT TO BE CONFIRMED WITH SITE ENGINEER IN CONJUNCTION WITH THE DEPARTMENT'S REPRESENTATIVE
3. SELECT PILE DEPTH FROM TABLE 1 OR TABLE 2 AS APPROPRIATE
4. CONTACT THE DEPARTMENT'S TECHNICAL SERVICES SECTION SHOULD THERE BE ANY QUESTIONS OR IF A SPECIAL SITE SPECIFIC DESIGN IS REQUIRED.

GENERAL

1. NOTES TO BE READ IN CONJUNCTION WITH THE DEPARTMENT'S SPECIFICATIONS.
2. PRIOR TO FABRICATION AND CONSTRUCTION, CHECK ON SITE LENGTH OF RAILS, POST HEIGHT AND POSITIONS.
3. SERVICES TO BE LOCATED BEFORE INSTALLATION OF NEW BARRIER, CARE SHOULD BE TAKEN WHEN EXCAVATING NEAR SERVICES, DIG BY HAND IF NECESSARY AND OR USE NON-DESTRUCTIVE EXCAVATION.
4. WHERE REQUIRED REMOVE VEGETATION ON APPROACHES TO ENSURE 10m IN FRONT OF TERMINAL IS CLEAR AND 1m BEHIND BARRIER IS FREE FROM OBSTRUCTION. VEGETATION REMOVAL TO BE APPROVED BY THE DEPARTMENT'S PROJECT MANAGER
5. WHERE REQUIRED BACK FILL WITH CLSM TO MATCH EXISTING SHOULDER LEVEL TO GIVE A FLAT TRAFFICABLE SURFACE TO PREVENT FURTHER EROSION IN THE FUTURE.
6. PILES TO BE INSTALLED A MINIMUM 1m FROM END OF STRUCTURE - CHECK EXISTING DRAWINGS TO AVOID ANY CLASHES WITH ABUTMENT FOOTING

## MATERIALS

1. PLATES TO BE GRADE 250 STEEL TO AS 3678.
2. ROLLED HOLLOW SECTIONS (RHS) TO BE GRADE C350 TO AS 1163.
3. UNIVERSAL COLUMN SECTIONS (UC) TO BE GRADE C300 STEEL TO AS 3679.
4. BOLTS (PROPERTY CLASS 8.8), NUTS AND WASHERS TO AS 1252.  
THREADED ROD TO BE CLASS 8.8.
5. CUPHEAD BOLTS (PROPERTY CLASS 4.6) TO AS 1390, WITH NUTS TO AS 1112.
6. ALL NUTS TAPPED OVERSIZE TO SUIT GALVANIZING.
7. REINFORCEMENT BARS SHALL BE D500N AND D500L(RW) IN ACCORDANCE WITH AS/NZS 4671.
8. STANDARD HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH AS 3600.
9. CONCRETE SHALL BE GRADE N32. COVER AS SHOWN ON DRAWINGS.

## FABRICATION

1. DIMENSIONS SHOWN ON DRAWINGS ARE SPECIFIED AT 20° C. TOLERANCE ON DIMENSIONS SHALL BE 2mm. HOLES SHALL BE WITHIN 2mm OF THE POSITIONS AS DIMENSIONED.
2. SLOTTED HOLES MAY BE PUNCHED, CUT OR DRILLED.
3. ALL WELDING TO BE SP CATEGORY TO AS 1554.1 AND THE SPECIFICATION. ALL WELDS SHALL BE PREQUALIFIED IN ACCORDANCE WITH CLAUSE 4.3 AND SUBJECT TO VISUAL INSPECTION OF WORK IN ACCORDANCE WITH CLAUSE 7.3 OF AS 1554.1.
4. ALL SHARP EDGES AND BURRS RESULTING FROM PUNCHING, CUTTING AND DRILLING SHALL BE REMOVED PRIOR TO GALVANIZING.

### PROTECTIVE TREATMENT

1. ALL COMPONENTS INCLUDING RODS, BOLTS, NUTS AND WASHERS TO BE HOT DIP GALVANIZED IN ACCORDANCE WITH AS/NZS 4680 AND AS 1214.
2. AFTER ERECTION ANY DAMAGE TO THE GALVANIZING SHALL BE CLEANED IN ACCORDANCE WITH AS 1627 PART 1 OR 2 AND GIVEN TWO COATS OF ORGANIC RICH PAINT AS APPROVED UNDER APAS 29/16.

## INSTALLATION


1. VERIFY ON SITE POST LOCATIONS SHOWN ON THE DRAWING PRIOR TO BORING HOLES FOR POST FOOTINGS. PROVIDE 50mm MINIMUM GAP BETWEEN PILE/PILE SLAB AND BACK OF WINGWALL. FILL WITH COMPRESSIBLE FOAM.
2. CAST THE POST FOOTINGS.
3. INSTALL POSTS IN THE FOOTINGS AND ASSEMBLE BACKING RAIL, ADJUSTING TO CORRECT ALIGNMENT AND LEVEL.
4. TIGHTEN ALL NUTS.
5. INSTALL GUARD RAIL.
6. BRIDGE APPROACH GUARD RAIL GUARDFENCE TO BE INSTALLED IN ACCORDANCE WITH STANDARD DRAWING 4050, SHEETS 36 - 47.
7. ACCEPTED TERMINALS AS PER GD300 ARE TO BE INSTALLED TO MANUFACTURERS SPECIFICATIONS.
8. FOR HEIGHT OF GUARDRAIL SYSTEM ABOVE GROUND, REFER TO GD300 'APPROVED SAFETY BARRIER PRODUCTS' AND SUPPLIER'S PRODUCT MANUAL.

DCP (BLOW COUNT /100mm ROD PENETRATION)	DCP (LOWEST RESULT IGNORING TOP 200mm)	SLOPE OF SURFACE WITHIN 1M BEHIND PILE(V:H)						
		<1:5	1:5	1:4	1:3	1:2	1:1	>1:1
	>5	2500	2500	2500	2600	2800	3300	SPECIAL DESIGN REQUIRED
	2-5	2700	3000	3000	3100	3300	3800	
	1	3500	3800	3800	3900	4100	4600	
	<1	SPECIAL DESIGN REQUIRED						

TABLE 1: STANDARD PILE FOOTING DEPTH (A)

DCP (BLOW COUNT /100mm ROD PENETRATION)	DCP (LOWEST RESULT IGNORING TOP 200mm)	SLOPE OF SURFACE WITHIN 1M BEHIND PILE(V:H)						
		<1:5	1:5	1:4	1:3	1:2	1:1	>1:1
	>5	2500	2500	2500	2500	2600	2900	SPECIAL DESIGN REQUIRED
	2-5	2700	2900	2900	3000	3100	3400	
	1	3500	3700	3700	3800	3900	4200	
	<1	SPECIAL DESIGN REQUIRED						

TABLE 2: STANDARD 1200mm OFFSET PILE FOOTING DEPTH (A)

FILE	8. FOR HEIGHT OF GUARDRAIL SYSTEM ABOVE GROUND , REFER TO GD300 ' APPROVED SAFETY BARRIER PRODUCTS' AND SUPPLIER'S PRODUCT MANUAL.										<div>DESIGNED</div> <div>QUALIFICATION DATE: DD/MM/YYYY</div> <div>REVIEWER</div> <div>QUALIFICATION DATE: DD/MM/YYYY</div> <div>INDEPENDENT DESIGN CERTIFIER (IF REQUIRED)</div> <div>QUALIFICATION DATE: DD/MM/YYYY</div>			<div></div> <div>Government of South Australia</div> <div>Department for Infrastructure and Transport</div>		<div>STANDARD DRAWING</div> <div>RHS-BACKED W-BEAM AND RHS-BACKED THRIE-BEAM</div> <div>NOTES</div> <div>BOX BEAM BARRIER SYSTEM UP TO 12M SPAN</div>								
											DESIGNED: DU		DRAFTED: DU		ACCEPTED FOR USE: PHIL MOLLOY		ACCEPTANCE FORM KNET No.: 16234483		DRAWING No.: S-4082		SHEET No.: 1		AMEND No.: 0	
											CHECKED: DU		REVIEWED: DU		DATE: 15/07/2021				LATITUDE:		LONGITUDE:			