

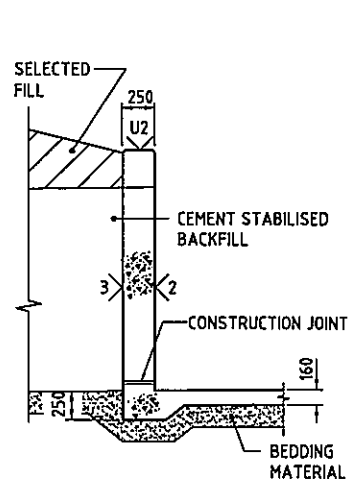
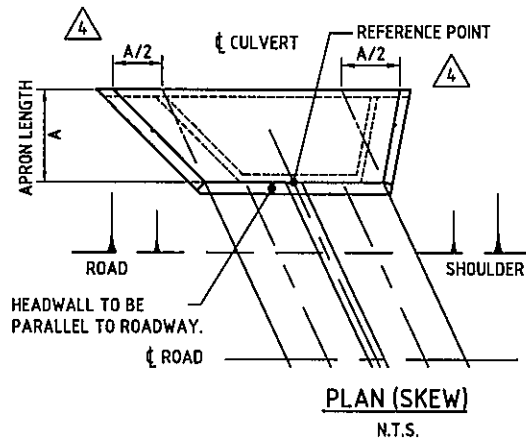
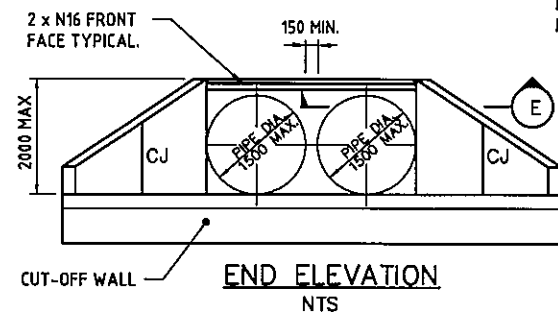
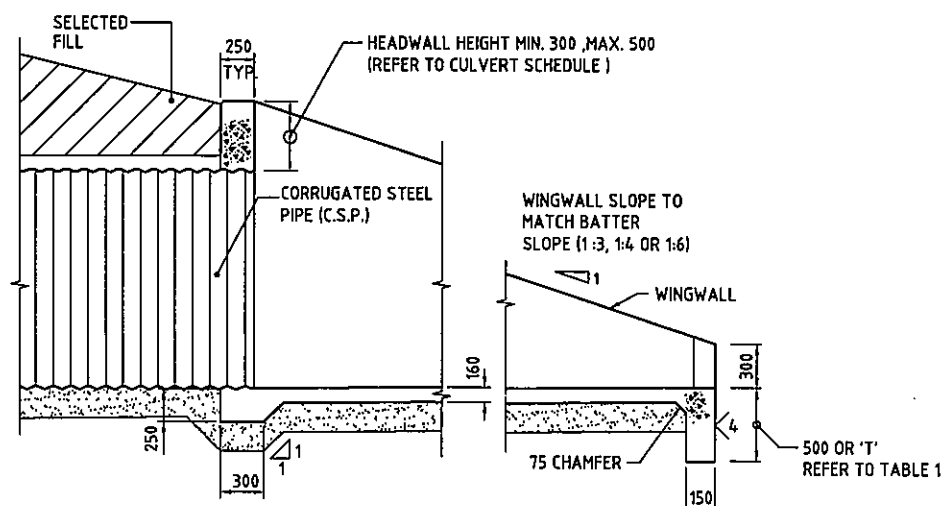
TABLE 1: ROCK PROTECTION DETAILS

CLASS ROCK	MIN THICKNESS (T)	MIN LENGTH (LOR)	ROCK SIZE (m)	ROCK MASS (Kg)	% OF ROCK LARGER THAN
FACING	500	3000	0.40 0.30 0.15	100 35 2.5	0 50 90
LIGHT	750	3000	0.55 0.40 0.20	250 100 10	0 50 90
1/4 TONNE	1000	5000	0.75 0.55 0.30	500 250 35	0 50 90
1/2 TONNE	1250	5000	0.90 0.70 0.40	1000 450 100	0 50 90

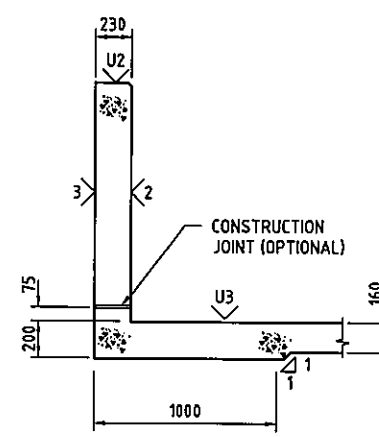
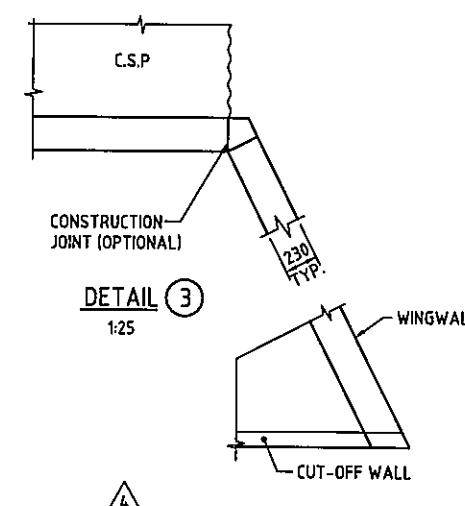
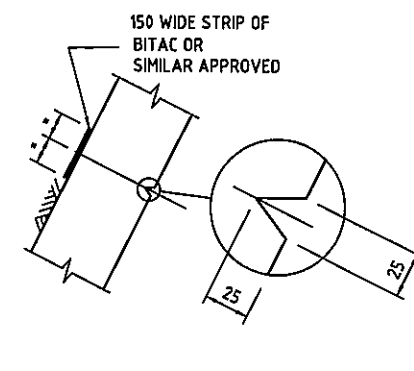
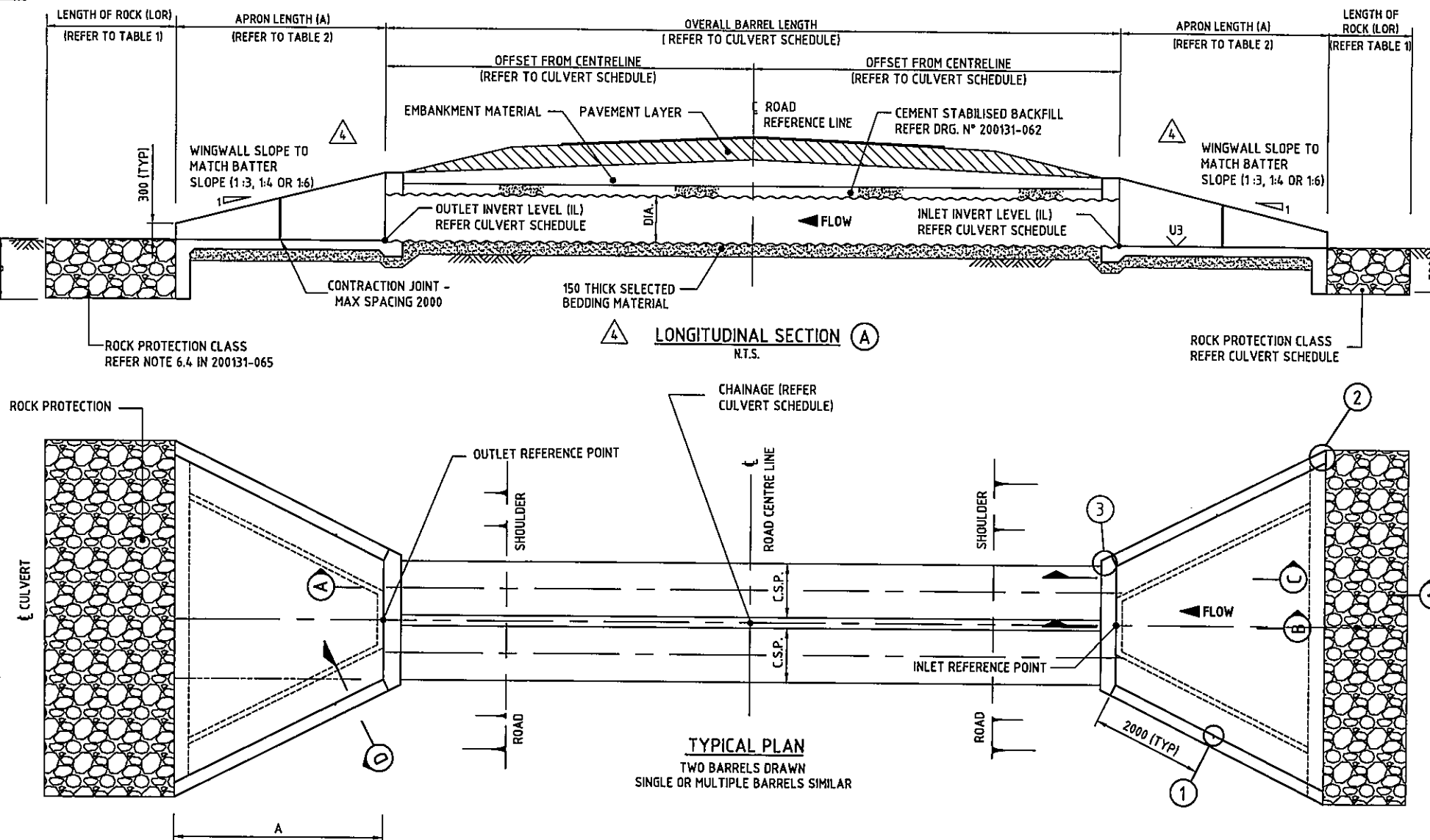
* ASSUMING A SPECIFIC GRAVITY OF 2.65 AND SPHERICAL SHAPE FOR ALL ROCK CLASS.

TABLE 2: APRON LENGTH TABLE
(BASED ON 1:4 BATTER SLOPE & STD. 300MM HEADWALL HEIGHT)

CULVERT DIA.	APRON LENGTH
≤ 450	1800
600	2400
750	3000
900	3600
1050	4200
1200	4800
1350	5400
1500	6000

SECTION (B)
N.T.S.

SECTIONAL ELEVATION (C)

SECTION (D)
1:20DETAIL (2)
1:25DETAIL (1) CONSTRUCTION JOINT
1:10TYPICAL PLAN
TWO BARRELS DRAWN
SINGLE OR MULTIPLE BARRELS SIMILAR

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRG. NO. 201631-065 AND 200131-066

No.	DESCRIPTION	APPROVED & DATE	No.	DESCRIPTION	APPROVED & DATE
3.	BATTER AND WINGWALL SLOPE AMENDED TO 1:4	T.A. FREEMAN 4.2.15	4.	MAXIMUM PIPE SIZE LIMITED TO 1500 DIA. ROAD SECTION AMENDED.	
2.	WINGWALL SLOPE CHANGED, APRON LENGTH TABLE UPDATED	T.A. FREEMAN 8.4.14		WINGWALL SLOPE & SPLAY VALUE AMENDED.	
1.	NAME ADDED TO DETAIL 1, MINOR EDITORIAL CHANGES TO NOTES.	R. GROVE 19.2.02		ROCK PROTECTION TABLE ADDED.	
				APRON LENGTH TABLE AMENDED.	
				TITLE OF DRAWING AMENDED.	

METADATA
GROUND SURVEY STANDARD:
DATE OF CAPTURE:
MAPPING SURVEY STANDARD:
DATE OF CAPTURE:
MAIN ROADS PROJECT ZONE:
HEIGHT DATUM:

Government of Western Australia
MAIN ROADS
Western Australia
TECHNOLOGY AND ENVIRONMENT DIRECTORATE
ROAD AND TRAFFIC ENGINEERING
WATERLOO CRESCENT
Telephone (08) 9323 4111
EAST PERTH 6004
Fax (08) 9323 4449

STANDARD DRAWING
C.S.P. CULVERT DETAILS
MAXIMUM PIPE DIAMETER 1500
GENERAL ARRANGEMENT WITH ENDWALLS
SHEET 1 OF 3

DESIGNED G. DE SILVA
DRAWN J. COOK/ K. KASIRI
DRAWING TYPE FILE NUMBER 67-08-52
DRAWING NUMBER 200131-064-4
VERIFIED J. KARPINSKI 19.12.02
APPROVED R. GROVE 19.12.02
LOCAL AUTHORITY 0601