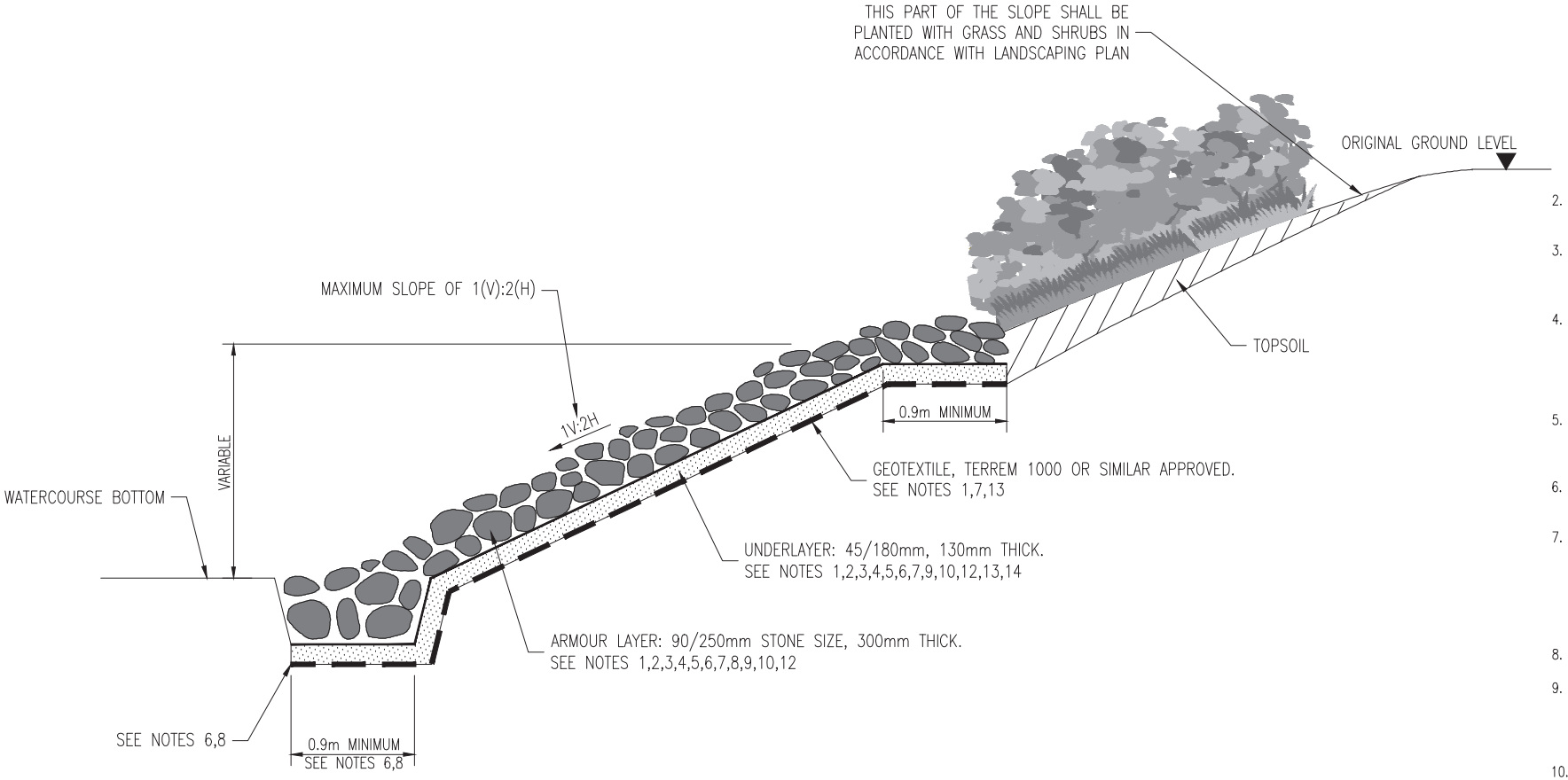
TII PUBLICATION NUMBER: CC-SCD-00550



REQUIREMENTS FOR ROCK ARMOUR			
	LOWER	UPPER	STANDARD
GRADINGS	SEE IS EN 13383-1:2002 and IS EN 13383-2:2013		
SHAPE	SEE IS EN 13383-1:2002 and IS EN 13383-2:2013		
PROPORTION OF CRUSHED OR BROKEN SURFACES	SEE IS EN 13383-1:2002 and IS EN 13383-2:2013		
PARTICLE DENSITY	2.5		IS EN 13383-1:2002 and -2:2013
PLASTICITY INDEX	NON PLASTIC		BS 1377:PART2
LOS ANGELES COEFFICIENT		50	CLAUSE 635
SLAKE DURABILITY	95%		CLAUSE 634
RESISTANCE TO WEAR	SEE IS EN 13383-1:2002 and IS EN 13383-2:2013		

NOTES :

1. THE DESIGNER SHALL TAKE INTO CONSIDERATION THE SITE SPECIFIC REQUIREMENTS AND MODIFY THIS RCD ACCORDINGLY. REFER TO GUIDANCE PROVIDED IN ESCARAMEIA, M, (1998), RIVER AND CHANNEL REVETMENTS – A DESIGN MANUAL, THOMAS TELFORD LIMITED ISBN 0 7277 2691 9 AND CIRIA, CUR, CETMEF, (2007), THE ROCK MANUAL. THE USE OF ROCK IN HYDRAULIC ENGINEERING, 2nd EDITION, C683, CIRIA, LONDON, MAY, RWP, ACKERS, JC, KIRBY, AM, (2002), MANNUAL ON SCOUR AT BRIDGES AND OTHER HYDRAULIC STRUCTURES, CSSI, CIRIA, LONDON. A RISK ASSESSMENT SHALL BE CARRIED OUT TO ASSESS THE REQUIREMENT FOR ROCK ARMOUR.
2. THE MINIMUM DIMENSIONS AND MAXIMUM SLOPE GRADIENT OUTLINED IN THIS RCD SHALL BE RETAINED BY THE DESIGNER IN THEIR DETAIL.
3. THIS RCD IS SUITABLE FOR MAXIMUM FLOW VELOCITIES OF 2.5M/S. THE DESIGNER IS REQUIRED TO DEMONSTRATE THAT THIS RCD IS SUITABLE FOR USE
4. ROCK ARMOUR SHALL BE HANDLED AND PLACED TO THE FULL LAYER THICKNESS IN ONE OPERATION SO THAT SEGREGATION IS MINIMISED AND THE GEOTEXTILE USED UNDER THE ROCK ARMOUR IS NOT DISTURBED AFTER THE INITIAL ROCK PLACEMENT.
5. ROCK ARMOUR PLACEMENT SHOULD BEGIN AT THE TOE TRENCH AND PROGRESS UP THE SLOPE MAINTAINING THE DESIRED ROCK PLACEMENT THICKNESS AS THE WORK PROCEEDS.
6. IF THIS RCD IS NOT SUITABLE FOR USE, THE DESIGNER IS REQUIRED TO PROVIDE A SOLUTION TAKING IN TO ACCOUNT OF NOTES 7–14.
7. THE DESIGNER SHALL SPECIFY THE GRADING AND STONE SIZE TAKING INTO ACCOUNT THE SPECIFIC SITE CONDITIONS, THE HYDRAULIC CONDITIONS AND WATER LEVELS. A FILTER LAYER IS REQUIRED BETWEEN THE COARSE COVER LAYER AND THE FOUNDATION. GEOTEXTILES ARE TO BE USED AS PART OF THE FILTERING SYSTEM.
8. THE DESIGN OF THE TOE SHALL TAKE INTO CONSIDERATION POTENTIAL SCOUR.
9. DETERMINATION OF THE STABILITY SHALL BE CARRIED OUT FOR THE DIFFERENT DESIGN SITUATIONS SUCH AS HYDRAULIC LOADS INDUCED BY FLOOD OR NAVIGATION OR OTHER TYPES OF LOADS.
10. DIMENSIONING OF COVER LAYERS AND FILTERS SHALL TAKE INTO CONSIDERATION WIND AND SHIP–INDUCED WAVES AND CURRENTS WHERE APPLICABLE.
11. THE DESIGNER SHALL ENSURE THAT THE EARTHWORKS ARE DESIGNED IN ACCORDANCE WITH IS EN 1997:PART 1.
12. THE STONES SHALL PREFERABLY BE ANGULAR AND REGULAR IN SHAPE RATHER THAN ROUNDED.
13. THE DESIGNER SHALL TAKE INTO ACCOUNT SITE SPECIFIC REQUIREMENTS (E.G. SOIL TYPE, GRAIN SIZE, INSTALLATION DAMAGE, ROCK ARMOUR SIZE ETC.) WHEN SPECIFYING THE GEOTEXTILE.
14. THE UNDERLAYER NEEDS TO BE APPROPRIATELY DESIGNED TO PROTECT THE IN–PLACE BANK MATERIAL AND REMAIN BENEATH THE OUTER ROCK ARMOUR.

NOT TO SCALE

NRA An tÚdarás um Bóithre Náisiúnta National Roads Authority

ROAD CONSTRUCTION DETAILS

DRAINAGE

Issue	Date
P4	03/15
P3	01/09
P2	10/07

ROCK ARMOUR: SCOUR PROTECTION

Drawing No. RCD/ 500/50