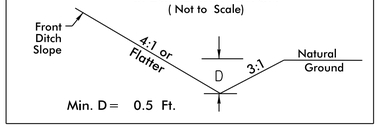
PROJECT REFERENCE NO.	SHEET NO.
R-2519B	2D-1
R/W SHEET NO.	

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20329 ENGINEER H. A. BILLINGS

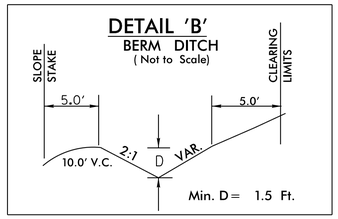
DocuSigned by: Henry A. Billings 9/19/2014

DETAIL 'A'
SPECIAL CUT DITCH
(Not to Scale)



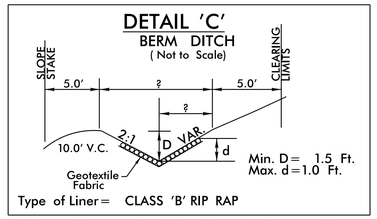
FROM STA. 19+00 TO STA. 21+00 –L– RT

DETAIL 'B'
BERM DITCH
(Not to Scale)



FROM STA. 18+00 TO STA. 18+50 –L– LT

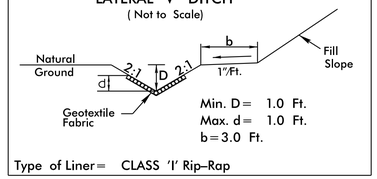
DETAIL 'C'
BERM DITCH
(Not to Scale)



Type of Liner= CLASS 'B' RIP RAP

FROM STA. 18+50 TO STA. 19+50 –L– LT

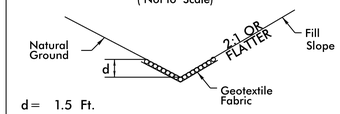
DETAIL 'D'
LATERAL 'V' DITCH
(Not to Scale)



Type of Liner= CLASS 'I' Rip–Rap

FROM STA. 21+50 TO STA. 23+25 –L– LT

DETAIL 'E'
TOE PROTECTION
(Not to Scale)

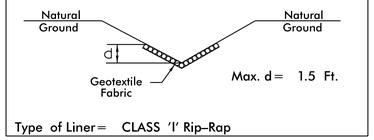


d= 1.5 Ft.

Type of Liner= CLASS 1 Rip–Rap

FROM STA. 22+10 TO STA. 22+70 –L– RT

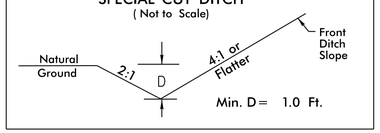
DETAIL 'F'
EXISTING DITCH
(Not to Scale)



Type of Liner= CLASS 'I' Rip–Rap

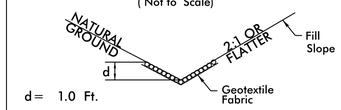
FROM STA. 22+70 TO STA. 23+80 –L– RT

DETAIL 'G'
SPECIAL CUT DITCH
(Not to Scale)



FROM STA. 71+00 TO STA. 71+60 –L– LT
FROM STA. 12+50 TO STA. 12+75 –Y38– RT
FROM STA. 13+70 TO STA. 14+30 –DR3– RT
FROM STA. 12+00 TO STA. 12+50 –Y31– LT

DETAIL 'H'
TOE PROTECTION
(Not to Scale)

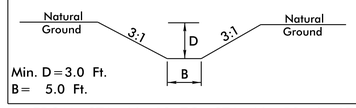


d= 1.0 Ft.

Type of Liner= Class 'B' Rip–Rap

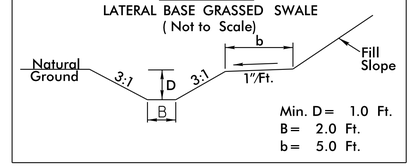
FROM STA. 52+80 TO STA 53+50 –L– RT
FROM STA. 58+50 TO STA. 59+00 –L– RT
FROM STA. 91+50 TO STA. 92+00 –L– LT
FROM STA. 98+98 TO STA. 99+52 –L– LT
FROM STA. 114+50 TO STA. 115+00 –L– LT
FROM STA. 139+00 TO STA. 140+50 –L– LT
FROM STA. 161+00 TO STA. 161+50 –L– LT
FROM STA. 276+00 TO STA. 276+50 –L– LT
FROM STA. 283+50 TO STA. 284+00 –L– LT
FROM STA. 282+00 TO STA. 284+50 –L– RT
FROM STA. 10+80 TO STA. 11+80 –Y23A– LT
FROM STA. 10+50 TO STA. 13+00 –DR2– RT
FROM STA. 10+50 TO STA. 13+50 –DR2– LT

DETAIL 'I'
STANDARD BASE DITCH
(Not to Scale)



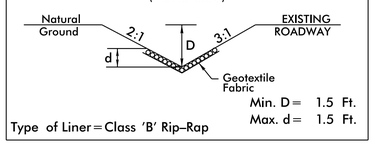
FROM STA. 46+10 TO STA. 46+50 –L– LT

DETAIL 'J'
LATERAL BASE GRASSED SWALE
(Not to Scale)



FROM STA. 46+50 TO STA. 49+50 –L– LT

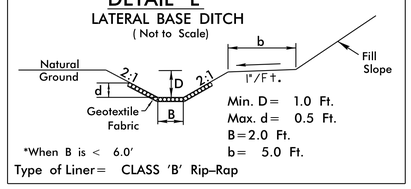
DETAIL 'K'
STANDARD 'V' DITCH
(Not to Scale)



Type of Liner=Class 'B' Rip–Rap

FROM STA. 12+92 TO STA. 15+20 –Y1– LT

DETAIL 'L'
LATERAL BASE DITCH
(Not to Scale)

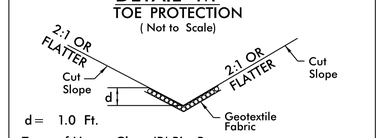


*When B is < 6.0'

Type of Liner= CLASS 'B' Rip–Rap

FROM STA. 49+50 TO STA. 50+50 –L– LT

DETAIL 'M'
TOE PROTECTION
(Not to Scale)

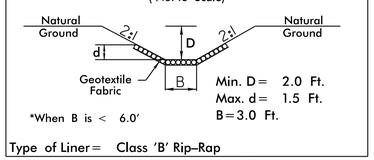


d= 1.0 Ft.

Type of Liner=Class 'B' Rip–Rap

FROM STA. 48+00 TO STA. 51+50 –L– RT

DETAIL 'N'
STANDARD BASE DITCH
(Not to Scale)

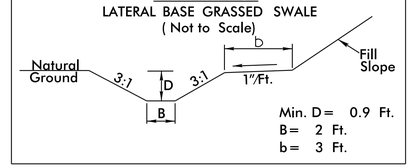


*When B is < 6.0'

Type of Liner= Class 'B' Rip–Rap

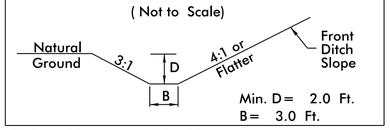
STA. 52+80 –L– LT

DETAIL 'O'
LATERAL BASE GRASSED SWALE
(Not to Scale)



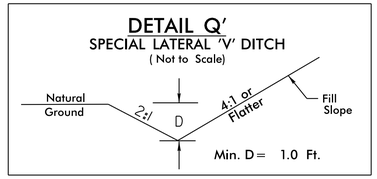
FROM STA. 52+80 TO STA. 54+50 –L– LT

DETAIL 'U'
SPECIAL LATERAL BASE GRASSED SWALE
(Not to Scale)



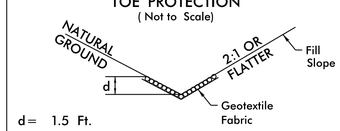
FROM STA. 9+85 TO STA. 13+00 –Y4– RT

DETAIL 'Q'
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM STA. 224+00 TO STA. 225+50 –L– LT

DETAIL 'R'
TOE PROTECTION
(Not to Scale)

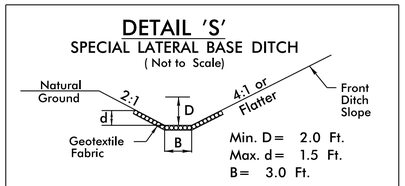


d= 1.5 Ft.

Type of Liner= Class 'I' Rip–Rap

FROM STA. 59+00 TO STA. 60+00 –L– RT
FROM STA. 99+00 TO STA. 99+50 –L– LT

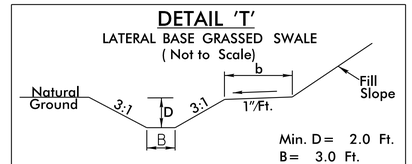
DETAIL 'S'
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Type of Liner= CLASS 'B' Rip–Rap

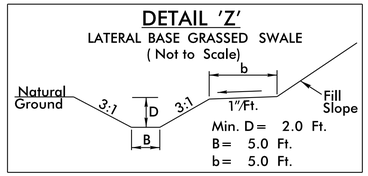
FROM STA. 43+00 TO STA. 43+50 –L– LT
FROM STA. 204+50 TO STA. 207+00 –L– RT

DETAIL 'T'
LATERAL BASE GRASSED SWALE
(Not to Scale)



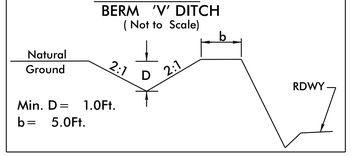
FROM STA. 13+00 TO STA. 13+72 –Y4– RT

DETAIL 'Z'
LATERAL BASE GRASSED SWALE
(Not to Scale)



FROM STA. 112+00 TO STA. 119+00 –L– RT
FROM STA. 319+80 TO STA. 321+80 –L– LT

DETAIL 'W'
BERM 'V' DITCH
(Not to Scale)

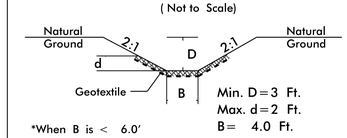


FROM STA. 194+50 TO STA. 195+80 –L– RT
FROM STA. 216+50 TO STA. 219+00 –L– RT
FROM STA. 227+50 TO STA. 232+50 –L– LT
FROM STA. 235+57 TO STA. 240+00 –L– LT
FROM STA. 258+00 TO STA. 259+00 –L– LT
FROM STA. 284+40 TO STA. 285+20 –L– LT
FROM STA. 296+50 TO STA. 298+00 –L– LT
FROM STA. 10+50 TO STA. 12+00 –Y20– LT

DETAIL 'X'
DRY DETENTION BASIN
SEE DETAIL SHEET 2D–4

DETAIL 'V'
DRY DETENTION BASIN
SEE DETAIL SHEET 2D–4

DETAIL X2
STANDARD BASE DITCH
(Not to Scale)

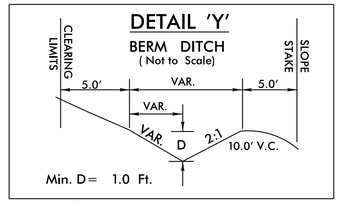


*When B is < 6.0'

Type of Liner= Class B Rip–Rap

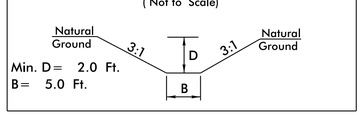
FROM STA. 11+20 TO STA. 11+51 –Y31– RT

DETAIL 'Y'
BERM DITCH
(Not to Scale)



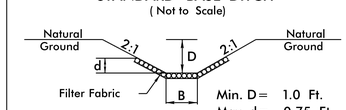
FROM STA. 91+50 TO STA. 96+50 –L– RT
FROM STA. 410+00 TO STA. 412+50 –L– LT
FROM STA. 11+50 TO STA. 12+00 –Y8– LT

DETAIL 'AA'
STANDARD BASE DITCH
(Not to Scale)



FROM STA. 119+50 TO STA. 121+50 –L– RT

DETAIL 'AB'
STANDARD BASE DITCH
(Not to Scale)

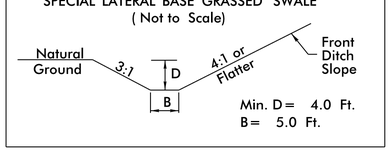


*When B is < 6.0'

Type of Liner= CLASS II Rip–Rap

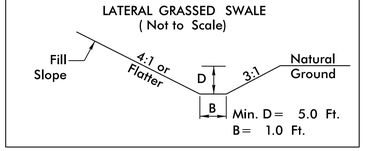
FROM STA. 121+50 TO STA. 121+75 –L– RT

DETAIL 'AC'
SPECIAL LATERAL BASE GRASSED SWALE
(Not to Scale)



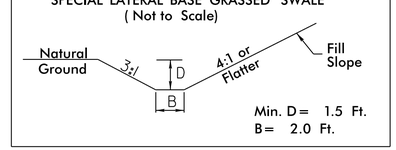
FROM STA. 124+50 TO STA.127+00 –L– RT

DETAIL 'AC–C'
LATERAL GRASSED SWALE
(Not to Scale)



FROM STA. 57+60 TO STA. 58+50 –L– RT

DETAIL 'AD'
SPECIAL LATERAL BASE GRASSED SWALE
(Not to Scale)



FROM STA. 135+75 TO STA. 139+00 –L– LT
FROM STA. 350+50 TO STA. 354+50 –L– RT

8/17/99

17-SEP-2014 10:40
R:\Roadway\Proj\2519b_det_ditches.dgn
$$$$USERNAME$$$$