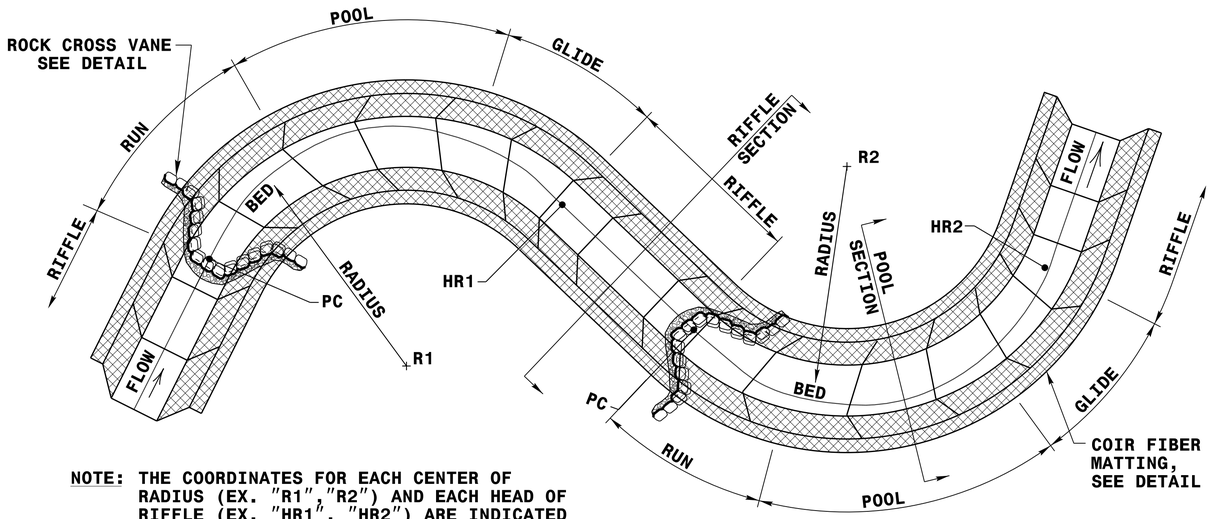
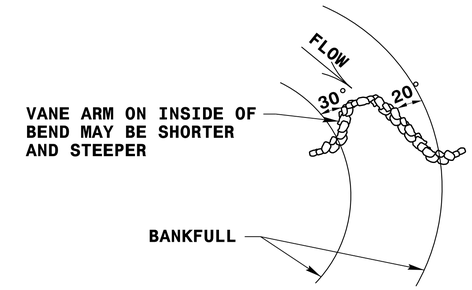
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-3615B | NS-4 |
| R/W SHEET NO. | |

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 012575 ENGINEER Paul F. Fisher
1/6/2015
DocuSigned by: Paul Fisher

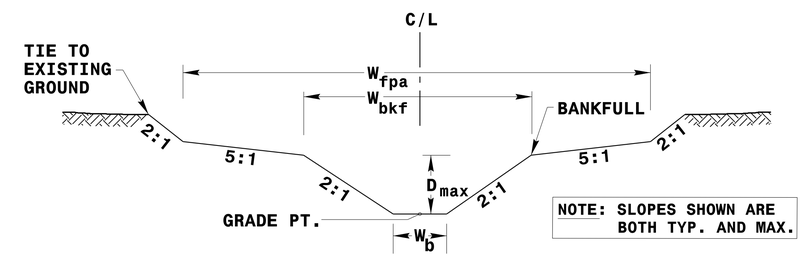



NOTE: THE COORDINATES FOR EACH CENTER OF RADIUS (EX. "R1","R2") AND EACH HEAD OF RIFFLE (EX. "HR1", "HR2") ARE INDICATED ON THE "PROPOSED STREAM CENTERLINE TRAVERSE" SHEETS.

## TYPICAL PLAN

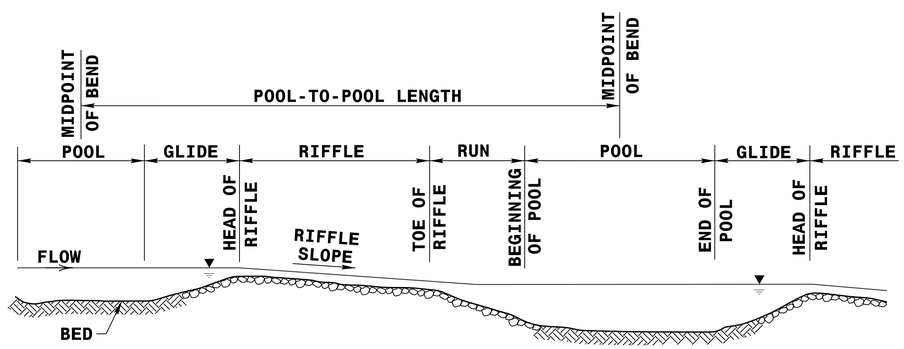



## CROSS VANE CONSTRUCTION IN MEANDER-BEND PLAN VIEW

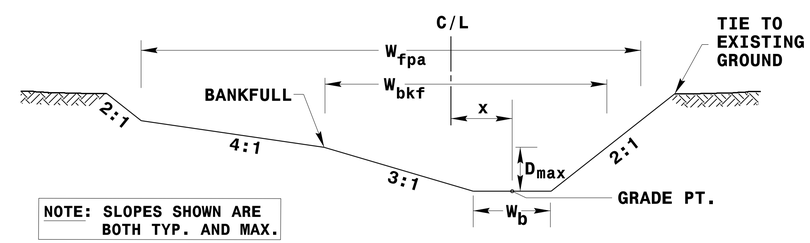



NOTE: SLOPES SHOWN ARE BOTH TYP. AND MAX.

## TYPICAL RIFFLE SECTION WITH BANKFULL BENCH




## TYPICAL PROFILE FOR ARMORED RIFFLE SECTION




NOTE: SLOPES SHOWN ARE BOTH TYP. AND MAX.

## TYPICAL POOL SECTION WITH BANKFULL BENCH

### CROSS SECTION DIMENSIONS

| REACH | RIFFLE | | | | | POOL | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | $W_{bkf}$ | $D_{max}$ | $W_b$ | $W_{fpa}$ | W/D Ratio | $W_{bkf}$ | $D_{max}$ | $W_b$ | $W_{fpa}$ | x |
| #1 | 12.3′ | 1.20′ | 7.5′ | 24.3′ | 12.7 | 12.5′ | 2.5′ | 0 | 24.0′ | 3.2′ |
| #2 | 13.4′ | 1.35′ | 8.0′ | 26.9′ | 12.5 | 14.0′ | 2.8′ | 0 | 27.0′ | 3.6′ |

ABBREVIATIONS:

R = RADIUS POINT
HR = HEAD OF RIFFLE
W/D = WIDTH/DEPTH
$W_{bkf}$ = BANKFULL WIDTH
$D_{max}$ = MAXIMUM BANKFULL DEPTH
$W_b$ = BOTTOM WIDTH
$W_{fpa}$ = FLOOD PRONE AREA WIDTH
x = CENTERLINE OFFSET

# CHANNEL TYPICAL DETAIL

NOT TO SCALE

NATURAL STREAM DESIGN
CHANNEL TYPICAL DETAIL

5/14/99
06-JAN-2015 07:00
Image:NatStrmDesign 2014\ns-3_to_ns-10 2014.dgn
$$$$USERNAME$$$$