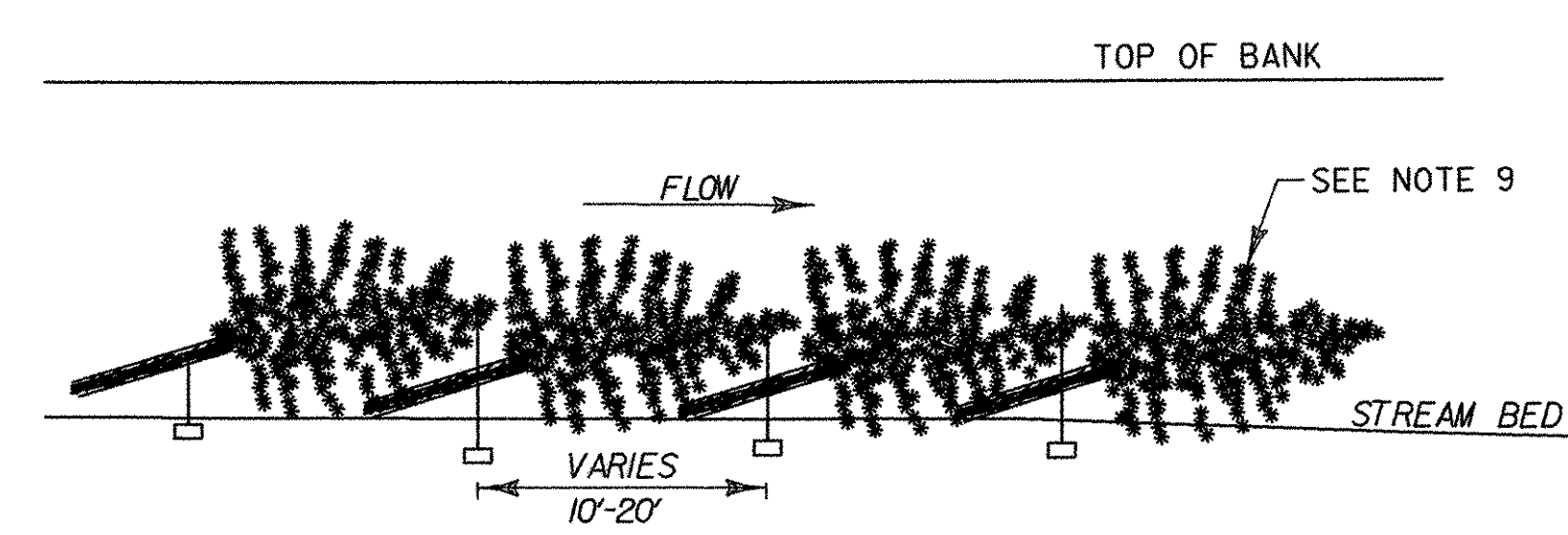
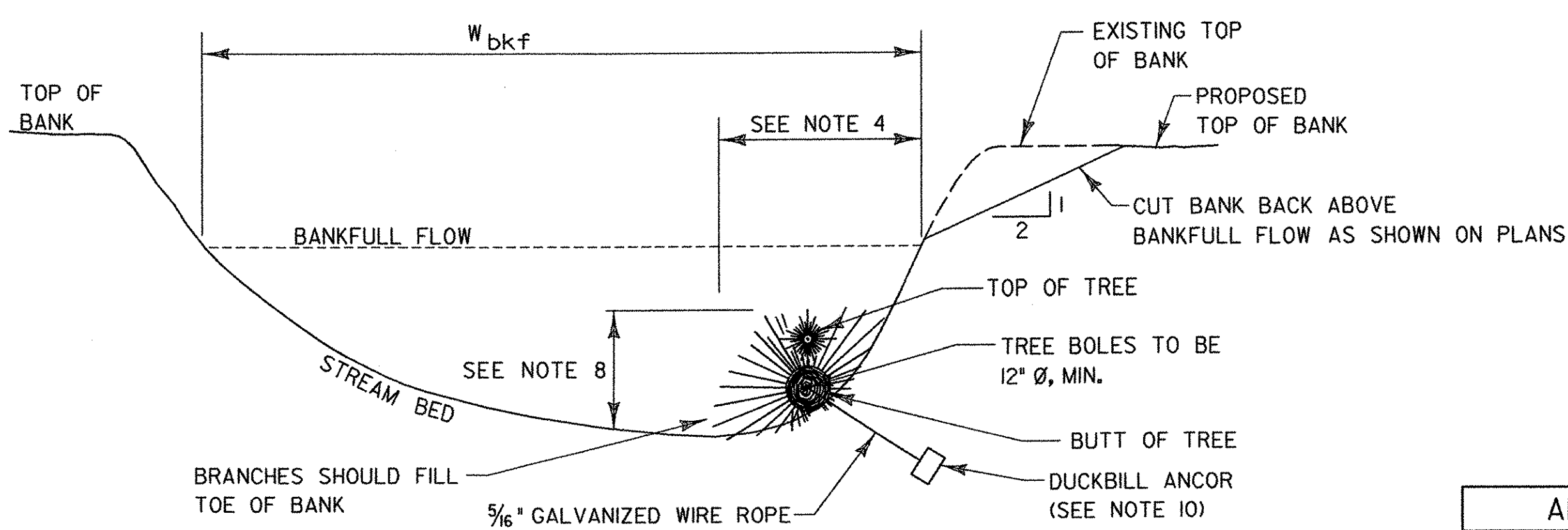


**PLAN**



**SECTION A-A**

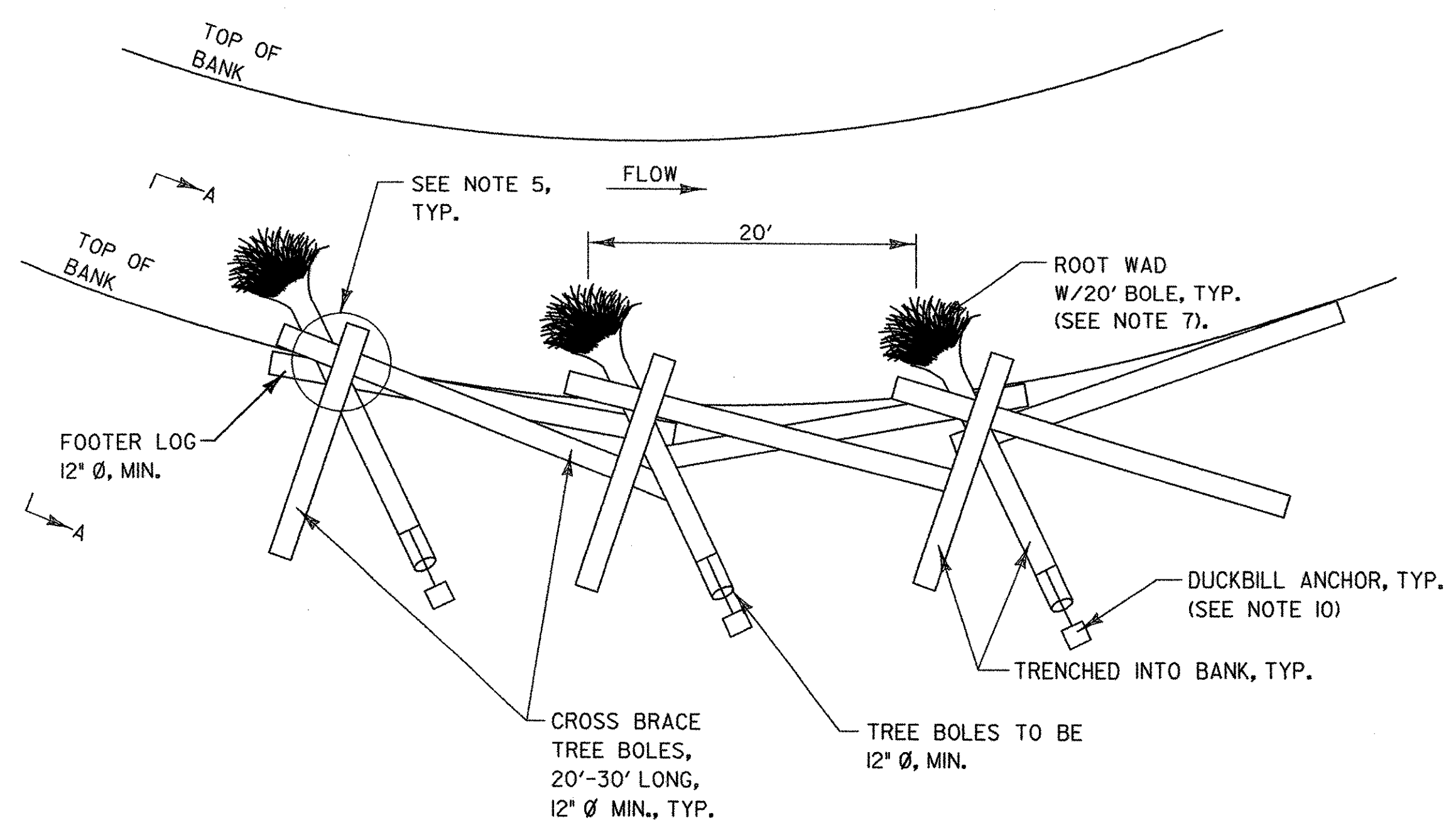


**SECTION B-B**

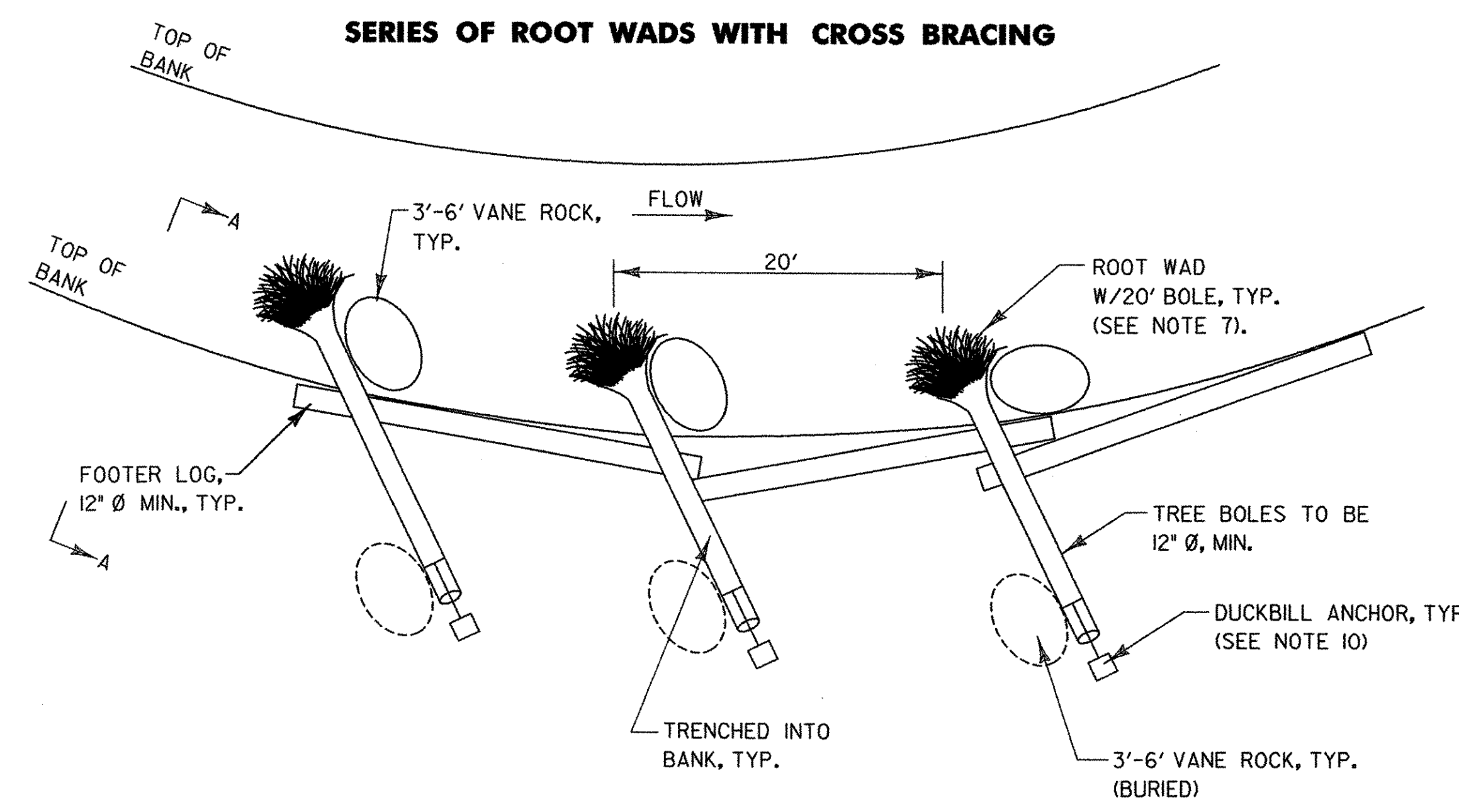
**TREE REVETMENT**  
N.T.S.

| APPROXIMATE QUANTITIES           |       |
|----------------------------------|-------|
| <b>TREE REVETMENT</b>            |       |
| 12" DIAMETER TREE (10'-20' LONG) | 4 EA  |
| 5/16" GALVANIZED WIRE ROPE       | 40 LF |
| DUCKBILL ANCHOR                  | 4 EA  |
| UNCLASSIFIED CHANNEL EXCAVATION  | 10 CY |

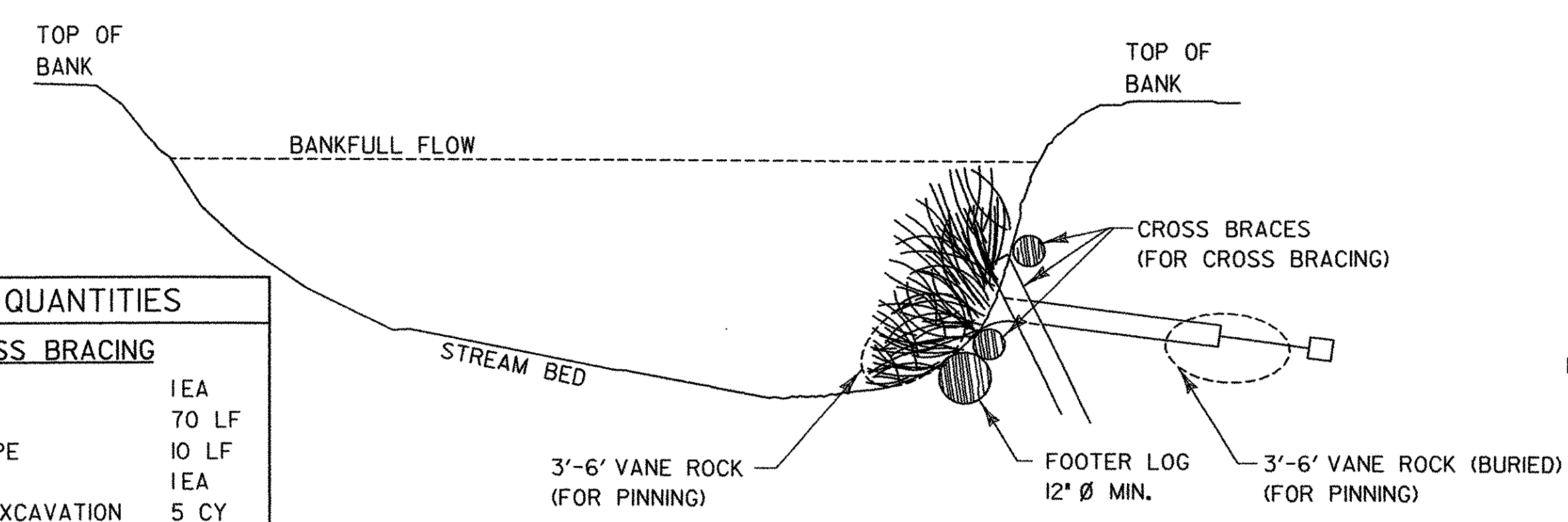
| APPROXIMATE QUANTITIES             |       |
|------------------------------------|-------|
| <b>ROOT WAD WITH CROSS BRACING</b> |       |
| ROOT WAD WITH BOLE                 | 1 EA  |
| 12" DIAMETER LOGS                  | 70 LF |
| 5/16" GALVANIZED WIRE ROPE         | 10 LF |
| DUCKBILL ANCHOR                    | 1 EA  |
| UNCLASSIFIED CHANNEL EXCAVATION    | 5 CY  |
| <b>ROOT WAD WITH PINNING</b>       |       |
| ROOT WAD WITH BOLE                 | 1 EA  |
| 12" DIAMETER LOGS                  | 20 LF |
| STONE FILL, TYPE IV (MOD.)         | 7 CY  |
| 5/16" GALVANIZED WIRE ROPE         | 10 LF |
| DUCKBILL ANCHOR                    | 1 EA  |
| UNCLASSIFIED CHANNEL EXCAVATION    | 5 CY  |



**SERIES OF ROOT WADS WITH CROSS BRACING**



**SERIES OF ROOT WADS WITH PINNING**



**SECTION A-A**

**ROOT WAD**  
N.T.S.

**NOTES:**

- FOR BANKFULL WIDTH AND OTHER DESIGN CRITERIA, SEE TITLE SHEET.
- FOR DESIGN BANKFULL ELEVATIONS, SEE PROFILE SHEETS.
- FOR LOCATIONS OF STRUCTURES, SEE PLAN SHEETS.
- TREE REVETMENT SHOULD NOT EXCEED 15% OF TOTAL BANKFULL WIDTH.
- THE ENDS OF ALL TREE BOLES ARE CABLED TOGETHER USING 5/16" 7X19 GALVANIZED WIRE ROPE HAVING A MIN. BREAKING STRENGTH OF 9800 LBS.
- VANE ROCKS AND WEIR ROCKS SHALL BE CLASSIFIED AS STONE FILL, TYPE IV (MOD.), AND SHALL MEET THE FOLLOWING SIZE REQUIREMENTS:  
- NO DIMENSION CAN BE < 3 FEET  
- AT LEAST 2 DIMENSIONS MUST BE > 4 FEET  
- AT LEAST 1 DIMENSION MUST BE > 5 FEET
- ROOT WADS SHALL HAVE A MINIMUM FAN DIAMETER OF 6'.
- TREE REVETMENTS USED FOR TOE OF SLOPE PROTECTION SHALL EXTEND UP TO 1/2 TO 2/3 BANKFULL DEPTH.
- TREES FOR TREE REVETMENTS SHALL BE HEMLOCK OR OTHER MATERIAL AS APPROVED BY THE ENGINEER.
- DUCKBILL ANCHORS SHALL BE DUCKBILL EARTH ANCHOR SYSTEMS MODEL I38 OR APPROVED EQUAL. ANCHORS SHALL HAVE A MINIMUM OF 5000 LBS OF ANCHOR HOLDING POWER IN NORMAL SOIL. ANCHORS SHALL BE ATTACHED TO TREES WITH 5/16" 7 X 19 GALVANIZED WIRE ROPE HAVING A MIN. BREAKING STRENGTH OF 9800 LBS.



|                    |                         |
|--------------------|-------------------------|
| PROJECT NAME:      | TROUT RIVER RESTORATION |
| PROJECT NUMBER:    | BRF-RS 0283(7)          |
| FILE NAME:         | zo2837frm.dgn           |
| PROJECT LEADER:    | GAE                     |
| DESIGNED BY:       | SAR                     |
| MISC. DETAIL SHEET | 2                       |
| PLOT DATE:         | 06/06/2003              |
| DRAWN BY:          | MBL                     |
| CHECKED BY:        | WCH                     |
| SHEET              | 118 OF 140              |