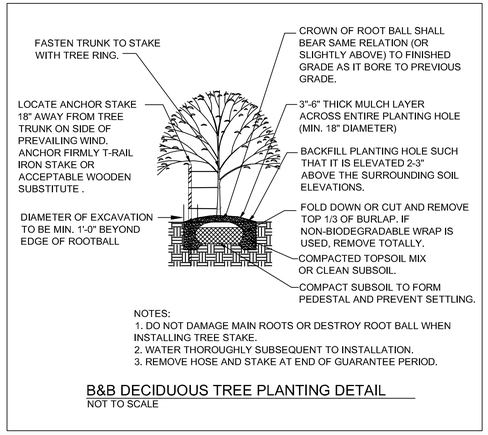
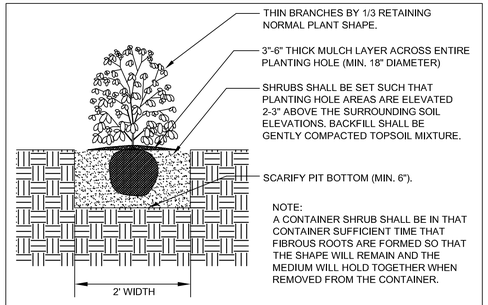
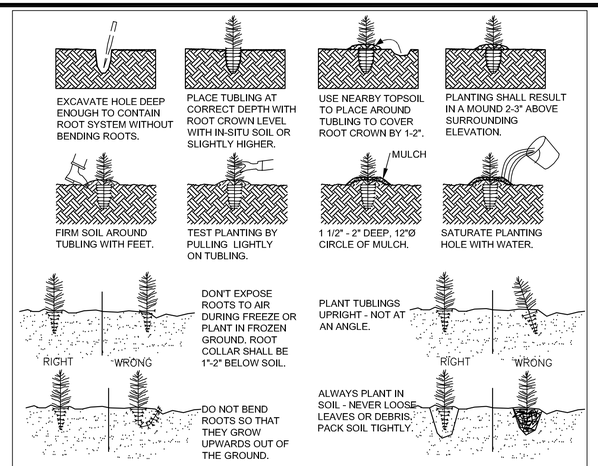



NOTES:
1. DO NOT DAMAGE MAIN ROOTS OR DESTROY ROOT BALL WHEN INSTALLING TREE STAKE.
2. WATER THOROUGHLY SUBSEQUENT TO INSTALLATION.
3. REMOVE HOSE AND STAKE AT END OF GUARANTEE PERIOD.

B&B DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE

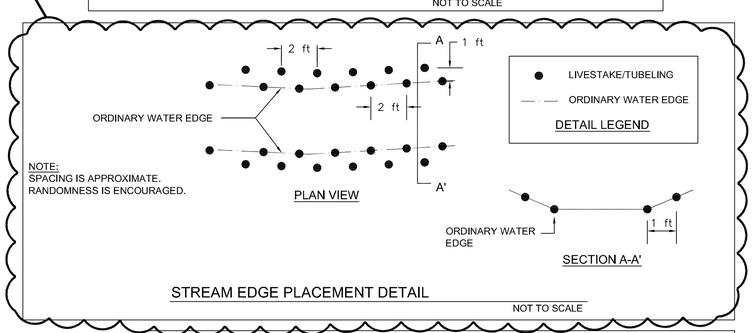



CONTAINER SHRUB PLANTING DETAIL
NOT TO SCALE




PLANTING TUBLINGS
NOT TO SCALE

3

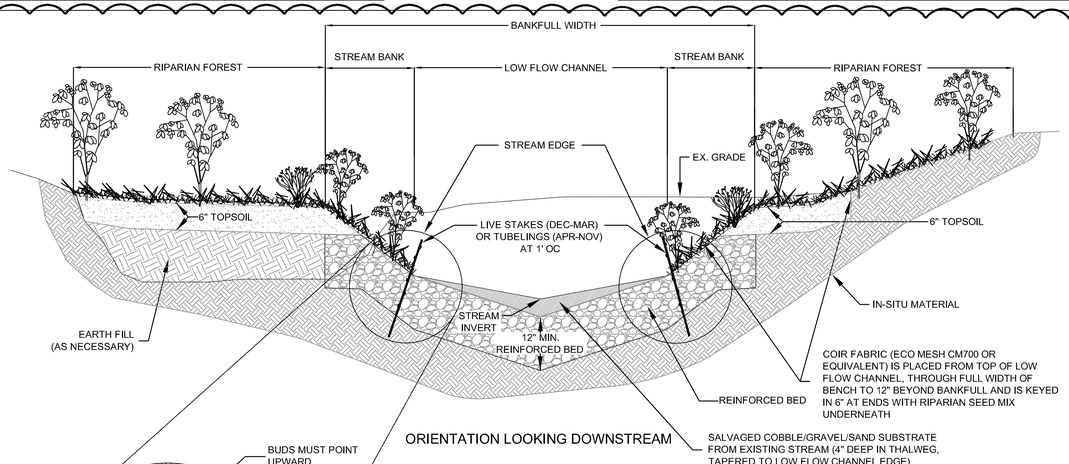


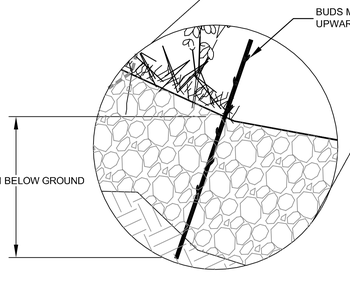

STREAM EDGE PLACEMENT DETAIL
NOT TO SCALE

**THIS PLAN IS FOR PLANTING PURPOSES ONLY.**

**PLEASE REFER TO PLANTING PLAN SHEETS FOR LEGEND**

3




LIVE STAKE CROSS SECTION THROUGH STREAM BANK

LIVE STAKE PLANTING NOTES

1. A TOOL CALLED A PLANTING BAR MAY BE USED TO PUNCH A HOLE FOR THE CUTTING. IN SOFTER SOILS, LIVE STAKES CAN SOMETIMES BE DIRECTLY PUSHED OR HAMMERED IN.
2. ROOTS SHALL BE TREATED WITH ROOT HORMONE PRIOR TO PLANTING.
3. LIVE STAKES SHOULD BE 18" TO 24" IN LENGTH AND $\frac{3}{4}$" TO 1$\frac{1}{2}$" IN DIAMETER.
4. INSTALL THE LIVE STAKE WITH THE CORRECT SIDE UP (SEE DETAIL THIS SHEET). LIVE STAKES SHOULD BE CUT ON AN ANGLE ON THE BOTTOM AND FLAT ON THE TOP. WHEN HELD WITH THE CORRECT END UP, THE BUDS MUST POINT UPWARD.
5. TWO-THIRDS ($\frac{2}{3}$) OF THE LIVE STAKE LENGTH MUST BE PLANTED BELOW GRADE. DEEPER IS FINE, AS LONG AS A FEW BUDS ARE EXPOSED AT THE TOP.
6. TAMP IN AROUND THE CUTTING TO ENSURE THAT THERE ARE NO AIR POCKETS ALONG THE STEM. YOU CAN PUSH THE PLANTING BAR INTO THE SOIL IMMEDIATELY AROUND THE STEM AND PUSH IN THE SOIL TOWARD THE PLANT.
7. REFER TO LIVESTAKE/TUBELING PLACEMENT DETAIL FOR SPECIFIC DETAILS OF PLANT PLACEMENT ALONG STREAM BANK.

RESTORED STREAM PLANTING DETAIL
NOT TO SCALE

k:\cadd files\Stream Restoration\Details-D-LiveStake.dwg

## PLANTING SPECIFICATIONS

1. PLAN DETAILS ARE INCORPORATED INTO THIS SPECIFICATION BY REFERENCE.
2. THE SUPPLIER OF ALL SEEDS AND/OR VEGETATION SHALL CERTIFY THAT THE ORIGIN OF THE SEEDS FROM WHICH THE PLANTS OR SEEDS WERE PRODUCED IS FROM HARDINESS ZONES 6 AND 7, FROM THE EASTERN OR CENTRAL PORTIONS OF THE U.S., PRIOR TO PLANTING.
3. ANY NURSERY SUPPLYING THE STOCK SHALL PROVIDE A CURRENT NURSERY INSPECTION CERTIFICATE FROM THE STATE DEPARTMENT OF AGRICULTURE, OR PROVIDE AT LEAST THIRTY DAYS ADVANCE NOTICE FOR WETLAND STUDIES AND SOLUTIONS, INC. (WSSI) TO INSPECT THE PLANT SOURCE AREAS AT WSSI'S DISCRETION. ANY SUCH INSPECTION IS NOT DEEMED APPROVAL OF THE PLANT MATERIALS.
4. ALL PLANTS SHALL BE SET STRAIGHT, OR PLUMB.
5. PLANTING SHALL ONLY BE PERMITTED BETWEEN NOVEMBER 4 AND APRIL 4. NO PLANTING SHALL OCCUR WHEN THE SOIL IS FROZEN. SEEDING SHALL BE COMPLETED DURING MARCH THROUGH MAY OR SEPTEMBER THROUGH NOVEMBER. THESE TIME LIMITS MAY NOT BE MODIFIED UNLESS APPROVED BY WETLAND STUDIES AND SOLUTIONS, INC., IN ADVANCE WITH THE RISK OF SURVIVAL BORNE SOLELY BY THE CONTRACTOR.
6. PLANTING HOLES FOR BARE ROOT TREES SHALL BE 1-2" DEEPER THAN THE ROOT COLLAR (I.E. 1-2" DEEPER THAN THEY WERE GROWING IN THE NURSERY). BARE ROOT SEEDLINGS SHALL BE INSTALLED WITH THE USE OF A "SHARPSHOOTER SHOVEL", AS DEPICTED WITHIN THESE PLANS. THE PLANTING HOLE SHALL BE LARGE ENOUGH TO AVOID THE NEED FOR ROOT TRIMMING WHERE EVER POSSIBLE. NO J-ROOTS (SEE PLANTING DETAILS) SHALL BE ALLOWED; IT IS EXTREMELY CRITICAL THIS BE ADHERED TO FOR EVERGREENS. BARE ROOT STOCK SHALL BE PLANTED WITH THEIR ROOT-COLLAR 1 TO 2 INCHES DEEPER THAN THE ADJACENT SOIL ELEVATION, USING ADJACENT SOIL TO CREATE A HUMMOCK OR MOUND THAT THE SEEDLING IS SET WITHIN.
7. PLANTING HOLES FOR CONTAINER GROWN PLANTS SHALL BE ONE FOOT (1') DEEP PLUS THE CONTAINER DEPTH IN WHICH THE PLANT HAS BEEN GROWN AND TWO FEET (2') WIDER THAN CONTAINER.
8. BACKFILL THE PLANTING HOLES WITH THE IN-SITU SOIL MATERIALS REMOVED FOR PLANTING AFTER REMOVING ALL STONES, ROOTS, AND OTHER DEBRIS GREATER THAN 1-1/2" IN DIAMETER.
9. FOLLOWING THE BACKFILLING, WATER TO THE POINT OF SOIL SATURATION (IF NOT PLANTED IN THE "WET") AND TAMP TO COMPACT THE BACKFILL MIXTURE. ADD EXISTING SOIL TO BRING THE FINAL GRADE IN THE PLANTING HOLE TO THE SURROUNDING SOIL SURFACE. RAKE THE UNUSED EXISTING SOIL OUTSIDE THE PLANTING HOLES, TAKING CARE NOT TO MOUND THE SOIL OR TO SIGNIFICANTLY ALTER THE EXISTING GRADES AND THEN PLACE MULCH (MIN. 2" THICK) ATOP ENTIRE PLANTING HOLE (EXCEPT THAT NO MULCH IS REQUIRED FOR EMERGENT PLANTINGS). THE PLANTING HOLE AREAS MUST NOT BE DEPRESSED BELOW THE SURROUNDING SOIL SURFACE ELEVATIONS. SAID AREAS SHALL BE SLIGHTLY RAISED (2-3"), RELATIVE TO THE SOIL SURFACE.
10. AS INDICATED IN THE PLANT LIST, THE SHRUBS THAT ARE SPECIFIED AS CONTAINER GROWN SPECIMENS SHALL BE BETWEEN 15" AND 18" IN HEIGHT. THEY SHALL BE HEALTHY, VIGOROUS, WELL ROOTED AND ESTABLISHED IN THE PLANTING CONTAINER IN WHICH THEY ARE GROWING. A CONTAINER SHRUB SHALL BE IN THAT CONTAINER A SUFFICIENT TIME SUCH THAT FIBROUS ROOTS ARE FORMED SO THE SHAPE WILL REMAIN AND THE MEDIUM WILL HOLD TOGETHER WHEN REMOVED FROM THE CONTAINER (REFER TO AMERICAN STANDARD FOR NURSERY STOCK).
11. DO NOT REMOVE PLANTS FROM CONTAINERS UNTIL IMMEDIATELY BEFORE PLANTING. EXAMINE THE ROOTS TO SEE IF THEY ARE POT BOUND. CAREFULLY SEPARATE ANY POT BOUND OR CRAMPED ROOTS AND SPREAD THEM OUT WHEN PLACING THE PLANT SO THAT THE ROOTS CAN GROW WITHOUT FURTHER CONSTRUCTION OF THE ROOT BALL.
12. FERTILIZE EACH BARE ROOT, PLUG, TUBER, AND PINT CONTAINER PLANT WITH A 5 GRAM TABLET OF CONTROLLED RELEASE FERTILIZER. FERTILIZE EACH QUART CONTAINER WITH A 10 GRAM TABLET. USE A 20 GRAM TABLET OF FERTILIZER WITH EACH 1 GALLON AND 2 GALLON CONTAINER. GENERALLY, FOR EACH 12 TO 18 INCHES OF PLANT HEIGHT OR FOR EACH 1/2" OF TREE DIAMETER AT THE BASE, USE 20 GRAMS FOR SLOW GROWING PLANTS OR 40 GRAMS FOR FAST GROWING PLANTS OR POOR SOIL SITUATIONS. SAID FERTILIZER TABLETS SHALL BE AGRIFORM 20-10-5 OR APPROVED EQUIVALENT, APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
13. AS RECOMMENDED BY THE CONTRACTOR AND APPROVED BY ENGINEER, THE CONTRACTOR SHALL WATER THE PLANTS AS NEEDED DURING THE CARE AND REPLACEMENT PERIOD OR UNTIL FINAL ACCEPTANCE, WHICHEVER IS THE SHORTEST.
14. THE CONTRACTOR IS RESPONSIBLE FOR REPLACING NON- SURVIVING TREES AND SHRUBS DURING THE CARE AND REPLACEMENT PERIOD (12 MONTHS, UNLESS OTHERWISE SPECIFIED IN CONTRACT DOCUMENTS) OR UNTIL FINAL ACCEPTANCE, WHICHEVER IS THE SHORTEST, AS REQUIRED BY THE TERMS OF THE SURVIVAL WARRANTY SPECIFIED HEREIN AND/OR IN CONTRACT DOCUMENTS. THE SPECIFICATIONS FOR THE REPLACED PLANTS SHALL BE THOSE PROVIDED IN THE PLANT LIST.
15. REFER TO APPLICABLE SKETCHES WITHIN THIS PLAN SET FOR ADDITIONAL GUIDANCE ON PLANTING REQUIREMENTS.
16. INVASIVE AND NOXIOUS WEEDS SHALL BE REMOVED BY HAND WITH LOCALIZED APPLICATIONS OF ROUND-UP WHERE NECESSARY.
17. ALL BARE ROOT SEEDLINGS SHALL BE TREATED WITH ROOT DIP ABSORBENT POLYMERS AND MYCORRHIZAL ROOT DIP INOCULATES IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. SAID ROOT DIP SHALL BE MYCORTREE ™ ROOT DIP OR APPROVED EQUAL .

## SEEDING SPECIFICATIONS

1. SEED SHALL HAVE BEEN COLLECTED THE SAME YEAR OF SEEDING. A SEED GERMINATION AND PURITY RATE OF 75% IS REQUIRED. EVIDENCE OF SUCH SHALL BE PROVIDED TO OWNER'S REPRESENTATIVE PRIOR TO PLANTING.
2. THE SPECIFIED SEED SHALL BE BROADCAST IN AREAS SPECIFIED ON THE PLANTING PLAN. FOLLOWING SEEDING, MECHANICALLY SOW SEED TO A DEPTH OF 1/8TH OF AN INCH BY THE USE OF A HAND RAKE.
3. THE LANDSCAPE CONTRACTOR SHALL INSPECT THE AREAS AND CONDITIONS UNDER WHICH THE SEEDING WORK IS TO BE PERFORMED PRIOR TO COMMENCING WORK. IF CONDITIONS ARE DETRIMENTAL TO THE PROPER AND TIMELY COMPLETION OF THE WORK, HE/SHE SHALL NOTIFY THE OWNER'S REPRESENTATIVE VERBALLY AND IN WRITING AND POSTPONE COMMENCING WORK UNTIL THE UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
4. PRIOR TO SEEDING, THE TOP SOIL SHALL BE RAKED SMOOTH AND CLEARED OF ALL STONES LARGER THAN 5" AND TRASH, DEBRIS, BRANCHES AND OTHER MATTER DETRIMENTAL TO THE SUCCESS OF SEEDING.
5. FERTILIZER IS TO BE BROADCAST AND RAKED INTO THE TOP ONE INCH OF TOP SOIL IMMEDIATELY BEFORE SEEDING. FERTILIZER SHALL HAVE A FORMULATION OF 10-10-10 AND BE APPLIED AT A RATE OF 50 POUNDS PER 1000 SQUARE FEET.
6. MULCH SHALL BE STRAW CAN BE SUBSTITUTED IF APPLIED AT A RATE SPECIFIED BY THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, 3RD EDITION, 1992.
7. CARE SHOULD BE EXERCISED TO INSURE UNIFORM SEED COVERAGE IS OBTAINED. SEED SHALL BE APPLIED AT THE RATE SPECIFIED ON THE PLANTING SCHEDULE.
8. FOLLOWING SEEDING, MECHANICALLY SOW SEED TO A DEPTH OF 1/8 OF AN INCH BY THE USE OF A CULTIPACTOR, YORK RAKE, OR HAND RAKE.

## PLANTING AND SEEDING SURVIVAL WARRANTY

1. LANDSCAPE CONTRACTOR SHALL GUARANTEE A MINIMUM SURVIVAL RATE OF EACH VEGETATION SPECIES AFTER TWELVE MONTHS OF 85% FOR B&B, CONTAINER GROWN, AND TUBLINGS, AND 60% FOR BARE ROOT AND TUBER STOCK.
2. IF SURVIVAL RATES ARE LESS THAN THE ABOVE WARRANTY RATES, THEN LANDSCAPE CONTRACTOR SHALL REPLACE THE QUANTITY OF DEAD PLANTS WITHIN THE NEXT PLANTING WINDOW (NOVEMBER 4 THROUGH APRIL 4, EXCLUDING FROZEN GROUND PERIODS) FOLLOWING THE END OF THE APPLICABLE WARRANTY PERIOD.

## PRODUCT HANDLING, STORAGE, AND DELIVERY

1. HANDLE PLANTS AT ALL TIMES SO THAT ROOTS OR BALLS ARE ADEQUATELY PROTECTED FROM BREAKAGE OF BALLS, FROM SUN AND DRYING WINDS. PLANTS WITH DRIED OUT TOPS OR ROOTS SHALL BE REJECTED.
2. ALL PLANT MATERIALS SHALL BE STORED AND DELIVERED IN SUCH A FASHION AND FOR TIME INTERVALS CONSISTENT WITH SOUND SILVICULTURAL PRACTICES.
3. PLANT MATERIAL WILL BE TRANSPORTED FROM THE NURSERY TO THE PLANTING AREAS BY SUCH MEANS AS TO AVOID WIND DAMAGE, OVER-CROWDING, OR OTHER MECHANISMS BY WHICH PHYSICAL DAMAGE MAY RESULT TO THE PLANTS.
4. PLANT MATERIAL MAY BE RANDOMLY INSPECTED BY THE DESIGN ENGINEER UPON ARRIVAL AT EACH PLANTING AREA AND DURING PLANTING ACTIVITIES. MATERIAL FOUND TO BE UNACCEPTABLE WILL BE REJECTED AND THE CONTRACTOR WILL BE REQUIRED TO SUPPLY REPLACEMENT MATERIAL WITHIN A REASONABLE TIME FRAME (I.E. 1-WEEK). UNACCEPTABLE MATERIAL IS TO BE DEFINED AS THE FOLLOWING:
   (A) PLANTS WITH BENT TRUNKS OR MULTIPLE LEADERS, UNLESS CHARACTERISTICS FOR THE SPECIES;
   (B) PLANTS WITH DISEASED TRUNKS, STEMS, OR LEAVES;
   (C) PLANTS WITH PEST-INFESTED TRUNKS, STEMS, OR LEAVES;
   (D) PLANTS OF INSUFFICIENT SIZE (LESS THAN A SPECIFIED HEIGHT);
   (E) PLANTS OF THE WRONG SPECIES/SUB-SPECIES;
   (F) PLANTS HAVING ROOT GIRDLING IN THE CONTAINER;

UNLESS OTHERWISE APPROVED BY THE DESIGN ENGINEER. JUSTIFICATION FOR USE OF TENTATIVELY REJECTED MATERIAL MAY BE PRESENTED TO THE DESIGN ENGINEER.

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Northern Virginia Stream Restoration Bank
The Glade - Reach 4A
Fairfax County, Virginia

Planting Notes and Details

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COMMONWEALTH OF VIRGINIA
FRANK R. GRAZIANO
Lic. No. 032099
PROFESSIONAL ENGINEER

REVISIONS

| No. | Date | Description | Rev. By: | App. By: |
|---|---|---|---|---|
| 3 | 5/26/09 | Revised Planting Detail and Labels | BJB | FRG |

SCALE: N/A
DATE: MAY 2009

Horizontal Datum: N/A
Vertical Datum: N/A
Boundary and Topo Source: N/A

| Design | Draft | Approved |
|---|---|---|
| KLS | KLS | FRG |

Sheet # 30 of 105

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