

## Stantec 2950 S Harmony Road, Suite 290 Fort Collins, CO/USA 80528 Tel. 970.482.5922 Fax. 970.482.6368 www.stantec.com Comparison Profile Existing vs. Proposed Legend 593 $\bigcirc$ TW 592 WS 591 **V** BKF Elevation (ft) **♦** TOB TOS 588 → Design Profile 587 586 Dwn. Chkd. Dsgn. YY.MI 585 North State 584 City of Auburn 150 160 170 180 190 200 210 260 270 280 320 340 CITY OF AUBURN NORTHEAST PARALLEL OUTFALL SEWEF Distance along stream (ft) STREAMBANK STABILIZATION PROJECT UT-SAUGAHATCHIE CREEK AUBURN, ALABAMA Profile Drawing No. Sheet

Stantec 2950 S Harmony Road, Suite 290 Tel. 970.482.5922 Fax. 970.482.6368 www.stantec.com XS-1 Comparison ▼ Water Surface Points XS-1 ▲ XS-1 Proposed 599 Legend 598 597 596 595 -594 -593 -Elevation (ft) 592 -591 590 589 588 -587 -586 585 -City of Auburn 584 CITY OF AUBURN NORTHEAST PARALLEL OUTFALL SEWEF 30 110 120 Horizontal Distance (ft) STREAMBANK STABILIZATION PROJECT UT-SAUGAHATCHIE CREEK AUBURN, ALABAMA Cross-Section 1 Sheet



North State

XS-2 Comparison ♦ Bankfull Indicators ▼ Water Surface Points ○ XS-2 ▲ XS-2 Proposed 599 598 597 596 595 594 593 -Elevation (ft) 592 -591 590 589 588 587 -586 585 584 100 110 120 130 140 150 Horizontal Distance (ft)



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Legend



City of Auburn

CITY OF AUBURN NORTHEAST PARALLEL OUTFALL SEWEF

STREAMBANK STABILIZATION PROJECT UT-SAUGAHATCHIE CREEK

AUBURN, ALABAMA

Cross-Section 2

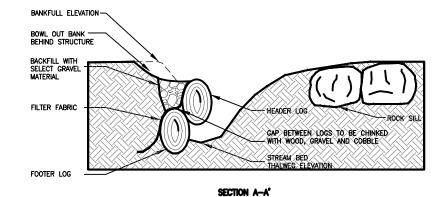
Sheet

XS-3 Comparison Bankfull Indicators ○ XS-3 ▼ Water Surface Points ▲ XS-3 Proposed 599 Legend 598 597 596 595 -594 -593 Elevation (ft) 592 -591 590 589 588 -587 -586 585 City of Auburn 584 CITY OF AUBURN NORTHEAST PARALLEL OUTFALL SEWEF 50 110 120 130 140 STREAMBANK STABILIZATION PROJECT UT-SAUGAHATCHIE CREEK Horizontal Distance (ft) AUBURN, ALABAMA Cross-Section 3 Drawing No. Sheet

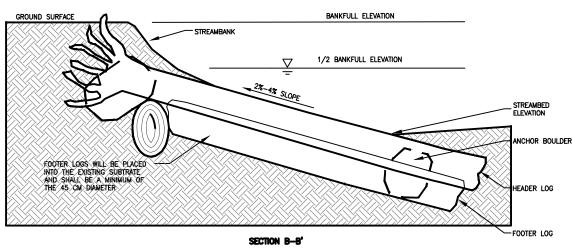


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## NOTES:

- FILTER FABRIC SHALL BE PLACED ON THE UPSTREAM SIDE OF THE STRUCTURE 1/4
  DIAMETER FROM THE TOP OF THE LOG. THE NAILS SHALL BE ON 30 CM CENTERS.
  FILTER FABRIC SHALL BE BURIED IN THE BOTTOM OF THE CHANNEL AND SHALL BE
  PLACED THE ENTIRE LENGTH OF THE STRUCTURE.
- A TRENCH SHALL BE DUG IN SUCH A MANNER THAT THE ANCHOR BOULDERS ARE BURIED BENEATH THE BED SURFACE ELEVATION.
- 3. A HYDRAULIC EXCAVATOR WITH A BUCKET THAT CONTAINS A HYDRAULIC THUMB SHALL BE USED TO PLACE BOULDERS AND LOGS WITH THE SUPERVISION OF THE ENGINEER.
- HEADER AND FOOTER LOGS SHALL BE A MINIMUM OF 45 CM IN DIAMETER WITH A LENGTH OF 5 M. THE HEADER LOG SHALL BE SET IN PLACE FIRST WITH THE FOOTER LOG UNDERNEATH AND BEHIND THE HEADER LOG PRIOR TO BACKFILLING THE
- 1/3 OF THE WAY ACROSS THE CHANNEL FROM THE OUTSIDE BANK THE HEADER ROCK SHALL BE PLACED AT 5 CM. ABOVE THE CHANNEL INVERT ELEVATION.
- 6. THERE SHALL BE A GAP BETWEEN THE HEADER ROCKS OF AT LEAST 3 TIMES THE D84 OF THE CHANNEL BED. THE GAP SHALL BE 10-15 CM.
- 7. HEADER LOGS SHALL SLOPE FROM THE BED ELEVATION, AT THE HEAD OF THE VANE, TO 1/2 BANKFULL ELEVATION AT A SLOPE OF 2%-4%. HEADER AND FOOTER LOGS SHALL BE TIED SECURELY INTO THE BANK IN SUCH A WAY THAT IT ELIMINATES THE POSSIBILITY OF STREAMFLOW DIVERTING AROUND THEM.

- 8. ANY SOIL DISTURBED DURING THE PLACEMENT OF J-HOOK VANES, SHALL BE SEEDED USING TEMPORARY AND PERMANENT SEEDING METHODS.
- FILTER FABRIC SHALL BE PLACED ON THE UPSTREAM SIDE OF THE VANE STRUCTURE TO PREVENT WASHOUT OF SEDIMENT THROUGH BOULDER GAPS. FILTER FABRIC SHALL EXTEND FROM THE BOTTOM OF THE FOOTER BOULDER TO THE FINISHED GRADE ELEVATION AND SHALL BE PLACED THE ENTIRE LENGTH OF THE STRUCTURE.
- 10. THE GAP BETWEEN THE HEADER AND FOOTER LOG SHALL BE CHINKED BY HAND WITH GRAVEL COBBLE AND WOODY DEBRIS FROM THE UPSTREAM DIRECTION.
- 11. THE HORIZONTAL ANGLE OF THE HEADER LOG OF THE VANE AND THE BANK SHALL BE BETWEEN 20–30 DEGREES.
- 12. SELECT GRAVEL MATERIAL CAN BE HARVESTED FROM SPOIL PILES ON-SITE BUT SHOULD HAVE A GRADATION WITH A D50 ~ 30MM, D84 ~ 80MM, AND A D16 ~ 10MM OR BE APPROVED BY ON-SITE CONSTRUCTION INSPECTOR/ GEOMORPHOLOGIST.
- THE ROOT WAD SHALL BE A MINIMUM OF 2 M IN LENGTH, WITH A ROOT FAN WITH A DIAMETER OF AT LEAST 1 M AND A DIAMETER OF 45 CM.
- 14. STRUCTURE INVERT ELEVATION SHALL BE THE SAME ELEVATION AS THE RIFFLE IMMEDIATELY DOWNSTREAM OF THE STRUCTURE IN THE PLAN VIEW.



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Legend

Revision By Appd. YY.MI ssued File Name



City of Auburn

CITY OF AUBURN NORTHEAST PARALLEL OUTFALL SEWEF

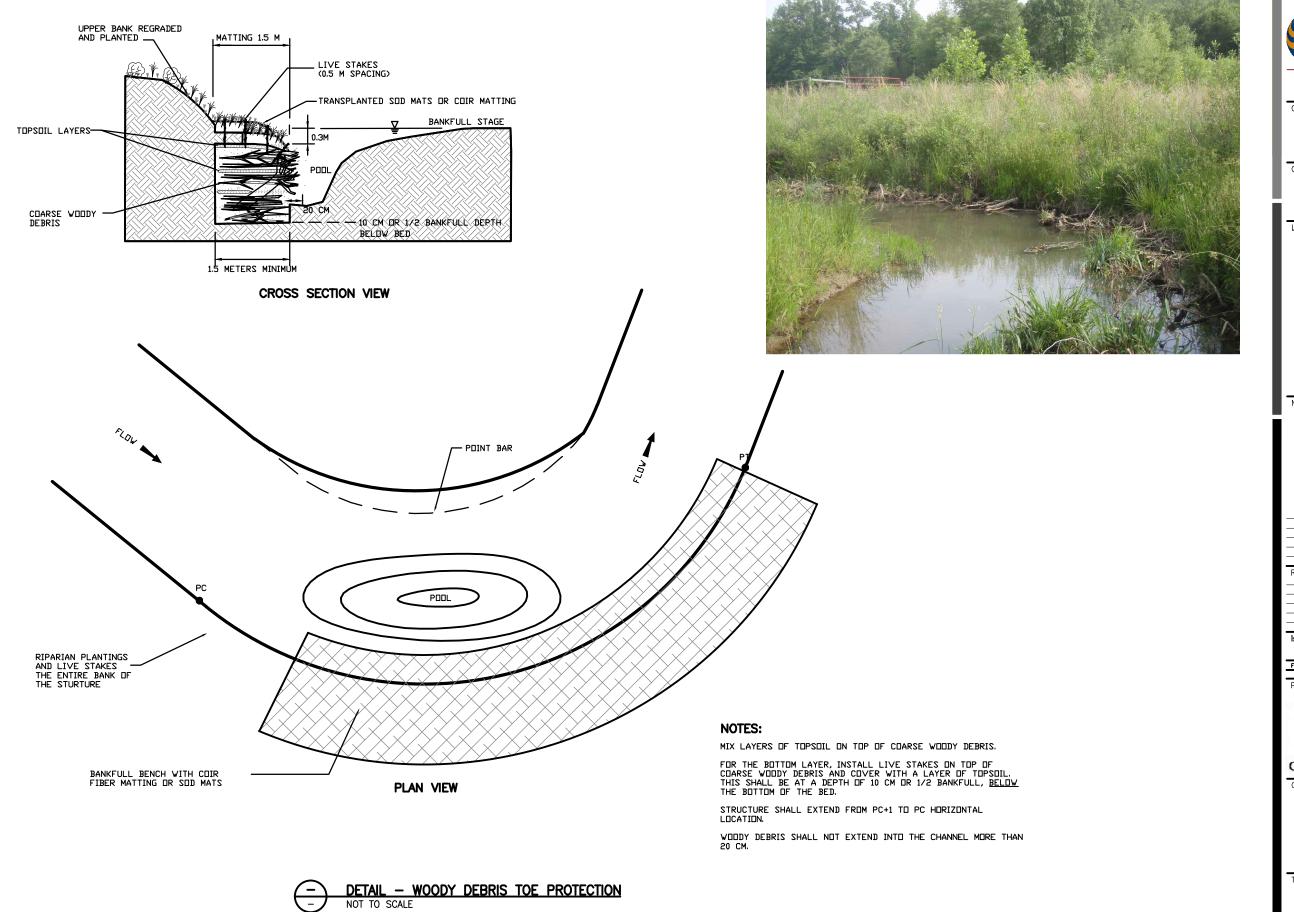
STREAMBANK STABILIZATION PROJECT UT-SAUGAHATCHIE CREEK

AUBURN, ALABAMA

Log J-Hook Typical Detail

Project No. Scale Drawing No. Sheet Revision

DETAIL - LOG VANE ROCK J-HOOK ROOTWAD COMBO





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CITY OF AUBURN NORTHEAST PARALLEL OUTFALL SEWEF

STREAMBANK STABILIZATION PROJECT UT-SAUGAHATCHIE CREEK

AUBURN, ALABAMA

Toe Wood Typical Detail

Scale Drawing No. Sheet

## PLAN VIEW

SELECT MATERIAL	LOG DIAMETER (CM)	ANCHOR BOULDER SIZE (M)	TOTAL LOG LENGTH (M)
3-10 CM STONE	40	0.9LX0.6WX0.6D	Wbkf + 3 M

## NOTES:

LOG STEPS SHALL BE CONSTRUCTED WITH 1 FOOTER LOG AND 1 HEADER LOG.

NAIL FILTER FABRIC ON TOP OF FOOTER LOG USING 8 CM 10D GALVANIZED COMMON NAIL ON 30 CM SPACING ALONG THE LOG.

PLACE HEADER LOG SLIGHTLY BACK ON TOP OF THE FOOTER LOG.

PLACE LOGS AND BACKFILL WITH SELECT MATERIAL.

FILTER FABRIC SHALL EXTEND FROM THE BOTTOM OF THE FOOTER LOG TO THE FINISHED GRADE ELEVATION AND SHALL BE PLACED THE ENTIRE LENGTH OF THE STRUCTURE.

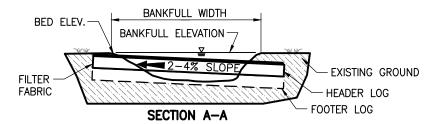
LOGS SHALL POINT TOWARDS CENTER OF RADIUS.

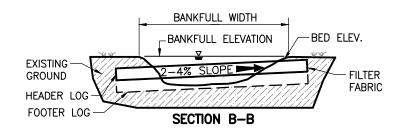
MAXIMUM DROP BETWEEN LOG SHALL BE 5 CM.

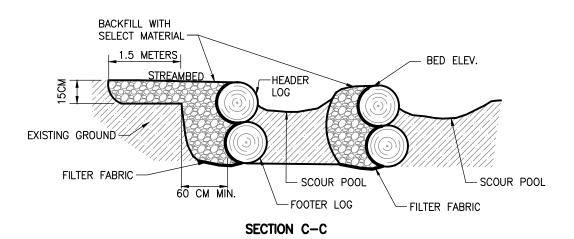
ALL LOGS SHALL BE RELATIVELY STRAIGHT.

ALL MATERIALS ARE TO BE APPROVED BY ENGINEER OR ENGINEER'S ONSITE CONSTRUCTION MANAGER.













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Permit-Seal



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CITY OF AUBURN NORTHEAST PARALLEL OUTFALL SEWEF

STREAMBANK STABILIZATION PROJECT UT-SAUGAHATCHIE CREEK

AUBURN, ALABAMA

Title

Log Step Typical Detail

Project No. Scale

Drawing No. Sheet Revisio