

ALL CONSTRUCTION & MATERIALS SHALL BE IN ACCORDANCE WITH CITY OF VALDOSTA & NRCS STANDARDS AND SPECIFICATIONS.

NO OPEN PITS SHALL BE LEFT OPEN OVERNIGHT OR LEFT UNATTENDED.

CITY OF VALDOSTA EMERGENCY WATERSHED PROTECTION STREAM CLEARING AND SNAGGING

CITY OF VALDOSTA, LOWNDES COUNTY, GA

DATED: 09/22/2025

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CULTURAL RESOURCES PROTECTION NOTES

- In the event that any type of cultural material is encountered during the normal course of NRCS (GA) approved implementation, work will immediately pause within a 100-meter buffer and NRCS GA State Archaeologist will be called to report the situation. The NRCS GA post-review discovery/ inadvertent discovery process will be followed.
- Utilize adequate protective measures to ensure historic properties and features, including archaeological resources, within or adjacent to debris removal sites, and are not damaged by project activities. This includes but is not limited to minimizing potential ground disturbance in accordance with the Georgia Forestry Commission's established practices as documented in Georgia's Best Management Practices for Forestry.
- In the event that project activities result in unanticipated effects to known historic resources, including but not limited to previously identified archaeological sites, project activities should cease immediately, and NRCS GA State Archaeologist will be called to report the unanticipated effects. Work cannot resume until approval to proceed is given.
- All work done along the waterway's locations associated with cultural resources (if identified) is to be conducted in extreme caution and measures taken to minimize ground disturbance.

PRE-CONSTRUCTION CERTIFICATION:
THE VALDOSTA STORM DEBRIS REMOVAL PROJECT WILL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING DRAWINGS AND PRACTICE CODES 326, 484 AND 342. ALL ADDITIONS OR CHANGES HAVE BEEN CONCURRED BY NRCS.

CITY OF VALDOSTA

SIGNATURE _____ DATE _____

NRCS REPRESENTATIVE

SIGNATURE _____ DATE _____

AS-BUILT CERTIFICATION:
THE VALDOSTA STORM DEBRIS REMOVAL PROJECT HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THESE PLANS AND MEETS NRCS STANDARDS AND SPECIFICATIONS.

CITY OF VALDOSTA

SIGNATURE _____ DATE _____

NRCS REPRESENTATIVE

SIGNATURE _____ DATE _____

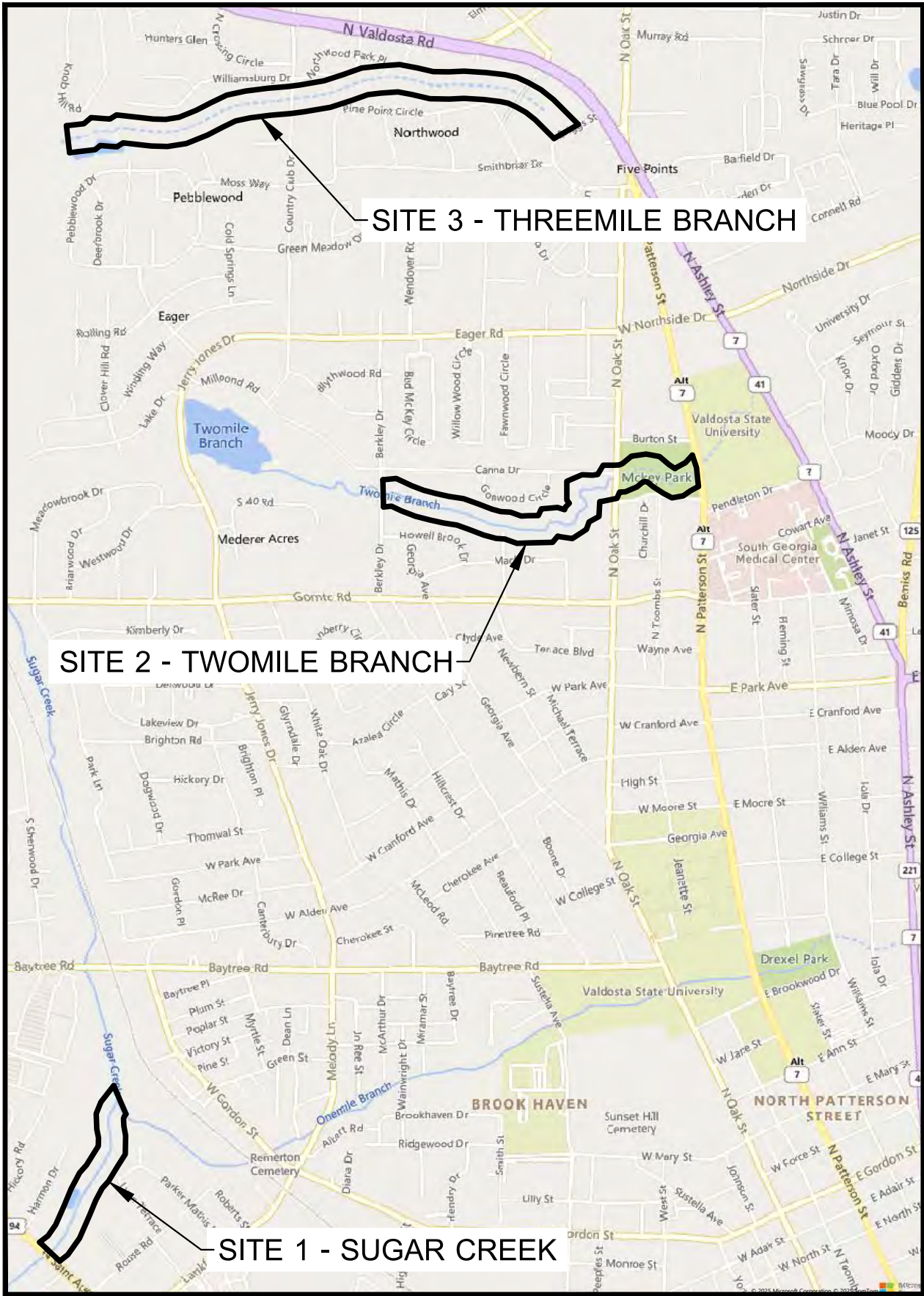


COVER NOTES:

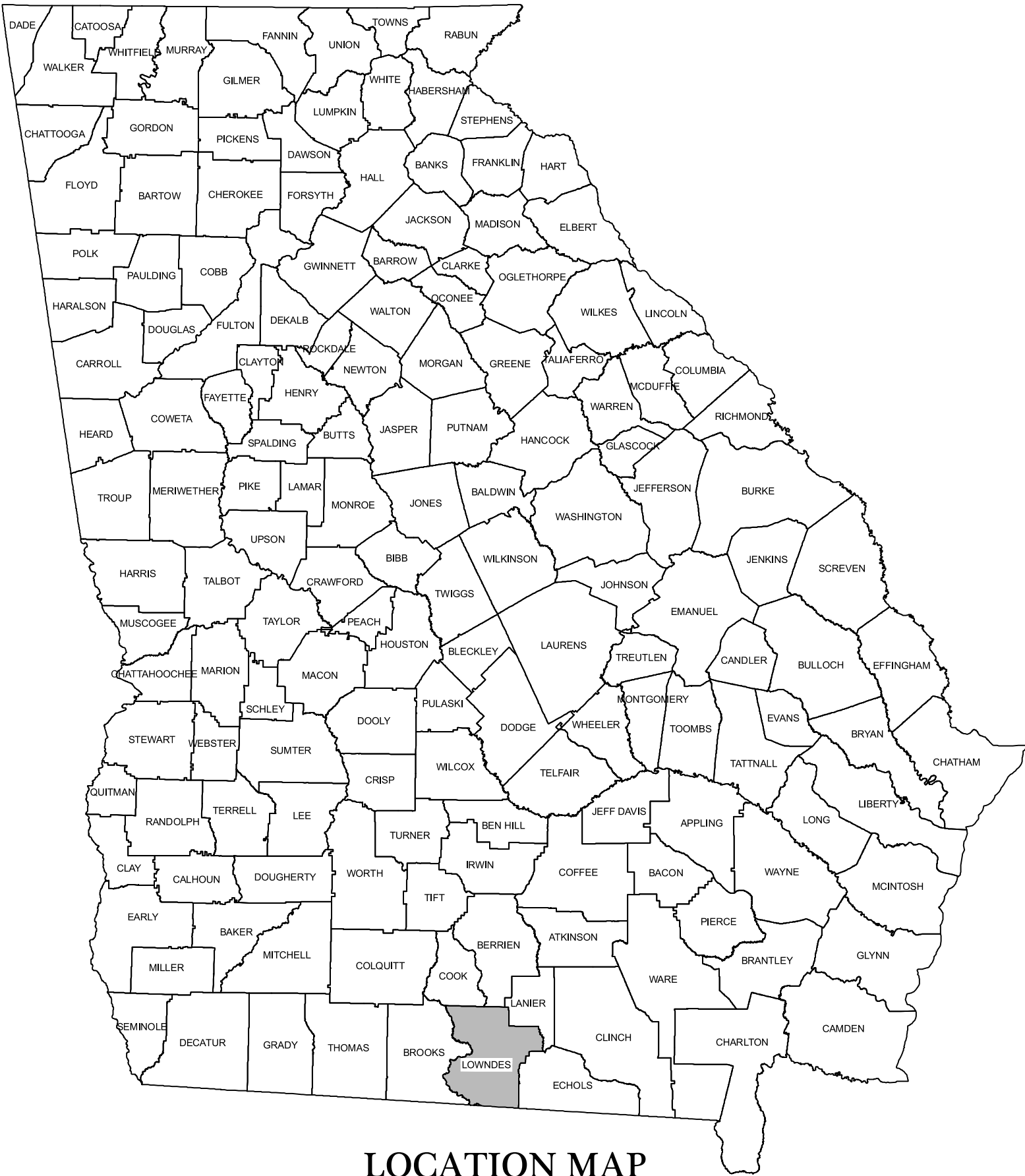
- ALL WORK MUST BE CONDUCTED IN ACCORDANCE WITH NRCS CONSERVATION PRACTICE STANDARDS 326 CLEARING AND SNAGGING, 484 MULCHING AND 342 CRITICAL AREA PLANTING.
- METHODS TO REMOVE FLOW OBSTRUCTION INCLUDE SAWING, CABLING, WINCHING, LIFTING, OR DRAGGING. EQUIPMENT USED WILL GENERALLY INCLUDE HYDRAULIC EXCAVATORS EQUIPPED WITH MECHANICAL THUMB OR GRAPPLE ATTACHMENT, LOADERS, WINCHES MOUNTED ON TRACKED OR RUBBER-TIRED EQUIPMENT, PORTABLE WINCHES, AND CHAIN SAWS. NO EQUIPMENT WILL BE PERMITTED WITHIN THE STREAM. ALL EQUIPMENT WILL OPERATE FROM BEYOND THE TOP OF THE STREAM BANKS. HEAVY EQUIPMENT WORKING IN WETLANDS MUST BE PLACED ON MATS OR OTHER MEASURES MUST BE TAKEN TO MINIMIZE SOIL DISTURBANCE. MECHANIZED LAND CLEARING WILL NOT OCCUR WITHIN WETLANDS AT ANY TIME.
- DO NOT REMOVE TREES FROM THE STREAM CHANNEL THAT WERE DEPOSITED PRIOR TO THE STORM EVENT AND ARE IN AN ADVANCE STAGE OF DECAY. ONLY TREE STUMPS COMPLETELY UPROOTED BY THE STORM EVENT ARE TO BE REMOVED. SNAGS ARE TO BE CUT OFF AT STUMP LEVEL AND REMOVED. STUMPS FROM SNAGS WILL REMAIN IN PLACE.
- DEBRIS FROM PROJECT AREAS SHALL BE DISPOSED BY CONTRACTOR.
- DAMAGE TO ADJACENT STREAM AREAS SHALL BE KEPT TO A MINIMUM DURING CLEARING AND SNAGGING OPERATIONS. ALL DAMAGED AREAS SHALL BE STABILIZED CONCURRENT WITH LAND DISTURBING ACTIVITIES.
- BEST MANAGEMENT PRACTICES SHALL BE EMPLOYED DURING THE OPERATION TO AVOID STREAM BANK EROSION AND SEDIMENTATION RUN OFF INTO THE STREAM.
- THE CLEARING AND SNAGGING OPERATIONS SHALL BE CONFINED TO 25 FEET FROM THE TOP OF BANK ON EACH SIDE OF THE STREAM (DISTANCE VARIES).

NOTE: NO UNDERGROUND UTILITIES WERE VERIFIED OR FIELD LOCATED ON THE PROPERTY SHOWN HERON

INNOVATE ENGINEERING & SURVEYING, LLC. DOES NOT GUARANTEE THAT ALL EASMENTS WHICH MAY AFFECT THE PROPERTY ARE SHOWN HERON AND ASSUMES NO LIABILITY FOR FAILURE TO CONFIRM UTILITY LOCATIONS PRIOR TO ANY DIGGING OR CONSTRUCTION.



LOCATION MAP
N.T.S.



LOCATION MAP
STATE OF GEORGIA

PREPARED BY:

INNOVATE!
Engineering & Surveying

PHONE: 229-249-9113 - www.innovatees.com
2214 N. Patterson Street, Valdosta, GA 31602



PROJECT NUMBER
1955

CONSTRUCTION NOTES:

1.

REMOVE DOWNED AND SNAGGED MATERIAL FROM THE STREAM CHANNEL PLUS 25' ADJACENT TO THE TOP OF BOTH STREAM BANKS. ONLY STORM DEBRIS IN THE ADJACENT FLOOD PLAIN AREA (WITHIN 25 FEET) THAT COULD EASILY MIGRATE TO THE STREAM CHANNEL SHALL BE REMOVED.
2.

REMOVE FALLEN TREES AND LEANING TREES THAT ARE AT AN ANGLE OF 30° OR LESS WITH THE GROUND. UNDERMINED OR STORM DAMAGED TREES WITHIN OR OUTSIDE THE BANKS WHICH ARE STILL STANDING BUT LIKELY TO FALL INTO THE STREAM SHOULD BE REMOVED. ROOT WADS ATTACHED TO THE BANK SHOULD BE LEFT IN PLACE WITH THE TREE SAWN OFF.
3.

TREES AND DEBRIS LESS THAN 8" IN DIAMETER ARE NOT REQUIRED TO BE REMOVED. HOWEVER, IF IT CAN BLOCK THE DOWNSTREAM CULVERT OR BRIDGE DURING A FLOODING EVENT AND EASILY MIGRATE INTO THE STREAM CHANNEL, IT SHOULD BE REMOVED. ALL STORM EVENT RELATED FOREIGN DEBRIS, DOWN TREES (EXCEPT FOR INTACT STUMPS/ROOT WADS), BRUSH, LIMBS, TOPS, VINES, AND OTHER WASHED-IN WOODY VEGETATIVE MATERIALS LYING COMPLETELY OR PARTIALLY WITHIN THE STREAM BANKS SHOULD BE REMOVED. UNDER NO CIRCUMSTANCE SHALL OLD (PRE-STORM EVENT) DEBRIS BE REMOVED. ONLY STORM DEBRIS IN THE ADJACENT FLOOD PLAIN AREA (WITHIN 25 FEET) THAT COULD EASILY MIGRATE TO THE STREAM CHANNEL SHALL BE REMOVED.
4.

MINIMIZE DISTURBANCE OF WETLANDS, RIPARIAN AREAS, AND FISH AND WILDLIFE HABITAT, AND AVOID DISTURBANCE WHERE POSSIBLE.
5.

RETAIN HABITAT-FORMING ELEMENTS THAT PROVIDE COVER, FOOD, POOLS, AND WATER TURBULENCE, TO THE EXTENT POSSIBLE.
6.

CONTRACTOR SHALL NOT REMOVE THE ROOTS, ROOT BALLS, OR STUMP OF ANY TREES OR VEGETATION.
7.

CONTRACTOR SHALL REMOVE THE TREE FROM THE ROOT BALL OR STUMP USING SAWS OR OTHER HAND EQUIPMENT.
8.

CONTRACTOR SHALL ENTER THE STREAM BUFFER AT RIGHT ANGLES TO THE STREAM.
9.

CONTRACTOR SHALL NOT TURN ANY VEHICLE INSIDE THE 25' WIDE STREAM BUFFER.
10.

DEBRIS MAY BE BURNED IF APPROPRIATE PERMITS ARE OBTAINED. ALSO, DEBRIS MAY BE MULCHED AND SPREAD ON SITE. DO NOT PLACE DEBRIS IN TRIBUTARIES, SIDE DITCHES, NOR OTHER DEFINED WATER ENTRANCES TO THE WATERCOURSE BEING CLEANED. NO DEBRIS WILL BE DISPOSED IN A WETLAND OR WITHIN THE 100-YEAR FLOODPLAIN.
11.

ALL DISTURBED AREA ABOVE WATER LEVELS SHALL BE STABILIZED WITH EROSION CONTROL MATTING IF THE STUMP CANNOT BE REPLACED. MATTING IS NOT NECESSARY IN FLAT AREAS.
12.

PERMITS THAT MAY BE REQUIRED FROM GDOT, EPD, OR USACE WILL BE OBTAINED BY THE SPONSOR.
13.

THE CONTRACTOR WILL OBTAIN TEMPORARY EASEMENTS FROM AFFECTED PROPERTY OWNERS.
14.

ALL CONSTRUCTION MUST MEET NRCS STANDARDS.
15.

THE CONTRACTOR TO INCLUDE O&M.
16.

THE CONTRACTOR TO INCLUDE QUALITY ASSURANCE PLAN (QAP).

GENERAL NOTES:

1.

THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND COMPLIANT DISPOSAL/RECYCLING OF ALL VEGETATIVE DEBRIS REMOVED AS PART OF THIS PROJECT.
2.

DAMAGE OF ADJACENT STREAM AREAS SHALL BE KEPT TO A MINIMUM DURING CLEARING AND SNAGGING OPERATION. ALL DAMAGED AREAS SHALL BE STABILIZED CONCURRENT WITH LAND DISTURBING ACTIVITIES.
3.

BEST MANAGEMENT PRACTICES SHALL EMPLOYED DURING THE ENTIRE OPERATION TO AVOID STREAM BANK EROSION AND SEDIMENTATION RUN OFF INTO THE STREAM.
4.

THE CLEARING AND SNAGGING OPERATION SHALL BE CONFINED TO 50 FEET EACH SIDE OF CENTER OF THE STREAM (100 FEET TOTAL).

Natural Resources Conservation Service
CONSERVATION PRACTICE STANDARD
CLEARING AND SNAGGING
Code 326
(R)

DEFINITION

Removal of vegetation along the bank (clearing) and selective removal of snags, drifts, or other obstructions (snagging) from natural or improved channels and streams.

PURPOSE

Reduce risks to agricultural resources or civil infrastructure by removing obstructions that hinder channel flow or sediment transport to--

- Restore flow capacity and direction
- Prevent excessive bank erosion by eddies or redirection of flow
- Reduce the undesirable formation of bars
- Minimize blockages by debris and ice

CONDITIONS WHERE PRACTICE APPLIES

Any natural or improved channel where the removal of vegetation, trees, brush, and other obstructions is needed to accomplish one or more of the listed purposes

CRITERIA

Notify landowner and/or contractor of responsibility to locate all buried utilities in the project area, including drainage tile and other structural measures. The landowner is also required to obtain all necessary permits for project installation prior to construction.

The design must address all modified flow conditions caused by clearing and snagging

Capacity

Determine the capacity of the channel, both before and after modification, using National Engineering Handbook (NEH) Part 654, Stream Restoration Design, Chapter 6, Stream Hydraulics. Select a value of Manning's "n" roughness coefficient to determine channel capacity after modification that reflects the degree of natural changes and maintenance expected to occur in future years.

Location

Include the perimeter and flow area of the channel in the area to be cleared and snagged. Trees on the bank that are leaning over or other objects that may fall into the channel may be included.

Clearing and snagging may also be used for other areas, such as temporary disposal areas or travelways, required for implementation of this practice.

Stability

Clearing and snagging activities may affect channel stability. The effect on downstream and upstream reaches due to the removal of obstructions must be analyzed using appropriate stream and channel geomorphologic procedures. Avoid or mitigate activities that negatively affect stability.

Debris Disposal

Remove cleared and snagged material from the floodplain or deposit in areas or in a manner that will not significantly affect the flow capacity of the floodplain. Designate locations to dispose of any garbage encountered during clearing and snagging operations, such as construction materials, metal, rubber, glass, and plastic.

Vegetation

Restore all areas denuded and/or disturbed during clearing and snag removal by planting vegetation, unless the disturbance is minimal and conditions are highly conducive for natural regeneration of vegetation. Use native vegetation where practical. Vegetation established as part of this practice should include ecologically suitable species obtained from local sources whenever practical.

Minimize disturbance of wetlands, riparian areas, and fish and wildlife habitat sites and avoid disturbance where possible.

The establishment of vegetation on cleared and snagged areas will be in accordance with the criteria contained within Conservation Practice Standard Critical Area Planting (342).

CONSIDERATIONS

Debris in stream systems affects the physical characteristics of the stream as well as the diversity and abundance of its aquatic organisms. Fisheries and/or aquatic biologists can assist in evaluating and incorporating measures to improve aquatic and riparian-wetland habitat.

Incorporate enhancements for fish and wildlife values as needed and practical. Special attention should be given to landscape aesthetics and to protecting and maintaining key shade, food, and den trees. Use Stream Habitat Improvement and Management (356).

Retain or replace habitat-forming elements that provide cover, food, pools, and water turbulence, to the extent possible.

Root balls of fallen trees that are securely anchored in the channel or naturally formed logjams may provide fish habitat and/or stability. The effects of these items must be included in the channel capacity hydraulic analysis. Existing root structure and stumps firmly within the soil should remain to help stabilize the soil and facilitate resprouting of woody vegetation.

Incorporate existing onsite woody debris into the design to help stabilize banks, modify channel flow, provide anchorage and food for invertebrates, and provide habitat and cover for fish. Note that woody debris should be securely fastened as dislodged woody debris may be a risk to downstream structures such as bridges, dams, or other civil works. Use NEH Part 654, Stream Restoration Design Technical Supplement 14E, for determining the forces acting on woody debris, and the necessary anchoring.

Erosion rates decline as a percentage of vegetative roots in a streambank increases. Selection of appropriate riparian vegetation will increase the streambank's ability to resist future erosion.

Clearing and snagging activity may resuspend sediments in the flow. Consider treatments that promote beneficial sediment deposition and the filtering of sediment and dissolved substances.

During construction, woody materials may float downstream and cause additional snags and drifts. Incorporate measures and practices, as needed and practical to address this concern.

Schedule in-stream work to avoid environmentally sensitive periods such as spawning and migration to the fullest extent possible.

Incorporate measures and practices, as needed and practical, to address modified flow conditions such as--

- A lowered hydraulic gradient which may drain adjacent flood plains more quickly
- Decreased groundwater recharge in water-losing streams resulting from reduced residence time in the channel and adjacent floodplains

Ground-disturbing activities associated with this practice have the potential to adversely affect protected plant species and may encourage the establishment of exotic and/or nonnative species. Quickly revegetating disturbed areas can minimize the introduction of nonnative species.

Temporary erosion and sediment best management practices can be used to minimize the delivery of fine sediment to adjacent and downstream reaches.

Incorporate construction methods that enhance fish and wildlife values as needed and practical to include--

- Use hand-operated equipment, water-based equipment, or small equipment to minimize soil, water, and other resource disturbances
- Operate heavy machinery from atop adjacent streambanks to the fullest extent possible
- Alter the material has been removed from streambank locations, limit machinery access to riparian areas to minimize damage to stream habitat

PLANS AND SPECIFICATIONS

Prepare plans and specifications for clearing and snagging that describe the requirements for applying the practice to achieve its intended purpose(s).

As a minimum, include, as applicable, the following items in the plans and specifications:

- Map of overall area including limits of clearing and snagging required
- Location of ingress and egress to the site
- Description of works of improvement, extent of removal, and manner of disposal
- Location of disposal areas or location of areas off limits for disposal of debris
- Requirements for disposal area to address final dressing, stabilization, drainage, and vegetation
- Location and description of trees or woody vegetation to be left undisturbed
- Method of debris disposal
- Manner and sequence of construction operations so that impacts on the environment will be minimized
- Erosion control measures, as applicable
- Vegetative requirements for areas denuded and disturbed, as applicable

The following list of Construction Specifications is intended as a guide to selecting the appropriate specifications for each specific project. The list includes most, but may not contain all, of the specifications needed for a specific project.

IA-5 Pollution Control

IA-6 Seeding and Mulching for Protective Cover

Carry out all operations in a safe and skillful manner. Observe all safety and health regulations and use appropriate safety measures.

OPERATION AND MAINTENANCE

Provide an operation and maintenance plan to the landowner/user to maintain channel capacity and vegetative cover. Items to include are--

- Assess the area after each major storm event for downed trees and debris accumulation. Remove or relocate and anchor downed trees and debris accumulations that are causing bank erosion problems as soon as possible.
- Periodically inspect the area for signs of streambank undermining or instability. Remove any debris accumulations that may contribute to the instability and closely monitor the area.
- Clear any vegetation and/or debris that block side drainage structures and channels.

REFERENCES

USDA-NRCS. 2007. National Engineering Handbook, Part 654, Stream Restoration Design. Washington, D.C.

USDA-NRCS. 2009. National Biology Handbook, Part 614, Stream Visual Assessment Protocol Version 2. Washington, D.C.

OWNER:

CITY OF VALDOSTA
216 E CENTRAL AVENUE
VALDOSTA, GA 31601
PH: (229) 242-2600

ENGINEER:

INNOVATE ENGINEERING & SURVEYING, LLC.
2214 N. PATTERSON STREET
VALDOSTA, GA 31604
PH: (229) 249-9113

24 HOUR CONTACT:

CHARLIE CLARK
ENGINEERING DEPARTMENT
CITY HALL ANNEX
300 N LEE STREET
VALDOSTA, GA 31601
PH: (229) 259-3530

UTILITY CONTRACTOR:

TBD

CITY OF VALDOSTA
EMERGENCY WATERSHED PROTECTION
STREAM CLEARING AND SNAGGING
CITY OF VALDOSTA, LOWNDEN COUNTY, GA



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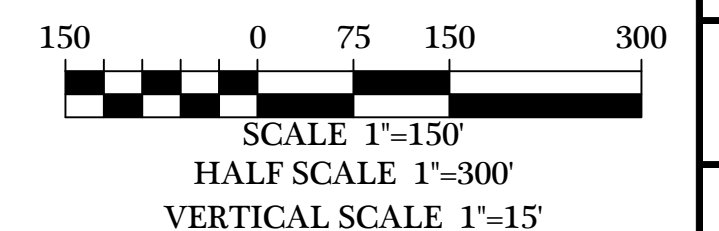
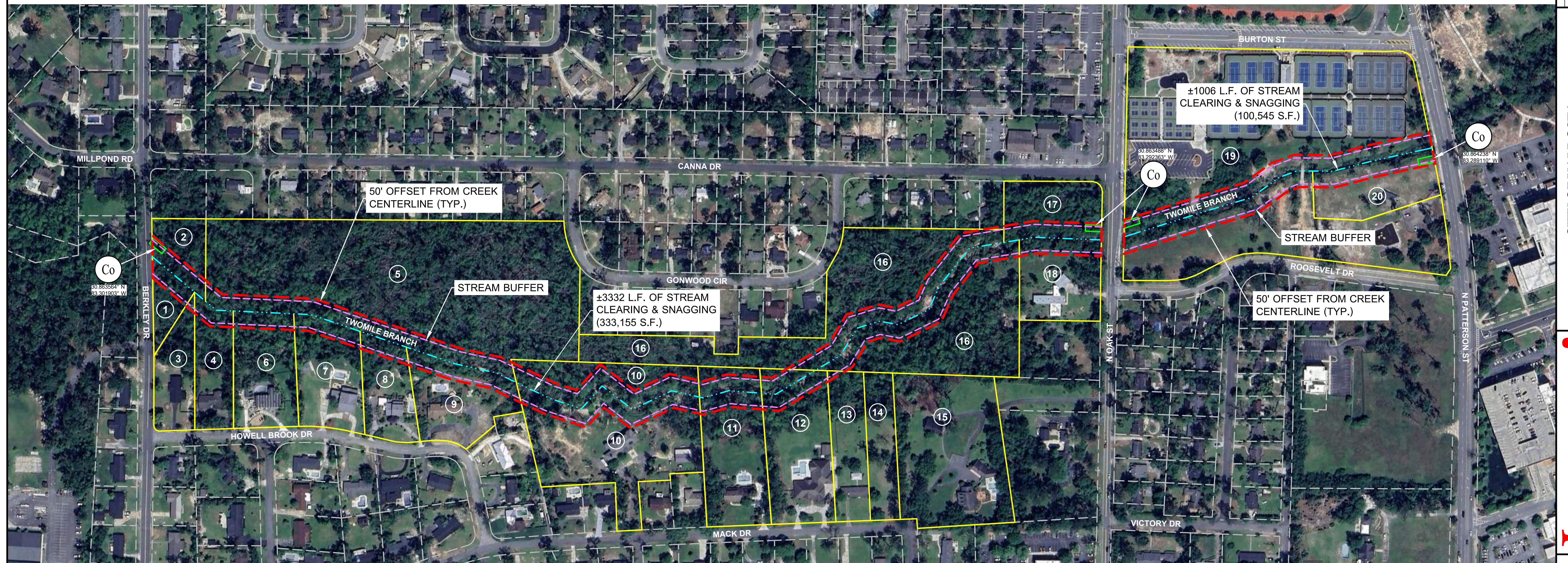
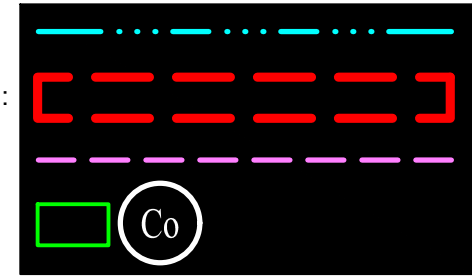
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DATE:
09/23/2025
DRAWN BY:
M. WILSON
CHECKED BY:
B. KENT

SHEET
1 OF 11

PROJECT NUMBER
1955

1. SEDIMENT REMOVAL FROM STREAM AREA SHALL BE SPREAD OUT ON ADJACENT UPLAND AREA TO BE DESIGNATED DURING A PRE-CONSTRUCTION CONFERENCE WITH THE CITY OF VALDOSTA. SEDIMENT SHALL BE SPREAD, LEVELED AND GRASSED. DEBRIS SHALL BE PLACED AT LEAST 10 FEET A WAY FROM TOP OF STREAM BANK ON SIDE OF STREAM WHERE IT WAS REMOVED FROM.
2. ALL DISTURBED AREA ABOVE WATER LEVELS SHALL BE STABILIZED WITH EROSION CONTROL MATTING AND BE SEEDED PER THE PROVIDED SEEDING SCHEDULE.
3. PERMITS THAT MAYBE REQUIRED FROM GDOT AND USACE WILL BE OBTAINED BY THE CITY OF VALDOSTA. NEITHER GDOT NOR USACE PERMITS ARE ANTICIPATED AT THIS TIME.
4. THE CONTRACTOR SHALL OBTAIN RIGHT-OF-ENTRY DOCUMENTS FROM AFFECTED PROPERTY OWNERS.

CONSTRUCTION EXIT:



CITY OF VALDOSTA
EMERGENCY WATERSHED PROTECTION
STREAM CLEARING AND SNAGGING
CITY OF VALDOSTA, LOWNDES COUNTY, GA



DATE:
0/22/2025
DRAWN BY:
J. WILSON
CHECKED BY:
KENT

SHEET
4 OF 11

PROJECT NUMBER
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DATE:	
DESCRIPTION:	

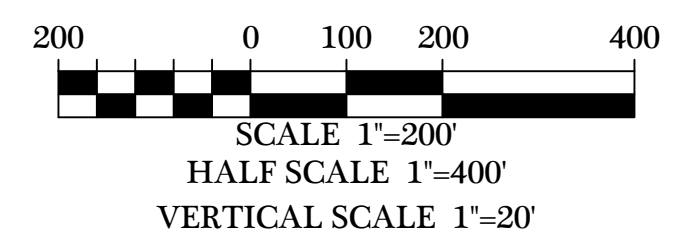
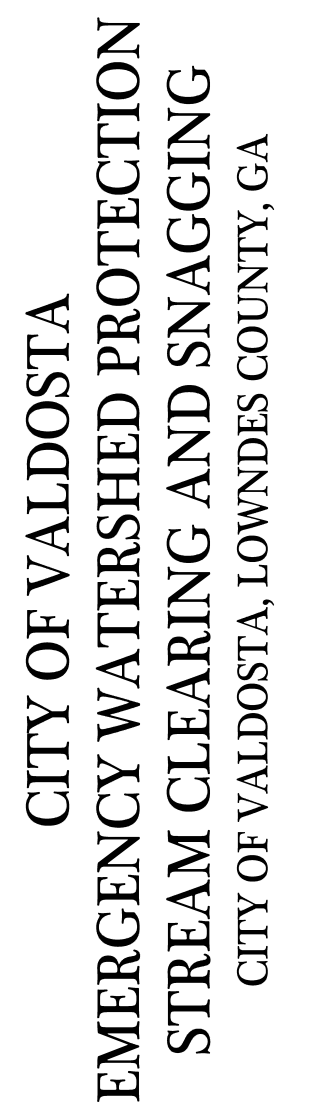
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CENTERLINE OF CREEK:
 100' LIMITS OF OPERATION: []
 STREAM BUFFER: - - - - -
 CONSTRUCTION EXIT: [] (C₀)



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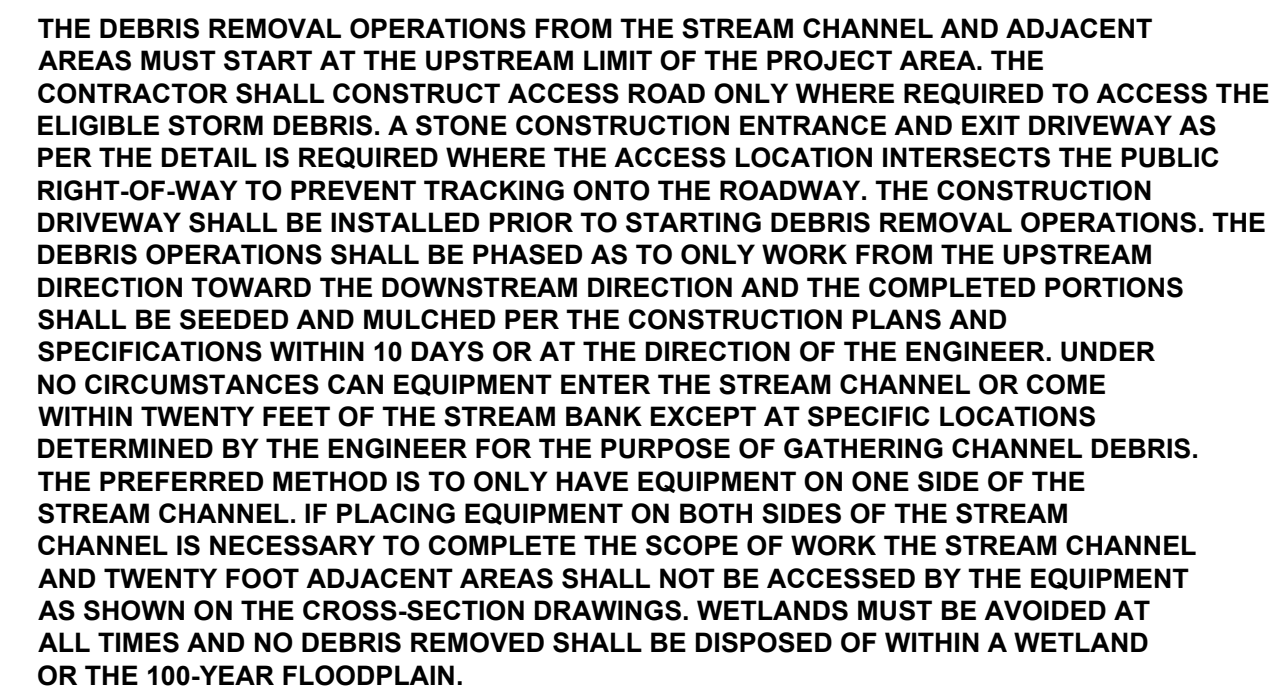
SHEET
6 OF 11

PROJECT NUMBER
1955

PARCEL LABEL		PARCEL NUMBER	OWNERS INFO							
1		0076C 024	VALDOSTA LOWNDES COUNTY PARKS & RECREATION AUTHORITY P O BOX 1746 Valdosta, GA 31603	17	0109C 051	RETTERBUSH KAY 800 PINE POINT CIRCLE VALDOSTA, GA 31602	33	0109D 020	CITIZENS COMMUNITY BANK PO BOX 338 HAHIRA, GA 31632-0338	
2		0078B 022	GRINER BRIAN C 2815 PEBBLEWOOD DRIVE VALDOSTA, GA 31602	18	0109C 030	RS3 LLC 807 NORTHWOOD PARK DRIVE VALDOSTA, GA 31602	34	0109D 021	DON BROTHERTON PROPERTIES LLC 1422 W HILL AVE VALDOSTA, GA 31601	
3		0076D 135	LINCOLN STEPHEN P PO BOX 2784 VALDOSTA, GA 31604-2784	19	0109C 050	FISHER JAMES B & DONA R 704 PINE POINT CIRCLE VALDOSTA, GA 31602	35	0109C 045A	CASTLEBERRY WILLIAM M JR P O BOX 2005 VALDOSTA, GA 31604	
4		0078B 026A	GEORGE EAGER FAMILY LLC 404 EAGER ROAD VALDOSTA, GA 31602	20	0109C 031	MWT PROPERTIES INC 375 OAKRIDGE CHURCH RD TIFTON, GA 31794				
5		0076D 156	VALDOSTA CITY OF P O BOX 1125 VALDOSTA, GA 31603-1125	21	0109C 049	WILLIAMS STEWART A 702 PINE POINT CIRCLE Valdosta, GA 31602				
6		0078B 012	HARRELL KYLE L & ASHLIE B 7 MOSS TRAIL CIRCLE VALDOSTA, GA 31602	22	0109C 048	GARNER DONALD W 700 PINEPOINT CIRCLE VALDOSTA, GA 31602-1304				
7		0076D 159	PERLMAN KIM ROBERT & LAURA 8 RAMBLEWOOD CIRCLE VALDOSTA, GA 31602	23	0109C 033	MWT PROPERTIES INC 375 OAKRIDGE CHURCH RD TIFTON, GA 31794				
8		0076D 158	MARSH CHRISTI W 2 RAMBLEWOOD CIRCLE VALDOSTA, GA 31602	24	0109C 047	BROOME BRENDA K 614 PINE POINT CIR Valdosta, GA 31602				
9		0076D 157	ELDRIDGE ELEANOR #1 RAMBLEWOOD CIRCLE VALDOSTA, GA 31602-2631	25	0109C 034	MWT PROPERTIES INC 375 OAKRIDGE CHURCH RD TIFTON, GA 31794				
10		0076D 161	GAUCHER LIVING TRUST & GAUCHER DENNIS E 3111 COUNTRY CLUB DRIVE VALDOSTA, GA 31602	26	0109C 046	LANGDALE KIMBERLY WORN P O BOX 5048 VALDOSTA, GA 31603				
11		0076D 162	MATHIS CHADD & GINA MARIE 2427 MEADOWBROOK DRIVE VALDOSTA, GA 31602	27	0109C 035	TURNER FURNITURE COMPANY OF VALDOSTA INC 375 OAKRIDGE CHURCH RD TIFTON, GA 31794				
12		0109C 020	THORNBROOKE OF NORTHWOOD PARK HOMEOWNERS ASSOC INC C/O CRAIG E HOWELL 708 THORNBROOKE COURT VALDOSTA, GA 31602-1390	28	0109C 036	KATECO LLC 3363 N VALDOSTA ROAD VALDOSTA, GA 31602				
13		0109C 054	DARNELL AARON & KERI L DARNELL 806 PINE POINT CIRCLE VALDOSTA, GA 31605	29	0109C 045	CASCADE FUNDING MORTGAGE TRUST HB7 14405 WALTERS RD SUITE 200 HOUSTON, TX 77014				
14		0109C 053	MARTINEZ EMMANUEL RICHARD & MANDY RENEE 804 PINE POINT CIRCLE VALDOSTA, GA 31602	30	0109C 042	LAHOOD MATTHEW C SR & VALERIE F 1 CASTLE CREEK PLACE VALDOSTA, GA 31602				
15		0109C 052	MCCRACKEN WILLIAM DAVID & REBECCA D 802 PINEPOINT CIRCLE VALDOSTA, GA 31602	31	0109C 041	CASTLEBERRY JULIAN CARTER PO BOX 2005 VALDOSTA, GA 31604-2005				
16		0109C 029	RS3 LLC 807 NORTHWOOD PARK DRIVE VALDOSTA, GA 31602	32	0109C 040	GAY SAMUEL BRYAN 2 CASTLE CREEK PLACE VALDOSTA, GA 31602				

REVISIONS

DATE	DESCRIPTION

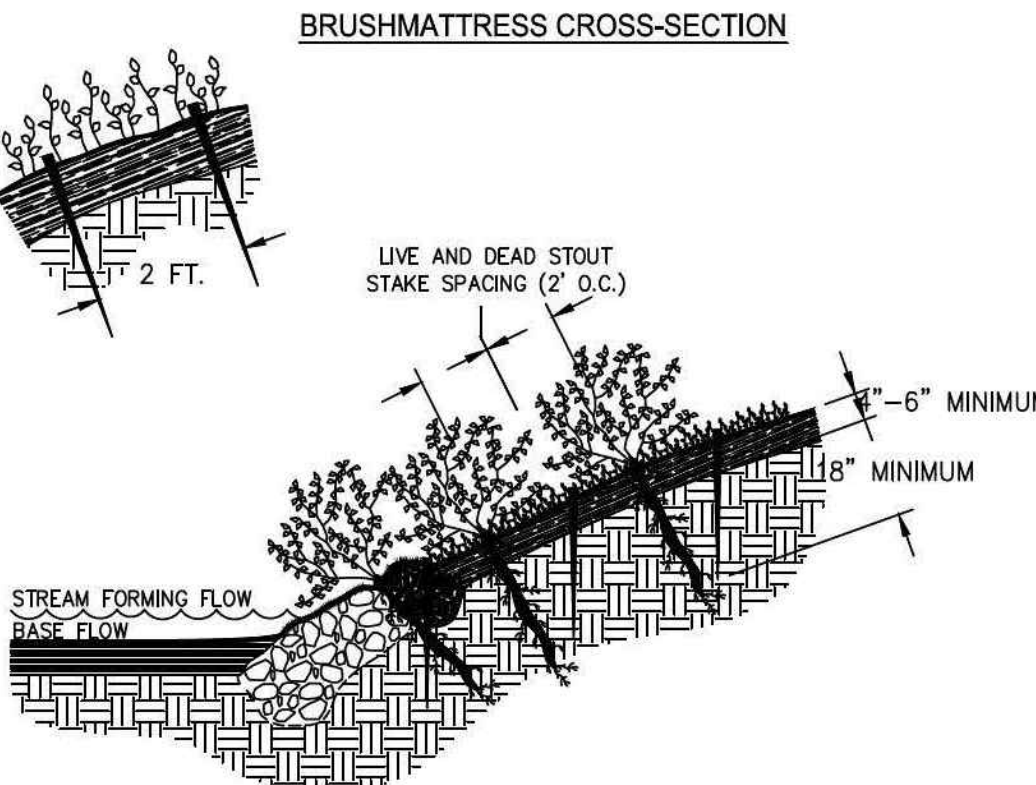
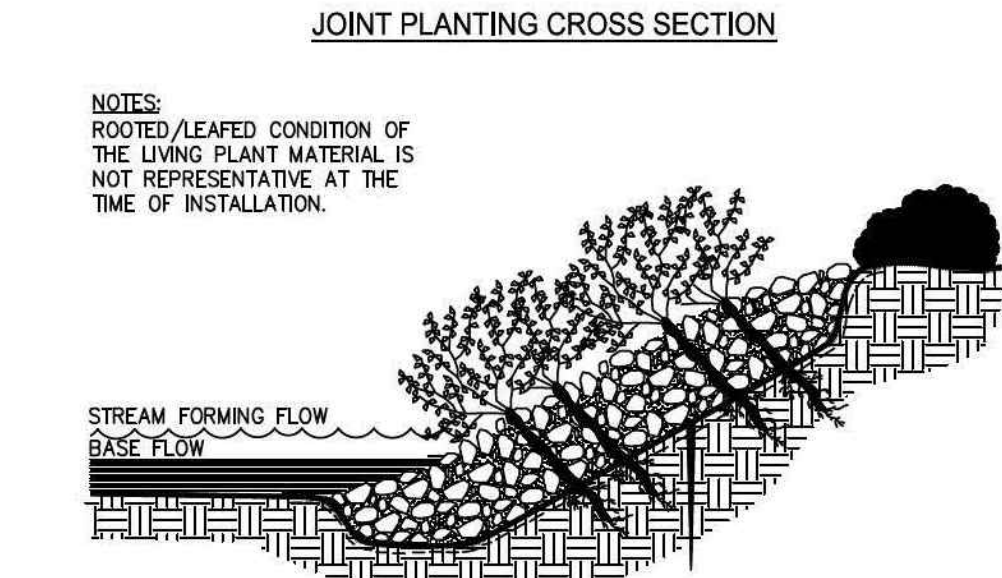
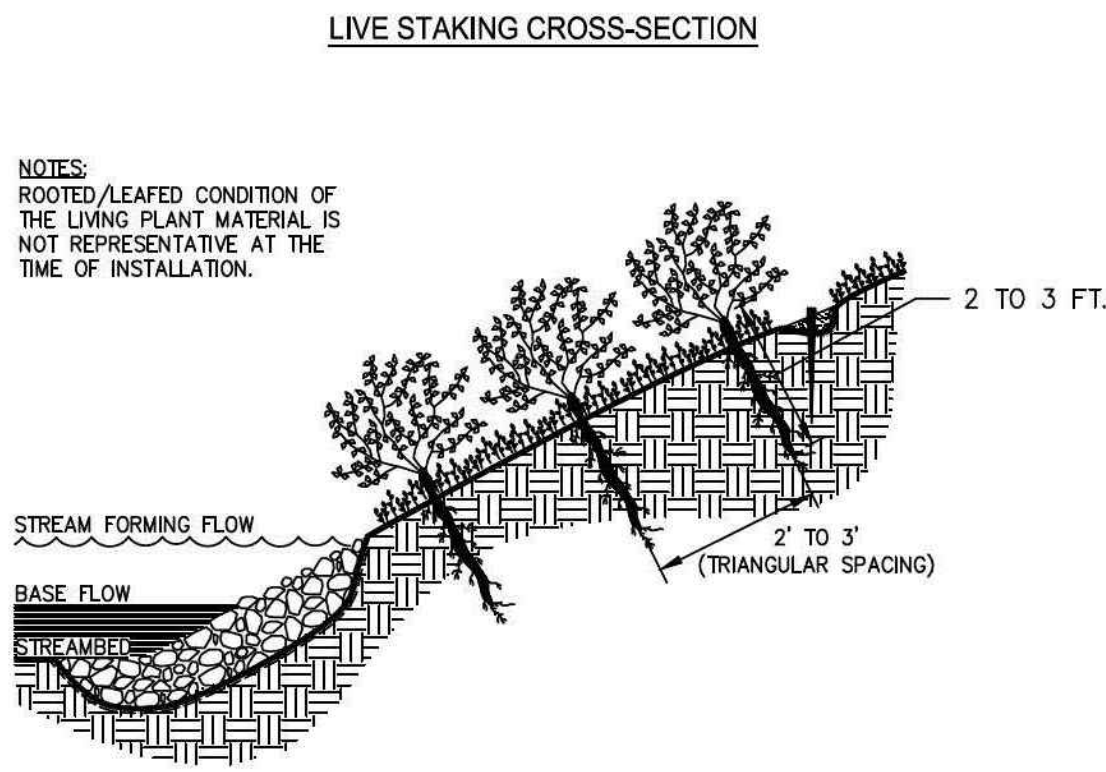


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CITY OF VALDOSTA, LOWNDES COUNTY, GA

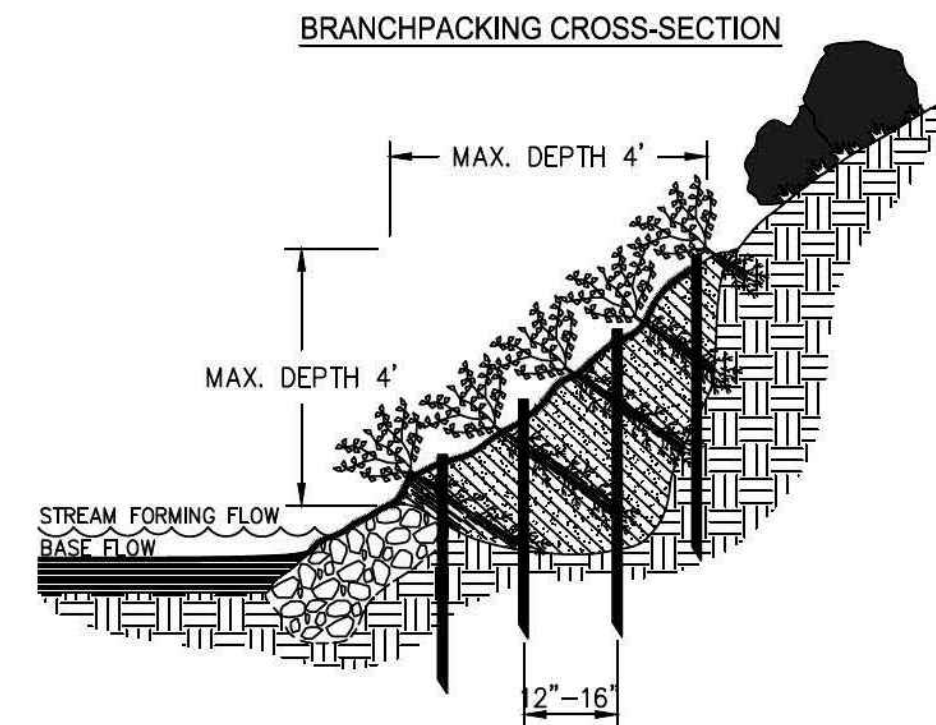
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DRAWN BY: M. WILSON
CHECKED BY: B. KENT

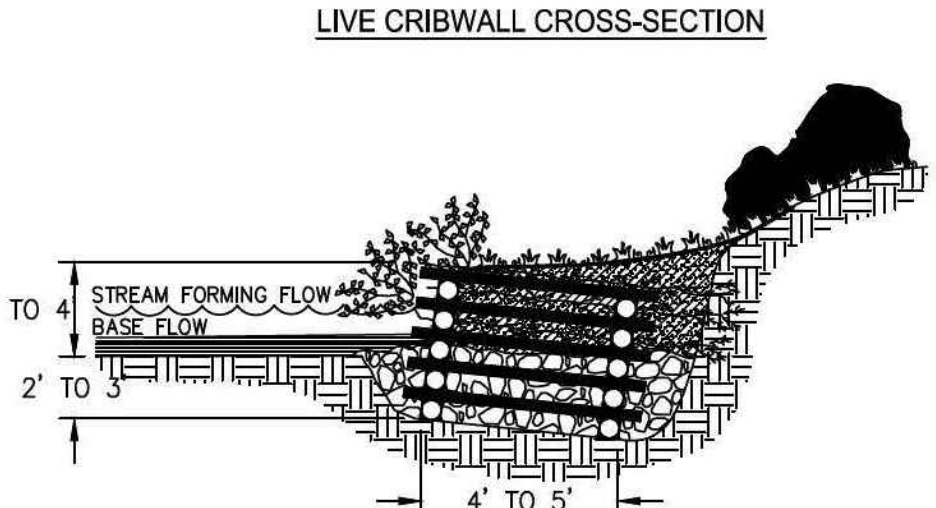
SHEET
8 OF 11
PROJECT NUMBER
1955



- NOTES:**
1. ROOTED/LEAFED CONDITION OF THE LIVING PLANT MATERIAL IS NOT REPRESENTATIVE AT THE TIME OF INSTALLATION.
 2. LAYERS SHALL BE COMPRISED OF LIVE, QUICK-ROOTING SPECIES. SEE CONTRACT DOCUMENTS.
 3. FILL MATTRESS WITH SOIL AND EVENLY DISTRIBUTE TO APPROXIMATELY 4" MIN. IN DEPTH AND HAND TAMP.
 4. PLACE STAKES EVENLY OVER THE GRADED FACE USING 2" SQUARE SPACING. IF LIVE STAKES ARE SPECIFIED, ALTERNATE EVERY OTHER ONE WITH A DEAD STOUT STAKE.
 5. STRETCH 16 GAUGE GALVANIZED WIRE DIAGONALLY FROM ONE STAKE TO ANOTHER BY TIGHTLY WRAPPING WIRE AROUND STAKES, NO CLOSER THAN 6" FROM THE TOP OF STAKE. WIRE SHALL NOT BE ATTACHED TO LIVE STAKES. POUND STAKES TO COMPRESS MATTRESS.
 6. LIVE FASCINES AND LIVE STAKES ARE INSTALLED WHEN AND WHERE DIRECTED ON THE PLAN SHEET.

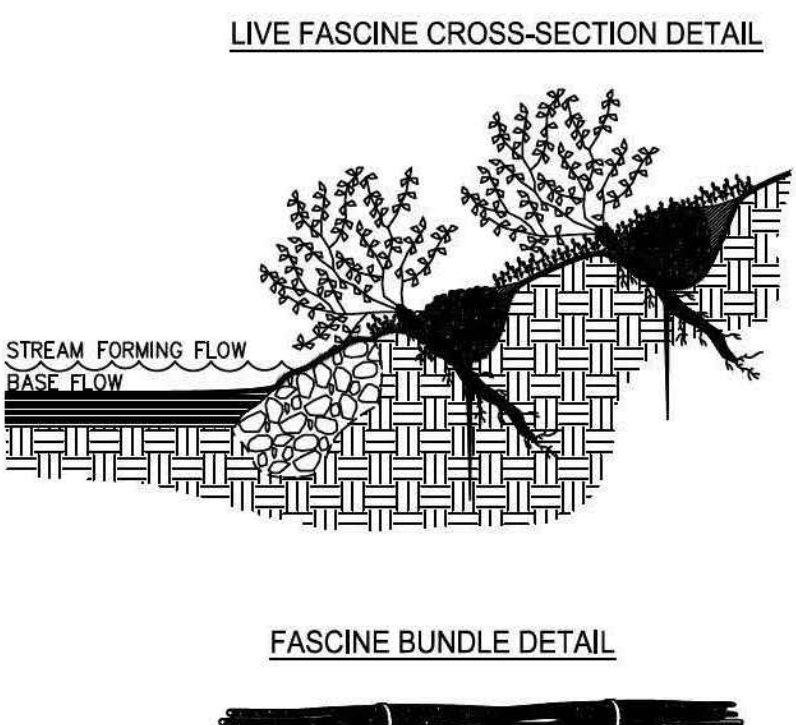


- NOTES:**
1. ROOT/LEAFED CONDITION OF THE LIVING PLANT MATERIAL IS NOT REPRESENTATIVE OF THE TIME OF INSTALLATION.
 2. STARTING AT THE LOWEST POINT, DRIVE THE WOODEN POSTS VERTICALLY 3' TO 4' INTO THE GROUND AND SET THEM 12"-16" APART.
 3. A LAYER OF LIVING BRANCHES (4"-6" THICK) IS PLACED IN THE BOTTOM OF THE HOLE, BETWEEN THE VERTICAL POSTS. THEY SHALL BE PLACED IN A CRISSCROSS CONFIGURATION.
 4. THE FINAL INSTALLATION SHALL MATCH THE EXISTING SLOPE. BRANCHES SHOULD PROTRUDE ONLY SLIGHTLY FROM THE FILLED FACE.
 5. EACH LAYER OF BRANCHES SHALL BE FOLLOWED BY A 12" LAYER OF SOIL HAND TAMPED TO ENSURE CONTACT WITH THE BRANCH CUTTINGS.
 6. THE SOIL SHALL BE MOIST OR MOISTENED TO ENSURE THAT LIVE BRANCHES DO NOT DRY OUT.
 7. WHERE SPECIFIED, LIVE STAKES SHALL BE USED IN PLACE OF POSTS.



- NOTES:**
1. ROOTED/LEAFED CONDITION OF THE LIVING PLANT MATERIAL IS NOT REPRESENTATIVE OF THE TIME OF INSTALLATION.
 2. EACH COURSE SHALL BE SECURED TO THE PRECEDING COURSE WITH SPIKES OR REBARS (SIZE VARIES ACCORDING TO PROJECT).
 3. BACKFILL IN AND AROUND TIMBER CRIB WITH RIPRAP FROM BOTTOM OF EXCAVATION TO THE LOWER GROUND LEVEL (OR WHEN IN STREAM CHANNEL UP TO BASEFLOW).
 4. EACH TRANSVERSE LOG COURSE CONTAINS LIVE CUTTINGS FOLLOWED BY A LAYER OF TAMPED BACKFILL.
 5. EACH FACE LOG COURSE (FRONT AND REAR), AND THE AREA BEHIND THE STRUCTURE SHALL BE BACKFILLED AND HAND TAMPED.

sb STREAMBANK STABILIZATION USING PERMANENT VEGETATION



- NOTES:**
1. ROOTED/LEAFED CONDITION OF THE LIVING PLANT MATERIAL IS NOT REPRESENTATIVE OF THE TIME OF INSTALLATION.
 2. LIVE FASCINES SHALL BE PREPARED FROM FRESHLY CUT DORMANT PLANTS AND INSTALLED WITHIN 8 HOURS OF THE TIME THE MATERIAL IS HARVESTED, UNLESS PROPERLY STORED.
 3. LIVE FASCINE SHALL BE OBTAINED FROM SOURCES APPROVED BY ENGINEER.
 4. LIVE FASCINES SHALL BE 4"-8" IN DIAMETER WITH MINIMUM 8' LENGTH.
 5. BEGINNING AT THE BASE OF THE SLOPE, A TRENCH SHALL BE DUG LARGE ENOUGH TO CONTAIN THE LIVE FASCINES. THE LIVE FASCINES SHALL BE PLACED IN THE TRENCH. WHERE ENDS MEET IN THE TRENCH, THE FASCINES SHALL OVERLAP BY 18".
 6. THE TRENCH SHALL BE BACKFILLED WITH MOIST SOIL AND HAND TAMPED. THE TOP OF THE FASCINE SHALL BE SLIGHTLY EXPOSED WHEN THE INSTALLATION IS COMPLETE AS SHOWN ON CROSS SECTION.
 7. SEED OR OTHER EROSION CONTROL MATERIAL SHALL BE USED BETWEEN THE FASCINE ROWS, AS SPECIFIED IN THE CONTRACT DOCUMENTS.
 8. LIVE FASCINE TRENCHES SHALL BE FROM 3' TO 8' APART, ACCORDING TO SLOPE AND/OR CONTRACT DOCUMENTS.

DEFINITION

THE USE OF READILY AVAILABLE NATIVE PLANT MATERIALS TO MAINTAIN AND ENHANCE STREAMBANKS, OR TO PREVENT, OR RESTORE AND REPAIR SMALL STREAMBANK EROSION PROBLEMS.

PURPOSE

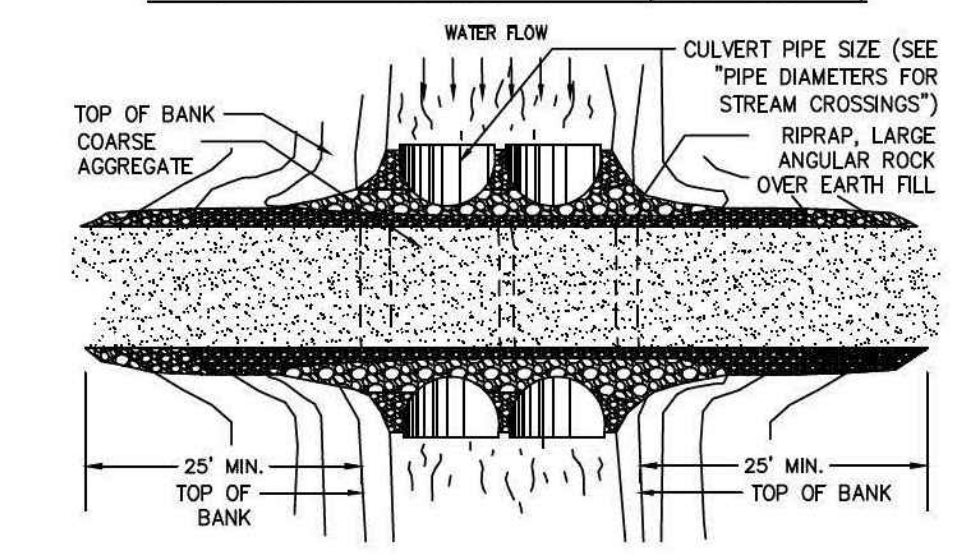
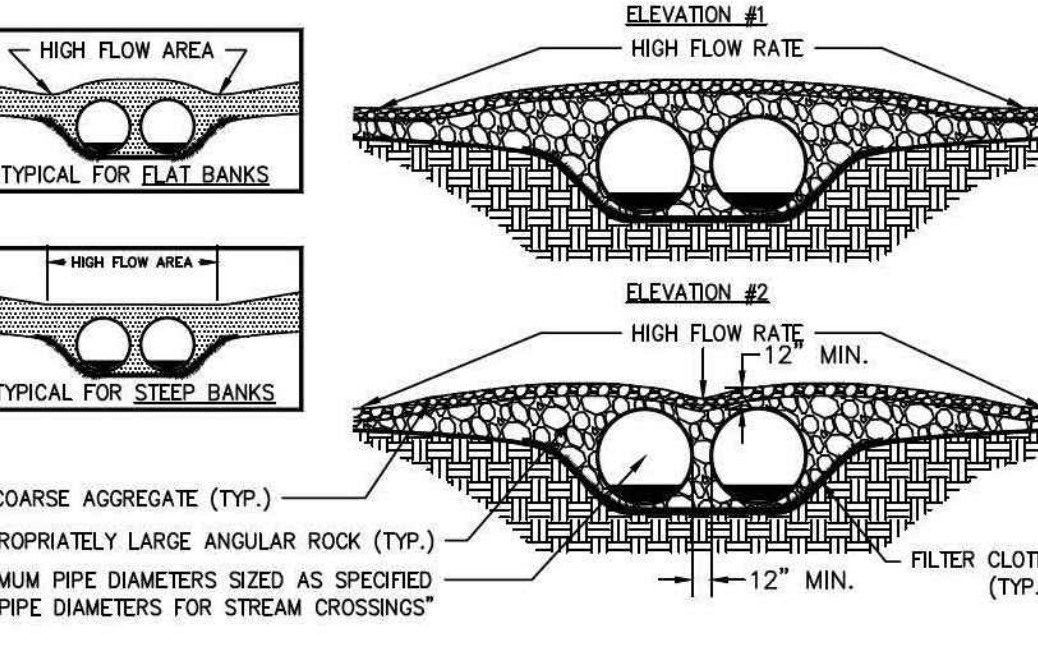
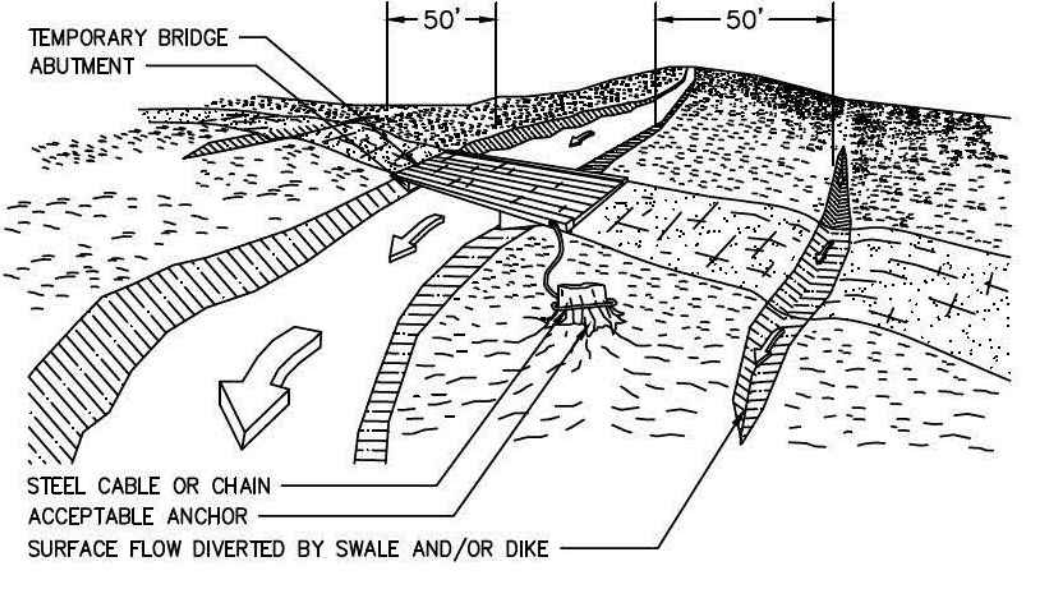
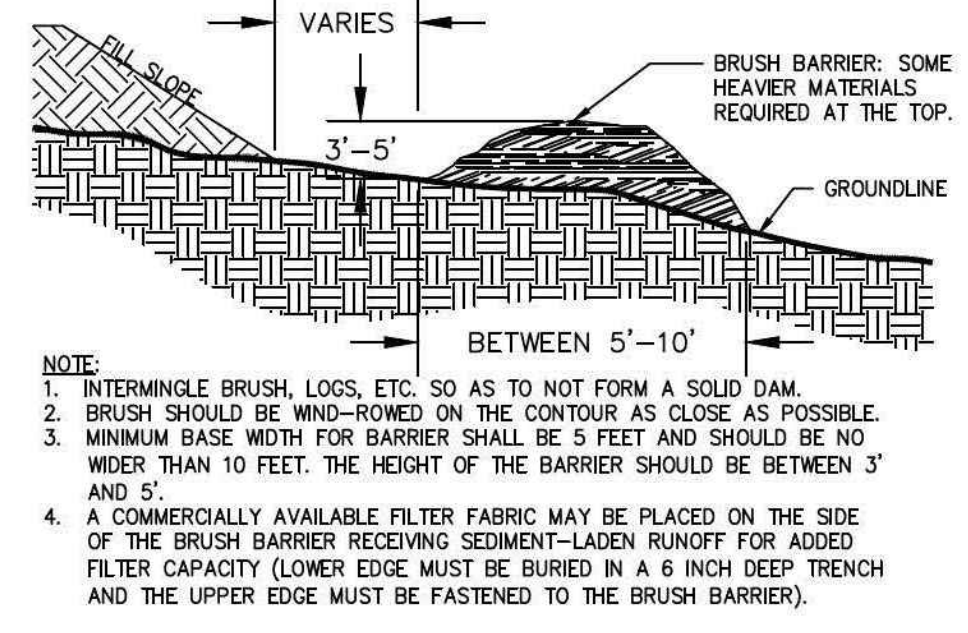
- LESSEN THE IMPACT OF RAIN DIRECTLY ON THE SOIL
- TRAP SEDIMENT FROM ADJACENT LAND.
- FORM A ROOT MAT TO STABILIZE AND REINFORCE THE SOIL ON THE STREAMBANK.
- PROVIDE WILDLIFE HABITAT.
- ENHANCE THE APPEARANCE OF THE STREAM.
- LOWER SUMMERTIME WATER TEMPERATURES FOR A HEALTHY AQUATIC POPULATION.

NOTE: CAREFUL THOUGHT, PLANNING AND EXECUTION IS REQUIRED TO ASSURE THAT THE STREAMBANK STABILIZATION PROJECT IS DONE EFFICIENTLY AND CORRECTLY. PLEASE REFER TO SSWCC'S GUIDELINES FOR STREAMBANK RESTORATION AND CHAPTERS 16 AND 18 OF THE NRCS ENGINEERING FIELD HANDBOOK FOR MORE DETAILED INFORMATION.

SELECTED MEASURES

REVEGETATION INCLUDES SEEDING AND SOODING OF GRASSES, SEEDING IN COMBINATION WITH EROSION CONTROL FABRICS, AND THE PLANTING OF WOODY VEGETATION (SHRUBS AND TREES). REFER TO Dd3 - DISTURBED AREA STABILIZATION (WITH SEEDING), AND Bf - BUFFER ZONE.

USE JUTE MESH AND OTHER GEOTEXTILES TO AID IN SOIL STABILIZATION AND REVEGETATION. REFER TO Sd - SLOPE STABILIZATION



Sr-C TEMPORARY STREAM CULVERT CROSSING

CITY OF VALDOSTA
EMERGENCY WATERSHED PROTECTION
STREAM CLEARING AND SNAGGING
CITY OF VALDOSTA, LOWNDES COUNTY, GA

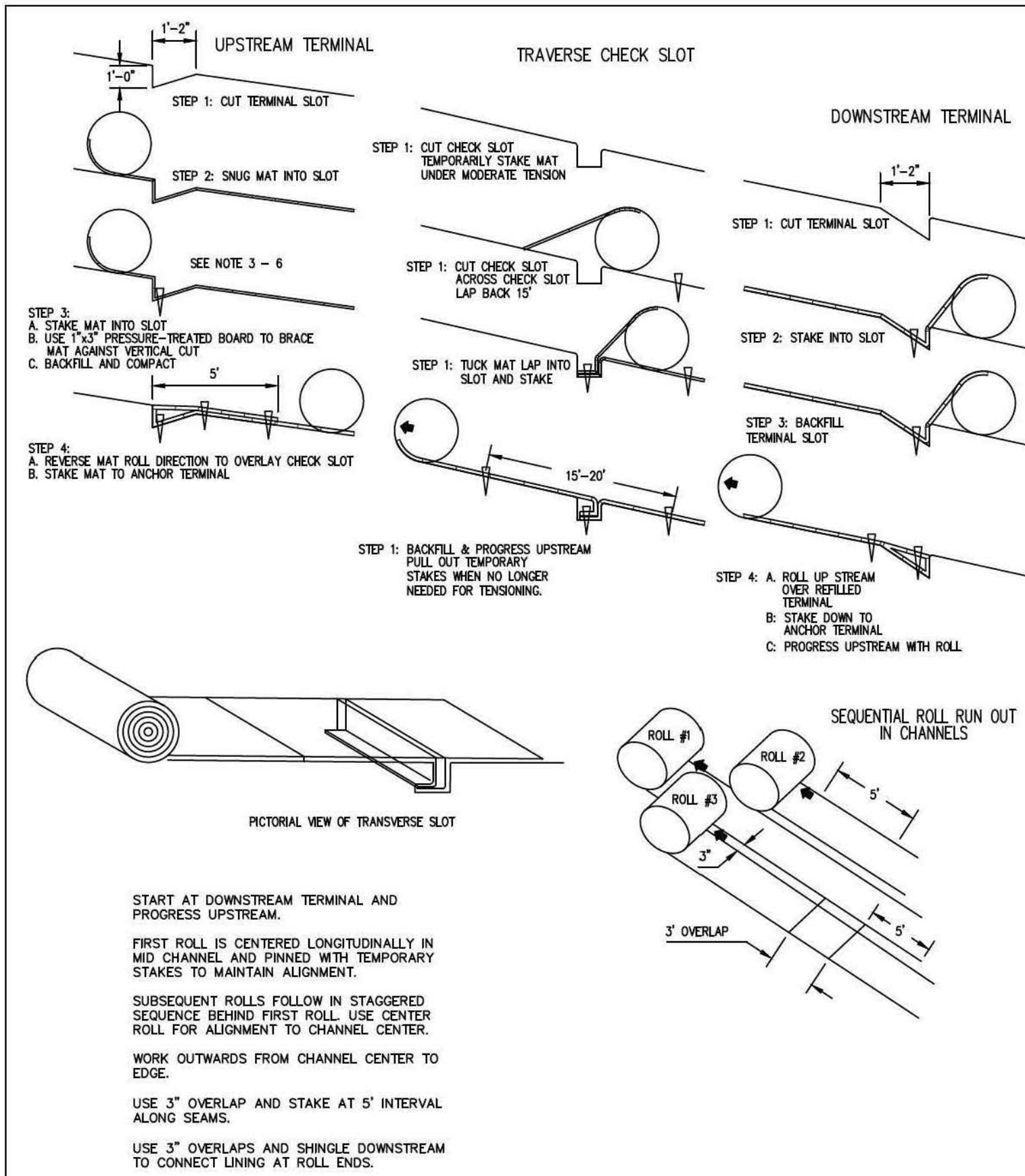
INNOVATE!
Engineering & Surveying
PHONE: 229-249-9113 - www.innovatees.com
2214 N. Patterson Street, Valdosta, GA 31602



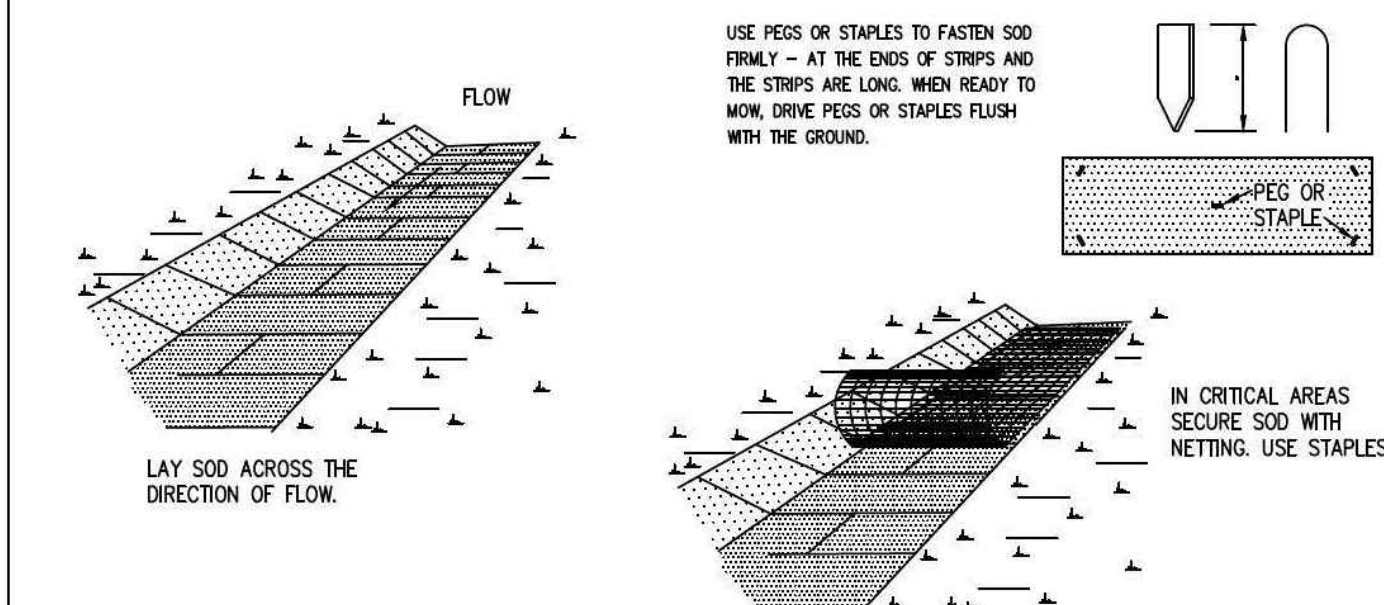
LEVEL II CERT. 8141
DATE: 09/23/2025
DRAWN BY: M. WILSON
CHECKED BY: B. KENT

SHEET
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1955



Ss SLOPE STABILIZATION



CONSTRUCTION SPECIFICATIONS INSTALLATION

Soil Preparation:

Bring soil surface to final grade. Clear surface of trash, woody debris, stones and clods larger than 1". Apply sod to soil surfaces only and not frozen surfaces, or gravel type soils.

Topsoil properly applied will help guarantee a stand. Don't use topsoil recently treated with herbicides or soil sterilants.

Mix fertilizer into soil surface. Fertilize based on soil tests or the table below.

Fertilizer Requirements for Soil Surface Application			
Fertilizer Type	Fertilizer Rate (lbs./acre)	Fertilizer Rate (lbs./sq.ft.)	Season
10-10-10	1000	.025	Fall

Agricultural lime should be applied based on soil tests or at a rate of 1 to 2 tons per acre.

Installation:

Lay sod with tight joints and in straight lines. Don't overlap joints. Stagger joints and do not stretch sod.

On slopes steeper than 3:1, sod should be anchored with pins or other approved methods. Installed sod should be rolled or tamped to provide good contact between sod and soil.

Irrigate sod and soil to a depth of 4" immediately after installation.

Sod should not be cut, or spread in extremely wet or dry weather. Irrigation should be used to supplement rainfall for a minimum of 2-3 weeks.

Materials:

Sod selected should be certified. Sod grown in the general area of the project is desirable.

- Sod should be machine cut and contain 3/4" (+ or - 1/4") of soil, not including shoots or thatch.

Ds4 DISTURBED AREA STABILIZATION (WITH SODDING)

Temporary Erosion Control Blankets

This includes temporary "combination" blankets (rolled erosion control blankets-RECB) consisting of a plastic netting which covers and is interlarded with a natural organic or manmade mulch; or, a jute mesh which is typically homogeneous in design and can act alone as a soil stabilization blanket.

Temporary blankets as a minimum shall be used to stabilize concentrated flow areas with a velocity less than 5 ft/sec and slopes 2.5:1 or steeper with a height of 10 feet or greater. Because temporary blankets will deteriorate in a short period of time, they provide no enduring reduction in erosion protection.

Benefits of using erosion control blankets include the following:

- Protection of the seed and soil from rainfall impact and subsequent displacement.
- Thermal consistency and moisture retention for seedbed area.
- Stronger and faster germination of grasses and legumes.
- Planting off excess stormwater runoff.
- Prevention of sloughing of topsoil added to steeper slopes.

Permanent Erosion Control Matting

Consists of a permanent non-degradable, three-dimensional plastic structure which can be filled with soil prior to planting. These mats are also known as permanent soil reinforcing mats (soil reinforcement matting). Roots penetrate and become entangled in the matrix, forming a continuous anchorage for surface growth and promoting enhanced energy dissipation. Matting shall be used when a vegetative lining is desired in stormwater conveyance channels where the velocity is between five and ten per second.

Benefits of using erosion control matting include the following:

- All benefits gained from using erosion control blankets.
- Causes soil to drop out of stormwater and fill matrix with fine soils which become the growth medium for the development of roots.
- Acts with the vegetative root system to form an erosion resistant cover which resists hydraulic lift and shear forces when embedded in the soil within stormwater channels.

Materials

All blanket and matting materials shall be on the Georgia Department of Transportation Qualified Products List (QPL #62 for blankets, QPL #49 for matting).

All blankets shall be nontoxic to vegetation and to the germination of seed and shall not be injurious to the unprotected skin of humans. At a minimum, the plastic netting shall be interlarded with the mulching material/fiber to maximize strength and provide for ease of handling.

Temporary Blankets

Machine produced temporary combination blankets shall have a consistent thickness with the organic material evenly distributed over the entire blanket area. All combination blankets shall have a minimum width of 48 inches. Machine produced combination blankets include the following:

- Straw blankets are combination blankets that consist of weed-free straw from agricultural crops formed into a blanket. Blankets with a top side of photodegradable plastic mesh with a maximum mesh size of 5/16 x 5/16 inch and sewn to the straw with biodegradable thread is appropriate for slopes. The blanket shall have a minimum thickness of 3/8 inch and minimum dry weight of 0.5 pounds per square yard.
- Excelsior blankets are combination blankets that consist of curled wood excelsior (80% of fibers are six inches or longer) formed into a blanket. The blanket shall have clear markings indicating the top-side of the blanket and be smolder resistant. Blankets shall be photodegradable plastic mesh having a maximum mesh size of 1 1/2 x 3 inches. The blanket shall have a minimum thickness of 1/4 of an inch and a minimum dry weight of 0.5 pounds per square yard. Slopes require excelsior matting with the top side of the blanket covered in the plastic mesh, and for waterways, both sides of the blanket require plastic mesh.
- Coconut fiber blankets are combination blankets that consist of 100% coconut fiber formed into a blanket. The minimum thickness of the blanket shall be 1/4 of an inch with a minimum dry weight of 0.5 pounds per square yard. Blankets shall have photodegradable plastic mesh, with a maximum mesh size of 5/8 x 5/8 inch and sewn to the fiber with a breakdown resistant synthetic yarn. Plastic mesh is required on both sides of the blanket is used in waterways. A maximum of two inches is allowable for the stitch pattern and row spacing.
- Wood fiber blankets are combination blankets that consist of reprocessed wood fibers that do not possess or contain any growth or germination inhibiting factors. The blanket shall have a photodegradable plastic mesh, with a maximum mesh size of 5/8 x 3/4 inch, securely bonded to the top of the mat. The blanket shall have a minimum dry weight of 0.35 pounds per square yard. A maximum of two inches is allowable for the stitch pattern and row spacing. This practice shall be applied only to slopes.
- Jute Mesh can be applied to slopes. Jute mesh with a 48 inch width shall show between 76 and 80 warpings and a one yard length shall show between 39 to 43 weftings. The woven mesh shall be at least 45 inches wide. Yarn shall have a unit weight of at least 0.9 pounds per square yard, but not more than 1.5 pounds per square yard.

Permanent Matting

Permanent matting shall consist of a lofty web of mechanically or melt bonded polymer nettings, monofilaments or fibers which are entangled to form a strong and dimensionally stable matrix. Polymer welding, thermal of polymer fusion, or the placement of fibers between two high strength, biaxially oriented nets bound securely together by parallel lock stitching with polyethylene, nylon or polyester threads are all appropriate bonding methods. Mats shall maintain their shape before, during, and after installation, under dry or water saturated conditions. Mats must be stabilized against ultraviolet degradation and shall be inert to chemicals normally encountered in a natural soil environment.

The mat shall conform to the following physical properties:

Property	Minimum Value
Thickness	0.5 inch
Weight	0.6 PSY
Roll Width	38 inches
Tensile Strength	
Length (50% elongation)	15 lbs./in.
Length (ultimate)	20 lbs./in.

Sod Planting Requirement		
Grass	Varieties	Growing Season
Bermudagrass	Common Tigergrass	Warm Weather
Bahia grass	Pensacola	Warm Weather
Centipede		Warm Weather
Zoysia	Emerald Myer	Warm Weather
Tall Fescue	Kentucky 31	Cool Weather

MAINTENANCE:

Re-sod areas where an adequate stand of sod is not obtained. New sod should be mowed sparingly. Grass height should not be cut less than 2" -3" or as specified (See table above).

Apply one ton of agricultural lime as indicated by soil test or every 4-6 years. Fertilize grasses in accordance with the soil tests or the below table.

Fertilizer Requirements for Sod				
Types Of Species	Planting Year	Fertilizer (N-P-K)	Rate (lbs./acre)	Nitrogen Top Dressing Rate (lbs./acre)
Cool Season Grasses	First	6-12-12	1500	50-100
	Second Maintenance	6-12-12	1000	30
Warm Season Grasses	First	6-12-12	1500	50-100
	Second Maintenance	6-12-12	800	30

Streambank Erosion Protection Measures

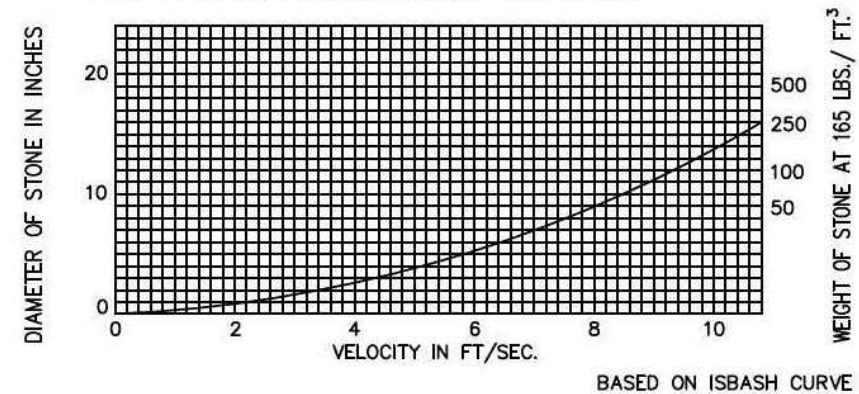
Measure	Relative Cost	Relative Complexity
Live Stake Joint planting	Low	Simple
Live Fascine	Low*	Moderate
Live Branching Bushmoss	Moderate	Moderate to Complex
Live cribwall	High	Complex
Branchpacking	Moderate	Moderate to Complex
Conventional Vegetation	Low to Moderate	Simple to Moderate
Conventional Bank armoring (Riprap)	Moderate to High	Moderate to Complex

MAINTENANCE:

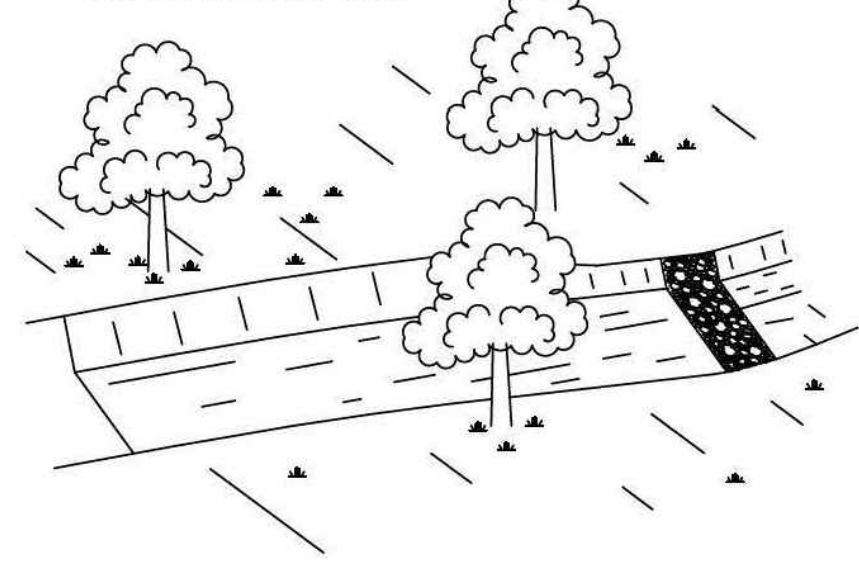
Check banks after every high water event, fixing gaps in the vegetative cover at once with structural materials or new plants, and mulching if necessary. Fresh cuttings from other plants may be used for repairs.

When fertilizer is applied on the surface, it is best to apply about one-half at planting, one-fourth when new growth is about 10 inches tall, and one-fourth about six weeks later.

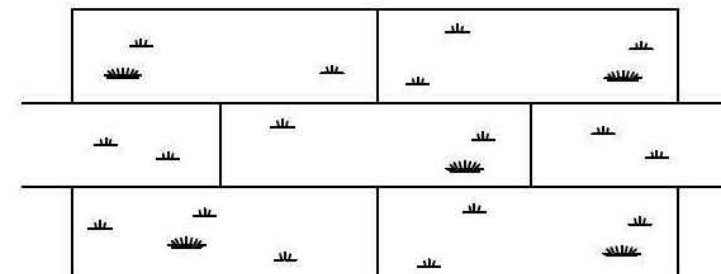
- USE GADOT TYPE 1, 3 OR NSA R-1 THRU R-7 RIPRAP, ROCK SHALL BE INSTALLED ACCORDING TO STANDARDS SPECIFIED IN **RIPRAP APPENDIX C** OF THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA.
- ROCK RIPRAP LINING SHOULD BE USED WHEN VELOCITIES ARE BETWEEN 5 AND 10 FT/SEC.
- DUMPED AND MACHINE PLACED RIPRAP SHOULD NOT BE PLACED ON SLOPES STEEPER THAN 1-1/2 HORIZONTAL TO 1 VERTICAL.
- WHERE CHANNEL VELOCITIES EXCEED SAFE VELOCITIES, THE CHANNEL MAY BE STABILIZED BY USING ROCK RIPRAP OR CONCRETE LINING OR GRADE STABILIZATION STRUCTURE.
- A BLANKET OF FILTER MATERIAL IS PLACED UNDER RIPRAP UNLESS BANK IS A SAND GRAVEL MIXTURE.
- STONE OF DURABLE MATERIAL WEIGHING ≥ 165 LBS/FT³



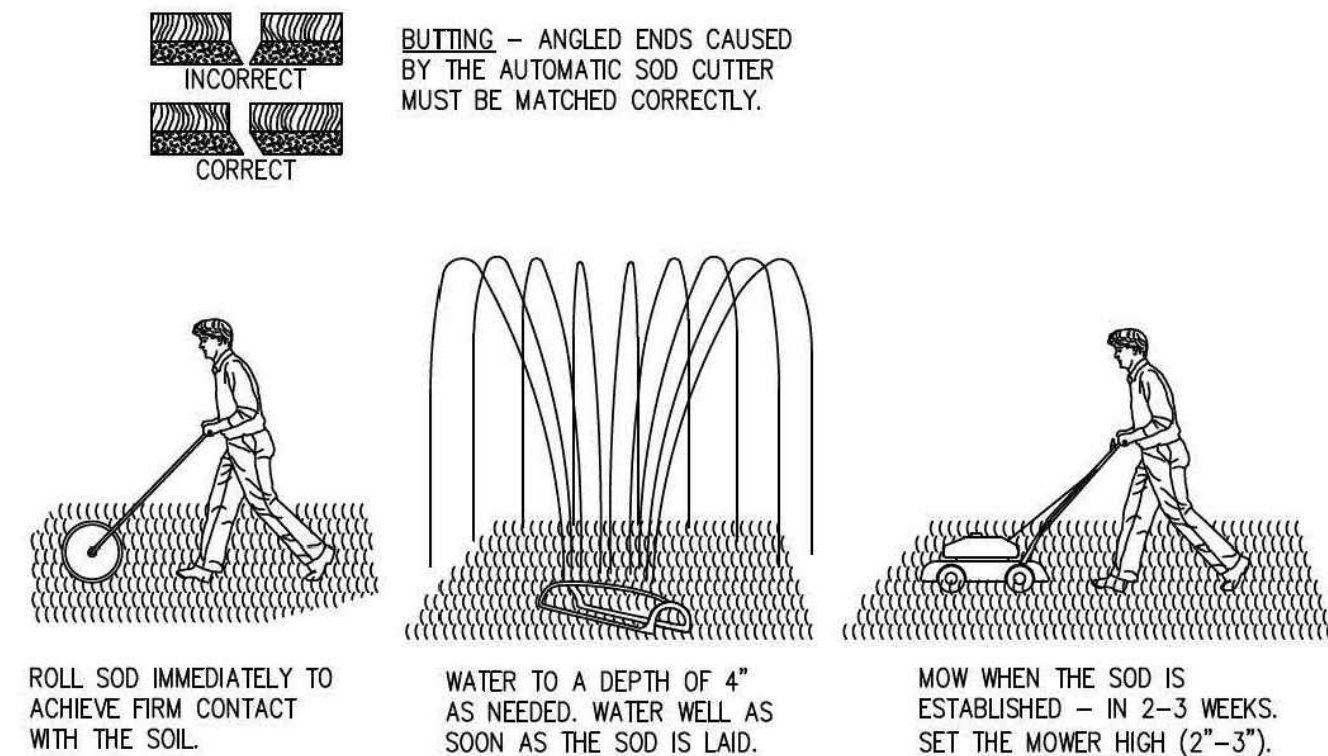
IMPROVING, CONSTRUCTING, OR STABILIZING AN OPEN CHANNEL FOR BETTER WATER MANAGEMENT.



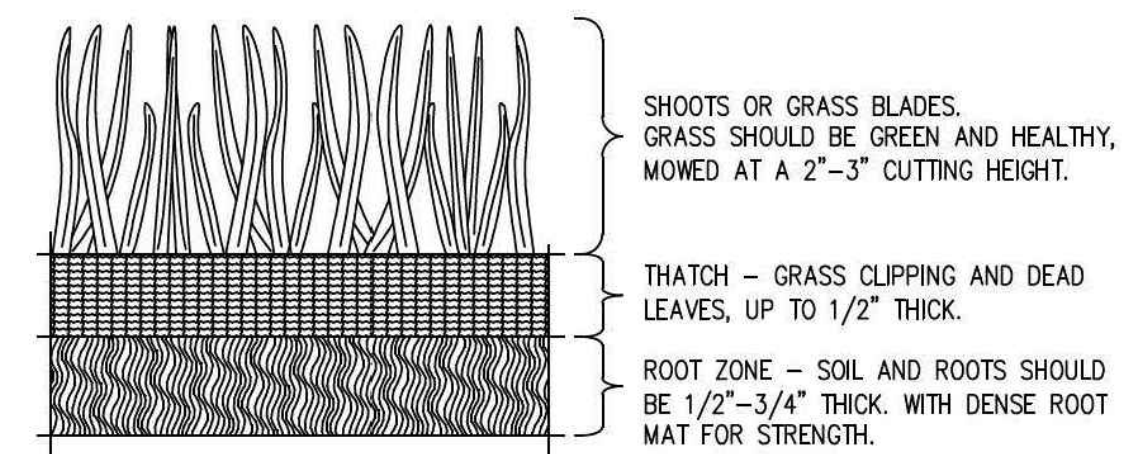
(Ch) CHANNEL STABILIZATION WITH GRADED RIPRAP



LAY SOD IN A STAGGERED PATTERN, BUTT THE STRIPS TIGHTLY AGAINST EACH OTHER. DO NOT LEAVE SPACES AND DO NOT OVERLAP. A SHARPENED MASON'S TROWEL IS A HANDY TOOL FOR TUCKING DOWN THE ENDS AND TRIMMING PIECES.



APPEARANCE OF GOOD SOD



Ds4 SODDING

Best Management Practices (BMPs) Heavy Equipment & Earth-Moving Activities

Heavy Equipment Operation Problems

Soil excavation and grading operations often contribute to urban runoff pollution. By loosening large amounts of soil and sediment, earth-moving activities can cause sediment to flow into gutters, storm drains and streams. Sediment is the most common pollutant washed from worksites, creating multiple problems once it enters the stream. Sediment clogs the gills of fish, blocks light transmission and increases stream water temperature, all of which harm life, disturbing the food chain upon which both fish and people depend upon.

Sediment also carries with it other worksite pollutants such as pesticides, cleaning solvents, cement wash, asphalt and car fluids like motor oil, grease and fuel. Thus, poorly maintained vehicles and heavy equipment leaking fuel and oil at the construction site, also contribute to ocean pollution.

Solutions

Best Management Practices (BMPs) such as handling, storing, and disposing of materials properly can prevent pollutants from entering the storm drains.

General Business Practices

Schedule excavation and grading work for dry weather. Use as little water as possible for dust control.

Clean Up Spills

Never wash down "dirty" pavement or impermeable surfaces where fluids have spilled. Use dry cleanup methods (sawdust, kitty litter, and/or rags) and dispose of properly. Sweep up dry spilled materials immediately. Never attempt to bury them or "wash them away" with water. Clean up spills on dirt areas by digging up and properly disposing of contaminated soil. Report significant spills to the appropriate spill response agencies immediately.

Vehicle & Equipment Maintenance

Maintain all vehicle and heavy equipment in good working order and inspect frequently for leaks. Conduct all vehicle/equipment maintenance and refueling at one location--away from storm drains. Perform major maintenance, repair jobs and vehicle/equipment washing off-site. Use gravel approaches where truck traffic is frequent, to reduce soil compaction and limit the tracking of sediment into streets. Use drip pans or drop cloths to catch drips and spills if you drain and replace motor oil, radiator coolant or other fluids on site. Collect all used fluids, store in separate containers and recycle whenever possible; otherwise make certain they are disposed of properly. Do not use diesel oil to lubricate equipment or parts. Washout of the drum at the construction site is prohibited.

Erosion Prevention

After clearing, grading or excavating, exposed soil poses a clear and immediate danger for stormwater pollution. Revegetation (permanent or temporary) is an excellent form of erosion control for any site. Avoid excavation and grading activities during wet weather. Construct diversion dikes to channel runoff around the site. Line channels with grass or roughened pavement to reduce runoff velocity. Cover stockpiles and excavated soil with secured tarps or plastic sheeting. Remove existing vegetation only when absolutely necessary. Large projects should be conducted in phases. Consider planting temporary vegetation for erosion control on slopes or where construction is not immediately planned. Plant permanent vegetation as soon as possible, once excavation and grading activities are complete.

Vehicle fueling

Description and Purpose
Vehicle equipment fueling procedures and practices are designed to prevent fuel spills and leaks, and reduce or eliminate contamination of stormwater. This can be accomplished by using offsite facilities, fueling in designated areas only, enclosing or covering stored fuel, implementing spill controls, and training employees and subcontractors in proper fueling procedures.
Suitable Applications
These procedures are suitable on all construction sites where vehicle and equipment fueling takes place.
Limitations
Onsite vehicle and equipment fueling should only be used where it is impractical to send vehicles and equipment offsite for fueling. Sending vehicles and equipment offsite should be done in conjunction with Co. Stabilized Construction Entrance/ Exit.
Implementation
Use offsite fueling stations as much as possible. These businesses are better equipped to handle fuel and spills properly. Performing this work offsite can also be economical by eliminating the need for a separate fueling area at a site.
... Discourage "topping-off" of fuel tanks.
Spill Response Agencies
GA EPD - 912-264-7284
NRC - 800-424-8802
Concrete Waste Management

Description and Purpose

Prevent or reduce the discharge of pollutants to storm water from concrete waste by conducting washout off-site, performing on-site washout in a designated area, and training employees and subcontractors.

Suitable Applications

These procedures are suitable on all construction sites where concrete work takes place.

- Implementation**
- < Store dry and wet materials under cover, away from drainage areas.
 - < Avoid mixing excess amounts of fresh concrete or cement on-site.
 - < Perform washout of concrete trucks off-site or in designated areas only.
 - < Do not wash out concrete trucks into storm drains, open ditches, streets, or streams.
 - < Do not allow excess concrete to be dumped on-site, except in designated areas.
 - < When washing concrete to remove fine particles and expose the aggregate, avoid creating runoff by draining the water within a bermed or level area.
 - < Train employees and subcontractors in proper concrete waste management.
 - < Washout of the drum at the construction site is prohibited.