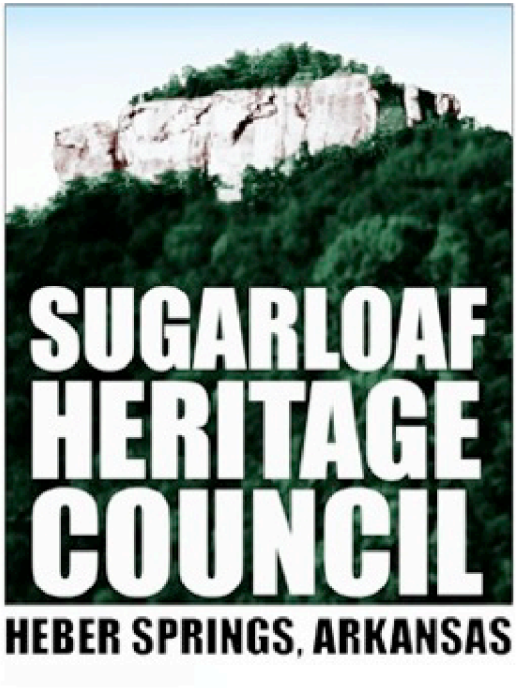
SUGARLOAF MOUNTAIN TRAILS MASTER PLAN



SUGARLOAF HERITAGE COUNCIL
in cooperation with
ARKANSAS STATE UNIVERSITY - HEBER SPRINGS

Heber Springs, Arkansas
August 2009

Eastin Outdoors, Inc.
Landscape Architecture . Trails

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INTRODUCTION - SUGARLOAF MOUNTAIN TRAILS MASTER PLAN

Sugarloaf Mountain rises almost 700 feet out of the Little Red River flood plain in the center of Cleburne County, just outside Heber Springs, Arkansas. The mountain is an erosional remnant of the surrounding landscape and has survived over countless eons by the extremely durable Atoka sandstone cap on top of the mountain. This capstone, combined with the steep mountain slopes, gives the mountain its unique shape which early explorers named Sugarloaf because of its resemblance to early loaves of unrefined sugar. One of the survey parties surveying the Louisiana Purchase in 1819 made note of the fact that they " encountered Sugar Lofe (sic), a well-known landmark". Presumably, early explorers, as well as Native Americans, have historically used the mountain as a landmark. The name of the landmark became the name of the springs to the west and the community that later developed there. The community's name was later changed to Heber Springs.

Throughout history, the unique natural feature has attracted visitors for a scramble to the top, either for an unparalleled view of the surrounding landscape, or as some say, simply because it was there. In the 20th century, it became more popular as surrounding populations grew. In 1922, Dr. LE Robbins bought 40 acres on the south side of the mountain, and then in 1951, acquired 40 acres on the north side of the mountain. At that time, Dr. Robbins and his wife dedicated the entire 80 acres to the town of Heber Springs in a 99-year lease for the purpose of a public park and picnic ground. This land that had long seen public access, was now enjoyed as public property for the people to use and enjoy.

In 2005, the property was obtained by Arkansas State University for the purpose of a new campus to be built in Heber Springs. Construction on the first phase of the ASU-HS campus was completed in 2007. Future plans call for further expansion of the campus in later phases.

Shortly after the new campus opened, the Sugarloaf Heritage Council was formed. There had long been a problem with vandalism on the mountain, particularly in the form of painted graffiti along the summit access trail and on the rocks and bluffs near the top of the mountain. Although some of the graffiti was especially offensive and vulgar, it was all unsightly and detracted from the natural beauty of the mountain. In addition, the long-used summit trail had experienced significant erosion and was in need of major maintenance to prevent continued resource damage. Thus, the Sugarloaf Heritage Council was created as a concerned citizen's group to address these problems, as well as general stewardship of the mountain resource. The Council has already begun successfully removing graffiti by using paint "strippers", volunteer labor and lots of "elbow grease".

Due to the deteriorated condition of the access trail, in addition to the possibilities for additional trail development on the mountain, the Sugarloaf Heritage Council determined the need to formulate a master trails plan. The Council, in concert with ASU-HS, commissioned Eastin Outdoors, Inc., a landscape architecture and trails planning consultant to prepare the Trails Plan. The intent of the Plan is to provide recommendations that will serve as a "road map" for continued trail development on the mountain and its surrounding slopes. The following pages illustrate these recommendations. The trails included in this plan are intended to provide a variety of experiences to a wider number of potential users of this extraordinary natural resource. The Plan is intended to be used as this "road map", but is also intended to be fluid and adaptable to changing conditions, priorities, and considerations. The following pages provide a concept and illustrate the Sugarloaf Trails Master Plan recommendations while providing an initial cost estimate for the planning of these facilities.

SUMMIT TRAIL

- 1500 feet long with an elevation gain of approximately 300 feet to base of "loaf".
- Tread will be 4 to 6 feet in width, natural surface reinforced with local shale.
- The initial focus of planned trail improvements will be rehabilitation of the existing Summit Trail to include total tread renovation for safety and sustainability. The major effort will be overall drainage improvements to reduce current damage resulting from runoff erosion. Efforts will also include removal of obstacles from the trail tread, and grading of the tread for improved safety. The trail itself will terminate at the base of the "cap rock" which will allow access for summit scrambling and exploration of the bluff rock. These improvements, combined with current volunteer efforts to remove painted graffitti on the rock, will protect, enhance and improve this historic public landmark.

TRAILHEAD IMPROVEMENTS

Planned improvements at the trailhead will include:

- Improved parking layout w/ improved vehicle and pedestrian circulation,
- Improved grading and drainage control,
- Kiosk / Trailhead Signboards providing specific trail information,
- Interpretive signage on the history and geology of the mountain,
- Benches,
- Trash receptacles,
- Adjacent pavilion shelter for group meetings and outdoor classroom use,

SUGARLOAF BASE TRAIL (TONAWANDA TRAIL)

- 6,000 feet long as shown (> 1 mile in length).
- Final field layout will follow contours to develop a trail with easy grades to provide access to the mountain slopes for a greater number of visitors and universal accessibility.
- Tread will be 4 to 6 feet in width, surface reinforced with compacted local shale. Ultimately, this trail surface may be hardened with asphalt or concrete.
- This trail will intersect off the Summit Trail near the trailhead. It will follow natural "benches" and moderate slopes to provide a loop which encircles the base of Sugarloaf Mountain.
- Field layout will be critical to use the best route around the mountain's base, which also provides the best views and access of the forested slopes and the scenic rock formations. Special trail features such as retaining walls, and elevated walkways may be necessary to complete the loop without steep grade changes.

HIDDEN POND TRAIL

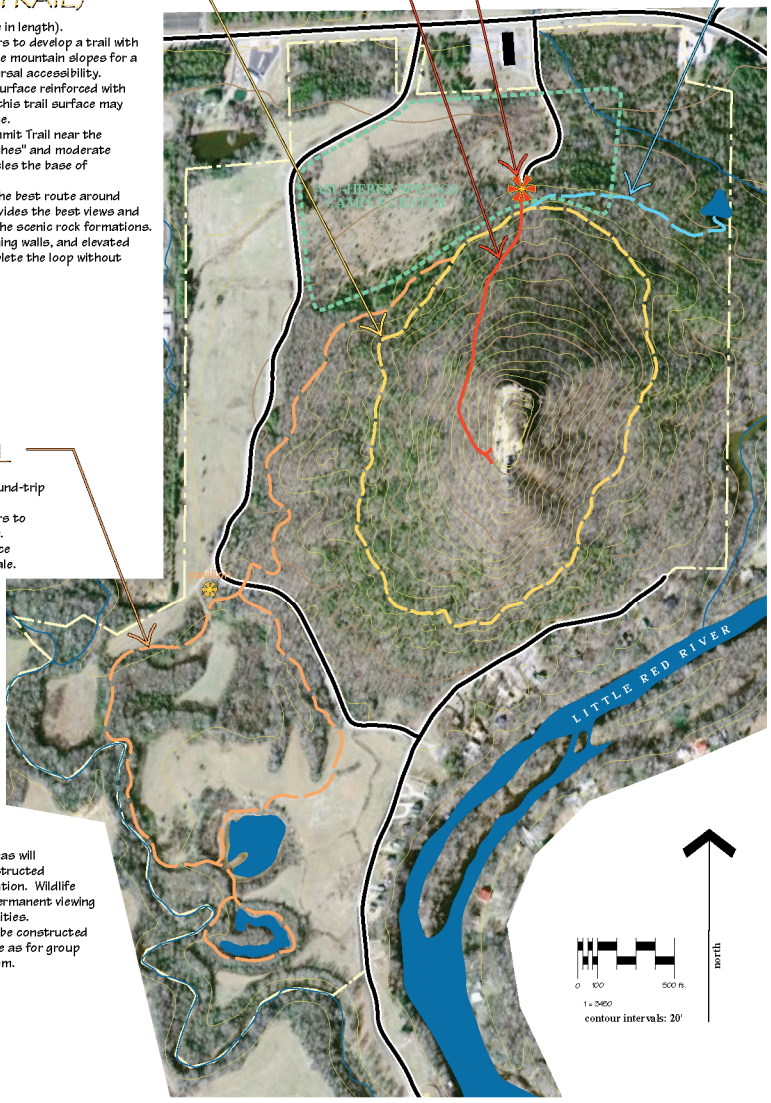
- 1,250 feet long as shown, 2,500 feet for a round-trip visit (1/2 mile).
- Tread will be 4 to 6 feet in width, surface reinforced with local shale.
- This trail will provide access to a quiet, scenic pond for fishing, nature study, or wildlife observation.
- This area offers excellent potential for interpretation and organized education for all ages and learning levels.
- Hidden pond provides a great location for a wildlife viewing blind or hidden photo blind.

SPUR TRAILS

- The trails system shown sets up a basic circulation "structure" that provides a high degree of access to the site. Once this primary system is in place, there will be additional opportunities to provide access to other special site features via spur trails.
- Some of these spurs may be a narrower tread with steeper grades for some of the more adventurous visitors.
- Spurs can visit interesting geologic features, scenic vistas or views of the mountain's capstone bluffs, as well as wildlife viewing areas or hidden photo blinds.

WILDLIFE TRAIL

- 11,000 feet long as shown for a round-trip visit (> 2 miles).
- Final field layout will follow contours to allow for level, universal accessibility.
- Tread will be 6 feet wide and surface reinforced with compacted, local shale.
- Boardwalks may be utilized.
- This trail will provide access to the bottomland fields at the base of the mountain and will visit hidden ponds, creeks and wetlands, offering a great experience and learning counterpoint to the higher slopes.
- Field layout of this trail will be critical to maximize the topography and the bottomland resources. Special trail features such as an elevated boardwalk may be necessary to utilize parts of the site.
- The hidden fields, creeks and ponds along this trail will offer a great opportunity for wildlife observation. Designated viewing areas will be identified and blinds may be constructed to allow undisturbed wildlife observation. Wildlife and bird identification panels and permanent viewing scopes can enhance these opportunities.
- An open-air pavilion will ultimately be constructed in conjunction with this trail to serve as for group gatherings and an outdoor classroom.



SUMMIT ACCESS

- Ultimately a safe route to the mountain summit will be required to open access to a wider range of visitors. For this, a simple treated lumber staircase is recommended; however, it should be located in order to be as unobtrusive as possible, perhaps within one of the crevices not typically used to make the ascent. In this case, the steps could be integrated into the lines and edges of the crevice to appear harmonious with the setting.

CONCEPTUAL PLAN

The purpose of this plan is to design an overall system of trails which allow access to the wide variety of site resources available on Sugarloaf Mountain and around its base. The trails indicated on the map are generally planned in terms of route; however, detailed on-site layout will be necessary. The layout will be critical to maximize the best of the site's resources, while protecting these resources and providing sustainable facilities. Much of the construction will be challenging. Special trail features such as elevated boardwalks may be necessary for both some of the steeper areas along the mountainside, or for the lowlands along the Wildlife Loop.

- Special care should also be taken during layout to utilize site features such as scenic plant and rock formations, etc. for trail "anchors" and "gateways" in order to enhance the trail experience and create a trail that is closely tied and identified to the site.

The ultimate goal of the new trail construction and renovation will be enhanced visitor access to the site's resources, improved user safety while protecting the site's natural resources.

NOTE:

This conceptual plan was developed for initial planning and budgeting purposes only. Trail names listed on the plan are for the plan's delineation purposes only. Final decisions on each on these trails including proposed names will be determined during final detailed planning efforts immediately before the construction of each trail.

SUGARLOAF HERITAGE COUNCIL
HEBER SPRINGS, ARKANSAS

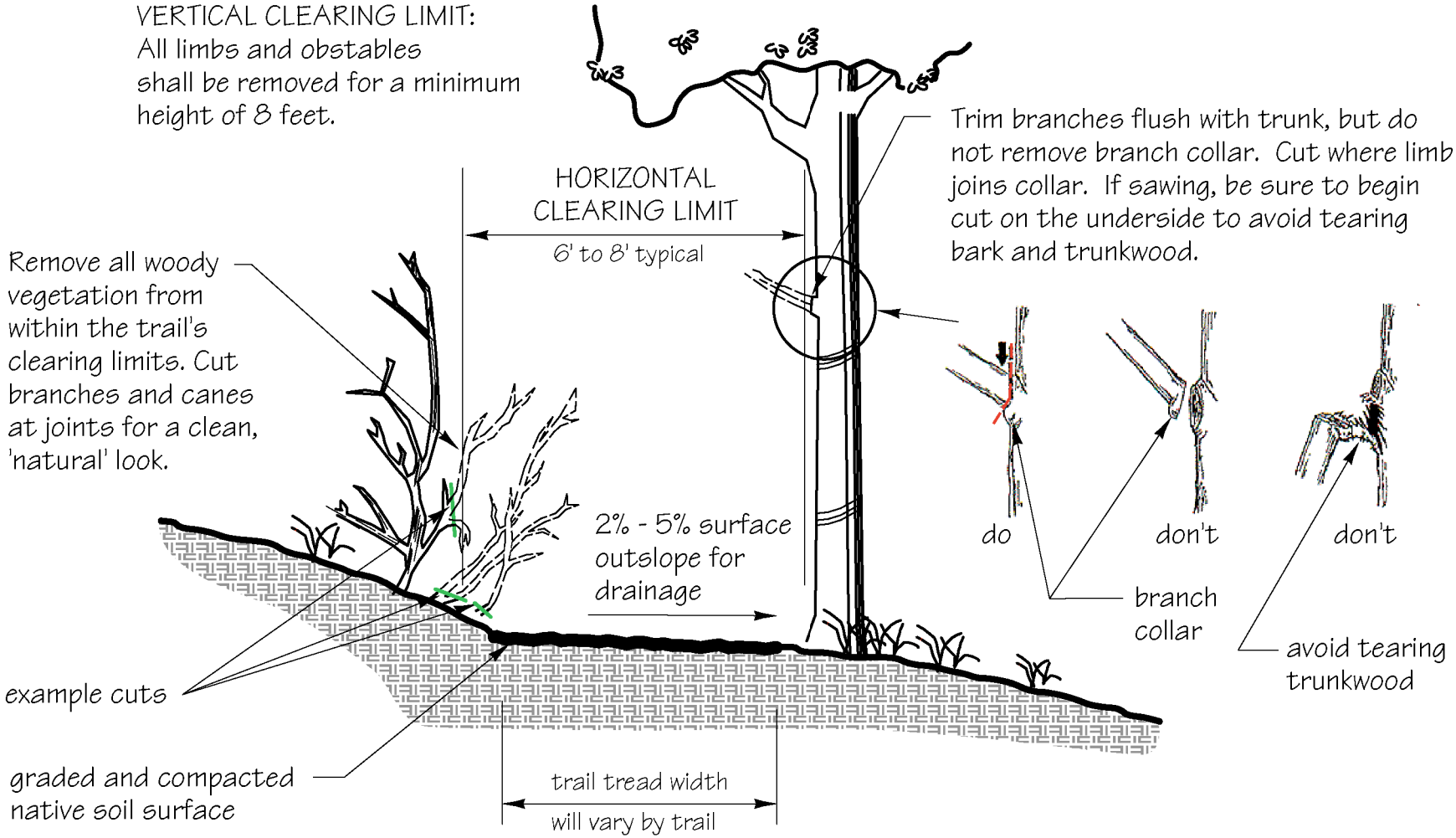
SUGARLOAF MOUNTAIN CONCEPT TRAILS PLAN

ASU-HEBER SPRINGS - 2009

Eastin Outdoors, Inc.
Landscape Architecture . Trails
858 N. Jackson Drive, Fayetteville, Arkansas 72701

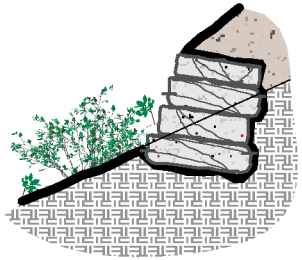
TRAIL CLEARING SECTION

Note: If a tree requires excessive pruning in the trail corridor so that it looks sheared or unnatural, then the limb removal should be balanced around the tree or the tree should be removed altogether. This is particularly applicable to evergreens.

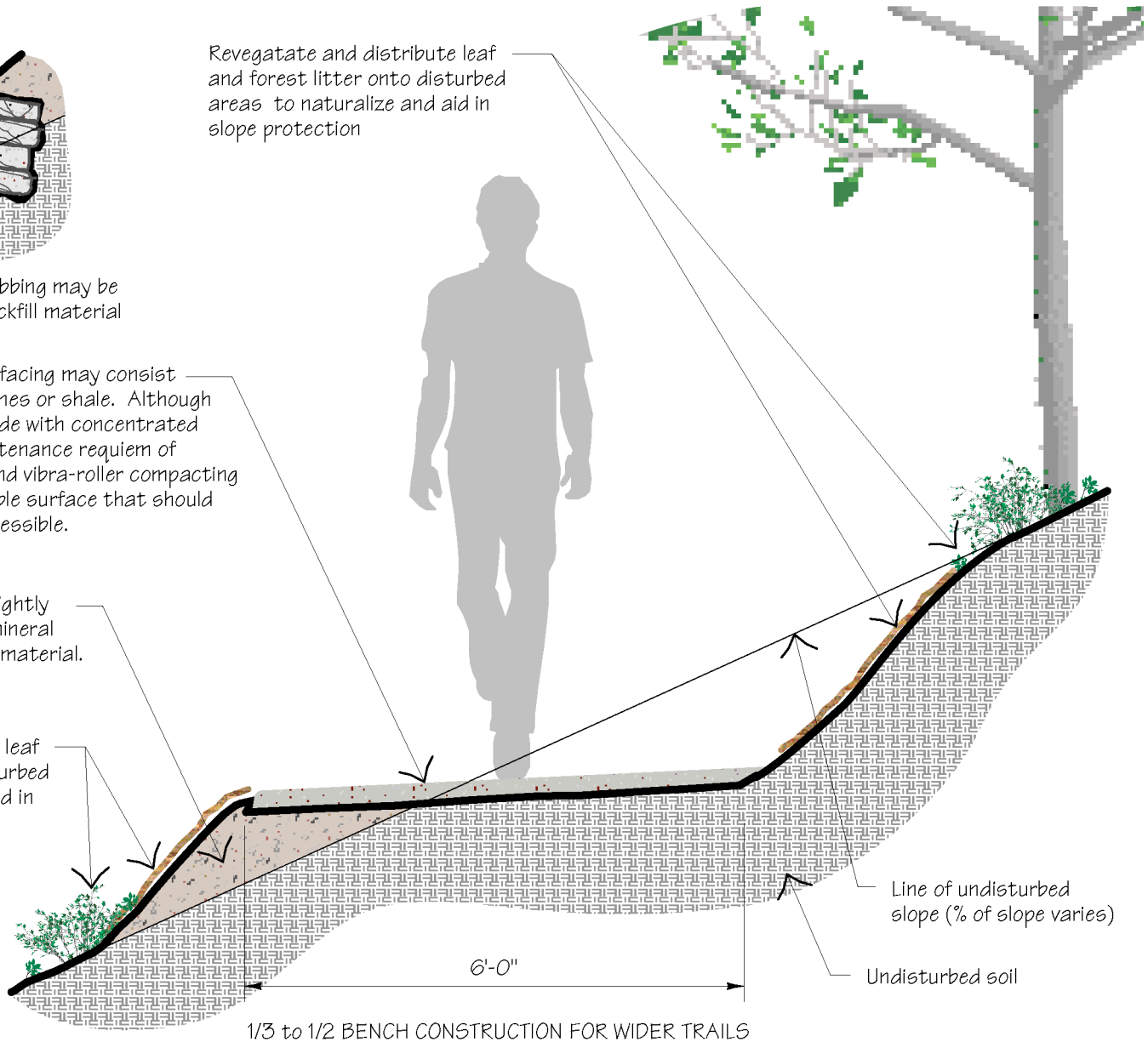


EXAMPLE SECTION - TYPICAL CORRIDOR CLEARING

TRAIL DESIGN SECTIONS



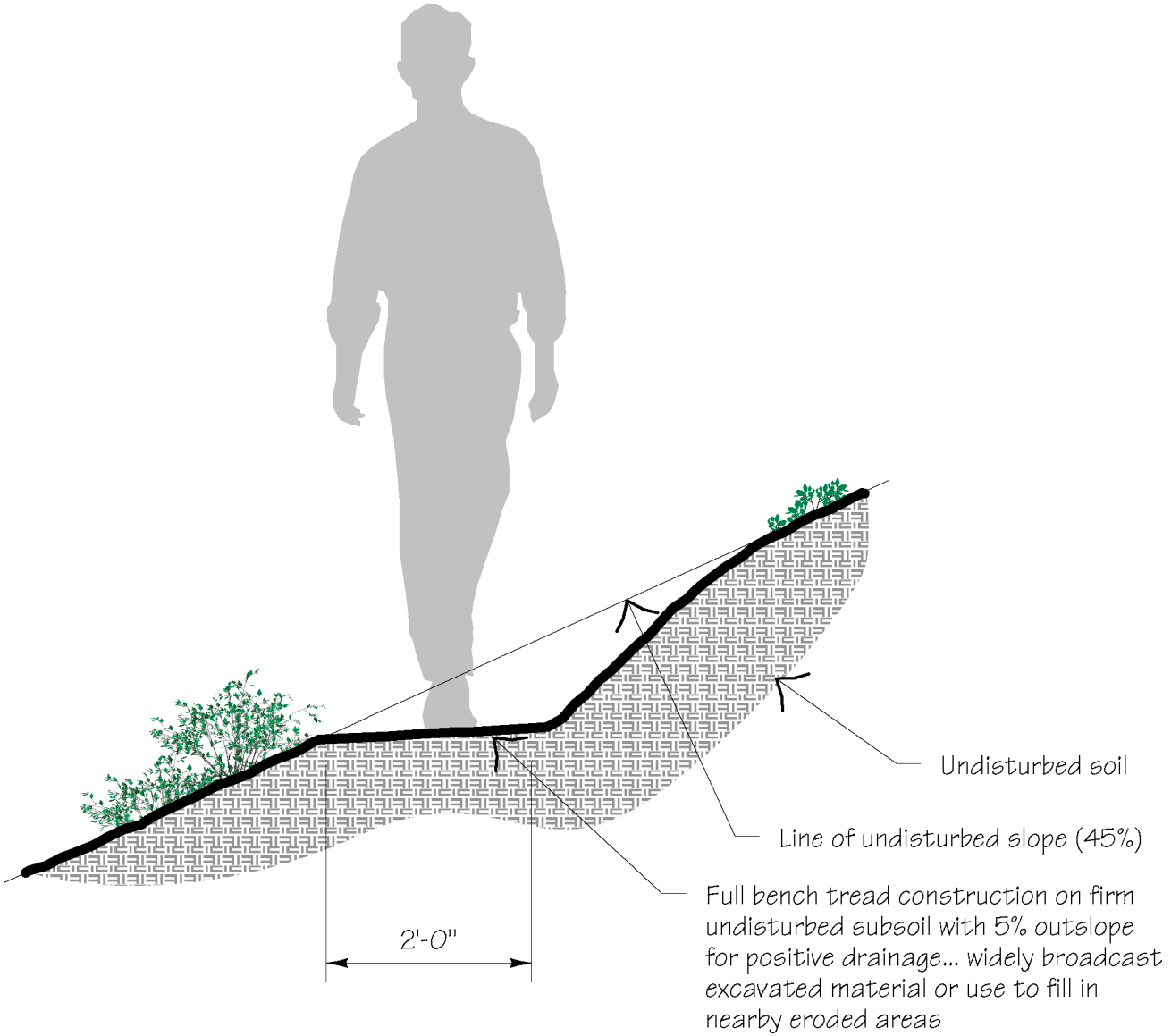
If necessary, stone cribbing may be used to help retain backfill material



1/3 to 1/2 BENCH CONSTRUCTION FOR WIDER TRAILS

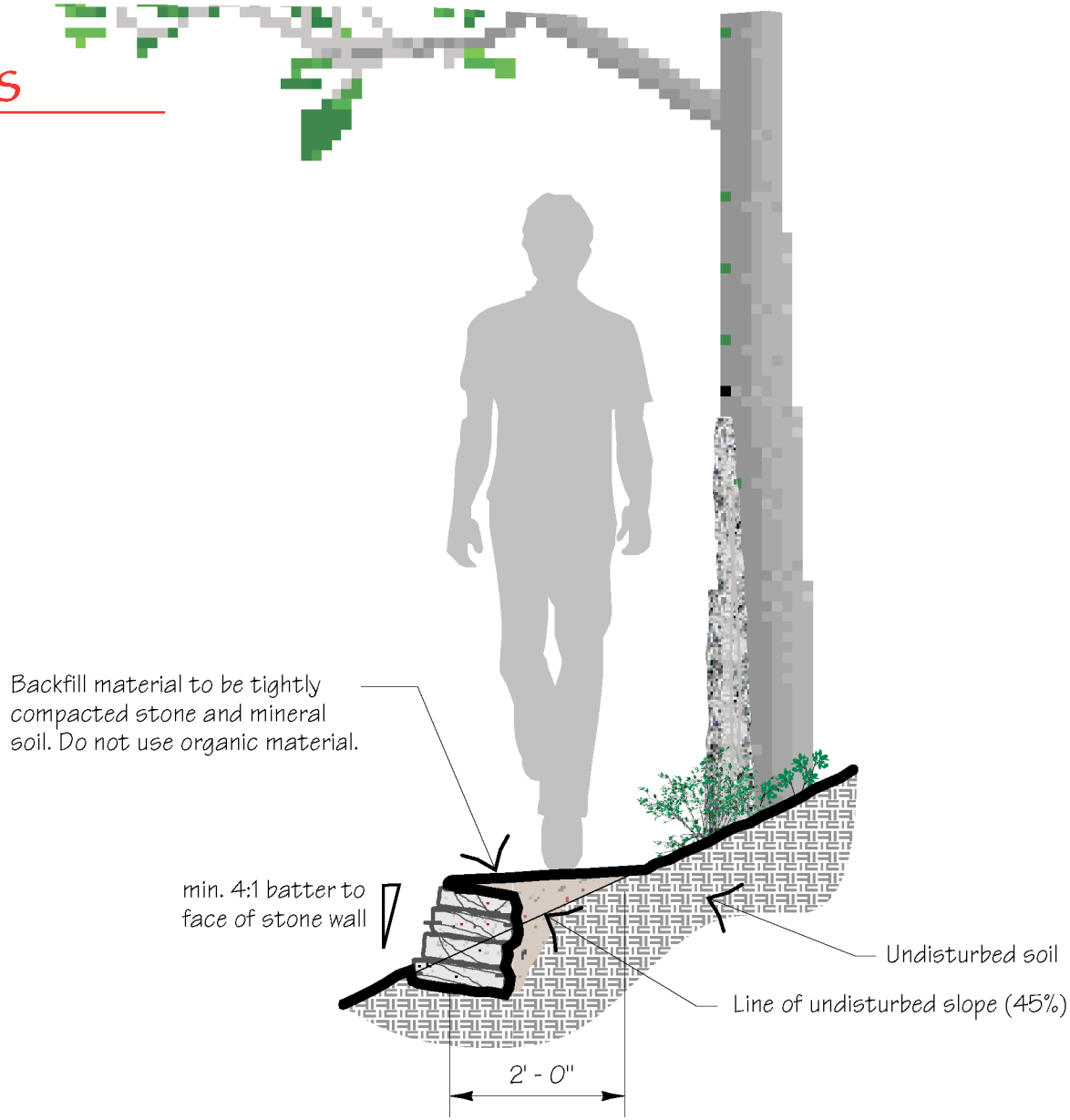
EXAMPLE SECTION - SUMMIT TRAIL, TONAWANDA TRAIL, HIDDEN POND TRAIL & WILDLIFE TRAIL

TRAIL DESIGN SECTIONS



EXAMPLE SECTION - TYPICAL SPUR TRAIL

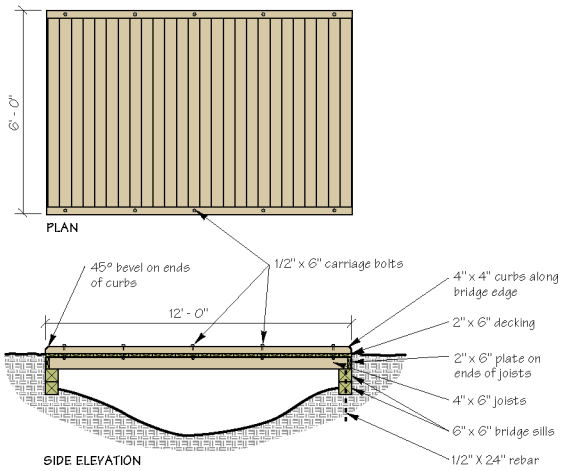
TRAIL DESIGN SECTIONS



PARTIAL TO NON-BENCH CONSTRUCTION IN SELECT AREAS WHERE NECESSARY TO AVOID EXCAVATION.

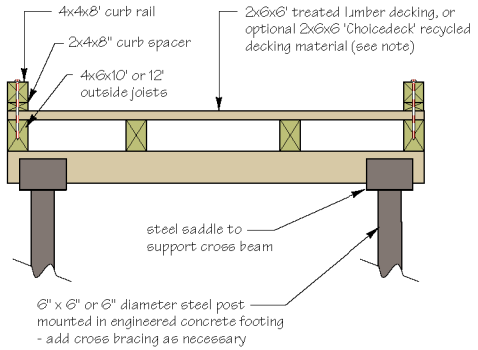
EXAMPLE SECTION - TYPICAL SPUR TRAIL WITHOUT EXCAVATION (very short distances)

BRIDGES AND BOARDWALKS



TYPICAL BRIDGE DETAIL

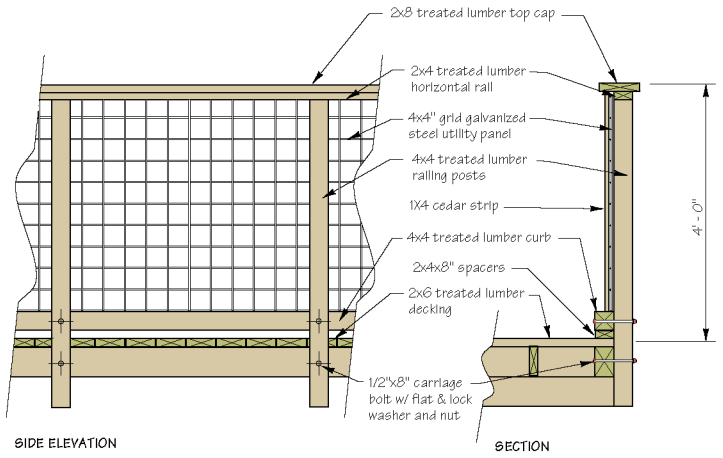
Bridges and boardwalks are recommended for the primary trail system. Plans are provided for a 6' wide treated lumber trail bridge. These bridges should be located in areas where the trail crosses obvious drainage courses. Bridges are more effective than a trail culvert for under trail drainage. Culverts typically clog fairly easily resulting in trail washout areas. Bridges are more aesthetically pleasing and serve as an attractive trail amenity. The bridge plans include a span of 12 feet or less. Longer elevated crossings will require boardwalk structures. For crossing some of the steeper ravines, it may be more advantageous to use boardwalks for an elevated crossing.



BOARDWALK SECTION

Note on Joists and Decking:

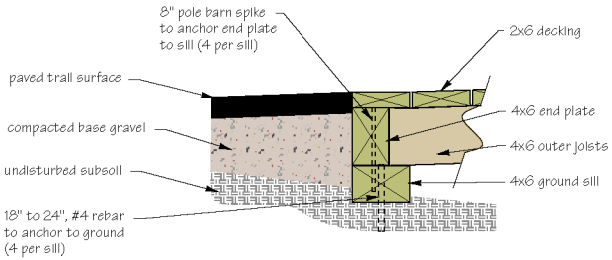
If Choicedeck or a comparable recycled decking material is used, additional inside joists will be required for an approximate spacing of 13 inches o.c., or less.



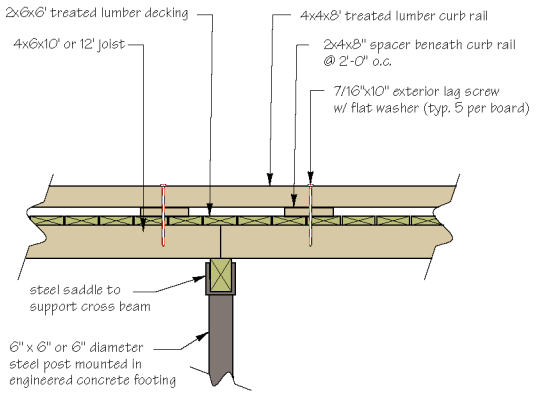
TYPICAL RAILING DETAIL

Notes on Railings:

Height of bridges and boardwalks above ground will vary, but should be kept as low as possible to avoid the necessity of railings. Do not provide railings for off-ground heights of 24 to 30 inches or less. Do provide railings for heights greater than 24 to 30 inches above ground.



BOARDWALK TO TRAIL TRANSITION



BOARDWALK DETAIL

COST ESTIMATE

The cost estimates shown below are as accurate as possible for a schematic design level. As design proceeds into the development and construction phases, decisions made may raise or lower the costs of each component facility. As part of any master planning process, initial estimates are best served in assisting fund raising and helping prioritize goals. Please note these estimates are approximations based on preliminary design concepts as applied to national average building costs.

SUGARLOAF MOUNTAIN TRAILS DEVELOPMENT PLAN
SUGARLOAF HERITAGE COUNCIL in coordination with ARKANSAS STATE UNIVERSITY - HEBER SPRINGS
HEBER SPRINGS, ARKANSAS

PRIMARY TRAILS

COMPONENT	QUANTITY	UNIT PRICE	TOTAL
▪ **SUMMIT TRAIL** (Existing Trail to Base of Sugarloaf Bluff) (1,500 ft. x 4 to 6 ft. wide)			
○ drainage improvements and tread reconstruction	1,500 lf	$12.00*	$18,000.00
○ granular surfacing placement and compaction	1,500 lf	$8.50*	$12,750.00
(Inflated due to steep slopes and outcroppings of bedrock)*			
Total			$30,750.00
Total with 18% design fees and contingency			**$36,285.00**
▪ **SUMMIT ACCESS** (Safe Route to Summit) *treated lumber staircase... approximately 40 feet in elevation gain x 6 feet wide*			
○ support and decking	1 ea	$14,000.00	$14,000.00 ls
○ handrails	1 ea	$5,200.00	$5,200.00 ls
Total			$19,200.00
Total with 18% design fees and contingency			**$22,656.00**

COST ESTIMATE (cont'd)

PRIMARY TRAILS

COMPONENT	QUANTITY	UNIT PRICE	TOTAL

- **TONAWANDA BASE TRAIL** (Sugarloaf Base Perimeter Trail)
  (~6,000 ft. x 6 ft. wide)
  - corridor clearing and tread construction ..... 6,000 lf ..... $7.00 ..... $42,000.00
  - compacted granular surfacing ..... 6,000 sf ..... $6.00 ..... $36,000.00

  Total $78,000.00
  Total with 18% design fees and contingency $92,040.00

  - Future Option, Tonawanda Base Trail Paving ..... 6,000 lf ..... $16.00 ..... $96,000.00

  Total with 10% contingency $105,600.00

- **HIDDEN POND TRAIL** (Sugarloaf Trailhead to Hidden Pond)
  (~ 1,250 ft. x 6 ft. wide)
  - corridor clearing and tread construction ..... 1,250 lf ..... $7.00 ..... $8,750.00
  - compacted crusher fines surfacing ..... 1,250 lf ..... $6.00 ..... $7,500.00

  Total $16,250.00
  Total with 18% design fees and contingency $19,175.00

  - Future Option, Hidden Pond Trail Paving ..... 1,250 lf ..... $16.00 ..... $20,000.00

  Total with 10% contingency $22,000.00

COST ESTIMATE (cont'd)

PRIMARY TRAILS

COMPONENT	QUANTITY	UNIT PRICE	TOTAL

- **WILDLIFE TRAIL** (Loop from Sugarloaf Trailhead to Bottomland Fields between River, Tributary and Mountain Base) (~ 11,000 ft. x 6 ft.)
  - corridor clearing and tread construction ..... 11,000 lf ..... $7.00 ..... $77,000.00
  - compacted crusher fines surfacing ..... 11,000 sf ..... $6.00 ..... $66,000.00
  - wildlife observation blind) ..... 1 each ..... $7,000.00 ..... $7,000.00
    (including bench, permanent spotting scope, blind screen with shelf, and hardened surfacing)
  - elevated, enclosed photography blind ..... 1 each ..... $12,000.00 ..... $12,000.00
  - identification markers (4"x6" tree or plant tags) ..... 1 each ..... $150.00 ..... $150.00

Total $143,000.00
Total with 18% design fees and contingency $168,740.00

- **OUTDOOR PAVILION ON WILDLIFE TRAIL** (A secondary pavilion is recommended in conjunction with the Wildlife Trail to serve as an outdoor classroom and educational gathering area, as well as cookouts, reunions, etc.) (24 ft x 36 ft to accommodate approximately 50 people)
  - Completed pavilion shelter including utilities, 32 ft x 44 ft concrete slab, 8 ft long picnic tables (6), benches (4), trash receptacles, and other associated amenities ..... 1 ..... LS $172,800.00

Total with 18% design fees and contingency $203,904.00

- **SPUR TRAILS**

Spur trails offer opportunities to provide access to other special site features such as interesting geologic features, scenic vistas, views of the capstone bluffs, wildlife viewing areas, hidden photo blinds, etc. Once the primary trails system is in place, spur trails may be constructed for additional, secondary access. Typical spur trails will have a tread two feet in width with a natural soil surface.

  - single track spur trail ..... 1 lf ..... $3.00 ..... $3.00 per lf
  - rock cribbing ..... 1 sf ..... $18.00 ..... $18.00 per sf

COST ESTIMATE (cont'd)

PRIMARY TRAILS

COMPONENT	QUANTITY	UNIT PRICE	TOTAL
TRAILHEAD IMPROVEMENTS			
asphalt paving	1 sf	$4.00 sf	$4.00 / sf
compacted base for asphalt	1 sf	$1.50 sf	$1.50 / sf
earthwork	1 cy	$16.00 cy	$16.00 / cy
lighting	2 each	$4,000.00	$8,000.00
wheelstops	12 min	$150.00 ea	$1,800.00
striping	1 ls	$2,000.00	$2,000.00
kiosk w/ two 30" x 40" full color panels	1 ls	$15,000.00	$15,000.00
benches (2)	2 ea	$1,000.00	$2,000.00
trash receptacle	1 ea	$750.00	$750.00
crosswalk	1 ls	$600.00	$600.00

- **OUTDOOR PAVILION ADJACENT TO PRIMARY TRAILHEAD**

A large pavilion is recommended adjacent to the trailhead. This will serve as a primary outdoor gathering area for trail visitors, ASU students, and residents of the area. It will serve as an outdoor classroom and educational gathering area, as well as for cookouts, reunions, etc. It should be sited beneath the tree canopy near the trailhead and campus facilities and should be designed to complement the architecture of the campus buildings. A minimum size of approximately 36 ft x 48 ft will accommodate approximately 100 people; however, final consideration may include incorporating rest rooms, preparation and serving facilities, and a fireplace with adjacent seating.

Completed pavilion shelter including utilities, 44 ft x 56 ft concrete slab, 8 ft long picnic tables (12), benches (8), trash receptacles, and other associated amenities	1	LS	$345,600.00
Provide budgeting for additional amenities listed above	1	LS	$138,240.00
Total			$483,840.00
Total with 18% design fees and contingency			**$570,931.00**

COST ESTIMATE (cont'd)

TRAIL SUPPORT COMPONENTS

COMPONENT	QUANTITY	UNIT PRICE	TOTAL
(These facilities may be necessary or desirable to include with the budgeting of each planned trail development.)			
▪ **BRIDGES**			
(12 ft. long x 6' wide)			
○ material and installation	1 each	$1,800.00 ls	$1,800.00 ea
▪ **BOARDWALKS**			
(6' wide)			
○ support and decking	1 lf	$200.00	$200.00/lf
○ handrails	1 lf	$45.00	$45.00/lf
▪ **SIGNAGE**			
○ intersection map sign (8" x 10")	1 each	$50.00	$50.00 ea
○ rustic sign post	1 each	$100.00	$100.00 ea
○ trailhead map sign (30" x 40" design & setup)	1 each	$2,000.00	$2,000.00 ea
○ interpretive panel (30" x 40" design & setup)	1 each	$2,000.00	$2,000.00 ea
○ panel mounting frame	1 each	$800.00	$800.00 ea

TRAIL MAINTENANCE CHECKLIST

FREQUENT INSPECTION (weekly or bi-weekly)

- ☐ Check entire trail to control vegetation growth. This should be done most frequently during growing season.
  - — This is particularly important in sunny areas and special attention should be given to grass, weed, and vine growth that will completely cover the trail surface. The surfacing should be inspected frequently to ensure grasses do not penetrate the surface. Any sprouting that does occur through the surface or from the adjacent edges should be sprayed with 'Roundup', or a comparable 'low-impact' herbicide, to control as soon as possible. Do not allow large masses of grass to grow in the trail.
  - — Vegetation control also includes limb and sprout growth which encroaches on the trail corridor. When trimming limbs and sprouts, cut limbs at the trunk or at a joint to prevent unsightly stubs (Refer to Trail Clearing Section).
- ☐ Check ends of bridges to ensure that the trail surfacing to bridge surface joint is flush (This connection should not be greater than 1/2" vertically to preserve wheelchair accessibility).
- ☐ Check trail throughout for blowdowns, particularly after heavy winds or storms. Remove as necessary.
- ☐ Periodically schedule removing surface debris with a leaf blower to prevent build-up of litter on the trail surface. This is particularly important in autumn after leaf fall.
- ☐ Pick up and remove larger litter and debris.
- ☐ Check gravel, granular, or natural surfaces for erosion, particularly sloped sections of the trail. This should be inspected and repaired on a monthly basis, more frequently during rainy seasons; repair by hand or machine grading is much easier before erosion gets out of hand.
- ☐ Check gravel, granular, or natural trail surfaces for displacement caused by wheeled vehicle use (particularly on curves) Pull displaced material back onto surface, groom, and compact. This removes the berm that forms along the outside edge of the trail through periodic use and allows sheet drainage of runoff while preventing puddling.

PERIODIC INSPECTION (Twice a year or annually at minimum)

- ☐ Check all lumber at bridges for decay or needed repair.
- ☐ Spray all exposed lumbers with preservative treatment.
- ☐ Ensure trail surfaces remain smooth and barrier free. Check for water puddling and periodically regrade surfacing for smoothness and drainage.
- ☐ Replenish surface layer as necessary.
- ☐ Check trail surface for gravel displacement caused by unauthorized wheeled vehicle use. Pull displaced material back onto surface, groom, and compact.
- ☐ Check culverts and underneath bridges for accumulted debris. Keep cleared and unblocked on a frequent basis to prevent failure.