



Prepared for the Stecoah Valley Center
Stecoah, NC

June 2015



SOUTHERN GROUP
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Stecoah Valley Center Conceptual Site Master Plan
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The Community Design Assistance Center (CDAC) is an outreach center in the College of Architecture and Urban Studies at Virginia Tech that assists communities, neighborhood groups and non-profit organizations in improving the natural and built environments. Assistance is provided in the areas of landscape architecture, architecture, planning, and interior design. Working with communities, the conceptual planning and design provides communities with a graphic vision of their project that can then be used for grant applications and fundraising for the next steps toward implementation.

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Stecoah Valley Cultural Arts Center

All Participants in the Design Process

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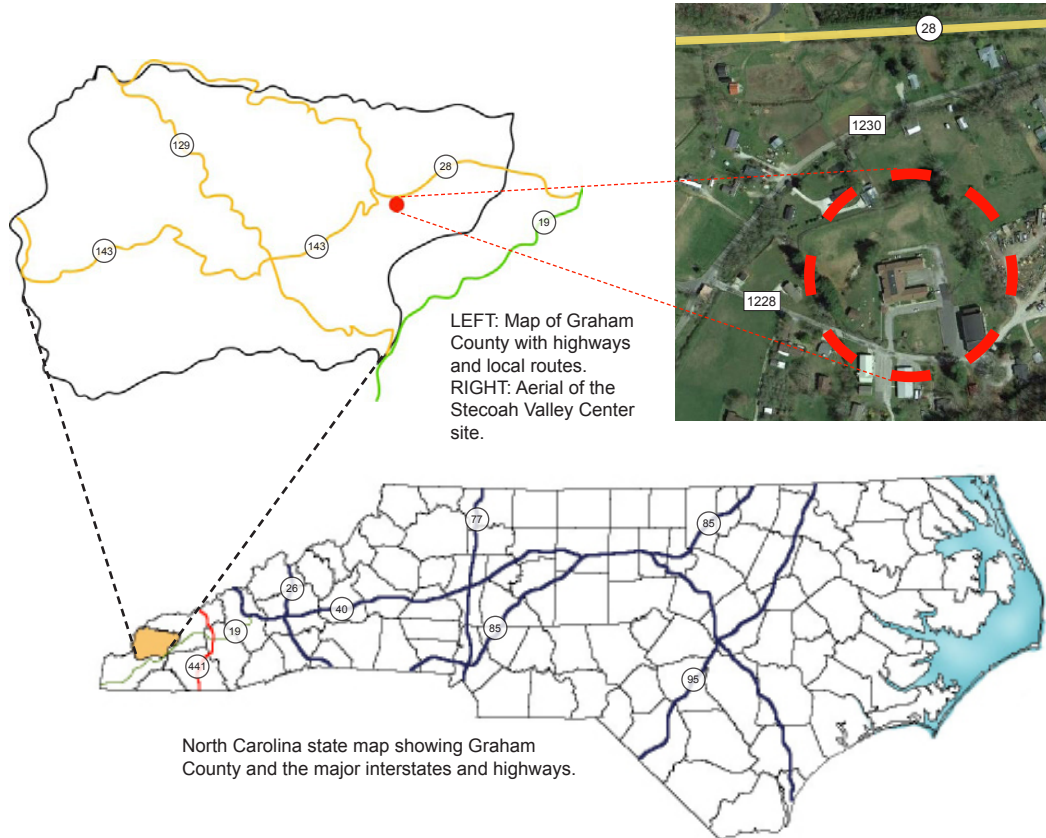
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Stecoah Valley Center Conceptual Site Master Plan

PROJECT DESCRIPTION



The Stecoah Valley Center is located in Stecoah, NC within Graham County. The Center was built in 1926 and served the community as the Stecoah Union School until it was closed in 1994 and converted into a cultural center. The Center now serves the community as a place for after school arts programs, a performance space, an art gallery, a museum for Cherokee history, and an event space to celebrate local arts and agriculture. The Center sits on 10 acres of land currently comprised of a fitness trail that surrounds the extent of the property, a playground, an azalea garden, a pavilion, a separate gymnasium building, and a creek. The majority of the grounds consists of open space to provide ample room for the many cultural events the Center hosts in the summer and fall seasons.

The Community Design Assistance Center (CDAC) was tasked with developing a conceptual master plan to enhance the cultural and environmental quality of the grounds. The proposed master plan includes a half-basketball court that also serves as an outdoor performance space, outdoor restrooms, a wind garden, a story circle, a creek-side reading area, an interpretive walking trail with a variety of stations, and stormwater management all of which are Americans with Disabilities Act (ADA) accessible. In addition, open space was preserved to support the many events that the Center hosts every year.

PROJECT DESCRIPTION

The Stecoah Valley Center also wanted CDAC to enhance the fitness trail and convert it to an interpretive walking trail, so 5 interpretive stations were proposed. These stations reflect the history, culture, art, and geology of the region.

PART 1

Stecoah Valley Center Conceptual Site Master Plan DESIGN PROCESS

The design process began with an initial site visit to Stecoah on January 27th, 2015. The CDAC team walked the site with Rick Davis, Executive Director for Graham Revitalization Economic Action Team (GREAT), and Beth Fields, Executive Director of Stecoah Valley Center, photographed the site, collected on-site data, documented existing conditions, and took soil samples. Also, the team met with the Stakeholders Committee and members of the community and discussed the history of the existing building, which was formerly a school built in 1926, the history of the grounds, and the community's needs, desires, and vision for the site. By gathering this information, the team was able to understand the opportunities and constraints of the site. This analysis would later influence the design concepts.

As requested, the CDAC team then researched the history of the area, Appalachian culture, and wind sculptures for ideas to incorporate in the design.

After careful consideration of all the factors, three preliminary conceptual design alternatives were developed. These designs were presented at a community meeting on March 10th, 2015 where they were reviewed and commented on by stakeholders and community members. The design alternatives were then revised and combined into a final conceptual master plan for the project site based on the comments made at the meeting.

The final master plan and designs for the recreation area, wind garden and the panoramic interpretive station were presented on April 20th, 2015 at the final community meeting. These designs can be found on the following pages.

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The Stakeholders Committee and CDAC team discuss the site conditions and the community's vision for the site during the initial visit.



CDAC team member Armaghan Behzad presenting preliminary conceptual designs at the second community meeting.



CDAC team member Jess VanNoy presenting final conceptual designs at the final community meeting.

FINAL DESIGNS
Conceptual Site Master Plan

The Stecoah Valley Center's grounds create a place where one can experience the arts, music, and traditions of Appalachia and Cherokee culture alike. The final conceptual design allows for users of all ages to experience these cultures in a multitude of ways; through different spaces, seasons, and events that the Stecoah Valley Center hosts throughout the year. In short, the grounds of the Stecoah Valley Center embody and emulate the work and passion that happens within the walls of the center.

The existing conditions of the site that have been maintained are all the buildings, the main entrance parking lot, the playground, the azalea garden, the community garden boxes, and all utilities. The fitness trail that follows the perimeter of the site has also been maintained and transformed into an interpretive trail, which consists of a variety of 'step-off' interpretive stations.

The interpretive trail splits from the main path in 3 places throughout the design. The first offshoot leads to the three cabinettes, located southeast of the Stecoah Valley Center building. This path leads to a parking lot with 5 spaces, one of which is a handicap space, for the residents of the cabinettes and those using the gymnasium. The dumpster is also located in the parking lot, which has been designed to support the maneuvering of a garbage truck. The other two offshoot trails stray to the north and west of the Stecoah Valley Center. Both of these routes lead to the active recreation area. This area consists of a basketball court with amphitheater-style seating, a shuffle board court, outdoor restrooms, a pavilion, the existing playground, and a plaza with seating. The active recreation area will be more thoroughly detailed later in the report.

The courtyard, located between the two wings of the Stecoah Valley Center building, has been converted into a deck that is ADA accessible via a ramp. The deck provides an area for outdoor table seating with umbrellas and bench seating with bubbler pots at the center. Both an ADA ramp and stairs lead down to a small circular plaza with benches along the edges and a piece of Cherokee art at the center. This plaza can be used for seating during an outdoor movie night, outdoor classroom space, or just simply a place to sit and enjoy the beauty of the grounds and the surrounding mountains. Directly adjacent to the deck and plaza is a maintenance path that leads to the north side of the building. The material of this path is changed from gray gravel to decorative gravel; this maintains the functionality of the path but makes it aesthetically cohesive with the surrounding landscape.

FINAL DESIGNS
Conceptual Site Master Plan

The front entrance lawn, to the south of the Stecoah Valley Center, has been maintained as open space with the exception of an ADA accessible path and the relocation of the flagpole. The path leads from the south entrance of the building to the pump house and connects into the interpretive trail. The flagpole is now located between the pump house and the small pavilion, where the old playground structure used to stand. At the base of the flagpole is a concrete pad with bench seating and low plantings that help establish it as a place amongst the empty lawn.

Additions that have been made to the grounds are the wind garden, the creek-side reading area, and the story circle. The wind garden is in the northeast corner of the grounds, just off of the interpretive trail. The garden is ADA accessible and consists of seating and local-made wind sculptures. The wind garden will be described in more detail later in this report. The story circle is located in the opposite corner from the wind garden, northwest of the Stecoah Valley Center. The story circle is a place where the oral history of both the Appalachian and Cherokee cultures is exemplified. The story circle has an ADA accessible path with a fire pit/stage at the center. The fire pit is an elevated structure that can be covered (when its not being used for a fire) and converted into a stage. The fire pit/stage is surrounded by a combination of natural boulder seating and bench seating. The last addition is the creek-side reading area, nestled in between the north end of the creek and the story circle. The reading area is a simple space with two benches that face towards the creek and a free library. A free library is a small wooden box filled with books where people can borrow a book to read and replace it with a different book.

Many of the plantings added to the site are native to this area and some of them are significant in Cherokee culture. The wide variety of proposed trees and shrubs buffer the site from surrounding properties, provide shade for visitors, add seasonal interest to the landscape, connect culturally to the area, and serve a riparian and/or environmental purpose. The following pages include the master plan and perspectives of the deck courtyard and reading areas.







FINAL DESIGNS
Interpretive Stations

Along the interpretive trail (see master plan on page 11 for the interpretive station locations) there are a variety of interpretive stations located just off the trail that showcase different aspects of the Appalachian and Cherokee cultures and the geology of the region.

The first interpretive station is at the pump house in the entrance lawn. The pump house is a direct link to the past and how water was manipulated by people in order to serve the school's various needs.

The second interpretive station is located where the interpretive trail meets the path that leads to the deck courtyard. This station is focused on local art that highlights the heritage and culture of this unique region of the country.

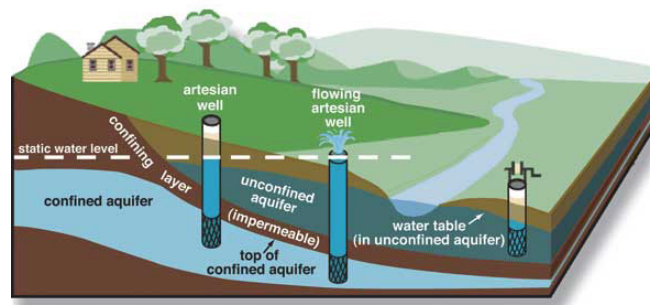
The third station is located along the interpretive trail, directly across from the south wall of the gymnasium. This station is unique in that it merges an Appalachian tradition with strong symbols of the Cherokee nation. On the south wall of the gymnasium is a barn quilt, which can be found on barns all throughout this region. Mirrored on the ground just below the quilt square is a quilt garden that contains the pattern of the Cherokee nation's seven-pointed star.

The fourth interpretive station is located in the northern part of the grounds and focuses on the area's flora/fauna and its geology. In the foreground there is a wildflower meadow comprised of wildflowers that are important in Cherokee culture and in the background is a magnificent mountain with a unique geological feature. The Cheoah bald is an unforested spot amongst the forested mountain, and it was a place of ritual for the Cherokee tribe in this area.

The fifth and final interpretive station is located southwest of the Stecoah Valley Center and focuses on the history of the school. When the school was opened in 1926 a panoramic photo was taken of the students and faculty at the front entrance of the building. This station talks about the history of the school and is located where the original panoramic photograph was taken. This provides a direct link between the past and the present and it provides people with the opportunity to see how the school and the landscape have grown and changed over the nearly 90 years since its inception. The following page depicts possibilities and ideas of what could occur at each of the physical stations.

1. Pump House Station

This interpretive station is a view into the history of the Stecoah Valley school. The structure was used to pump water from a well to the school and gymnasium. Wells and pump houses are just one of the ways that humans manipulate and regulate the environment to receive fresh water.



2. Art Station

This interpretive station features a piece of art that acts as a point of discussion and also reflects the region and its rich cultural heritage.



3. Quilt Station

This interpretive station speaks to the prominent cultures in Stecoah Valley; the Cherokee and Appalachia. Framed on the south wall of the gymnasium is a quilt that alludes to the barn quilts found throughout the Appalachian region. Mirrored on the ground in front of the gymnasium is a quilt garden with a seven pointed star. This star is a symbol of the Cherokee nation and is symbolically used to depict the nation's 7 tribes.



4. Geology & Flora/Fauna Station

This interpretive station highlights different natural conditions of Stecoah Valley. In the foreground is a meadow with native wildflowers and grasses. As one's eyes move across the meadow, the magnificent mountains in the background begin to dominate the view. Atop the mountain directly in view is a large area with no vegetation, known as the Cheoah Bald. A bald is a large clearing on top of a forested mountain. The Cheoah bald is one of the largest in this area and is a great place for camping and scenic views.



5. Panoramic Photograph

The interpretive photo station speaks to the history of the school. In the 1920's when the school was built, a large panoramic photo of the first class was taken at the front entrance. This station frames the same view from the photo allowing everyone to see how the school, the grounds and the surrounding landscape has changed.



FINAL DESIGNS

Active Recreation Area Detail

The recreation and active area includes a half basketball court with amphitheater seating, shuffleboard with a shared seating wall with the basketball court, outdoor restrooms, and a pavilion with picnic tables. The 50'x48' half basketball court is designed to serve as a multi-functional venue for the fall festival and other seasonal events. ADA access is available to this area through an ADA accessible ramp which also connects to the playground. Restrooms are also designed for ADA use. The pavilion is placed on the north side of the playground, which includes picnic tables for outdoor dining and group gatherings.

Following is the detail design and perspective for the active recreation area.



Active Recreation Area



Perspective



Amphitheater Seating



Seating Walls



Pavilion with Picnic Tables

FINAL DESIGNS
Wind Garden Detail

The wind garden is a place of retreat amongst the activity that is happening on the rest of the grounds. It is a circular garden surrounded by low vegetation to provide privacy without any threat to safety; the specific plantings are detailed in the planting plan later in the report. In addition to the shrubs, the wind garden is bordered with a variety of wind sculptures and a wind sculpture in the center of the garden as well. Along the edges are a variety of gliding benches and chairs that create a relaxing and soothing sensation as one experiences the garden. The ground plane is made up of decorative pavers which are both aesthetic and functional in that they allow the garden to be ADA accessible.

The following pages include the wind garden detail, material examples, and a supporting perspective.



Interpretive Walking Trail

Wind Sculpture

Glider Bench

Decorative Pavers

Glider Chair

Property Fence





FINAL DESIGNS

Panoramic Photograph Interpretive Station Detail

The panoramic photograph station is one of the most special places in the master plan because it speaks directly to the history of the school and all the work that the staff of the Stecoah Valley Center have done to make it the place it is today. The station frames the same angle that the 1926 class photo was taken at, creating a conversation between the past and present.

In addition to the interpretive signage, which contains the panoramic photo taken in 1926, this station is also accompanied with a step-off seating area that is comprised of two benches and a variety of low shrubbery that increases the privacy of the seating area without threatening safety. Overall, it is a very simple station but a very meaningful place on the Stecoah Valley Center grounds.

The following pages depict the panoramic photograph interpretive station detail, materiality, and a perspective of the station.



Interpretive Walking Trail

Bench

Interpretive Station

Seating Area





FINAL DESIGNS

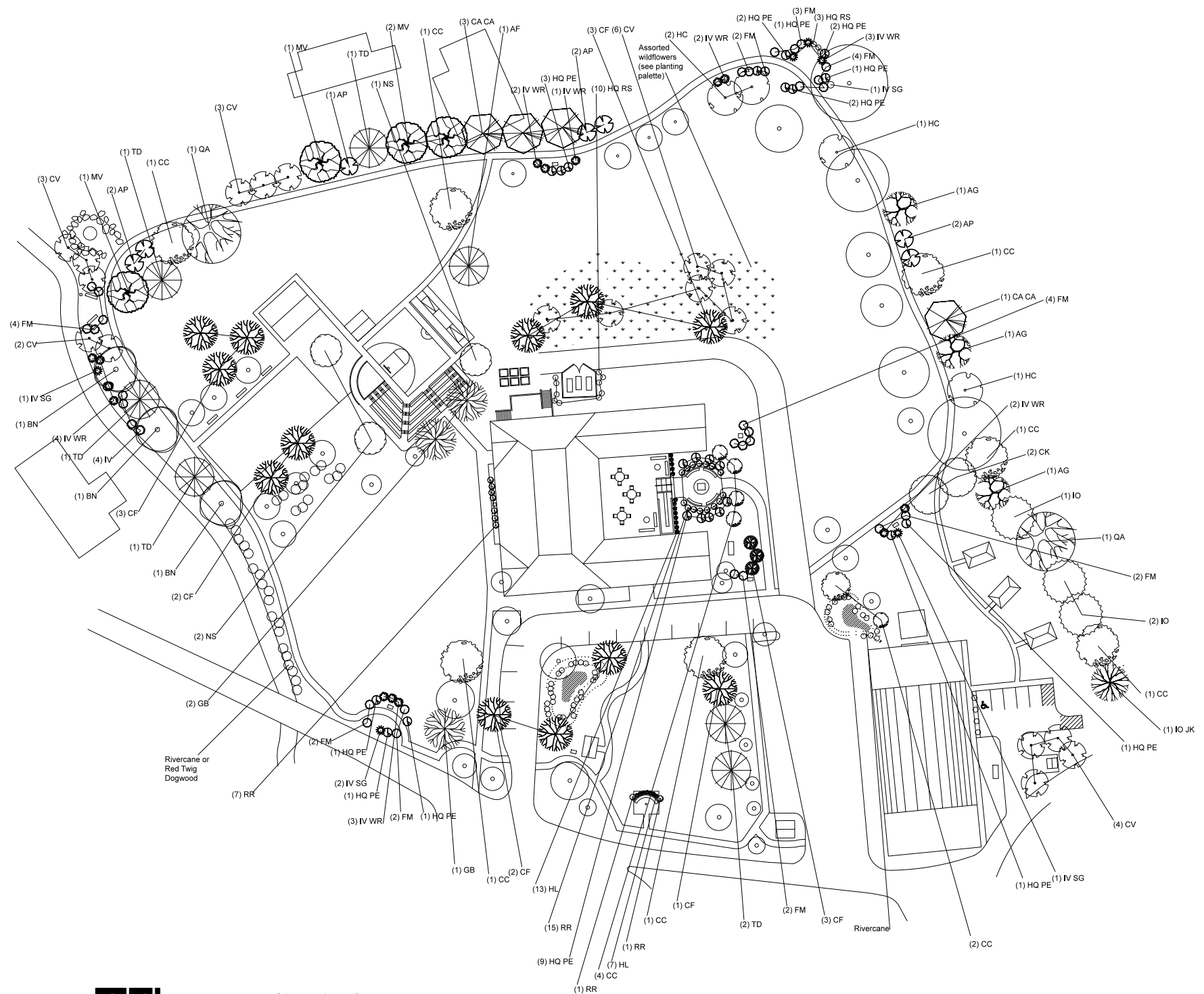
Planting Design

The plantings for Stecoah Valley Center were carefully chosen to fit the needs of the grounds and to mesh with the surrounding landscape. The planting plan, schedule, and palette outline the specifics of each plant. The planting plan details where each plant goes and the schedule serves as the legend for the plan. The schedule contains both the botanical and common names, the size, and the quantity of each plant. The schedule is organized by type (trees, shrubs, perennials, etc.) and arranged alphabetically by botanical name. The palette is a grid of images of all the plants that are in the plan and schedule and is also organized by type and common name.

As stated earlier, many of the plantings chosen are native to the region, meaning they will grow well and thrive in a specific region's soil and climate. Many of the plants are also significant in Cherokee culture for a variety of reasons. When looking at the diversity of shrubbery, seasonal interest, and density played a large role both to make the space beautiful year round.

The following pages include the planting plan and schedule and the palette for the master plan design.

CODE	BOTANICAL NAME / COMMON NAME	SIZE	QTY.
TREES			
AG	<i>Amelanchier x grandiflora</i> 'Autumn Brilliance' / Serviceberry	1" cal.	3
AP	<i>Aesculus parviflora</i> / Bottlebrush Buckeye	2" cal.	7
BN	<i>Betula nigra</i> 'Dura-heat' / River Birch	2" cal.	3
CA CA	<i>Carpinus caroliniana</i> / Ironwood	2" cal.	4
CC	<i>Cercis canadensis</i> / Eastern Redbud	1" cal.	14
CF	<i>Cornus florida</i> 'Cherokee Chief' / Flowering Dogwood	2" cal.	15
CK	<i>Cladrastris kentukea</i> / Yellowwood	2" cal.	2
CV	<i>Chionanthus virginicus</i> / Fringe Tree	2" cal.	18
GB	<i>Ginkgo biloba</i> 'Presidential Gold' / Ginkgo	2" cal.	3
HC	<i>Halesia carolina</i> / Carolina Silverbell	2" cal.	4
IO	<i>Ilex opaca</i> 'Jersey Princess' / American Holly	8' Hei.	3
IO JK	<i>Ilex opaca</i> 'Jersey Knight' / American Holly Pollinator	8' Hei.	1
MV	<i>Magnolia virginiana</i> 'Moonglow' / Sweet Bay Magnolia	1" cal.	4
NS	<i>Nyssa sylvatica</i> 'Red Rage' / Black Gum	2" cal.	3
QA	<i>Quercus alba</i> / White oak	2" cal.	2
TD	<i>Taxodium distichum</i> / Bald Cypress	8' Hei.	7
SHRUBS			
FM	<i>Fothergilla major</i> 'Mt. Airy' / Fothergilla	3-5 gal.	24
HQ PE	<i>Hydrangea quercifolia</i> 'Peewee' / Dwarf Oakleaf Hydrangea	3-5 gal.	13
HQ RS	<i>Hydrangea quercifolia</i> 'Ruby Slippers' / Oakleaf Hydrangea	3-5 gal.	23
IV	<i>Itea virginica</i> 'Henrys Garnet' / Virginia Sweetspire	3-5 gal.	4
IV SG	<i>Ilex verticillata</i> 'Southern Gentlemen' / Winterberry Pollinator	3-5 gal.	4
IV WR	<i>Ilex verticillata</i> 'Winter Red' / Winterberry	3-5 gal.	14
PERENNIALS			
HL	<i>Hemerocallis</i> sp. / Yellow Daylily	1 gal.	22
RR	<i>Rosa radrazz</i> / Knockout Rose	3-5 gal.	13
POTENTIAL CHEROKEE WILDFLOWER PLANTINGS			
AA	<i>Ageratina altissima</i> 'Chocolate' / White Snakeroot		
AT	<i>Asclepias tuberosa</i> / Butterfly Milkweed		
BA	<i>Baptisia australis</i> / Blue Wild Indigo		
EF	<i>Eupatorium fistulosum</i> / Joe Pye Weed		
EP	<i>Echinacea purpurea</i> / Purple Coneflower		
MD	<i>Monarda didyma</i> 'Jacob Cline' / Wild Bergamot		
PP	<i>Phlox paniculata</i> / Fall Phlox		
RF	<i>Rudbeckia fulgida</i> / Orange Coneflower		
RL	<i>Rudbeckia laciniata</i> / Cutleaf Coneflower		



TREES



American Holly
Ilex opaca 'Jersey Princess'



American Holly Pollinator
Ilex opaca 'Jersey Knight'



Black Gum
Nyssa sylvatica 'Red Rage'



Bottlebrush Buckeye
Aesculus parviflora



Carolina Silverbell
Halesia carolina



Eastern Redbud
Cercis canadensis



Flowering Dogwood
Cornus florida 'Cherokee Chief'



Bald Cypress
Taxodium distichum



Fringe Tree
Chionanthus virginicus



Ginkgo
Ginkgo biloba



Ironwood
Carpinus caroliniana



River Birch
Betula nigra 'Dura-heat'



Serviceberry
Amelanchier x grandiflora 'Autumn Brilliance'



Sweetbay Magnolia
Magnolia virginiana 'Moonglow'



White Oak
Quercus alba



Yellowwood
Cladrastis kentuckea

SHRUBS



Dwarf Fothergilla
Fothergilla gardenii 'Mt. Airy'



Knockout Rose
Rosa radrazz



Virginia Sweetspire
Itea virginia 'Henry's Garnet'



Winterberry (Pollinizer)
Ilex verticillata 'Southern Gentleman'



Dwarf Oakleaf Hydrangea
Hydrangea quercifolia 'Pee Wee'



Oakleaf Hydrangea
Hydrangea quercifolia 'Ruby Slippers'



Winterberry
Ilex verticillata 'Red Sprite'

PERENNIALS FOR CHEROKEE WILDFLOWER PLANTING



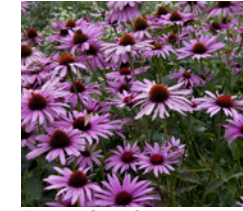
Blue Wild Indigo
Baptisia australis



Cutleaf Coneflower
Rudbeckia laciniata



Joe Pye Weed
Eupatorium fistulosum
Cherokee meaning: 'The thing to drink water with'



Purple Coneflower
Echinacea purpurea



Butterfly Milkweed
Asclepias tuberosa
Cherokee meaning: 'Chigger, jigger'



Fall Phlox
Phlox paniculata
Cherokee meaning: 'It has dirt in it, no gloss'



Orange Coneflower
Rudbeckia fulgida
Cherokee meaning: 'Lowland-Growing Deer Eye'



White Snakeroot
Ageratina altissima 'Chocolate'



Wild Bergamot
Monarda didyma 'Jacob Cline'

CONCLUSION

The Stecoah Valley Center has worked hard to create a place that celebrates the region's cultures, traditions, and history. The Community Design Assistance Center has worked closely with the members of the Stecoah Valley Center to create a master plan for the grounds that surround the center. It is our hope that these improvements respect and exemplify the cultures and traditions of the Stecoah Valley Center. In addition, we hope that the new design creates an enjoyable place for visitors and locals of all ages to enjoy the natural beauty of the area. The new design will hopefully support old traditions, like the many festivals the Center hosts, and also create avenues for new traditions to be made.

PART 2

After the site visit and gathering of data, documenting the existing conditions, and collecting soil samples, the CDAC team created site inventory and analysis maps. This allowed the team to better understand the opportunities and constraints of the site that would later influence the design concepts.

The site inventory consisted of documenting circulation, views, slopes, existing buildings, and natural elements. The site analysis analyzed the data and highlights the design opportunities and constraints.

The following are brief descriptions of the inventory and analysis.

Inventory:

The site of the Stecoah Valley Center contains a few locations of steep topography but is largely flat. The site is bordered by an existing fitness trail, Dry Creek, and adjacent properties. The bank of Dry Creek that is on the property is eroded and in need of remediation. The trail is largely in good shape and is an asset to the property. Views from within the property are mostly attractive thanks to the surrounding mountains, the interesting architecture of the main building and gymnasium, and the presence of Dry Creek. However, the facade of the gymnasium is in poor shape and screening is necessary to a few adjacent properties.

The only major environmental factor that needs to be considered is the fact that stormwater collection is a problem in a few areas throughout the site. In one location, the water runs over the fitness trail causing it to crumble.

The inventory map shows current circulation conditions within the property boundaries which includes vehicular access and the fitness trail. Good views, indicated with green arrows, can provide great opportunities for gathering spots/seating areas. Less desirable views, shown in red, have the least potential for attractive backgrounds. Different slope conditions are shown and labeled as moderate or steep, to indicate zones with different opportunities. Areas with stormwater conditions are also shown.

Stecoah Valley Center Conceptual Site Master Plan
SITE INVENTORY & ANALYSIS

Analysis:

The analysis shows that there are several site conditions that need to be taken into consideration while developing the design.

Screening around the property is necessary, but must not block views of the front of the building so that cars approaching on Old School House Road can have a view to the center. The gas tanks on the north and east sides of the main building need to be screened.

Emphasis needs to be returned to the true front of the main building. Enhancing the gymnasium facade should be considered. The interior courtyard of the main building provides an opportunity for a unique focus area.

The existing fitness trail and Dry Creek provide ample opportunities for resting/reflection areas throughout the property.

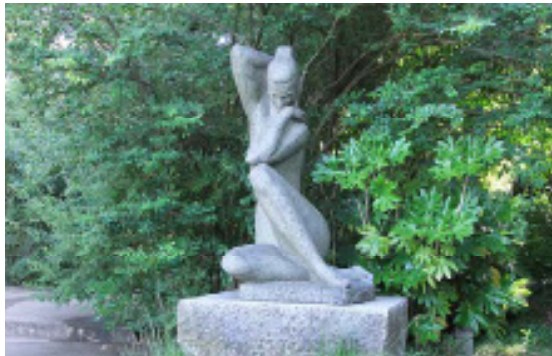
Following are the site inventory and analysis maps.





CASE STUDIES
Contemplative Gardens

Contemplative gardens are unlike a typical garden in that there are many psychological aspects to factor into the design. Contemplative gardens are meant to create a relaxing environment that serves as an escape from the activity that may surround it. From a variety of case studies the design team learned what makes a contemplative garden successful. It is important to have a focal point because it gives the users something to focus on. A contemplative garden needs to have some kind of seating; preferably seating that is comfortable and natural looking. And lastly, the garden should be submerged in or surrounded by nature.



Art Focal Point



Natural Wood Glider Chair



Water Focal Point



Seating



Submerged in Nature

CASE STUDIES
Appalachian Art and Culture

The region of North Carolina, where the Stecoah Valley Center is located, is filled with a rich art and culture. These traditions date back to the settlement of the area and they are a part of the resident's daily lives. The art varies from sculpture and pottery to quilting and paintings. The cultural aspect involves types of dance and performance pieces that have been taught from generation to generation.



Face Jug Art



Clog Dancing



Appalachian Music



Appalachian Painting

CASE STUDIES

Story Circles

The story circle case studies that the design team explored help the team understand the form and materiality of these spaces. For example, the stage on which the speaker presents must be at the center of the story circle and that stage can either be elevated or level with the ground plane. Materiality should be rustic and natural for both the seating and the ground plane. The edges of the story circles are lined with plantings to help create a more private setting for the oral stories to be heard.



Natural Seating and Center Stage



Natural Wood Seating



More formal story circle that maintains rustic/natural character



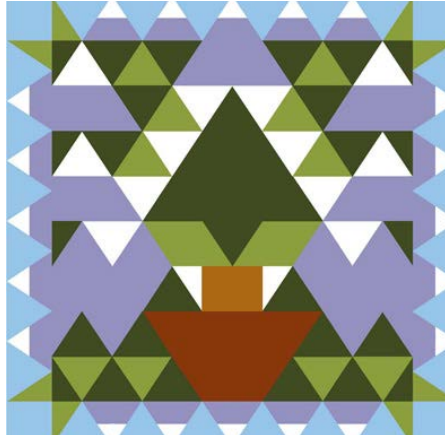
Story circle in a more open landscape

CASE STUDIES

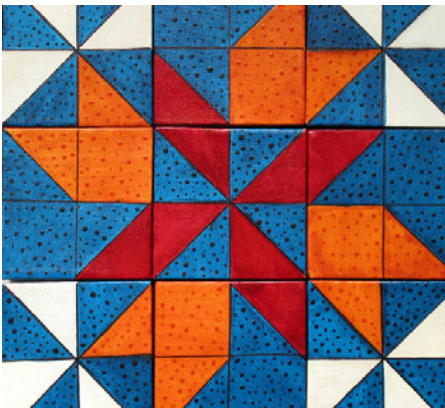
Quilt Squares and Quilt Gardens

Quilt squares are one of Appalachia's oldest traditions. Consequently it was important to the design team to understand the history, patterns, and color palette of the quilt squares. In addition to the squares, ideas for quilt gardens were explored. Quilt gardens imitate the patterns and colors of the quilt squares, but they are on the ground plane and comprised of perennials instead of fabric.

Traditional Quilt Squares



Quilt Gardens



PRELIMINARY CONCEPTS

Concept A

This concept for the development of the Stecoah Valley Center property is guided by a few main ideas:

1. The fitness trail is a wonderful opportunity to create interpretive stations throughout the property. These stations cover topics of nature/landscape, culture/art, and the specific history of the site.
2. As one moves around the site they are constantly afforded specific views in toward the building or out toward the surrounding landscape. These views are defined by plant material and focal sculptures that direct the eye and bring art into the landscape.
3. Active use areas are centralized around the northwest corner of the building. These include the playground, a relocated pavilion, a basketball court, shuffleboard and outdoor restrooms. The existing topography is used to create a small amphitheater that turns the basketball court into a multi-functional venue. This entire portion of the property is meant to be ADA accessible.
4. A veteran's memorial around the existing flag pole, as well as a new sidewalk that connects to the active use area, bring the emphasis back to the true front of the building.
5. Storm water issues are dealt with by the introduction of a number of rain gardens/retention areas. These depressions can be aesthetically pleasing, work with the existing land form and require little maintenance.
6. Finally, all of these features leave room for considerable open lawn space that can be used for free play and vehicle parking during special events.

Preliminary Concept A can be found on the following page.

DESIGN ELEMENTS

1. Story circle and creek-side sitting area.
2. Active use area: basketball court, shuffle board, restrooms, relocated pavilion and amphitheater.
3. Vegetated buffer.
4. Contemplative garden/resting space.
5. Native meadow plantings.
6. Creek bank restoration.
7. Re-use of tree stumps as art display space.
8. Veteran's Memorial around existing flag pole.
9. Interpretive station.
 - a. Native flora of the region using a view of the meadow.
 - b. History of the school using historic photo.
 - c. History of the Pump House and current stormwater retention.
 - d. Cultural history using quilt square mounted on gymnasium facade.
10. Courtyard deck and garden.
11. Stormwater retention area.
12. Turf service drive that maintains access to the north side of the building but is more attractive than a gravel drive.



PRELIMINARY CONCEPTS

Concept B

This concept offers several zones based on different activities:

1. The contemplative garden is carefully designed to provide the best possible views to the Appalachian Mountains. Wind sculptures are placed around this area. The reading area is adjacent to the contemplative garden and are both considered quiet zones.
2. The recreation area is tied into the existing playground and the amphitheater seating for the basketball court is created on the existing topography. Shuffleboard, outdoor restrooms, sound circle and free play spaces are located around this area. Also, this area is designed to be ADA accessible.
3. The added entrance path offers the community to get involved in the site design. This will be done by having members of the community place their own designed tile on the path to create an art work as a whole. Other additional paths are to serve accessibility throughout the site.
4. Gathering zones for outdoor dining and vendors are located on the southeast side of the building.

Preliminary Concept B can be found on the following page.

DESIGN ELEMENTS

1. Quilt garden with rocking chairs and umbrella tables on the side
2. Dance stage with built-in seats and benches
3. Ticket booth
4. Stormwater treatment area
5. Temporary food vending stands
6. Parking
7. Pavilion with picnic tables and seating
8. Barbeque and grill
9. Seating areas provide great views of the natural surroundings
10. Vegetative buffers
- 11a. Courtyard deck for outdoor movies and gatherings
- 11b. Expanded deck provides a bigger platform for outdoor dining with good views
12. Reflective garden
13. Outdoor reading area
14. Seating area with umbrella tables
15. Tree trunk carving area with sculptures by artists carved from the pine trees
16. Active zone- Horse shoe, Shuffle boards, Half basketball Court, Restrooms
17. Story circle and fire pit with removable cover
18. Educational corner with Appalachian Trail map-mosaic flooring
19. Music circle
20. Community-built path
21. Outdoor classrooms with umbrella tables
22. Tree stumps used to display art or wind sculptures
23. Creek bank restoration



Master Plan
 Scale: 1"=30'-0"

Section A-A
 Scale: 1"=10'-0"
 Horizontal: 1"=10'-0"
 Vertical: 10:1 Vertical Exaggeration

Reflective Garden with reflective elements such as reflective sphere

Reflective Garden with focal elements and spiral flooring

Fitness Trail

PRELIMINARY CONCEPTS

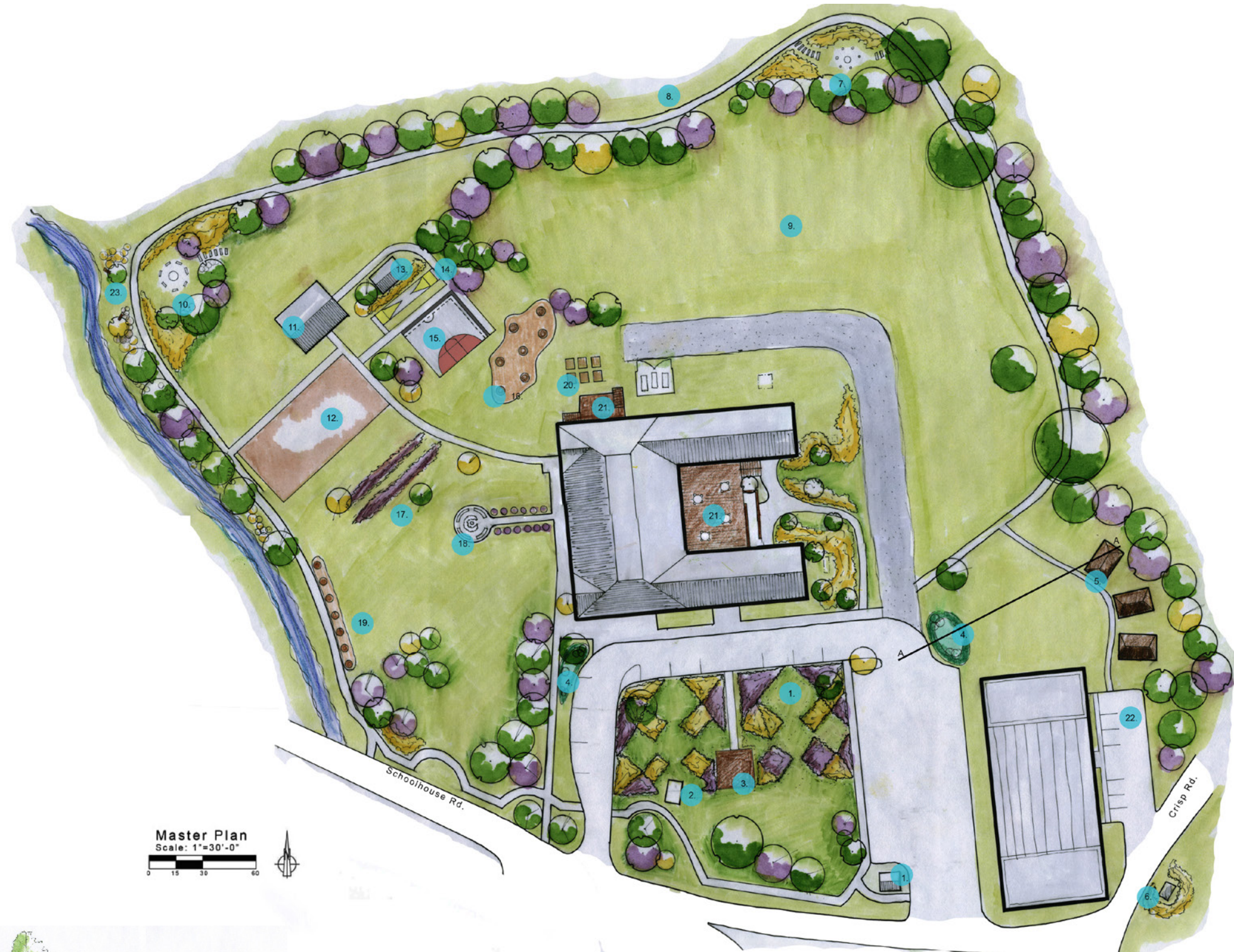
Concept C

This final concept focuses on introducing the cabinettes into the grounds and finding ways to preserve the open space necessary for the Stecoah Valley Center's large festivals, but also using some of that open space to create a safe place for children to play. In addition, the front entrance lawn is seen as a structured performance space with a stage at the center. Surrounding the stage is an experiential quilt garden that people can sit amongst during performances and watch the show that is happening on the stage. When there are no performances, it acts as an interactive landscape that is fun for children to run through and one that alludes to the heritage and traditions of the Appalachian region.

Preliminary Concept C can be found on the following page.

DESIGN ELEMENTS

1. Experiential quilt garden
2. Old pump house ticket booth
3. Performance stage
4. Stormwater management areas
5. Tiny cabins
6. Dumpster
7. Contemplative garden
8. Wind sculptures
9. Open field/overflow parking
10. Story circle
11. Pavilion
12. Playground
13. Restrooms
14. Shuffle board court
15. Half-basketball court
16. Natural play area
17. Azalea garden
18. Flagpole and veterans memorial
19. Art display logs
20. Community garden boxes
21. Deck
22. Parking lot for gymnasium and tiny cabins
23. Creek access point



Master Plan
 Scale: 1"=30'-0"



PART 3

APPENDIX: Table of Contents

- A. Soil Samples/Results
- B. Soil Results Location Map
- C. Explanation of Soil Tests
- D. Cabinettes
- E. Cherokee Art and Culture
- F. Bubblers Fountain
- G. Outdoor Lighting

Name	Sample ID	LabID	pH	BpH	Pppm	Kppm	Cappm	Mgppm	Zn ppm	Mn ppm	Cu ppm	Fe ppm	B ppm	% OM	SS ppm	CEC meq/100g	% Acidity	% Base Sat	% Ca Sat	% Mg Sat	% K Sat	P Rating	K Rating	Ca Rating	Mg Rating
CDAC	STE01	6023	5.71	6.07	4	112	536	122	1.1	11.6	0.6	13.1	0.3			5.9	33.1	SS Rating	OM Rating						
CDAC	STE02	6024	6.12	6.16	4	131	985	195	2	13.2	0.4	7.9	0.5			8.3	17.2	66.9	45.2	16.9	4.8	L	H	M	VH
CDAC	STE03	6025	5.77	6.18	2	50	763	85	0.8	10.6	0.5	14	0.2			5.9	22								
CDAC	STE04	6027	5.54	6.03	2	128	389	117	0.8	8.3	0.4	12.8	0.2			5.4	40.5	82.8	59.4	19.4	4	L	H	H	VH
CDAC	STE05	6028	5.84	6	3	155	686	153	1.8	15.4	0.4	10.2	0.3			7.4	31.9								
CDAC	STE06	6029	6.31	6.23	8	124	1016	148	3.3	22.7	0.6	17.5	0.3			7.6	13.3	78	64.1	11.8	2.1	L-	M-	H-	H
CDAC	STE07	6030	7.55	N/A	1	80	4651	199	4.2	26	0.1	1.8	0.5			25	N/A								
CDAC	STE3B	6026	6.33	6.31	2	121	1124	85	1	11.4	0.3	9.3	0.4			7.2	7.5	59.5	35.7	17.8	6	L	H	M-	VH



Virginia Cooperative Extension

PUBLICATION 452-701

Explanation of Soil Tests

Rory Maguire, *Extension Nutrient Management Specialist, Virginia Tech*Steve Heckendorn, *Soil Test Laboratory Manager, Virginia Tech*

The accompanying Soil Test Report (and supplemental Soil Test Notes, when provided) will help you assess your plant's need for fertilizer and lime.

The "History of Sampled Area" section restates the information you filled in on the Soil Sample Information Sheet you submitted with the soil sample.

The "Lab Test Results" section shows the relative availability of nutrients numerically and if appropriate, as a rating. The rating may be interpreted as follows: L=Low, M=Medium, H=High, VH=Very High, EH=Excessively High (soluble salt test only), DEF=Deficient, or SUFF=Sufficient, and sometimes a "+" or "-" When soils test Low, plants almost always respond to fertilizer. When soils test Medium, plants sometimes respond to fertilizer and a moderate amount of fertilizer is typically recommended to maintain fertility. When soils test High to Very High, plants usually do not respond to fertilizer. If there is no rating for a nutrient, the adequacy of that nutrient in the soil for the plant you specified has not been determined.

The following is an explanation of the symbols and abbreviation used in the report:

Report Symbols and Abbreviations

P = phosphorus	K = potassium
Ca = calcium	Mg = magnesium
Zn = zinc	Mn = manganese
Cu = copper	Fe = iron
B = boron	SS = soluble salts
lb/A = pounds per acre	ppm = parts per million
meq = milliequivalent	g = gram
pH = acidity	Sat. = saturation
N = nitrogen	P ₂ O ₅ = phosphate
K ₂ O = potash	% = percent
Est-CEC = estimated cation exchange capacity	
AG = agricultural limestone (dolomitic or calcitic)	

Fertilizer Recommendation

The fertilizer recommendations may be used for the same crop for two to three years. After this time, it is advisable to retest the soil to determine if significant changes have occurred in nutrient levels. When the soil tests Very High for phosphorus or potassium and no fertilizer for these nutrients is recommended, you should retest the following year to determine if fertilizer will be needed. Due to the variability associated with sampling, fertilizer application rates may be varied by a plus or minus 10 percent.

No soil test is performed for **nitrogen** because this element is too mobile in the soil for laboratory results to be useful. Nitrogen fertilizer recommendations are based on the crop/plant to be grown, the previous crop, and when applicable, the soil's yield potential. Comments on the report and other enclosed Notes, if any, will have further information regarding nitrogen.

Lime Recommendation

If needed, a lime recommendation is given to neutralize soil acidity and should last two to three years. After that time, you should have the soil retested. The measured soil test levels of calcium and magnesium are used to determine the appropriate type of limestone to apply. If neither dolomitic nor calcitic lime is mentioned, or "Ag" type or "agricultural" limestone is stated on the report, then it does not matter which type is used. When no information on the Soil Sample Information Sheet was provided regarding the last lime application, the lab assumed you have not applied lime in the past 18 months. If this is not correct, contact your Extension agent for advice on adjusting the lime recommendation to take into consideration recent lime applications. Do not over lime! Too much lime can be as harmful as too little. For best results, apply lime, when possible, several months ahead of the crop/plant to be planted to allow time for more complete soil reaction.

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Produced by Communications and Marketing, College of Agriculture and Life Sciences, Virginia Polytechnic Institute and State University, 2010

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Methods and Meanings

For more detail on the lab procedures used, visit www.soiltest.vt.edu and click on “Laboratory Procedures.”

Soil pH (or soil reaction) measures the “active” acidity in the soil’s water (or hydrogen ion activity in the soil solution), which affects the availability of nutrients to plants. It is determined on a mixed suspension of 1:1, volume to volume ratio of soil material to distilled water.

Virginia soils naturally become acidic, and limestone periodically needs to be applied to neutralize some of this acidity. A slightly acid soil is where the majority of nutrients become the most available to plants, and where soil organisms that decompose organic matter and contribute to the “overall health” of soils are the most active. When a soil is strongly acidic (< 5.0-5.5), many herbicides lose effectiveness and plant growth is limited by aluminum toxicity. When soils are over-limed and become alkaline (> 7.0), micronutrients, such as manganese and zinc, become less available to plants.

For most agronomic crops and landscaping plants, lime recommendations are provided to raise the soil pH to a slightly acid level of between 5.8 and 6.8. Blueberries and acid-loving ornamentals generally prefer a 4.5 to 5.5 pH, and an application of liming material is suggested when the soil pH drops below 5.0. For the majority of other plants, lime may be suggested before the pH gets below 6.0. This is to keep the soil pH from dropping below the ideal range, since lime is slow to react and affects only a fraction of an inch of soil per year when the lime is not incorporated into the soil. If the soil pH is above the plant’s target pH, then no lime is recommended. If the pH is well above the ideal range, then sometimes an application of sulfur is recommended to help lower the pH faster; however, most of the time, one can just let the soil pH drop on its own.

A Mehlich buffer solution is used to determine the **Buffer Index** to provide an indication of the soil’s total (active + reserve) acidity and ability to resist a change in pH. This buffer measurement is the major factor in determining the amount of lime to apply. The Buffer Index starts at 6.60 and goes lower as the soil’s total acidity increases and more lime is needed to raise the soil pH. A sandy soil and a clayey soil can have the same soil pH; however, the clayey soil will have greater reserve acidity (and a lower Buffer Index) as compared to the sandy soil, and the clayey soil will require a greater quantity of lime to be applied in order to raise the soil pH the same amount as the sandy soil. A reported

Buffer Index of “N/A” means that it was not measured since the soil (water) pH was either neutral or alkaline and not acidic (soil pH \geq 7.0) and therefore requires no lime.

Nutrients that are available for plant uptake are extracted from the soil with a Mehlich 1 solution using a 1:5 vol:vol soil to extractant ratio, and are then analyzed on an ICP-AES instrument. An extractable Mehlich 1 level of phosphorus from 12 to 35 pounds per acre (lb/A) is rated as medium or optimum. A medium level of potassium is from 76 to 175 lb/A. Medium levels of calcium and magnesium are 721 to 1440 and 73 to 144 lb/A, respectively. Calcium and magnesium are normally added to the soil through the application of limestone. It is rare for very high fertility levels of P, K, Ca and Mg to cause a reduction in crop yield or plant growth. Levels of micronutrients (Zn, Mn, Cu, Fe and B) are typically present in the soil at adequate levels for plants if the soil pH is in its proper range. See Soil Test Note 4, at www.soiltest.vt.edu/stnotes, for documented micronutrient deficiencies in Virginia.

Soluble Salts (S.Salts) or fertilizer salts are estimated by measuring the electrical conductivity of a 1:2, vol:vol ratio of soil material to distilled water. Injury to plants may start at a soluble salts level above 844 ppm when grown in natural soil, especially under dry conditions and to germinating seeds and seedlings. Established plants will begin to look wilted and show signs related to drought. This test is used primarily for greenhouse, nursery and home garden soils where very high application rates of fertilizer may have led to an excessive buildup of soluble salts.

Soil Organic Matter (SOM) is the percentage by weight of the soil that consist of decomposed plant and animal residues, and is estimated by using either the weight Loss-On-Ignition (LOI method) from 150° to 360°C, or a modified Walkley-Black method. Generally, the greater the organic matter level, the better the overall soil tilth or soil quality, as nutrient and water holding capacities are greater, and improved aeration and soil structure enhance root growth. The percent of organic matter in a soil can affect the application rate of some herbicides. Soil organic matter levels from 0.5% to 2.5% are ordinary for natural, well-drained Virginia soils. A soil organic matter greater than 3% would be considered very high for a cultivated field on a farm, but can be beneficial. Due to relatively large amounts of organic materials being commonly added to gardens, the soil organic matter in garden soils can be raised into the range of 5% to 10%.

The remaining values that are reported under the “Lab Test Results” section are calculated from the previous measured values and are of little use to most growers.

Estimated Cation Exchange Capacity (**Est-CEC**) gives an indication of a soil’s ability to hold some nutrients against leaching. Natural soils in Virginia usually range in CEC from 1 to 12 meq/100g. A very sandy soil will normally have a CEC of 1 to 3 meq/100g. The CEC value will increase as the amount of clay and organic matter in the soil increases. This reported CEC is an estimation because it is calculated by summing the Mehlich 1 extractable cations (Ca + Mg + K), and the acidity estimated from the Buffer Index and converting to units commonly used for CEC. This is also an Effective CEC since it is the CEC at the current soil pH. This value can be erroneously high when the soil pH or soluble salts level is high.

The percent **Acidity** is a ratio of the amount of acid-generating cations (as measured by the Buffer Index) that occupy soil cation exchange sites to the total CEC sites. The higher this percentage, the higher the amount

of reserve acidity in the soil, and the higher the amount of acidity there will be in the soil solution and the lower the soil pH will be. A reported Acidity% of “N/A” means that a buffer index was not determined, and the acidity is probably less than 1 meq/100g and/or 5%, and the soil pH is alkaline (greater than 7.0).

The percent **Base Saturation** is the ratio of the quantity of non-acid generating cations (i.e., the exchangeable bases, Ca, Mg, and K) that occupy the cation exchange (CEC) sites.

The percent **Ca, Mg, or K Saturation** refers to the relative number of CEC sites that are occupied by that particular nutrient and is a way of evaluating for any gross nutrient imbalance.

Additional Information

For questions and more information, contact your local Virginia Cooperative Extension (VCE) office or go to www.ext.vt.edu. Contact information for your local Extension office appears on the upper left of your soil test report.

Conversion Factors

(Some Values are Approximate)

1 acre = 43,560 square feet

1 pound of 5-10-5, 5-10-10 or 10-10-10 fertilizer = 2 cups

1 pound of ground limestone or ground dolomitic limestone = 1.5 cups

1 pound of aluminum sulfate or magnesium sulfate = 2.5 cups

1 pound of sulfur = 3.3 cups

1 quart = 2 pints = 4 cups

1 pint = 2 cups = 32 tablespoons

1 tablespoon = 3 teaspoons

1 bushel = 35.24 liters = 1.25 cubic feet

Pounds per 100 square feet x 0.54 = lbs per cubic yard

100 square feet = 5 feet x 20 feet, 10 feet x 10 feet, or 2 feet x 50 feet

1,000 square feet = 50 feet x 20 feet, 10 feet x 100 feet, or 25 feet x 40 feet

Pounds per 100 square feet x 436 = pounds per acre

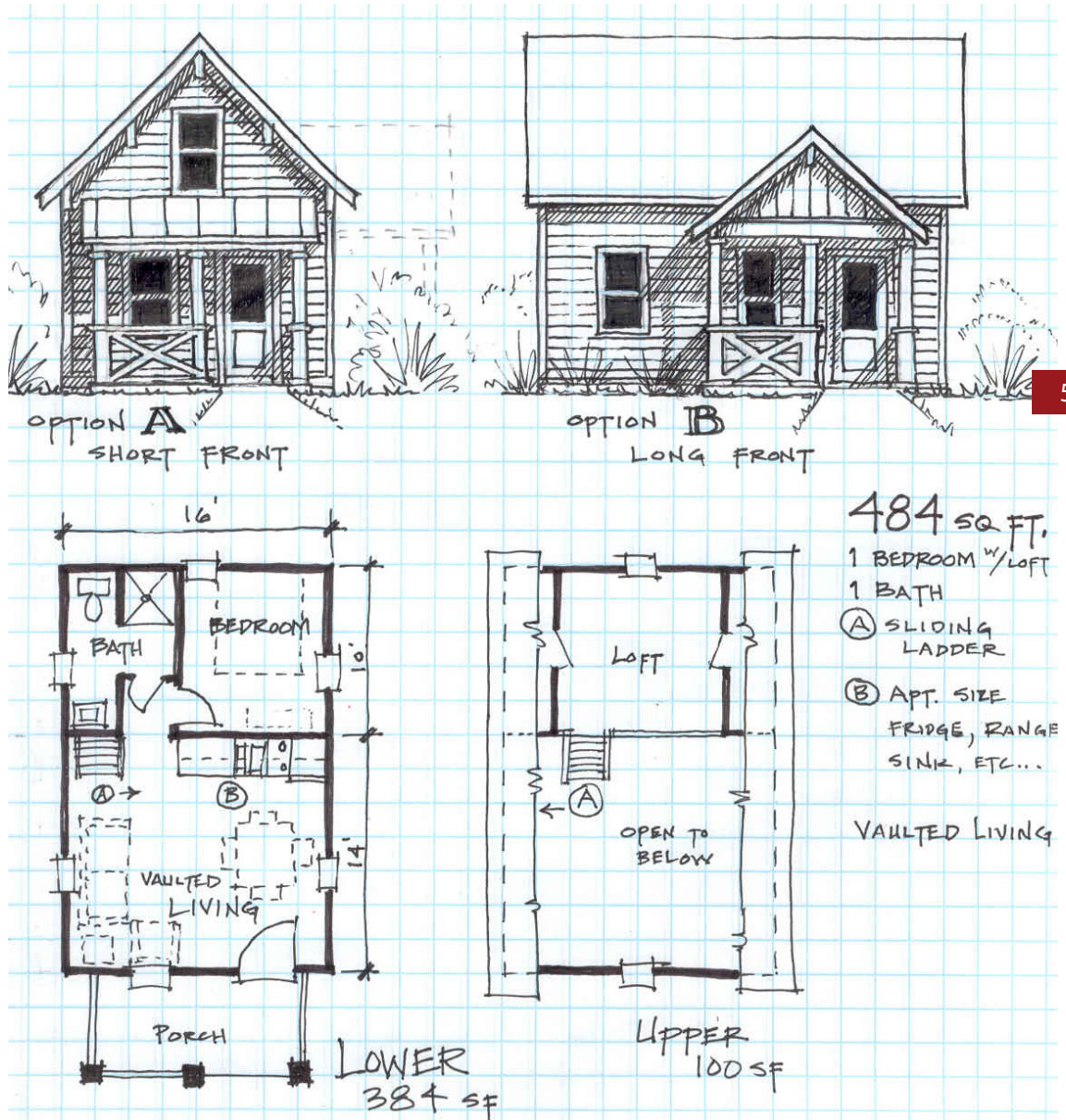
Pounds per 1,000 square feet x 43.6 = pounds per acre

Pounds per acre x 0.0023 = pounds per 100 square feet

Pounds per acre x 0.023 = pounds per 1,000 square feet

APPENDIX: Cabinettes

One of the things that the Stecoah Valley Center community members requested on the grounds were cabinettes, tiny cabins, to house any guests who visit during one of the many events that the center hosts each year. After much research on size, style, and functionality the design team has concluded that the following plans and styles best depict what the Stecoah Valley members and their future guests would like on the center's grounds. Dimensions are provided on the floor plans at the bottom of the page

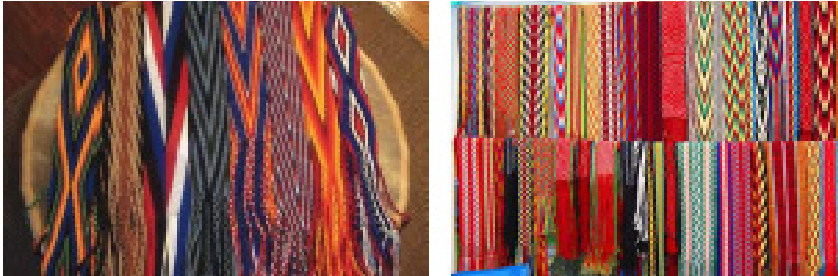


Stecoah Valley Center Conceptual Site Master Plan
APPENDIX: Cherokee Art and Culture

As part of the design process, the design team did a great deal of research on Cherokee art and culture. Some of what we found was put in the master plan design, but here all of it is outlined in case the members of the Stecoah Valley Center decide they would like to research what we have found.



In the earlier meetings with the community there was talk about a sound circle. Although it was decided that there would be no structured space for the sound circle it is still a nice idea and there are ways to incorporate Cherokee culture if the members of the Stecoah Valley Center decide they would like to incorporate these ideas. There was talk of very simple instruments and after doing some research, the Cherokee instruments are just that. Kids can come outside with their drums, maraccas and flutes and learn traditional Cherokee songs and chants.



The above images are examples of Cherokee weaving patterns. They are bright, bold, and beautiful and though they were not incorporated in the masterplan design, if the members of the Stecoah Valley Center every find a time where they need something bright and beautiful, these patterns are a nice way to bring in Cherokee art and culture.



The image to the left shows what can be both an art piece and an interactive element. The pole in the image is a Cherokee game where the teams have to run around and try to hit the fish at the top of the pole with a ball. This can either serve as a symbol of Cherokee culture on the grounds, or it has the opportunity to be implemented as part of the active recreation area so that the children who go to the center can partake in this game as well.

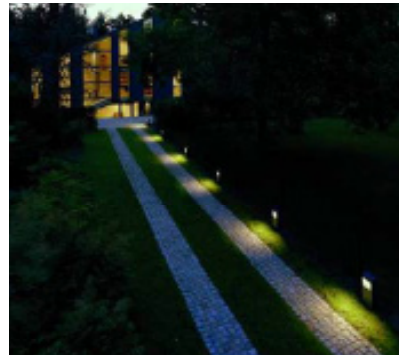
APPENDIX: *Bubbler Fountain*

Throughout the report the design team has mentioned ‘bubblers’ as part of the design for the deck. These bubblers are simply closed-circuit fountains that create a peaceful atmosphere where ever they are located. The images below is just two kinds of bubbler fountains but there are many different makes and models that the members of the Stecoah Valley Center can choose from.

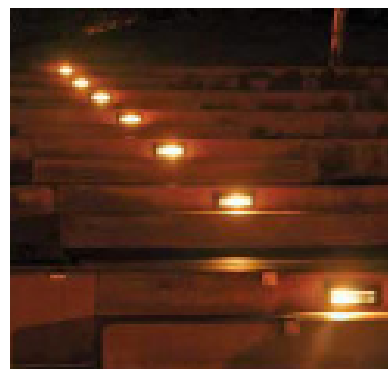


APPENDIX: Outdoor Lighting

At our last meeting with the Stecoah Valley Center members, there was talk about concern for lighting. Though it is not included in our master plan, we have outlined a variety of outdoor lighting for many of the spaces that make up the master plan.



The image above are all examples of lighting along a path. They are all different forms of bollards and the top image shows how these light fixtures distribute light. There are also a variety of materials and sizes that they come in, so much like the bubblers, if the members of the Stecoah Valley Center decide they would like to implement a similar light fixture there are many different models available to suit the center's needs.



The above images show how to light the amphitheater seating that is located along the basketball court. Though the lights are small they are extremely effective in providing ample light to this area.