



NINIGRET PARK

Final Master Plan



Submitted to:
The Town of Charlestown
Parks and Recreation Committee

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Ninigret Park Master Plan

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Section I Introduction



Ninigret Park Master Plan

Introduction

The Town of Charlestown has embarked on an important master planning initiative to guide long term development of Ninigret Park. Working closely with the Town of Charlestown Parks and Recreation Committee, Town officials and interested members of the public, Vanasse Hangen Brustlin (VHB), Inc. and Huntress Associates have developed a comprehensive Ninigret Park Master Plan addressing both near and long term goals ascertained through a series of publicly held meetings and discussions with stakeholders.

The Ninigret Park Master Plan brings together the findings of our firm's evaluation of expressed goals as related to actual site conditions in the form of clearly defined recommendations for improvements supplemented by Concept Plans and descriptive narratives for key program elements.

Context

Ninigret Park is comprised of 227 acres of land in two parcels fronting upon Old Post Road. Of the total acreage, a 55 acre parcel is owned and managed directly by the Town of Charlestown while the remaining 172.4 acre parcel is owned by the Town but subject to restrictions by the U.S. Secretary of the Interior. These restrictions may be waived subject to review by the Town with the federal government provided the contemplated changes are in keeping with the spirit of park and recreation usage.

In addition to its frontage upon Old Post Road to the northwest, Ninigret Park is also bounded by the Ninigret Wildlife Refuge to the south and the Arnolda Residential Community to the northeast. Additionally, the Town of Charlestown Police Station, Ambulatory Service Station and Chamber of Commerce reside on the opposite side of Old Post Road from Ninigret Park's frontage.

Historical Overview

Ninigret Park is on the site of what was originally developed as a naval air training base. Vestiges of the former base are evident through-out the current built facilities, including portions of pavement from runways, service areas and access roads. Due to their military origins, this pavement infrastructure takes the form of a geometric grid layout comprised of long straight sections of pavement particularly evident in what is now the event parking area as well as in the access drives.

The Charlestown Naval Auxiliary Landing Field was built in 1942 on land purchased from the Hunter harbor summer colony as well as some 600 acres of farmland. It was primarily used as a training field for new pilots to learn night landing and takeoff techniques and also included a catapult and training deck to simulate carrier take-offs. President George H.W. Bush trained at “Charlietown” before being sent to the south Pacific theater in World War II.

The base was closed in the early 1970’s and the land transferred to the U.S. Fish and Wildlife Service. It was subsequently divided into the Ninigret Wildlife Refuge, maintained by the U.S. Fish and Wildlife Service, and the 220 acre Ninigret Park facility maintained by the Town of Charlestown.

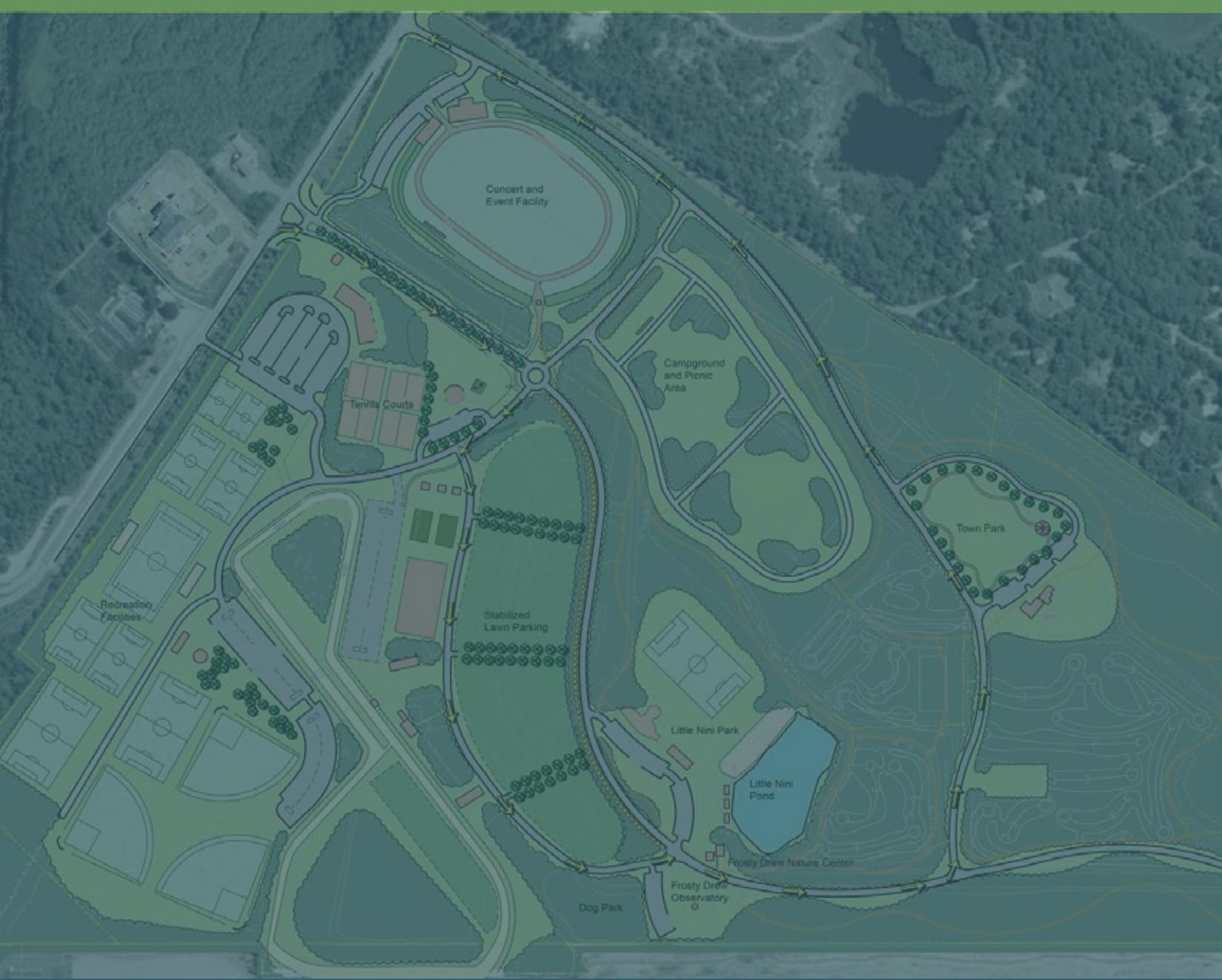
Approximately 172.4 acres of Ninigret Park remain subject to covenants put in place by the Secretary of the Interior to be used “exclusively for public park or public recreation purposes in perpetuity by the Town of Charlestown.” This land use compliments the U.S. Fisheries and Wildlife Refuge abutting the property to the southwest, which also served as a portion of the original Charlestown Naval Auxiliary Landing Field and still has the remnants of a major runway clearly evident in its landscape.

In the years following this change in ownership various public groups have implemented recreation improvements upon the land, albeit without a guiding Master Plan. Consequently, development has not been optimized from either a park or environmentally sensitive standpoint and clearly remains hostage to the original grid layout of the naval air base and the seriously deteriorated condition of many of the paved areas.

Another result of the naval air base origins of the site is that much of the site was originally cleared and, over the years since the base’s closure, allowed to go unmaintained. This has resulted in major infestations of invasive plant species, particularly autumn olive, over the “scrub” portions of the site. Within these areas of scrub growth are numerous abandoned roads in condition of major disrepair.

Section II

Existing Conditions



Current Site Uses

Ninigret Park is currently home to a diverse range of recreation, entertainment and land preservation uses. Some of the key existing permanent program features (refer to the Existing Conditions Aerial Photo) include:

- Park entrance
- Soccer fields and tennis courts along the Old Post Road site frontage
- The Criterium Bicycle Course with judge's stand (the former naval air base control tower) and the nearby Kimball Pavilion picnic shelter
- A major area of pavement central to the developed portion of the site utilized for event parking
- The summer recreation office, maintenance/storage building and restroom facility proximate to the tennis courts
- The Naval Air Memorial, also proximate to the tennis courts
- The Little Nini Pond swimming beach, bath house and picnic facility with associated parking
- The Kid's Place Playground proximate to Little Nini Pond
- Multi-purpose athletic fields and a baseball field (now being removed) proximate to Little Nini Pond
- The Frosty Drew Nature Center and Observatory
- The Town of Charlestown Senior Center located in the wooded area of the site
- A Disc Golf course sited in clearings behind Little Nini Pond
- Informal trails along abandoned stretches of interior drives

In addition to these permanent land uses, Ninigret Park is also the site for four regional summer entertainment events: the Big Apple Circus, the Ocean State Reggae Festival, the Charlestown Seafood Festival, and the Rhythm and Roots Festival. These are reviewed in a later section of this report.



Existing Conditions of Permanent Facilities

Ninigret Park Entrance



The existing Ninigret Park entrance is comprised of two stone piers supporting a metal gate on the property line. Since the property is set back substantially from the Old Post Road paved way, and the gate set along a brush line, it can be easily passed unnoticed.

An entrance sign is provided in the lawn area within the Old Post Road right of way. The sign identifies Ninigret Park and also includes a list of major on-site features. Since it is located in a long section of lawn area alongside the road it tends to get lost visually due to its small scale.

Soccer Fields and Tennis Courts along Site Frontage



The existing soccer fields along the site frontage were constructed several years ago with the help of the U.S. Coast Guard in clearing and grading of the land. Based upon a site aerial photograph this area includes line striping for one full size soccer field, one junior soccer field (1/2 size) and two beginners soccer fields (1/4 size) with much additional level lawn area available for informal practice.

The fields appear level in gradient and are without a formal drainage or irrigation system. The lawn was of serviceable condition for municipal level play, but the turf exhibits thin areas and encroachment by undesirable turf invasive weeds.

Other amenities not evident at the time of site inspection included player seating, bleachers, sports lighting, as well as roadway and parking lighting. A concession stand is not provided for and bath facilities are restricted to the small facility adjacent to the tennis courts supplemented by portable johns for larger events.

The tennis courts have recently been expanded from four courts to the present eight courts. The earlier constructed courts are in serviceable condition and the new courts in excellent condition, as is the fencing surrounding the courts.

A skating rink once also occupied a portion of this area of the site but has been abandoned and fenced in. It is now overrun by weeds.

Criterion Bicycle Course



The Criterion Bicycle Course, a 9/10th mile long closed circuit figure eight configuration bicycle track, was developed utilizing areas of the original naval air training runways. The pavement of the track itself exhibits deterioration evidenced by “alligatoring” (a network of cracks). These have been maintained by periodic crack sealing. Remaining paved areas surrounding the track and at the judge’s stand which were part of the original Charlestown Naval Auxiliary Landing Field facility are seriously degraded due to their age.

The track is currently protected by placed boulders to restrict vehicles from entering it from the adjacent parking area along its northeast edge. The boulders present a potential hazard to riders. This parking area itself is also in poor condition evidenced by extensive alligator cracks.

The Judge’s Stand reutilizes the original naval air training field control tower. This provides a slightly elevated platform from which judges may view race course activities. It is set in an area of seriously degraded pavement with placed boulders introduced to keep cars from entering the track.

Parking for the Criterium Bicycle Course events is provided for in the existing paved parking area alongside the course. This parking is also shared by users of the soccer fields on the opposite side of the course, resulting in some short-cutting across the course by soccer game attendees.

It was noted by the Criterium Bicycle Course secretary that their primary concern is this trespassing by soccer field users during race events, an activity posing hazard to bike racers and pedestrians alike. While they have tried to coordinate soccer events to not occur during bike races, this has not always been possible.

Central Paved Parking Area



The large central paved area is utilized primarily for major event parking during the course of the summer. The parking areas are subdivided by the main site access drive, which is in fair to good condition. However the parking areas flanking the drive are characterized by seriously degraded bituminous pavement which appears to date back to the training field. This pavement presents serious pedestrian issues due to uneven settlement, major cracks and exposed lifted pavement infiltrated with weed growth, all of which present tripping hazards. It is also unsightly in appearance.

In terms of layout, the central parking area and drive again follow the grid layout of the naval air training facility. This, combined with large expanses of pavement, seriously compromise Ninigret Park's visual appeal as a pastoral park experience.

The main drive has a few widely separated tall light poles of older design (not dark skies compliant), while the parking lots are largely devoid of site lighting. Evidence of a rudimentary piped drainage system was also found, but its condition is questionable.

A basketball court is located along the southern edge of this central paved area. It is in very poor condition, characterized by highly degraded bituminous pavement with weed filled cracks, older basketball backboards and posts for a fenced enclosure but missing the fence fabric.

Recreation Office and Adjacent Facilities



The Recreation Office which services summertime use of Ninigret Park is provided for in a small wood frame shingled structure. Adjacent to it are a small wood frame garage and a nearby small bathroom facility servicing the tennis courts. The structures appear in acceptable, albeit dated, appearance.

Charlestown Naval Auxiliary Landing Field Memorial



The Charlestown Naval Auxiliary Landing Field Memorial includes an attractive granite monument memorializing those who gave their lives in training at the Charlestown NAAF, now Ninigret Park. The memorial is flanked by landscaping and has a flagpole behind it. It is unfortunately not immediately seen from the entrance drive due to its location. It has, however, been located on the site of one of the training plane crashes which it honors.

Little Nini Pond Park



Little Nini Pond features a swimming beach along its northern shore supported by a restroom/changing facility, picnic shelter, two small storage sheds by the beach, the CHARIHO Youth Soccer Association shed, and paved parking area. Some items:

- The swimming beach has areas of thin sand and some portions overgrown with weeds, general annual maintenance items.
- The shingle sided restroom/changing facility, small storage shed and the CHARIHO Youth Soccer Association shed appear in fair condition, requiring repainting of trim at the time of inspection. Their structures, particularly in areas where there is ground contact, should be inspected for decay and/or insect damage.
- The picnic shelter and concrete pavement within it appear in good condition. The five barn red-painted picnic tables are freestanding, so some were scattered, while two barbecues are in fixed positions. Another type of picnic table was found in this area; this, along with freestanding gray plastic trash receptacles make the area appear unplanned.
- The paved parking area is in fair condition, having numerous cracks.

The Kid's Place Playground



The Kid's Place Playground is of recent construction and in very good condition. It includes a large pre-manufactured children's play system including slides, climbers, and platforms at various levels protected with railings. Being of plastic/resin construction it shows little degradation from weather.

Wood chips are used as a safety mat in fall areas surrounding the play structure. These should be checked to confirm they meet standards for depth and material for cellulose engineered fiber used for this purpose. The structure was not reviewed for compliance with current ADA accessibility standards.

In addition to the major play structure, the Kid's Place Playground also provides Two adjacent swingsets, spring toys and a see-saw are set in informal areas with a sand/fine crushed stone ground plane. Numerous picnic tables and trash receptacles of the same manufacturer lend the play area a professional appearance. The furnishings appear to be manufactured using recycled wood/plastic material in keeping with sustainable design practices.

Shade trees have also been planted in the area of the playground, offering increasing levels of shade as they mature.

Athletic Fields and Baseball Field proximate to Little Nini Pond

The two large lawn areas adjacent to the Little Nini Pond area are currently used for two summer concert events, open informal play and also include striping for two multi-purpose fields and a ballfield (now planned for removal). They are reasonably level in gradient and of serviceable condition for municipal level play, but the turf exhibits thin areas and encroachment by undesirable turf invasive weeds. They do not have drainage or irrigation systems.

The Frosty Drew Nature Center and Observatory



The Frosty Drew Nature Center comprises a single story wood-frame shingled building which houses display, meeting and office areas dedicated to educating the public on natural systems of the area. It includes a concrete walkway and accessible ramp leading to the entrance and large deck to the rear, all in satisfactory condition. A bench is also provided for viewing of Little Nini Pond.

The Frosty Drew Nature Center uses the same parking area as Little Nini Pond, the pavement being in fair to poor condition as evidenced by widespread cracking.

There are plans for an expansion to the Frosty Drew Nature Center building to provide a Frosty Drew Sky Theater. This will include assembly seating and a library. Construction has not yet commenced.

The Frosty Drew Observatory, located across the road from the Frosty Drew Nature Center, is set in an open lawn area free of obstructions to nighttime viewing. The structure appears in good if a bit dated condition. The only site improvements include a concrete walk to the entrance (fair condition) and a fence along its frontage on the drive. The remaining area is finished in lawn which is in fair condition.

Town of Charlestown Senior Center



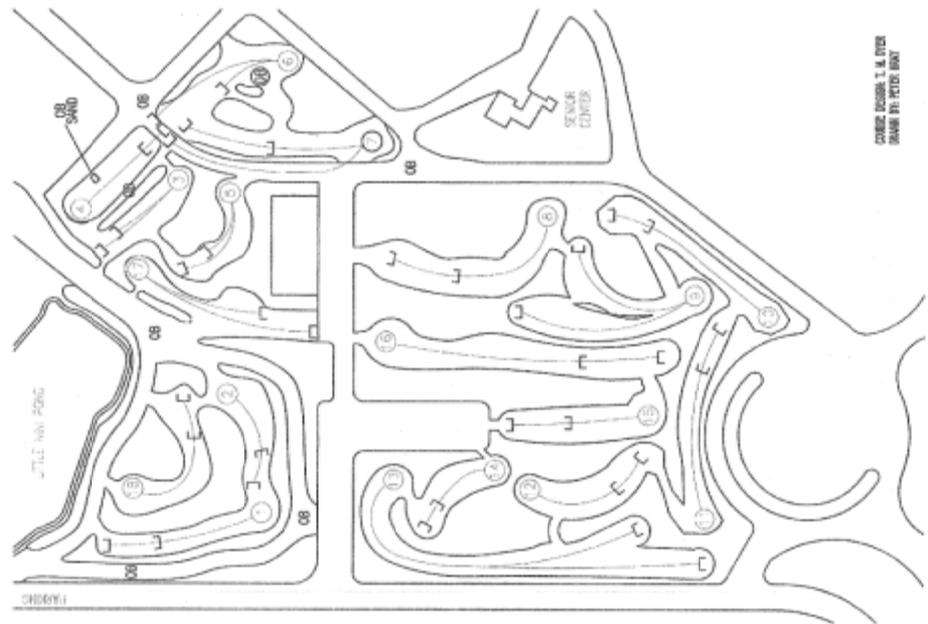
The Charlestown Senior Center is located towards the rear of the site in an area best described as being covered with small trees and scrub. The clearing in which the center is situated is comprised of lawn and a parking lot. Access to the Senior Center is indirect, utilizing an extension of the main access road traversing areas of heavily deteriorated pavement and confusing side roads, not all of which are blocked off. There is no roadway lighting, so access in the evening is confusing at best.

The Senior Center building is of woodframe construction finished in clapboard siding. It comprises an older existing structure offering kitchen, gathering and office space, and a recent addition providing a large community space for meetings, arts and crafts classes and similar events.

The parking area is in fair condition, having some pavement cracks. Two of the entrance walks are handicapped accessible ramps, one constructed of pressure treated wood, the other of concrete. The emergency exit from the newer addition comprises a wooden stair and landing with no walkway connection to the parking lot.

What is most striking about the Senior Center is its secluded location. It is challenging to find for newcomers and this may have impact upon its current light attendance.

Disc Golf Course



An 18 hole “Frisbee” disc golf course has been constructed in a series of clearings to the southwest of Little Nini pond. The course presents little impact to the landscape, being designed for purely aerial use by Frisbees, thereby avoiding the maintained turf required by traditional golf courses. Brush is largely left in place, only an aerial clear area being provided to many of the “holes” (actually raised cylinders of mesh used as targets for throwing).

The course was designed, installed and is maintained by its organizer. It is one of only two disc gold courses in Rhode Island, the other being only a 9 hole course. Given the popularity of the sport elsewhere in the country, this may become a growing attraction within Ninigret Park.

Trails



Existing trails at Ninigret Park frequently take the form of abandoned drives, in sharp contrast to those of the Ninigret Wildlife Refuge (photo). Consequently, they tend to follow the grid of the original naval training base and do not lend themselves to enjoying the natural experience. Additionally, no hierarchy of trails is present to serve the varied needs of walkers, joggers, cyclists and those seeking nature interpretation signage.

Vegetation



The existing vegetative cover at Ninigret Park is largely comprised of:

- Large areas of lawn at the existing recreation fields along Old Post Road, in the cleared area west of the Criterium Bicycle Track, in the open field areas west and north of Little Nini Pond and in the area surrounding the Senior Center.
- Areas of introduced tree and shrub plantings, primarily at the tennis courts, the Naval Auxiliary Landing Field Memorial, the Kid's Place Playground, the Senior Center and areas adjacent to the Little Nini Pond and Frosty Drew Nature Center facilities.
- Much of the remainder of site is vegetated with pioneer and secondary tree and shrub growth over portions of the one-time cleared naval air base facilities which are no longer in active use.

The lawn areas are in serviceable condition, however, since they are not irrigated and growing in very well drained soils they are typically thin and have weed growth (clover, crabgrass, etc.) evident in many of the areas.

Introduced trees include pines partially screening the tennis courts with mixed shrubs (roses, spiraea and juniper), red oak and ornamental trees at the Memorial. Shade trees introduced at the trees introduced at the Senior Center, Little Nini Pond and Frosty Drew Nature Center facilities include red and white oak, Norway maple (an invasive species no longer recommended), sugar maple, red maple and white pines.

Remaining areas of the site are comprised of native species including atlantic white cedar, red and white oaks, red maple, black cherry and some eastern white pine.

There are additionally some weeping willow (not native) along the shores of Little Nini Pond.

Much of the vegetated areas of the site are, however, heavily overgrown with invasive autumn olive trees as well as bittersweet vines in select areas. Both of these species should be eradicated to avoid further damage to native plant varieties in the wooded areas.

Regional Summer Entertainment Events

Ninigret Park currently hosts four major summer entertainment events which present regional draws. These include the Big Apple Circus, the Ocean State Reggae Festival, the Charlestown Seafood Festival, and the Rhythm and Roots Festival. VHB attended each of these events and our observations are provided below.

Big Apple Circus



The Big Apple Circus, held from July 9th through the 15th of this year, has now been a major feature of Ninigret Park's summer event calendar for 29 years. It is set up in the paved parking area (parking area A) located south of the tennis courts and east of the Criterium Bicycle Course and uses a portion of the major parking field (parking area B) to the east for patron parking.

Patrons enter the circus area via a canopied ticket area alongside the Kimball Pavilion. Temporary fencing is installed surrounding the entertainment area and temporary lighting provided for evening activity. The fenced in open space between the ticket canopy and the main Big Apple tent utilizes the existing pavement as an activity plaza which provides for vendor booths/tents as well as temporary sanitary facilities.

The paved area behind the main tent is used for RV and trailer parking as well as animal care tents. This area had many electrical lines crossing the paved areas, typically with vinyl covers as an attempt to minimize tripping hazards, and with

orange safety cones to identify their locations for pedestrians. There were also numerous water hoses run through this location, these being largely kept on lawn areas to the degree possible.

The noise of electrical generators was very much evident, adequate power for the many uses not being available on site. Lighting was provided by large floodlights generally mounted on the tops of surrounding trailers.

Parking was estimated at approximately 250 vehicles at the time of the evening visit during a main performance. Parking lot attendees did a good job of directing traffic during the attended event. Vehicular access to the event from U.S. Route 1 was also not found to be an issue.

The primary safety issues related to potential tripping hazards posed by the various above ground temporary utility lines as well as to holes in the bituminous pavement which appear to be from tent tie-down stakes used at earlier events. In the evening these conditions weren't always easily visible.

Ocean State Reggae Festival



The Ocean State Reggae Festival, held from July 21st through the 22nd of this year, and is in its tenth year taking place as part of Ninigret Park's summer event calendar. It is held in the open field area adjacent to Little Nini Pond, with the concert stage being set up in the northern corner of the space.

Vehicular access to the Ocean State Reggae Festival from U.S. Route 1 was found to be free of delays during the date of observation (July 23rd). It is, however, recommended that improved event signage be provided to assure patrons can easily find their way to the Ninigret Park entrance.

Parking was located in the central paved parking field (Parking Areas B and C) with some overflow parking placed on the adjacent multi-purpose field. These areas were found to comfortably exceed parking demands on the date of observation.

Temporary fencing was provided surrounding the open lawn portion of the performance area. Vendor booths and temporary sanitary facilities were set up on the opposite side of the field from the stage.

Power for the performing stage, staff operations tent, stage lighting and refrigeration was provided by a transformer and supplementary generator with a temporary panel. Vendors provided their own temporary generator, adding to noise levels. Lawn seating area lighting was provided for using temporary floodlights with generators built into their trailer bases.

Electric lines were run across the concert area between power supplies and various equipment, and while covered in many places, still posed potential tripping hazards to patrons.

Camping was provided for in the open field west of the Criterium Bicycle Course, approximately ¼ mile and a 5 minute walk from the concert area. Portable toilets were provided for the campers as were temporary shower facilities. A maximum 1000 person limit is set by the Town for camping.

Issues relating to this year's Ocean State Reggae Festival included noise generated by both the concert soundstage and audience as well as from the numerous electrical generators. Complaints were also noted relative to noise in the camping area caused by an informal unplanned "concert" by a concession tent.

Charlestown Seafood Festival



The Charlestown Seafood Festival, held from August 3rd through the 5th of this year, has long been the largest summer event at Ninigret Park, now in its 29th year. It is set up utilizing the easterly long straight section of the Criterium Bicycle Course as a pedestrian promenade featuring vendor booths flanking both sides of the walking area. In addition, an RV parking area is located beyond the north end of the vendor booth area and an amusement park at the south end.

Vehicular access to the Charlestown Seafood Festival from U.S. Route 1 was found to be free of back-ups on the date of observation (August 5th). To assure smooth traffic flow from Route 1 is recommended that improved event signage be provided to assure patrons can easily find their way to the Ninigret Park entrance. During peak periods it is also advisable to have a police detail available in the event of an accident to reduce possibility of related delays.

Patrons park in all three major parking fields (parking areas A, B and C) with overflow onto the multi-purpose field by Little Nini Pond. Parking was observed to be approximately 1800 vehicles in mid-afternoon on August 5th. Patrons then enter the promenade by way of a ticket booth alongside the Kimball Pavilion.

A large number of volunteers directed traffic into the site, to the parking areas and then to the ticket booth. This effectively controlled parking patterns to assure each lot was filled in an orderly manner. Traffic cones and volunteers also assured clarity for pedestrians in finding their way safely to the promenade entrance.



Emergency vehicles and a temporary emergency care station were located at the other paved area leading to the promenade located further south along the Criterium Bicycle Course. The station was well staffed and easily visible.

Parking for employees of the amusement park, vendors and performing acts was accommodated in a paved area immediately west of the Criterium Bicycle Course. Water hook-ups as well as temporary generator hook-ups were located in this area as well as at the water and storage building across from the Kimball Pavilion.

A lawn concert area was situated in the large open lawn area west of the Criterium Bicycle Course with the soundstage set up centrally in this space. This allowed for a large area for chair set-up as well as picnic areas and several large tents for sitting in the shade. Temporary toilet facilities were provided between the lawn concert area and the promenade of vendor booths.

The Kimball Pavilion saw continuous use as a shaded dining area. Some 36 picnic tables were counted within the pavilion along with an additional 13 tables in a spill-

over area alongside the pavilion. A children's park area was also provided in the vicinity of the Kimball Pavilion.



The area used for the promenade and amusement park was enclosed by extensive temporary fencing with gate openings for the entrance area, the temporary emergency care station and for controlled RV and employee access.

Power for the amusement park, stage and other activities was provided for by portable generators with temporary panels. Vendors provided their own temporary generators, adding to noise levels. Lighting was provided for using several tall temporary floodlights with generators built into their trailer bases.

Consequently, there were numerous electrical lines crossing the paved areas. While many these lines were kept out of active pedestrian areas to the degree possible, some were required to cross major walking areas. These were typically covered with vinyl safety caps and orange safety cones to identify their locations for pedestrians, but still presented a possible tripping hazard.



There were also numerous water hoses run through-out the Sea Festival area. While these were kept on lawn areas and behind vendor booths as much as possible, there were still some cases where they had to cross pedestrian walking areas. While again covered with vinyl safety caps and marked with orange safety cones, they still presented potential tripping hazards.

Perhaps the most significant tripping hazard was the condition of the bituminous pavement itself. While the portion of the promenade which uses a portion of the Criterium Bicycle Course is free of major cracks, paved areas beyond the track are in

poor condition. Alligator cracks are widely present and holes can be observed in numerous locations, particularly where the children’s play area was set up, in the area of the judges booth and through-out the parking areas. These all represent potential liability.

Rhythm & Roots Festival



The Rhythm & Roots Festival, held from August 31st through the September 2nd of this year, is in its tenth year as a feature event of Ninigret Park’s summer calendar. Like the Ocean State reggae Festival, it is held in the open field adjacent to Little Nini Pond, with the temporary concert stage located in the northern corner of the field.

Vehicular access to the Rhythm & Roots Festival from U.S. Route 1 was found to be free of delays during the date of observation (September 1st and 2nd). It is, however, recommended that improved event signage be provided to assure patrons can easily find their way to the Ninigret Park entrance.

Temporary fencing was provided surrounding the performance area. Vendor booths and temporary sanitary facilities were set up on the opposite side of the field from the stage.

Power for the performing stage, staff operations tent, stage lighting and refrigeration was provided by a transformer and supplementary generator with a temporary panel. Vendors provided their own temporary generators, adding to noise levels. Lawn seating area lighting was provided for using temporary floodlights with generators built into their trailer bases.



Electric lines were run across the concert area between power supplies and various equipment, and while covered in many places, still posed potential tripping hazards to patrons.

Parking was located in the central paved parking field (Parking Areas B and C) with some overflow parking placed on the adjacent multi-purpose field. These areas were found to comfortably exceed parking demands on the date of observation.

Camping was provided for in the open field west of the Criterium Bicycle Course, approximately $\frac{1}{4}$ mile and a 5 minute walk from the concert area. Portable toilets were provided for the campers as were temporary shower facilities. Approximately 1500 tickets were sold for camping at this event.

Issues relating to this year's Rhythm & Roots Festival included some complaints about noise generated by the concerts.

Section III Master Planning Process



Master Planning Process

The Final Master Plan for Ninigret Park is the culmination of a process which began in June of 2007 when the VHB team of landscape architects, planners and engineers in association with Huntress Associates recreation designers commenced work on the project.

The VHB team's project approach to the Master Planning of Ninigret Park involved working closely with the Charlestown Parks and Recreation Committee, its Director and the Town Administrator as principle liaisons. This assured that the team stayed on target towards achieving principle goals of the project in a manner carefully tailored to the needs of the community. We also reached out to the general public and specialized interest groups via open meetings and during our on-site observation of major summer events.

In order to fully understand the Town of Charlestown's goals, current active uses upon the site and physical site characteristics, the project team initiated the study with a meeting with key Town officials in late June of 2007. At this meeting goals and concerns were expressed and local knowledge shared followed by VHB gathering available site information and performing a detailed walk of the site with the Director of Parks and Recreation.

The Charlestown Parks and Recreation Committee additionally provided a comprehensive summary of current and desired Ninigret Park uses including the results of a Town-wide survey performed in 2004. This served as a starting point for refinement of a program of uses optimally suited to Ninigret Park based upon prospective user needs juxtaposed with the site's natural characteristics.

VHB traffic engineers also reviewed available Town and RIDOT traffic count data, roadway improvement plans and other relevant information towards determining adequacy of existing roadway conditions at a Master Planning level. Their findings concluded that the existing roadway dimensions and configuration along with existing entrance and exit locations and conditions from Ninigret Park were adequate for the larger event capacities provided unforeseeable accidents do not occur. Improved temporary event identification signage was recommended for the duration of major events to eliminate confusion regarding access to Ninigret Park from U.S. Route 1.

The VHB team subsequently prepared an overall annotated Existing Conditions Plan utilizing available aerial photography as a base and a survey base plan compiled from available sources. These resources, along with comprehensive site photographs and GIS mapping, provided a sound basis upon which planning could proceed.

To further frame design goals for the Master Plan, the VHB team met with the Charlestown Town Council in mid-June of 2007. This meeting further focused efforts to include a permanent home for summer concerts and festivals on a portion of the Town controlled 55 acre parcel within Ninigret Park.

Over the course of the summer of 2007, VHB attended the four major entertainment events held at Ninigret Park: the Big Apple Circus, the Ocean State Reggae Festival, the Charlestown Seafood Festival and the Rhythm & Roots Festival. At each of these events VHB, in addition to performing our own independent observations, we met with the Director of Parks and Recreation as well as the organizers of the events to receive feedback on how they perceive the events operating.

The VHB team developed an Opportunities and Constraints Plan summarizing findings from our site and event observations as they related to the survey base for use as a working tool in subsequent planning efforts. Using this as a basis, a Conceptual Master Plan was then prepared illustrating initial ideas on how desired program needs might best be expressed in the site development.

These two plans, the Opportunities and Constraints Plan and the Conceptual Master Plan, accompanied by a photo inventory of site features served as a springboard for discussion at a follow-up meeting with the Charlestown Town Council in late August of 2007. Informed by our observations at summer festival events, the Conceptual Master Plan provided a framework for understanding how program elements best fit both desirable linkages and site conditions.

Comments from the Town Council, Parks and Recreation Committee and the attending public were used to refine Ninigret Park planning as it was brought up from freehand concept level to a CAD prepared Draft Preliminary Master Plan rendering. This plan was first presented to the Charlestown Parks and Recreation Committee in a work session in early October 2007 followed by a public presentation sponsored by the Parks and Recreation Committee in mid-October 2007.

Town representatives and the public further informed the direction of the Master Plan through the October 2007 meetings. As a result new program features were added (a Dog Park), configuration of the combined events/concert facility revised, and a new event campground introduced proximate to the events/concert facility.

A follow-up working meeting was held in early December 2007 with the Charlestown Parks and Recreation Committee to review the Draft Preliminary Master Plan refinements. Adequacy of the events/concert facility area to accommodate larger events such as the Seafood Festival was revisited, as was the sizing of the stabilized based lawn area to accommodate major event parking.

Circulation was also reviewed to assure pedestrian conflicts were significantly reduced during events relative to current operations.

This meeting further served as a forum to discuss anticipated construction costs for the various projects identified within the Master Plan and for the sharing of ideas on possible value engineering approaches towards cost reductions during Master Plan implementation.

In early January 2008 a publicly held meeting with the Charlestown Parks and Recreation Committee served to share the Preliminary Master Plan with the public for additional comments. The plan was very well received and it was agreed the VHB team should proceed on the Final Ninigret Park Master Plan.

A follow-up working meeting was held in mid-February 2008 with the Charlestown Parks and Recreation Committee to review a draft of the Final Ninigret Park Master Plan. The VHB team presented overlays demonstrating how larger events could be laid out within the proposed events/concert facility. The proposed dedicated event campground was also confirmed to match the size of the existing open field currently being used for this purpose.

Based upon the findings of this meeting, VHB was authorized to complete the Final Ninigret Park Master Plan towards public presentation to the Charlestown Parks and Recreation Committee in early April 2008 followed by the Charlestown Town Council later that month.

Section IV

Executive Summary of Recommended Improvements



Executive Summary of Recommended Improvements

Overview

The Town of Charlestown Parks and Recreation Committee master planning initiative was introduced to guide the long term development of Ninigret Park as a regional center for public recreation, entertainment, and land preservation. Working closely with the Parks and Recreation Committee, Town officials and interested members of the public, Vanasse Hangen Brustlin (VHB), Inc. and Huntress Associates (the “VHB Team”) developed this comprehensive Final Master Plan for Ninigret park which addresses the community’s near and long term goals in a clearly defined manner.

The community’s vision for Ninigret Park was originally conveyed as comprising use areas for an outdoor sports complex, a festival center and a performing arts center. As the project proceeded forward, it was realized that significant site efficiencies would be realized by combining the festival center with the performing arts center without compromise to their functionality. This approach freed up additional areas of the site for complimentary uses while minimizing overall disturbance.

This approach was but one part of a stewardship approach to site development at the heart of the master planning process for Ninigret Park. A principle of “appropriate development of the land” was adopted as a guiding principle as contrasted with the all too common “overdevelopment of the land”, this ethos of respect for natural systems being drawn upon through-out the planning process.

A balance was struck in the planning of active use areas such as the Sports Complex and the Concert and Festival Center to maximize utilization of existing open areas and areas currently overrun by invasive plants in order to assure preservation of major portions of the site. Connectivity of major tracts of wooded land was also respected in planning layout of new facilities, thereby assuring maintenance of wildlife corridors through the park.

Generous designated conservation areas were further preserved within the park as vegetated buffers lending visual and noise mitigation qualities to abutting residential properties. Vegetated buffers have also been preserved along Ninigret Park’s frontage on Old Post Road and alongside the Ninigret Wildlife refuge.

Principles focusing upon sustainable design become evident through-out the Ninigret Park Master Plan upon detailed review. The measure of success is that the Town’s programmatic goals for Ninigret Park have been met in a manner which also maintains the integrity of the park as a natural preserve.



U.S. Fish and Wildlife Refuge

Main Entrance Drive

A new Gateway Entrance has been introduced to Ninigret Park in the lawn area along Old Post Road. The new entrance features major fieldstone sign walls in a rich setting of native trees, shrubs and perennials to announce one's arrival at Ninigret Park. This is a radical departure from the existing entrances almost hidden condition in the line of scrubby growth alongside Old Post Road. It will require easements for extending into the existing broad lawn panel flanking Old Post Road, but will accomplish a signature statement in introducing Ninigret Park to visitors.

The entrance drive has been redesigned to present itself more strongly as the entrance to a major park through introduction of a tree planted median leading to a roundabout park. This accomplishes two objectives: it provides extensive on-site cueing area for cars arriving at festivals and it also utilizes an attractive roundabout as a traffic calming device with directory signage. Pavers at the roundabout further enhance its visual appeal as a park space.

It is at the roundabout that arrivals are directed to major facilities within the park. Take a right upon reaching the roundabout and one comes to the Naval Air Memorial, the Sports Complex, and the Criterium Bicycle Course. One also arrives at the major event parking area, thereby avoiding conflicts with townspeople going straight through to Little Nini Park during major festival events.

By going straight through the roundabout one also proceeds to the Dog Park, the Frosty Drew Nature Center and Observatory, the Kid's Place playground, parking for trail access, the Disc Golf Course, and the Senior Center. Finally, by taking a left at the roundabout one easily accesses the Festival Campground or can quickly exit the site.

This traffic solution greatly minimizes pedestrian/vehicle conflicts during festival events. Pedestrians accessing the Festival/Event Center never cross the drive carrying vehicles to the major event parking area. Rather, their crossing occurs beyond the roundabout on the lightly traveled drive serving Little Nini Pond. The traffic calming features of the roundabout, which serves to slow vehicles down, further enhances pedestrian friendly aspects of this crossing.

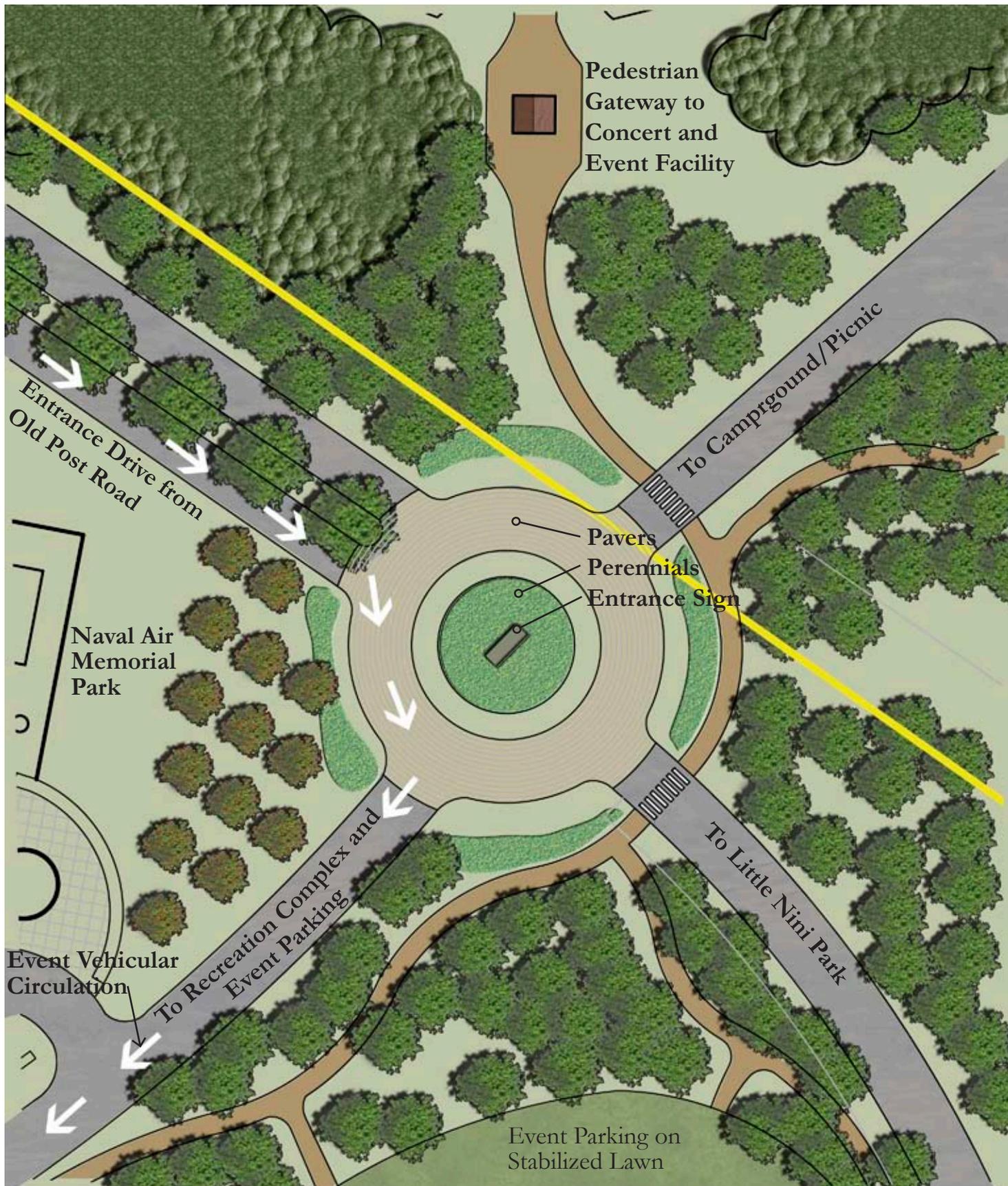
Interior Drives

Roadways have been designed to present an informal pastoral park experience to drivers through the introduction of a series of gracious curves. This approach offers an ever-changing sequence of interesting views to the "outdoor rooms" presented in the landscape by the many informal open play areas juxtaposed against treed edges. This approach replaces the many long straight sections of road which hark back to



Park Entrance





Entrance Roundabout



the original naval air training station's severe grid plan which is out of character with a park and preserve.

Drive access for concert and festival events is indicated on the Master plan with directional areas indicating one way event circulation. This pattern is designed to allow free through traffic by local residents to Little Nini Pond facilities to occur even during events and reduces the need for volunteers directing traffic. It also greatly reduces pedestrian/vehicular conflicts at the roadway crossing to the Concert and Festival center during events.

The heavily deteriorated existing roadway and parking areas, many dating back as much as 60 years, are long overdue for replacement given bituminous concrete pavement's typical lifespan of some 20 years. The roadways would be ground down, stockpiled and then reused as a base for the newly configured park drives.

Lighting for all drives and parking areas should be "dark skies compliant" to prevent skyglow which might interfere with the Frosty Drew Observatory and pose a nuisance to residential abutters.

Parking Areas

Low Impact Development (LID) principles have been built into the master plan, introducing design techniques to reduce paved surfaces through introduction of stabilized base lawn areas for major festival and concert parking. This approach allows major areas of the site used for intermittent event parking to appear as pastoral lawn fringed with shade trees, replacing the current sea of deteriorated pavement blighting the heart of the parkland experience. During events the stabilized base lawn system will support vehicle loads without settlement due to a compacted gravel base set below the visible lawn. Existing pavement may be used as part of this base after being ground to the proper gradation and blended with compacted gravel.

Such an approach also minimizes the need for piped drainage and detention systems, not having a paved surface with its associated high rate of concentrated stormwater runoff, but rather presenting a vegetated surface which takes advantage of the naturally well drained soils prevalent on the site. This approach helps to ensure a sustainable and low maintenance development as the Master Plan is implemented. It also assures simplified upkeep for years to come, not being prone to the degradation over time which is so prevalent in the existing paved areas of the site.

Porous bituminous pavement is recommended for smaller parking areas such as those serving the Sports Complex, Criterium Bike Track and Little Nini Pond's park.

These parking areas generally see three-season usage, rarely being used during winter months. Consequently, they are free of winter sanding and salt de-icing practices and therefore not prone to clogging by fines of their drainage porosity properties. This approach again minimizes the need for structural drainage systems, allowing for the use instead of low impact water quality enhancing infiltration swales.

The Sports Complex

Athletic fields have been maximized utilizing primarily existing open and level areas of the site to minimize impacts upon natural systems. This approach has yielded a new competition level multi-use soccer and football field with bleachers, three additional junior level soccer fields, two little league fields, a softball field and two basketball courts. The result is a comprehensive sports field program comprising:

- One competition level multi-use soccer and football field with bleachers
- One multi-purpose soccer or lacrosse field
- Two full size soccer fields
- Four junior level soccer fields
- Two youth soccer fields
- Two little league fields
- A softball field
- Two basketball courts
- Eight tennis courts
- A site for a possible future enclosed skating rink

It is recommended that the competition level multi-use soccer and football field utilize synthetic turf in order to allow continuous use for regional athletic events.

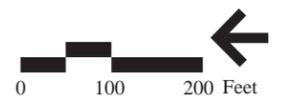
Other fields are recommended to utilize turf. Those fields located in existing level sports field areas are recommended to be tilled, aerated, topdressed with additional loam and leveled prior to reseeding. This will assure a good quality municipal level playing surface.

Given the strong yield of existing on-site wells, it is also recommended that the sport fields be irrigated. This will strengthen the turf's root system and lengthen the period between their having to be "rested" from play.

Any fertilizers applied must be natural based fertilizers free of herbicides and pesticides to meet sustainable design criteria for the overall park.



Sports Complex



Parking utilizing porous pavement design has been introduced proximate to the athletic fields, eliminating existing pedestrian conflicts with the Criterium Bicycle Course. A concession stand has also been introduced as a centerpiece of the new Sports Complex.

Concert and Festival Center

A new outdoor Concert and Festival Center has been introduced along Old Post Road just east of the Ninigret Park entrance drive. This location on the unrestricted Town controlled 55 acre portion of Ninigret Park allows the soundstage to be positioned further from the Arnolda Residential Community and oriented away from it as well. A planted earth berm topped with a pre-engineered wooden sound barrier is additionally introduced surrounding the facility to significantly reduce concert sound levels from the residential community.

Set-up area and parking for concert and festival organizers and performers has been sited alongside Old Post Road behind a screen of preserved vegetation. An EMT shelter has also been located here for quick access to Old Post Road for ambulances. This location minimizes noise from these activities upon the residential community.

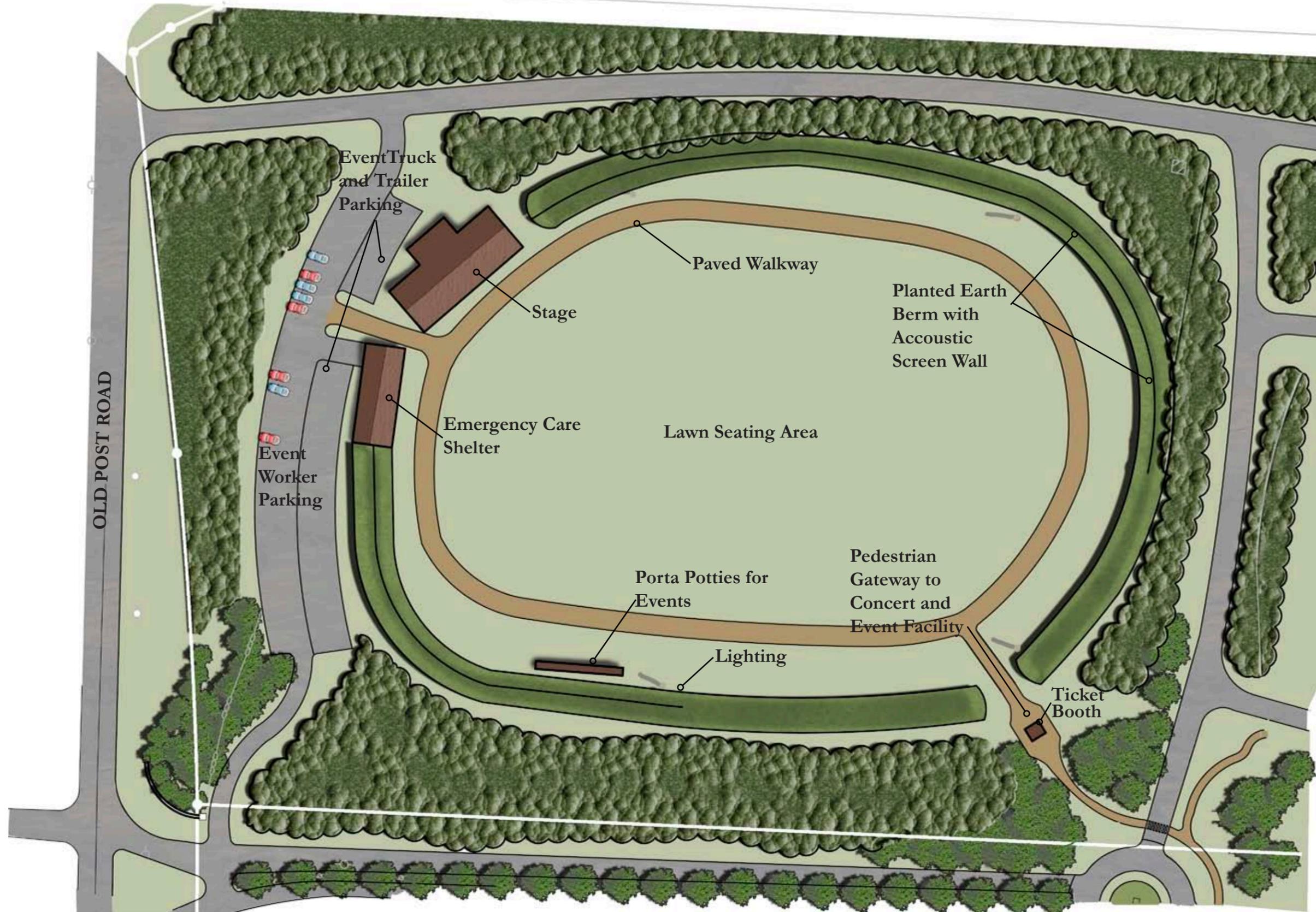
The Concert and Festival Center has also been designed to accommodate the Charlestown Seafood Festival, the largest event currently held at Ninigret Park, and is almost twice the size of the existing lawn area by Little Nini Pond currently used for concerts. This provides flexible space for different scale events to assure long term usability.

Potable water sources will be provided within the Concert and Festival Center. Portable toilets will be provided by event organizers for concert and festival attendees. The introduction of a wastewater treatment facility is not considered viable due both to operational constraints posed by intermittent use by the Concert and Festival Center and to major cost impacts.

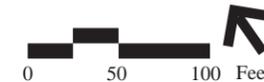
A new primary electrical feed will be required from Old Post Road to service the soundstage, EMT shelter, event lighting, vendor booths and other event related operations. This will eliminate the need for electrical generators and their attendant noise.

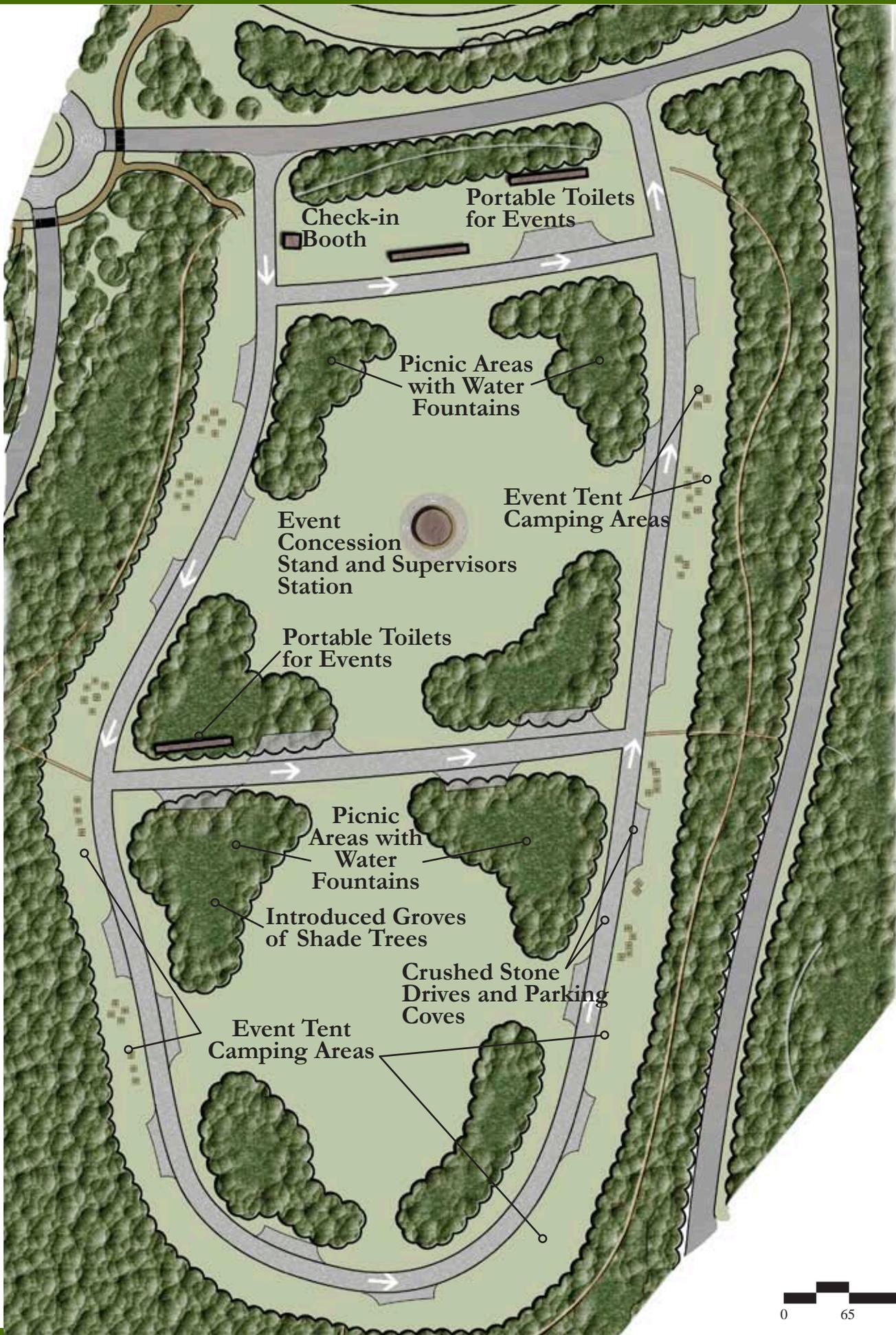
Festival Campground

A dedicated area has been planned for use as a concert and festival event short-term camping facility. While located for convenience to the Concert and Festival Center,



Concert and Festival Center





this facility is not intended or planned as a permanent campground. Rather, this area is instead designed to provide an additional open informal play and picnic facility open to the public for the majority of time when festivals are not being held.

Consequently, drives and parking are of permeable crushed stone and treed groves are introduced to lend shade and visually reduce the scale of the open area. This approach to the design adds another facet to the pastoral parkland experience of Ninigret Park.

Potable water sources will be provided in the picnic areas of the campground. Portable toilets will be provided for campers during concert and festival events. Electrical outlets will only be provided at the concession stand, this area being intended for temporary tent camping only.

Criterion Bicycle Course

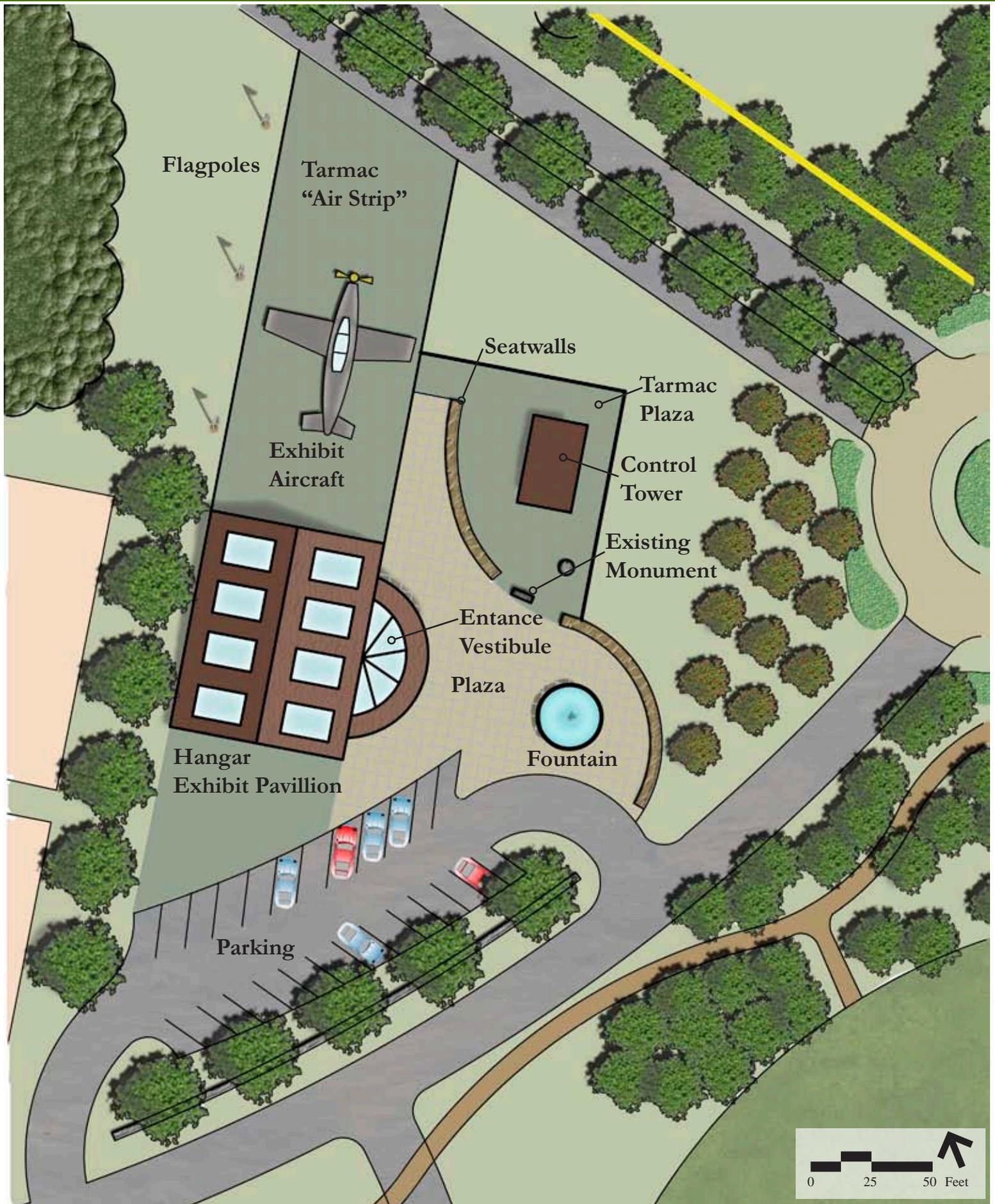
The Criterion Bicycle Course has been maintained in its current configuration. Discussion with a course representative demonstrated the high level of design parameters which the course was originally laid out to, so deviation from this layout was deemed both undesirable and unnecessary.

The principle concern of Criterion Bicycle Course users was short-cutting across the course by soccer players and their fans during races, posing potential for very serious accidents. It was agreed the best remedy was twofold: provision of safety capped fencing surrounding easily accessed portions of the track combined with provision of sufficient parking in close proximity to the athletic facilities, thereby eliminating the desire to cross the track. Both measures are reflected in the Master Plan.

Parking for the Criterion Bicycle Course is recommended to replace the existing deteriorated bituminous pavement with porous pavement. By the same measure, relocation of the festival area from the Criterion Bicycle Course will allow the heavily deteriorated bituminous pavement surrounding the track itself to be removed and replaced with walkways and landscaping. Finally, the boulders lining the track might also be removed.

Charlestown Naval Auxiliary Landing Field Memorial

The Charlestown Naval Auxiliary Landing Field Memorial has been upgraded in the Master Plan to provide a true destination attraction at the entrance to Ninigret Park speaking to its origins as a naval air training field. The existing granite monument is preserved, but by relocating the entrance drive a major new space is opened up



Naval Air Memorial Park

befitting the memorial's historic and significance. The new setting provides for an exhibition building to display historic artifacts and educational material relating to "Charlietown", a major plaza space with fountain and seatwalls to invite the public in and an introduced section of flagpole-lined "runway" as a setting for a Hellcat fighter as the focal point of the new museum. Abundant landscaping and convenient parking complete this new gateway to Ninigret Park.

Little Nini Park

Little Nini Park receives a facelift through redesigned parking and access reflecting the pastoral park theme. This parking is carried through to the Frosty Drew Observatory to engage it within the larger Little Nini Park area.

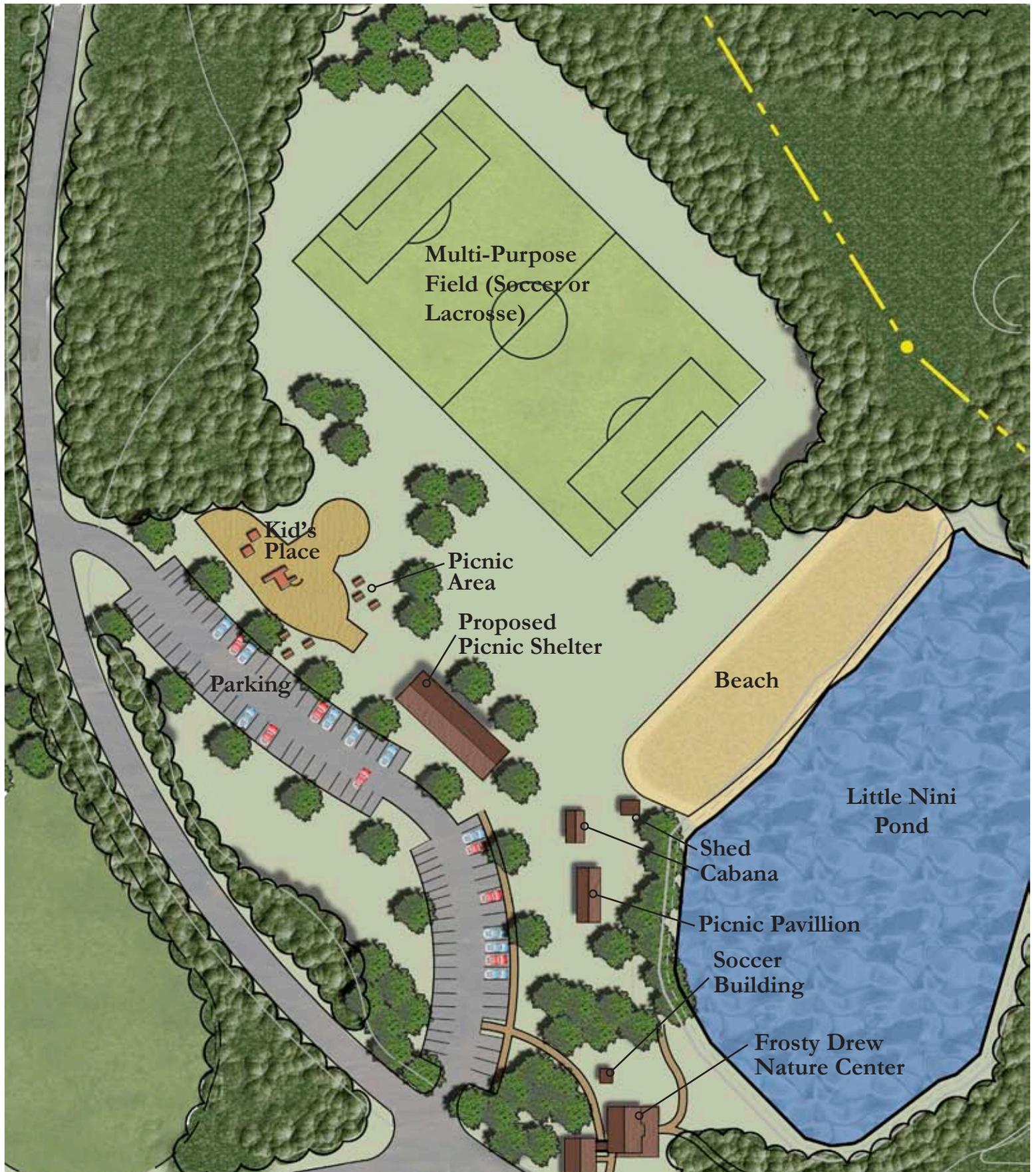
A large picnic shelter is also introduced to tie the Kid's Place playground in with the Little Nini beach facility, serving as an attraction for large family gatherings.

The multi-purpose field for soccer or lacrosse has been preserved in the existing open field area. This clearing might be expanded to accommodate an additional multi-purpose athletic field in replacement of one lost to the recommended pastoral park drive reconfiguration.

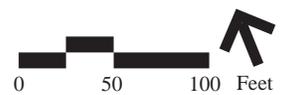
Frosty Drew Nature Center and Observatory

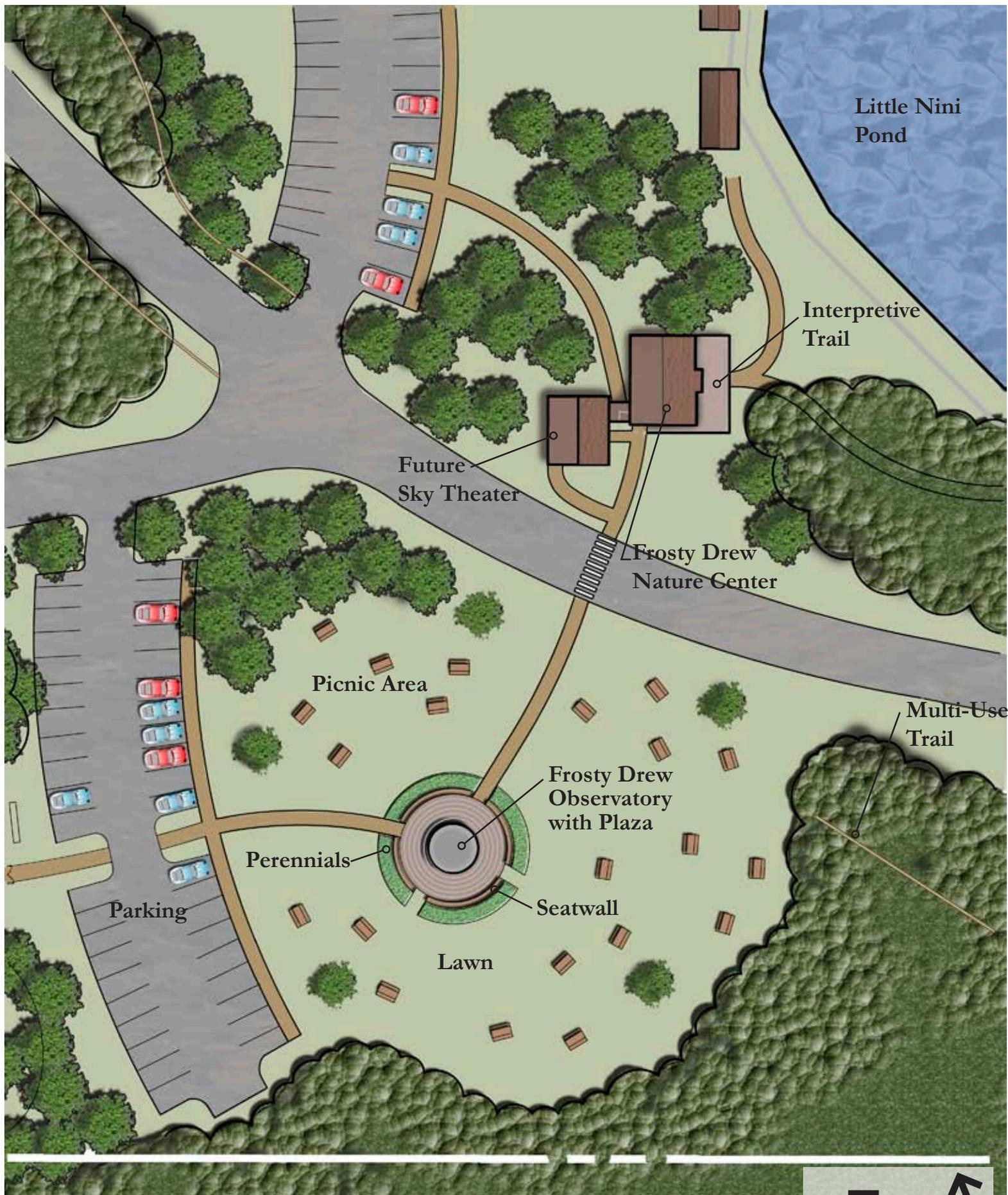
The Frosty Drew Nature Center has been shown on the Master Plan with the proposed Frosty Drew Sky Theater addition, expanding the facility's presence within Ninigret Park. This is befitting the Frosty Drew Nature Center's recommended additional role as gateway to an expanded Ninigret Park nature interpretation trail system. This trail will feature views to scenic areas such as Little Nini Pond while also providing educational signage describing ways in which the landscape has been disturbed and is being healed through eradication of invasive plants and reforestation with native varieties. The trail is envisioned as leading to a Reforestation Nursery, allowing the public to better appreciate how disturbed areas of Ninigret Park will be returned to a natural environment over time.

The Frosty Drew Observatory, located across the road from the Frosty Drew Nature Center, has been upgraded through introduction of the aforementioned new parking area. It has also been enhanced as a public space through the informal introduction of picnic tables in a radial array surrounding the observatory. A small plaza area is also indicated highlight the observatory's significance in Ninigret Park. Informative signage might also be introduced to describe astronomic features of the night sky which can be viewed from the observatory.



Upgrades to Little Nini Park





Frosty Drew Nature Center and Observatory



Dog Park

In response to requests during the master plan's public review process, a Dog Park has been introduced in the vicinity of the Frosty Drew Observatory. This park will share parking with the Observatory and present an attractive appearance with landscaping, a walkway loop and benches. Key to its success will be adoption by interested dog owners in Charlestown to assure it is possibly managed. This can be fostered by properly educating the public in advance of the advantages of a well maintained dog park. Clear signage on regulations posted at the entry, well maintained fencing and adequate facilities for its maintenance further assure success. Dog parks have successfully been operated through-out the nation, but are lacking in this area of Rhode Island.

Disc Golf Course

The "Frisbee" disc golf course has been preserved within the Master Plan largely in its current configuration. Since maintained lawn is not required within the course, native vegetation can also be gradually reintroduced to replace invasives through-out the disc golf course. It is the planner's opinion that this is an appropriate low-impact recreational land use which may in the long term attract new visitors to Ninigret Park. In discussions with its operator there also appears to be opportunity for charging users to supplement the operating fund for the larger park.

Senior Center

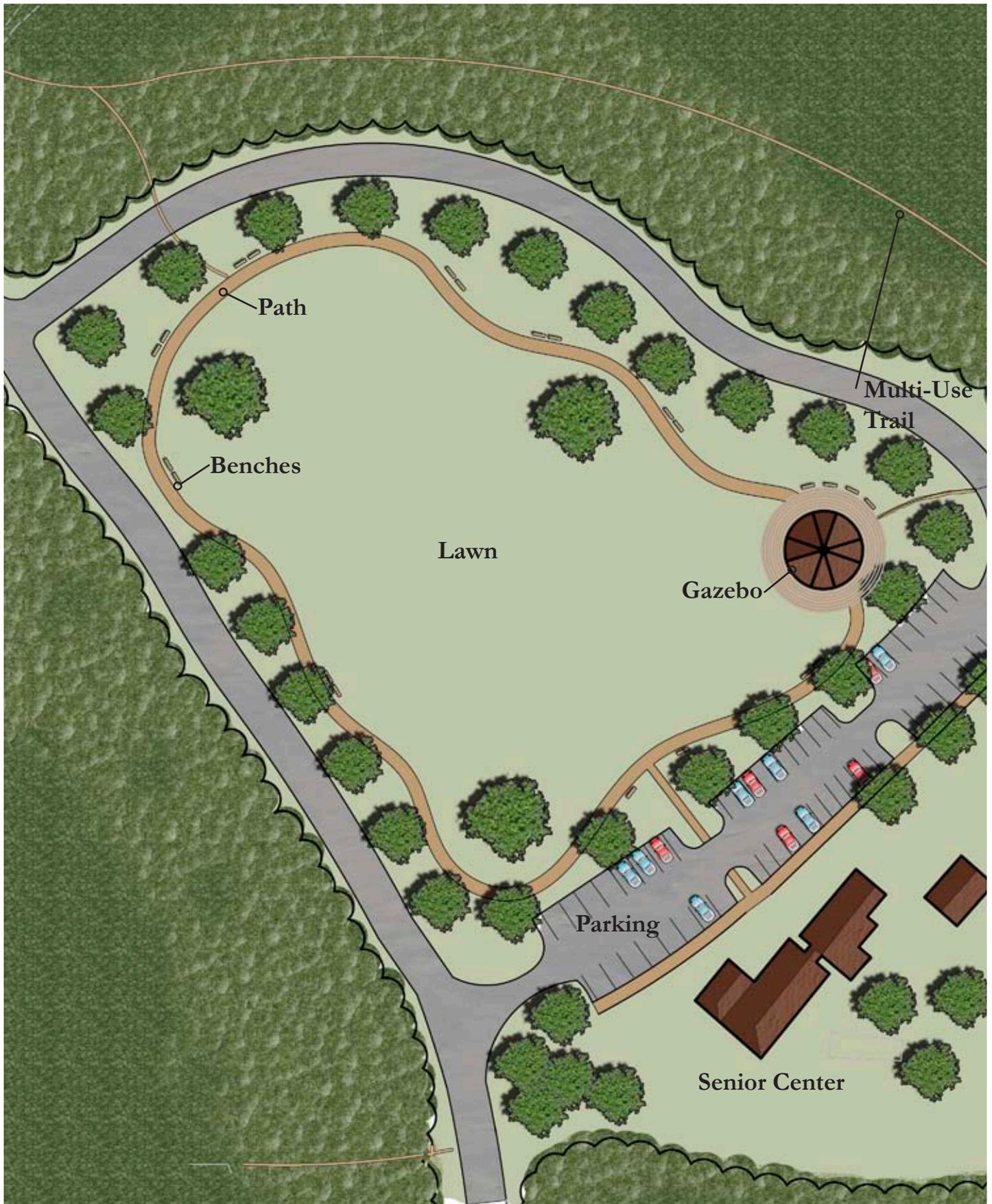
At the request of the town a new park has also been introduced in front of the Senior Center. This Town Park is envisioned as a quiet area for walking and sitting. It is indicated with treelined walks, small seating plazas and a gazebo for possible outdoor activities even in inclement weather. A new drive has been provided surrounding the park and upgraded parking is indicated at the Senior Center. A broad buffer of existing vegetation has been preserved and is intended to be supplemented with additional native evergreen trees alongside the Arnolda Residential Community.

As part of the upgrades to the Senior Center a new dedicated entrance drive has been introduced as a key part of the proposed new pastoral drive system redefining Ninigret Park. Currently, patrons of the Senior Center must find their way on a seriously deteriorated and poorly signed roadway devoid of lighting. This is a challenge by day and a true deterrent to use at night. The new drive will provide

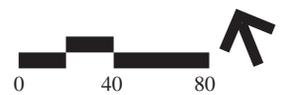


Dog Park





Town Park



direct access from Old Post Road and introduce dark sky compliant lighting to illuminate the roadway at night without causing light pollution to the sky.

These improvements will allow the senior center to more successfully fulfill its mission as a major destination and valuable resource to the Town of Charlestown.

Potential Future Community Center Site

At the request of the Client, in addition to the Senior Center the Master Plan also introduces a site for a potential future Community Center near the main entrance to Ninigret Park. This is intended as a placekeeper for municipal development which must first pass review by the U.S. Secretary of State in accordance with restrictions on the 172.4 parcel of land. It is located proximate to the new athletic field parking area, its anticipated use hours generally being deemed not to be in conflict with those of athletic events. This parking area will also be available for RV parking during major festival events.

Landscape Restoration

Landscape restoration will be a significant part of the Master Plan's implementation. The recommended Reforestation Nursery, located in an existing clearing in the back portion of Ninigret Park, will be a nucleus of these efforts. It will offer facilities for the growing of native plants for phased reforestation of Ninigret Park as part of an overall invasive plant eradication plan. A greenhouse area, compost facility, and open growing area are envisioned along with a service yard and parking for volunteer vehicles. The nursery should also include an educational component, informing the public on disturbed landscapes and practices for their restoration as applied in Ninigret Park.

A key part of returning Ninigret Park to a more natural park experience will also be the replacement of deteriorated abandoned roads formerly associated with the naval air training base. Portions of the corridors for these roads might be replaced with meandering hiking trails, other sections simply reforested over time.

Walkways and Trails

Implementation of a comprehensive network of walkways and trails with distinct use hierarchies will help reshape Ninigret Park as a more natural experience.

Walkways in finished park areas must provide accessibility for the disabled and elderly. Bike lanes should also be provided linking the various activity centers to Old Post Road, and bike parking facilities provided through-out the park.

Trails should include educational interpretive trails originating at the Frosty Drew Nature Center, accessible walking paths for relaxed enjoyment of the outdoors, exercise "fit-trails" at Little Nini Park (remnants of one still exist) and the Sports Complex, hiking trails tying into those at the Ninigret Wildlife Refuge and off-road bike trails which might someday tie into a regional bicycle trail system.

Nature interpretation trails are to be designed to inform the public on native plants and features which will be reintroduced as part of the sustainably designed park redevelopment. A prime feature along this trail should be the Reforestation Nursery which will foster restoration of damaged environments on the site and to replant areas overgrown with non-native invasive plants.

Section V Appendices





Ninigret Park Project Area Plan

The Ninigret Park Project Areas Plan was developed at the request of the Charlestown Parks and Recreation Committee to illustrate discreet projects within the overall Master Plan. In a number of cases certain project areas have strong inter-relationships with others in terms of operations.

One example of this is the Concert and Festival Facility project which should be constructed in conjunction with the Entrance Drive project and Egress Drive project for improved vehicular accessibility. Ideally it would also be constructed in conjunction with the Stabilized Base Lawn Event Parking project so patrons would no longer have to utilize the existing degraded bituminous parking lots, and with the Parking Area project to provide for RV parking.

The Event Campground/Open Play Area project could follow after construction of the Concert and Festival Facility project provided the Sports Center project has not been commenced (this would displace the existing open field currently used for festival camping).

The Sports Complex project ideally would include the Entrance Drive project and at least the linking roadway portion of the Stabilized Base Lawn Event Parking project for optimal accessibility. It should also ideally include the Parking Area project to assure adequate parking to eliminate present pedestrian conflicts during Criterium Bicycle Course events.

The Naval Air Memorial project requires construction of the Entrance Drive project to free up site area for its implementation.

The Upgrades to Little Nini Pond project is largely independent of other project areas in terms of implementation, although it ideally would have the roadway relocation indicated for the Stabilized Base Lawn Event Parking project completed for best appearance.

The Frosty Drew projects, the Dog Park project and the Town Park project by the Senior Center can largely be accomplished independently of the other project areas. It should be noted, however, that the Drive Extension to the Senior Center project and the Egress Drive project ideally would be completed as part of the new Town Park project to properly direct patrons to the site, a major flaw of the existing roadway layout.

The Reforestation Nursery, Enhanced Multi-Use Trail System and Reforestation Program projects can be implemented independently of all other projects.



Memorandum

To: File

Date: February 12, 2008

Project No.: 10229.00

From: Jon Stabach, PE

Re: Ninigret Park – Individual Sewage
Disposal System
Preliminary Master Plan
Charlestown, Rhode Island

VHB prepared this memorandum to evaluate the potential costs, regulatory requirements, and feasibility of an onsite sewage disposal system in support of an outdoor performing arts, camping, and festival area at Ninigret Park in Charlestown, Rhode Island. Public sewers are not currently available and the Park is located in a critical resource area. Attendance capacity for larger events are anticipated to have a maximum capacity 4,000 people, generating 6,000 gallons per day of sanitary sewage (15 gallons per person per day based on Rhode Island Individual Sewage Disposal Regulations).

According to the State of Rhode Island Individual Sewage Disposal System Regulations, a package treatment plant would be required to provide treatment for sewage onsite, followed by a sand filter, before dispersal into the ground. However, the biological processes required to maintain the treatment operation of this system cannot currently be sustained due to infrequent use, which is currently limited to only 4 larger events during the summer.

Sanitary facilities for all existing larger events at Ninigret Park are currently provided using portable toilet facilities. Although there is no written policy for the use of portable toilets, it is likely that any continuation of a limited number of larger events at the park could continue using portable toilet facilities. Further coordination and continued communication with the Rhode Island Department of Environmental Management will be required as the Master Plan is implemented to confirm portable sanitary facilities are acceptable. In addition, any increased use in the park facilities or more frequent larger events would require reevaluation of sanitary facilities.

Although not anticipated based on the Master Plan and current event schedule, we have prepared the following approximate cost for the onsite sewage treatment system:

On-Site Sanitary Sewer Treatment Plant:

- Assume 6,000 GPD;
- Assume effluent quality of 30 mg/l BOD5, 30 mg/l TSS and less than 10 mg/l N;
- Coastal Critical Area;
- Assume poor soils;

<i>Package treatment plant</i>	<i>1 ea.</i>	<i>\$1,750,000/ea</i>	<i>\$1,750,000</i>
			<i>\$1,750,000</i>



Memorandum

To:

Date: February 6, 2008

Project No.: 10229.00

From: Weston Ruthven, PE

Re: Ninigret Park – Cost Premiums
Preliminary Master Plan
Charlestown, Rhode Island

Electric/Communication Services to Concert Stage:

- Assume connection to existing utility pole on Old Post Road;
- Approximately 400 LF duct bank required;
- Transformer not included;
- Cable not included;
- Assume one (1) manhole each for electric, telephone and cable;

<i>Manhole – Tel/Data/Power</i>	<i>3 ea.</i>	<i>\$3,500.00/ea.</i>	<i>\$10,500</i>
<i>Electrical Exc., Backfill & Concrete Encasement Power</i>	<i>400 lf.</i>	<i>\$75.00/lf.</i>	<i>\$30,000</i>
<i>Excavation, Backfill for Telephone/Data</i>	<i>400lf.</i>	<i>\$40.00/lf.</i>	<i>\$16,000</i>
			<i>\$56,500</i>

Domestic Water Supply Well:

- Assume 100 ft deep;
- Assume 2 HP. Pump;
- Include Pump Installation, well sterilization and testing;
- Includes Pressure Tank;

<i>Drilled Well</i>	<i>100lf..</i>	<i>\$52.00/lf.</i>	<i>\$5,200</i>
<i>2 HP Pump</i>	<i>1 ea.</i>	<i>\$3,000.00/ea.</i>	<i>\$3,000</i>
<i>Pressure Tank</i>	<i>1ea.</i>	<i>\$1,500.00/ea</i>	<i>\$1,500</i>
<i>Installation/Testing</i>	<i>1ea.</i>	<i>\$5,000.00/ea</i>	<i>\$5,000</i>
			<i>\$14,700</i>

On-Site Sanitary Sewer Treatment Plant:

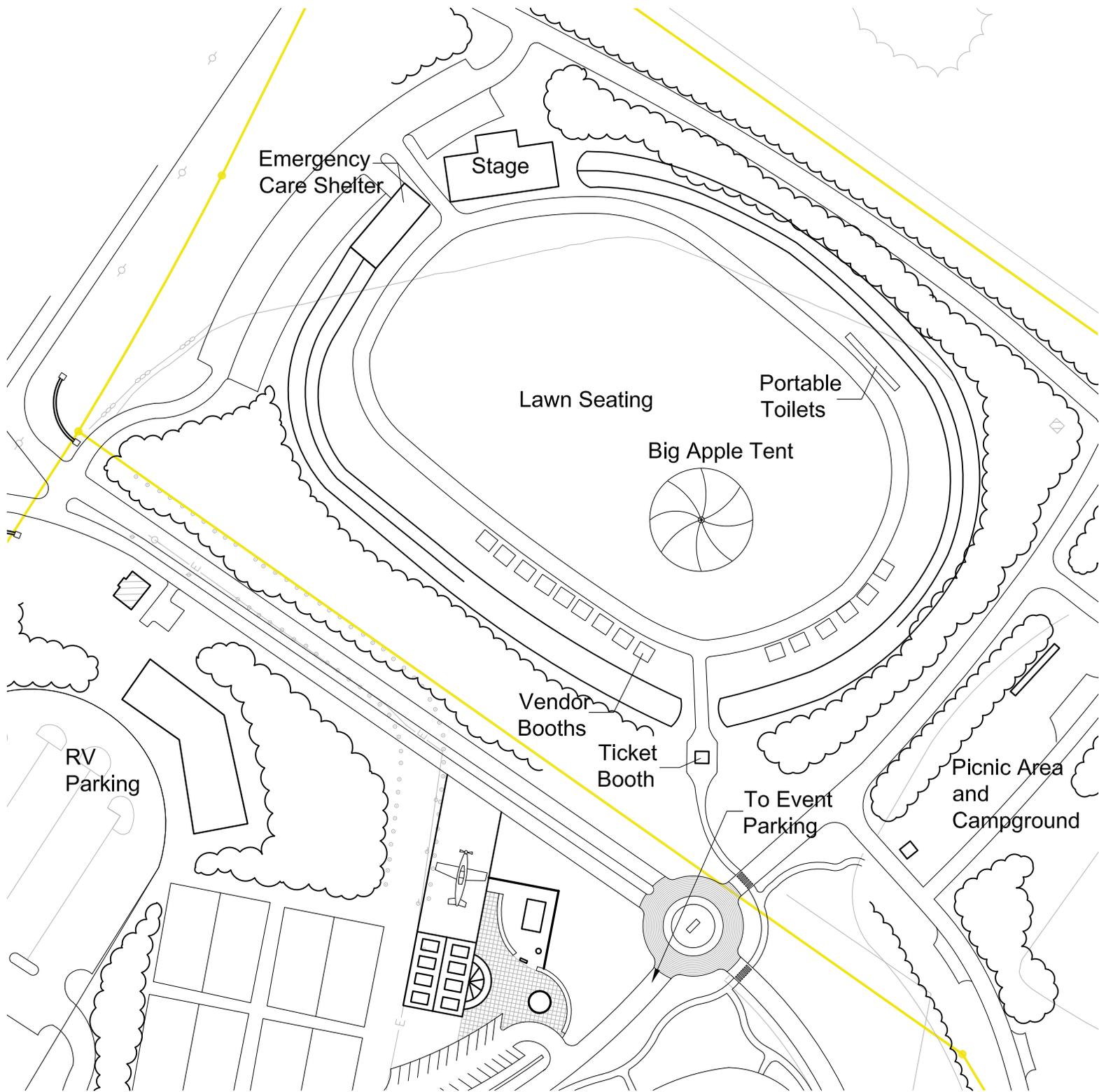
- Assume 6,000 GPD;
- Assume effluent quality of 30 mg/l BOD5, 30 mg/l TSS and less than 10 mg/l N;
- Coastal Critical Area;
- Assume poor soils;

<i>Package treatment plant</i>	<i>1 ea.</i>	<i>\$1,750,000/ea</i>	<i>\$1,750,000</i>
			<i>\$1,750,000</i>

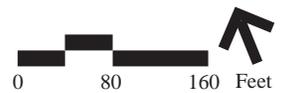
Roadway Relocation:

- Assume all material will be reclaimed and reused on site;
- Includes parking areas;
- Restoration of existing paved areas includes loam & seed;

<i>Remove Bit. Walks/Park/Drives</i>	<i>1,661,000sf.</i>	<i>\$1.25/sf.</i>	<i>\$2,762,250</i>
<i>Loam & Seed</i>	<i>682,000sf.</i>	<i>\$1.10/sf.</i>	<i>\$750,200</i>
<i>Clear & Grub</i>	<i>175,000sf.</i>	<i>\$0.15/sf.</i>	<i>\$26,250</i>
<i>Grade & Compact Pave Base</i>	<i>682,000sf.</i>	<i>\$0.50/sf.</i>	<i>\$341,000</i>
<i>Bituminous Pavement</i>	<i>682,000sf.</i>	<i>\$2.00/sf.</i>	<i>\$1,364,000</i>
<i>(Alternate – permeable pavement</i>	<i>682,000sf.</i>	<i>\$3.00/sf.</i>	<i>\$2,046,000)</i>
			<i>\$4,557,700</i>
		<i>Alternate:</i>	<i>\$5,239,700</i>

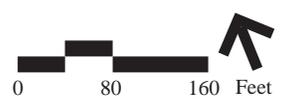


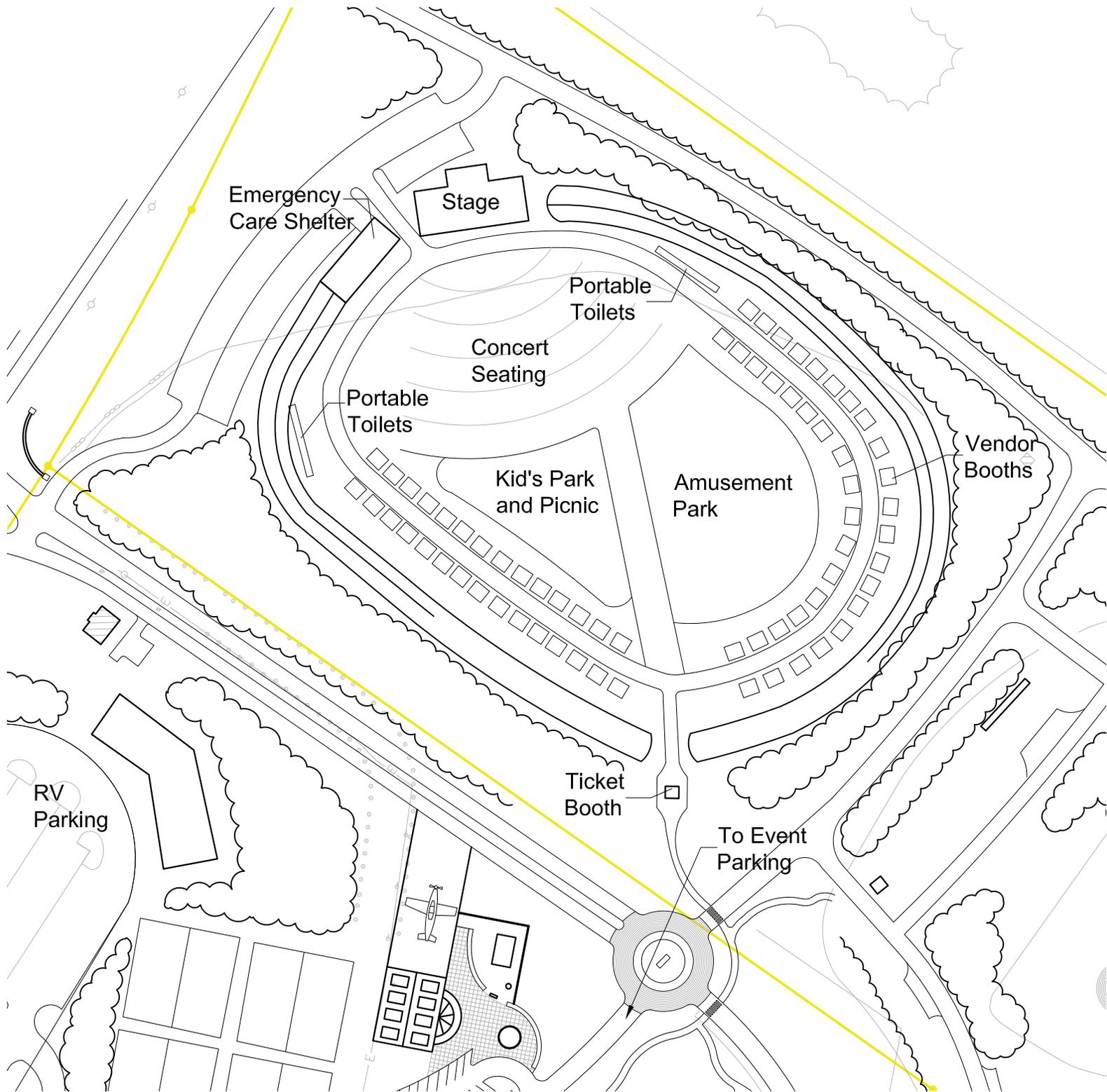
Overlay of Big Apple Circus





Overlay of Rhythm & Roots, and Ocean State Reggae Festival





Overlay of Seafood Festival



Memo



TOWN OF CHARLESTOWN

To: Ed Barrett, Town Administrator
From: John Matuza, Building / Zoning Official
Date: 9/21/07
Re: Ninigret – Festival Field

I have done a preliminary review of the area at Ninigret Park that we discussed as a possible site for a permanent Festival Field. I have attached a possible plan for this area and my comments concerning this plan follows:

AREA – The area within the fence is approximately 13.5 acres. The biggest festival to date, I believe, is Rhythm and Roots, which uses 14.5 acres of the existing park area. Some of this acreage is not needed for the festival (i.e. playground etc) so I think this number is a little high. The field is located off of the property line on Post Road to allow a 100-foot natural vegetated buffer.

FENCES – The plan shown has approximately 2900 linear feet of fencing and eight double gates.

ELECTRIC POWER – Electric service could be brought to the site from two locations.

- A three phase, 600 amp under ground service will come in from Post Road to a utility building on the north side of the field. This building will provide power to the stage and all areas on the north side of the field.
- A single phase, 400 amp service will be brought in from Arnolda Road to the pump station south of the field. This service will be to provide power to the well pump station and all areas to the south end of the field.
- All power through out the field will be underground. Power will be to all restrooms, ticket booths and vendor areas. 100 amp panels, on pedestals, located every two hundred feet, will service vendor areas.

WATER – Water could come from the wells at the south end of the property. A pump station will be constructed to utilize the existing wells of the base, if possible. Water service to the field will be underground, utilizing the same trench as the underground electric when ever possible.

RESTROOMS – Permanent restroom facilities will be constructed to accommodate 3000 people. This will require – FOR MEN - 20 water closets (note: 2/3 could be urinals) and 8 lavatories and FOR WOMEN – 38 water closets and 10 lavatories. These will be spread to the number of structures constructed. For each structure or combination of structures a new septic system (ISDS) will be required. Whether these systems would require being the advanced treatment type systems or conventional systems is a question I cannot answer. For festivals with larger attendance portable facilities will be required to be brought in. Using 3000 people is a good median number for the permanent facilities, but we could go less and just require more portable facilities. Vehicle entrance to the park would be through the current main entrance and exit through the main entrance, the service road and possible a new emergency exit to the west (closed at all times except for large festivals and emergencies).

PARKING – The existing runways would be used for parking of all private vehicles. All patrons would enter through the Main Gate to the south. Exit would be through all gates to the south and west. Vehicle entrance to the park would be through the existing main gate and exit through the main entrance, the service road and possibly a new emergency exit to the west (closed at all times except for large festivals or emergencies).

- 100 AMP TRANSFORMER ADJACENT TO PEDESTAL

POST ROAD

100' BUFFER

REST

HOPKINS AREA

STAGE 100' 50'

13.5 ACRES

SERVICE ROAD

WINDY ROAD

REST

VENDOR AREA

VENDOR AREA

VENDOR AREA

VENDOR AREA

REST

PUMP STATION

REST

MAIN GATE

PARKING

NORTH

0 25 50 100 150 200 Feet

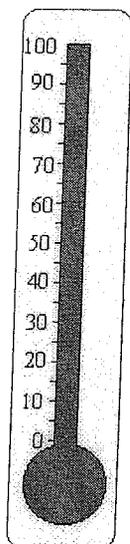
ORTHOPHOTOGRAPHY
6 INCH PIXEL RESOLUTION
APRIL 10, 2006
TOWN OF CHARLESTOWN



Frosty Drew Observatory



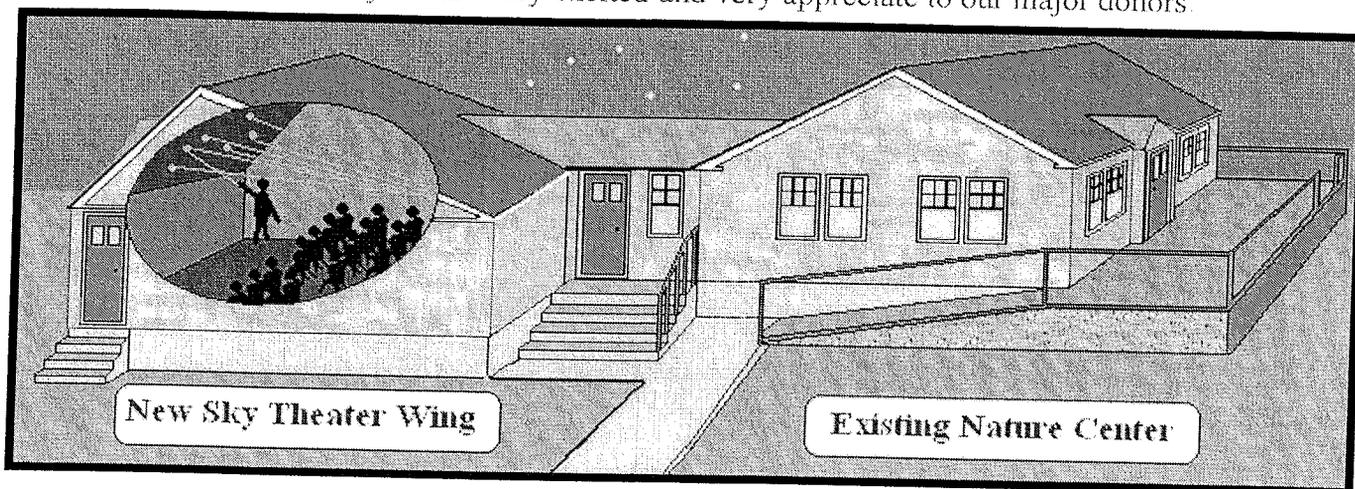
The Sky Theater is Funded!!!



We are very excited and pleased to become the recent recipient of a substantial donation from the Champlin Foundation. Combining the Champlin Foundation funds with earlier donations and bequests have placed us in a position where we expect to break ground for the **Sky Theater** in March 2007. If all goes as we hope, the construction will be complete by sometime in early May 2007. We'll keep you up to date as we make progress towards opening the **Sky Theater**.

It has taken us several years to collect sufficient funds to begin the **Sky Theater**. Prudence demands that small not for profit organization delay major activities until funds are available. Had we done this project piece meal as funds became available, we would have left a large excavation and an incomplete foundation for the past several years. Piece meal construction often results in the need for additional repair work to weather damage before additional progress is possible. No one at Frosty Drew wanted anything to do with any plan that an ugly incomplete hole for several years.

Needless to say we are very excited and very appreciate to our major donors.



Since 1988, Frosty Drew Observatory has attempted to open every clear Friday night to the public. We'd like to be able to provide more access but several problems hinder our ability to provide better astronomical education for children and adults in the area:

1. The necessity for clear skies prevents organizations from planning visits or events at the observatory.
2. Transitory celestial events are limited to the single person at the eyepiece.
3. Late hours of operations limit access to the observatory for children and groups.
4. Large telescopes present obstacles for physically handicapped individuals.

A traditional planetarium isn't appropriate for the observatory for these reasons:

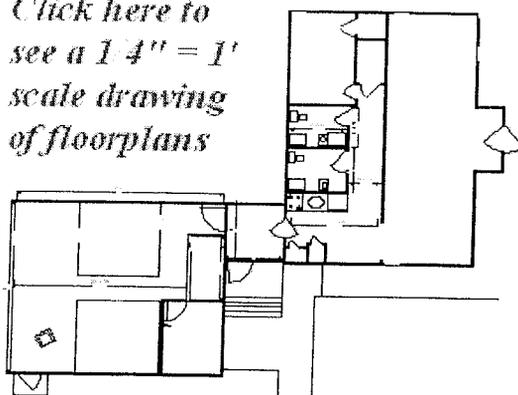
1. Several public planetariums exist within 50 miles. We have no need to duplicate their services and programs.
2. Traditional format planetariums have limited versatility as a teaching tool. We wish to mix live telescope views with media and simulations.

3. In an area which has fine dark skies such as we have on clear nights, no planetarium projection competes well with the true sky. Both the Frosty Drew Observatory and our associated Frosty Drew Nature Center have always placed an emphasis on the real world around us.

Our solution is a hybrid facility we call a **Sky Theater**.

1. The **Sky Theater** will mix computer simulations and live telescope views in formats impossible with a planetarium star projector. The **Sky Theater** will provide a completely new level of mixed media.
2. We will use the **Sky Theater** to anticipate real events. For example we can simulate the Moon passing in front of Saturn so that visitors are prepared to look for when the real event happens. We then can capture the event and replay it noting specific highlights.
3. Transitory events can be captured at the observatory's large telescope and projected to large audiences live.
4. Handicapped individuals can see telescopic views projected on the screen.
5. Programs during school hours become possible using stored media and simulations.
6. Weather problems are reduced to manageable levels.
7. Live events occurring in distant parts of the world (eclipses, shuttle launches and things in the southern hemisphere) can be displayed via the Internet.

Click here to see a 1/4" = 1' scale drawing of floorplans



We have been actively experimenting with computer based simulations since 1999. Available software allows us to rove at will throughout the solar system and hundreds of nearby star systems. Viewers can move time forward or back tens of thousands of years. We can set ourselves in orbit around a planet, or ride a comet into the inner solar system or fly across the surfaces of the moons of Jupiter. Past and future eclipses of the Sun or the Moon are easily simulated. Students can view the Big Dipper from Earth and then fly into this constellation and view these stars from inside. The software effects are dramatic, exciting both staff and visitors, even when viewed on a standard monitor. Viewing these simulations on a large screen will be stunning.

Exciting as software simulations may be we intend to go much further. We will connect the PC projector in real time with the telescope. When a real event is about to occurs, we will show visitors a simulation that will allow them to know what to look for when the real event happens. We will then transmit the event live from the telescope. When questions arise we can display an instant repeat or simulate the event from another perspective to clarify our answers.

We envision the **Sky Theater** as a screen tilted in front and above the viewer's line of sight. Projectors for slides, videos, PCs and CCDs will provide the required tools. The unusual position of the screen allows the projection of star patterns approximately as the viewer will see them outside. We have simulated this screen using a cathedral ceiling. The results were stunning. We envision the central area of the screen to be primarily used for simulations and live presentations, while the side panels will be used for supplemental images. For example if we are discussing galaxies in the northern skies, the side panels will have images of these northern galaxies.

A climate controlled enclosure would allow us to run every scheduled evening and extend our hours into the daytime. On evenings we would be forced to close due to weather, we can provide a substitute experience. We could commit to other organizations without being at the mercy of the weather. School groups could schedule us as a field trip rather than as optional parent supported after school activities. The Sky Theater would allow us to show slides and video programs that we simply cannot do for lack of an adequate facility. Interest in scientific software packages is currently very great. This facility would allow us to demonstrate these tools without causing disruptions to viewing in The Observatory dome.

Our plans are to create a new wing on the Frosty Drew Nature Center (across the park road from the observatory). The Nature Center is already handicapped accessible. Attaching live access to the telescope will allow us to serve physically handicapped individuals. Our 16" telescope mounted 9 feet above the floor on a raised platform would no longer provide an obstacle to them.

Sky Theater

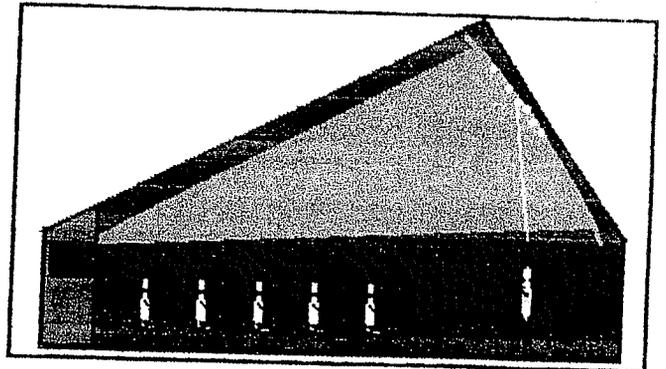
Frosty Drew Observatory is a public access observatory in **Ninigret Park** in Charlestown Rhode Island adjacent to a **US National Wildlife Refuge**. Our programs include weekly public sky viewing sessions, courses in astronomy and programs in association with schools in Rhode Island, eastern Connecticut and nearby Massachusetts. We participated in 'Project Comet Chaser'. Over 2800 students from the three states participated in Project Comet Chaser and attended the launch adjoining our facilities. Students from the University of Rhode Island can obtain extra credit for attending Frosty Drew Observatory viewing sessions. We provide additional astronomy awareness through our web site and monthly newspaper columns. We began in 1988 and have operated year round, weather permitting, ever since. This summer we are expanding our programs for the public on a second night per week.

Several problems hinder our ability to provide better astronomical education for children and adults in the three state area:

1. Weather restricts us to *clear* nights. We must warn all visiting organizations (scouts, school groups, nature clubs and others) that we are open "weather permitting".
2. Some visitors find star and constellation recognition difficult or impossible outdoors. A star pattern easily recognized by most people can be all but meaningless to a significant minority.
3. Many modern presentations require a projection theater. Films, computer simulations, videos and slide shows are possible in neither a dome nor outdoors (in poor weather).
4. Certain events (such as the Moon occulting a planet or a star) can only be seen by a single person at the eyepiece.
5. Inherently a telescope in a dome presents obstacles to physically handicapped individuals.

While a planetarium might seem to be an obvious solution to these problems, we do not think this is appropriate for Frosty Drew for several reasons. At least four planetariums exist within 50 miles of Ninigret Park². A simulation of the real sky is not in keeping with our goals of teaching visitors the natural wonders of the sky [the Observatory] and the coastlines of New England [the Nature Center]. A spherical planetarium surface is not ideal for many of the presentations we plan to present.

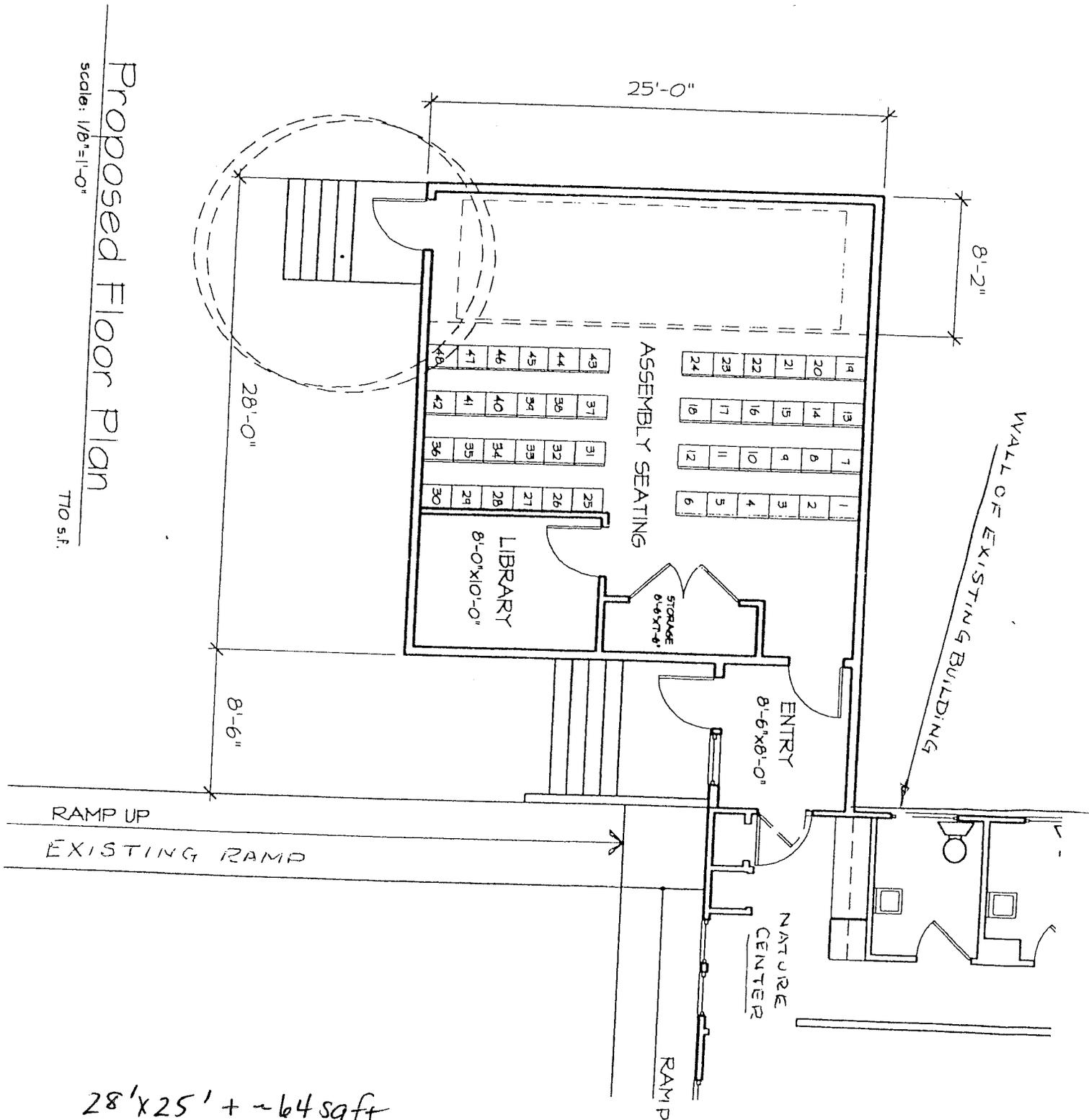
What we envision is a "**Sky Theater**" with a nearly flat screen tilted (about 45°) in front and above the viewer's line of sight. Projectors for slides, videos, PCs and CCDs will provide the required tools. The **Sky Theater** would be built as a wing to our existing Nature Center building. The unusual position of the screen allows the projection of star patterns approximately as the viewer will see them outside. Visitors with deficits perceiving spatial relationships will not be faced with the daunting task of mentally inverting images from something at eye level or below to something above their heads. Our simulations on a cathedral ceiling have shown this above eye level projections to be very effective.



Project Comet Chaser was an ambitious school project designed to collect dust from Comet Tempel-Tuttle using a NASA supplied two stage rocket launched from Ninigret Park. Students from grade school to universities designed and implemented the collection package.

Mystic Seaport Museum Planetarium in Stonington CT, Cormac Planetarium in Providence RI (Roger Williams Park), Gaudet Middle School in Middletown RI and Bristol Community College in Fall River MA.

PLAN



Proposed Floor Plan

scale: 1/8"=1'-0"
TTO s.f.

28' x 25' + ~64 sqft
 700 + 64 =
 ~764 sqft addition