# **Fort Stevens State Park Historic Fort Area** - *Site Development Plan*

Prepared for
**Oregon Parks &**
**Recreation Department**

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*Photographs and illustrations by Mayer/Reed unless individually noted.*

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AutoCad Drawing Set - (not to scale)


Note: Civil engineering Concept Report and Drawings for site utilities are available at OPRD main office in Salem.

# I Overview – *Project Background*

Photo Courtesy of Floyd Holcom

*Historic aerial photograph of Fort Stevens, 1945*

As the primary military installation in a three-fort harbor defense system at the mouth of the Columbia River, Fort Stevens provided one of the most important strategic military outposts in the Pacific Northwest. Dating back to the Civil War era, a series of military installations continuously occupied the site through World War II. In 1947, Fort Stevens was listed by the War Department of the U.S. Military as surplus.

In the mid-1950s, a portion of the fort site was included as a new Oregon State Park. A Fort Stevens State Park Master Plan for the entire park was prepared in 1976. The Master Plan was recently updated by Oregon State Parks staff. The plan includes input of a steering committee, members of the community, and public agency and local government representatives. In addition, the Friends of Old Fort Stevens, a volunteer group and park managers and staff provided input.

The purpose of the Master Plan update was to address both current and future management concerns and to identify the needs and opportunities for the property. A Heritage Assessment of the park was conducted which included natural and cultural resource inventories. The plan also provided development concept plans for key facility areas in the park. The table of contents for the current 2001 Master Plan is included in the appendix of this document.

The Historic Fort Area Site Development Plan focuses on improvements proposed for the old fort portion of the park. The scope of the Site Development Plan is limited to the portion of the site where most of the intense military development took place. The site plan takes the goals and objectives and concepts in the Master Plan to a more site-specific, detailed level.

### Goals and Objectives

The State Park Master Plan goals that relate to the Site Development Plan include the following:
*Goal I:* Protect and enhance the outstanding natural, scenic and cultural resources of Fort Stevens State Park.
*Goal II:* Improve park maintenan
ment.
*Goal III:* Enhance park visitation
*Goal IV:* Provide for future recrea
*Goal V:* Improve state park acces
tion.
*Goal VI:* Improve interpretation
about the park.
*Goal VII:* (Consider relationships)

Chapter Eight of the Master Plan
tives for the historic fort area. T
states, "The Fort concept involv
tion and rehabilitation of historic
cultural resource interpretation,
ment of access and circulation to
fort site. The concept also involv
visitor's understanding of the ex
historic eras at that site." The M
a high priority on interpretation
about the fort area and its comp
toric features and stories.

*2001 - Aerial Photograph of Historic Fort*

# **Overview** – *Brief History of Fort Stevens*

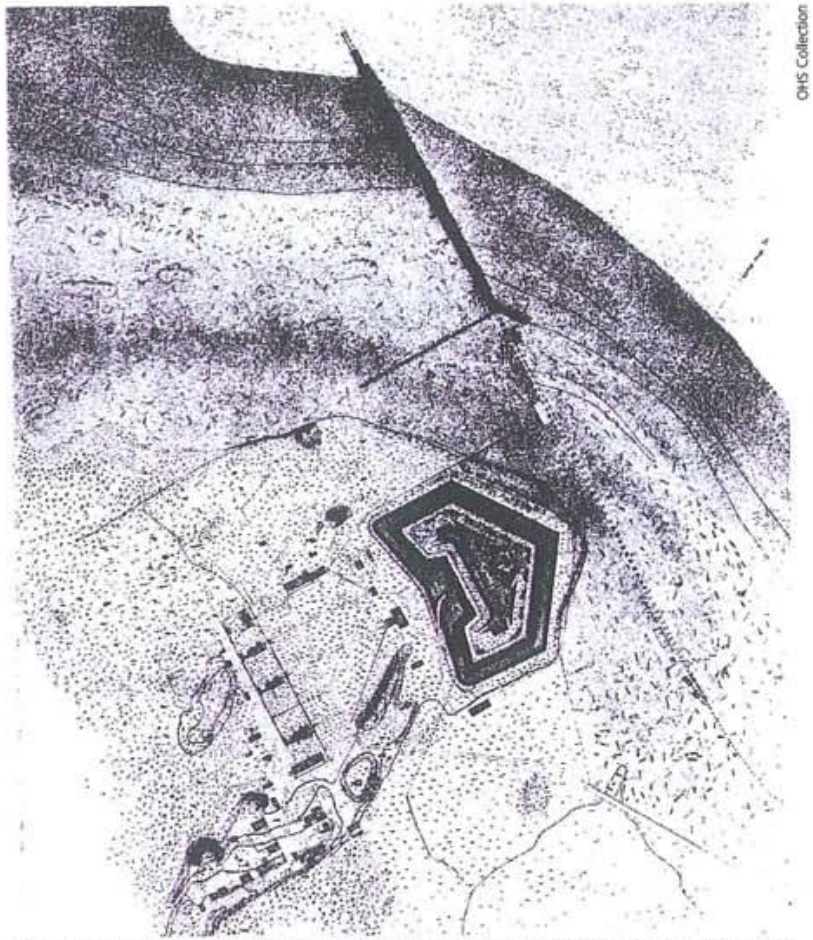
Photo Courtesy of USGS Aerial Photography

*Aerial view - USGS September 5, 1994 photograph of Point Adams and Clatsop Spit North of Ft. Stevens.*

Fort Stevens State Park is located on the northern end of the Clatsop Plains, an extensive oceanfront area that extends several miles east to the coast range and several miles south. The early 1860's Civil War era historic fort area was strategically located on Point Adams, an area of high ground where south shore of the Columbia River enters the Pacific Ocean. Prior to Euro-American settlement and the construction of the south jetty in the late 19th century, the point was an important location for the trading activities and settlement of Native American peoples. Point Adams was later used for the military's protection of the entrance to the Columbia by the United States.

*Columbia River looking no*

# **Overview** – *Brief History of Fort Stevens (continue)*

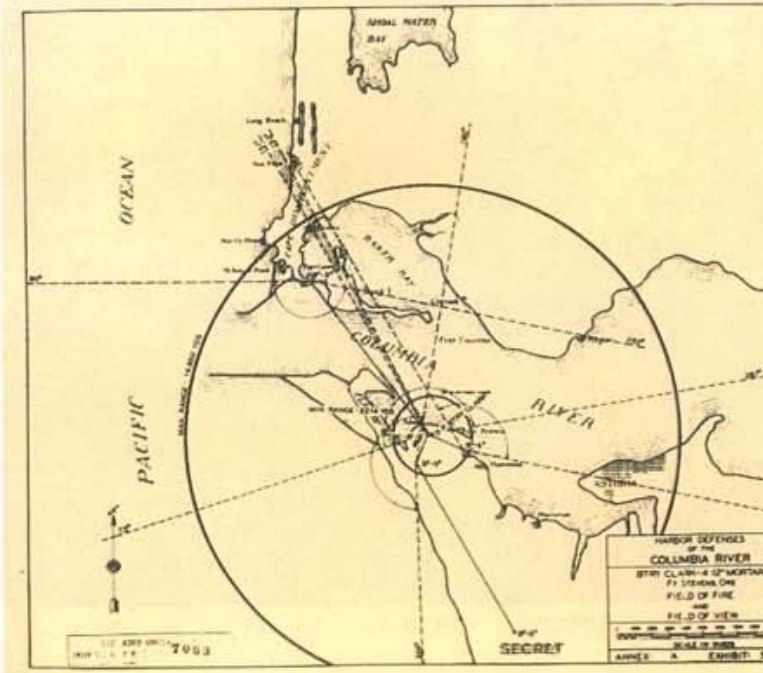


OHS Collection

*"Capt. Charles F. Powell, Corps of Engineers, took control of Fort Stevens late in 1884 to set up there a base for projecting a stone jetty from south side of Columbia's mouth. During the year he managed to extend this structure 1,020 feet seaward from the ordinary high tide line. (Note True North arrow) Section of Point Adams chart is dated Oct.-Nov. 1885, "surveyed mainly and drawn by Einar Phil," under Powell's direction." -The Cape Forts by M. Hanft*

**Civil War Era**

There were significant national security concerns during the mid1800's on the west coast of the continent and into the Civil War era. Concerns included the occupation by Maximilian in Mexico, Confederate cruisers attacking Union ships and the presence of potentially hostile British ships in Victoria, Canada. Point Adams was the key site to controlling the ship channel along the Columbia River's south bank. Fort Stevens was once utilized in combination with two other f at Cape Disappointment and lat at Chinook Point, both located of the Columbia River in Washir these three fort installations, the mouth of the Columbia could b covered by plotted arcs of canno artillery range configured in a tr arrangement.



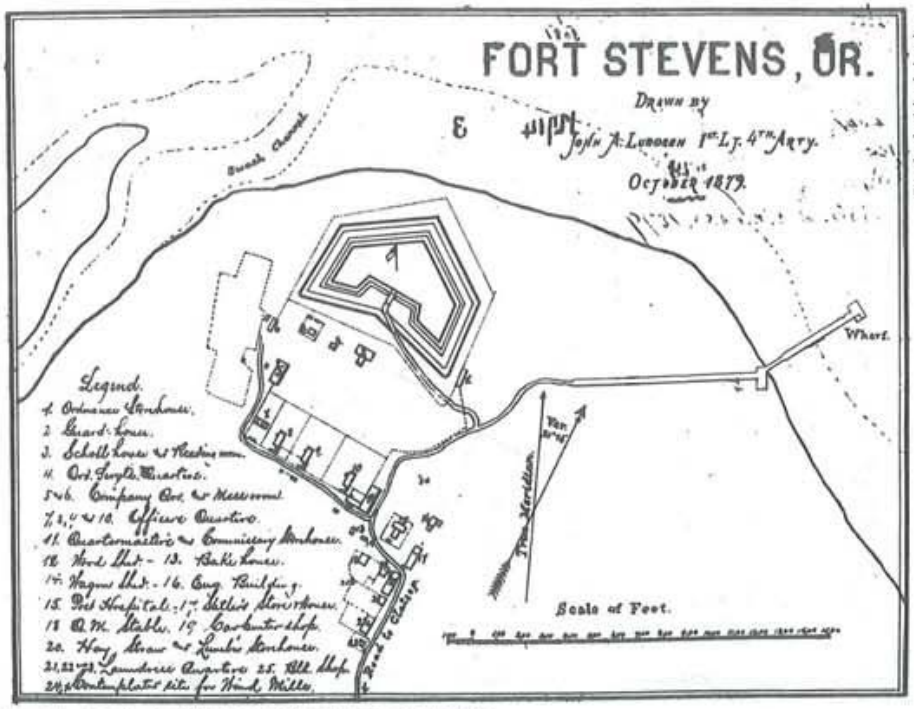

*Top Photo: View up Columbia River towards Washington. Above Photo: Historic plan of fire control for Battery Clark. Stevens by M. Hanft*

# **Overview** – *Brief History of Fort Stevens (continue)*

The original installation at Fort Stevens, completed in 1865, consisted of high, closed earthwork slopes called glacis, held by wooden scarp walls. A dry moat was formed at the base which filled from the high water table. The earthwork was shaped like an arrowhead with the length of the slopes nearly 340 ft. long, pointing north, east and westward. "The work provided enough space for twenty-seven guns to bear on the channel ways and sixteen guns in the salient on faces and flanks of the bastion," states Hanft.

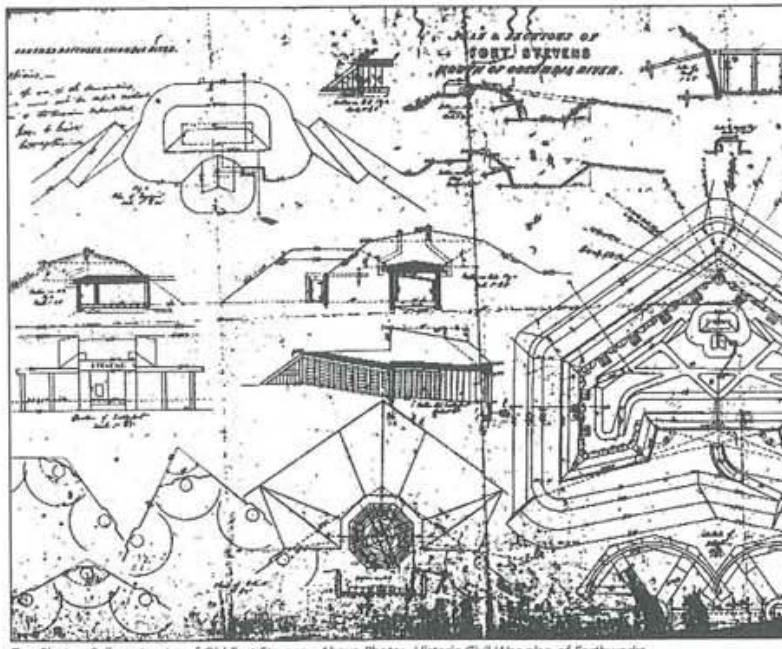
The Army's construction at Fort Stevens was particularly laborious due to the amount of dense tree cutting and brush removal. It was reported that it took more than a month just to clear the site of immense fallen and decayed trees. Lack of drainage and decay of timber structures were constant problems in this damp, rainy climate. Near the end of the century, Fort Stevens was in a state of disrepair and troops were transferred to Fort Canby in 1884.

The muzzle-loading Rodman cannons of the original weaponry were sold for scrap in 1900. The earthworks were removed during World War II to make way for a parade ground. Today, much of the earthwork form has been reconstructed in the original location. A complete reconstruction of the earthworks is planned for later phases of the site reconstruction.




Drawing by John A. Lundeen

Historic Plan of Earthworks 1879, plate XLII in Fort Stevens book by M.Hanft.



Top Photo: Sallyport entry of Old Fort Stevens. Above Photo: Historic Civil War plan of Earthworks.

Interior view of earthwork, Fort Stevens. Th
10-inch Rodman Smoothbore Cannon. Tho
Rifles. All were muzzle loaded.

# **Overview** – *Brief History of Fort Stevens (continue)*

### Spanish American War Era

By 1898, a greater level of military preparedness was needed at the onset of the Spanish American War. Construction of concrete gun batteries allowed modernization of military facilities at Fort Stevens. An extensive system of submarine mine tracking and plotting was key to the defense of the Columbia, while still allowing for safe navigation of friendly vessels. During the war, the main channel of the Columbia was controlled with mines through operations based at Fort Stevens. The technical challenges of mine planting and tracking in the rough waters of the Columbia required extreme precision of mapping and communications. Physical development on site during this time included docks for mine planting ships, engineering offices and storage of mine materials.

As the technology of weaponry and observation improved in range, the military batteries were developed in locations westward toward the Pacific Ocean. By 1902 the US Army Corps of Engineers had built three more concrete batteries extending west along the river at Fort Stevens.

These west batteries, designed to function with disappearing guns, can still be seen today. At the end of the West Batteries, two were designed for "all around" (360 degree) fire. However, Battery Mischler had several operational defects that soon rendered it non-functional. Functionally , the issue with all other batteries, the main problem encountered was dampness and condensation on the walls due to leaks, cracks and a lack of ventilation and maintenance. With an average rainfall of 77 inches per year, drainage and waterproofing were constant issues.

Battery Russell, completed in 1904, was one of the last of the concrete emplacement built at Fort Stevens and was located south and west of the main fort. It was intended to supplement protection afforded by the other batteries with its greater range of firepower.

In 1899, two barracks, officers' quarters, an administration building, storehouse, stable and wagon room, bake house, guard house and workshop were constructed. Water and sewer systems were not built until considerably later. In 1901, there were a number of additional facilities constructed, including a hospital, more officers' quarters, barracks, mess halls and lavatories, and a water distributing system. Plank roadways were added as funds became available.

*West Battery Command Station on the Parados.*

An enormous 36 ft. high earth form called the Parados was constructed in 1897. A French military designer, Vauban, developed the concept for the Parados. This embankment of earth at the base edge of the emplacements was to protect gun troops from rear attack. The Parados also protected the West Battery by limiting the area of fire from the Columbia River. In a period of attack, the gun crews could effectively operate in the area without fear of flying fragments from enemy ship bombardments.

In 1899 the command station in the west end of the Parados controlled all firing from the guns in the West Battery. The east bunker was used to sight enemy ships in the Columbia River and their proximity to sea mines, which were detonated from shore as the ship passed. The Parados, command station and east bunker all still exist and can be toured by park visitors.

### World War I

Between wars, National Guard t
tioned at Fort Stevens, along wi
units. According to Hanft in his
Stevens, Oregon's Defender at t
West, Fort Stevens functioned d
"as both a reception, staging ar
which training was given to new
units." In addition, Fort Stevens
more mine activity in the Colum

Many additional temporary buil
structed in 1917 to accommoda
at Fort Stevens. Electricity and
added to the site during this co
Some buildings were sold and r
war. Most of the temporary str
by mid-1941.

*South facing elevation of the West Batteries looking towards Battery Pratt in the background.*

# **Overview** – *Brief History of Fort Stevens (continue)*

Photo Courtesy of Floyd Holcom

*Historic aerial photograph of Fort Stevens, 1945.*

**World War II**

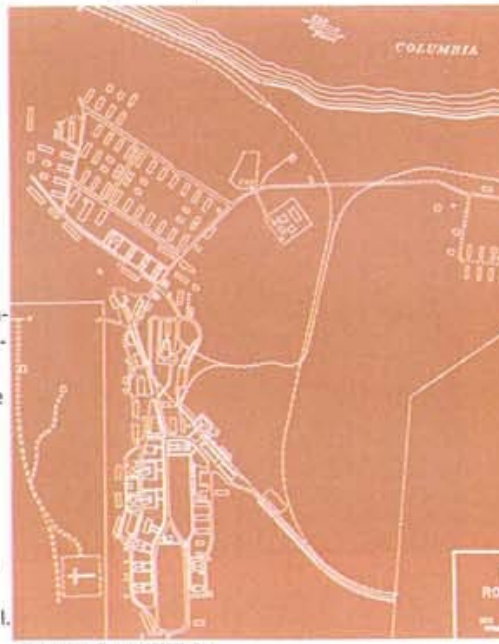
In the time between World Wars, Fort Stevens switched its focus from decelerating wartime efforts to maintaining the existing armament and permanent housing, and then restructuring for another war. Although it was felt that there was little threat to the west coast, the mobilization for World War II placed a heavy demand on the Northwest for training camps and ship building in the Portland/Vancouver area. As in World War I, the Coast Artillery mined the mouth of the Columbia to prevent entry of hostile ships. Fort Stevens controlled the actual blast machinery. Significant building again took place at Fort Stevens at the beginning of World War II.

However, most World War II structures had a short life in terms of the post as an active military installation. A few of the more durable buildings, such as the new mine storeroom and the ammunition magazines, have remained relatively intact. Most of the foundations of those raized or moved have survived, but have been hidden in the vegetation which has sprung up and enclosed these ruins.

Incidentally, Fort Stevens was the only military installation to receive direct bombardment from an enemy in World War II.

Nine rounds of shells from a Japa
landed 300 yards from Battery R
fire from Fort Stevens was ordere
sub was believed to be out of ra
commander did not want to reve
locations.

*Above Photo: Historic wood barracks buildin*




*Historic Fort Stevens WWII plan.*

# **Overview** – *Relationship to the Columbia River*

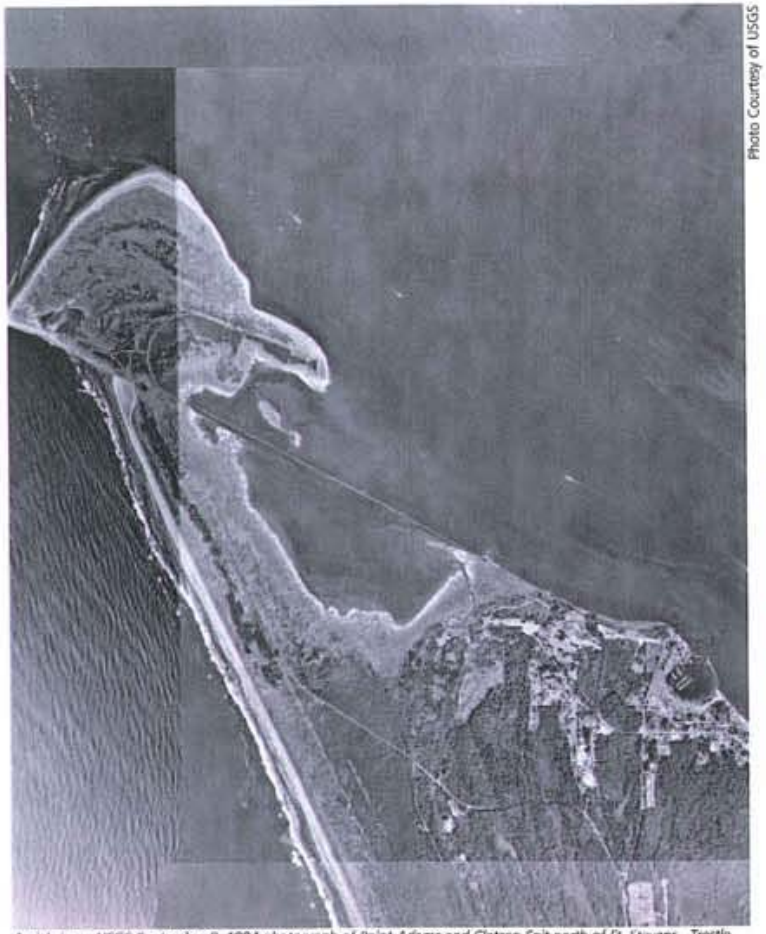


Photo Courtesy of USGS

*Aerial view - USGS September 5, 1994 photograph of Point Adams and Clatsop Spit north of Ft. Stevens. Trestle Bay as seen in center.*

### The South Jetty

The City of Portland, 108 miles inland, owes much of the existence of early commerce as a port city to the river protection offered by Fort Stevens construction of the South Jetty and river dredging by the USCOE. The South Jetty was constructed from 1884 to 1896 by the U.S. Army Corp of Engineers to improve the navigation channel for commerce. The jetty extends about 4.25 miles past the Fort Stevens site to the west, into the Pacific Ocean.

Over the past century, huge depo
accumulated south of the jetty, a
has moved westward. One inter
this considerable change in topo
historic fort installation at Fort St
is now much farther from the oc
nization of dense shore pines an
site has lost much of its former r
the coastline. Portions of the sit
infilled with wetlands, dunes an
dense vegetation. While this cha

Photo Courtesy H. Kunowski

*The wetland estuary approaching Swash Lake as it looks today*

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Fort
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Cun*

# II Fort Conservation & Development – *Overview & Objectives*

Aerial Photo - Spencer B. Goss Inc.

*2001 Aerial Photograph of Ft. Stevens. The earthworks landform can be seen in the upper central area of the fort*

**Overview**

In addressing the detail of a Site
for the historic fort site, it is imp
nize that a number of conservat
come into play. Early photograp
and Fort Stevens development f
show a site cleared of vegetatio
could be constructed and sight
maintained. However, certain a
Old Fort development have evo
Woodlands have been left to m
have been overtaken with high
wetlands have established along

**Objectives**

The Heritage Assessment Summ
of the Master Plan provides a su
resource inventories and assess
for the Mater Plan. The Cultura
of the Master Plan is comprehe
ment of the prehistoric and hist
are found within the park along
perimeter of the Columbia Rive
of the parks historic features ar
senting several eras, presents a
management and development
listing of the appropriate mana
for the natural and scenic resou
Stevens State Park, refer to cha
of the 2001 Master Plan.

**I Cultural Resource Conservatio**

For the project site, cultural res
ment is focused on both the Ci
War II era reconstructions and

# Fort Conservation & Development – *Overview & Objectives (continue)*

other developmental eras. This focus is based on the preexistence of demolished facilities that were found within the fort area of the current park boundaries.

1. Preserve all intact historic site structures and landforms, at a minimum, in a stabilized condition.

2. Preserve significant historic remains of buildings from each era, including remnant concrete and/or brick foundations.

3. Plan for relocation of heavily used visitor facilities, such as the museum and educational functions, from the historic war games building to the new reconstruction barracks buildings to reduce wear on the historic wood structure and provide more interpretive and visitor services space.

4. Preserve the WWI era Merci 40+8 boxcar and provide a new storage shelter to house the boxcar during the months of harsh coastal weather and for security.

5. Work to repair, and where necessary, reconnect the existing utility system at the fort site to help prevent further erosion and provide better drainage of the central core area of the site. (Refer to seperate civil report for more information.)

6. Restore/stabilize certain fort artifacts and existing buildings / structures to ward off further weathering and deterioration.

7. Rehabilitate War Games Building for use as staff/FOOFS office space, meeting hall and to meet current building codes.

8. Reconstruct certain historic fort elements, such as buildings, walks, roads, fences and site utilities for accommodation of new visitor facilities. The Site Development Plan identifies the approximate locations and types of these new facilities and site landscape elements. Prior to reconstruction, archaelogical survey, detailed plans and specifications will need to be completed, that are based on an exact location which will be identified through further historic research.

## II. Natural Resource Conservation

The following objectives are an abbreviated list of guidelines for the natural resource conservation of the fort site development area.

1. Conserve natural resources such as woodlands and wetlands to the greatest extent possible, while accommodating programmed fort events, educational functions, and historic views.

2. Conserve existing wetland and woodland resources at the historic fort site perimeter. Where bike and pedestrian trails navigate the accessible areas of the site, provide opportunities to view the more sensitive vegetated areas without adversely impacting these established ecosystems. Where new pathways extend north out to the jetty for observation platforms that provide overlook views to the river and the distant shorelines, the pathways shall be elevated just above the marsh waterline to protect the delicate balance of the tidal areas. The materials and construction of the walks are to match existing park facilities where appropriate.

3. Conserve the existing site woodlands and individual stands of maturing trees within the primary core area of the fort. However, selective removal of understory vegetation will be necessary to increase visibility to some of the remnant fort architecture and artifacts and to open up historic views deemed necessary to the protection of the historic fort site.

4. Selective removal of key trees and understory vegetation along the north perimeter of the site is necessary to regain key cultural views important to the historic perspective of protecting the site. This selective clearing will also aid in the visitor's understanding of the Park's interpretive objectives and will strengthen visitor orientation by allowing off-site views to the city of Astoria and environs.

5. Limit access to areas where demonstration war games and events are staged so that adjacent natural areas are not impacted. Where additional trails are suggested, augment the existing pedestrian trail system so that impacts to landscape areas and wetlands are minimized. Remove and eradicate exotic vegetation, such as Scotch broom, where manpower and cost will allow.

## III. Civil War Era Reconstructio

1. Reconstruct four 2-story c
along with walkways, roads,
gates that will outline the ori
area.

2. Reconstruct the historic C
and Messroom in keeping wi
tation on the site and flanks
of the re-established Civil Wa

3. Reconstruction of the ear
continue to become availabl

## IV. WWII Era Reconstructions

1. Reconstruct WWII shop t
the new park shop adjacent
Games Building. (see page 2

2. Reconstruct another WW
located west of the War Gar
used as an open air demons
and picnic structure.

3. Reconstruct three historic
to house an enlarged museu
artifact storage facilities and
rooms and office space.

4. Construct compacted ag
prints" of no longer extant
the concrete walks that con
footprints will show the hist
buildings that stood in this p
site during the WWII era.

*Above Photo: Swash Lake at bike trail brid*
*Columbia River.*

# Fort Conservation & Development – *Interpretive Guidelines*

### Overview

According to the 2001 Fort Stevens State Park Master Plan, "...the Interpretive and Educational mission for OPRD, in conjunction with its cooperative associations, is to provide interpretive and educational services that can involve visitors in activities which connect them with the natural and cultural heritage found on OPRD's parks and other properties. OPRD's main interpretive purpose, as a department, is to heighten and spread public understanding, appreciation and enjoyment of the natural and cultural resources of the OPRD system and to better understand the department's role in providng these opportunities to the public." The following text can be found in chapter eleven of the 2001 Master Plan.

### Fort Stevens State Park Interpretive Themes

The following themes and subthemes have been identified for implementation in the Fort Stevens State Park interpretive program and facilities.

**Central Theme for the Park: The Confluence of the Columbia and the Pacific Ocean.** The confluence of the Columbia River, the Great River of the West, and the Pacific Ocean has shaped both the natural history and human history of the area, and of the Fort Stevens State Park itself. People through time have been driven to enter the treacherous waters of the river to unlock the riches of a continent.

The central theme provides a starting point in presenting Fort Stevens as a gateway to the northwest. The gateway opens the door for closer examination of the biological and geological diversity of the area, and of human exploitation of the gateway and the role of Point Adams/Fort Stevens as guardian and protector of the gateway. It also provides the basis for understanding the "creation" of much of the parkland due to sand accretion from the jetty and from dune stabilization efforts. The state park landscape has been dramatically altered by the wildness of the river and ocean, and by human attempts to control them.

The Columbia River Empties a Continent and Opens a Region: The Columbia River has carried and deposited huge amounts of eroded material from deep within the North American continent, which has been deposited in an ever growing spit and beach complex, and a very dangerous bar at the mouth.

**Pre-jetty sand movement and deposition.**
**Destruction of the pre-settlement beachside grasslands by grazing and trails.**
**The beachside sand stabilization effort.**
**Treacherous Waters**

- **The Point Adams historic lighthouse and shipping traffic.**
- **Shipwrecks.**
- **South Jetty Construction Attempts to Tame the Bar:** the jetty was constructed by the Army Corp of Engineers in the late 1800's in an attempt to tame the river for safer shipping traffic. This is an effort that continues today.

**Point Adams- Strategic Location:** Point Adams was settled by Native Americans and was developed by the US military because of its strategic importance at the mouth of the Columbia River.

**Clatsop Indian Presence, Trading and Culture**

**Fort Stevens:** The fort was an important element in our nation's coastal defense system until the development of guided missiles and advanced air power made coastal artillery systems obsolete. The fort continued to upgrade fortifications and fire power and was both a social and economic center for the local community.

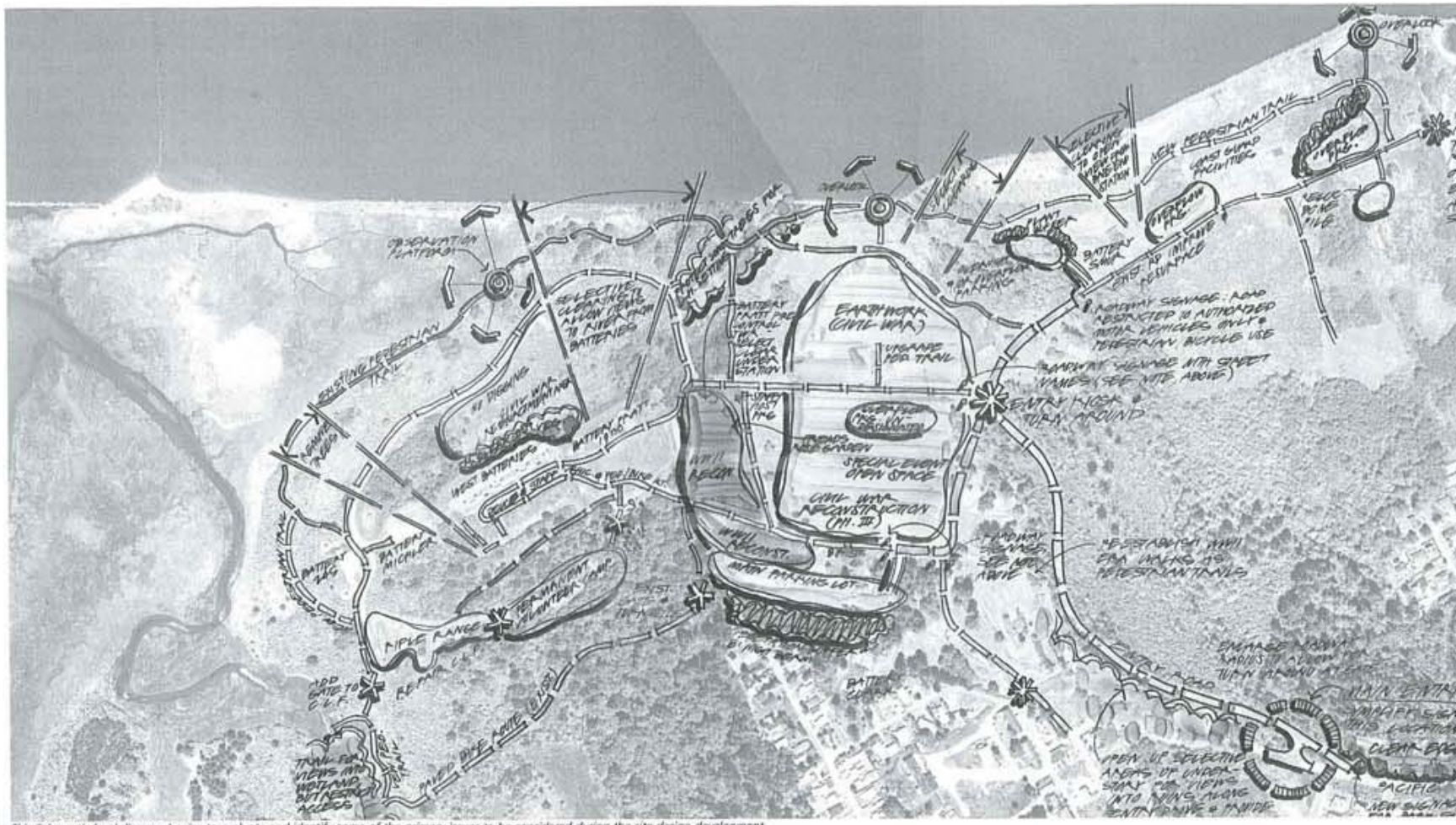
- **Old Fort Stevens / Civil War**
- **Old Fort Steven Garrison Life**
- **Army Corp of Engineers' role**
- **Height of Fort Construc**
- **Spanish American War (**
  **and Underwater Mining**
- **World War I Era Fort an**
- **World War II Era Fort ar**
- **Fort Closure and Reuse**

**The Natural resources of the**
ecosystems within the park a
able and becoming increasin

- **Upland Sitka spruce for**
  **dunal lakes, the bay, the**
  **ocean.**

*View of Columbia River looking northwest along remnant train trestle and sand deposits south of the Jetty.*

# **Fort Conservation & Development** – *Conceptual Site Analysis Diagram*




*This Schematic level diagram begins to evaluate and identify some of the primary issues to be considered during the site design development process.*

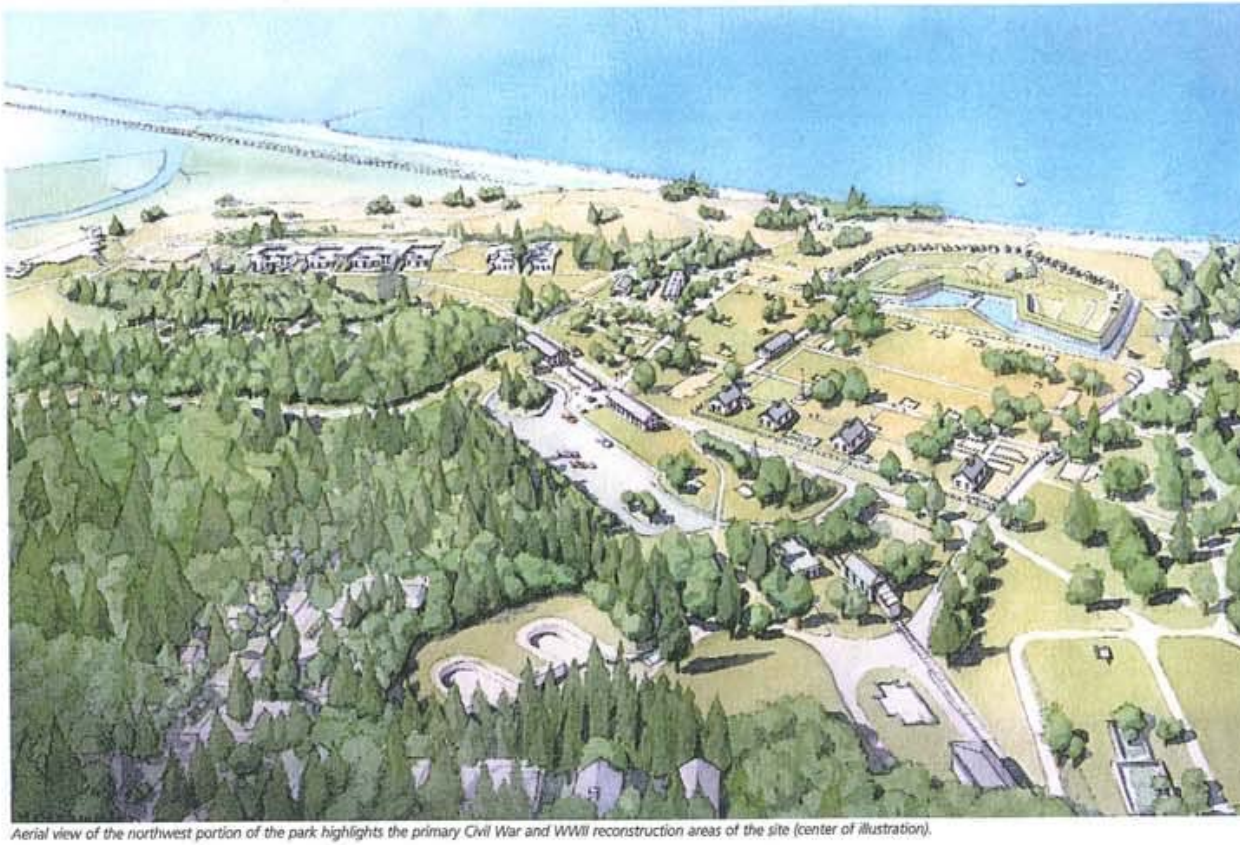
# III Site Development Program – *Overview*

### Overview

Through several meetings with OPRD representatives and park staff, the fort reconstruction program proposed in the 2001 Fort Stevens State Park Master Plan was evaluated and utilized to provide guidelines for further development and reconstruction. Chapter eight, Development Concepts, of the Master Plan describes the facility development proposals for Fort Stevens State Park. These Master Plan proposals are based on the Goals and Suitability Assessments identified in chapters five and eight of the Master Plan. For ease of reference, the Master Plan Development Concepts section is reprinted in the Appendix section of this document.

Visitor improvements cited in the Master Plan include new day-use parking areas, historically located pathways within the fort area, improved connections to other parts of the state park, location of a new volunteer camp, and preservation of existing historic structures. In addition, the reconstruction of select historic barrack structures is proposed in the Master Plan. These reconstructed buildings will house the new museum, visitor orientation and interpretation and public meeting space and will offer limited overnight use for park visitors.

A critical component to the future development of the site is to evaluate and upgrade the existing utility infrastructure to meet all state and local compliance issues for the proposed development. A separate civil engineers report and support concept drawings were prepared in conjunction with this Site Development Plan. Copies of the report and drawings are available at the OPRD Headquarters Office in Salem.



*Aerial view of the northwest portion of the park highlights the primary Civil War and WWII reconstruction areas of the site (center of illustration).*

The following pages define and illustrate the physical improvements proposed in the Site Development Plan for the historic area of Fort Stevens State Park. For purposes of discussion, most of the proposed activities and reconstructed facilities are located in the o
The balance of the site cont
recreational improvements s
and permanently located vo

War Games (museum) B

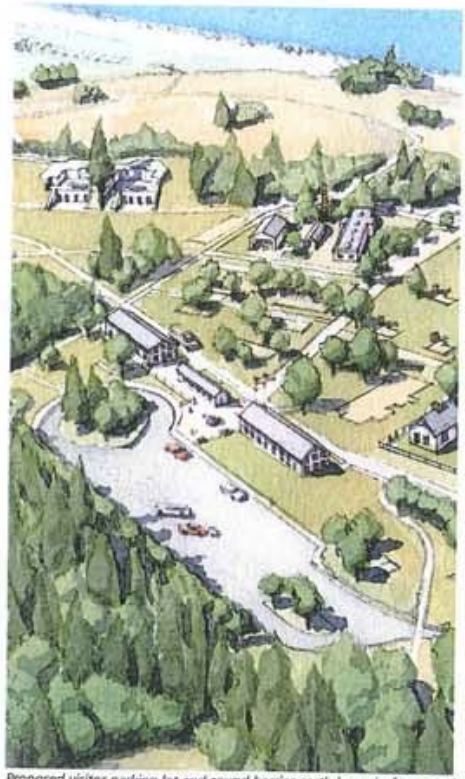
# Site Development Program – *Overview (continue)*

In keeping with the stated goals, the more specific objectives of the Site Development Plan are as follow:

1. Orient site features to improve way finding through the historic fort area. These objectives will be met through entry signage and roadway improvements, reduction of visual distractions, reinforcement of key views through vegetation management, location of an entry and information kiosk, and improved directional signage within the site.

M. Kyle-Milward

Park entry drive shown on right, (with vehicles).


M. Kyle-Milward

Proposed visitor parking lot and sound barrier earth berm in forground.

2. Screen new visitor parking so that visual impacts are reduced where they are adjacent to neighboring private properties. Further, the location and construction of new parking areas must not impact important natural resources, historic ruins or foundations of historic buildings.

3. Through site improvements, reinforce the interpretive and educational opportunities of this area of the park. Designate the different war eras so visitors can begin to understand the physical evolution of the site over time. Visitors will have a greater understanding of how this site exhibits layers of history that relate to distinct levels of military preparedness and technological capabilities of each era.

4. Improve the relationship of the historic fort area within the park to off-site extant structures that are now incorporated within the town of Hammond and Warrenton. This includes creation of a pedestrian walkway with a more significant gateway where park visitors exi explore the town on foot.

5. Provide for limited passive re portion of the park. Recreation tors will include picnic areas an trails for biking and walking, his for exploration and areas for vie

6. Anticipate more peak use da more designated parking areas i priate locations. In addition, pr and support facilities for volunte security for the park.

7. Manage vegetation so that k views are maintained.

Civil War era reconstructions surrounded by wooden picket fence to perimeter of earthworks.

## **Site Development Program** – *Site Development Plan*

**Leg**

- Ⓐ P
- Ⓑ E
- Ⓒ H
- Ⓓ E
- Ⓔ B
- Ⓕ B
- Ⓖ C
- Ⓗ E
- Ⓘ P
- Ⓙ E
- Ⓚ N
- Ⓛ R
- Ⓜ R
- Ⓝ R
- Ⓞ T
- Ⓟ N
- Ⓠ N
- Ⓡ B
- Ⓢ R
- Ⓣ B
- Ⓤ W
- Ⓥ B
- Ⓦ B
- Ⓧ P
- Ⓨ V
- Ⓩ N

## **Site Development Program** – *Site Development Plan Trail System*

Illustration: M. Kyle-Milward

**Legend**

Pe

De

## **Site Development Program** – *Site Development Plan Vehicular Circulation System*

Illustration: M. Kyle-Millward

**Legend**

Sta

Pul

# Site Development Program – *Entry Drive Improvements*

*View looking northwest alon existing park entry road.*

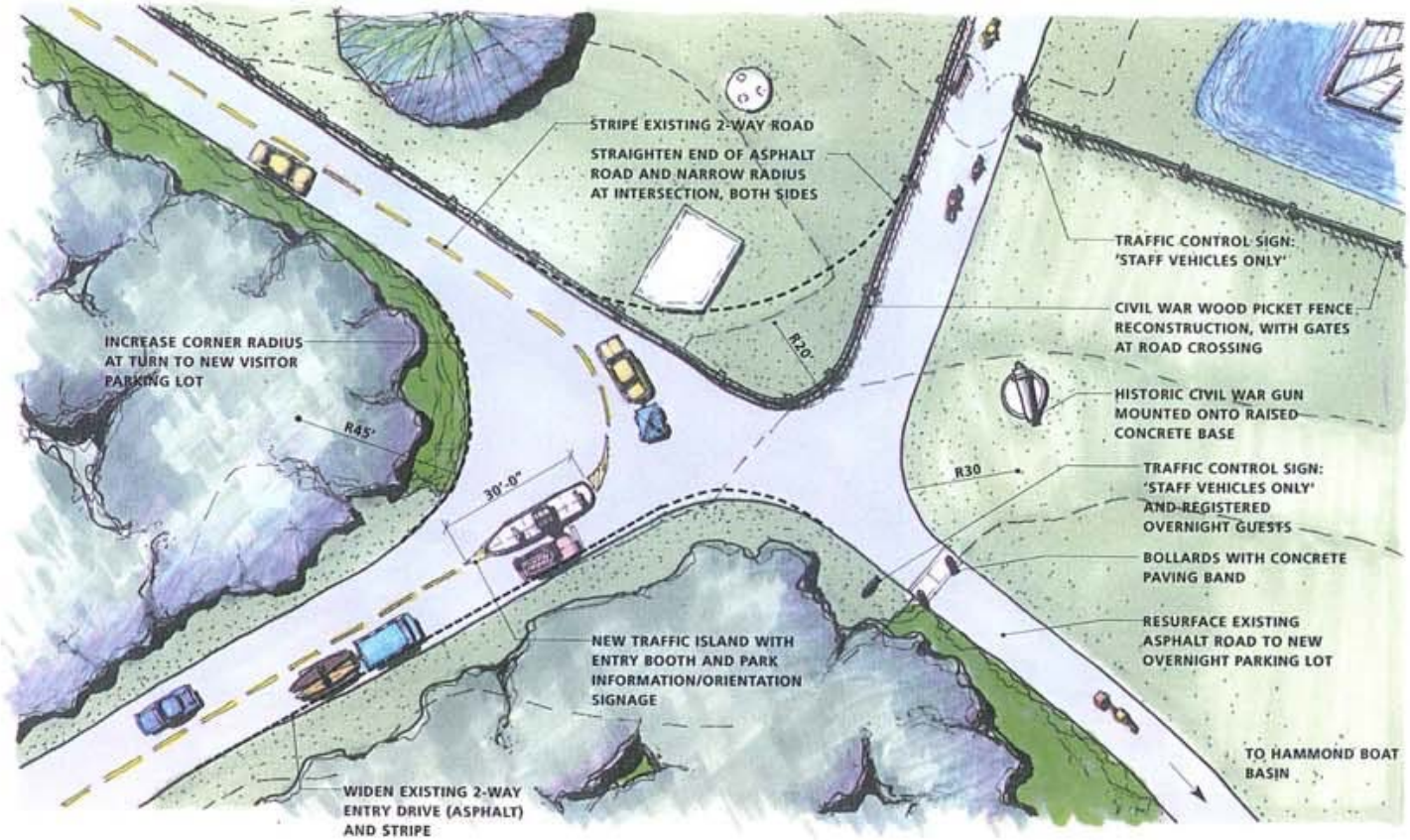
**A** PULL BACK EXISTING CURBS AS SHOWN AND STRIPE AT EAST END OF ISLAND. ADJUST STOP SIGNS AS REQUIRED.

**B** RELOCATE (2) EXISTING CONCRETE FORT PIERS FROM ALONG ENTRY DRIVE TO THIS NEW LOCATION. MOVE EXISTING WOODEN FORT SIGN FROM ISLAND TO NEW ENTRY BOOTH LOCATION (SEE PLAN DRAWING NEXT PAGE).

**C** CLEAR OUT UNDERSTORY VEGETATION TO IMPROVE VISIBILITY TO PARK ENTRY APPROACH (APPX. 15'W).

**D** RELOCATE STANDARD OPRD PARK SIGN TO THE EAST END OF THE PACIFIC DR. CURVE. ADD TEXT 'PARK ENTRANCE NEXT RIGHT.'

# **Site Development Program** – *Entry Booth and Ranger Station for Visitor Orientation*




Not to Scale

*Above Photo: View looking northwest to existi*
*Building, beyond trees.*

*Existing park entry road looking northwest to e*

*Southeast corner of earthworks.*

# **Site Development Program** – *Civil War Era Historic Reconstruction Area*

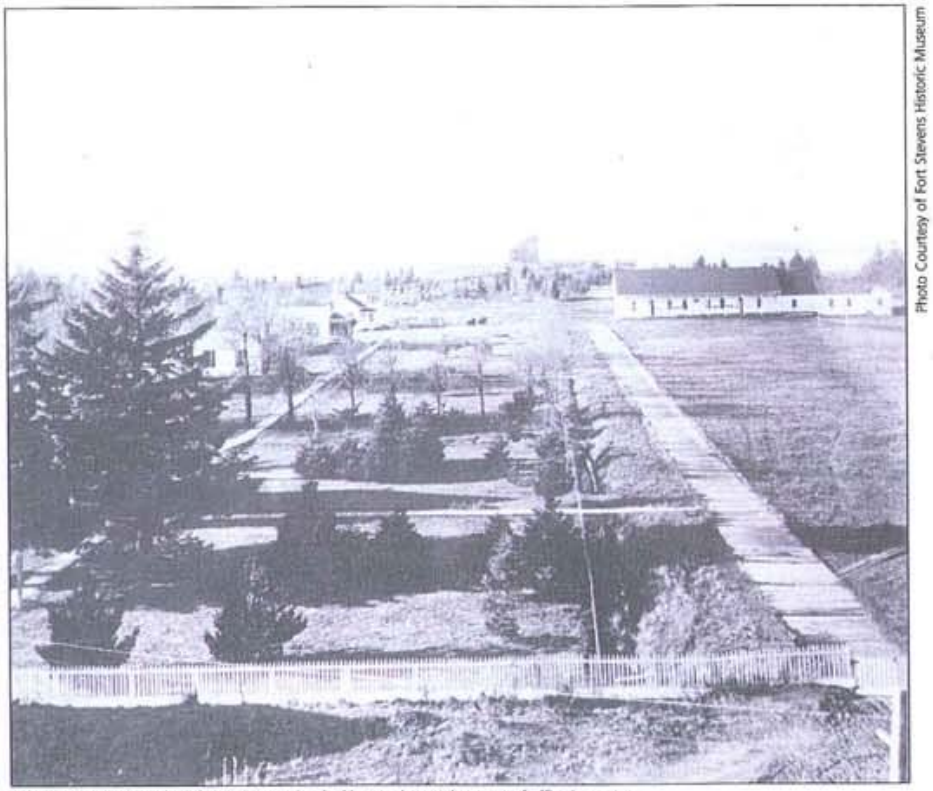
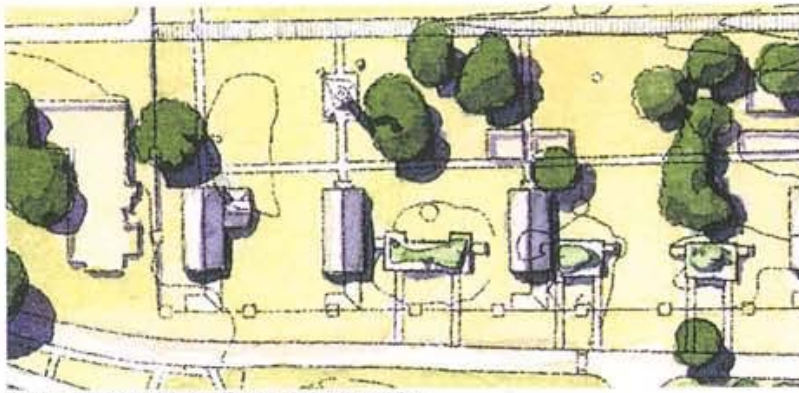


Photo Courtesy of Fort Stevens Historic Museum

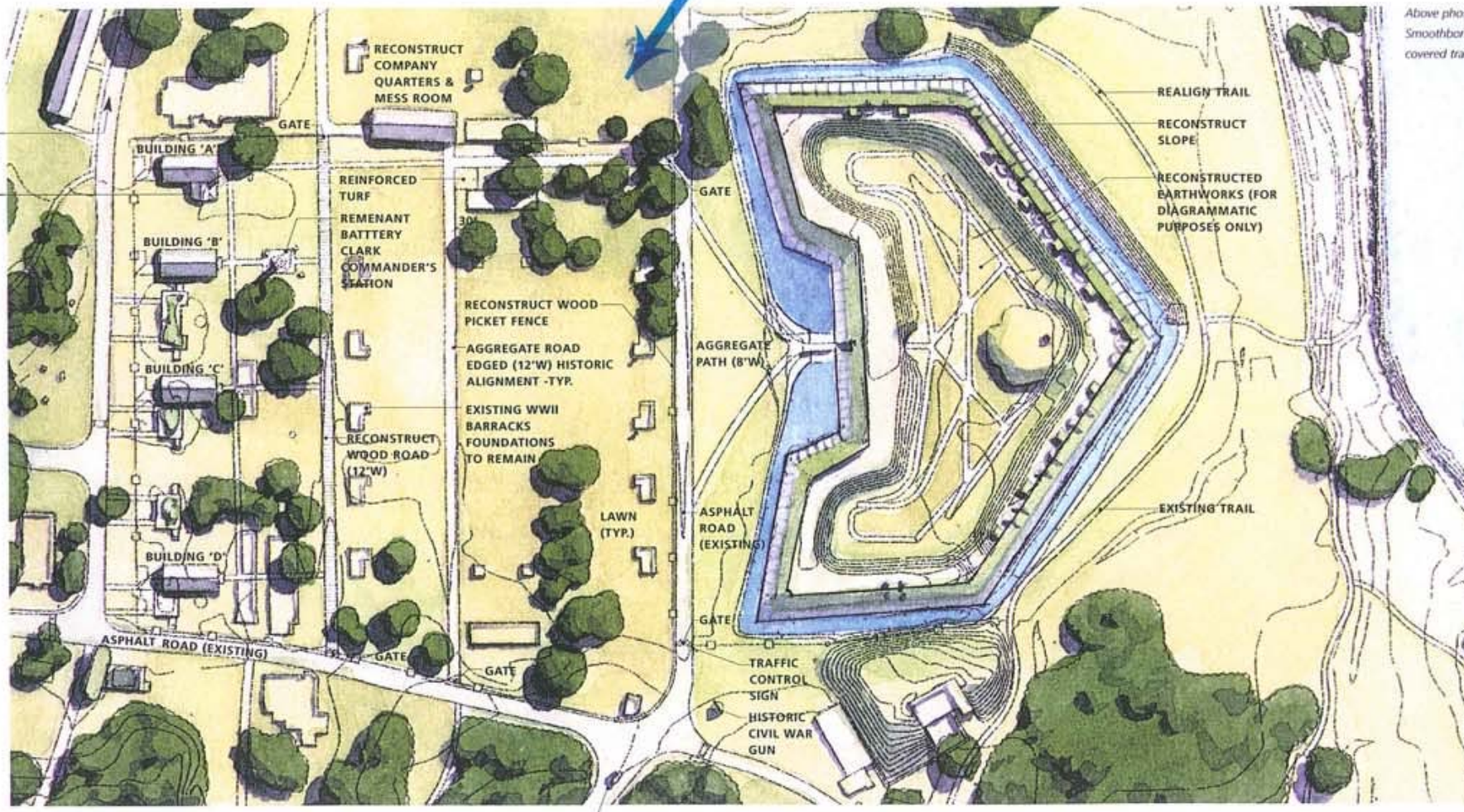
*Historic Fort Stevens Park Civil War photo. View looking northwest along row of officer's quarters.*



*Plan view at purposed Civil War Officer's Quarter's reconstruction.*

*Illustration of Civil War officer's quarters reconstruction. View looking south from porch of Company Quarters and Mess Ro*

# Site Development Program – *Civil War E[illegible]oric Reconstruction Area*




Above pho
Smoothbor
covered tra

# **Site Development Program** – *Historic WWII Reconstruction Area*

Photo Courtesy of Ft. Stevens Historic Museum

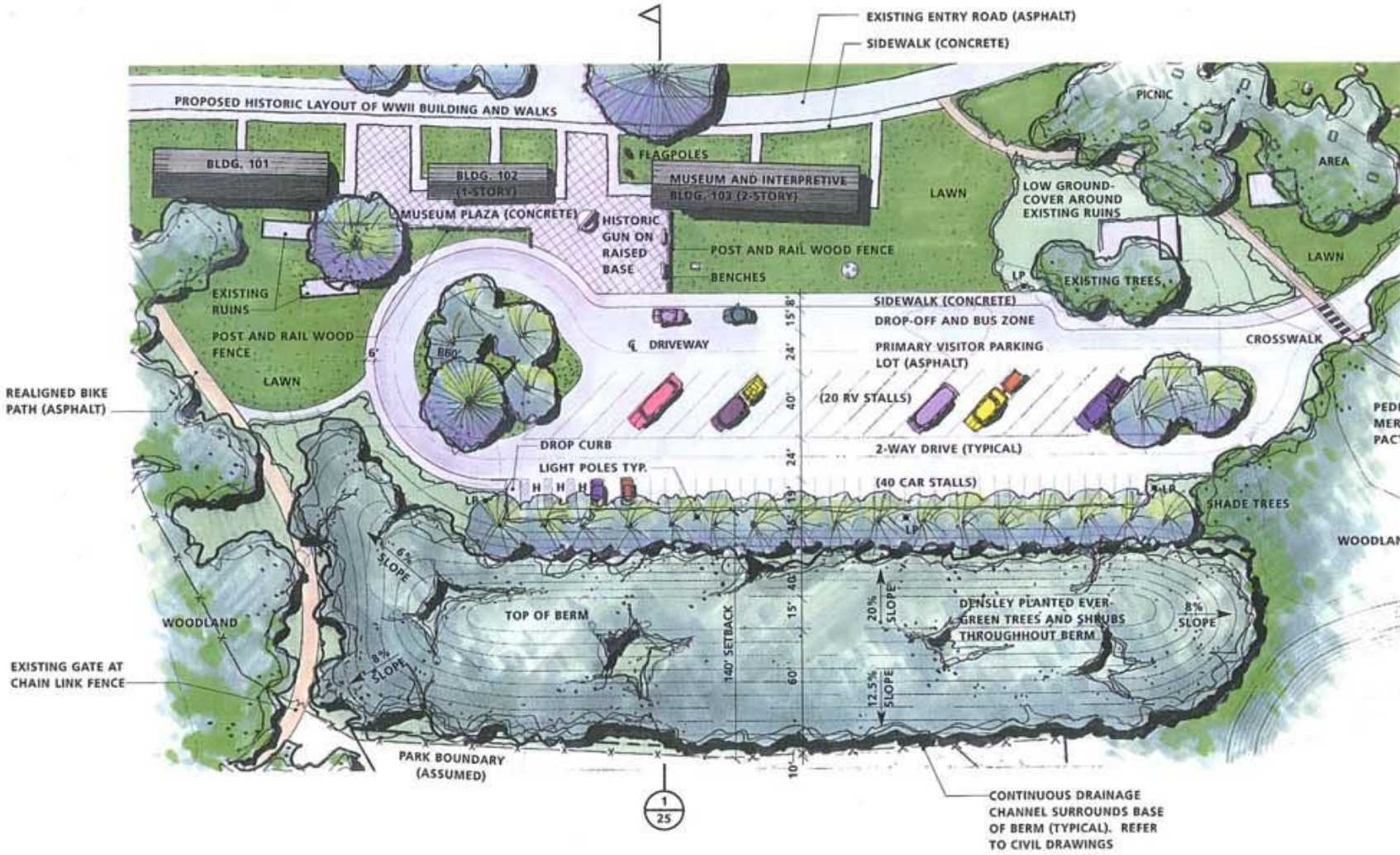
*Historic WWII photo at Fort Stevens barracks.*

*Illustration of WWII Barracks reconstruction.*

*Fort Stevens Duece & a Half vehicle.*

*Aerial view looking north towards West Batteries. Proposed WWII reconstruction area seen above visitor parking lot at proposed museum complex.*

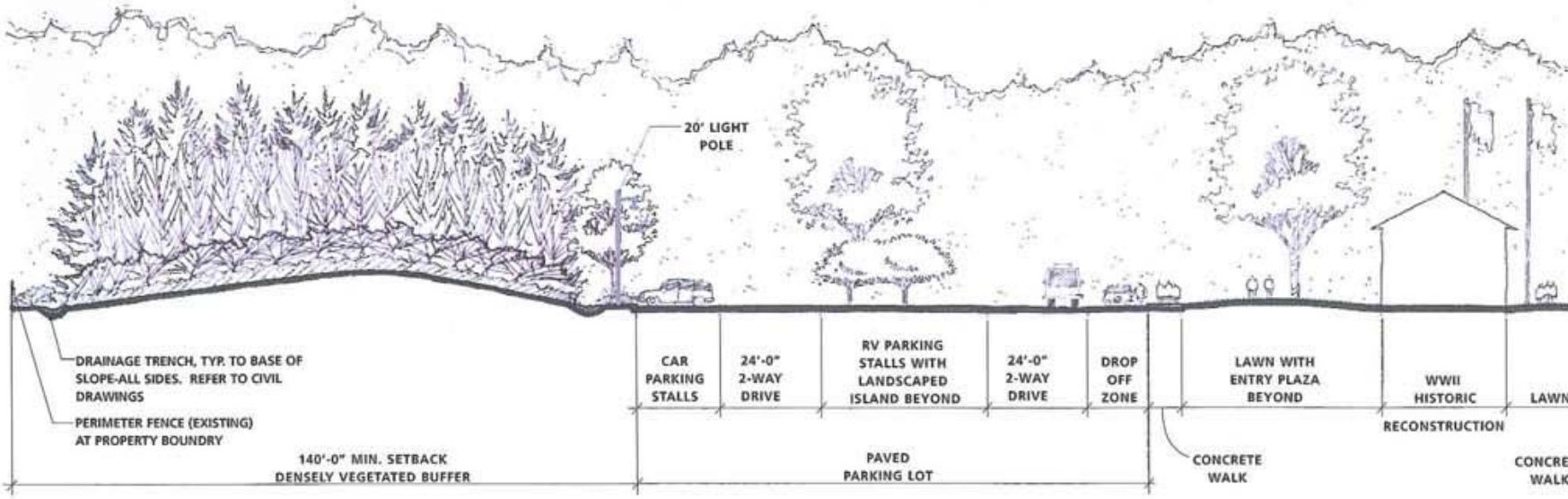
# Site Development Program – *WWII Historic Barracks Reconstruction at New Museum Complex*



# **Site Development Program** – *WWII Historic Barracks Reconstruction at New Museum Complex*

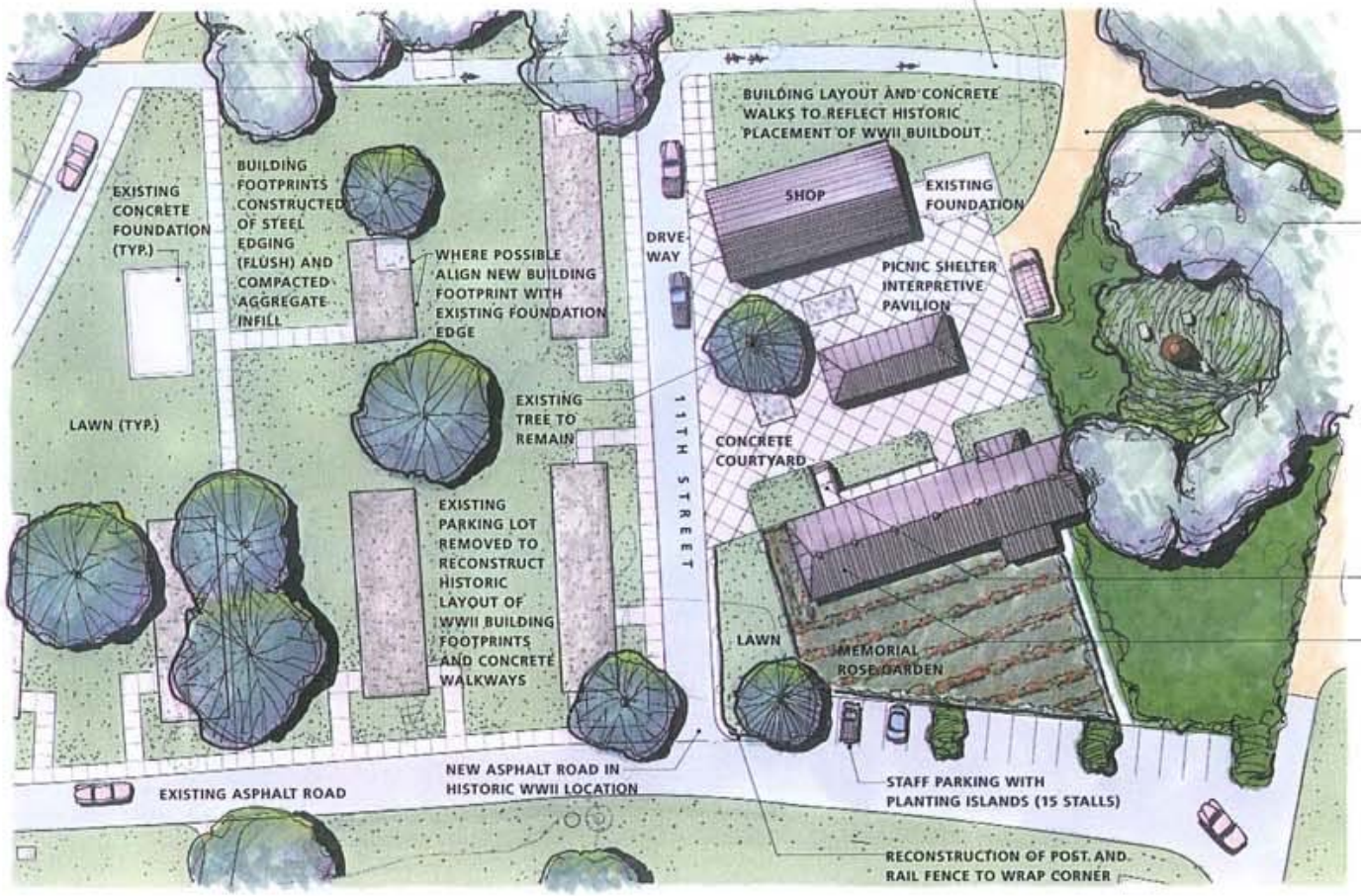
View looking southwest towards existing park boundary and area proposed for new visitor parking lot.

Aerial view looking north directly over proposed visitor parking lot and elevated, planted sound barrier.




1 Section at Proposed Visitor Parking Lot

# Site Development Program – *WWII Reconstruction at Existing War Games Building*




*Above Photo: Historic WWII photo look barracks at Fort Stevens. War Games Bu*

# **Site Development Program** – *Permanent Volunteer Campsites*

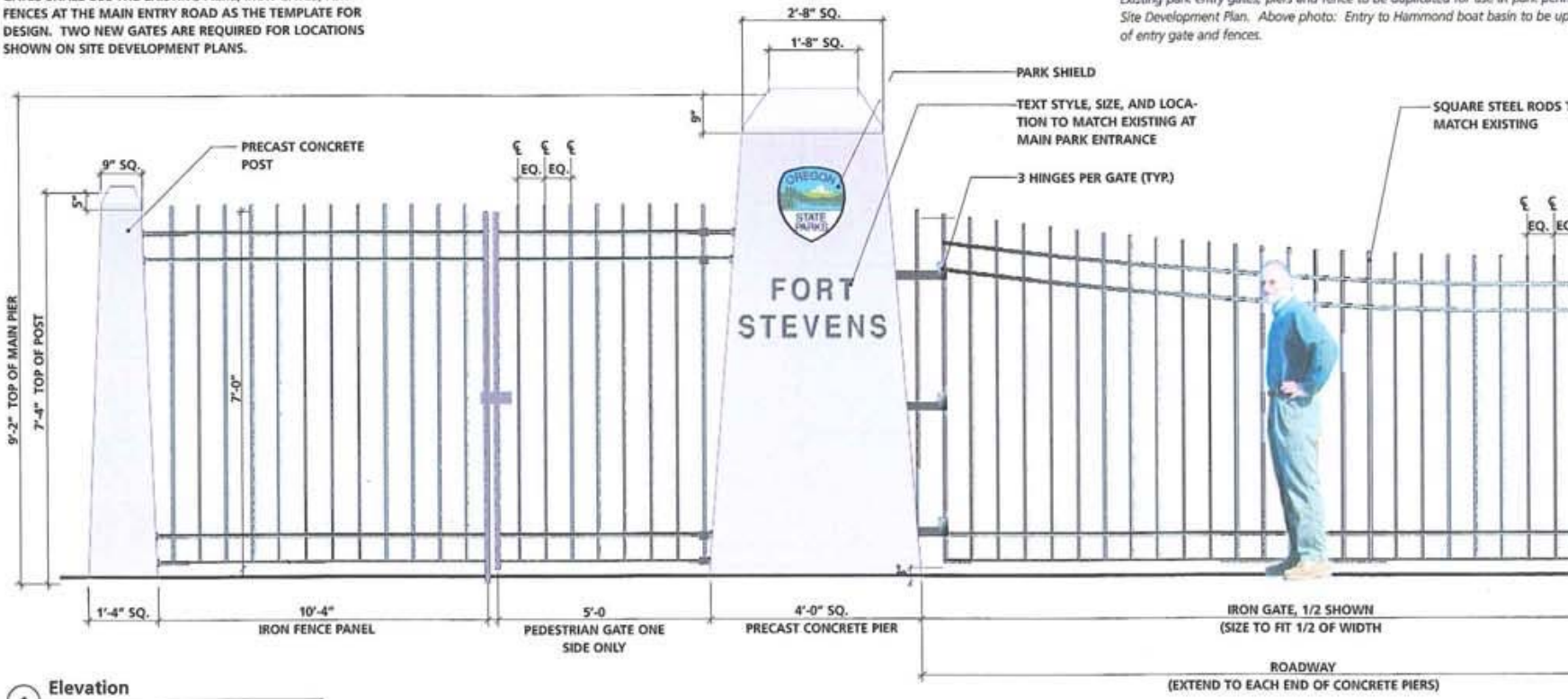
# IV Design Detail Guidelines – *Entry Gate Reconstruction*

**GENERAL NOTES:**
1. ALL DETAILS SHOWN ARE TO BE USED FOR DIEGRAMMATIC PURPOSES.

**NOTES:**
GATE-
1. DETAIL REPRESENTS HALF OF FULL GATE, FENCE AND PIERS, DUPLICATE ALL COMPONENTS FOR RIGHT SIDE OF GATE NOT SHOWN.

2. THE MATERIAL AND SCALE DETAILS OF THE NEW ENTRY GATES SHALL USE THE EXISTING PIERS, IRON GATES, AND FENCES AT THE MAIN ENTRY ROAD AS THE TEMPLATE FOR DESIGN. TWO NEW GATES ARE REQUIRED FOR LOCATIONS SHOWN ON SITE DEVELOPMENT PLANS.

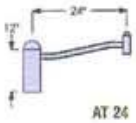
*Existing park entry gates, piers and fence to be duplicated for use at park peri Site Development Plan. Above photo: Entry to Hammond boat basin to be up of entry gate and fences.*




1 Elevation

# Design Detail Guidelines – *Walkway and Bollards*

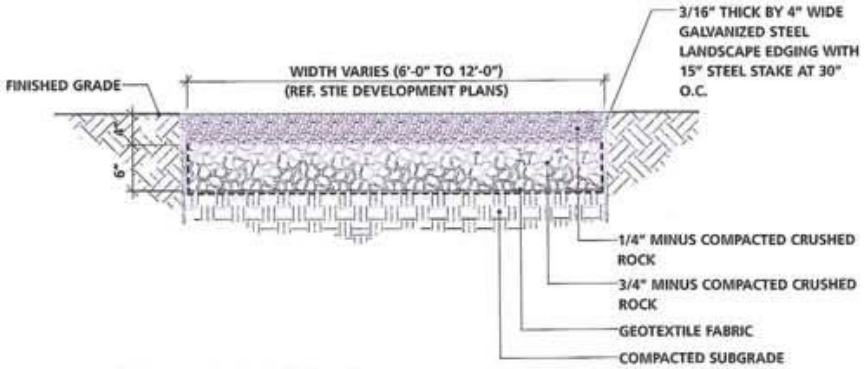
| | Size = 10 |
|---|---|
| A | 22" |
| B | 24-1/2" dia. |
| Max Watts | 400W |
| EPA | 2.1 |




20' LIGHT POLE, WITH BIEBER FIXTURE MODEL 'SUMMER SERIES', WITH AT24/DC ARM, AND TC POLE.

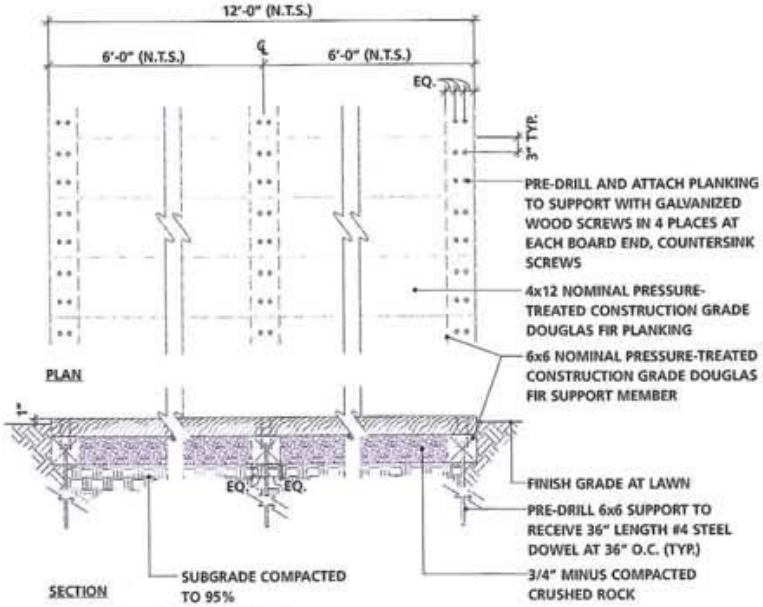
DOUBLE FIXTURE TO BE USED ALONG SIDE-WALK EDGE OF PARKING LOT. SINGLE FIXTURE TO BE USED IN ALL DESIGNATED PARKING LOT LOCATIONS.

1 Light Pole at Parking Lots

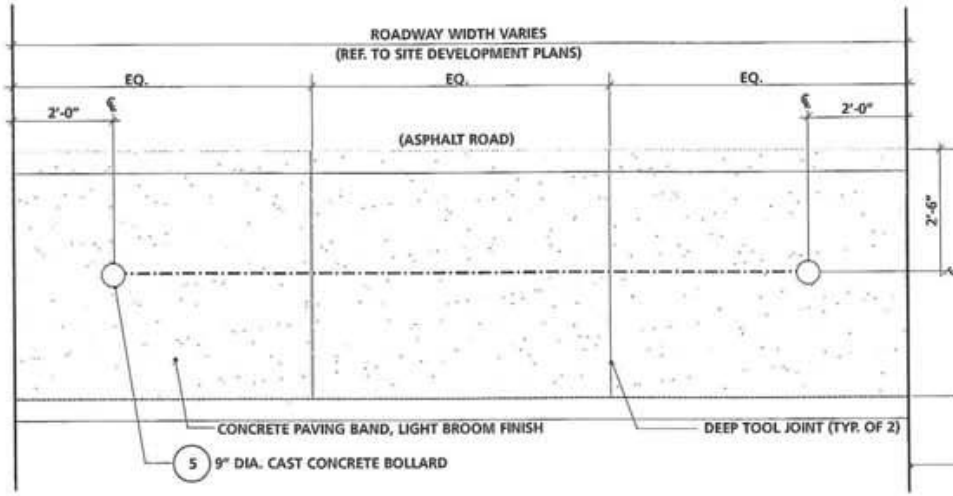



3 Aggregate Path (edged) Section

5 Traff Elev




2 Wood Road - Civil War




4 Traffic Control Paving Band Plan View

# V Conclusion

The Site Development Plan for the historic fort area is a culmination and synthesis of ideas and goals set forth in the OPRD 2001 Fort Stevens State Park Master Plan. The design intent of this plan is to further define the specific restoration and development program of the historic fort area within the current park boundaries. The opportunities associated with the development and management of this uniquely historic coastal environment presented many challenges to the design team. While it is essential to protect and enhance the extensive natural, historic and scenic qualities of the site, programming for future development is necessary to facilitate the education, interpretation and outdoor recreation for the park visitors.

The established OPRD Master Plan goals pertaining to the fort area of the park have been used to guide our development study and proposal. The Site Development Plan specifies some major components essential to park development and maintenance that further the specific long-term goals of the Master Plan.

In addition, more thought and focus must be given to the phasing for the varied improvements identified in this document. The outline information compiled in the Estimate of Probable Cost, located in the Appendix of this plan, offers a tool that can be used to evaluate and select the primary elements designed into each of the specific historic reconstruction areas. A critical component to be considered in evaluating a phasing plan is to salvage and improve the current site infrastructure. Preliminary site utility studies were performed and as-built utility documents were researched and, where possible, field verified, we suggest the inclusion of additional field verification and documentation for each of the proposed reconstruction areas.

The images, plans and details illustrated in this document are to serve as a way to provide an enhanced visitor experience to the richly diverse natural, cultural and scenic qualities of the site.

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# **Appendix** – *2001 OPRD Master Plan Development Concepts*

The following excerpt is taken from Chapter Eight of the 2001 Fort Stevens State Park Master Plan prepared by Oregon Parks and Recreation Department. The referenced text (pages 57-62 of the Master Plan) is provided for the Fort Concept Development Area.

**Fort Concept**

The Fort concept involves the reconstruction and rehabilitation of historic structures for cultural resource interpretation, and the improvement of access and circulation to and within the fort site. The concept also involves improving the visitors understanding of the existence of several historic eras at that site. Interpretation and education are major objectives for the site and are proposed in simple and intensive ways. In addition to the interpretive objectives, proposals include meeting space and overnight accommodations in the historic area and setting.

For purposes of Master Plan approval by the affected local governments, the Fort Concept proposals apply only to lands within the main park boundary, and do not include proposals for the two OPRD-owned parcels outside of the park boundary, which are located in the adjacent residential/industrial neighborhood that was once a part of the historic fort.

Changes in Visitor Capacity and Peak Visitation that will Result from the Fort Development
Actual numbers of vehicles counted in the Fort site over the last six years, for the peak season of July through September, has ranged from 345 to about 2800. However, the larger number has occurred only a couple of days over the last six years during the Labor Day weekend re-enactment. Without the additional re-enactment visitation the average daily peak number of vehicles over the same time period has been about 413. Averaging in the additional traffic from the re-enactment, the average daily peak vehicle count grows to about 440 per day. The small difference between the average with the re-enactment numbers and without them is due to generally lower visitation during the rest of September.

The larger number of vehicles entering the park is generally confined to July and August, with Labor Day weekend adding a final surge and then dropping off significantly during the remainder of September. Good weather in September can add 2 or 3 more weekends of traffic similar to that experienced in August.

During the rest of the year visitation at the Fort site drops dramatically. Very little traffic enters the Fort area during October through June except for staff and volunteers. A few sunny weekends bring visitors in low to moderate numbers.

The development concept for the Fort proposes construction of enough designated parking to accommodate the non-event, non-Labor Day, peak use of about 413 cars a day. The concept includes two day use parking lots totaling up to 96 parking spaces, 50 overnight parking spaces, 15 staff parking spaces (existing), and 10 camping spaces for staff and volunteers. With 2-3 turnovers a day at the day use lots and one turnover a day at the overnight lots, this amount of parking would accommodate about 413 cars a day. Up to 50 cars would remain overnight at the Fort, which is longer than the current stay at the Fort. Additional cars would find no parking available except during special events, which are the only times that undesignated parking is allowed in grassy areas.

In summary, the development concepts for the Fort will not increase peak visitation during non-event peak visitation periods because parking at the Fort, which determines peak visitor capacity, will be limited to an amount that accommodates the current level of visitation only.

**Circulation and Parking in the Fort Area**

Reconfigure vehicular circulation within the Fort site. Vehicular travel between the Fort and the other areas of the park will continue via the Ridge Road, located outside of the park boundary. The Fort access road, which extends from Pacific Avenue, will connect with the proposed new central parking lot. The Fort access and parking proposals in the Fort Concept are intended to direct visitors along a circulation route to interpretive facilities that represent the historic eras of the Fort site. Existing streets within the Fort site other than the main access route will be retained, but will be closed to public vehicular use and used as bicycle and pedestrian paths, tour vehicle routes and service accesses. Several proposed parking lots for the Fort development are discussed below.

*Conditions of Approval for the Fort Roads and Parking, in General*

*- OPRD will develop a*
*agement plan for the*
*Fort. The managemen*
*appropriate measures*
*opment in this area d*
*flooding problems on*
*lands outside of the p*
*the south. (The core a*
*area east of the batte*
*earthworks, west of t*
*access road, and nort*
*tured home developm*

*- The stormwater mar*
*be submitted to Clats*
*review and approval p*
*construction of any n*
*roads or the reconstru*
*buildings within the c*

*- All access roads and*
*Fort will meet the mir*
*construction standard*
*County, except that r*
*reduced from such st*
*cretion of OPRD.*

*- Plans and specs for*
*parking lots at the Fo*
*to Clatsop County fo*
*prior to construction.*

- Construct a new central p
new entrance road, in the
use parking only. Design

and 20 RV-length parking spaces, maximum. Buffer the parking lot from the neighboring private lands to the south. Buffering will be accomplished using distance, a constructed berm along the south edge of the lot, and planting of native vegetation between the lot and the park boundary.

*Conditions of Approval for the Central Parking Lot*

*- The minimum requirements of the parking buffer cannot be reduced through application of the minor variation provisions of OAR 736-018-0040.*

*- The parking lot will be located a minimum distance of 140 feet from the park boundary to the southwest.*

*- The berm will be constructed along the south edge of the lot and extend beyond each end of the lot, with a minimum height of eight feet above existing grade.*

*- Native and predominantly evergreen trees and shrubs will be planted on the berm and within additional area between the parking lot, the park boundary, and the existing tree cover to the west. The intent is to create a dense vegetative screen between the parking lot and access road and the adjacent private lands to abate noise and visual impacts. The vegetation will be planted prior to the construction of the parking lot and fort access road to allow the establishment of the screen. The vegetation in the buffer area will be maintained and replanted as needed to preserve a screening effect.*

*-The parking lot will meet the minimum applicable construction standards used by Clatsop County.*

*- Prior to Clatsop County's approval of the plans and specs for the central parking lot, OPRD will construct and plant the berm and the area between the berm and the private lands.*

- Retain up to 15 spaces of existing parking at War Games Building for staff and volunteer parking.
- Construct a second dayuse parking lot at the east central edge of Fort site. Design for 36 car spaces maximum.
- Construct parking lots along access road in the northeast corner of the site. Design for a total of 50 car spaces. These lots are for overnight accommodations only.
- Reserve areas along internal circulation roads for overflow parking on the grass.
- Direct re-enactment events to the batteries and earthworks and areas north and west of them.
- Construct docks on Columbia River in the approximate location of the historic docks, for courtesy dayuse docking. Docks should be designed to accommodate small tour boats as well as private boats. The docks will be designed with a maximum of 600 linear feet of moorage space.

*Conditions of Approval for Docks on the Columbia River*

*- The following requirements will be applied in addition to DSL and USACE permitting requirements for dock construction and related mitigation, provided these requirements do not conflict with DSL or USACE requirements.*

*- The docks will be designed in consultation with CREST, ODFW, DSL, USACE and the OSU Department of Marine Sciences.*

*- Professionally accepted methods will be employed to contain excavated materials and control erosion, sedimentation and turbidity during construction.*

*- Disturbance of riparian vegetation will be kept to a minimum. Riparian areas disturbed during construction will be rehabilitated using native riparian vegetation within one year following construction. Rehabilitated areas will be monitored and maintained for a period of three years following planting to insure that vegetation is adequately established, and will be replanted as needed.*

*- Mitigation required will be accomplished wetland creation, re ment, provided that project can be ident igation concept con Plan will be evaluate planning and pursue logically favorable p*

*- Prior to constructio detailed plans and s Clatsop County for*

*- Prior to Clatsop Co plans and specs, OP fill and mitigation p the project from DS Concurrently with th permitting processes the plans and specs ODFW and CREST.*

**Fort Foot and Bike Circulatio**

·Use routes shown on 1 map. They represent so and some routes to be c

**Volunteer Camp**

·Construct up to 10 per sites to east of firing ran need to wait until a por access road can be cons Design to remain screen areas.

*Conditions of Approval for the Volunteer Camp*

*- Prior to construction of the volunteer camp, OPRD will obtain approval from the City of Warrenton for the extension of sewer and water services to serve the development. (Upon the approval of this master plan by the City and County, an exception to statewide Goal 11 is being adopted to allow the future extension of these services. However, in order for the service connections to be approved, the City must find that the capacity of the City's sewer system is sufficient to serve existing and future uses in the UGB as well as the uses in the park.)*

*- Prior to site construction, OPRD will submit plans and specs for the volunteer camp to Clatsop County for review and approval.*

Historic Preservation of OPRD-Owned Structures

- Stabilize and restore buildings labeled as such on Fort Concept map and per detailed instructions in the Cultural Resource Management chapter of this master plan, and as determined by consultation with the State Historic Preservation Office. Most of these buildings will be used for interpretation only. The War Games building will continue to be used as an interim museum and staff/volunteer offices until new museum buildings can be constructed.
- The Officer's Row Bed and Breakfast will continue in its present use. The staff residence on the parade grounds will continue as such; the use of this building may be expanded in the future to include meeting space and/or another bed and breakfast. However, any land use approvals needed for future uses of either of these two properties will not be granted through the approval of this Master Plan, but will require separate land use actions by the City of Warrenton.
- Reconstruct certain, no longer extant, historic structures for museum, orientation, meeting space and overnight use. The buildings recommended for reconstruction are labeled as such on the Fort Concept Map. Recommended reconstructions include buildings from several eras of fort history such as "turn of the century", "WWI" and "WWII". The center of the Fort area, currently filled with the foundations of previously existing barracks, should remain mostly undeveloped, except for the recommended reconstructions shown in the concept plan. This will provide an open space which will help to keep separate the various restoration and reconstruction areas surrounding it, and to provide space for staging events.

  Barracks reconstruction could be used for one or more of the following purposes:
  - Fort Orientation and Interpretive Center
  - museum display areas
  - display preparation
  - storage space
  - staff and volunteer offices and break rooms
  - public restrooms
  - museum store
  - museum cafe,
  - retreat facility public meeting spaces and/or classrooms.
  - retreat facility overnight accommodations including an associated dining hall. Overnight accommodations in the Fort Area will not exceed 60 double occupancy rooms.

  *Conditions of Approval for Reconstruction of Historic Buildings*

  *- Design of the reconstructed historic structures, including square footage and exterior and interior appearance, will preserve the integrity of the National Register District and its contributing elements. Compliance with this requirement will be determined through the review and approval of detailed designs by the State Historic Preservation Office.*

  *- Prior to the reconstruction of historic buildings at the Fort, OPRD will work with the Department of Geology and Mineral Industries and local emergency service providers to complete a tsunami warning and evacuation plan for the park, and will provide any needed signage, materials or other improvements as necessary to implement the parkwide plan. (See the discussion under Chapter 7, Goal 2, on the tsunami warning and evacuation plan.) Note to Henry: not exist in Goal 2.*

  *- Prior to reconstruct that require sewer or will obtain approval Warrenton for the ex ities to serve the dev approval of this mast and County, an exce Goal 11 is being ado future extension of t However, in order fo to be approved, the the capacity of the C sufficient to serve ex in the UGB as well a park.)*

  *- Detailed plans and reconstructions will Clatsop County for r prior to construction*

# **Appendix** – *Estimate of Probable Cost*

| DESCRIPTION | QTY | UNIT | UNIT COST | COST |
|---|---|---|---|---|
| **EARTHWORK** | | | | |
| 8' High Earth Berm (@ Main Parking Lot)- use onsite material | 1 | | $5.00 | $ 5.00 |
| Earthwork Reconstruction | 1 | LS | $2,000,000 | $ 2,000,000.00 |
| | | | **SUB TOTAL** | **$ 2,000,005.00** |
| **CLEARING** | | | | |
| Tree and Vegetation Clearing (276,682 SF) | - | - | Force Account/Corrections Crew | |
| | | | **SUB TOTAL** | **$ -** |
| **UTILITIES** | | | | |
| For breakdown of items refer to civil report | | | | |
| | | | **SUB TOTAL** | **$ -** |
| **STEPS/PAVING** | | | | |
| WWII Reconst.-Concrete Stairs, 5 treads x 8' wide (@ War Games Building) | 40 | SF | $40.00 | $ 1,600.00 |
| Stair handrail | 12 | LF | $60.00 | $ 720.00 |
| Concrete ramp (@ War Games Building) | 240 | SF | $4.50 | $ 1,080.00 |
| WWII Reconst.-Concrete Walks (@ War Games Building) | 10,412 | SF | $4.00 | $ 41,648.00 |
| WWII Reconst.-Concrete Walks (@ New Museum Complex) | 5,302 | SF | $4.00 | $ 21,208.00 |
| WWII Reconst.-Concrete Walk (@Building Footprints) | 9,449 | SF | $4.00 | $ 37,796.00 |
| Concrete Walk (@ West Batteries) | 645 | SF | $4.00 | $ 2,580.00 |
| Asphalt Roads/Bike Paths | 13,399 | SF | $3.00 | $ 40,197.00 |
| Main Visitor Parking Lot (Asphalt)(includes parking striping) | 70,109 | SF | $3.25 | $ 227,854.25 |
| 6' wide concrete walk (@ Main Visitor Parking Lot) | 4,956 | SF | $4.00 | $ 19,824.00 |
| Extruded Concrete Curb (@ Main Visitor Parking Lot) epoxy mastic to a/c | 2,409 | LF | $12.00 | $ 28,908.00 |
| Overnight Parking Lot (compacted aggregate) | 23,894 | SF | $2.50 | $ 59,735.00 |
| 12' Wide Wooden Road (Civil War) | 6,720 | SF | $15.00 | $ 100,800.00 |
| 12' Wide Aggregate Drive | 13,206 | SF | $2.50 | $ 33,015.00 |
| Steel Edging (@ Aggregate Drive) | 2,274 | LF | $4.50 | $ 10,233.00 |
| 8' Wide Aggregate Path | 3,650 | SF | $2.50 | $ 9,125.00 |
| Steel Edging (@ Aggregate Path) | 898 | LF | $4.50 | $ 4,041.00 |
| 6' Wide Aggregate Path | 8,805 | SF | $2.50 | $ 22,012.50 |
| Steel Edging (@ Aggregate Path) | 2,670 | LF | $4.50 | $ 12,015.00 |
| 2' Wide Aggregate Border | 2,340 | SF | $1.00 | $ 2,340.00 |
| Aggregate @ Volunteer Campsites | 18,730 | SF | $2.50 | $ 46,825.00 |
| Steel Edging @ Volunteer Campsites | 2,070 | LF | $4.50 | $ 9,315.00 |
| Hardpack Roads | 43,037 | SF | $2.00 | $ 86,074.00 |
| Steel Edging (@ Hardpack Roads) | 3,988 | LF | $4.50 | $ 17,946.00 |
| Pedestrian Trail (44,854 LF) | - | - | Force Account/Corrections Crew | |
| Concrete Paving Band @ Roads | 300 | SF | $4.00 | $ 1,200.00 |
| Wood Boardwalk @ Wetland | 2,000 | SF | $15.00 | $ 30,000.00 |
| | | | **SUB TOTAL** | **$ 868,091.75** |
| **BUILDING FOOTPRINTS** | | | | |
| Historic Reconst.-WWII Bldg Footprint: Aggregate Bed | 11,213 | SF | $2.50 | $ 28,032.50 |
| Historic Reconst.-WWII Bldg Footprint: Steel Edging | 1,335 | LF | $4.50 | $ 6,007.50 |
| | | | **SUB TOTAL** | **$ 28,032.50** |
| **FENCES/GATES/SIGNS** | | | | |
| Wood Picket Gate @ Civil War Fence | 60 | LF | $20.00 | $ 1,200.00 |
| Civil War Reconst.-Wood Picket Fence | 2,540 | LF | $12.00 | $ 30,480.00 |
| Vehicle Directional Signage | 5 | EA | $350.00 | $ 1,750.00 |
| New Piers & Iron Gates/Fences | 2 | EA | $14,000.00 | $ 28,000.00 |
| WWII Reconst.-Post/Rail Fence | 325 | LF | $8.00 | $ 2,600.00 |
| | | | **SUB TOTAL** | **$ 64,030.00** |

| DESCRIPTION | QTY | UNIT | UNIT |
|---|---|---|---|
| **BUILDINGS** | | | |
| Historic Civil War Reconst.-Company Quarters and Messroom (1-story) | 3,141 | SF | $1 |
| Historic Civil War Reconst.-Officer's Quarters-Bldg. A (2-story) | 4,432 | SF | $1 |
| Historic Civil War Reconst.-Officer's Quarters-Bldg. B (2-story) | 3,632 | SF | $1 |
| Historic Civil War Reconst.-Officer's Quarters-Bldg. C (2-story) | 3,632 | SF | $1 |
| Historic Civil War Reconst.-Officer's Quarters-Bldg. D (2-story) | 3,632 | SF | $1 |
| Historic WWII Reconst.-Bldg. 101 (2-story) | 6,075 | SF | $1 |
| Historic WWII Reconst.-Bldg. 102 (1-story) | 1,522 | SF | $1 |
| Historic WWII Reconst.-Bldg. 103 (2-story) | 7,340 | SF | $1 |
| Historic WWII Reconst.-Shop | 2,547 | SF | $ |
| Historic WWII Reconst.-Picnic Shelter/Interp. Pavillion | 1,051 | SF | $ |
| Storage Bldg. For Mercy 48 Boxcar | 1,235 | SF | $ |
| New Entry Booth & Traffic Island | 1 | LS | $80,0 |
| New Restroom/Shower (@ Volunteer RV Camp- 625 SF) | 1 | LS | $300,0 |
| | | | SUB T |
| **SITE LIGHTING** | | | |
| Light Poles @ Main Parking Lot (20' double fixture) | 1 | EA | $4,0 |
| Light Poles @ Overnight Parking Lot (20' single fixture) | 4 | EA | $3,5 |
| Light Poles @ Main Parking Lot (20' single fixture) | 5 | EA | $3,5 |
| | | | SUB T |
| **IRRIGATION** | | | |
| New Museum Complex & Parking Lot | 171,244 | SF | |
| | | | SUB T |
| **PLANTING** | | | |
| Planting @ Main Parking Lot & Berm (dense shrubs, trees, groundcover, bark) | 87,083 | SF | |
| Planting @ Overnight Parking Lot (4 trees, 300 lf shrubs) | 300 | LF | $ |
| Planting @ Revised Staff Parking Islands | 400 | SF | |
| Planting @ Volunteer Campsites | 1 | LS | $2 |
| | | | SUB T |
| **SITE FURNISHINGS- MISC.** | | | |
| Traffic Bollards (9" dia. cast concrete) | 6 | EA | $ |
| Benches (6' steel slat w/ back) | 2 | EA | $ |
| Flag Poles (30' high aluminum) | 2 | EA | $2,4 |
| | | | SUB T |
| | | | SUB |
| | | | Contingen |

# **Appendix** – *Project Resources*

### Publications

*Fort Stevens- Oregon's Defender at the River of the West,* Marshall Hanft, Friends of the Old Fort Stevens, Inc., 1980

*The Cape Forts- Guardians of the Columbia*, Marshall Hanft, Friends of the Old Fort Stevens, Inc., June 2000

*Army Engineers & The Developent of Oregon,* William F. Willingham, Portland, OR: The District 1983

*Fort Stevens State Park Master Plan* , Oregon Parks and Recreation Department, 2001

### Photography & Illustration

Aerial & Historic Photography: Courtesy of Fort Stevens Historical Area Museum, Fort Stevens State Park, Warrenton, OR

Watercolor Illustrations: Martin Kyle-Milward
Portland, Oregon, November 2001

### Survey Data

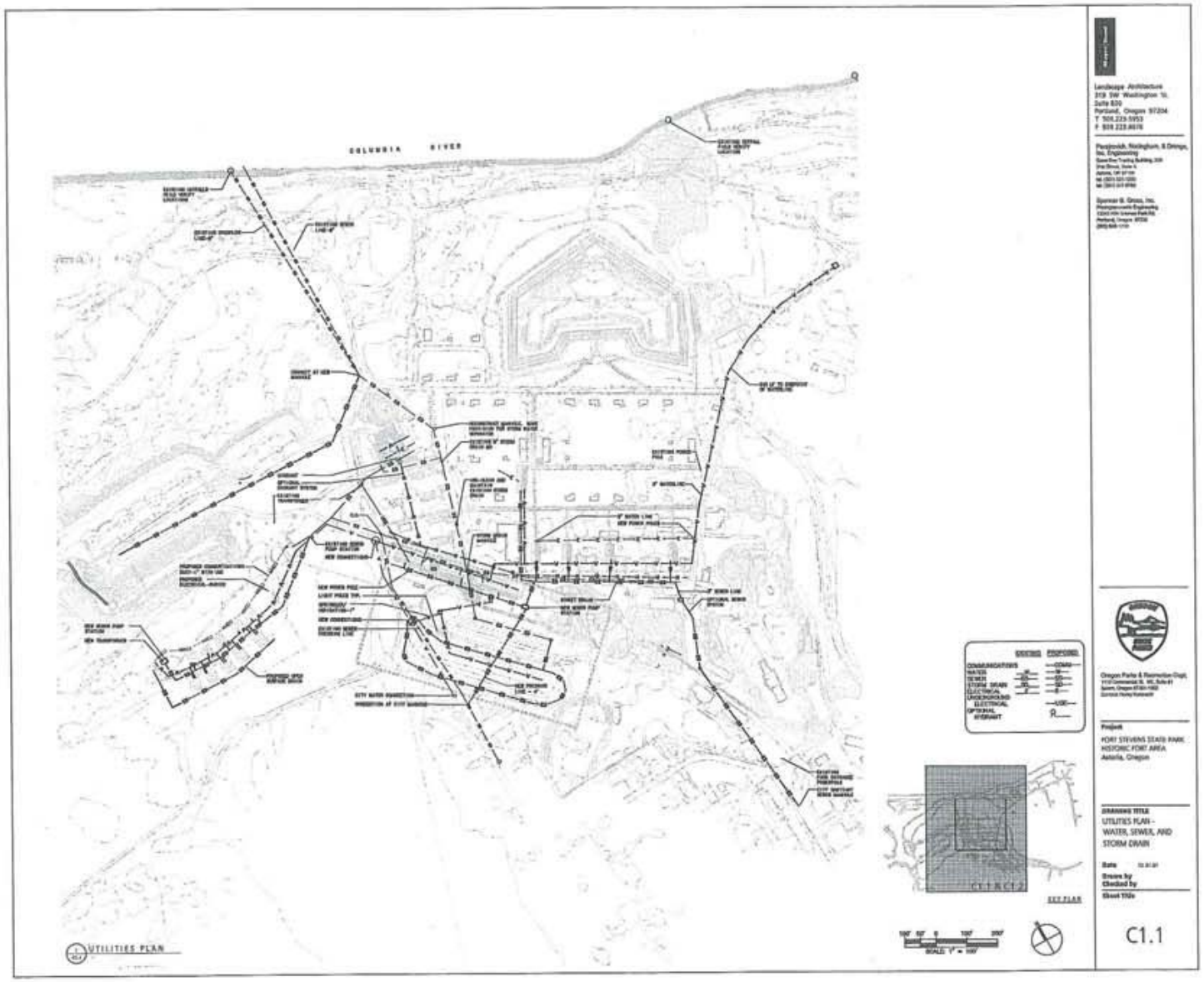
Digital Orthophoto and Electronic Contour Survey
Spencer B. Gross, Inc.
Portland, Oregon, July 2001

### Civil Engineering & Electrical Data

Pertrovich, Nottingham & Drange, Inc.
Astoria, Oregon, December 2001
- Site Utilities and Electrial Concept Plans
- Site Utilities Report / Cost Estimate

### Earthworks Reconstruction Documents

Zaik / Miller / Dibenedetto Architects

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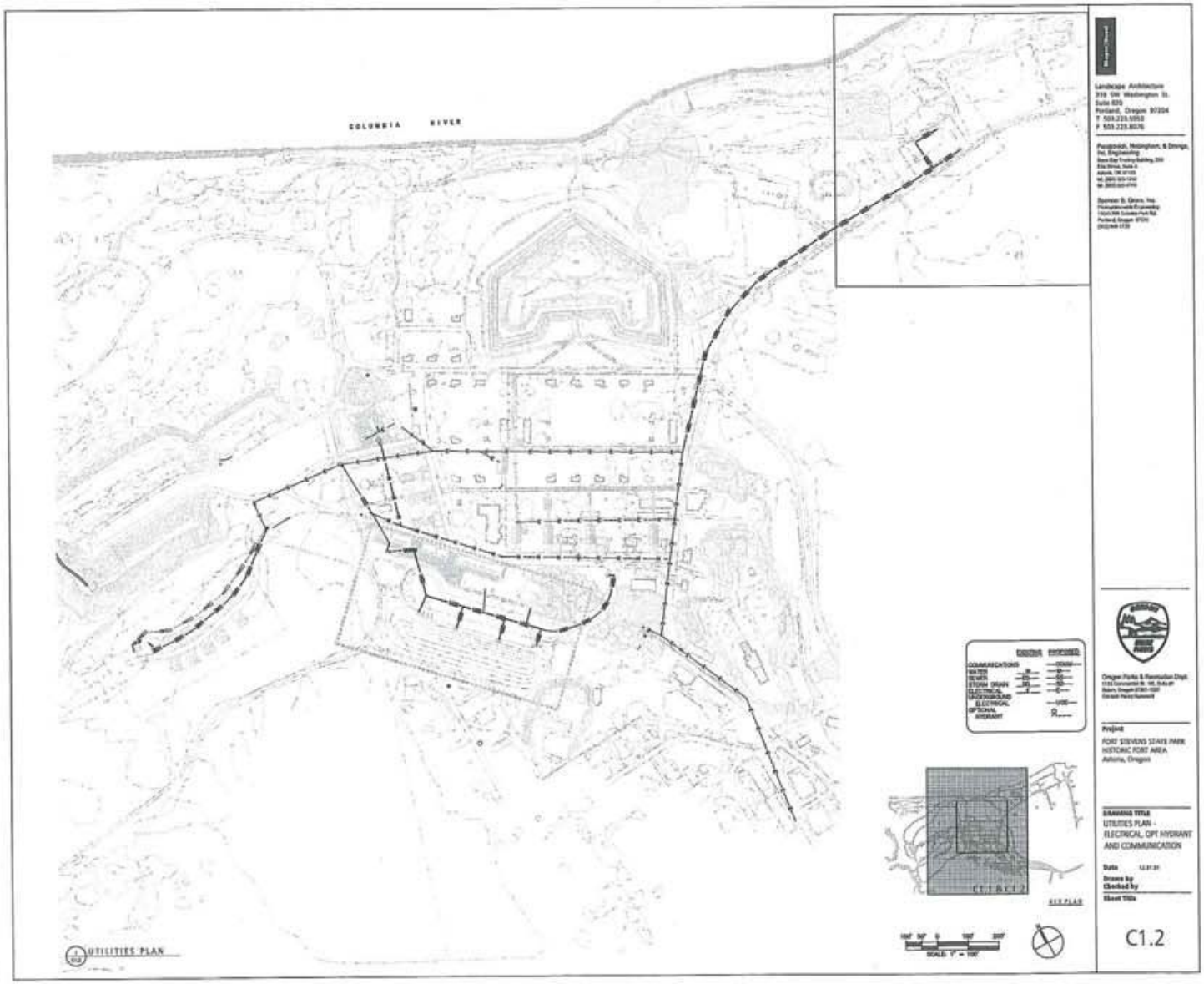
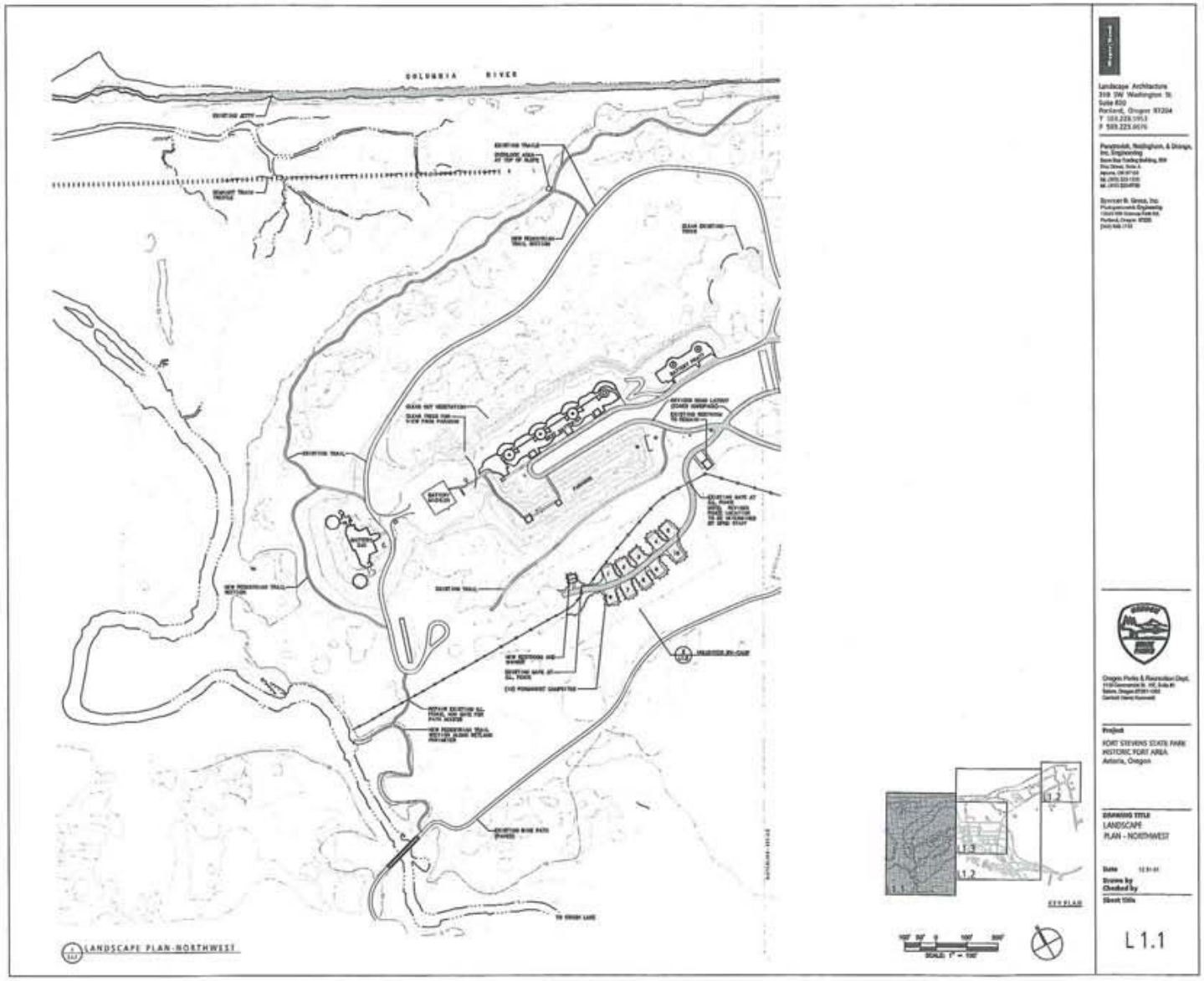
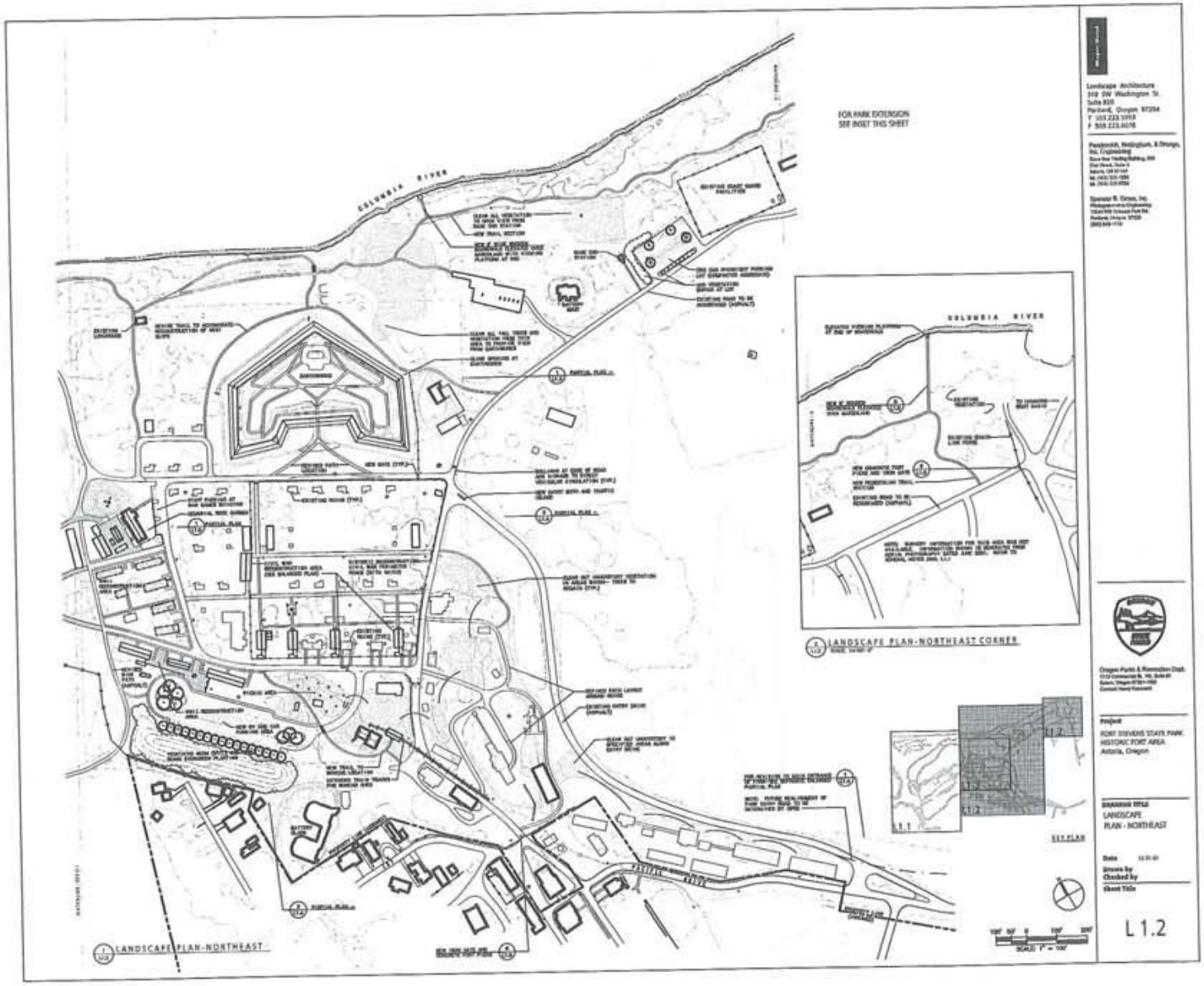
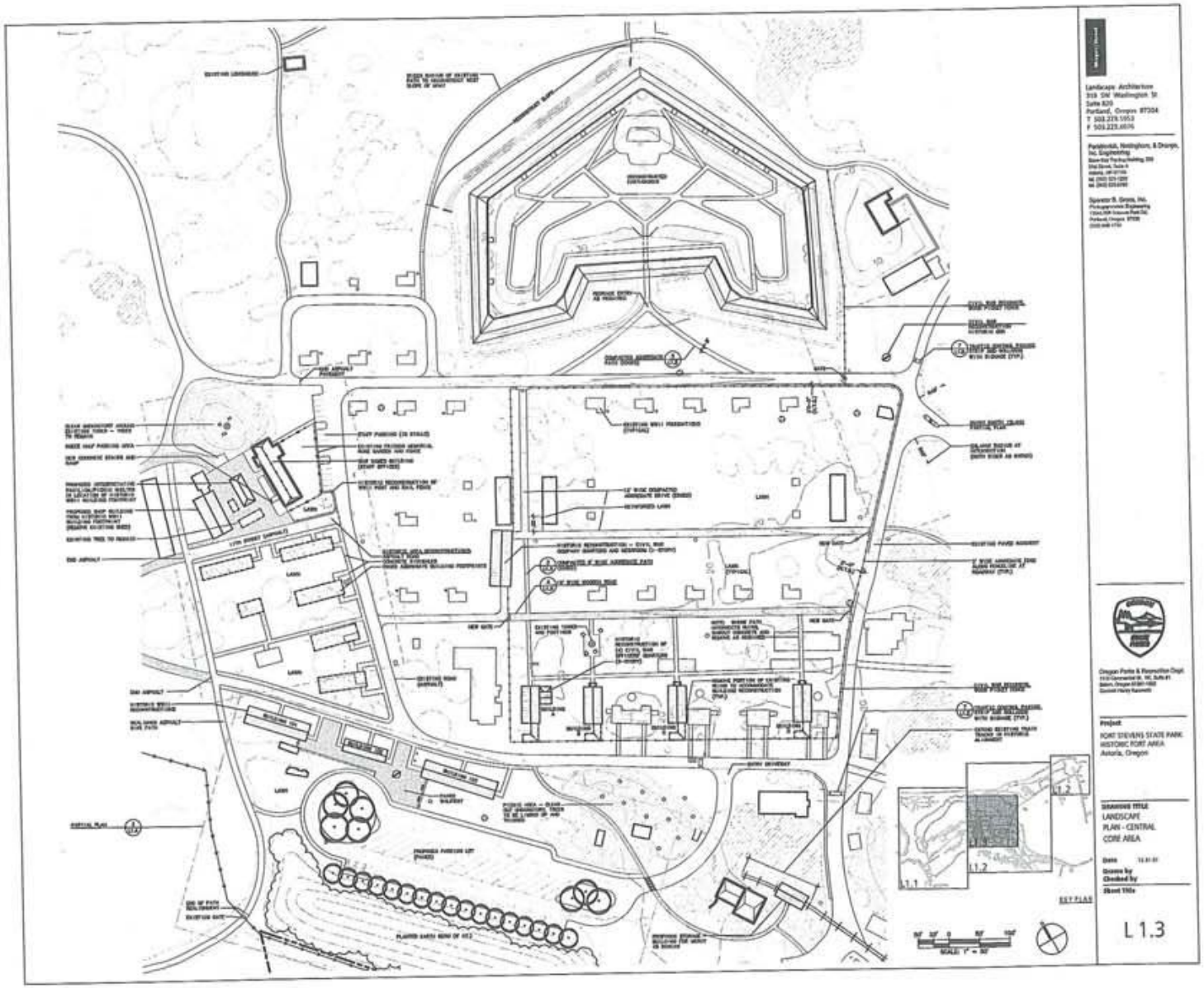
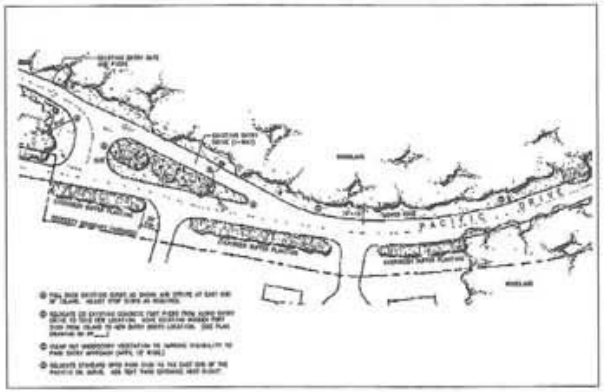

COLUMBIA RIVER
UTILITIES PLAN
Landscape Architecture
Portland, Oregon 97204
FORT STEVENS STATE PARK
HISTORIC FORT AREA
Astoria, Oregon
UTILITIES PLAN -
ELECTRICAL, OPT HYDRANT
AND COMMUNICATION
C1.2

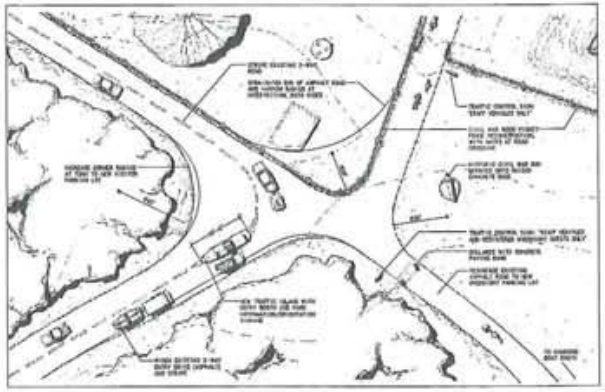

COLUMBIA RIVER
LANDSCAPE PLAN-NORTHWEST
Landscape Architecture
Project
FORT STEVENS STATE PARK
HISTORIC FORT AREA
Astoria, Oregon
DRAWING TITLE
LANDSCAPE
PLAN - NORTHWEST
L1.1


COLUMBIA RIVER
FOR PARK EXTENSION
SEE INSET THIS SHEET
LANDSCAPE PLAN-NORTHEAST CORNER
LANDSCAPE PLAN-NORTHEAST
Project
FORT STEVENS STATE PARK
HISTORIC FORT AREA
Astoria, Oregon
LANDSCAPE
PLAN - NORTHEAST
L1.2

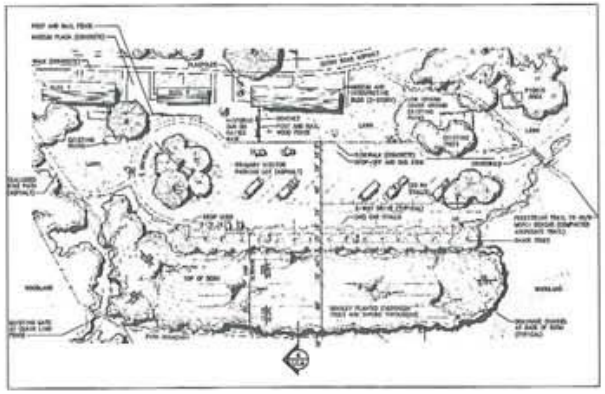

Landscape Architecture
Project:
FORT STEVENS STATE PARK
HISTORIC FORT AREA
Astoria, Oregon
LANDSCAPE
PLAN - CENTRAL
CORE AREA
L1.3



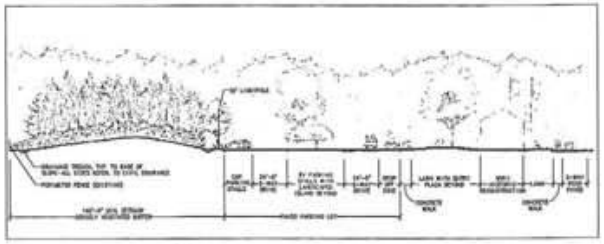

PARTIAL PLAN-ENTRY DRIVE IMPROVEMENTS



PARTIAL PLAN-ENTRY BOOTH AND VISITOR ORIENTATION



PARTIAL PLAN-WWII HISTORIC RECONSTRUCTION AT NEW MUSEUM COMPLEX



SECTION-WWII HISTORIC RECONSTRUCTION AT NEW MUSEUM COMPLEX

Landscape Architecture
319 SW Washington St.
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F 503.223.6074

Pennycuick, Waddington, & Grasso, Inc. Engineering

Oregon Parks & Recreation Dept.

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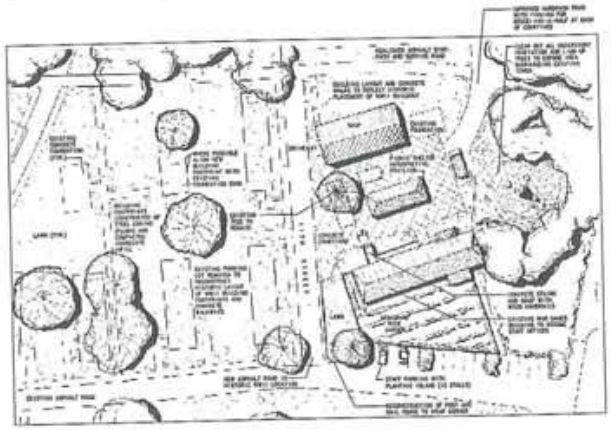
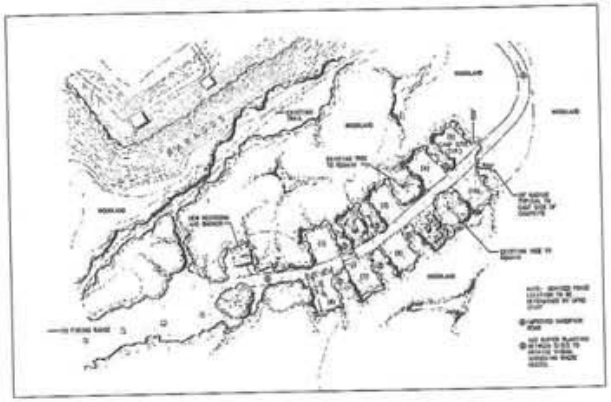
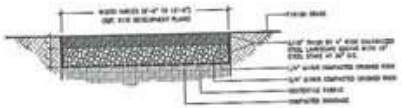


PARTIAL PLAN-WWII RECONSTRUCTION AT WAR GAMES BUILDING



PARTIAL PLAN-PERMANENT VOLUNTEER CAMPSITES



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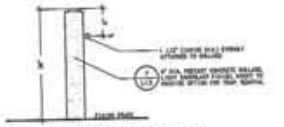
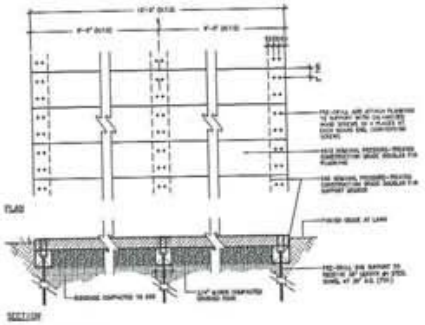
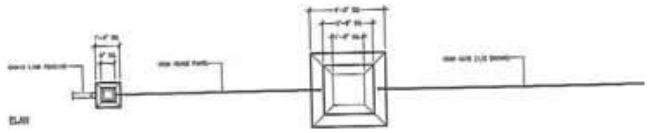
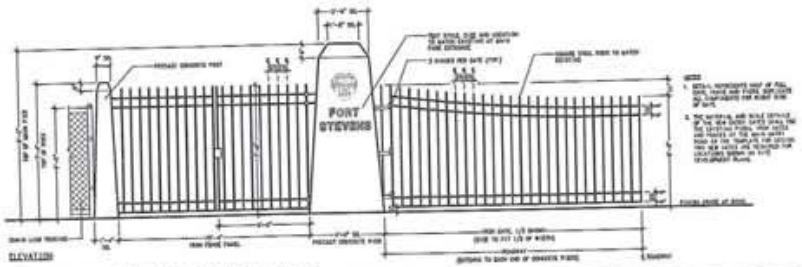


TRAFFIC CONTROL BOLLARD

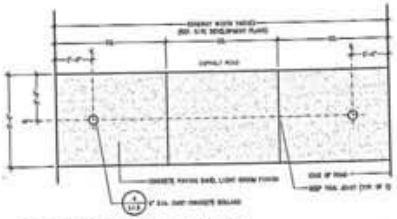


WOOD ROAD






NEW IRON GATE AND CAST CONCRETE PIERS



TRAFFIC CONTROL PAVING BAND

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Oregon Parks & Recreation Dept.

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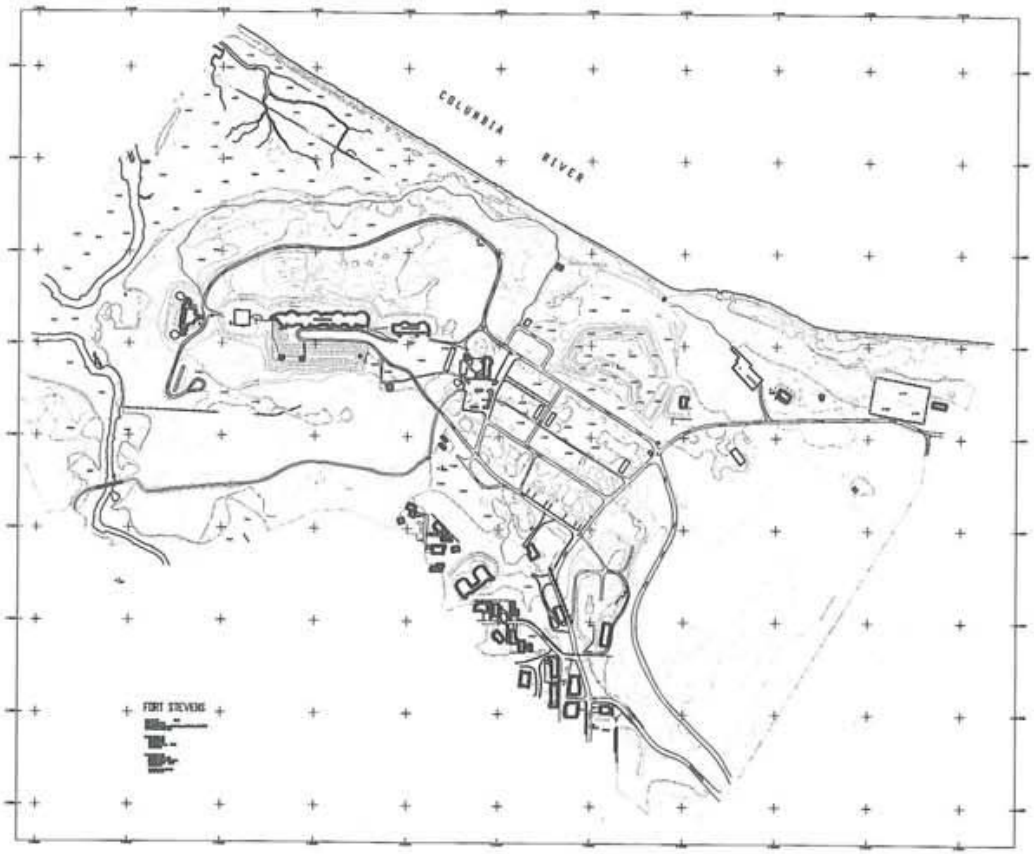


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