

# **PINELLAS COUNTY RESTORE ACT DIRECT COMPONENT PROJECT PROPOSAL SUBMITTAL FORM**

Based on the Transocean settlement and until the BP trial ends, it is estimated by March 31, 2015, \$1,542,888 will be available in the Gulf Coast Restoration Trust fund for distribution to Pinellas County under the Direct Component allocation.

As a guideline, Pinellas County anticipates funding 3 to 7 projects not to exceed a total of \$1,542,888 as part of the initial multiyear implementation plan (MYIP). It's anticipated that projects selected for MYIP inclusion that receive funding would not begin until after December 2015.

Please read through all the questions before beginning.

- Submitted projects must address one or more of the five Gulf Coast Ecosystem Restoration Council goals and one or more RESTORE Act-eligible activities.
- Projects submitted by FEBRUARY 6, 2015 will be eligible for inclusion in the initial Multiyear Implementation Plan (MYIP)
- The "Steps" and "Criteria" numbers in the application refer to questions that address the steps and criteria for selection and ranking projects. The selection and ranking criteria can be viewed at [www.pinellascounty.org/restore/pdf/project-selection.pdf](http://www.pinellascounty.org/restore/pdf/project-selection.pdf)
- Answer each of the 29 questions as completely as possible, but keep responses focused.
- Submit one form per project.
- Once the form is successfully submitted, you will be contacted by Pinellas County.
- Send associated maps, charts, images, and budget information along with the title of your project in a Portable Document File (PDF) to [restore@pinellascounty.org](mailto:restore@pinellascounty.org).
- Direct questions to [restore@pinellascounty.org](mailto:restore@pinellascounty.org)

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**Applicant Name:** *(Include at least one Point of Contact (POC), phone number, email address, and organization name, if applicable):*

- 1. POC Name:** Debbie Chayet
- 2. POC Organization:** Pinellas County Office of Management & Budget
- 3. POC Title:** Sr. Grants Specialist
- 4. POC Email:** [dchayet@pinellascounty.org](mailto:dchayet@pinellascounty.org)
- 5. POC Phone:** 727-582-2521
- 6. Proposed Activity Name:** Ft. De Soto Park Dune Walkovers

## **7. Restoration Council Goals Addressed:**

(Step 1 and Step 2 - Criteria 1 and 2)

*List which of the following goal(s) will be addressed and how each goal will be addressed.*

- A. Restore and Conserve Habitat
- B. Restore Water Quality
- C. Replenish and Protect Living Coastal and Marine Resources
- D. Enhance Community Resilience
- E. Build and Revitalize the Gulf Economy

This project will address several of the five listed Restoration Council Goals. It will (A) conserve habitat, (C) Protect Living Coastal and Marine Resources and (D) provide a small measure of enhanced resilience to infrastructure. The project involves the development of dune walkover structures over existing coastal dune systems in Ft. De Soto Park. Vegetated dune systems provide the best defense against storms and tidal influx. Aerial photos clearly delineate scarring where long time pedestrian use has destroyed vegetative cover through the dune system and created over 35 existing open sand paths. These paths provide access for floodwaters, tidal overwash and wave overrun during storms and/or extreme high tides. Exposed sand along these paths shifts readily with wind, further eroding the open pathways and further creating opportunity for tidal overwash.

The development of five selectively located dune walkovers will conserve the dune habitat by preventing damaging pedestrian traffic on the delicate dune system, decreasing erosion and allowing the dunes to naturally restore and rebuild over time. The walkways will direct the flow of pedestrian traffic away from footpaths and toward these acceptable dune crossings. The presence of the dune system protects the upland infrastructure of the park by capturing the brunt of storm impact; thus protection of the dune system protects the park and provides a measure of resiliency for uplands. "Protecting dunes helps prevent loss of life and property during storms and safeguards the sand supply that slows shoreline erosion. Protecting dunes also preserves and enhances the beauty of the coast and coastal ecosystems." Rigid structures are less efficient than the naturally resilient dunes as defense for the beach against storm surge. Per "Coastal Dunes" a publication from Texas.

Having the dune walkovers may also bring educational awareness to the public of the value of dune systems. Understanding the importance of dunes in this coastal ecosystem may assist with public conservation of "sand dunes".

The five dune walkovers, totaling roughly 1,290 linear feet, will also prevent pedestrians from traversing other areas in the existing beach and dunes which serves to protect other dune flora and fauna. Dune systems are quite biologically diverse; especially along beach wrack lines. The assorted vegetation and marine wildlife present in wrack lines assist with the beginnings of dune development as sand gets trapped and builds over time; allowing grasses to move in and stabilize a beginning dune. Decaying wrack provides nutrients for newly growing dune vegetation (University of Florida). Soft sand in early dunes is also an ideal location for federally endangered and threatened nesting sea turtles to lay eggs. The sea turtles will lay eggs above the high tide line so nests are not washed out by high tides. This is

usually located at the edge of developing dunes or on open sandy beaches. Ft. De Soto Park averaged 59 sea turtles nests over the last 5 years has recorded as many as 104 (in 2014). Loggerhead sea turtles (federally threatened) are the most common nesting sea turtle at Ft. De Soto Park although one green sea turtle (federally endangered) has nested at Ft. De Soto in the past. The location of the proposed dune walkovers is a highly used nesting area and crawl area for sea turtles. The installation of dune walkovers will keep pedestrians away from sea turtle nests and minimize impacts to the dunes edges where turtles may choose to nest. Walkovers will also assist in keeping pedestrians away from the many shorebirds that nest in this ecosystem, particularly those that nest in open sandy spots near vegetative cover. This includes Willets and Wilson's and snowy plovers (state threatened) that all nest at the edge of dunes. On open beach sand close to the dunes, the American oystercatcher (species of special concern), black skimmer (species of special concern) and least tern (state threatened) also nest. Currently this 1,100+ acre park, with its 7 miles of beaches has only two dune walkovers. Lack of funding availability is why.

#### **8. RESTORE Act Eligible Activities Addressed:**

(Step 1 and Step 2 - Criteria 3 and 4)

*List which of the following activities will be addressed and how each activity will be addressed.*

1. Restoration/protection of natural resources, ecosystems, fisheries, marine wildlife habitats, beaches, and coastal wetlands
2. Mitigation of damage to fish, wildlife, and natural resources
3. Implementation of Federally-approved marine, coastal, or comprehensive conservation management plan, including fisheries monitoring
4. Workforce development and job creation
5. Improvements to or on State parks in coastal areas affected by Deepwater Horizon oil spill
6. Infrastructure projects benefitting the economy or ecological resources, including port infrastructure
7. Coastal flood protection and related infrastructure
8. Promotion of Gulf Coast Region tourism, including recreational fishing
9. Promotion of the consumption of seafood harvesting from the Gulf Coast Region
10. Planning assistance

This project addresses several of the Restore Act Eligible Activities including all or portions of items 1,2,4,6 and 8.

Item 1: The installation of dune walkovers directly protects dune ecosystems and their diversity. This allows for the continuing entrapment of sand and development of dunes which continues to protect the natural resources in the project site. As a result, federally protected sea turtles and state protected shorebirds can continue to nest in their chosen habitats; thus positively impacting marine wildlife.

Item 2: The installation of dune walkovers prevents the previous/continuing damage by pedestrians to the dune habitat. By preventing further damage, this ecosystem is provided the

opportunity to naturally recover and mitigate the damage caused by pedestrians. Allowing dunes to restore and further develop also provides a measure of mitigation before a storm or natural disaster as the dune system would be healthy enough to reduce risk from a storm's impact.

Item 4: The construction of the dune walkovers will create up to 4 jobs in the short term. The length of time is dependent upon the number of walkovers able to be constructed for the requested funding (how competitively priced the construction bids end up). Job retention will be enhanced as the walkovers will require some measure of maintenance for public safety.

Item 6: This project is an infrastructure project as walkovers must be constructed. A competitive bid process will be undertaken to acquire the best contractor at the best price for the work. This benefits the economy by placing work into the region, thus offering construction jobs that may not have previously existed. The infrastructure project provides ecological benefits because it protects the dune habitat, wildlife nesting areas and indirectly helps protect upland infrastructure.

Item 8: Promotion of Gulf Coast Region tourism may not initially sound like it is a benefit of this project, but it is. The installation of dune walkovers helps with disabled access to the beach and can be used in promoting beach access for this target audience. Ft. De Soto Park also provides beach wheelchairs for use and the walkovers will provide much needed access to the beach itself. Additionally, marketing of Ft. De Soto beaches with beautiful dunes cascading around dune walkovers is a typical type of marketing scene. Easy beach access spreads readily by word of mouth and social media amongst beachgoers. Searching online for Ft. De Soto Park results in hundreds of photos dune walkovers will rapidly be added to social media photos that unofficially promote the park and tourism. Beaches are the primary tourism draw to Pinellas County and Ft. De Soto Park was named as the best beach in the nation in 2005. Providing easy access to the beaches of this park can only serve to further tourism especially since the Tourist Development Council indicates that 95% of visitors to Pinellas County consider the beach the number one reason for choosing this area to spend their vacation.

#### **9. Previous Claim:**

Is the proposed activity included in any claim for compensation paid out by the Oil Spill Liability Trust Fund after July 6, 2012? If yes, this activity is not eligible for Direct Component grant.

Yes: ☐  
No: ☒

#### **10. RESTORE Act Pinellas County priorities addressed:**

(Step 2 - Criteria 5 and 6)

*List which of the following priorities will be addressed and how each priority will be addressed.*

a. **Protect and restore native habitats**

- b. Provide stormwater quality improvements
- c. Create policies, programs, and/or mechanisms to remediate environmental and/or economic damages
- d. Create policies, programs, and/or mechanisms to protect against future environmental and/or economic vulnerability
- e. Provide climate change/sea-level rise planning, adaptation and/or related community engagement
- f. Provide flood and storm protection to infrastructure and other publically owned assets that consider resilience and changing sea levels
- g. Implement or further actions in the Pinellas County Post Disaster Redevelopment Plan  
Link to Plan: <http://www.postdisasterplan.org/pdrp.shtml>
- h. Diversify and improve the economy including tourism
- i. Promote sustainable recreational fishing and consumption of seafood dependent on Gulf ecosystem, and/or protect or promote working waterfronts

Installing dune walkovers will allow the currently damaged dunes to recover and accrete sand and grow vegetation. As the dunes build in size they serve to protect the upland from the impact of storms. Healthy dune systems protect the coast by mitigating before a disaster to reduce risk from future storms (items a, c & d). This is one means to implement actions of the Pinellas County Post Disaster Redevelopment Plan (PCPDR) and the Pinellas County Comprehensive Plan. According to the PCPDR, “tropical storms/hurricane events as well as flooding events pose the greatest risk to Pinellas County in terms of probability, extent of damage, vulnerability and impact and potential loss” (page 3-38) (item g). The maintenance of healthy dune systems, which is enhanced by dune walkovers, is the first line of protection against storms and flooding. The dunes in the project area will be of particular importance in the protection of the batteries at Fort De Soto which are in the National Historic Register. This project further implements the PCPDRP as it complies with standard land management practices to protect the dune system in the park. Per page 5-63 “in many instances open space management practices are consistent with the goals of reducing hazard losses, such as the preservation of wetlands, or other flood prone areas in their natural state in perpetuity”. This project helps to protect the dune system from human damage and retain the dunes in natural state. “The County’s natural lands are often the first line of defense in a storm and are foundational to the County’s character and quality of life, a cornerstone of the local economy and critical contributors to regional biodiversity and the function of the larger ecosystem.” This statement on page 8-114 explains succinctly why dune walkovers fulfill Pinellas County Restore Act criteria.

As a beach that has been ranked the best beach in America and repeatedly is noted by TripAmerica as an outstanding beach location, providing disabled access and environmentally friendly access to the beach will further promote tourism (item h). This location is nationally and internationally known and the installation of dune walkovers will enhance the site that brings tourists to the park. Tourists spend money which furthers drives the economy in Pinellas County.

## 11. Project Location

(Step 1)

*As applicable, describe the location, attach a map and indicate the address, city, zip code, longitude/latitude, and watershed:*

Project location is along the northwest side of Ft. De Soto Park, which is situated at the southernmost point of Pinellas County; buffeted by Tampa Bay to the east and south and by the Gulf of Mexico to the west. Please see attached maps. Since the park is over 1,100 acres, the coordinates provided are at the proposed project site and not at the park entrance or administration facility.

Park address is:

**Ft. De Soto Park  
3500 Pinellas Bayway S.  
Tierra Verde, FL 33715**

**Watershed: Tampa Bay**

**Coordinates:**

**Lon: -82 44'11.82" W**

**Lat: 27 36'52.66" N**

## **12. Region or Geographic Area Impacted by Project**

(Step 1 and Step 2 - Criterion 7)

*Provide a description of the project area or region in which environmental or economic benefits will be realized. Be as specific as possible by listing cities or geographical boundaries and why.*

The project area is situated along the beachfront of Ft. De Soto Park from the Gulf Pier to North Beach, approximately 1.5 miles in length. This is located on the west side of the park. Currently the site contains footpaths that scar the dune system and create erosion of sand dunes. Substantial environmental benefits will be realized with this project (dune restoration, reduction/elimination of erosion, protection of upland, protection of nesting sea turtles and shorebirds etc.). This shoreline is a nesting location for sea turtles, primarily federally threatened loggerheads. Protecting the natural habitat from erosion and trampling by pedestrians provides a measure of protection to these nests. If the sand dunes are destroyed by public use, the sea turtle nesting areas and shorebird nesting areas are no longer viable and considerable environmental diversity is lost. This site is also internationally known as a major migration route for birds. Ft. De Soto Park is a gateway location on the Great Florida Birding Trail and attracts many thousands of birding enthusiasts weekly during bird migration time. The sighting of an unusual bird hits bird listserves and/or social media and birders visit the park in busloads to observe the bird life. Along the way they use fuel, eat at local restaurants, stop for snacks & drinks and provide a boost to the local (Pinellas County) and regional economies (several surrounding counties such as Manatee, Hillsborough, Sarasota, Pasco etc).

The park mailing address is Tierra Verde; however, the park is usually associated with a St. Petersburg location. With up to 3.2 million annual visitors that come from local, regional, national and international locations, the park generates considerable economic impact on the region. Visitors spend money to camp in the park, and then sightsee, take boat rides, rent cars, eat out, visit regional museums and art galleries, fish, attend sporting events and a wide assortment of other activities. Money is also spent at local concessions to buy fishing gear, bait and assorted sundries for fishing in the park. Ft. De Soto Park's beaches and sand dunes are also renowned for their presence in films and advertising clips.

Coastal recreation is valued at \$43,200 for every 1,000 visitors to a state park per the Florida Oceans and Coastal Council, Florida's Ocean and Coastal Economies Report. Frequently confused for a state park, if this number is extrapolated to the average visitation figures of 2.7 million annual visitors to Ft. De Soto Park, this represents an economic impact of \$116,640,000 annually.

### **Discussion of Specific Activity**

*Describe the project by responding to each of the following topics.*

### **13. Project Description – Discuss the essential elements of the project. Include what is proposed, clearly list major project tasks or program milestones, the project duration, and why it should be done.**

This project proposes the design, permitting and construction of a series of dune walkovers along a stretch of up to 1.5 miles of beach at Ft. De Soto Park, from the Gulf Pier parking lot northward to North Beach parking lots. The number of dune walkovers to be installed can be adapted to the available funding and cost of the project. In an unrealistic scenario of unlimited funding a total of at least 12 walkovers would be constructed. Due to the long distances a dune walkover must be constructed to carry pedestrian traffic at the project site, it is more likely that 5 may be constructed.

Essential elements of project: These are also the milestones of the project:

1. Design
2. Permitting
3. Construction
4. Construction inspection

Project tasks:

1. Prepare consultant scope of services for design & permitting
2. Contract review process
3. Let request for proposal to public for consultant services
4. Perform design
5. Acquire permits
6. Prepare bid package, specifications for construction
7. Contract review process
8. Let request for proposal to public for construction services
9. Commence construction

10. Consecutively perform construction inspections
11. Complete construction: perform final inspection-generate punch list & complete items
12. Acquire as-built
13. Open dune walkovers to public

**Duration of Project:**

This is dependent upon the time it takes to acquire permits. That process can vary greatly depending upon the permitting agency's request for additional information, backlog of work and assorted other factors.

Turtle and bird nesting season will also impact this project. No work will be performed during turtle nesting season as the dune walkover construction approaches the beach area. That limits the project progress during the time frame of May to October. This timeline can also be extended as some turtles may build nests earlier than May.

**Therefore, the duration of project timeline is an estimate that may be impacted by these variables.**

Prepare scope of services/review etc:	3 months
Design:	6 months
Permitting:	12 months
Prepare bid package	3 months
Construction	12 month
<u>Project wrap up/as-built</u>	<u>1 month</u>
Total project time:	3 years +/-

Why the project should be done has already been thoroughly addressed in questions previously. Summary: environmental sustainability, disabled access to beach, reduced erosion, stabilization of dunes, protection of sea turtle and bird nesting areas, economic impact to region, protection of natural resources, job creation and others.

**14. Project Manager and Key Project Team Members - include credentials and experience doing similar work.**

**Project manager:**

Debbie Chayet, Senior Grants Specialist, will facilitate the project. Ms. Chayet, in her role as Sr. Grants Specialist, has coordinated over \$30 million dollars of grant projects for Pinellas County. These include major infrastructure projects such as the restoration of the Ft. De Soto Fort, Pinellas Trail repairs, development of Eagle Lake Park & Joe's Creek Greenway Park, reconstruction of Belleair Boat Ramp Park, multiple large scale habitat restoration projects at Wall Springs Park, McKay Creek Greenway, Chesnut Park and many other sites. The only existing two dune walkovers (built in 2005) at Ft. De Soto Park were funded and constructed under Debbie Chayet's grant management. Ms. Chayet is skilled in project management and



grant compliance and is able to ensure the appropriate progress on construction projects is made and funding allocations follow “granting agency” requirements.

**Key Project Team Members:**

1. A vital team member will be the person from the Pinellas County Public Works Department that will be assigned to this project; most likely Professional Engineer Greg Cutrone. Mr. Cutrone and his staff (Engineers & Engineer Interns) will perform engineering project management services. This includes the development of the scope of services for design/permitting functions and also bid specifications for construction. Mr. Cutrone supervises the engineering staff that works on Parks & Conservation Resources Department construction projects. Mr. Cutrone and Ms. Chayet have worked together on multiple projects and have a working relationship based on mutual respect.
2. Purchasing Department: a staff person from the Pinellas County Purchasing Department will assist the development of boilerplate for the bid packages to be let out for public bid. They will advertise the availability of the work, open the bids, and select the consultant & contractor according to appropriate legal requirements. This is normal work activity for Purchasing Department staff.
3. Consultant-This firm, currently to be determined, will develop design specifications for this project, using a county template and modifying to meet specific needs of Ft. De Soto Park. The consultant will also acquire the permits for the project and will work closely with the County engineer.

**15. Environmental and/or Economic Benefits - Describe environmental and/or economic benefits of the project.**

According to “Economics of Beach Tourism in Florida (2006)” the total contribution of the Southwest Beach Region (inclusive of Pinellas County) to the economics of Florida is \$13 billion. This equates to 177,000 jobs. Roughly 83% of the tourists to the Southwest region visit beaches. Ft. De Soto Park North Beach was designated the Best Beach in America in 2005 and the following year attendance at the park topped 3.2 million; a new attendance record for the park. Economic benefits are not limited to just the beach attendance. The ripple effect of beach visitors impacts local and regional businesses that provide fuel, restaurant services, lodging, recreational facilities, rentals, bait & sundries, etc for resident and out of town visitors. This beach has also been used for the film industry where advertisements have been filmed and shots for movies. This is a major economic benefit.

Environmental benefits are numerous:

- Restore & conserve habitat
  - Prevents damage to sand dunes via funneling pedestrian traffic to walkover
  - Allows continuing development of dunes
- Protect living coastal resources
  - The protection of the dunes allows for the protection of nesting sea turtles and shore birds as well as state protected sea oats
- Enhance community resilience

- Mechanism to protect against future environmental vulnerability
- Installation of dune walkovers allows the continuing growth of sand dunes
  - Dunes protect the coastal shoreline by taking brunt of storm and protecting upland resources
- Mitigation of damage to natural resources
  - Installation of dune walkovers diminishes dune erosion and allows dune damage to cease. Dunes reverse damage by accreting sand and building
- Infrastructure project benefiting ecological resources
  - Walkovers funnel pedestrians off the sand dunes, thus preventing ecological damage
- Promotion of Gulf Coast Region tourism
  - Walkovers provide disable access to beach
  - Healthy beach with diversity of coastal wildlife and birds promotes visitation by birders, residents and out of town visitors
  - Park keeps and improves upon positive national reputation
- Further actions in the Pinellas County Post Disaster Redevelopment Plan
  - Installation of walkovers furthers actions of this plan as well as comprehensive plan, state recommendations etc.

**16. Technical Feasibility** - Describe technologies and relevant past experience or proven success with similar projects.

This project does not involve any advanced technology. The construction of dune walkovers is straightforward. With sufficient funding, walkovers may be constructed of composite material; a combination of recycled woods and plastics. This product has a longer life expectancy; however, it requires more stringers during construction than traditional wood decking. The surface can be slippery when wet and would need anti-slip material placed on it. Most likely the design would specify wood decking and composite handrails which would minimize splinters in hands. Wood requires frequent treatment with sealant and can be more maintenance demanding. In that regard, composite would have significantly less ongoing maintenance for the park staff.

Parks & Conservation Resources Department (PCR) staff has experience with all wood boardwalks, all composite boardwalks and a combination of wood and composite. The product to be used at this site will be thoroughly discussed prior to design. Experience indicates there is no perfect product that is completely maintenance free. PCR maintains miles of boardwalk throughout its parks, including dune walkovers at Sand Key Park, beach access parks, Weedon Island Preserve and inland parks. Their ultimate selection will be based on these years of experience, available funding and the best return on investment.

**17. Public Acceptance** - Describe any known or potential public approval or opposition to the project.

No public opposition to this project is known. The Friends of Ft. De Soto Park supports the installation of dune walkovers. The Friends group is a 501 (c) (3) volunteer organization whose mission is to support the park and assist with sweat equity and financial needs.

#### **18. Project Activity Budget Justification:**

*Provide the total project cost and costs by identified tasks for the following items. Provide specific justification for all that apply.*

- Personnel and fringe: **\$117,042.36**

This cost is derived from the hourly pay of the Public Works Professional Engineer and Engineering Specialist I who will be working on this project. Cost covers labor for the development of scope of services for consultant, review of contracts, development of construction contract specifications, meetings, including pre-construction meeting etc. Cost also includes labor associated with construction building inspection by Project Coordinator from Public Works.

*Please see attached budget detail.*

- Travel including the number of trips and estimated cost per trip: \$0
- All equipment greater than \$1,000: \$0
- Supplies including a list of major types of supplies: \$0
- Contractual costs: **\$1,000,000 (option for Phase 1 at \$500,000, Phases 2 & 3 at \$250,000 each.) for installation of five dune walkovers totaling 1,290 linear feet.**  
*Please see attached budget detail.*
- Administrative costs not to exceed 3% of the total award: \$0
- Future costs related to maintaining the project, the funding source, and responsible entity:

Future costs involve dune walkover safety inspections and dune walkover maintenance. Safety inspections will be performed by a park staff person at least every two weeks and involve observing and walking the structures and checking for broken decking, stringers, washouts around pilings, nails working out of decking, slippery surfaces and similar items. Maintenance involves the repair of any items. This might include replacing individual boards on the decking, sections of handrail, removal of sand on the deck, replacement of side rails etc.

All costs related to maintaining the project will be absorbed by Ft. De Soto Park in the Parks & Conservation Resources Department budget.

**TOTAL PROJECT COST: \$1,117,042.36**

***See attached budget detail.***

Additional dune walkovers further north along the beach could easily be added to this project to increase the overall project allocation.

**19. Describe how the project will utilize a collaborative approach that incorporates partnerships, if applicable.**

(Step 2 - Criterion 8)

*List any project partners and briefly describe their involvement and contribution to the project.*

Both the Friends of Ft. De Soto and Tampa Bay Watch have been long standing partners in funding acquisition of sea oats and providing sweat equity with sea oat planting in continual enhancement of dune development on the beach. These partnerships are expected to continue. Although none are anticipated, any nearby dune impacts from dune walkover construction will be restored with planted sea oats. While dunes are expected to naturally mitigate and accrete sand near the dune walkovers, this process will be assisted with planted sea oats if needed.

The St. Petersburg Audubon Society is also a long-standing partner of the park and supports this project. This group monitors the shorebirds and dune nesting birds. They have been instrumental in establishing protected sections of the beach where birds may try to nest uninterrupted by human use of the park. The installation of dune walkovers should reduce nesting bird/people interaction; an Audubon success. Please see attached letter of support.

**20. Describe how the project will support, further, or help implement one or more Pinellas County Comprehensive Plan Element goal(s) as identified in the overarching project goals, if applicable. Clearly list each Comprehensive Plan Element goal addressed.**

(Step 2 - Criterion 9)

*Link to Applicable Comprehensive Plan Element Goals:*

[www.pinellascounty.org/restore/pdf/comp-plan-goals.pdf](http://www.pinellascounty.org/restore/pdf/comp-plan-goals.pdf)

**ELEMENT: Future Land Use and Quality Communities:**

**GOAL ONE:** THE PATTERN OF LAND USE IN PINELLAS COUNTY SHALL PROVIDE A VARIETY OF URBAN ENVIRONMENTS TO MEET THE NEEDS OF A DIVERSE POPULATION AND THE LOCAL ECONOMY, CONSERVE AND LIMIT DEMANDS ON NATURAL AND ECONOMIC RESOURCES TO ENSURE SUSTAINABLE BUILT AND NATURAL ENVIRONMENTS, BE IN THE OVERALL PUBLIC INTEREST, AND EFFECTIVELY SERVE THE COMMUNITY AND ENVIRONMENTAL NEEDS OF THE POPULATION.

Because this project assists in conserving, preserving and restoring coastal dune habitat as well as providing public access to the beach, it supports the portion of the goal that references conserving and limiting demands on natural resources. It also supports the part that references effectively serving the community and environmental needs of the population while ensuring sustainable natural environments.

ELEMENT: Natural Resource Conservation & Management, Natural Systems & Living Resources:

**GOAL TWO:** PINELLAS COUNTY WILL CONSERVE, PROTECT, RESTORE AND APPROPRIATELY MANAGE ITS NATURAL SYSTEMS AND LIVING RESOURCES ENSURE THE HIGHEST ENVIRONMENTAL QUALITY POSSIBLE.

This project fully implements Goal Two. The project helps conserve and protect existing sand dunes. It helps restore dunes via prevention of further damage and allowing accretion of sand. The installation of dune walkovers is a very appropriate and state and federally supported coastal management practice on coastal ecosystems. The installation of dune walkovers also protects state and/or federally listed (protected) flora and fauna (living resources), thus ensuring the highest environmental practices are implemented to secure a quality environment.

ELEMENT: Natural Resource Conservation & Management, Environmental Lands & Resource-Based Parks:

**GOAL THREE:** PINELLAS COUNTY'S ENVIRONMENTAL LANDS AND RESOURCE-BASED PARKS ARE THE HALLMARK OF THIS COUNTY'S ENVIRONMENTAL COMMITMENT, AND THESE LANDS ARE TO BE PROTECTED AND MANAGED IN PERPETUITY FOR THEIR CONTRIBUTION TO THE BIODIVERSITY AND BIOLOGICAL SUSTAINABILITY OF THE REGION, AS A MEANS OF PROVIDING RESPITE FROM URBAN LIFE AND BECAUSE THEY INSTILL FUTURE GENERATIONS WITH A SENSE OF APPRECIATION FOR FLORIDA'S NATURAL HERITAGE.

The first sentence of this goal states how resource-based parks are the hallmark of Pinellas County's environmental commitment. Ft. De Soto Park has long been the crown jewel of the County parks. Sized at over 1,100 acres and providing over 7 miles of beaches for public access, this county park is often mistaken for a state park. Attendance figures average around 2.7 million visitors annually and topped 3.2 million visitors in 2005 when the park was named the best beach in the nation. This honor was again bestowed upon Ft. De Soto when TripAdvisor ranked it the best beach in 2009. This goal further references protection of the park in perpetuity due to the biodiversity and the importance of the biological sustainability. Ft. De Soto Park is not only a major birding hotspot; it is a Gateway site on the Great Florida Birding Trail. Over 325 species of birds have been documented here. This includes many federally and state protected species; many of which nest in the park and on the beach. Ft. De Soto Park is also an annual nesting site for federally protected sea turtles, with a whopping 100+ loggerhead nests recorded on the beaches of this park last year.

One of the reasons the park is so popular is public access to its beautiful white sandy beaches. The beaches on the west side of the park are so heavily used that pathways have been gouged out in the dunes by people trying to access the beach. People come to the beach as a "respite from urban life". Installation of dune walkovers will help provide proper stewardship of this property and keep it available in natural condition for future generations.

ELEMENT: Natural Resource Conservation & Management, Promoting Environmental Stewardship:

**GOAL FIVE:** PINELLAS COUNTY WILL BE A RECOGNIZED LEADER IN ENVIRONMENTAL EDUCATION AND LOCAL ENVIRONMENTAL STEWARDSHIP.

The desire to implement this project which provides the list of benefits below, a great many of which are ecological benefits, speaks to Pinellas County's position as a leader in environmental stewardship. Pinellas County (now called) Parks & Conservation Resources Department won the first ever awarded national County Leadership in Conservation Award given jointly by the Trust for Public Lands and the National Association of Counties. This recognition dramatically speaks to the environmental stewardship of Pinellas County.

ELEMENT: Coastal Management, Beaches & Dunes:

**GOAL TWO:** PINELLAS COUNTY SHALL CONSERVE, MAINTAIN AND RESTORE COASTAL BEACH AND DUNE SYSTEMS TO BALANCE THE BENEFITS TO STORM PROTECTION, RECREATION, AND THE ECONOMY WITH THEIR FUNCTION AS A NATURAL RESOURCE.

This project implements the entirety of Goal Two of the Coastal Management Element, as identified in the benefits list.

ELEMENT: Recreation, Open Space & Culture, The Provision of Recreation & Open Space:

**GOAL ONE:** TO ADMINISTER OUTSTANDING COUNTYWIDE RECREATIONAL, OPEN SPACE AND ENVIRONMENTAL SYSTEMS THAT PROVIDE, THROUGH ACQUISITION, DEVELOPMENT AND MAINTENANCE, SUFFICIENT RESOURCE-BASED REGIONAL PARKS AND ENVIRONMENTAL LANDS THAT ARE ENVIRONMENTALLY SUSTAINABLE, FOSTER ENVIRONMENTAL STEWARDSHIP, AND ENHANCE THE COUNTY'S ECONOMIC VITALITY AND THE QUALITY OF LIFE FOR RESIDENTS AND VISITORS.

Providing sustainable beach access within a County park supports this goal.

ELEMENT: Recreation, Open Space & Culture, Sustainability of the County's Recreation & Open Space System:

**GOAL SIX:** TO PRACTICE AND PROMOTE A SUSTAINABILITY ETHIC, ENSURING THAT ECOLOGICAL LIMITS AND ENVIRONMENTAL IMPACTS ARE CONSIDERED IN ALL DECISIONS AND DESIGNS AFFECTING CULTURAL, RECREATION AND OPEN SPACE PLANNING, AND THAT ALL DECISIONS AND PROJECTS CONTRIBUTE INCREMENTALLY TO ACHIEVING AND SUSTAINING SOCIAL EQUITY, ECONOMIC PROSPERITY AND A QUALITY COMMUNITY FOR CURRENT AND FUTURE RESIDENTS.

As this goal states, this project does ensure that ecological limit and environmental impacts are strongly considered in decisions and design related to the project. That is the very reason for the project.

**21. Describe the benefits the project will provide, for how long, and why:**

(Step 2 - Criterion 10)

*Benefits may be economic, social, and/or environmental. Explain how the benefits will or could be identified, assessed, and/or measured. Describe and quantify environmental and/or economic benefits as applicable [e.g., area restored (acres, linear feet), improved ecosystem services, jobs created/preserved, pollutants and/or nutrients removed (e.g., kg, pounds, tons)].*

This project will provide multiple benefits, as referenced in several questions above. In recap, the following are benefits of this project:

1. Restore & conserve habitat
  - a. Prevents damage to sand dunes via funneling pedestrian traffic to walkover
  - b. Allows continuing development of dunes
  - c. Environmentally sensitive mechanism for reducing erosion and sediment transport upland
  - d. Reduced fragmentation of dune system
2. Protect living coastal resources
  - a. The protection of the dunes allows for growth and spread of state protected sea oats
  - b. Maintains suitable beach habitat for nesting sea turtles, invertebrate species, and shorebirds
3. Enhance community resilience
  - a. Mechanism to protect against future environmental vulnerability
  - b. Installation of dune walkovers allows the continuing growth of sand dunes
    - i. Dunes protect the coastal shoreline by taking brunt of storm and protecting upland resources
    - ii. Reduces expected storm erosion damage to park upland infrastructure
    - iii. Short-term offset to climate change beach migration
4. Mitigation of damage to natural resources
  - a. Installation of dune walkovers diminishes dune erosion and allows dune damage to cease. Dunes reverse damage by accreting sand and building
5. Infrastructure project benefiting ecological resources
  - a. Walkovers funnel pedestrians off the sand dunes, thus preventing ecological damage
6. Promotion of Gulf Coast Region tourism
  - a. Walkovers provide disable access to beach
  - b. Healthy beach with diversity of coastal wildlife and birds promotes visitation by birders, residents and out of town visitors
  - c. Park keeps and improves upon positive national reputation
7. Further actions in the Pinellas County Post Disaster Redevelopment Plan
  - a. Installation of walkovers furthers actions of this plan as well as comprehensive plan, state recommendations etc.
8. Conserve existing dunes and provide opportunity for sand accretion to build up beach area

- a. Use for recreational opportunities
- b. Increased tourism
  - i. Increased economic benefit

Up to 1.5 miles of beach will benefit from this project. The ecosystem services benefit are hard to measure as the preservation of a single sea turtle nest could equate to un-measurable long term benefits.

**22. Possible material risks to implement and maintain the proposed activity:**

*List possible material risks, e.g., operational, legal, regulatory, budgetary or ecological. Include brief description of mitigation strategy to address each identified risk.*

This project is straightforward and bears little risk. The project will require a permit to proceed due to its location seaward of the Coastal Construction Control Line. The Florida Department of Environmental Protection manages the Coastal Construction Control Line (CCCL) Program under the authority of Chapter 161 Florida Statutes, the “Beach and Shore Preservation Act.” This is not considered a regulatory risk, however, as dune walkovers are considered beneficial to protection of coastal dunes. The project will also bear no ecological risk as walkovers will also provide protection to nesting shorebirds and sea turtles. Construction will be stopped during sea turtle nesting season. Shorebirds nesting nearby will be cordoned off so nests are not disturbed.

**23. Best Available Science:**

*Only answer if proposed activity will serve to protect or restore natural resources, otherwise, indicate “Not Applicable.” Briefly describe how the project will use best available science with respect to peer reviewed literature, objective(s), and methodologically sound literature sources that support the scope of work, when available.*

From the most basic perspective, not much scientific literature exists that supports the installation of dune walkovers as a mechanism to protect or restore beaches. Much literature addresses the benefits that have been identified as outcomes of this project due to conservation of sand dunes and beaches. A great deal of scientific literature exists that negates the use of shoreline hardening, such as seawalls, for this purpose.

Years of experience support this proposed project. The literature that does specifically support the use of dune walkovers includes:

1. “FEMA P-55, Coastal Construction Manual: (Chapter on) Dune Walkover Guidance” : *The Florida Department of Environmental Protection encourages the design of beach access, including beach and dune walkovers, to protect the dune topography and dune vegetation from pedestrian traffic and allow for the natural recovery of damaged or eroded dunes*”. Page 3; Produced by FEMA, with statement from Florida Department of Environmental Protection Bureau of Beaches & Coastal Systems document.



2. "Building Back the Sand Dunes": "***Three Things You Can Do To Protect Sand Dunes***; 1. *Use Dune Walkovers and Designated Beach Access Points to Cross the Dunes.*" Page 3; Produced by Florida Department of Environmental Protection, Bureau of Beaches & Coastal Systems & United States Fish & Wildlife Service.
3. "Shoreline Enhancement and Restoration": "*Dune Restoration-Here's How You Can Help; Use Dune Walkovers-A few extra steps may be all it takes to protect the plants that hold the dune in place. Serious erosion problems are caused by pedestrian traffic and by dragging....objects across the dunes*". Last page. Produced by Palm Beach Department of Environmental Resource Management.
4. "City of South Padre Island Erosion Response Plan": "*Dune walkovers remove the pedestrian traffic from the dunes that lead to erosion and blowouts along the frontal dunes. The most harmful activity that takes place on the dunes is the continuous pedestrian traffic that leads to low elevations. Storm surge makes its way up the paths and erodes the path with each wave which can eventually undermine the massive dunes that provide protection*". Page 46. Produced for Texas General Land Office by Ravella Consulting, LEAP Engineering, Three Rivers Studio, and Coastal Resource Manager.

#### **24. Matching/Other funding**

(Step 2 - Criterion 11)

*Indicate:*

- The amount and percent of the total project cost secured and the source of each matching fund secured. Restore Act funds can be matched with other federal sources of funding.
- If matching funds are not secured, specify the amount of matching funds requested or expected.
- The date the amount of secured funds will be known.

No cash match is secured at this time. Pinellas County will provide a considerable amount of in-kind match to the project. In-kind match will be provided in the form of Restore Act fund management, project management etc by Sr. Grants Specialist in Office of Management and Budget. In-kind match will be provided in the form of contract review administration by Contracts Administrator in Public Works. In-kind match will be provided in the form of Public Works permitting staffer to coordinate permit receipt and filing. In-kind match will be provided in the form of daily site monitoring by Parks & Conservation Resource staff. In-kind match will be performed in the form of periodic site visits by Public Works engineers not listed as Key Team Members. In-kind match will be performed in the form of periodic visits by Coastal Management staff. Permanent maintenance will be performed by park staff; the ultimate in-kind match.

Through the estimated 3 +/- year timeline of this project, in-kind match may exceed \$45,000.

#### **Readiness for Implementation**

(Step 3)

Complete the following:

**25. Will the project be completed within 5 years from date funding is confirmed?**

Yes: X

No:   

**26. Identify each project milestones and proposed duration (no. of months) to complete each step and the total number of months or years to complete the project.**

Prepare scope of services/review etc:	3 months
Design:	6 months
Permitting:	12 months
Prepare bid package	3 months
Construction	12 months
<u>Project wrap up/as-built</u>	<u>1 month</u>
Total project time:	3 years +/-

**27. How long before the project can start after funds are available (months)?**

The project can commence immediately after funds are available. County staff can commence with development of scope of services to acquire a consultant and proceed forward from that point.

**28. Describe project design work, permit requirements and hurdles (federal, state, or local), and/or permitting that is in progress (*attach applicable permits or design work*).**

Pinellas County Public Works Engineering maintains a standard design template for boardwalk for use in County parks. This design will be modified as needed to best fit the conditions at Ft. De Soto Park. The use of composite recycled material to minimize long term maintenance is desired at this site and the current boardwalk design uses wood decking. This will require some design modification to add stringers and potentially change hardware. The majority of the design, however, is completed do design should proceed rapidly. See attached boardwalk design template from existing 2005 dune walkovers.

Permitting anything seaward of the Coastal Construction Control Line (CCCL) (which includes most of the land in this project) can be a potentially time-consuming process. The dune walkovers will need permits. A Florida Department of Environmental Protection permit related to the CCCL is needed. That permit will be pursued upon notification of funding availability.

This project may also require an Army Corps of Engineers (ACOE) permit. An Exemption for the ACOE permit will be requested. The two dune walkovers constructed in 2005 were permitted by the Florida Department of Environmental Protection (permit # 52-0248325-001). Page three of this FDEP permit indicates that the ACOE did not require a permit for the construction of those two dune walkovers. With that precedent, it is hoped that an ACOE permit would not be needed to construct the proposed new dune walkovers.

**29. Describe any issues or reasons that may delay project start or completion.**

Unanticipated natural disasters such as hurricanes, tropical storms. This impacts the park to a degree that a construction project might get delayed until clean-up has been achieved.

Timing of actual construction of dune walkovers will have to be coordinated to avoid any disruption or disturbance of nesting shorebirds. Construction closest to the beach will have to be performed outside the standard sea turtle nesting season of May to October.

---

**END OF QUESTIONS**

## BUDGET

Project length anticipated to be 3 +/- years.

Personnel & Fringe: **Total: \$117,042.36**

1. Professional Engineer

Year 1: (\$44.75/hour pay + \$20.88/hr fringe) x 120 hours = \$ 7,875.60

Year 2: (\$44.75/hour pay + \$20.88/hr fringe) x 56 hours = \$ 3,675.28

Year 3: (\$44.75/hour pay + \$20.88/hr fringe) x 56 hours = \$ 3,675.28

2. Engineering Specialist 1

Year 1: (\$31.36/hour pay + \$14.63/hr fringe) x 280 hours = \$12,877.20

Year 2: (\$31.36/hour pay + \$14.63/hr fringe) x 200 hours = \$ 9,198.00

Year 3: (\$31.36/hour pay + \$14.63/hr fringe) x 80 hours = \$ 2,872.00

3. Project Coordinator (Construction Building Inspector)

Year 1: (\$35.90/hour pay + \$16.75/hr fringe) x 120 hours = \$ 6,318.00

Year 2: (\$35.90/hour pay + \$16.75/hr fringe) x 1,040 hours = \$54,756.00

Year 3: (\$35.90/hour pay + \$16.75/hr fringe) x 300 hours = \$15,795.00

Contractual Cost: **Total: \$1,000,000**

Composite recycled material for boardwalk/dune walkover construction estimated price per **linear foot: \$775**

Desired outcome: Installation of **five dune walkovers** at approximately **1,290 linear feet** of dune walkovers. This provides walkovers specifically over the dunes along the beach area as identified in the attached map.

Should insufficient funds be available to construct all five dune walkovers in a single construction project, **phases have been identified**, with associated costs. **Installing walkovers in phases will take considerably longer and will be more expensive as the contractor will charge a mobilization fee and contingency fee for each phase of construction; thus actual**

on the ground linear feet of dune walkovers will be reduced and increased funding will be received by contractor.

#### **OPTIONS:**

- 1. Install all five dune walkovers as a single project.**

**a. This is the recommended option.**

**Cost for total project: \$1,117,042.36**

Personnel: \$117,042.36

Construction: \$1,000,000

- 2. Install dune walkovers identified as priority 1, in red, on map.**

**Cost for this option: \$617,042.36**

Personnel: \$117,042.36

Construction: \$500,000

- 3. Install dune walkovers identified as priority 2 or 3.**

**Cost for this option: \$367,042.36**

Personnel: \$117,042.36

Construction: \$250,000

**This option provides far less return on investment** as the same amount of work must be performed for this option as the others; i.e.: personnel cost remain the same. The contractor cost of mobilization remains the same and contingency cost is high, thus a substantially reduced quantity of dune walkover is constructed for this amount of funding. Additionally, these lower priority sites are less likely to protect the most at-risk dune sites.



Map Produced September 23, 2003

## Ft. DeSoto Park

3500 Pinellas Bayway S.  
 Tierra Verde, FL 33715  
 Park Office: 727.582.2267  
 Camp Office: 727.582.2267

Park Hours: 7:00a.m. to dusk

[Information](#) [Park Map/3-D Views](#) [Amenities](#)



**Ft. De Soto Park**  
**3500 Pinellas Bayway S.**  
**Tierra Verde, FL 33715**

**Project location is from the  
north side of the fort  
parking lot northward to  
north beach.**

**Project falls within the  
Tampa Bay Watershed.**

**Location coordinates per  
the northwest corner of the  
fort parking lot:**

**Lon: -82 44'11.82" W**

**Lat: 27°36'52.66" N**



# Ft. De Soto Park Dune Walkovers

## Priority Spots for Dune Walkovers

Priority 1-Red

Priority 2-Blue

Priority 3-Green

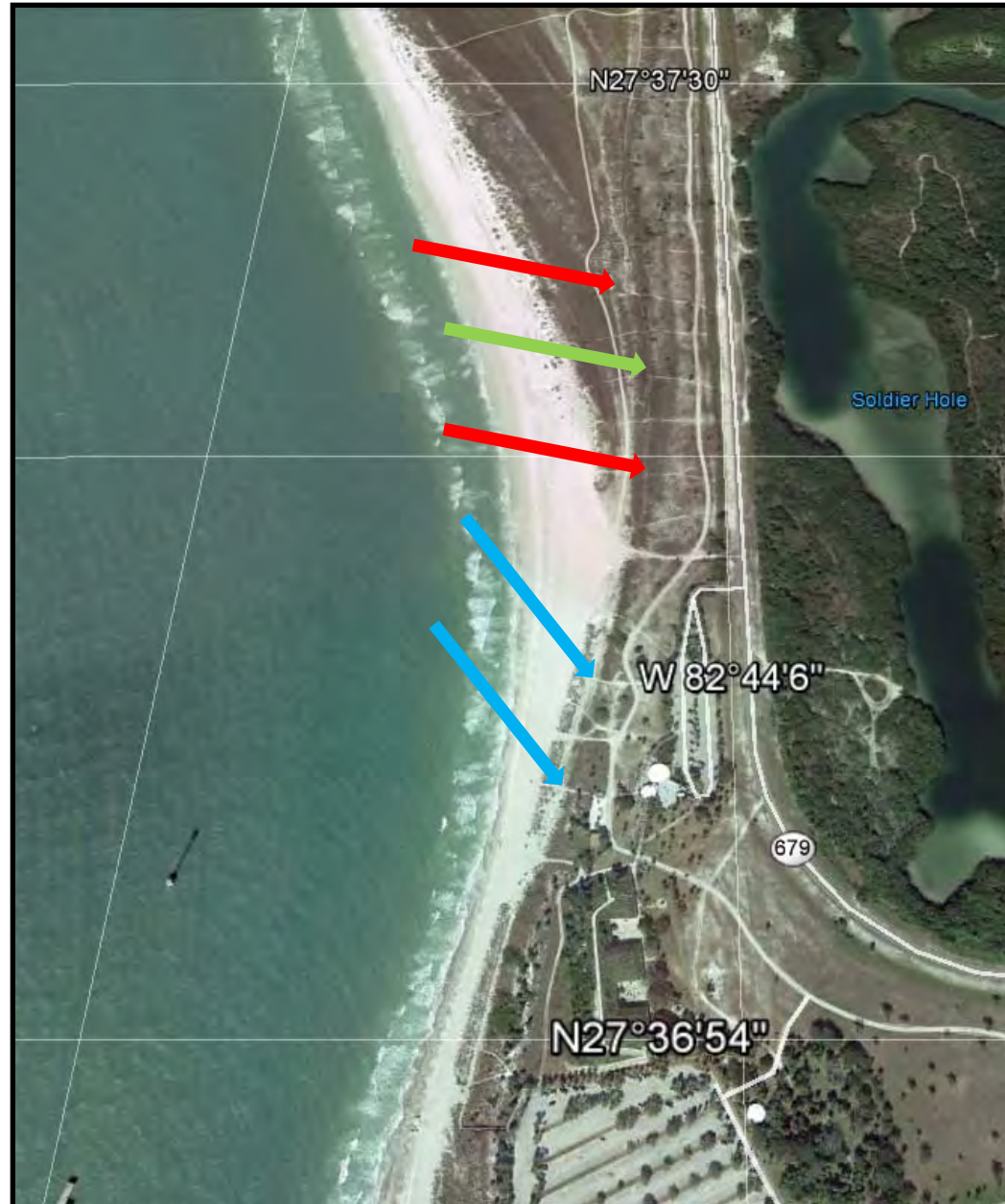
Priority 1 Cost:  
\$500,000

Priority 2 Cost:  
\$250,000

Priority 3 Cost:  
\$250,000

Entire Project:  
\$1,000,000

Construction





February 1, 2015



The St. Petersburg Audubon Society is a 501 (c) (3) volunteer-based organization whose mission is to protect and restore natural ecosystems important to birds and other wildlife through responsible activism and education.

In alignment with this mission, the St. Petersburg Audubon Society strongly supports the Pinellas County Restore Act application for funding of dune walkovers along the west side of the park. This stretch of beach, running from the Gulf Pier north to North Beach, is in dire need of dune walkovers. The public over time has carved out paths into the sand dunes in their efforts to access the beach, which has damaged the dunes and has caused long term dune erosion, increased high tide flooding upland, contributed to pedestrian damage to beach nesting wildlife and generally negatively impacted the environment.

Fort Desoto Park staff, in conjunction with local volunteer based organizations, has facilitated several dune plantings over the years. It is sad to see the vegetation planted by volunteers being trampled by beachgoers. The installation of dune walkovers would improve upon those conditions and would also provide disabled access to the beach.

We appreciate the effort of Pinellas County in conserving birds and wildlife and enthusiastically support installation of dune walkovers at Fort Desoto Park.

Sincerely,

Dave Kandz  
Conservation Chair  
St. Petersburg Audubon Society

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OUR PUBLIC WORKS MISSION IS TO SERVE THE CITIZENS AND VISITORS OF PINELLAS COUNTY BY PROVIDING, IMPLEMENTING, OPERATING AND MAINTAINING COASTAL, SURFACE WATER AND TRANSPORTATION PROGRAMS IN A PROFESSIONAL MANNER WHICH SUPPORTS ECONOMIC AND COMMUNITY GROWTH.

### RELATED STANDARDS AND SPECIFICATIONS

DOCUMENT	DESCRIPTION
D-1	FLORIDA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", 2000 AND ALL SUPPLEMENTAL SPECIFICATIONS THERETO.
D-2	STATE OF FLORIDA "MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION AND MAINTENANCE FOR STREETS AND HIGHWAYS", MAY, 2001.
D-3	FEDERAL HIGHWAY ADMINISTRATION "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", LATEST EDITION.
D-4	FLORIDA DEPARTMENT OF TRANSPORTATION "ROADWAY AND TRAFFIC DESIGN STANDARDS", JANUARY, 2002.
D-5	PINELLAS COUNTY ENGINEERING DEPARTMENT "SPECIFICATIONS FOR ROAD AND DRAINAGE CONSTRUCTION" (FOR CONTRACT CORRESPONDING TO THESE PLANS).
D-6	PINELLAS COUNTY, DEPARTMENT OF PUBLIC WORKS "STANDARD ENGINEERING DETAILS", LATEST EDITION AVAILABLE ONLINE (WWW.PINELLASCOUNTY.ORG/PUBLICWORKS).

### BUILDING STANDARDS AND SPECIFICATIONS

2001	FLORIDA BUILDING CODE, PLUMBING, MECHANICAL CODE AND FUEL GAS
2001	FLORIDA FIRE PROTECTION
1997	NFPA70 - NATIONAL ELECTRIC CODE

ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN REDUCED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

### UTILITY WARNING NOTE

ABOVE GROUND AND/OR UNDERGROUND UTILITIES MAY BE IN THE AREA OF THIS PROJECT - PROCEED WITH CAUTION - CALL "SUNSHINE STATE ONE CALL OF FLORIDA" AND THE UTILITY OWNER(S) 2 WORKING DAYS IN ADVANCE OF BEGINNING WORK (1-800-432-4770).

THE FOLLOWING COVERS ALL WORK PERFORMED WITHIN THE FLORIDA DEPARTMENT OF TRANSPORTATION RIGHT-OF-WAY ONLY

ALL WORK SHALL CONFORM TO:

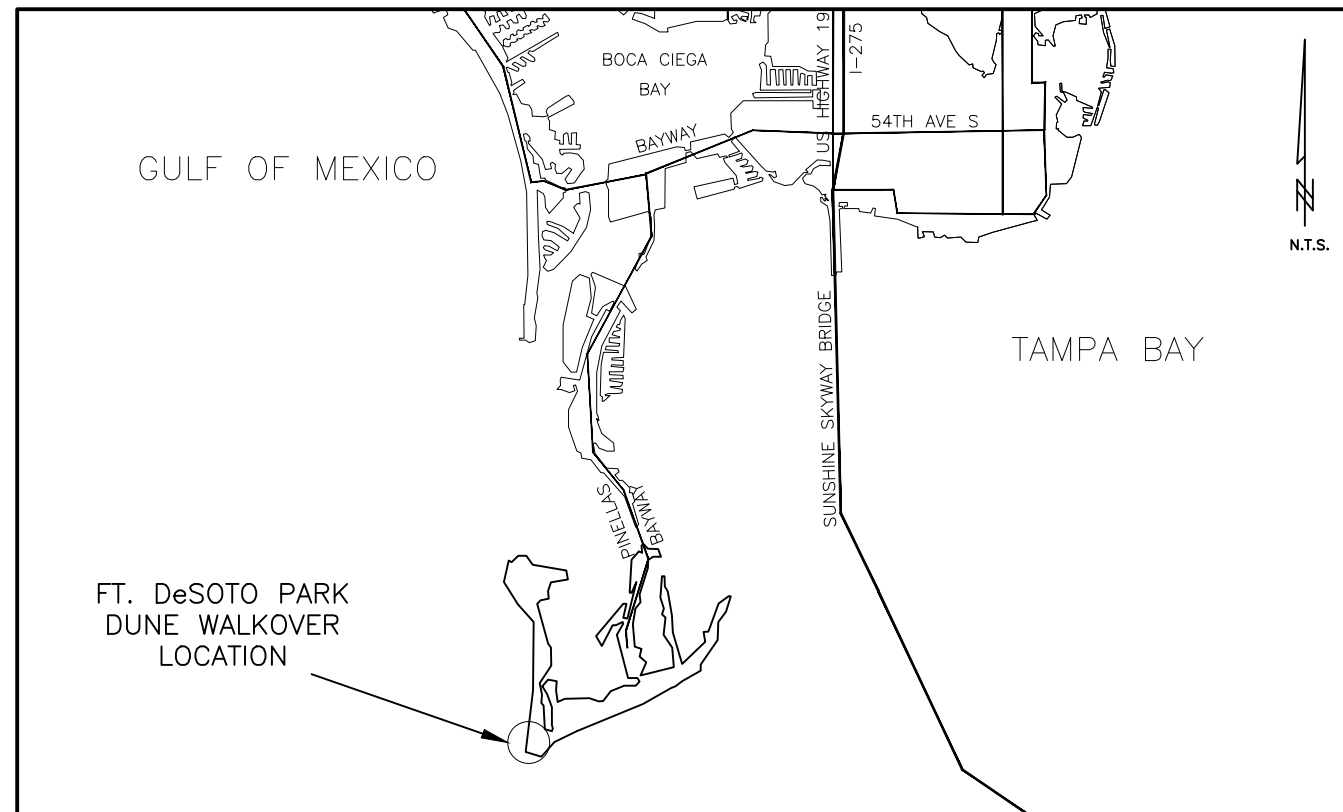
- FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (2000), (A.K.A.: STANDARD SPECS).
- FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS FOR CONSTRUCTION, MAINTENANCE AND UTILITY OPERATIONS ON STATE HIGHWAY SYSTEM (JAN. 2000), WITH INTERIM STANDARDS SUPPLEMENT (A.K.A.: STANDARD INDEX), COMPLIANCE WITH ALL APPLICABLE INDICES IS REQUIRED.
- FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY PLANS PREPARATION MANUAL VOLUME I, CHAPTER 2 & 25
- FLORIDA DEPARTMENT OF TRANSPORTATION FLEXIBLE PAVEMENT DESIGN MANUAL FOR NEW CONSTRUCTION AND PAVEMENT REHABILITATION (MAR. 1995).
- NO LANE CLOSURES ARE PERMITTED BETWEEN THE HOURS OF 5:00 AM AND 9:00 PM, UNLESS PRIOR APPROVAL IS RECEIVED FROM THE FDOT INSPECTOR.

SUMMARY OF REVISIONS	
DATE	DESCRIPTION

# PINELLAS COUNTY ENGINEERING DEPARTMENT STATE OF FLORIDA

## PLANS OF PROPOSED *DUNE WALKOVERS* AT *FT. DESOTO PARK*

P.I.D. NO. 1082



SECTIONS 18      TOWNSHIP 33 SOUTH      RANGE 16 EAST

FT. DeSOTO PARK  
DUNE WALKOVER  
LOCATION

**PINELLAS COUNTY, FLORIDA**  
Department of Public Works

HASSAN R. SHAFEE, P.E.  
FLORIDA PROFESSIONAL ENGINEER NO. 57591

DATE

**ENGINEERING DEPARTMENT**

440 COURT STREET  
CLEARWATER, FLORIDA 33756-5316  
PHONE (727) 464-3251

### PROJECT PRODUCTION TEAM (CORE MEMBERS)

PROJECT MANAGER: \_\_\_\_\_ John M. Linton, E.I.  
\_\_\_\_\_ Nedima A. Ablakovic

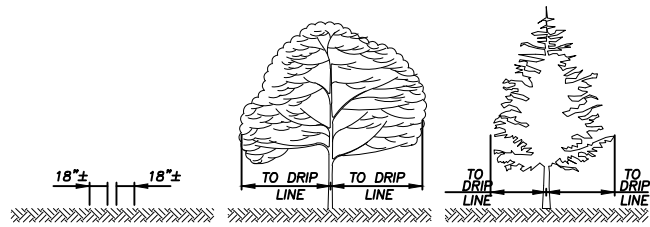
DEPT. OF ENV. MGMT.: \_\_\_\_\_ Steve Robinson  
CONSTRUCTION: \_\_\_\_\_ Laurence Ritchie  
SURVEY: \_\_\_\_\_ Susan Scholpp  
HIGHWAY: \_\_\_\_\_ N/A  
UTILITY COORDINATOR: \_\_\_\_\_ Jim Cannon  
RIGHT - OF - WAY: \_\_\_\_\_ Sonny Naar  
TRAFFIC: \_\_\_\_\_ N/A  
PARK DEPT.: \_\_\_\_\_ Joe Lupardus  
Robert Browning

SUBMITTED BY AND RECOMMENDED FOR APPROVAL BY:	ANTONIO HORRNIK, P.E., STRUCTURES DIVISION ENGINEER	DATE
RECOMMENDED FOR APPROVAL BY:	PAUL A. COZZIE, PARK AND RECREATION DIRECTOR	DATE
RECOMMENDED FOR APPROVAL BY:	JORGE M. QUINTAS, P.E. DIRECTOR OF ENGINEERING	DATE
APPROVED BY:	JAN R. HERBST, P.E., DIRECTOR OF PUBLIC WORKS	DATE

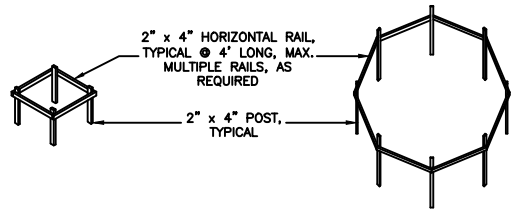
PROJECT  
LOCATION

### INDEX OF PLANS

SHEET NO.	SHEET DESCRIPTION
B01	COVER SHEET
B02	EROSION AND SEDIMENT CONTROL DETAILS
B03	GENERAL NOTES
B04	FASTENER TABLE
B05	NORTH AND SOUTH DUNE WALKOVER LOCATIONS
B06	NORTH DUNE WALKOVER LAYOUT & PROFILE
B07	SOUTH DUNE WALKOVER LAYOUT & PROFILE
B08	RAILING, PILE EMBEDMENT & PLATE DETAILS
B09	TYPICAL FRAMING PLAN AND DETAILS
B10	TYPICAL 30 AND 45 DEGREE FRAMING PLANS
B11	TYPICAL 51 AND 20 DEGREE FRAMING PLANS
B12	TYPICAL 90 DEGREE AND NON-TYPICAL CORNER FRAMING PLANS
B13	RAMP SECTION & DETAILS
B14	REST AREA LAYOUT & SECTIONS



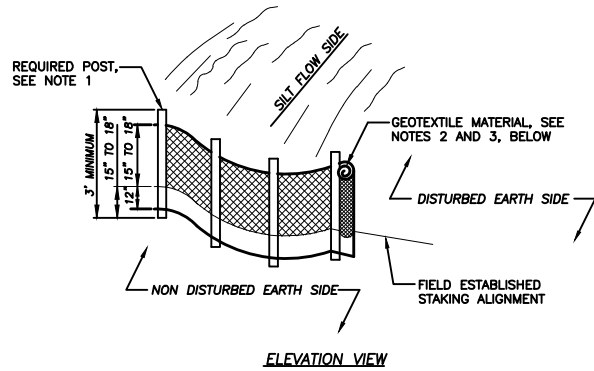
PALM TREES DECIDUOUS TREES CONIFEROUS TREES



PALMS AND SMALL TREES LARGE TREES AND BUSHES

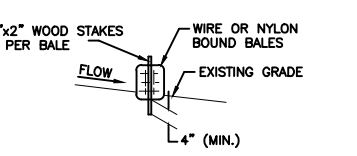
- NOTES:
1. NO TRUCKS OR HEAVY EQUIPMENT ALLOWED WITHIN BARRIERS. ONLY HAND LABOR ALLOWED.
  2. NO CONSTRUCTION MATERIALS, SOILS DEPOSITS, OR SOLVENTS SHALL BE ALLOWED WITHIN BARRIERS.
  3. BARRIERS ARE TO IN PLACE PRIOR TO ANY CONSTRUCTION ACTIVITIES WITH-IN TREE AREA.
  4. BARRIERS ARE TO STAY IN PLACE UNTIL ALL PAVING, CONSTRUCTION, AND HEAVY EQUIPMENT IS REMOVED FROM THE AREA.

TREE PROTECTION BARRIERS DETAIL  
NTS

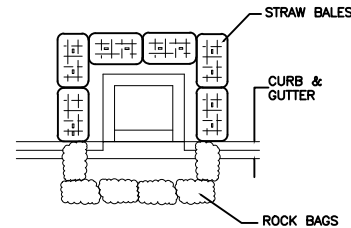


- NOTES:
1. POST: 2" x 2" WOOD, P.T. OR 2-1/2" Ø STEEL AT 6'-0" CENTERS MAXIMUM.
  2. GEOTEXTILE: GRAB TENSILE AT 90 LBS., TRAPEZOIDAL TEAR AT 35 LBS., MULLEN BURST AT 180 PSI.
  3. GEOTEXTILE MATERIAL SHALL BE BURIED IN THE GROUND A MINIMUM OF 12" AND BACK FILLED.
  4. ALSO SEE FDOT INDEX 199, "GEOTEXTILE CRITERIA", EROSION CLASS.
  5. OPTIONAL POST POSITION REQUIRED WHEN SLOPE IS GREATER THAN 1:2.

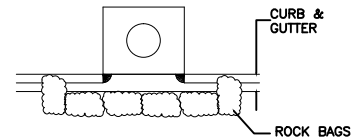
STAKED SILT BARRIER DETAIL  
NTS



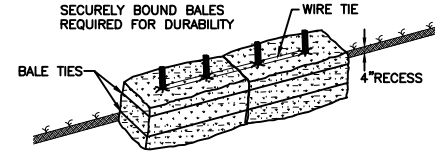
SECTION



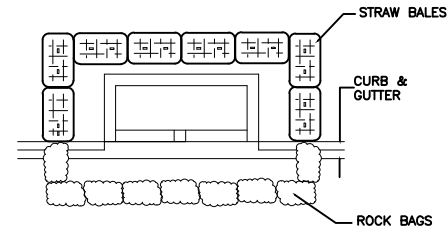
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(TYPE I)



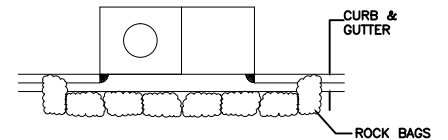
COMPLETED INLET  
(TYPE I)



ANCHORING BALES



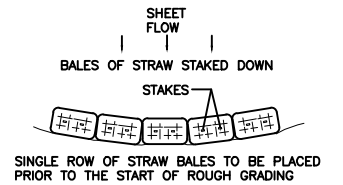
PARTIALLY COMPLETED INLET  
(TYPE II)



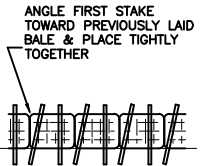
COMPLETED INLET  
(TYPE II)

BALED HAY OR STRAW BARRIERS

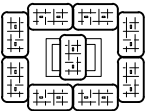
NTS



ROUGH GRADING



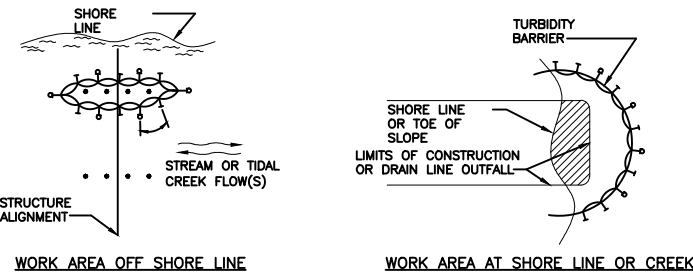
ELEVATION



DITCH BOTTOM INLET

## SOIL TRACKING PREVENTION DEVICE NOTES

1. A Soil Tracking Prevention Device (STPD) shall be constructed at locations designated by the Engineer for points of egress from unstabilized areas of the project to public roads where off site tracking of mud could occur. Traffic from unstabilized areas of the construction project shall be directed through a STPD. Barriers, flagging, or other positive means shall be used as required to limit and direct vehicular egress across the STPD.
2. The contractor may propose an alternative technique to minimize off site tracking of sediment. The alternative must be reviewed and approved by the Engineer prior to its use.
3. All materials spilled, dropped or tracked onto public roads (including the STPD aggregate and construction mud) shall be removed daily, or more frequently if so directed by the Engineer.
4. Aggregated shall be described in section 901 excluding 901-2.3. Aggregates shall be FDOT size #1. If this size is not available, the next available smaller size aggregate may be substituted with the approval of the Engineer. Sizes containing excessive small aggregate will track off the project and are not suitable.
5. The sediment pit should provide a retention volume of 3600 cubic feet/acre of surface area draining to the pit. When the STPD is isolated from other drainage areas, the following pit volumes will satisfy this requirement:  
15'x50'=100 ft.<sup>3</sup> 30'x50'=200 ft.<sup>3</sup>  
as an option to the sediment pit, the width of the swale bottom can be increased to obtain the volume. When the sediment pit or swale volume has been reduced to one half, it shall be cleaned. When a swale is used, hay bales or silt fence shall be placed along the entire length.
6. The swale ditch draining the STPD shall have a 0.2% minimum and a 1.0% maximum grade along the STPD and to the sediment pit.
7. Mitered end sections are not required when the side drain pipe satisfies the clear zone requirements.
8. The STPD shall be maintained in a condition that will allow it to perform its function. To prevent offset tracking, the STPD shall be rinsed (daily when in use) to move accumulated mud downward through the stone. Additional stabilization of the vehicular route leading to the STPD may be required to limit mud tracked.
9. A STPD shall be paid for under the contract unit price for Soil Tracking Prevention Device, EA. The unit price shall constitute full compensation for construction, maintenance, replacement of materials, removal, and restoration of the area utilized for the STPD: including but not limited to excavation, grading, temporary pipe (including M.E.S. when required), filter fabric, aggregate, paved turnout (including asphalt and base construction), ditch stabilization, approach route stabilization, sediment removal and disposal, water, rinsing and cleaning of the STPD and cleaning of public roads, grassing and sod. Hay bales shall be paid for under the contract unit price for Hay or Straw Baled, EA. Silt fence shall be paid for under the contract unit price for Staked Silt Fence, L.F.
10. The nominal size of a standard STPD is 15'x50' unless otherwise shown in the plans. If the volume of entering and exiting vehicles warrant, a 30' width STPD may be used if approved by the Engineer. When a double width (30') STPD is used, the pay quantity shall be 2 for each location.

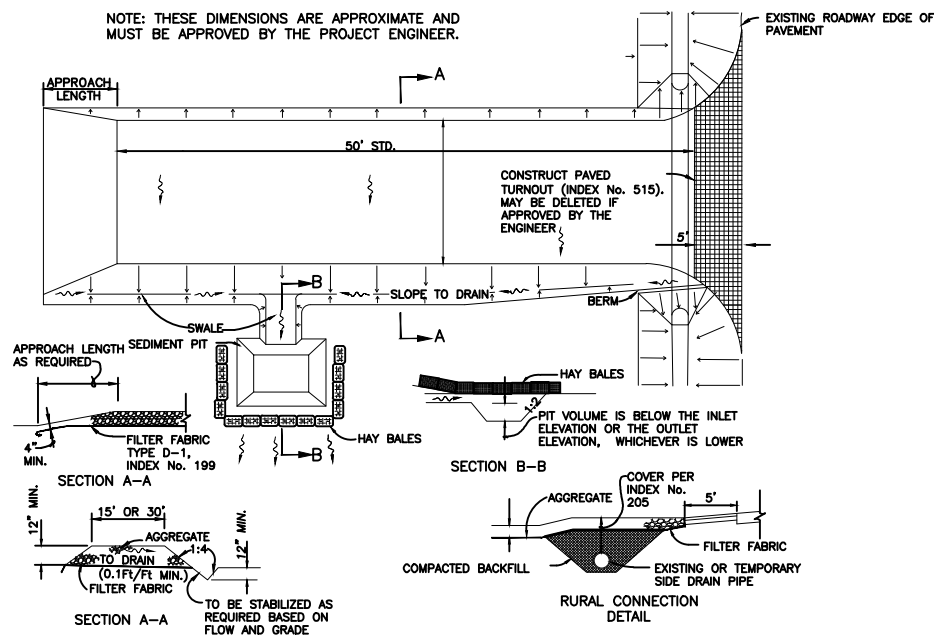


## LEGEND

- ▨ DREDGE OR FILL AREA
- MOORING BUOY W/ ANCHOR BARRIER MOVEMENT DUE
- TO CURRENT ACTION
- PILE LOCATIONS
- ~ WAVE ACTION

- NOTES:
1. CURTAIN TO REACH THE BOTTOM UP TO DEPTHS OF 10', 2 PANELS ARE TO BE USED FOR DEPTHS GREATER THAN 10' UNLESS SPECIAL DEPTH CURTAINS SPECIFICALLY ARE CALLED FOR IN THE PLANS OR AS DIRECTED BY THE ENGINEER.
  2. COMPONENTS OF TYPES I AND TYPES II MAY BE SIMILAR OR IDENTICAL TO PROPRIETARY DESIGNS. ANY INFRINGEMENT OF THE DESIGNER SHALL BE THE SOLE RESPONSIBILITY OF THE USER. SUBSTITUTIONS FOR TYPES I AND/OR TYPE II SHALL BE AS APPROVED BY THE ENGINEER.
  3. TURBIDITY BARRIERS SHALL BE USED IN ALL PERMANENT BODIES OF WATER REGARDLESS OF WATER DEPTH.
  4. NUMBER AND SPACING OF ANCHORS DEPENDENT ON CURRENT VELOCITIES.
  5. DEPLOYMENT OF BARRIER AROUND PILE LOCATIONS MAY VARY TO ACCOMMODATE CONSTRUCTION OPERATIONS.
  6. NAVIGATION MAY REQUIRE SEGMENTING BARRIER DURING CONSTRUCTION ACTIVITIES.
  7. FOR ADDITIONAL INFORMATION, SEE SECTION 104 OF THE STANDARD FDOT SPECIFICATIONS.

FLOATING TURBIDITY BARRIER DETAIL  
NTS



SOIL TRACKING PREVENTION DEVICE  
TYPE A  
NTS

REVISIONS	BY	DATE	SURVEY BOOK No.: 2422-8
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			CHECKED HRS 12/04

## DUNE WALKOVERS AT FT. DeSOTO PARK

## EROSION & SEDIMENT CONTROL DETAILS

**PINELLAS COUNTY, FLORIDA**  
Department of Public Works  
**ENGINEERING DEPARTMENT**  
440 COURT STREET  
CLEARWATER, FLORIDA 33756-5136  
PHONE (727) 464-3251

HASSAN R. SHAFEE, P.E.  
FLORIDA PROFESSIONAL ENGINEER NO. 57591  
DATE

DATE: FEBRUARY 2005  
PROJECT I.D. 1082  
SURVEY FILE NO.: 1369  
SHEET: B02 of B14

STRUCTURAL DESIGN CRITERIA:

- D01. DESIGN CODES:
- a. FLORIDA BUILDING CODE 2001.
  - b. AMERICAN INSTITUTE OF STEEL CONSTRUCTION, 9th EDITION.
  - c. AMERICAN SOCIETY OF CIVIL ENGINEERS, ASCE 7-2002
  - d. NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION, N.D.S. 2001

- D02. DESIGN LOADS:
- A. WIND LOAD:
- |                      |                                    |
|----------------------|------------------------------------|
| 1. WIND SPEED        | 130 MPH (ASSUMED COASTAL LOCATION) |
| 2. CATEGORY          | I                                  |
| 3. EXPOSURE          | B                                  |
| 4. IMPORTANCE FACTOR | 1.0                                |
- B. LIVE LOAD:
- 1. DECK = 50 psf
- C. DEAD LOAD:
- 1. DECK = 20 psf
- D. HANDRAIL:
- 1. 200# CONCENTRATED LOAD AT ANY POINT IN ANY DIRECTION. OR
  - 2. 50 plf LOAD IN ANY DIRECTION.

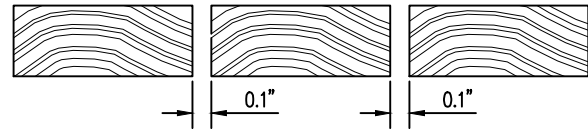
- D03. TIMBER PILE DESIGN: (ALL LOAD VALUES (lbs.) PER PILE)
- a. AXIAL: 4000 lbs
  - b. LATERAL: 1500 lbs (750 lbs GROUND LEVEL BOARDWALK)
  - c. UPLIFT: 500 lbs
  - d. MINIMUM EMBEDMENT: 8'-0".
  - e. TOP OF PILES AT TURNS SHALL BE FLUSH WITH TOP OF STRINGERS.
  - f. TOP OF PILES AT OTHER LOCATIONS SHALL BE FLUSH WITH TOP OF BEAMS, UNLESS OTHER WISE NOTED.

GENERAL NOTES:

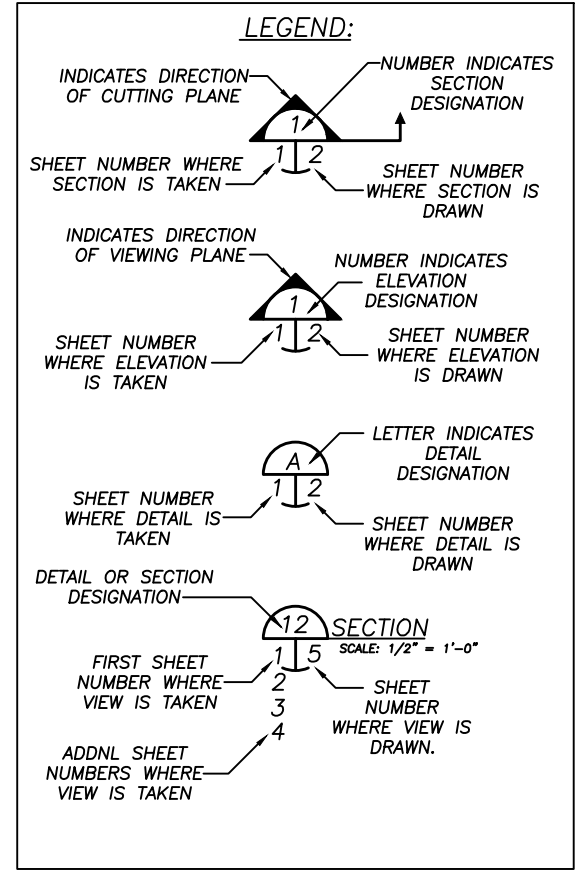
- G01. CONTRACTOR SHALL REVIEW ALL PROJECT DOCUMENTS PRIOR TO FABRICATION AND START OF CONSTRUCTION. REPORT ANY DISCREPANCIES TO ARCHITECT OR ENGINEER PRIOR TO PROCEEDING WITH WORK.
- G02. IT IS THE CONTRACTOR'S RESPONSIBILITY AT ALL TIMES TO MAINTAIN STRUCTURAL STABILITY FOR THE STRUCTURE DURING THE CONSTRUCTION PHASE OF THE PROJECT.
- G03. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT EXISTING FACILITIES, STRUCTURES AND UTILITY LINES FROM ALL DAMAGES DURING CONSTRUCTION.
- G04. NO STRUCTURAL MEMBER SHALL BE CUT, NOTCHED OR OTHERWISE REDUCED IN SIZE OR STRENGTH WITHOUT PRIOR WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER.
- G05. COORDINATE STRUCTURAL AND OTHER DRAWINGS THAT ARE PART OF THE CONTRACT DOCUMENTS FOR ANCHORED, EMBEDDED OR SUPPORTED ITEMS WHICH MAY AFFECT THE STRUCTURAL DRAWINGS.
- G06. ALL DETAILS AND SECTIONS ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUCTED TO APPLY TO ANY SIMILAR SITUATION ELSEWHERE ON THE PROJECT EXCEPT WHERE A SEPARATE DETAIL IS SHOWN.
- G07. THE INTENTION OF THE PLANS AND SPECIFICATIONS IS TO PROVIDE NECESSARY DETAILS TO DESIGN A COMPLETE STRUCTURE. WHEN SPECIFIC INFORMATION IS MISSING OR IS IN CONFLICT, THE CONTRACTOR SHALL USE A SIMILAR DETAIL AND/OR THE MORE COSTLY ITEM OF CONFLICT. THE CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S ENGINEER/REPRESENTATIVE.
- G08. THE OWNER'S ENGINEER/REPRESENTATIVE SHALL NOT BE RESPONSIBLE FOR LAYOUT, DIMENSIONAL ERRORS OR DISCREPANCIES RESULTING FROM THE REPRODUCTION AND USE OF DRAWINGS FOR ERECTION AND SHOP DRAWINGS. USE OF CONTRACT DRAWINGS REPRODUCED IN WHOLE OR ANY PART IN SHOP DRAWINGS SHALL NOT RELIEVE THE CONTRACTOR NOR SUBCONTRACTORS FROM THEIR RESPONSIBILITY TO ACCURATELY LAYOUT, COORDINATE, DETAIL, FABRICATE AND INSTALL A COMPLETE STRUCTURE.
- G09. REVIEW ALL SHOP DRAWINGS FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS AND FOR COMPLETENESS AND ANSWER ALL CONTRACT RELATED QUESTIONS. SIGN AND SEAL ALL SHEETS PRIOR TO SUBMITTING SHOP DRAWINGS TO THE ENGINEER FOR REVIEW. NONCOMPLIANCE WITH THIS REQUEST WILL RESULT IN REJECTION OF SUBMITTAL.
- G10. AFTER ALL WORK IS COMPLETED, LOOSE WOOD AND FILL MUST BE REMOVED FROM BELOW AND WITHIN THE CONSTRUCTION ZONE OF THE BOARDWALK. THIS INCLUDES ALL GRADE STAKES, TUB TRAP BOXES, FORMS, SHORING OR OTHER CELLULOSE MATERIAL.
- G11. NO WOOD, VEGETATION, STUMPS, CARDBOARD, TRASH, ETC., SHALL BE BURIED WITHIN THE CONSTRUCTION SITE.

WOOD:

- W01. DECKING AND RAILING SHALL BE NO. 1 DENSE GRADE PRESSURE TREATED SOUTHERN PINE. ALL OTHER MEMBERS SHALL BE NO. 2 GRADE PRESSURE TREATED, SOUTHERN PINE.
- W02. DECKING AND RAILING SHALL BE AIR DRIED TO LESS THAN 19% MOISTURE CONTENT, GRADED IN ACCORDANCE WITH THE SPIB GRADE RULES, SECTION 4, AND MAY HAVE ANY OR ALL OF THE CHARACTERISTICS OF THIS GRADE.
- W03. ALL DECKING SHALL BE CONTINUOUS UNLESS OTHERWISE NOTED IN THE PLANS.
- W04. EACH PIECE OF DECKING SHALL BE FACE SCREWED WITH THREE NO. 10x3" DECK SCREWS AT EACH SUPPORT.
- W05. ALL BOLT HOLES THROUGH TIMBERS TO BE AN EXTRA 1/16" IN DIAMETER RELATIVE TO THE BOLT DIAMETER.
- W06. DECKING AND RAILING WITH WANE OF 3/8" OR MORE MAY BE GROUNDS FOR REJECTION, REMOVAL AND REPLACEMENT.
- W07. INSTALL DECKING FACING DOWN AS SHOWN BELOW AND WITH MAXIMUM 0.1 INCH SPACING FOR EXPANSION.



- W08. BEAMS, STRINGERS, DIAGONAL CROSS BRACING, AND RAILS SHALL BE CONTINUOUS OVER SINGLE SPANS UNLESS OTHERWISE NOTED IN THE PLANS.
- W09. POSTS SHALL BE SOUTHERN PINE WITH A MINIMUM ALLOWABLE COMPRESSIVE STRESS OF 1200 PSI PARALLEL TO GRAIN AND SHALL BE PRESSURE TREATED IN ACCORDANCE WITH REQUIREMENTS OF AWPA C3 WITH A MINIMUM OF 0.6 ACQ RETENTION AND 0.25 WATER REPALLENT.
- W10. POSTS/PILES SHALL RUN FULL HEIGHT. NO SPLICING OF POSTS SHALL BE PERMITTED.
- W11. ALL CUTS IN POSTS/PILES ARE A MAXIMUM DEPTH. ANY CUT DEEPER THAN THE CUT DEPTH NOTED ON THE DRAWING IS GROUNDS FOR REJECTION, REMOVAL AND REPLACEMENT OF THE POSTS FOR ITS FULL HEIGHT.
- W12. ALL FIELD CUTS IN POSTS/PILES SHALL BE FIELD TREATED IN ACCORDANCE WITH AWPA STANDARD M4 PRIOR TO STRINGER SUPPORT BEAM INSTALLATION.
- W13. FIELD PRESERVATIVE CHEMICALS SHALL BE APPLIED TO ALL FIELD CUTS AND DRILLED HOLES TO MAINTAIN TIMBER PRESSURE TREATMENT INTEGRITY.
- W14. ALL PILES/POST SHALL CONFORM TO ASTM D 25-99.
- W15. PILES SHALL BE MINIMUM 8" DIAMETER AT THE TIP END AND HAVE A STANDARD LINEAR TAPER OF ROUGHLY 0.2 in/ft FROM THE TIP TO THE BUTT.
- W16. TIMBER PILES TO BE INSTALLED PER FDOT SECTION 455-6 OF THE STANDARD SPECIFICATIONS TO A 2.0 TON CAPACITY (UNFACTORED). PILES SHALL BE INSTALLED TO THE MINIMUM EMBEDMENT INDICATED ON THIS SHEET (NOTE D03), IT MAY BE NECESSARY TO PREDRILL PILE HOLES TO OBTAIN THE REQUIRED EMBEDMENT WITHOUT DAMAGING THE PILE DURING DRIVING. AUGERS USED FOR PREDRILLING SHALL BE NO LARGER THAN THE MINIMUM PILE DIAMETER.
- W17. TIMBER PILES SHALL BE SET BY DRIVING, OR JETTING, OR EXCAVATING A 12" DIA. HOLE. IF SET BY DRIVING, THE POST TIP SHALL BE DRIVEN TO THE EMBEDMENT "D" DEPTH. IF SET BY EXCAVATION, PILES SHALL BE SET CENTERED IN THE HOLE AND TO THE EMBEDMENT "D" DEPTH. THE HOLE SHALL BE BACKFILLED AND COMPACTED WITH FDOT SELECT MATERIAL AS APPROVED BY THE ENGINEER.
- W18. ALL TURNS SHOWN IN THE PLANS ARE STANDARD 30°, 45°, 90°, AND TEES. FIELD CONDITION MAY REQUIRE MODIFICATIONS; ANY MAJOR MODIFICATIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO COMMENCING THE WORK.



WOOD PRESSURE TREATMENT TABLE		
COMPONENT	CCA RETENTION (PCF)	
PILES	2.5	
COMPONENT	ACQ RETENTION (PCF)	w/ WATER REPALLENT
STRINGER, STRINGER SUPPORT BEAMS, BRACES	0.6	0.25
DECK BOARDS, RAILS AND RAIL POSTS	0.6	0.25

CONTRACTOR'S NOTE:

CONTRACTOR SHALL SECURE CONSTRUCTION SITE ALL AROUND WITH TEMPORARY FENCING AND POST NO TRESPASSING SIGNS, AND PROVIDE TRAFFIC BARRICADES TO BLOCK TRAFFIC LEADING TO STAGING / STORAGE AREA. TEMPORARY FENCING, POST NO TRESPASSING SIGNS, AND TRAFFIC BARRICADES SHALL BE PAID FOR UNDER MOBILIZATION.

REVISIONS	BY	DATE	SURVEY BOOK No.: 2422-8
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DUNE WALKOVERS AT  
FT. DeSOTO PARK

GENERAL NOTES

PINELLAS COUNTY, FLORIDA  
Department of Public Works

ENGINEERING DEPARTMENT  
440 COURT STREET  
CLEARWATER, FLORIDA 33756-5136  
PHONE (727) 464-3251

HASSAN R. SHAFEE, P.E.  
FLORIDA PROFESSIONAL ENGINEER NO. 57591

DATE

DATE: FEBRUARY 2005

PROJECT I.D. 1082

SURVEY FILE NO.: 1369

SHEET: B03 of B14

FASTENER NOTES:

- N-1

SPLICE 2x10 STRINGERS WITH THREE F2 COMMON NAILS (TYP.)
- N-2

SIMPSON HURRICANE TIE H4 EACH STRINGER
- N-3

CONNECT 6x6 RAIL POSTS TO DOUBLE 2x10 STRINGERS WITH TWO B3 BOLTS ON 3 ¼" CENTERS (TYP.)
- N-4

CONNECT 6x6 RAIL POST TO STRINGER SUPPORT BEAMS WITH TWO B3 BOLTS (TYP.).
- N-5

CONNECT 2x10 STRINGER SUPPORT BEAMS TO TIMBER PILE WITH TWO B2 BOLTS (TYP.)
- N-6

CONNECT WITH ONE B3 BOLT (TYP).
- N-7

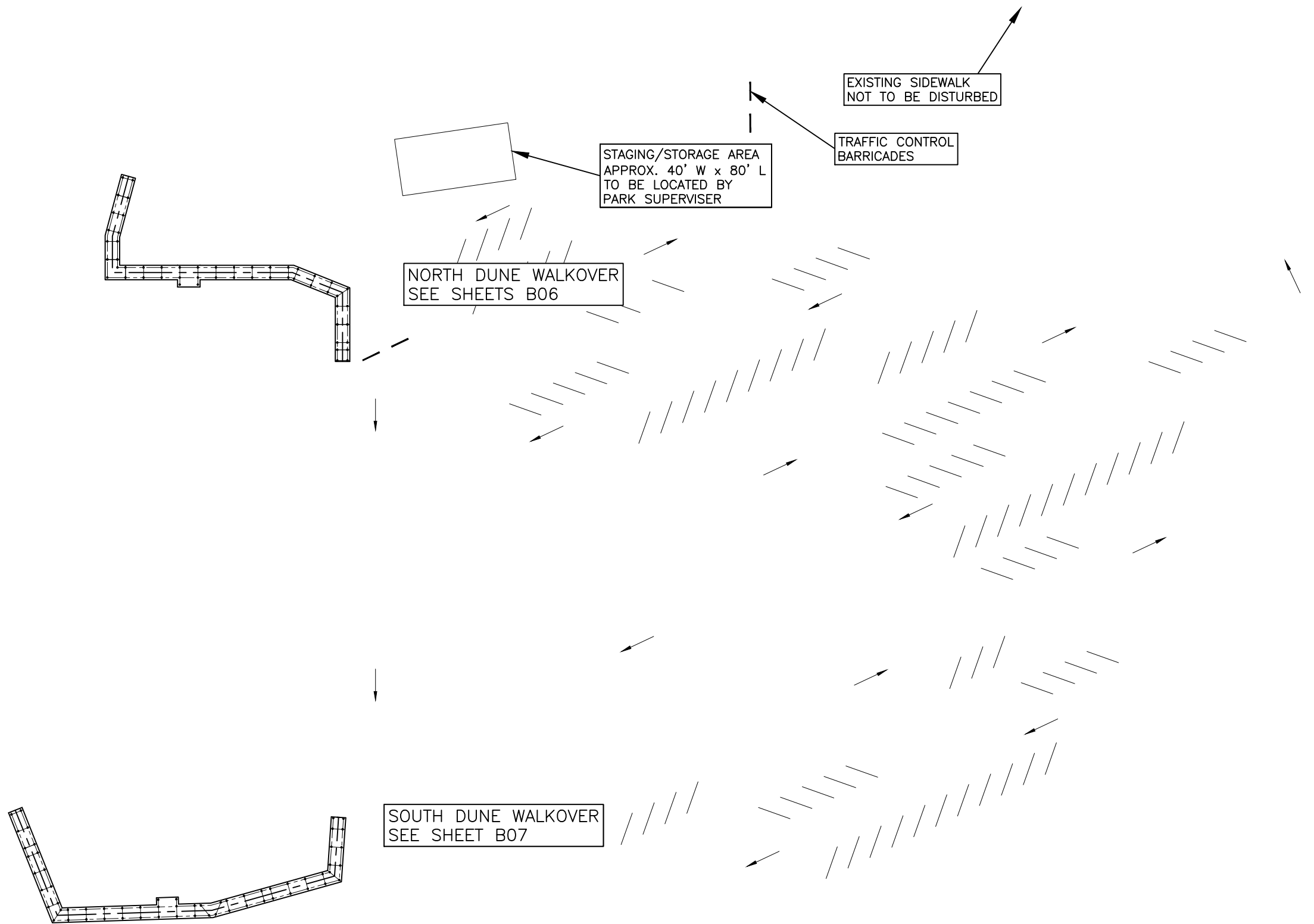
CONNECT 2x10 STRINGERS WITH THREE F2 COMMON NAILS (16d). (TYP.)

FASTENERS TABLE					
CODE	FASTENER	STEEL GRADE	SIZE	DESCRIPTION	CORROSIVE PROTECTION
P1	STEEL PLATE – 30'	A36	¼" x 6" x 1'-0" LG. 30'	STRINGER AND RAIL CONNECTOR	HOT DIPPED GALVANIZED
P2	STEEL PLATE – 45'	A36	¼" x 6" x 1'-0" LG. 45'	STRINGER AND RAIL CONNECTOR	HOT DIPPED GALVANIZED
P3	STEEL PLATE – 90'	A36	¼" x 6" x 1'-0" LG. 90'	STRINGER AND RAIL CONNECTOR	HOT DIPPED GALVANIZED
P4	STEEL ANGLE – 90'	316 L, 304 SS	½" x 2" x 2" X 2" LG.	BENCH ANCHOR.	STAINLESS STEEL
P5	STEEL PLATE – 51'	A36	¼" x 6" x 1'-0" LG. 90'	STRINGER AND RAIL CONNECTOR	HOT DIPPED GALVANIZED
P6	STEEL PLATE – 20'	A36	¼" x 6" x 1'-0" LG. 90'	STRINGER AND RAIL CONNECTOR	HOT DIPPED GALVANIZED
B1	BOLT, HEX HEAD, GALV-O-GEE WASHERS & NUT	A307	1"ø	BRACE CONNECTION.	HOT DIPPED GALVANIZED
B2	BOLT, HEX HEAD, GALV-O-GEE WASHERS & NUT	A307	¾"ø	PILES TO 2x10 STRINGER SUPPORT BEAMS. STRINGER CONNECTION METAL PLATES FOR 30' & 45' FRAMING.	HOT DIPPED GALVANIZED
B3	BOLT, HEX HEAD, GALV-O-GEE WASHERS & NUT	A307	½"ø	6x6 RAIL POSTS TO 2x10 STRINGER SUPPORT BEAMS. 6x6 RAIL POSTS TO 2x10 STRINGERS. 2x10 STRINGER SPLICE.	HOT DIPPED GALVANIZED
B4	CARRIAGE BOLT, WASHERS & NUT	A307	½"ø	RAILS TO 6x6 RAIL POSTS.	HOT DIPPED GALVANIZED
L1	LAG SCREW, HEX HEAD WITH WASHER	A36	¾"ø	BACK OF BENCH AND APPROACH.	HOT DIPPED GALVANIZED
S1	DECK SCREW	CONFORM TO ANSI/ASME STANDARD B 18.6.1-1981	No. 10 x 3"	2x6 DECKING.	CERAMIC
S2	DECK SCREW	CONFORM TO ANSI/ASME STANDARD B 18.6.1-1981	No. 8 x 1½"	BENCH ANCHORS.	CERAMIC
S3	RAIL SCREW	CONFORM TO ANSI/ASME STANDARD B 18.6.1-1981	No. 8 x 2½"	2x2 PICKET TO 2x8 RAIL.	CERAMIC
H4	HURRICANE ANCHOR (SIMPSON OR EQUIV.)	304 SS	H4 – UPLIFT CAPACITY 360 lbs	STRINGER TO STRINGER SUPPORT BEAMS.	STAINLESS STEEL
F1	COMMON NAIL	316 L, 304 SS	8d	H4	STAINLESS STEEL
F2	COMMON NAIL	A307	16d	STRINGER TO STRINGER CONNECTION.	HOT DIPPED GALVANIZED
F3	COMMON NAIL	A307	12d	STRINGER TO STRINGER CONNECTION.	HOT DIPPED GALVANIZED

FASTENERS:

- F.01 HOT DIPPED GALVANIZED ITEMS SHALL BE GALVANIZED AS FOLLOWS:
- a. STRUCTURAL SHAPES AND PLATES – ASTM A123
  - b. ALL NUTS, BOLTS AND WASHERS – ASTM A153
  - c. CLASS C OR D DEPENDING ON SIZE, FIELD TOUCH UP ALL STEEL IMMEDIATELY WHERE GALVANIZING HAS BEEN DAMAGED DURING OR PRIOR TO CONSTRUCTION WITH COLD GALVANIZING COATING.
- F.02 ALL THROUGH BOLTS WHICH ARE EXPOSED TO HUMAN CONTACT SHALL BE CUT OFF AND GROUND SMOOTH, FLUSH WITH THE NUT.
- F.03 ALL THROUGH BOLTS SHALL EXTEND FULL LENGTH TO THE FACE OF THE NUT. FOR BOLTS NOT EXPOSED TO HUMAN CONTACT, EXTEND BOLT 1 ½ TIMES THE BOLT DIAMETER PAST THE NUT.
- F.04 ALL STEEL SHALL BE ASTM-A36 AND HOT DIPPED GALVANIZED.
- F.05 STAINLESS STEEL SHALL CONFORM TO AISI MARINE GRADE 316L STAINLESS STEEL.
- F.06 IF STAINLESS STEEL PLATES AND ANGLES ARE SUBSTITUTED, THE FASTENERS SHALL ALSO BE STAINLESS STEEL.
- F.07 "O-GEE" WASHERS SHALL BE USED FOR ALL TIMBER SIDE CONNECTOR SIZES EQUAL TO OR GREATER THAN ½"ø.
- F.08 STAINLESS STEEL HURRICANE ANCHOR H4 SHALL BE ATTACHED WITH F1- STAINLESS STEEL NAILS (8d). WHENEVER POSSIBLE ALL ANCHORS SHALL BE PLACED IN THE LEAST VISIBLE MANNER TO THE PUBLIC.
- F.09 9/32ø PILOT HOLE SHALL BE DRILLED PRIOR TO LAG SCREW INSTALLATION.
- F.10 ALL THROUGH NAILS SHALL BE BENT ON PROTRUDING SIDE.

REVISIONS	BY	DATE	SURVEY BOOK No.: 2422-8			DUNE WALKOVERS AT FT. DeSOTO PARK	FASTENER TABLE	PINELLAS COUNTY, FLORIDA Department of Public Works	ENGINEERING DEPARTMENT 440 COURT STREET CLEARWATER, FLORIDA 33756-5136 PHONE (727) 464-3251	HASSAN R. SHAFEE, P.E. FLORIDA PROFESSIONAL ENGINEER NO. 57591	DATE: FEBRUARY 2005	
			SURVEY DIVISION	BY	DATE						PROJECT I.D. 1082	
			SURVEYED	CB	04/04						SURVEY FILE NO.: 1369	
			TECHNICIAN	AET	05/04						SHEET: B04 of B14	
			CHECKED	SCVS	06/04							
			DESIGN DIVISION									
			DESIGNED	HRS	8/04							
			DRAWN	NAA	12/04							
			CHECKED	HRS	12/04							



REVISIONS	BY	DATE	SURVEY BOOK No.: 2422-8		
			SURVEY DIVISION	BY	DATE
			SURVEYED	S.C.V.S.	6/29/04
			TECHNICIAN	AET	05/04
			CHECKED	JF	05/04
			DESIGN DIVISION		
			DESIGNED	HRS	8/04
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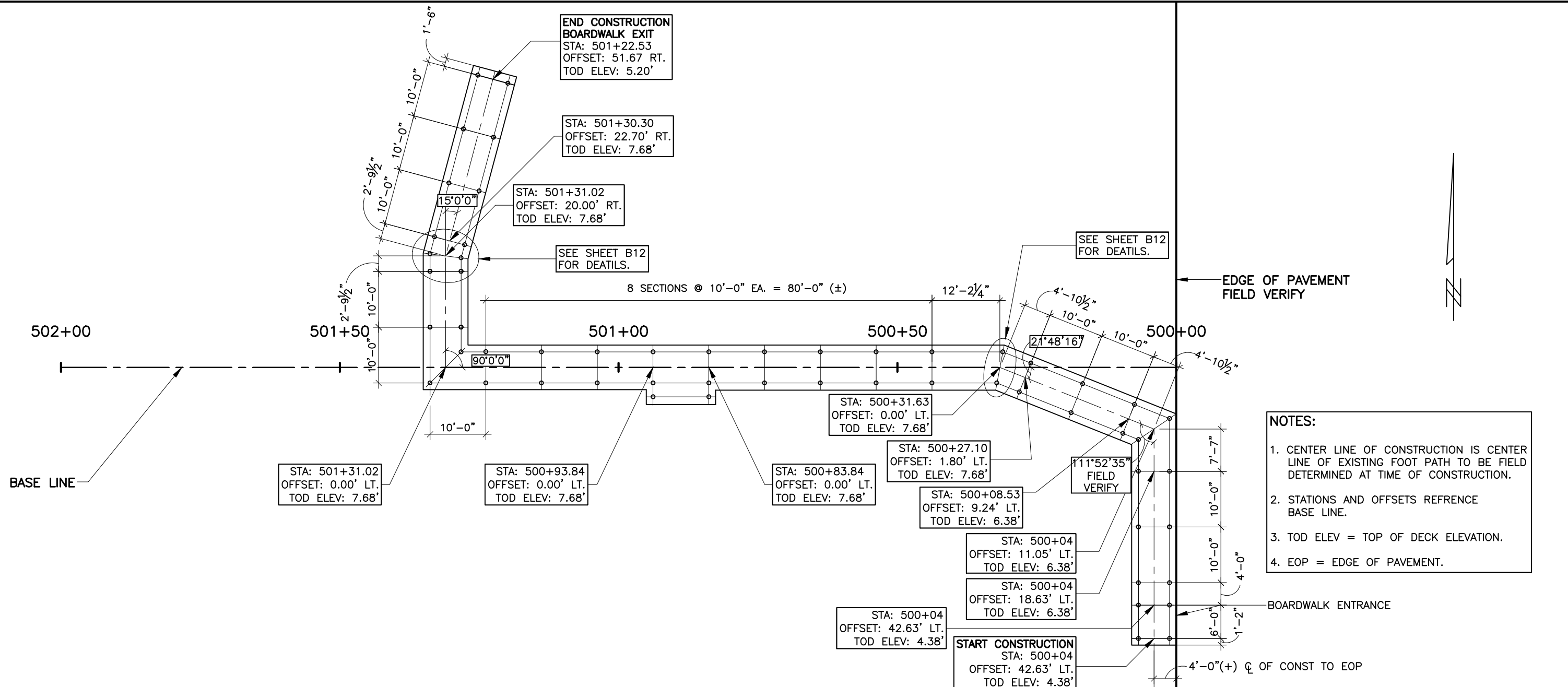
**DUNE WALKOVER AT  
FT. DeSOTO PARK**

**NORTH & SOUTH  
BOARDWALK  
LOCATIONS**

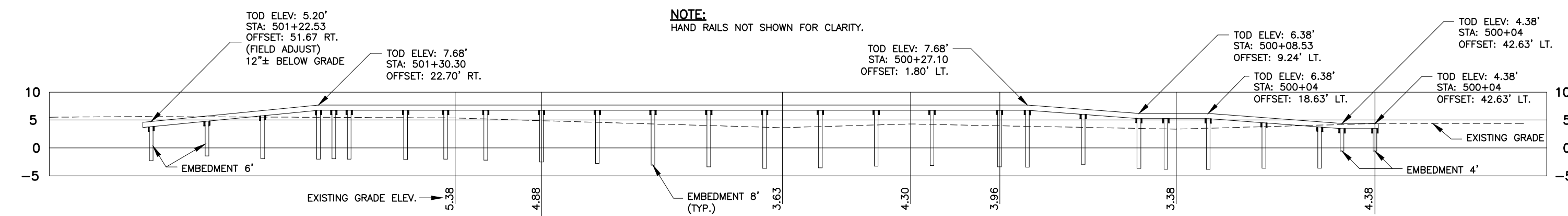
**PINELLAS COUNTY, FLORIDA**  
Department of Public Works  
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440 COURT STREET  
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PHONE (727) 464-3251

HASSAN SHAFEE  
FLORIDA PROFESSIONAL ENGINEER NO. 57591  
DATE

DATE: FEBRUARY 2005  
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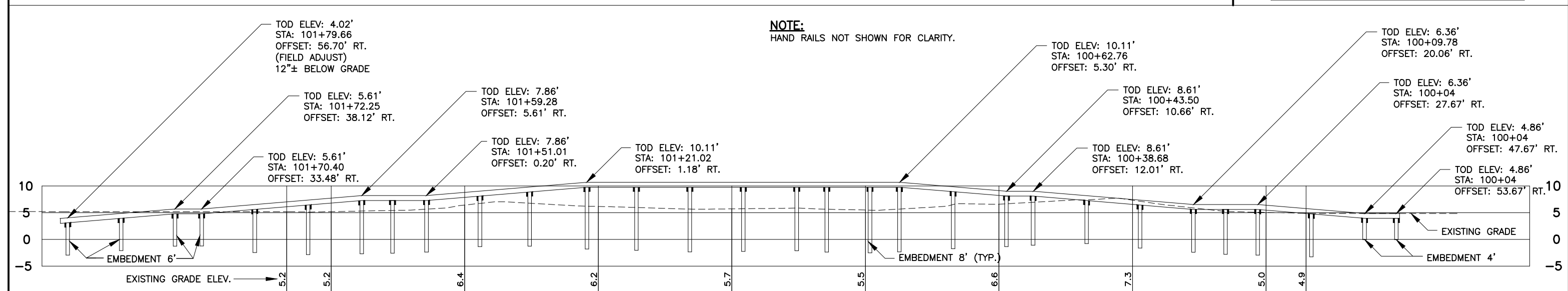
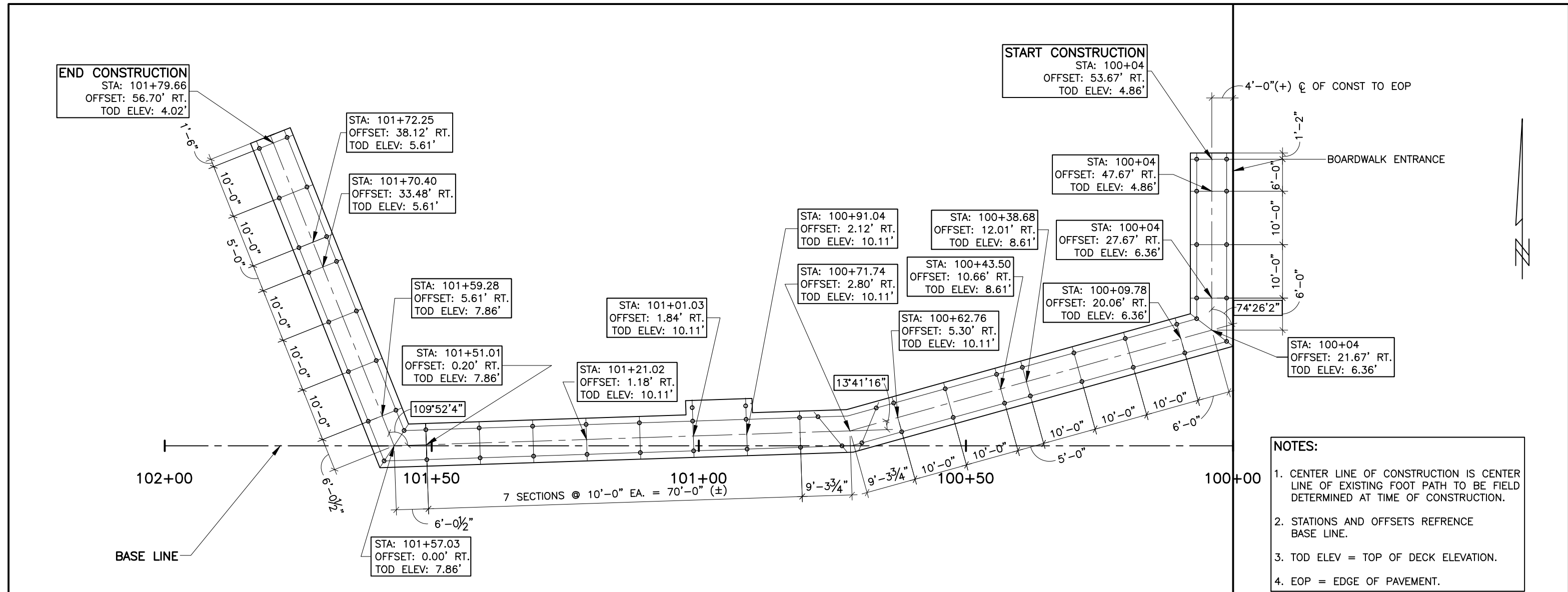
- NOTES:**
- 1. CENTER LINE OF CONSTRUCTION IS CENTER LINE OF EXISTING FOOT PATH TO BE FIELD DETERMINED AT TIME OF CONSTRUCTION.
  - 2. STATIONS AND OFFSETS REFERENCE BASE LINE.
  - 3. TOD ELEV = TOP OF DECK ELEVATION.
  - 4. EOP = EDGE OF PAVEMENT.



PROPOSED PROFILE SECTION THRU CENTER LINE OF CONSTRUCTION

REVISIONS	BY	DATE	SURVEY BOOK No.: 2422-B			DUNE WALKOVER AT FT. DeSOTO PARK	NORTH BOARDWALK LAYOUT & PROFILE	PINELLAS COUNTY, FLORIDA Department of Public Works	HASSAN R. SHAFEE FLORIDA PROFESSIONAL ENGINEER NO. 57591	DATE: APRIL 11, 2005	
			SURVEY DIVISION BY DATE							PROJECT I.D. 1082	
			SURVEYED CB 04/04							SURVEY FILE NO.: 1369	
			TECHNICIAN AET 05/04							SHEET: B06 of B14	
			CHECKED SCVS 06/04								
			DESIGN DIVISION								
			DESIGNED HRS 8/04								
			DRAWN NAA 12/04								
CHECKED HRS 12/04							DATE				

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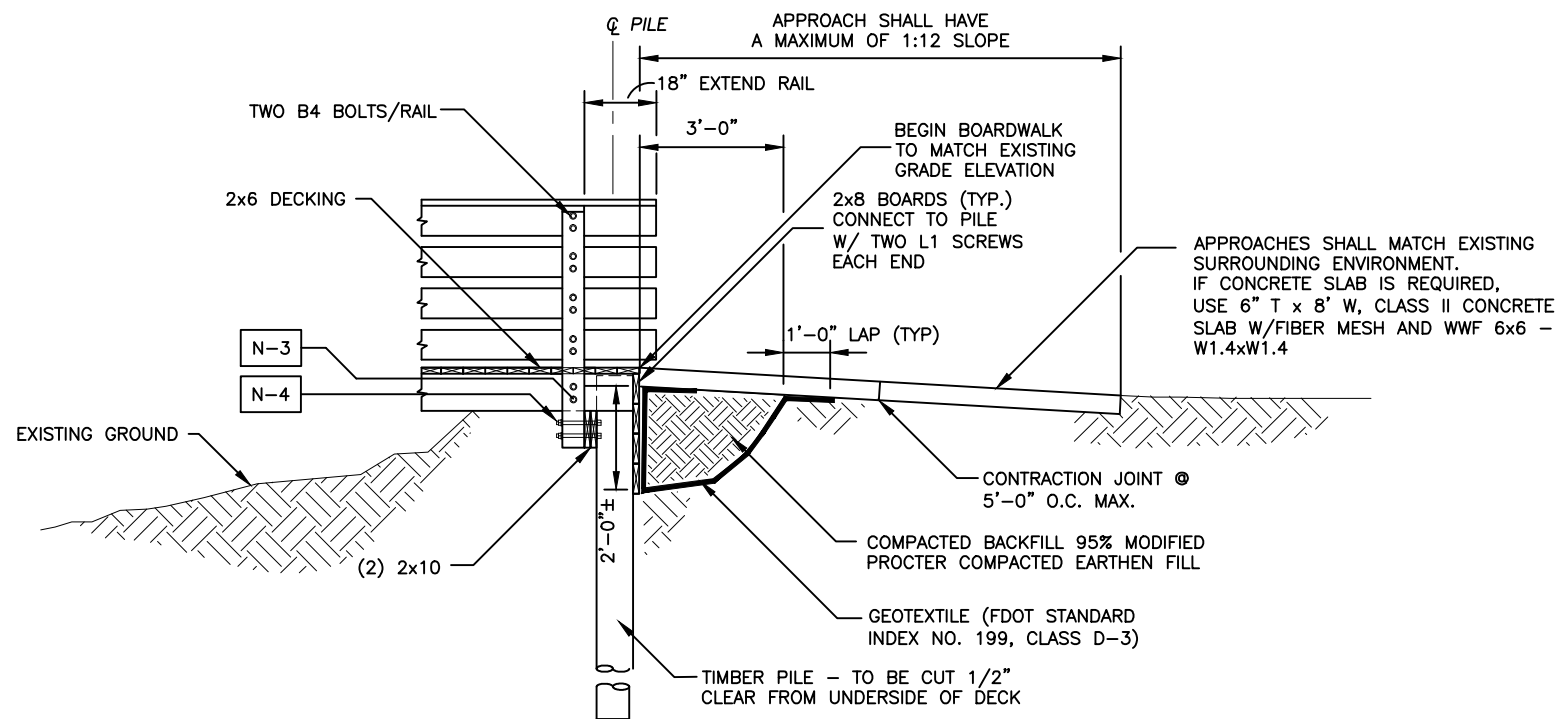


PROPOSED PROFILE SECTION THRU CENTER LINE OF CONSTRUCTION

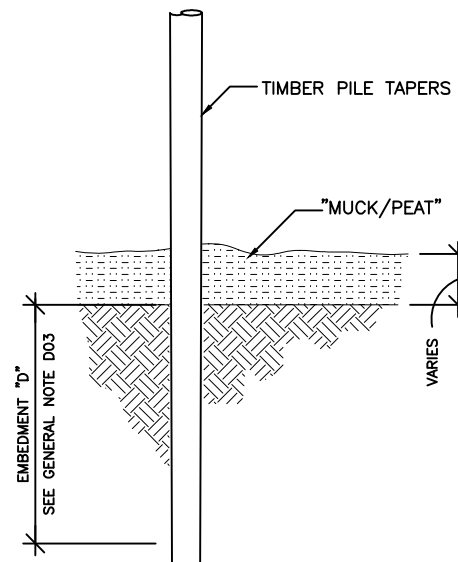
REVISIONS	BY	DATE	SURVEY BOOK No.: 2422-B			DUNE WALKOVER AT FT. DeSOTO PARK	SOUTH BOARDWALK LAYOUT & PROFILE	PINELLAS COUNTY, FLORIDA Department of Public Works <b>ENGINEERING DEPARTMENT</b> 440 COURT STREET CLEARWATER, FLORIDA 33756-5136 PHONE (727) 464-3251	HASSAN R. SHAFEE FLORIDA PROFESSIONAL ENGINEER NO. 57591 DATE	DATE: APRIL 11, 2005 PROJECT I.D. 1082 SURVEY FILE NO.: 1369 SHEET: B07 of B14
			SURVEY DIVISION	BY	DATE					
			SURVEYED	CB	04/04					
			TECHNICIAN	AET	05/04					
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			DRAWN	NAA	12/04					
			CHECKED	HRS	12/04					

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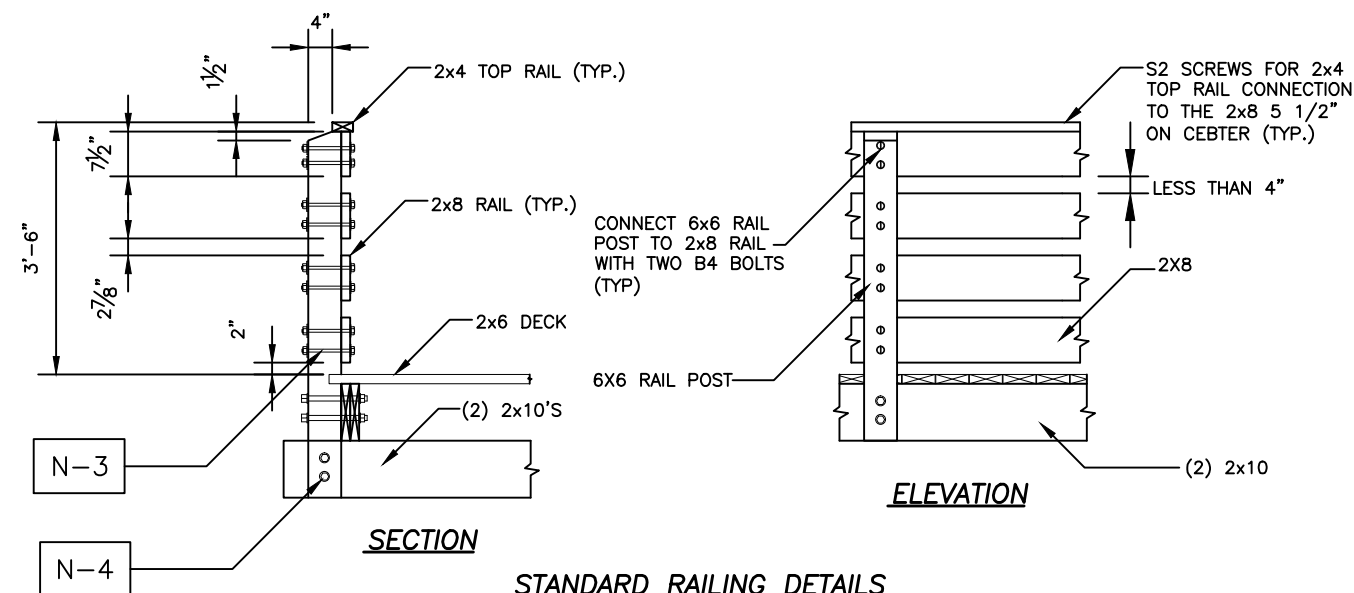




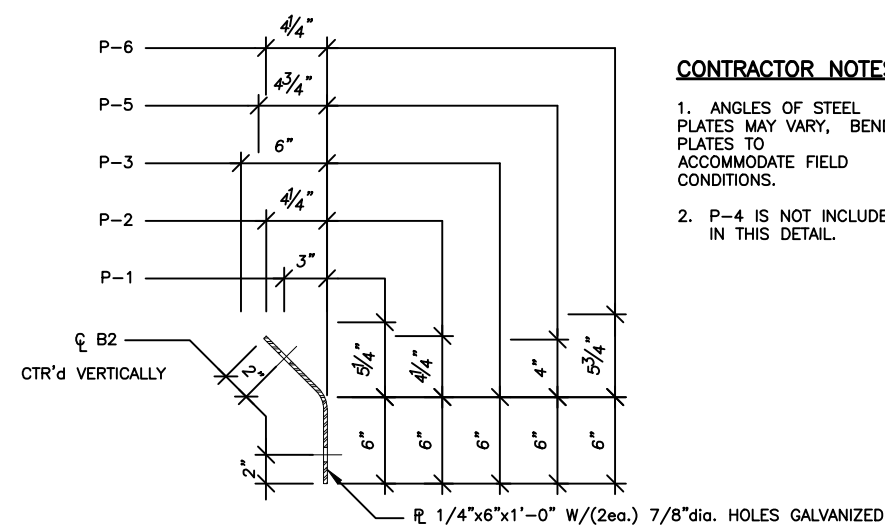
**1 BOARDWALK APPROACH SECTION**  
 B08/B08 SCALE: N.T.S.



**PILE EMBEDMENT DETAIL**  
 SCALE: N.T.S.



**STANDARD RAILING DETAILS**  
 SCALE: N.T.S.



**P-1, P-2, P-3, P-5 & P-6 PLATE DETAIL**  
 SCALE: N.T.S.

**CONTRACTOR NOTES:**

1. ANGLES OF STEEL PLATES MAY VARY, BEND PLATES TO ACCOMMODATE FIELD CONDITIONS.
2. P-4 IS NOT INCLUDED IN THIS DETAIL.

REVISIONS	BY	DATE	SURVEY BOOK No.: 2422-8
			SURVEY DIVISION BY DATE
			SURVEYED CB 04/04
			TECHNICIAN AET 05/04
			CHECKED SCVS 06/04
			DESIGN DIVISION
			DESIGNED HRS 08/04
			DRAWN NAA 12/04
			CHECKED HRS 12/4

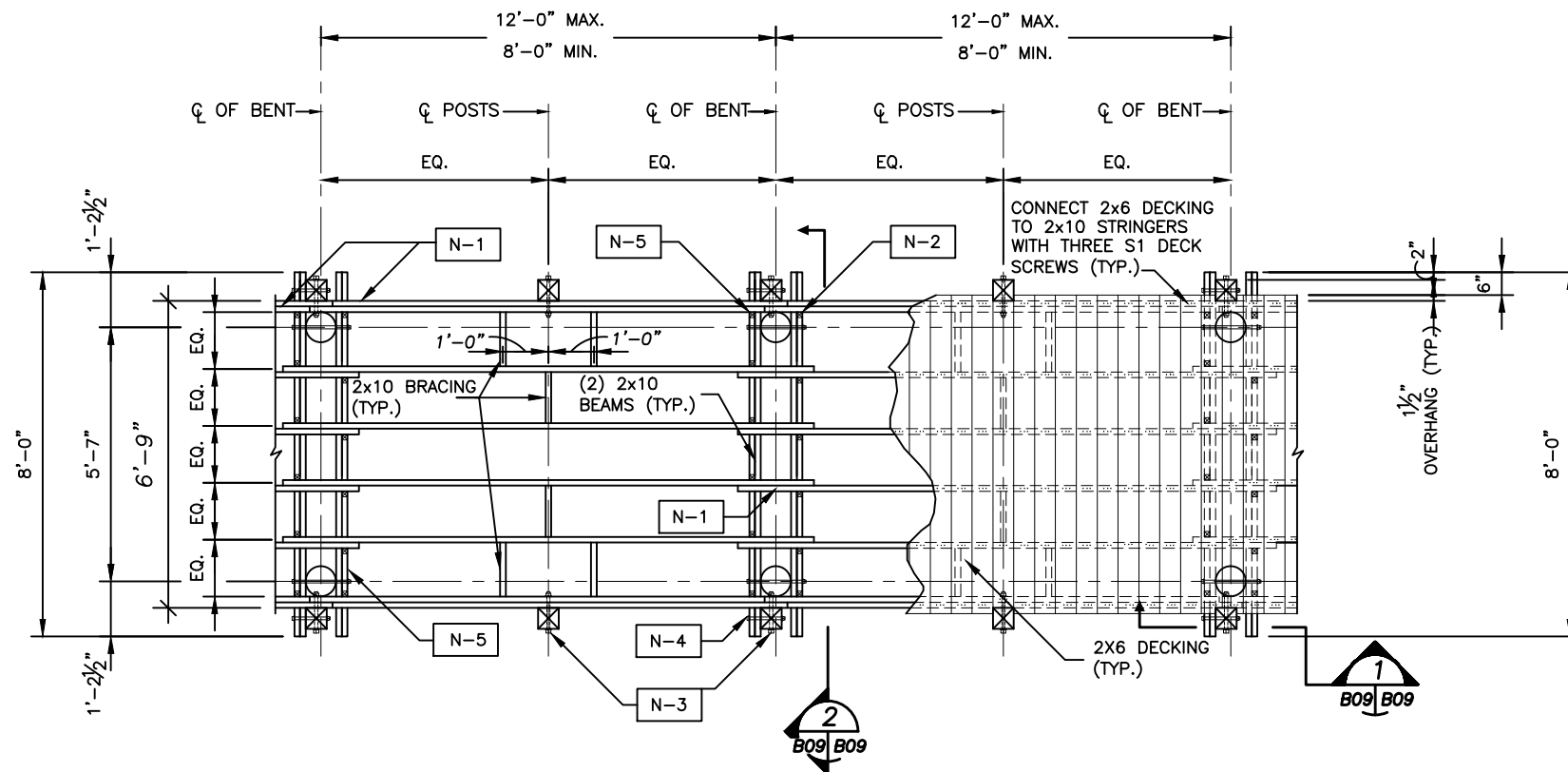
**DUNE WALKOVERS AT  
 FT. DeSOTO PARK**

**BEGIN/END  
 RAILING, PILE EMBEDMENT &  
 PLATE DETAILS**

**PINELLAS COUNTY, FLORIDA**  
 Department of Public Works  
**ENGINEERING DEPARTMENT**  
 440 COURT STREET  
 CLEARWATER, FLORIDA 33756-5136  
 PHONE (727) 464-3251

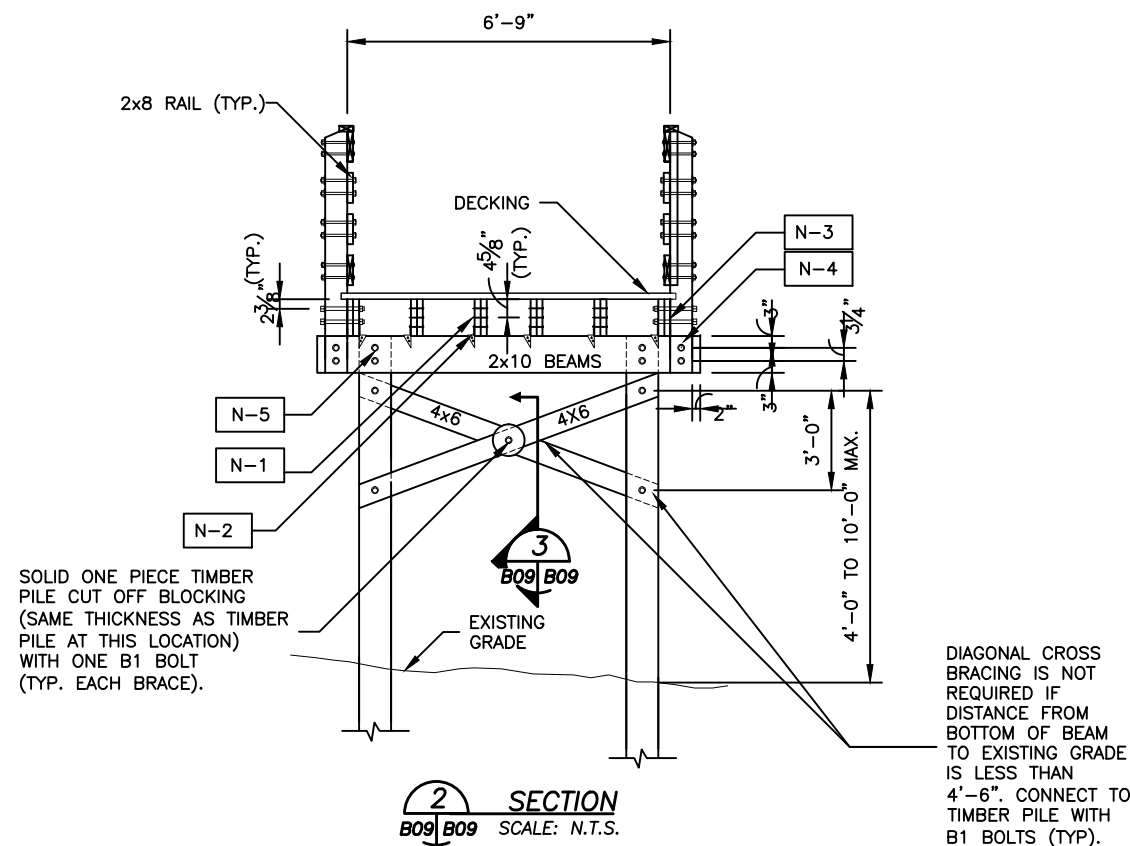
HASSAN R. SHAFEE, P.E.  
 FLORIDA PROFESSIONAL ENGINEER NO. 57591  
 DATE

DATE: FEBRUARY 2005  
 PROJECT I.D. 1082  
 SURVEY FILE NO.: 1369  
 SHEET: B08 of B14

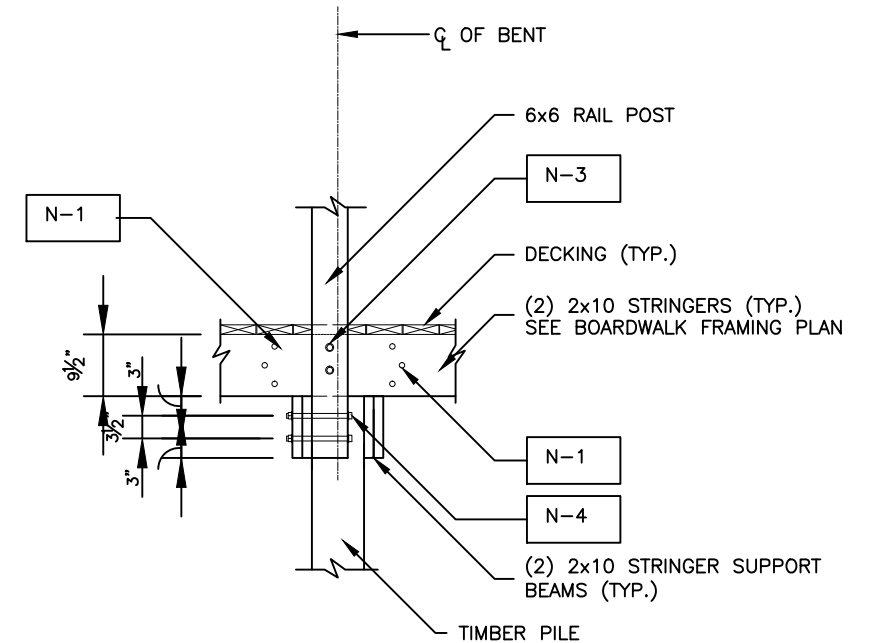


**(A) BOARDWALK FRAMING PLAN**  
B09/B09 SCALE: N.T.S.

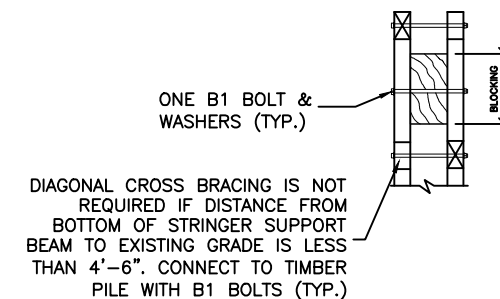
NOTE:  
HAND RAILS NOT SHOWN FOR CLARITY



**(2) SECTION**  
B09/B09 SCALE: N.T.S.



**(1) SECTION**  
B09/B09 SCALE: N.T.S.



**(3) SECTION**  
B09/B09 SCALE: N.T.S.

REVISIONS	BY	DATE	SURVEY BOOK No.: 2422-8
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			DESIGN DIVISION
			DESIGNED HRS 08/04
			DRAWN NAA 12/04
			CHECKED HRS 12/04

## DUNE WALKOVER AT FT. DeSOTO PARK

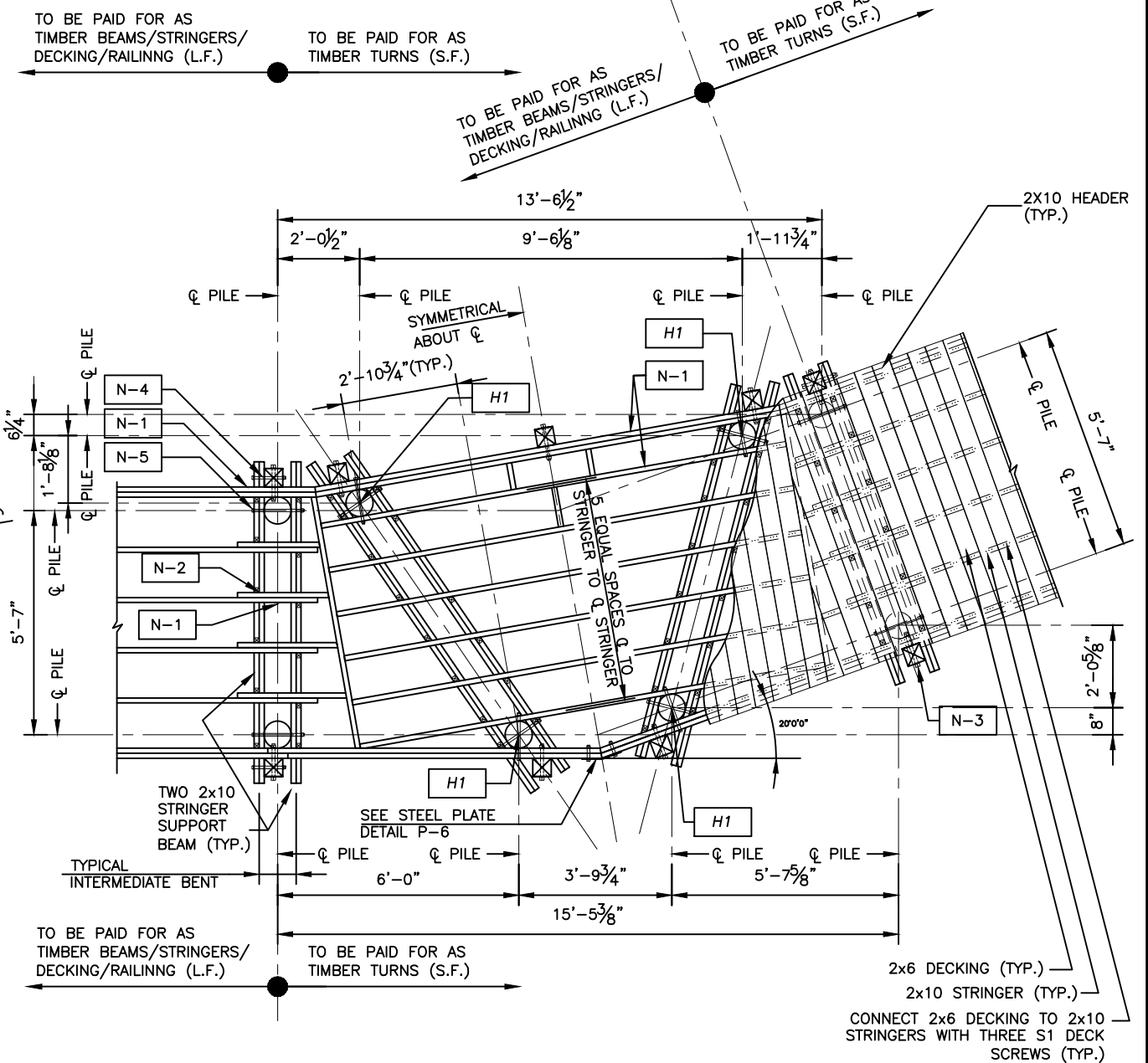
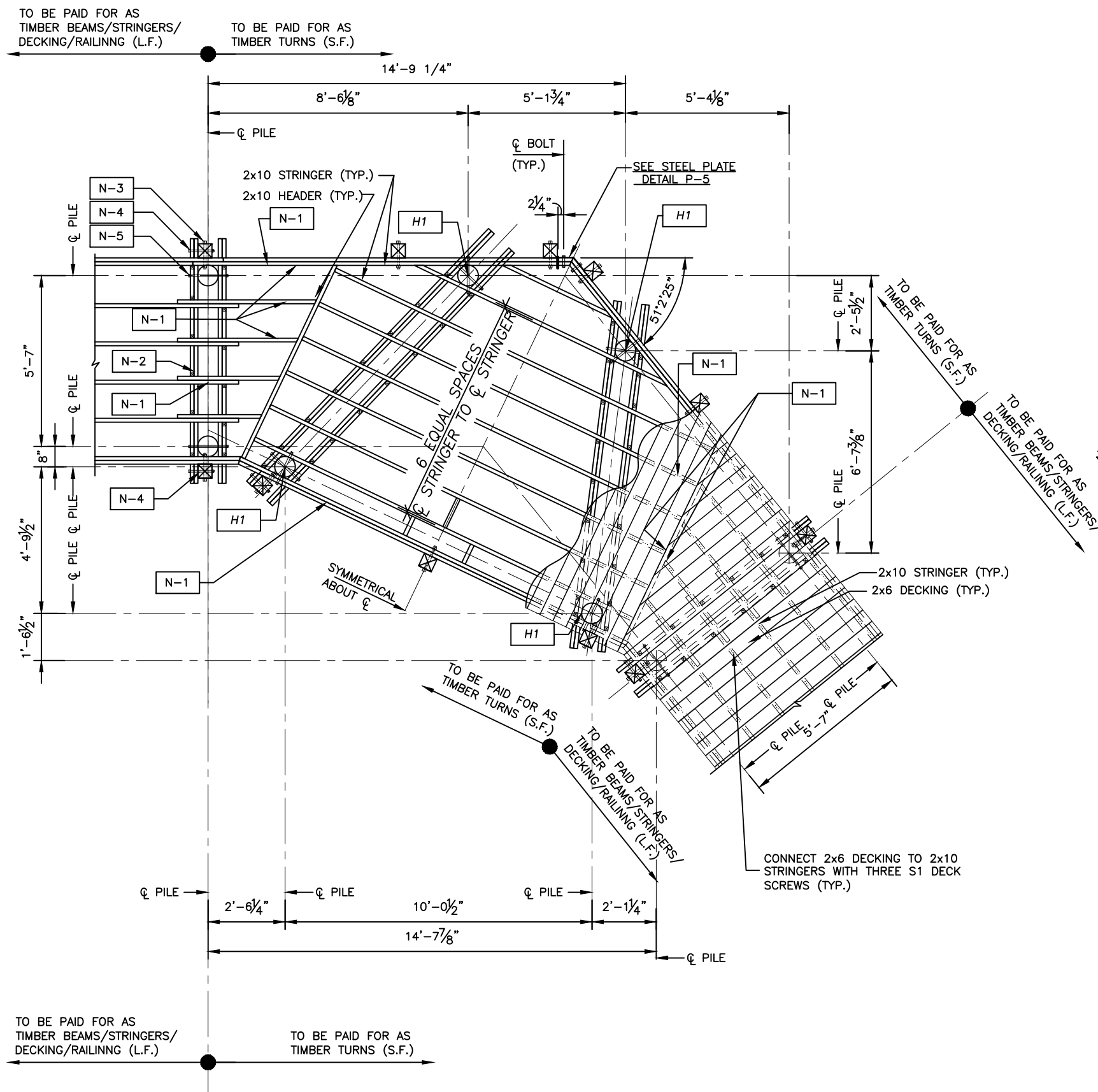
## TYPICAL FRAMING PLAN AND DETAILS

**PINELLAS COUNTY, FLORIDA**  
Department of Public Works  
**ENGINEERING DEPARTMENT**  
440 COURT STREET  
CLEARWATER, FLORIDA 33756-5136  
PHONE (727) 464-3251

HASSAN R. SHAFEE  
FLORIDA PROFESSIONAL ENGINEER NO. 57591  
DATE

DATE: FEBRUARY 2005  
PROJECT I.D. 1082  
SURVEY FILE NO.: 1369  
SHEET: B09 of B14





**NOTES:**

1. HAND RAILS NOT SHOWN FOR CLARITY.
2. SEE SHEET B08 FOR RAIL DETAILS.
3. H1, SEE GENERAL NOTES D03.e. FOR PILE ELEVATION.

REVISIONS	BY	DATE	SURVEY BOOK No.: 2422-B		
			SURVEY DIVISION	BY	DATE
			SURVEYED	CB	04/04
			TECHNICIAN	AET	05/04
			CHECKED	SCVS	06/04
			DESIGN DIVISION		
			DESIGNED	HRS	08/04
			DRAWN	NAA	12/04
			CHECKED	HRS	12/04

*DUNE WALKOVER AT  
FT. DeSOTO PARK*

**TYPICAL 51 & 20 DEGREE  
FRAMING PLANS**

**PINELLAS COUNTY, FLORIDA**  
Department of Public Works

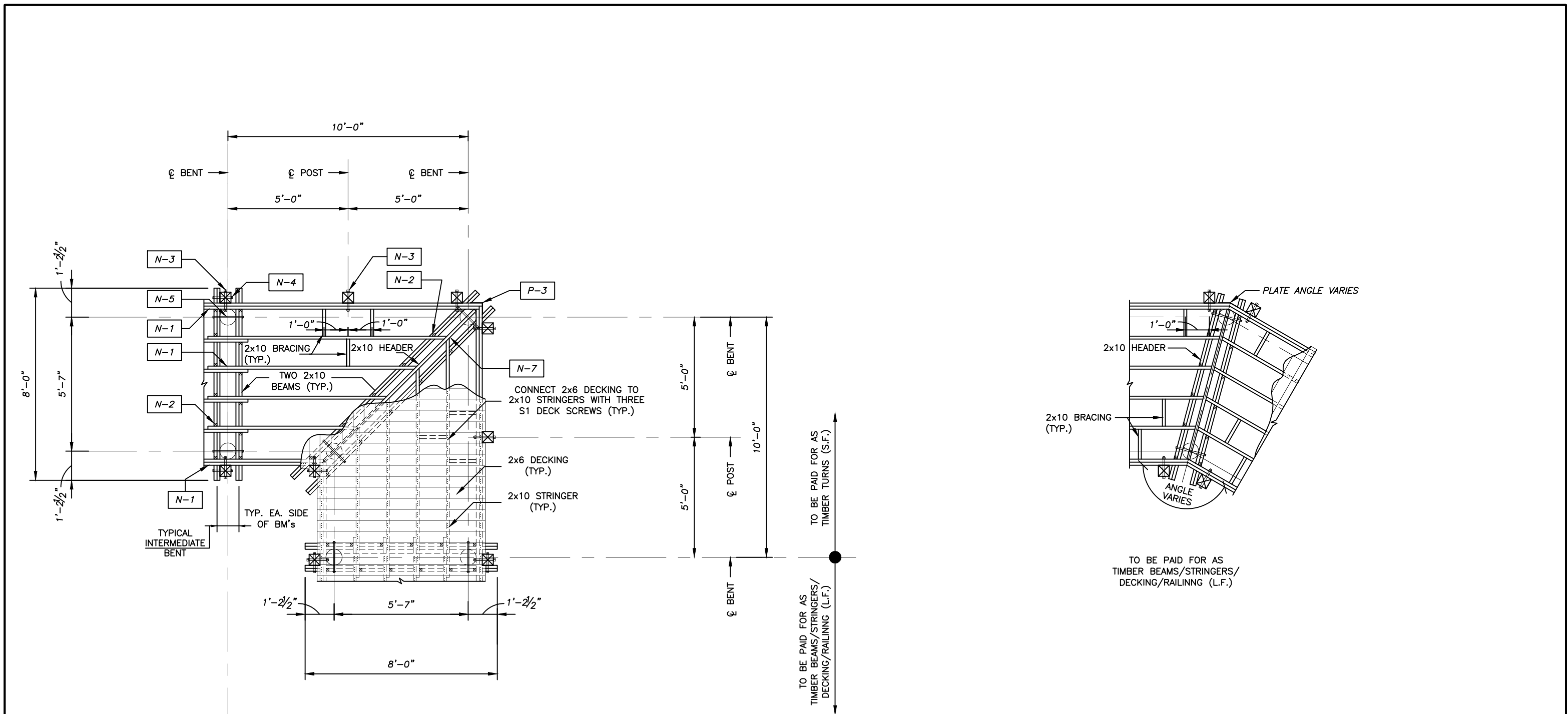
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**ENGINEERING DEPARTMENT**  
440 COURT STREET  
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FLORIDA PROFESSIONAL ENGINEER NO. 57591

DATE

DATE: FEBRUARY 2005	
PROJECT I.D. 1082	
SURVEY FILE NO.: 1369	
SHEET: B11 of B14	



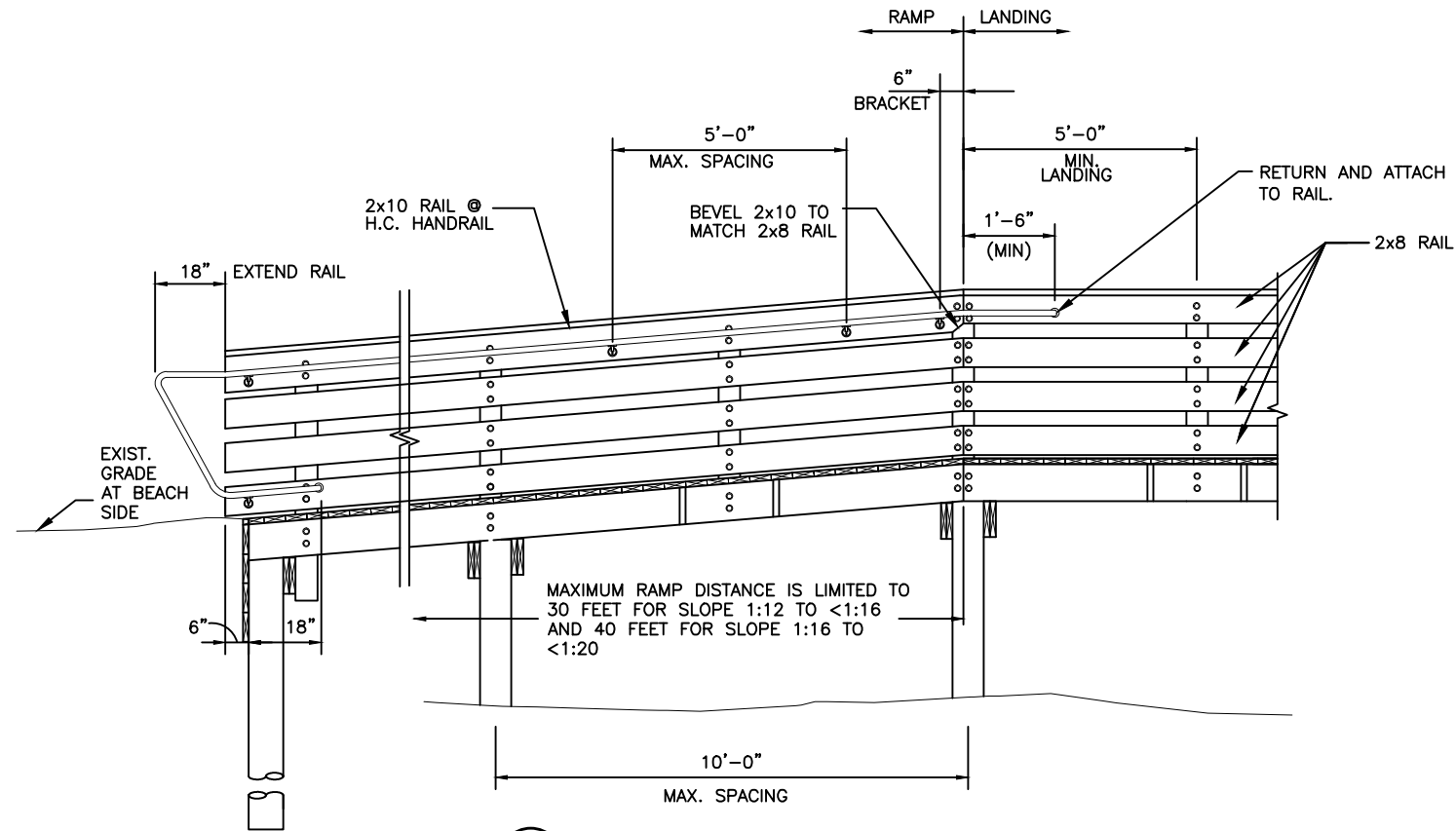
**A BOARDWALK 90° CORNER FRAMING PLAN**  
B12 | B12 SCALE: N.T.S.

**B BOARDWALK NON-TYPICAL CORNER FRAMING PLAN**  
B12 | B12 SCALE: N.T.S.

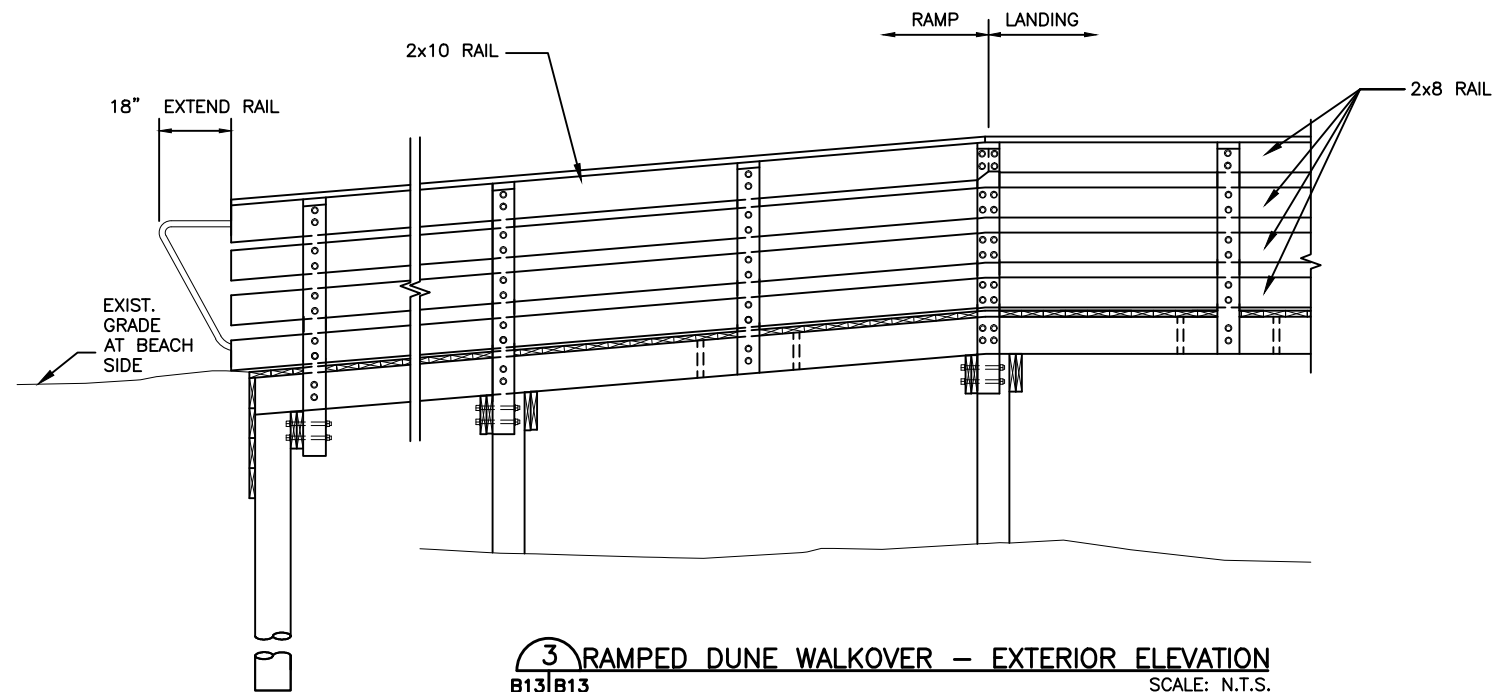
- NOTES:**
1. HAND RAILS NOT SHOWN FOR CLARITY.
  2. SEE SHEET B08 FOR RAIL DETAILS.
  3. H1, SEE GENERAL NOTES D03.e. FOR PILE ELEVATION.

REVISIONS		BY	DATE	SURVEY BOOK No.: 2422-8		BY		DATE	<div>DUNE WALKOVER AT FT. DeSOTO PARK</div>	<div>TYPICAL 90 DEGREE NON-TYPICAL CORNER FRAMING PLAN</div>	PINELLAS COUNTY, FLORIDA		DATE: FEBRUARY 2005	
				SURVEY DIVISION		BY		DATE			Department of Public Works		PROJECT I.D. 1082	
				SURVEYED		CB		04/04						
				TECHNICIAN		AET		05/04						
				CHECKED		SCVS		06/04						
				DESIGN DIVISION									SURVEY FILE NO.: 1369	
				DESIGNED		HRS		08/04						
				DRAWN		NAA		12/04						
				CHECKED		HRS		12/04					SHEET: B12 of B14	
											ENGINEERING DEPARTMENT			
											440 COURT STREET			
											CLEARWATER, FLORIDA 33756-5136			
											PHONE (727) 464-3251			
													DATE	

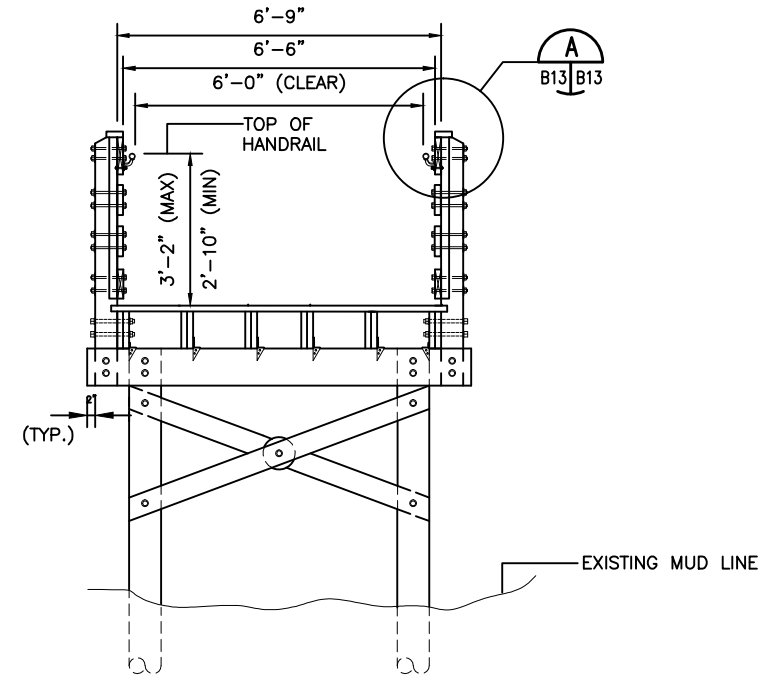
S:\Staff\Terry\01\DUNE WALKOVER REV BOARDWALK DESIGN.dwg - Feb 02, 2015 @ 8:25am - engzet18



**1 RAMPED DUNE WALKOVER - INTERIOR ELEVATION**  
B13/B13 SCALE: N.T.S.

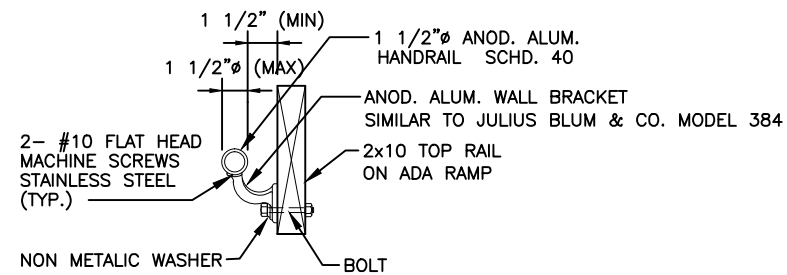


**3 RAMPED DUNE WALKOVER - EXTERIOR ELEVATION**  
B13/B13 SCALE: N.T.S.



FOR ADDITIONAL INFORMATION NOT SHOWN SEE SECTION "1" SHEET B09

**2 ADA RAMP SECTION**  
B13/B13 SCALE: N.T.S.



**A DETAIL - ADA HANDRAIL AND BRACKET**  
B13/B13 SCALE: N.T.S.

**GENERAL NOTES:**

1. RAMP SHALL BE IN COMPLIANCE WITH ADA ACCESSIBILITY GUIDELINES.
2. THE MAXIMUM SLOPE OF A RAMP SHALL BE 1:12.
3. BOARDWALK RAMP OVER 5% TO 8.33% SLOPE SHALL HAVE ALUMINUM HANDRAIL.
4. HANDRAIL TO EXTEND 18" MINIMUM HORIZONTAL BEYOND TOP AND BOTTOM OF RAMP RETURN ENDS AND ATTACH TO 2x TOP RAIL.
5. SPACE HANDRAIL BRACKETS EQUALLY ALONG LENGTH MAXIMUM SPACING NOT TO EXCEED 5'-0".

REVISIONS	BY	DATE	SURVEY BOOK No.: 2422-8
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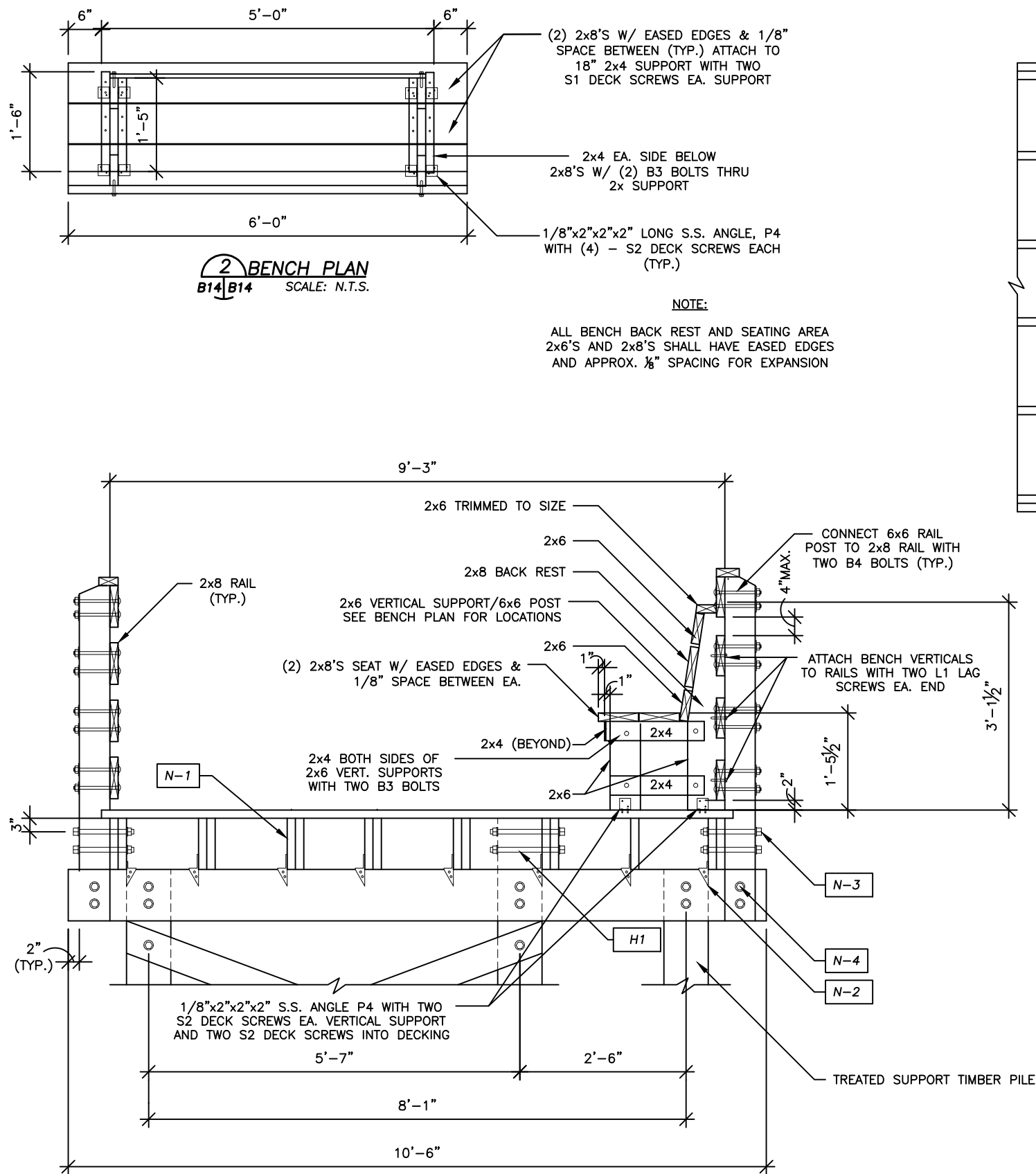
**DUNE WALKOVERS AT  
FT. DeSOTO PARK**

**RAMP SECTION  
& DETAILS**

**PINELLAS COUNTY, FLORIDA**  
Department of Public Works  
**ENGINEERING DEPARTMENT**  
440 COURT STREET  
CLEARWATER, FLORIDA 33756-5136  
PHONE (727) 464-3251

HASSAN R. SHAFEE  
FLORIDA PROFESSIONAL ENGINEER NO. 57591  
DATE

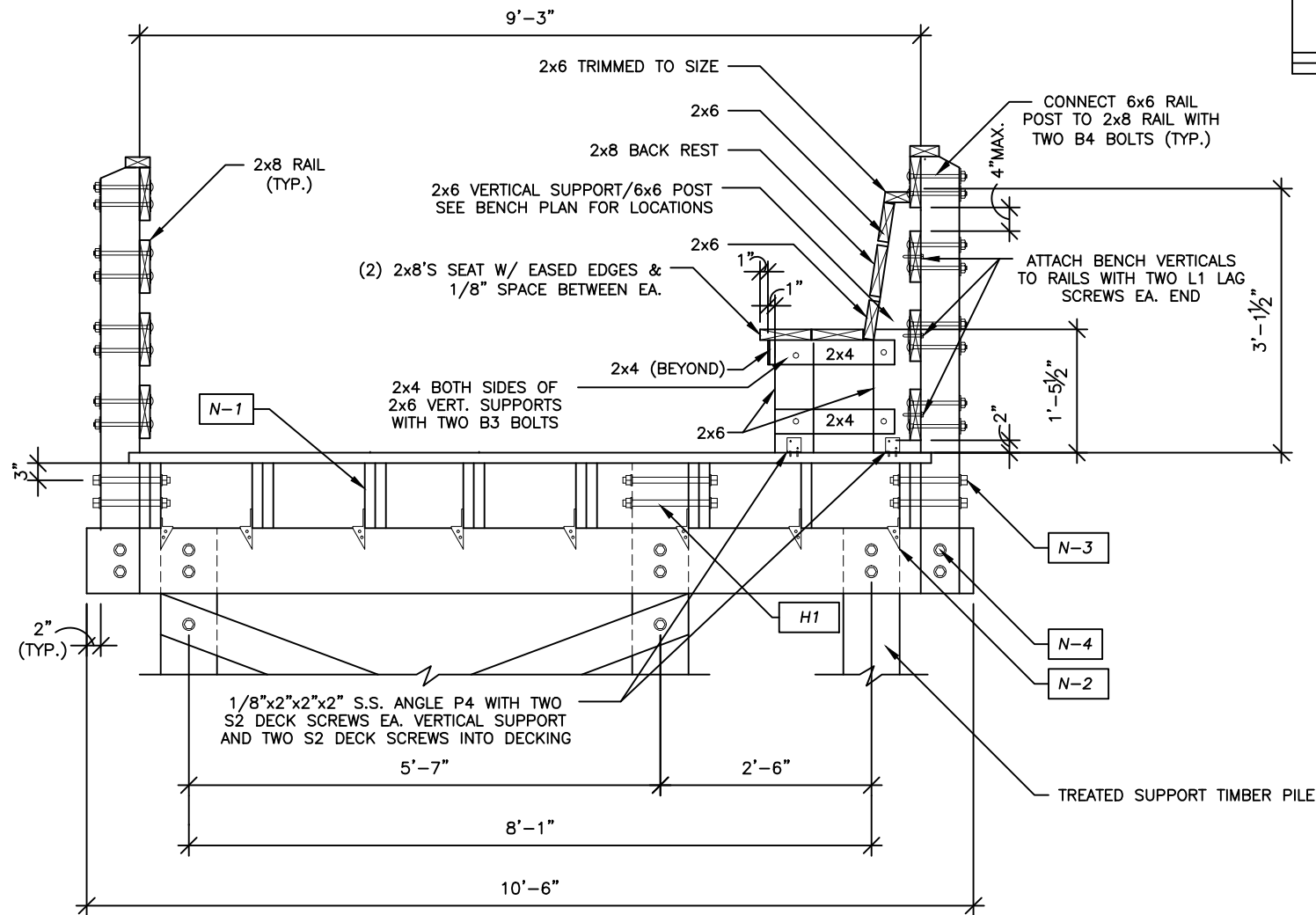
DATE: FEBRUARY 2005  
PROJECT I.D. 1082  
SURVEY FILE NO.: 1369  
SHEET: B13 of B14



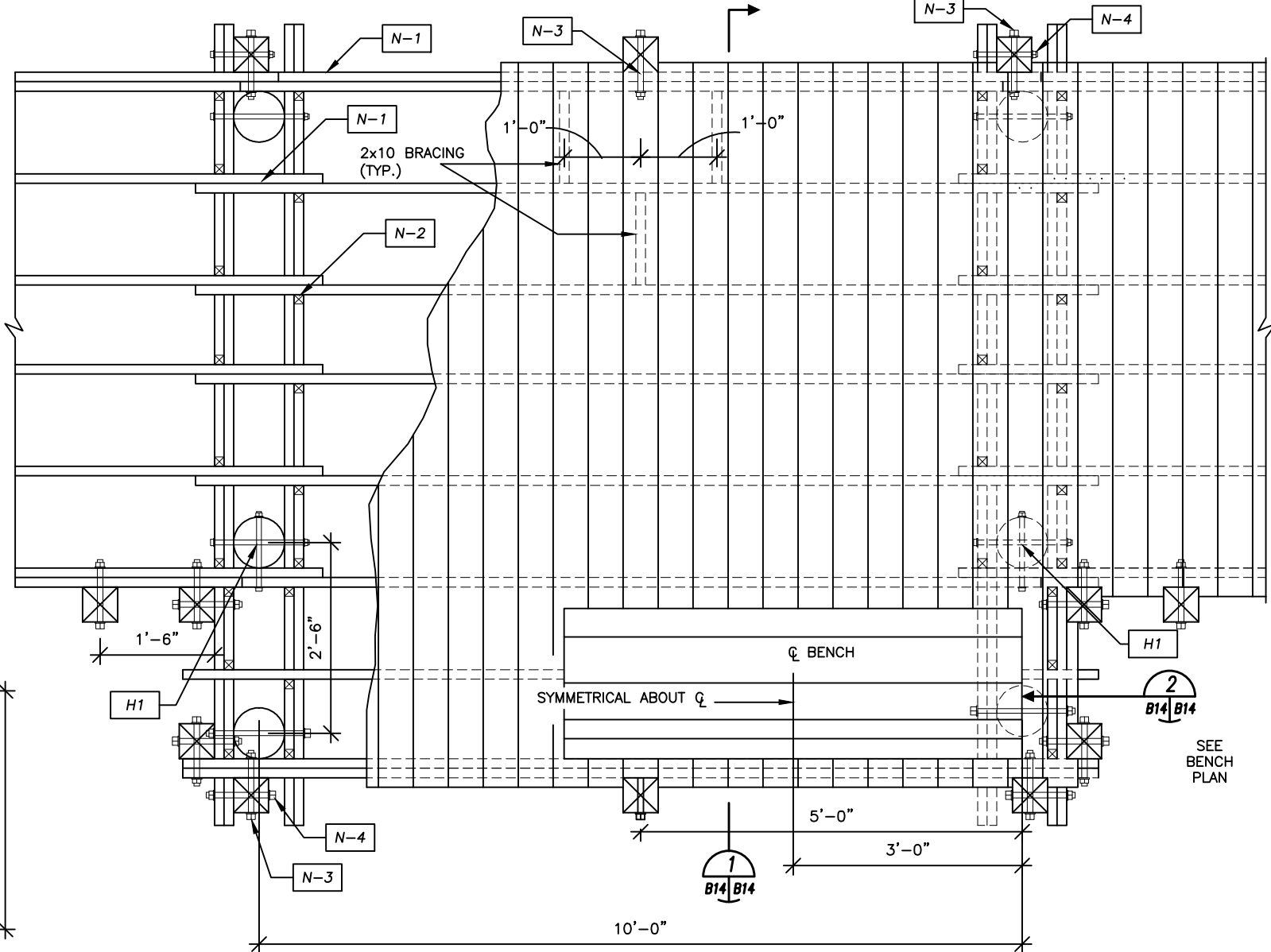
**2 BENCH PLAN**  
B14/B14 SCALE: N.T.S.

NOTE:

ALL BENCH BACK REST AND SEATING AREA  
2x6'S AND 2x8'S SHALL HAVE EASED EDGES  
AND APPROX. 1/8" SPACING FOR EXPANSION



**1 BOARDWALK W/BENCH SECTION**  
B14/B14 SCALE: N.T.S.



**A BOARDWALK W/BENCH PLAN**  
B14/B14 SCALE: N.T.S.  
SEE SHEET B09 FOR CONNECTIONS

NOTES:

1. HAND RAILS NOT SHOWN FOR CLARITY.
2. SEE SHEET B08 FOR RAIL DETAILS.
3. H1, SEE GENERAL NOTES D03.e. FOR PILE ELEVATION.

REVISIONS	BY	DATE	SURVEY BOOK No.: 2422-8
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			DRAWN NAA 12/04
			CHECKED HRS 12/04

## DUNE WALKOVER AT FT. DeSOTO PARK

## REST AREA LAYOUT AND SECTIONS

**PINELLAS COUNTY, FLORIDA**  
Department of Public Works  
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HASSAN R. SHAFEE  
FLORIDA PROFESSIONAL ENGINEER NO. 57591  
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SURVEY FILE NO.: 1369  
SHEET: B14 of B14