# PANAMA CITY BEACH



July 2006



# PANAMA CITY BEACH COMMUNITY REDEVELOPMENT AREA



# FRONT BEACH ROAD STREETSCAPE DESIGN GUIDELINES MANUAL

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# TABLE OF CONTENTS

### **GUIDELINE INTRODUCTION**

## FUNCTIONAL SPECIFICATIONS

SECTION 1	TYPICAL ROADWAYS
SECTION 2	INTERSECTION AND MID-BLOCK CROSSING DESIGN
SECTION 3	ROADWAY CURBING AND TRAFFIC SEPARTOR
SECTION 4	PEDESTRIAN SIDEWALKS
SECTION 5	BEACH ACCESS FACILITIES
SECTION 6	VEHICULAR ACCESSES
SECTION 7	TRAFFIC SIGNAL MAST ARMS
SECTION 8	LIGHTING STANDARDS
SECTION 9	PLANT INSTALLATIONS
SECTION 10	IRRIGATION
SECTION 11	PLANT PALETTE
SECTION 12	IDENTITY ICON
SECTION 13	TRANSIT SYSTEM



### **AESTHETIC OPTIONS**

SECTION 14 BEACH UILLAGE

SECTION 15 RESORT PARADISE

SECTION 16 COASTAL CAUSAL

### <u>IMPLEMENTATION</u>



# **GUIDELINE INTRODUCTION**

In 2001, the City of Panama City Beach determined that the Front Beach Road Community Redevelopment Area as blighted as per Florida Statutes. The City then approved a community redevelopment plan and established a redevelopment trust fund for the Front Beach Road Community Redevelopment Area. In the summer of 2002, the City ratified and reconfirmed the Front Beach Road Community Redevelopment Plan.

The Front Beach Road Community Redevelopment Plan (Plan) provides a redevelopment framework for the Community Redevelopment Area over the next 30 years or longer. The Plan's focus is on mitigation or correction of various transportation, parking, beach access and safety issues documented in the Blight Study. The Plan proposes redeveloping the area as an attractive, inviting, easily accessible and economically sustainable pedestrian oriented, public beach and tourist corridor that promotes a favorable identity for the City of Panama City Beach and the overall Bay County community.

The Plan outlines numerous redevelopment objectives and strategies that may be implemented in partnership with the private sector and other governmental entities. Some of the objectives and strategies include:

- 1) Make improvements to pedestrian, parking and transportation networks and facilities
- 2) Enhance beach access and related parking
- 3) Create efficient, practical and equitable funding and financing to properly implement the Redevelopment Plan
- 4) Address aesthetic and planning elements that can enhance the overall urban form of the community
- 5) Encourage public/private partnerships
- 6) Identify and implement programs and projects that enhance safety
- 7) Develop and implement programs that encourage economic development and revitalization
- 8) Provide adequate infrastructure to support redevelopment initiatives

The Streetscape Design Guidelines Manual is designed to familiarize the user with the aesthetic amenities for the three character areas: 1) Beach Village; 2) Resort Paradise; and 3) Coastal Casual (see Figure 1). Each character area is distinctive from each other with common street and pedestrian lighting, traffic signal mast arms, handicap ramp landings and crosswalks to provide a streetscape continuity along Front Beach Road. Transition zones will be located between different character areas to provide a smooth transition by taking on the characteristic of each of the adjacent character areas.

The Streetscape Design Guidelines Manual is a working document that takes each aspect of the streetscape elements on a section by section basis, each giving materials and dimensions as a guide to proceed with the final development of construction drawings. During the development of Front Beach Road, additional specifications and details may be required and shall be incorporated into this manual. All drawings shall comply with the Engineering Standards Manual and shall be approved by the Front Beach Road Project Team and the City of Panama City Beach.





COASTAL CASUAL RESORT PARADISE

### FRONT BEACH ROAD CHARACTER AREAS- REVISED





# FUNCTIONAL SPECIFICATIONS

The functional specifications will provide the layout, intensity and design requirements for all streetscape elements along Front Beach Road, such as:

- Typical roadways
- Intersection hardscape requirements
- Roadway curbing and traffic separator
- Sidewalk dimensions and placement
- Light fixture (i.e., intensity and lamp options)
- Light pole materials and dimensions (i.e., diameter, height, structural components and banner connections)
- Traffic signal mast arms
- Connections to adjacent properties
- Beach access areas
- Transit facilities
- Plant palette
- Banners
- Identity icon

Some of these common area materials may be incorporated into roadway improvement projects along the primary connector roads [North Thomas Drive, South Thomas Drive, Beckrich Road, Alf Coleman Road, Clara Avenue, Hutchinson Boulevard, Powell Adams Road and Arnold Boulevard (S.R. 79)], where there is sufficient room for these streetscape elements, as determined by the roadway design.

These functional specifications are to be used as a guide to the development of final construction drawings. Modifications to the specifications may be necessary due to the final roadway engineering plans.



# TYPICAL ROADWAYS

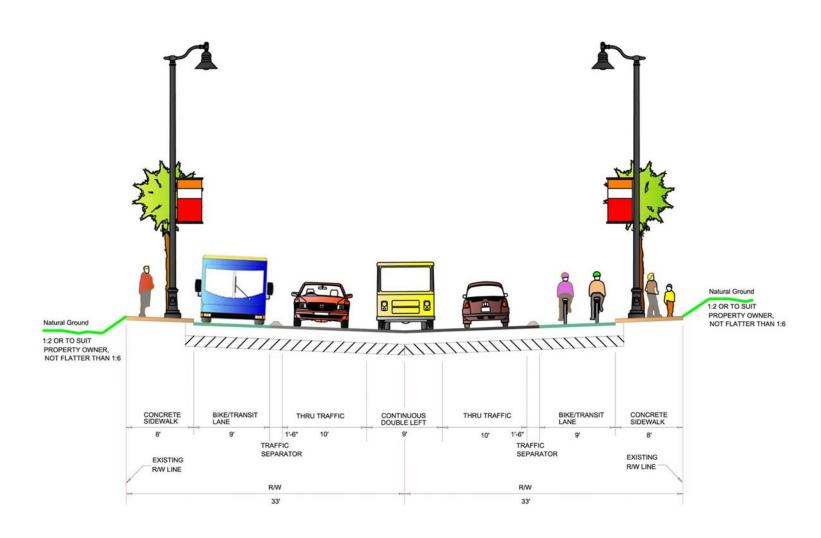
The right-of-way for Front Beach Road varies from 66 feet to 100 feet in width. Existing buildings are built to the right-of-way line with limited on-site parking capabilities. In many cases, private parking occurs within the public right-of-way.

The following illustrates a 66' right-of-way, 100' right-of-way and 100' right-of-way with tram pull-out. The 10' wide travel lanes; 9' wide double left center turning lane; 11'-6" wide bike/transit lanes; and 1'-6" wide traffic separators remain consistent along the road corridor. The only exceptions are the 9' wide bike/transit lane in the 66' right-of-way sections and the additional 5' wide bike lane at the tram pull-out areas. The sidewalks and landscape areas vary according to the right-of-way widths with 8' to 10' wide sidewalks on the south side of the road and minimum 12' wide sidewalks on the north side of the road; and minimum 5' wide landscape areas (see Figures 2, 3 & 4)

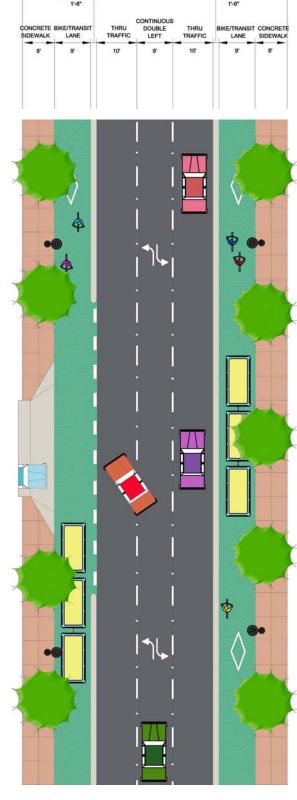
There may be some opportunities through partnerships with property owners to acquire minimum 6' wide landscape areas in the 66' right-of-way section to further visually enhance the streetscape and to provide shade. There may also be some opportunities in the 100' right-of way to provide a raised center landscaped median where dual left turn lanes are not warranted and to create meandering sidewalks (see Figure 5). The overall goal is to design within the existing right-of-way widths along Front Beach Road, so as not to acquire additional easements.



FIGURE 2 66' RIGHT-OF-WAY TYPICAL SECTION & PLAN VIEW



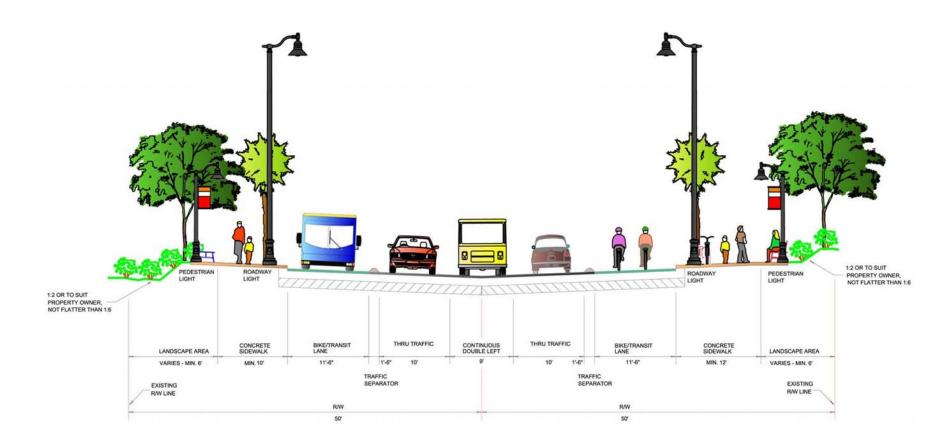
**SECTION** 



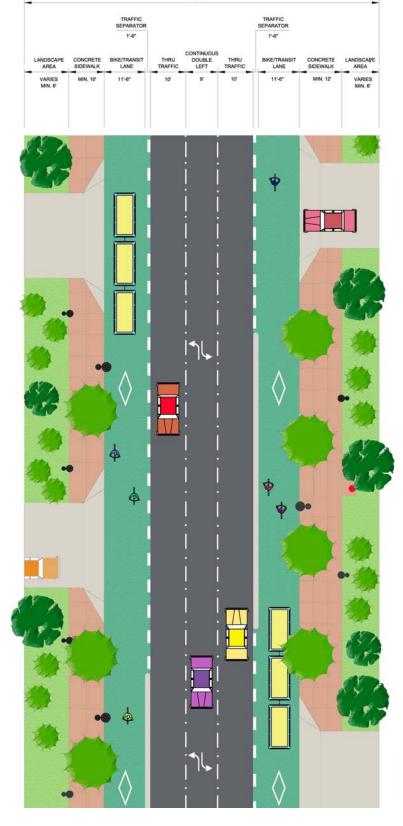
**PLAN VIEW** 



FIGURE 3 100' RIGHT-OF-WAY TYPICAL SECTION & PAN VIEW



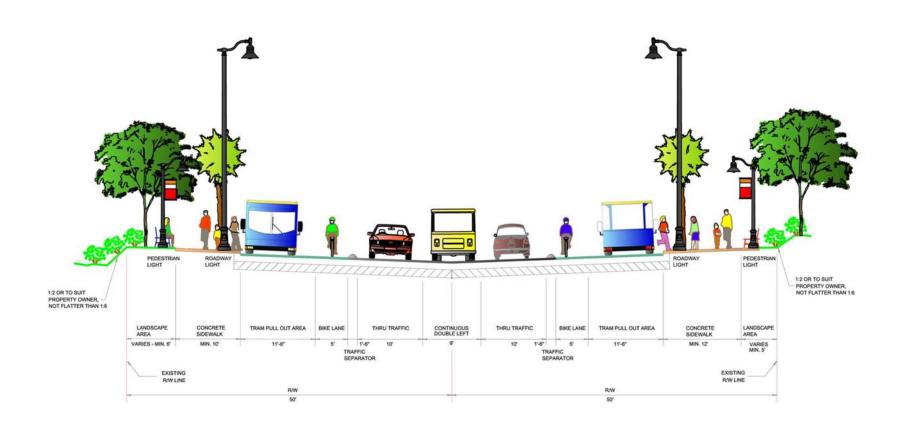
**SECTION** 

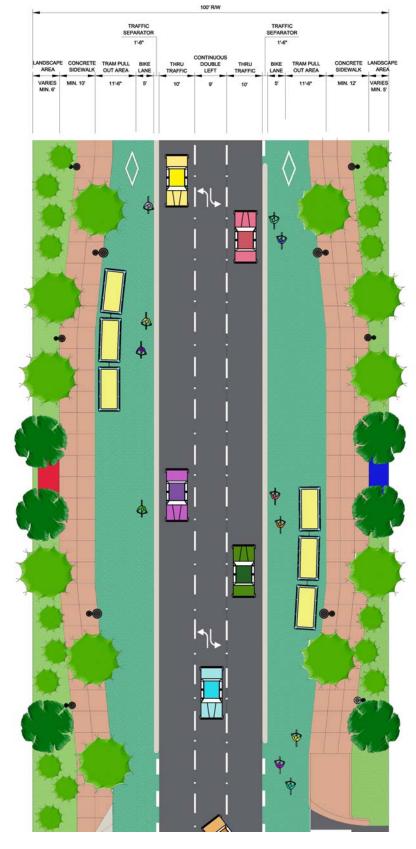


**PLAN VIEW** 



FIGURE 4
100' RIGHT-OF-WAY WITH TRAM PULL-OUT
TYPICAL SECTION & PLAN VIEW

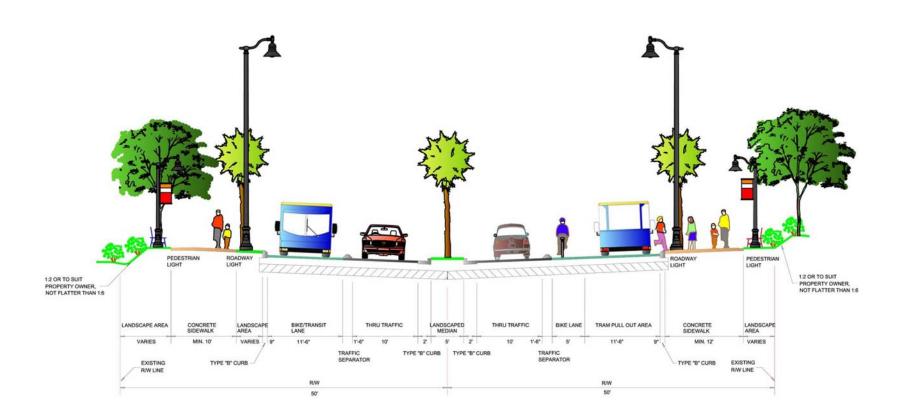


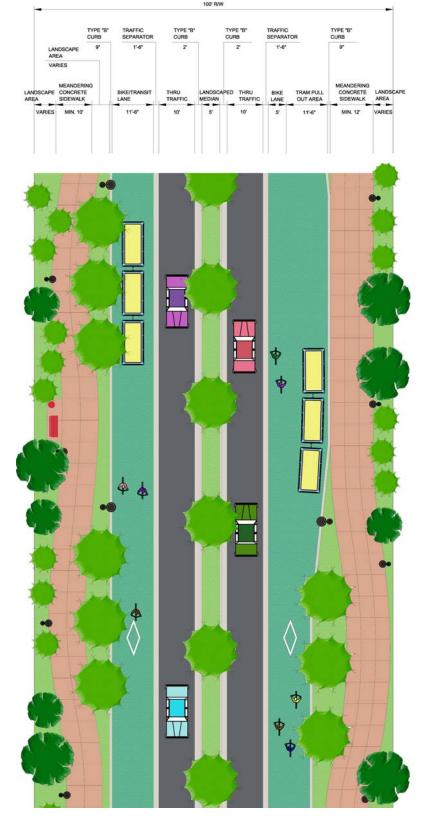


**PLAN VIEW** 



FIGURE 5
OPTIONAL - 100' RIGHT-OF-WAY WITH LANDSCAPED MEDIAN & MEANDERING SIDEWAKS
TYPICAL SECTION & PLAN VIEW





**PLAN VIEW** 



# INTERSECTION AND MID-BLOCK CROSSING DESIGN

#### A. INTERSECTION DESIGN

Decorative intersection treatments shall be provided along Front Beach Road, Hutchinson Boulevard and Back Beach Road. There are two types of intersection treatments:

- 1. Primary Intersections Where the primary road connectors [North Thomas Drive, South Thomas Drive, Beckrich Road, Alf Coleman Road, Clara Avenue, Hutchinson Boulevard, Powell Adams Road and Arnold Boulevard (S.R. 79)] intersect with Front Beach Road. These primary intersections shall consist of Ivory, Buff or Beach color concrete pavers for the pedestrian landings; contrasting color concrete detectable panels for the handicap ramps; Emerald Green color stamped concrete with Fishscale pattern for the crosswalks; and a Beige identity icon at the center of the intersection to be sandblasted into a minimum 30'x30' square concrete base (see Figures 6, 8, 9 &10).
- 2. Secondary Intersections The remainder of the intersections along Front Beach Road and where the primary road connectors [North Thomas Drive, South Thomas Drive, Beckrich Road, Alf Coleman Road, Clara Avenue, Hutchinson Boulevard, Powell Adams Road and Arnold Boulevard (S.R. 79)] intersect with Hutchinson Boulevard and Back Beach Road. These intersections shall consist of Natural Grey concrete for pedestrian landings, Beach color concrete detectable panels for handicap ramps and Tile Red stamped color concrete with Old Brick Herringbone pattern (see Figures 7, 8 & 10).



FIGURE 6
PRIMARY INTERSECTION DESIGN

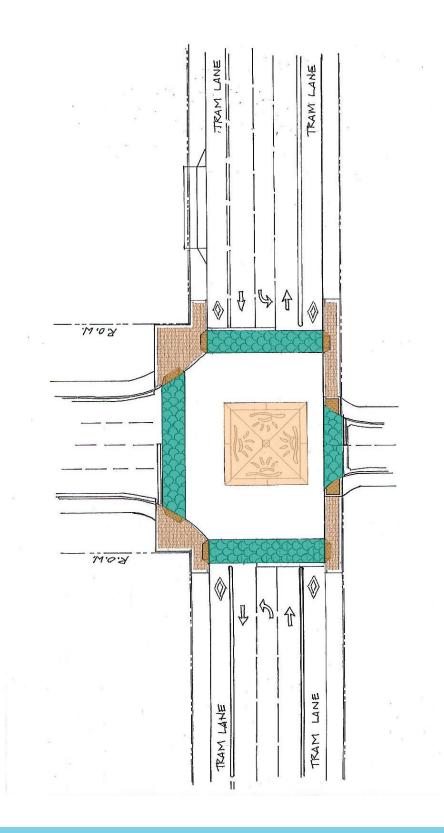
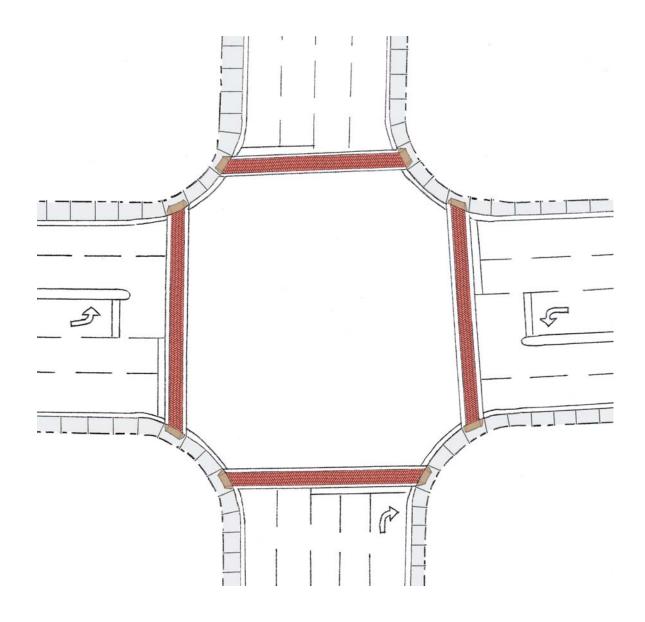




FIGURE 7
SECONDARY INTERSECTION DESIGN





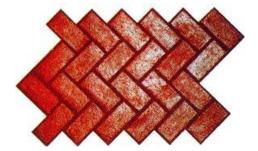
# FIGURE 8 HARDSCAPE MATERIALS



Primary Intersection
Pedestrian Landings - Concrete Pavers (Ivory, Buff, Beach colors)



Primary Intersection
Crosswalks –Stamped Concrete (Fishscale Pattern, Emerald Green color)

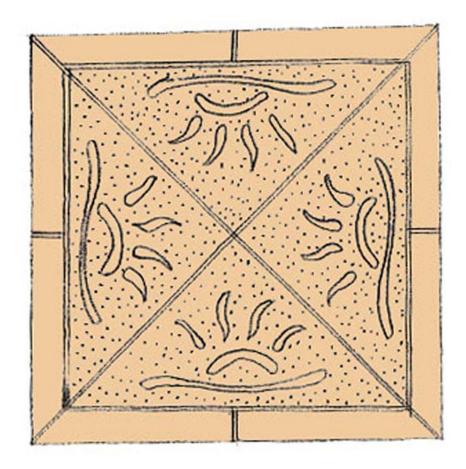


Secondary Intersection
Crosswalks –Stamped Concrete (Old Brick Herringbone pattern, Tile Red color)



# FIGURE 9 IDENTITY ICON

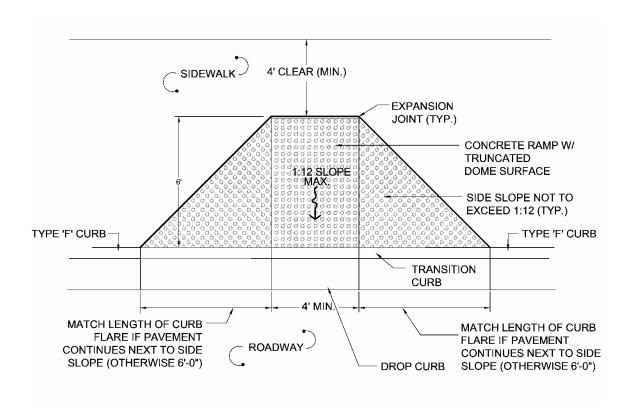
• To be sandblasted into a minimum 30' x 30' Beige color concrete square.

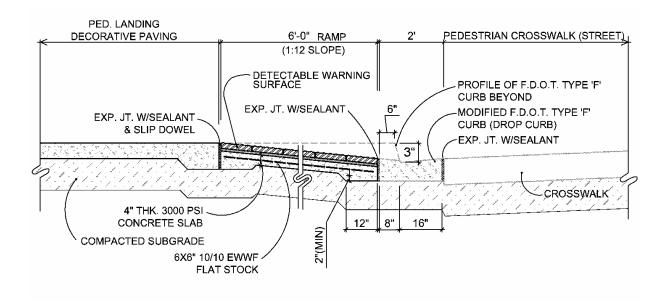




#### FIGURE 10 HANDICAP RAMP

• Contrasting color concrete pavers from the pedestrian landing.







#### **B. MID-BLOCK CROSSING DESIGN**

Mid-block crossings along Front Beach Road shall be provided to improve safety for pedestrians at specific locations where pedestrians would be expected to need to cross the road (i.e., connecting to beach accesses, entertainment/attraction areas, public promenades/plazas and high-rise condominiums). The minimum distance from a signalized intersection shall be 300 feet.

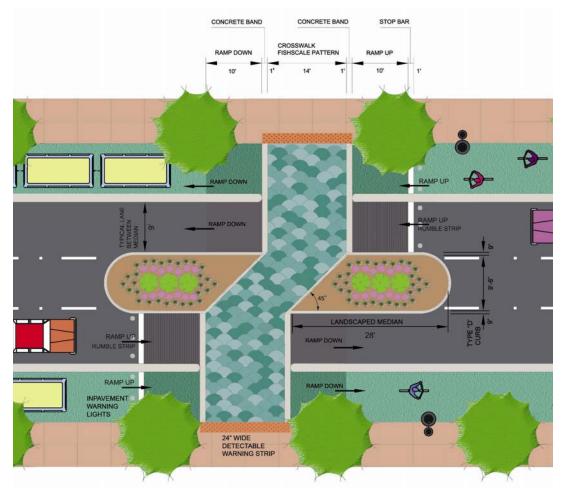
Mid-block crossings shall consist of the following:

- 1. Minimum 14' wide elevated crosswalk and refuge island angled 45° to direct pedestrians to view on-coming traffic. The crosswalk shall match the grade of the sidewalk.
- 2. The crosswalk shall be emerald green color stamped concrete with Fishscale pattern.
- 3. A 24" wide detectable warning strip shall be provided at either curb. The color of the detectable warning strip shall be contrasting to the sidewalk.
- 4. Minimum 9'-6" x 28' (longest length) landscaped medians with Type "D" curbing.
- 5. Maximum 2'-6" high shrubs and minimum 18" high groundcovers shall be provided within the landscaped medians.
- 6. Minimum 10' long ramps with rumble strips on the up-ramps of the thru-traffic lanes.
- 7. The thru-traffic lanes shall be narrowed to 9' between the landscaped medians and sidewalk.
- 8. Inpavement warning lights (Traffic Safety Corporation, TS600 or equivalent) shall be installed in front of the stop bars, as per the manufacturer's specifications. These lights shall be activated by a push-button at either curb. The pole for the push-button shall have a black finish.
- 9. "Yield to Pedestrian" signs shall be provided as per FDOT standards.

(See Figures 10a and 10b)



### FIGURE 10a MID-BLOCK CROSSING



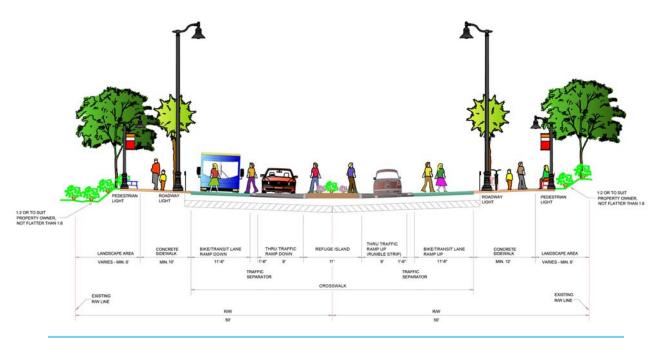
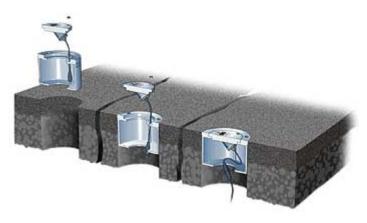
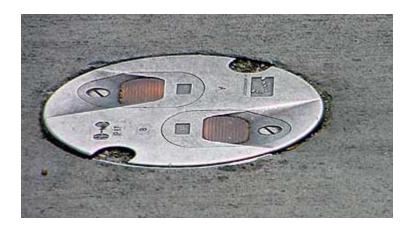


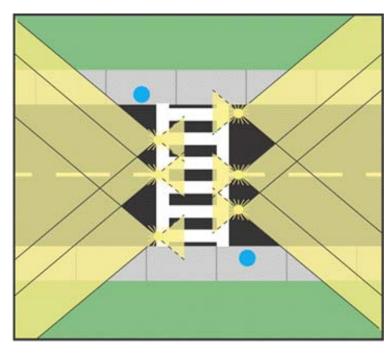


FIGURE 10b
INPAVEMENT WARNING LIGHTS











# ROADWAY CURBING AND TRAFFIC SEPARATOR

The roadway curbing along Front Beach Road consists of a 3" raised mountable curb between the sidewalks and the bike/tram lanes. The purpose of the mountable curb is to delineate the pedestrian and vehicular travel areas and to allow emergency vehicles to use the bike/tram lanes to by-pass congested traffic during emergency situations (see Figure 11).

There is also a 1'-6" wide and 6" high traffic separator on both sides of Front Beach Road to provide a visual and physical delineation between the travel lanes and the bike/tram lanes. This traffic separator is mountable for emergency vehicles to by-pass the congested traffic during emergency situations (see Figure 12).

In areas within the 100' right-of-way, where the dual left turning lanes are not warranted, raised center landscaped medians and meandering sidewalks may be possible. A Type "F" curb shall be required for the meandering sidewalks and a Type "E" curb and gutter shall be required for the raised center landscaped medians (see Figures 13 &14).



FIGURE 11 3" MOUNTABLE CURB

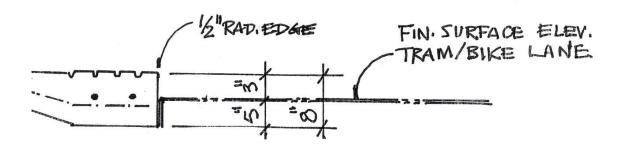


FIGURE 12 TRAFFIC SEPARATOR

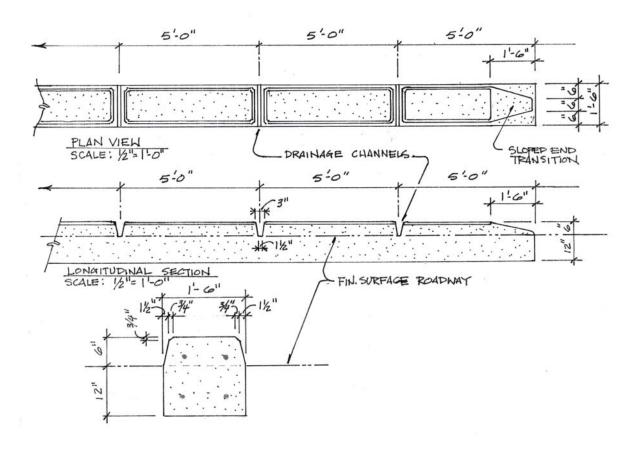




FIGURE 13
TYPE "F" CURB AND GUTTER

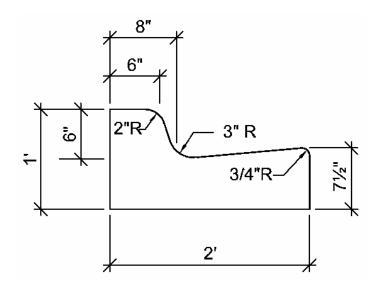
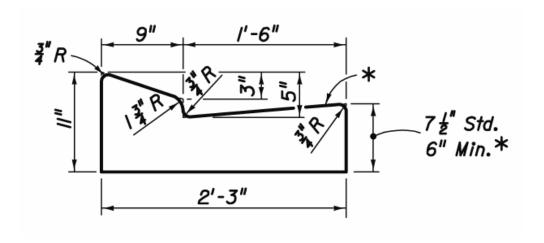


FIGURE 14
TYPE "E" CURB AND GUTTER



**Note:** The concrete curb & gutter shall meet the latest edition of the Florida Department of Transportation Standards and Specifications.



### Section 4

### PEDESTRIAN SIDEWALKS

The desire to redevelop Front Beach Road as a pedestrian friendly and visually enhanced corridor requires a functional sidewalk with appropriate widths, ranging from 8' to 12' depending on the right-of-way and 4' x 4' tree wells to plant street trees (see Section 1 – Roadway Cross Sections & Figure 15).

Even though, there are color and texture changes between the sidewalks and the tram lanes, a tactile waning strip (tooled grooves at 3" on- center, up to 12" wide) shall be provided along the edge of the sidewalks as an additional safety precaution, since there is only a 3" high mountable curb (see Figure 16).

The finishes on the concrete sidewalks vary depending on the character districts:

1. Exposed Aggregate Color Concrete – Beach Village



2. Beige Concrete with Rock Salt Finish – Resort Paradise



3. Grey Concrete with Broom Finish - Coastal Casual





FIGURE 15 CONCRETE SIDEWALK

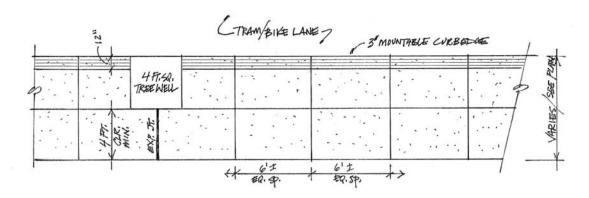
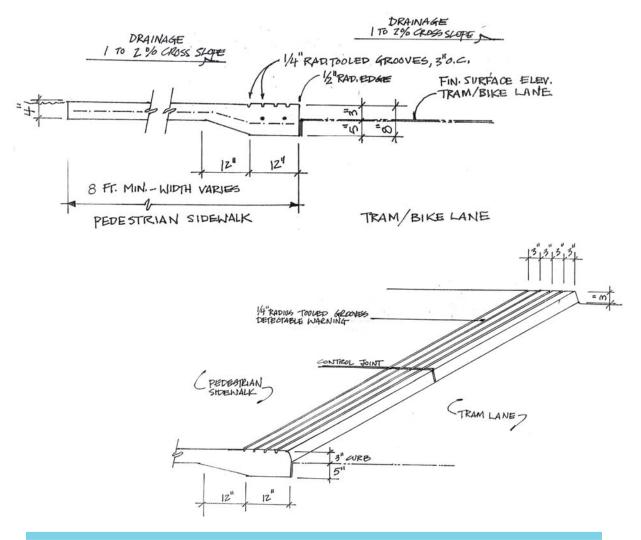


FIGURE 16 CONCRETE SIDEWALK EDGE





# BEACH ACCESS FACILITIES

Beach access is also an important part of the pedestrian network by providing distinctive access signs and a minimum 6' wide boardwalks leading from Front Beach Road to the beach (see Figures 17, 18 & 19). The site furniture (benches, trash receptacles, planters and bicycle racks) shall be consistent with the Character Area Districts.

There are three classifications of beach access and associated amenities:

### 1. Primary Beach Access

- a. Location to be designated by the City
- b. Location must be under public ownership
- c. Site must have direct access (either Gulf-front or 'directly' across the street from a public access) to 100 public parking spaces and spaces must be clearly signed as beach access parking or general public parking
- d. Public restrooms must be available
- e. Location to be designated by the City
- f. Outdoor shower(s) should be associated with restroom
- g. Beach hazard flag pole should be location is a visible location directly associated with access point
- h. Signage
  - i. Beach Access Site #
  - ii. Beach Hazard Flag Identification Sign
  - iii. Operation Hours and Rules
- i. Pedestrian Amenities
  - Walkways shall be provided from parking area to beach access point; dune crossovers such as boardwalks should be used to protect natural beach areas
  - ii. Trash receptacles should be located near restrooms, parking area and at the direct access point or cross over
  - iii. Shelters may be provided where site conditions permit
  - iv. Benches may be provided under shelters or incorporated into beach access point or walkway where site conditions permit

### 2. Secondary Beach Access

- a. Location to be designated by the City
- b. Location must be under public ownership
- c. Parking must be provided for within one-quarter mile of beach access point and be clearly signed as beach access parking or general public parking.
- d. Signage
  - i. Beach Access Site #
  - ii. Beach Hazard Flag Identification Sign
  - iii. Operation Hours and Rules



#### e. Pedestrian Amenities

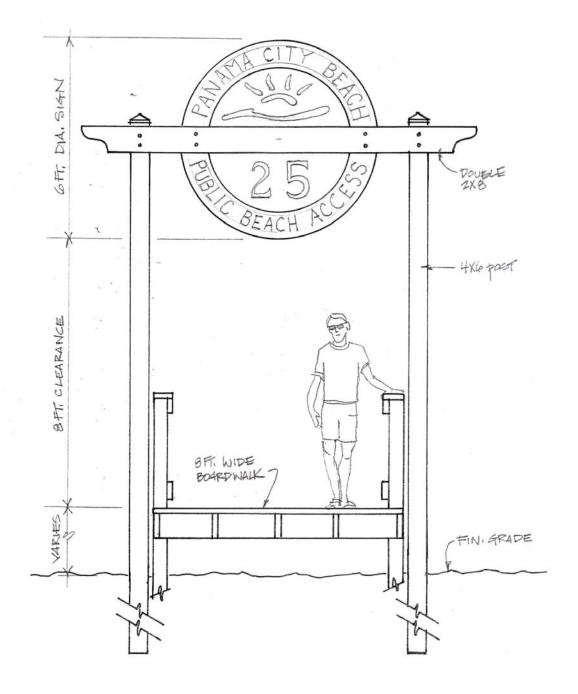
- Walkways or signage directing beach goers to access point shall be provided from parking area to beach access point; dune crossovers such as boardwalks should be used to protect natural beach areas
- ii. Trash receptacles should be located near parking area and at the direct access point or cross over
- iii. Shelters may be provided where site conditions permit
- iv. Benches may be incorporated into beach access point or walkway where site conditions permit

#### 3. Tertiary Beach Access

- a. Location to be designated by the City
- b. Parking spaces are not required to be associated with tertiary beach access points
- c. Signage
  - i. Beach Access Site #
- d. Pedestrian amenities are not required for tertiary beach access point

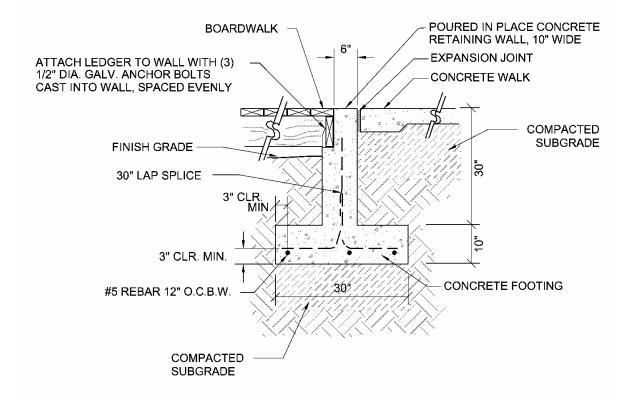


FIGURE 17 BEACH ACCESS SIGN



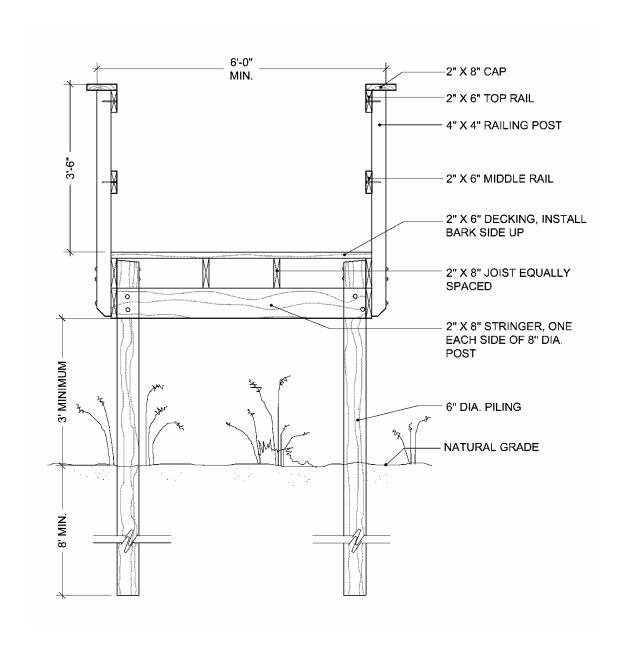


### FIGURE 18 BOARDWALK APPROACH





### FIGURE 19 BOARDWALK





# **UEHICULAR ACCESSES**

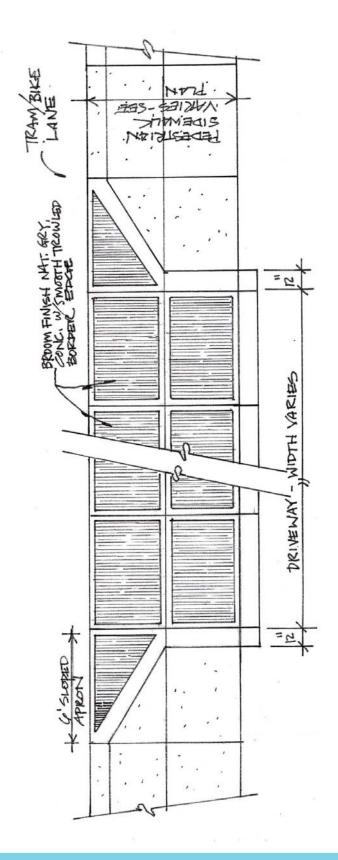
The driveway aprons along Front Beach Road shall be natural grey concrete with a broom finish and smooth trowel border edge (see Figure 20).

Joint use driveway access shall be provided, where feasible, between adjoining parking lots to allow for alternative dispersal of vehicular traffic and to promote a logical and inter-connected parking lot network within the site. The standards for joint use driveways are as follow:

- 1. Development sites with less than 200 feet of street frontage shall provide driveway consolidation and cross access easements.
- Proposed surface parking lots shall connect to driveway stubouts or adjacent properties. Wherever a proposed development abuts undeveloped land(s) or developed land/s with redevelopment potential, driveway stubouts to adjacent properties shall be provided to allow future access to abutting properties.



### FIGURE 20 DRIVEWAY APRON





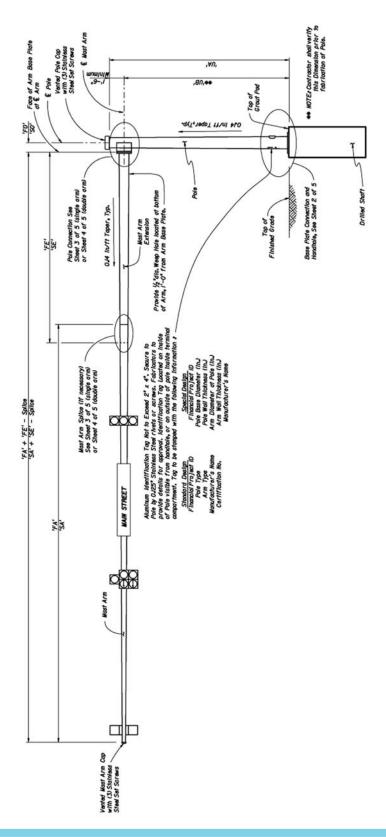
# TRAFFIC SIGNAL MAST ARMS

The design, location and specifications for the traffic signal mast arms shall be according to the Florida Department of Transportation (FDOT) Design Standards 17745 and all related indexes. The mast arms shall have a black finish to blend into the background throughout the entire Front Beach Road corridor (see Figure 21).

The controller cabinet assembly shall be a NAZTEC TS-1 and shall comply with FDOT specifications. The controller cabinet shall not impede pedestrian movement along the sidewalks and shall have a black finish to blend into the background throughout the entire Front Beach Road corridor and primary connector roads.



FIGURE 21
TRAFFIC SIGNAL MASS ARMS





# LIGHTING STANDARDS

The street lighting along Front Beach Road consists of decorative pedestrian scale lights and roadway lights with a nautical theme from Holophane Lighting. These street lights shall have a black color finish to blend into the background and provide a common design thread for the entire corridor. Banner arms may be attached to the light poles to celebrate special events and festivities (see Figures 22, 23 & 25).

The decorative roadway lights shall also be installed along the primary connector roads [North Thomas Drive, South Thomas Drive, Beckrich Road, Alf Coleman Road, Clara Avenue, Hutchinson Boulevard, Powell Adams Road and Arnold Boulevard (S.R. 79)] to provide a consistent nautical theme leading to Front Beach Road (see Figure 23). The decorative roadway lights with dual fixtures may be incorporated into the lighting scheme along the primary connector roads, where additional light distribution is necessary, as determined by the lighting engineer (see Figure 24).

### A. PEDESTRIAN LIGHTING - 12' Hallbrook Assembly

- 1 SPECIFICATIONS:
  - a. HLP1108-30506T4-CM17CBS12' Decorative Aluminum Pole with 17" chamshell base
  - b. BHC36/1-CA/BK LESS SCROLL AND TOP FINIAL 3' ARM
  - c. GWLF200-SCA/BK

GlasWerks Leveling Slipfitter for Standard Mast Arms, Slipfit 2 inches (2-3/8 inch O.D.) Nominal Pipe, Swivel Version Cast Aluminum, Black Finish.

d. GS10DMHMA2BS1AN S-64417

Hallbrook Standard Series, 100 Watt Metal Halide Medium Base, Multivolt, 120, 208, 240, 277V Factory Wired for 120 Volt ONLY, Pendant Housing Style, Standard Fixture – No Up Light, 919 Sag Glass Asymmetric, No Cast Guard, Painted Standard Holophane Black Finish with Sylvania (MP100/U/MED) 100MH Clear Medium Base "O" Pulse Start Protected Lamp.

#### 2. PLACEMENT:

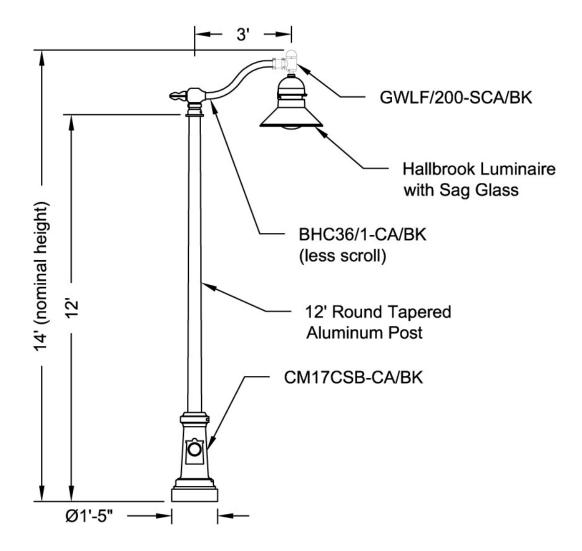
The light poles shall be installed approximately 50 feet on center and spaced between the roadway lights behind the back of sidewalk in the landscape area with the light fixtures oriented toward the pedestrians. The pedestrian lights shall also be located in high pedestrian active areas (i.e., beach access, public promenades/plazas, etc).

#### 3. INSTALLATION:

The lighting assembly and in-ground installation shall be per manufacturer's specifications.



### FIGURE 22 PEDESTRIAN LIGHT





### B. ROADWAY LIGHTING - 30' Hallbrook Assembly (Single Light Fixture)

### 1. SPECIFICATIONS:

#### a. HLP2908-60108T4-CM23CSB

30' Decorative Aluminum Pole with 23" chamshell base

## b. BHC48/1-CA/BK LESS SCROLL AND TOP FINIAL

### c. GWLF200-SCA/BK

GlasWerks Leveling Slipfitter for Standard Mast Arms, Slipfit 2 inches (2-3/8 inch O.D.) Nominal Pipe, Swivel Version Cast Aluminum, Black Finish.

### d. GE175MHMA2BS2AN S-64471

Hallbrook Entended Cover, 175 Watt Metal Halide Mogul Base, Multivolt, 120, 208, 240, 277V, Factory Wired for 120 Volt ONLY, Pendant Housing Style, Standard Fixture – No Up Light, 920 Sag Glass Aymmetric, No Cast Guard, Painted Standard Holophane Black Finish with Sylvania (M175/U) 175MH Clear Mogul Base "E" Lamp.

### 2. PLACEMENT:

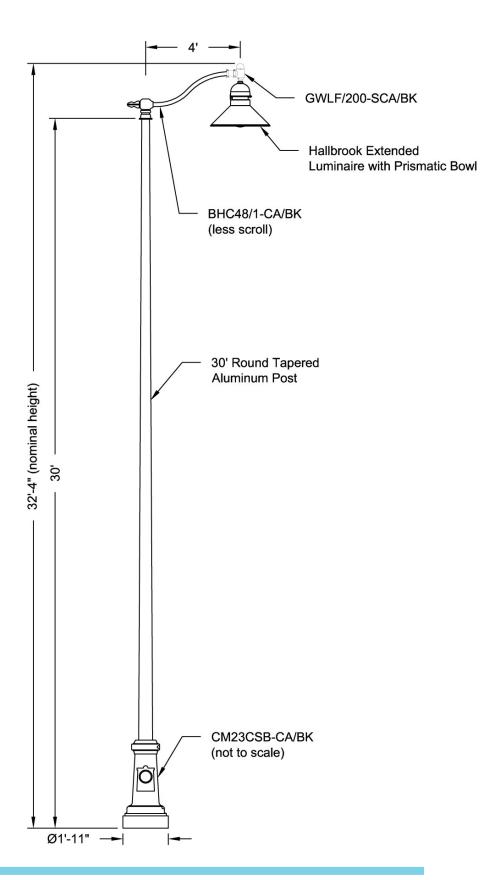
The light poles shall be installed approximately 100-foot on center at 2'-6" behind the back of curb with the light fixtures shall be oriented toward the road.

#### 3. INSTALLATION:

The lighting assembly and in-ground installation shall be per manufacturer's specifications.



FIGURE 23 ROADWAY LIGHT (Single Light Fixture)





### C. ROADWAY LIGHTING - 30' Hallbrook Assembly (Dual Light Fixtures)

#### 1. SPECIFICATIONS:

#### a. HLP2908-60108T4-CM23CSB

30' Decorative Aluminum Pole with 23" chamshell base

## b. BHC48/1-CA/BK LESS SCROLL AND TOP FINIAL

#### c. GWLF200-SCA/BK

GlasWerks Leveling Slipfitter for Standard Mast Arms, Slipfit 2 inches (2-3/8 inch O.D.) Nominal Pipe, Swivel Version Cast Aluminum, Black Finish.

### d. GE175MHMA2BS2AN S-64471

Hallbrook Entended Cover, , 175 Watt Metal Halide Mogul Base , Multivolt, 120, 208, 240, 277V, Factory Wired for 120 Volt ONLY, Pendant Housing Style, Standard Fixture – No Up Light, 920 Sag Glass Aymmetric, No Cast Guard, Painted Standard Holophane Black Finish with Sylvania (M175/U) 175MH Clear Mogul Base "E"Lamp.

## e. BHC36/1-CA/BK LESS SCROLL AND TOP FINIAL for mounting at 12' on pole 3' ARM

#### f. GWLF200-SCA/BK

GlasWerks Leveling Slipfitter for Standard Mast Arms, Slipfit 2 inches (2-3/8 inch O.D.) Nominal Pipe, Swivel Version Cast Aluminum, Black Finish.

### g. GS10DMHMA2BS1AN S-64417

Hallbrook Standard Series, 100 Watt Metal Halide Medium Base, Multivolt, 120, 208, 240, 277V, Factory Wired for 120 Volt ONLY, Pendant Housing Style, Standard Fixture – No Up Light, 919 Sag Glass Asymmetric, No Cast Guard, Painted Standard Holophane Black Finish with Sylvania (MP100/U/MED) 100MH Clear Medium Base "O" Pulse Start Protected Lamp.

#### 2. PLACEMENT:

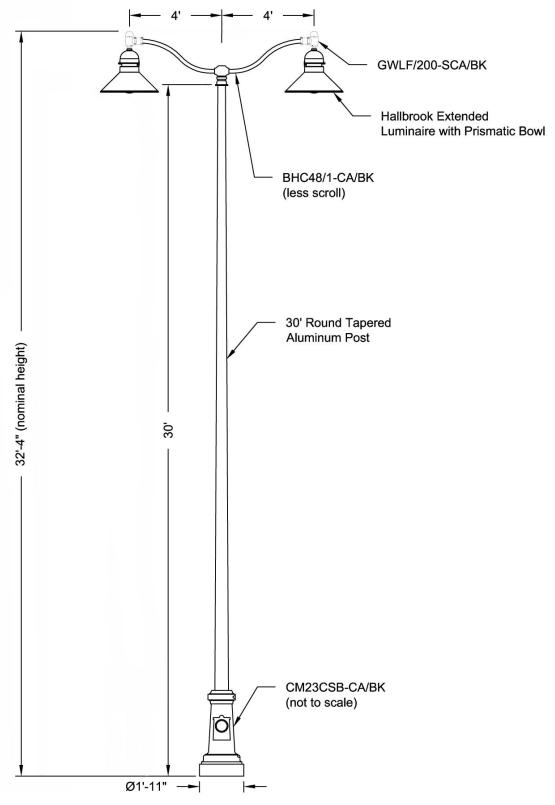
The light poles may be incorporated into the lighting scheme along the primary connector roads, where additional light distribution is necessary, as determined by the lighting engineer

### 3. INSTALLATION:

The lighting assembly and in-ground installation shall be per manufacturer's specifications.



FIGURE 24 ROADWAY LIGHT (Dual Light Fixtures)





### D. BANNER ARMS

### 1. SPECIFICATIONS:

### a. 2BA26-B/1/CO

2-26" same side banner arms (top and bottom) to fit 24" banner; ball cap end; 1" pipe; clamp on. Banner arms range from 18" to 30".

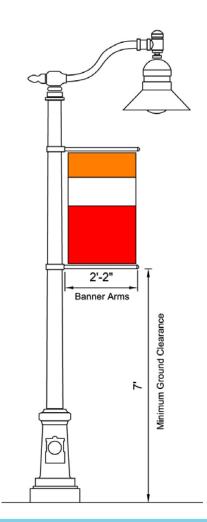
### 2. PLACEMENT:

The banner arms shall be attached to the inside of the light pole underneath the light fixture. The bottom arm shall be located at a minimum of 7' from the ground level.

### 3. INSTALLATION:

The banner arms shall be installed as per manufacturer's specifications.

### FIGURE 25 BANNER ARMS





# PLANT INSTALLATIONS

The plant installation shall comply with applicable Federal, State and local codes, ordinances and regulations governing landscape materials and work, as well as good horticultural practice. Plant material shall conform to the names given in "Standardized Plant Names", 1942 Editions, prepared by the American Joint Committee on Horticultural Nomenclature or by the Bureau of Plant Industry, State of Florida; and shall be graded Florida Fancy as outlined under Grades and Standards for Nursery Plants, State Plant Board of Florida. The following details specify typical planting installations (see Figures 26, 27, 28, 29 & 30).

The work shall be coordinated with other trades to prevent conflicts and with the irrigation work to assure availability of water and proper location of irrigation equipment and plant materials.

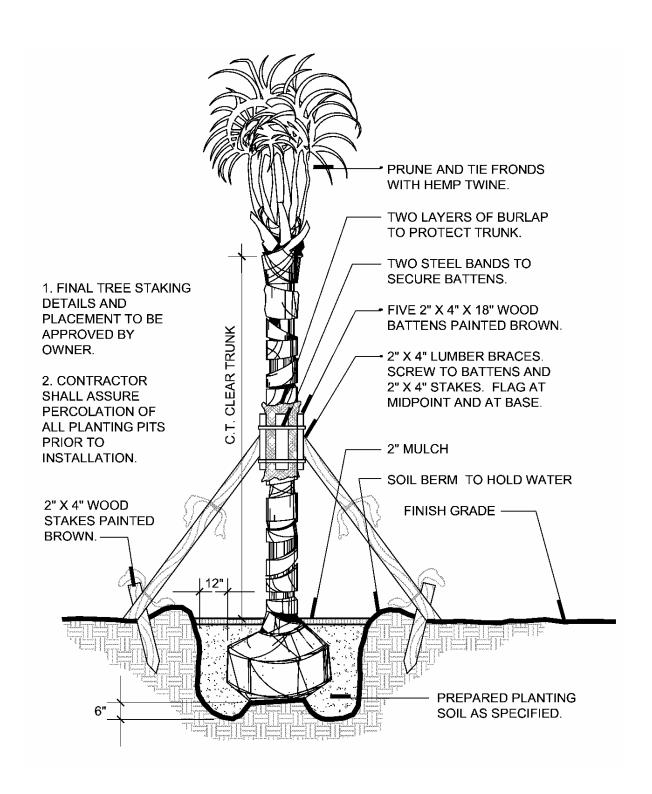
The minimum plant height at installation shall be as follows:

Palms 12' high clear trunk

Trees 12' high Understory Trees 8' high Shrubs 3' high Groundcover 18" high

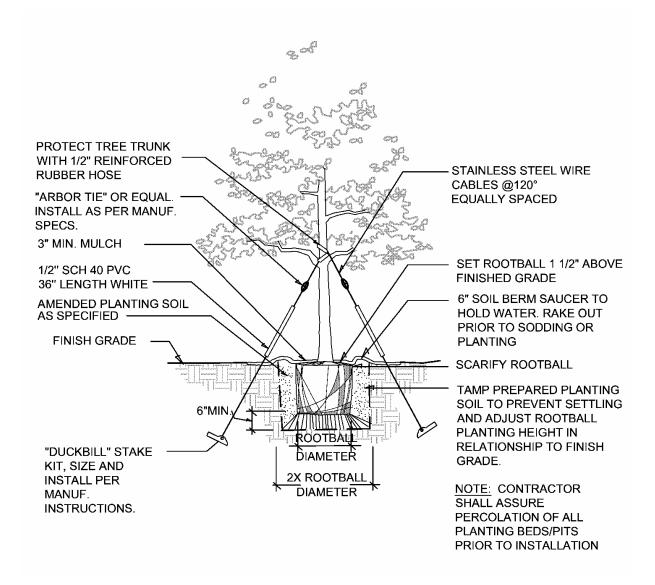


## FIGURE 26 PALM INSTALLATION



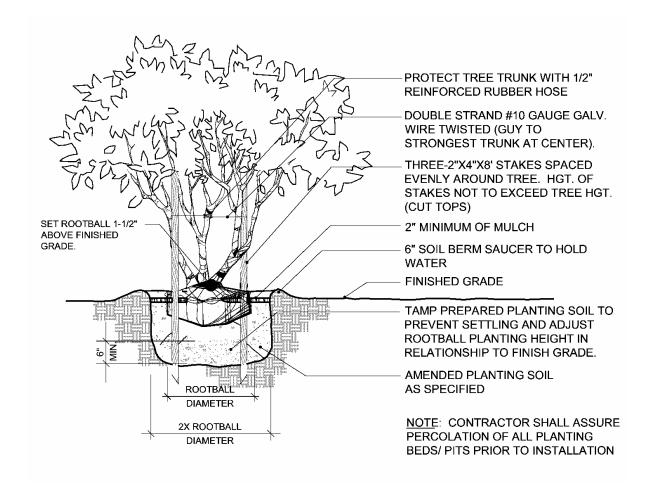


## FIGURE 27 TREE INSTALLATION



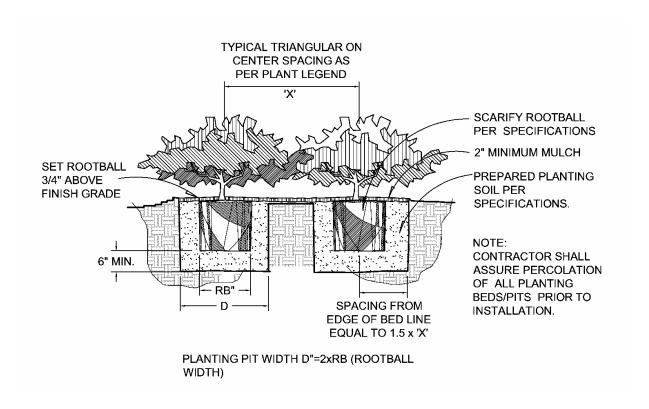


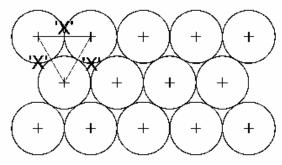
## FIGURE 28 MULTI-TRUNK TREE INSTALLATION





### FIGURE 29 SHRUB INSTALLATION

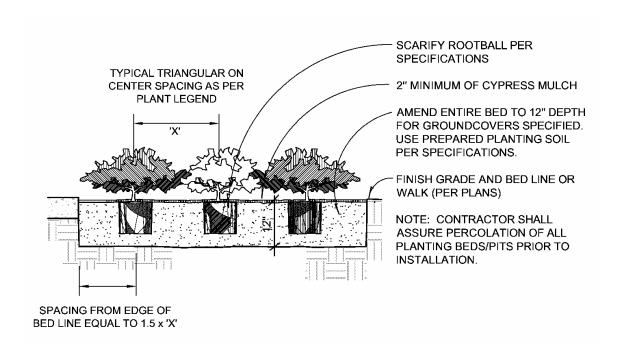


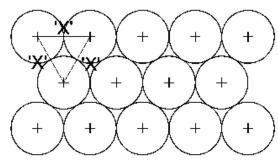


ALL SHRUBS & GROUNDCOVER MASSES TO USE TRIANGULAR SPACING EXCEPT WHERE NOTED. REFER TO PLANT LIST FOR INDIVIDUAL PLANT SPACING 'X'.



## FIGURE 30 GROUNDCOVER INSTALLATION





ALL SHRUBS & GROUNDCOVER MASSES TO USE TRIANGULAR SPACING EXCEPT WHERE NOTED. REFER TO PLANT LIST FOR INDIVIDUAL PLANT SPACING 'X'.



# IRRIGATION

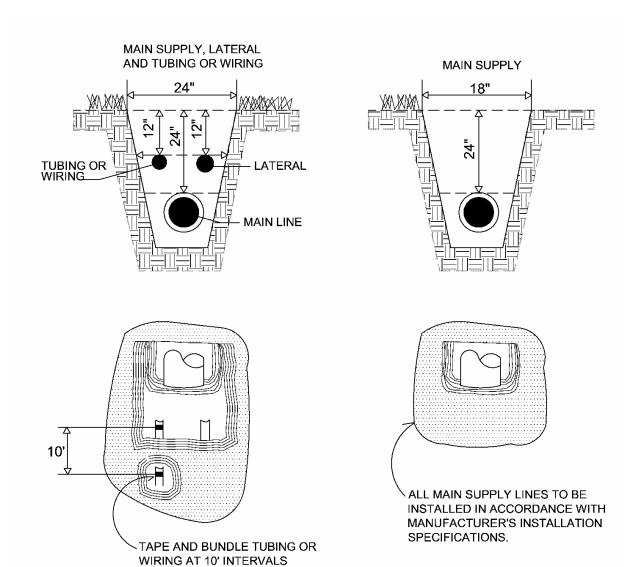
Irrigation shall be provided to all plant materials. The irrigation system shall be a complete unit produced by acceptable manufacturers for all portions of the work, including heads, valves, piping, circuits, controls, hosebibs and accessories. Design modifications may be made as necessary to meet field conditions.

The irrigation control shall be accomplished by automatic timers. These controllers shall be set outdoors and shall be accessible to the City Public Works Department and shall have a lockable hasp.

The following details specify minimum standards for irrigation trenches and thrust blocks (see Figures 31, 32 & 33).

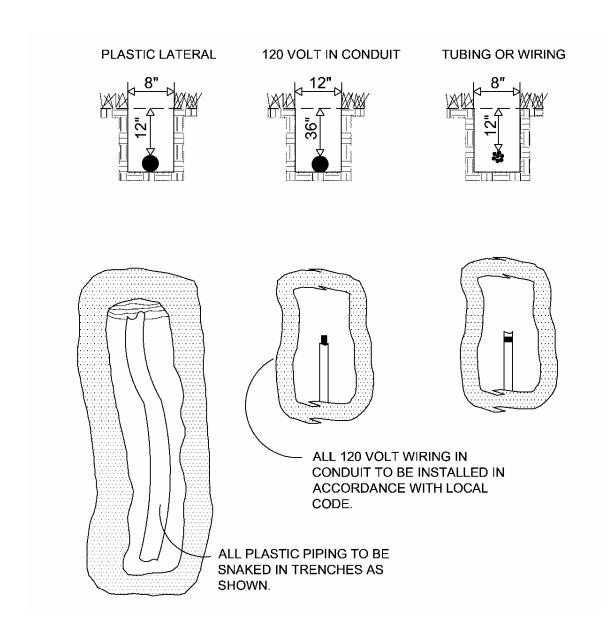


# FIGURE 31 IRRIGATION TRENCHES



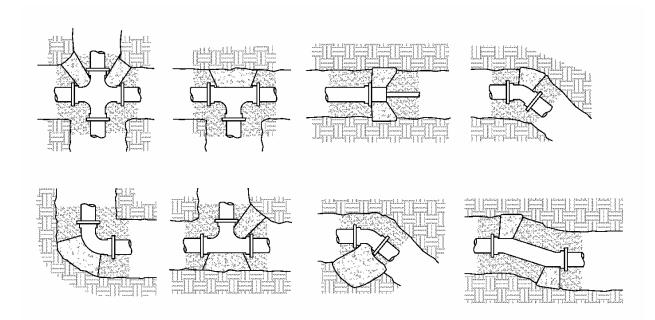


# FIGURE 32 IRRIGATION TRENCHES





## FIGURE 33 IRRIGATION THRUST BLOCKS



THRUST BLOCKS ARE TO BE CONSTRUCTED WITH 3,000 PSI CONCRETE. STEEL REINFORCING RODS WILL BE REQ'D IF SURROUNDING SOIL HAS A BEARING VALUE OF LESS THAN 2,000 PSF. THRUST BLOCKS REQUIRED AT ALL FITTINGS AND DIRECTION CHANGES ON MAIN LINES. NOTE THRUST BLOCK LOCATIONS ON AS-BUILT DRAWINGS.



# PLANT PALETTE

The following plant palette is typical of the climatic zone (Plant Hardiness Zone 9) and the coastal region of Panama City Beach. The plant palette is divided into two lists: 1) Primary Palette Listing can be used throughout the Front Beach Road Community Redevelopment Area and 2) Special Conditions Palette Listing can be used when specific climatic and/or conditions exist to protect the plant from extreme environmental or physical damage.

### LANDSCAPE MATERIAL FOR USE THROUGHOUT CORRIDOR

PLANT TYPE	COMMON NAME	BOTANICAL NAME
TREES	Southern Red Cedar	Juniperus silicicola
	Jerusalem Thorn	Parkinsonia aculeate
	Live Oak	Quercus virginiana
	Sand Pine	Pinus clausa
	Chickasaw Plum	Prunus angustifolia
		1.1
PALMS	Sabal Palm	Sabal palmetto
	Washington Palm	Washingtonia robusta
	Medjool Date Palm	Phoenix dactylifera "medjool"
	•	
SHURBS	Beargrass	Nolina brittoniana
	Christmas Berry	Lycium carolinianum
	Coontie	Zamia floridana
	Rhaphiolepis indica	Indian Hawthorn
	Nerium Oleander	Oleander
	Pittosporum	Pittosporum tobira
	Yew Podocarpus	Podocarpus macrophillus
	Silverthorn	Elaeagnus pungens
	Saw Palmetto	Serenoa repens
	Shore Juniper	Juniperus conferta
GROUNDCOVER	Beach Sunflower	Helianthus debilis
	Blanket Flower	Gaillardia pulchella
	Daisy Sea Oxeye	Borrichia frutescens
	Daylily	Hemerocallis spp
	Grass, Bitter Panic	Panicum amarum
	Gopher Apple	Licania michauxii
	Bitter Panic Grass	Panicum amarum
	Muhly Grass	Muhlenbergia capillaris
	Saltmeadow Cord Grass	Spartina patens
	Sand Cord Grass	Spartina bakeri
	Sea Oats	Uniola paniculata
	Rain-lily	Zephyrathes spp.



### LANDSCAPE MATERIAL FOR USE IN PROTECTED AREAS FROM SALT AND COLD

PLANT TYPE	COMMON NAME	BOTANICAL NAME
TREES	Southern Crabapple	Malus angustifolia
	Crape Myrtle	Lagerstroemia indica
	Dahoon Holly	Ilex cassine
	East Palatka Holly	Ilex attenuata
	Southern Magnolia	Magnolia grandiflora
	Slash Pine	Pinus elliottis
		The same same same same same same same sam
PALMS	Canary Island Date Palm	Phoenix canariensis
	Chinese Fan Palm	Livistona chinensis
	European Fan Palm	Chamaerops humilis
	Pindo Palm	Butia capitata
	Sago Palm	Cycas revolute
SHURBS	Anise	Illicium floridanum
	Christmas Berry	Lycium carolinianum
	Gallberry	Ilex glabra
	Fahatchee Grass	Tripsacum dactyloides
	Gardenia	Gardenia augusta
	Golden Dewdrop	Duranta evecta
	Guava, pineapple	Feijoa sellowiana
	Hawthorn, Indian	Rhaphiolepis indica
	Hibiscus	Hibiscus rosa-sinensis
	Holly, Burford	Ilex cornuta "Burford"
	Oleander	Nerium oleander
	Pampas Grass	Cortaderia selloana
	Photinia glabra	Photinia or Red-tip
	Plumbago	Plumbago auriculata
	Podocarpus, yew	Podocarpus macrophyllus
	Silverthorn	Elaeagnus pungens
	Split Leaf Philodendron	Philopendron selloum
	Texas Sage	Leucophyllum frutescens
	Thryallis	Galphimia gracilis
	Wax Myrtle	Myrica cerifera
GROUNDCOVER	Beach Morning Glory	Ipomoea imperati
	Blue Daze	Evolvulus glomerata
	Gopher Apple	Licania michauxii
	Grass, Aztec	Ophiopogon spp.
	Grass, Mondo	Ophiopogon japonicus
	Grass, muhly	Muhlenbergia capillaries
	Grass, saltmeadow cord	Spartina patens
	Grass, sand cord	Spartina bakeri
	Jasmine, Asiatic	Trachelospernum asiaticum
	Liriope	Liriope spp.



# **IDENTITY ICON**

On October 27, 2005, the City Council approved the use of the existing Tourism Development Council (TDC) logo to serve as a unifying thread throughout Panama City Beach and the Front Beach Road Community Redevelopment Area.



TDC Logo

This logo can be incorporated into the site furniture (i.e., trash receptacles, planters, etc.) by attaching a medallion or applying a decal to the surface of the furniture. Coordinate with the manufacturer for modifications and specifications to the site furniture.



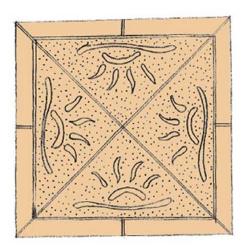


The logo can also be incorporated into a banner to be attached to the pedestrian and vehicular streetlights. Coordinate with the banner manufacturer with the specific size of the banner arm attachment as indicated in <u>Section 8 – Lighting Standards</u>.



**Street Banner Application** 

With some modifications to the design of the logo, it can be incorporated into the primary connector intersections by sandblasting into the roadway concrete base surface for ease of implementation, consistency of product and maintenance (see Section 2 – Intersection Design).





# TRANSIT SYSTEM

A multi-modal bicycle/tram system is feasible within the Front Beach Road Redevelopment Area to mitigate the transportation, parking and safety issues by creating a transit-friendly environment.

The transit system will be divided into two routes – the East Run (Phase 1) and the West Run (Phase 2), with Pier Park being the dividing point. The East Run will begin at South Thomas Drive in front of the Boardwalk Hotel and run to Pier Park where a turn around is all ready in place. Twenty-five stops will be placed along this route. The West Run will run from Pier Park to De Luna just west of the Sea Cove Resort. Fifteen stops will be placed along this route to coincide with present and future development (see Figures 34 & 35).

Even though further coordination between various stakeholders; continue research on vehicles, kiosk and other equipment; and development of financial/funding sources and operational/service plans is necessary to make this a reality, the following design standards are to provide guidance to fully integrate the multi-modal bicycle/tram system in the development of Front Beach Road.

- 1. Bike/Tram Lanes (see Section 1 Typical Roadways)
  - a. 9' wide bike/tram lanes within the 66' right-of-way
  - b. 11'-6" wide bike/tram lanes within the 100' right-of-way
  - c. 1'-6" wide concrete traffic separators

### 2. Paving Surface

- a. The bike/tram lanes shall have a different texture and color from the travel lanes and the sidewalks. The texture surface shall be relatively smooth to provide an easy ride (JARVIS – STONEGRIP or similar product). The color shall be emerald blue to represent the Emerald Coast of Florida.
- b. Thermoplastic pavement striping with reflectors shall be applied between the traffic separators along the inside edge of the bike/tram lanes.

#### 3. Pull-Out Areas

- a. A cantilevered transit shelter (Parasol FCL 8 x 36 or equivalent) shall be provided at each tram stop/pull-out area. The shelter shall be 8' (w) x 36 (l) x 10' (h). The posts shall be installed at the back of sidewalk as per the manufacturer's specifications. The posts and fabric shall be two different colors that are typical for each Character Area (see Figure 36).
- b. Benches may be installed under the cantilever with a minimum 5' wide circulation space in front of the benches.
- c. A trash receptacle shall be located at each shelter with a minimum 5' wide circulation space in front of the trash receptacle.
- d. 24" wide detectable warning strips shall be provided at the edge of the pedestrian waiting area at each tram pull-out area (see Figures 37 & 38).



### FIGURE 34 CIRCULATION ROUTE MAP -THE EAST RUN (PHASE 1)

### Section 1 Section 2





FIGURE 35 CIRCULATION ROUTE MAP -THE WEST RUN (PHASE 2)





FIGURE 36 CANTILEVER TRANSIT SHELTER



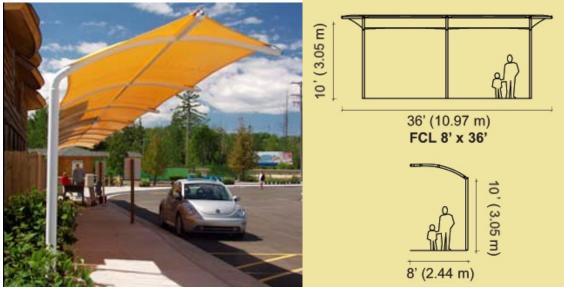
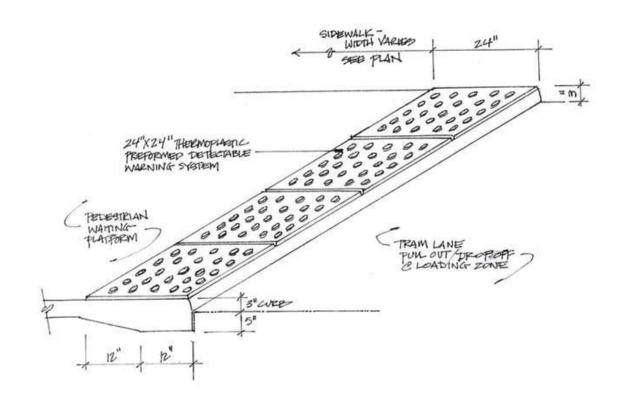




FIGURE 37
DETECTABLE WARNING STRIP WITH 3" CURB



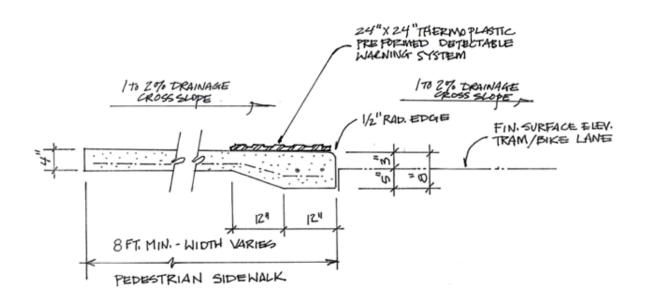
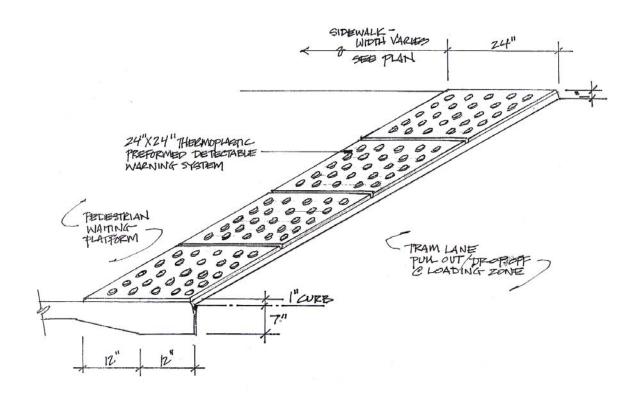
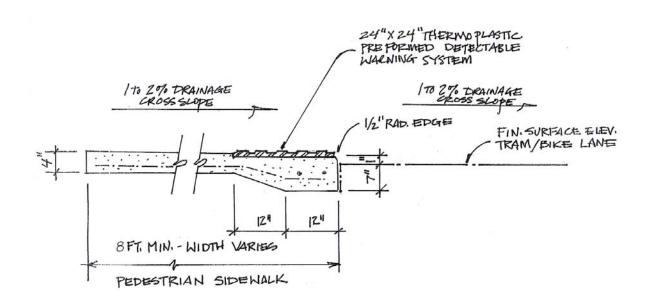




FIGURE 38
DETECTABLE WARNING STRIP WITH 1" CURB AT LOADING AREAS







# **AESTHETIC OPTIONS**

The aesthetic options will provide the streetscape theming along Front Beach Road to celebrate the festive atmosphere and the natural environment of Panama City Beach, as indicated in their branding statement:

Panama City Beach and Front Beach Road in particular are undergoing dynamic changes. Panama City Beach is known for the "World's Most Beautiful Beaches", a southern tropical paradise with white sand and emerald water, a casual, comfortable, coastal environment to visit, live, work and play.

The redevelopment of Front Beach Road should reflect this unique environment in the materials, colors and textures used within the streetscape. The design should build upon the organic coastal form and provide enhanced landscape opportunities while creating a safe and enjoyable pedestrian experience.

The following specifications will provide aesthetic treatments along the right-of-way for the three character districts: 1) Beach Village; 2) Resort Paradise; and 3) Coastal Casual, such as:

- Landscape Planting Intensities
- Hardscape Color and Texture
- Style and Color of Pedestrian Amenities, such as benches, trash receptacles and bicycle racks

A Character Area District may overlap the adjacent Character Area District boundary with a minimum of 1500 linear feet on both sides of the road. This request shall require approval by the Front Beach Road Program Team.

(See Figure 1 - Character Area Districts)



# BEACH VILLAGE

Within this area there is a higher intensity of the built or urban form. The streetscape will incorporate public promenades/plazas and wider sidewalks where appropriate to accommodate the movement of pedestrians and to assist with connections to adjacent development. The sections of the Front Beach Road corridor and the major roadway connectors within the following areas should be designed to reflect the "Beach Village" vernacular - 1) East of Pier Park to Bid-A-Wee Beach and 2) Long Beach.

### LANDSCAPE PLANTING INTENT:

- 1. Landscape plantings shall have a more formalized pattern and colors may take on a more festive flavor while still reflecting the beach or coastal vernacular.
- 2. The street trees shall consist of palm trees located in tree wells along the edge of the road at 30 to 40 feet on center between the roadway lights to provide a consistent rhythm pattern.
- 3. The landscape areas along the back of sidewalk shall consist of trees planted at 35 to 45 feet on center at regular intervals with clusters of palm trees in odd numbers to provide shade and a consistent rhythm pattern.
- 4. Larger shade trees and/or clusters of palm trees in odd numbers shall be installed next to seating areas to provide shade.
- 5. Minimum 3-foot high shrubs shall be installed between the sidewalk and the parking areas to screen the vehicles. Additional shrubs shall be located at promenades/plazas to delineate public and private spaces and at retail building and beach accesses to identify and enhance the entranceway.
- 6. Groundcovers shall be installed along the shrub rows to create a layering effect and to prevent pedestrians from bypassing through the shrubs.
- 7. Refer to <u>Section 9, 10 and 11</u> for planting installation, irrigation and plant palette.



### **TYPICAL PLANTS**





### **HARDSCAPE**:

- 1. Exposed aggregate colored concrete shall be installed along public sidewalks and promenades/plazas and beach access approaches to the boardwalks.
- 2. Minimum 12-foot wide sidewalk on the north side of the road and minimum 8 feet on the south side of the road.
- 3. Refer to <u>Section 4 Pedestrian Sidewalks</u> for specific requirements.



**Exposed Aggregate Colored Concrete** 



### AMENITIES:

### 1. Benches:

- a. Keystone Ridge, Breakwater Series, Powdercoat Color Options: Kiwi, Nantucket Blue, Cotton Candy, Lemondrop.
- b. Flat Bench Keyshield Metal Finish, Item#BW16 (6 Feet Long).
- c. Bench with Back Keyshield Metal Finish Item#BW26 (6 Feet Long).
- d. The benches shall be located in high pedestrian activity areas (i.e., near retail shops, promenades/plazas, beach access facilities, etc.), so as not to impede pedestrian movement and under shade (i.e., trees and canopy/awning).
- e. The benches shall be anchored to a concrete base, as per the manufacturer's specifications.



Color Options for Benches





### 2. Trash Receptacles:

- a. Keystone Ridge, The Basket Series, Item#Ba3-32 (32 gal.), Iceyshield Metal Finish, Powdercoat Color Options: Kiwi, Nantucket Blue, Cotton Candy, Lemondrop.
- b. The trash receptacles shall be located in high pedestrian activity areas (i.e., near retail shops, promenades/ plazas, beach access facilities, etc.), so as not to impede pedestrian movement and within easy access from the benches.
- c. The trash receptacles shall be anchored to a concrete base, as per the manufacturer's specifications.



Color Options for Trash Receptacles





### 3. Planters:

- a. Stonwear, Jordache Series, Model #JC4836, TR22
- b. The planters shall be located in high pedestrian activity areas to accentuate seating areas and to enhance the streetscape.



### 4. Bicycle Racks:

- a. Madrax, Circa 2000, 2 Hoop Model #CIR-4-SF-P
- b. Powdercoated Steel, mixture of colors.
- c. The bicycle racks shall be located in high pedestrian areas, so as not to impede pedestrian movement, next to public facilities, building entrances and beach access facilities. The bicycle racks shall be anchored to a concrete base, as per the manufacturer's specifications.



Color Options for Bicycle Racks





# RESORT PARADISE

In these areas the built form is less urban or village and takes on a more relaxed resort feeling. Pedestrian facilities are provided but are smaller in scale than those provided in the Beach Village areas. The sections of the Front Beach Road corridor and the major roadway connectors located within the following area should be designed to reflect the "Resort Paradise" vernacular - East of Middle Beach past Sunspree to Long Beach.

### LANDSCAPE PLANTING INTENT:

- 1. Plantings shall be lush and soothing tropical colors to create a more relaxed resort feel.
- 2. The street trees shall consist of palm trees located in tree wells along the edge of the road at 30 to 40 feet on center between the roadway lights to provide a consistent rhythm pattern.
- 3. The landscape areas along the back of sidewalk shall consist of trees planted at 20 to 30 feet on center at regular intervals with clusters of palm trees in odd numbers to provide shade and a consistent rhythm pattern.
- 5. Larger shade trees and/or clusters of palm trees in odd numbers shall be installed next to seating areas to provide shade.
- Minimum 3-foot high shrubs shall be installed between the sidewalk and the
  parking areas to screen the vehicles. Additional shrubs shall be located at
  hotel/retail building and beach accesses to identify and enhance the
  entranceway.
- 7. Groundcovers shall be installed along the shrub rows to create a layering effect and to prevent pedestrians from bypassing through the shrubs.
- 8. Refer to Section 9, 10and 11 for planting installation, irrigation and plant palette.



### **TYPICAL PLANTS**





# **HARDSCAPE**:

- 1. Beige concrete with a rock salt finish shall be installed along public sidewalks and promenades/plazas and beach access approaches to the boardwalks.
- 2. Minimum 8-10 foot wide sidewalk on the north side of the road and minimum 8 feet on the south side of the road.
- 4. Refer to <u>Section 4 Pedestrian Sidewalks</u> for specific requirements.



Beige Concrete with a Rock Salt Finish



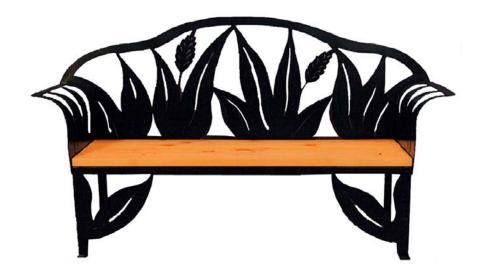
# **AMENITIES:**

#### 1. Benches:

- a. Skip-A-Stone Studios, Piazza Inc., Tropical Bench, Vertigre Textured, Steel Seat
- b. The benches shall be located in high pedestrian activity areas (i.e., near retail shops, hotels, beach access facilities, etc.), so as not to impede pedestrian movement and under shade (i.e., trees and canopy/awning).
- c. The benches shall be anchored to a concrete base, as per the manufacturer's specifications.



Color Option for Entire Bench





# 2. Trash Receptacles:

- a. Dumor Inc, Model #87-22, Deep Red Powdercoat Color.
- b. The trash receptacles shall be located in high pedestrian activity areas (i.e., near retail shops, hotels, beach access facilities, etc.), so as not to impede pedestrian movement and within easy access from the benches.
- c. The trash receptacles shall be anchored to a concrete base, as per the manufacturer's specifications.



Color Option for Trash Receptacles





#### 3. Planters:

- a. Dumor Inc, Model #114-00, Deep Red Powdercoat Color.
- b. Located in high pedestrian activity areas to accentuate seating areas and to enhance the streetscape.



Color Option for Planters





#### 4. Bicycle Racks:

- a. Madrax Inc., Keyrac II, Model #KY2-SF-P, Red Powdercoat Color.
- b. The bicycle racks shall be located in high pedestrian areas, so as not to impede pedestrian movement, next to public facilities, building entrances and beach access facilities. The bicycle racks shall be anchored to a concrete base, as per the manufacturer's specifications.



Color Option for Bicycle Racks





# SECTION 16

# COASTAL CASUAL

The streetscape and built form in the areas designated as "Coastal Casual" should reflect the organic forms of the Gulf Coast natural environment. Areas designated to reflect the "Coastal Casual" environment are presented as follow: 1) Western City Limits to Pier Park and 2) Bid-A-Wee Beach.

#### LANDSCAPE PLANTING INTENT:

- 1. Plantings shall be free-formed to reflect dune plantings and emulate the colors found in the natural environment.
- 2. The street trees shall consist of palm trees located in tree wells along the edge of the road at 30 to 40 feet on center between the roadway lights to provide a consistent rhythm pattern.
- 3. The landscape areas along the back of sidewalk shall consist of trees planted at 15 to 50 feet on center at irregular intervals with clusters of palm trees in odd numbers to provide shade and a natural planting scheme.
- 4. Larger shade trees and/or clusters of palm trees in odd numbers shall be installed next to seating areas to provide shade.
- 5. Minimum 3-foot high shrubs shall be installed between the sidewalk and commercial parking areas to screen the vehicles. Additional shrubs shall be located at beach accesses to identify and enhance the entranceway.
- 6. Groundcovers shall be installed along the shrub rows to create a layering effect and to prevent pedestrians from bypassing through the shrubs.
- 7. The dune areas shall consist of shrubby or woody plants along the dune crest and vines and grasses along the foredune to prevent sand erosion.
- 8. All sprinkler heads near the dunes be adjusted to avoid overspray onto the dune.
- 9. Refer to <u>Section 9, 10and 11</u> for planting installation, irrigation and plant palette.



# **TYPICAL PLANTS**





# **HARDSCAPE**:

- 1. Grey concrete with broom finish shall be installed along public sidewalks and beach access approaches to the boardwalks.
- 2. Minimum 8-foot wide sidewalk on both sides of the road.
- 3. Refer to <u>Section 4 Pedestrian Sidewalks</u> for specific requirements.



Grey Concrete with Broom Finish



# **AMENITIES:**

#### 1. Benches:

- a. Benchmark Design Group, Model #Waverly, WAV4008-6-ST, Color: Powdercoat RAL#6027.
- b. The benches shall be located in high pedestrian activity areas (i.e., beach access facilities), so as not to impede pedestrian movement and under shade (i.e., trees and canopy/awning).
- c. The benches shall be anchored to a concrete base, as per the manufacturer's specifications.



Color Option for Benches





# 2. Trash Receptacles:

- a. Benchmark Design Group, Model #Waverly, WAV6051, Color: Powdercoat RAL#6027.
- b. The trash receptacles shall be located in high pedestrian activity areas (i.e., beach access facilities), so as not to impede pedestrian movement and within easy access from the benches.
- c. The trash receptacles shall be anchored to a concrete base, as per the manufacturer's specifications.



Color Option for Trash Receptacles





#### 3. Planters:

- a. Benchmark Design Group Model #Waverly, WAV6051-2424, Color: Powdercoat RAL#6027.
- b. Located in high pedestrian activity areas to accentuate seating areas and to enhance the streetscape.



Color Option for Planters





# 3. Bicycle Racks:

- a. Madrax Inc., Cutless Model #CTL-3-SF-P, Custom Powdercoat Color: RAL#6027
- b. The bicycle racks shall be located in high pedestrian areas, so as not to impede pedestrian movement, next to beach access facilities. The bicycle racks shall be anchored to a concrete base, as per the manufacturer's specifications.



Color Option for Bicycle Racks





# IMPLEMENTATION

The City of Panama City Beach has designated Front Beach Road as a Community Redevelopment Area within which any development must implement the mandatory Streetscape Design Guidelines Manual. In addition, the designer shall ensure that the project design is in compliance with the City of Panama City Beach's "Engineering Standards Manual." Any discrepancies between these guidelines and the E.S.M. shall be brought to the attention of the City's Review Engineer. The following summarizes the steps to be taken during the Streetscape process:

#### **PRELIMINARY APPROVAL:**

- 1. Initiate contact with the Front Beach Road Program Team and submit conceptual design for preliminary review. Refer to the Streetscape Design Guideline Manual for material specifications.
- Any deviations from the Aesthetic Options in the Streetscape Design Guideline Manual shall require approval by the Front Beach Road Program Team. The alternative aesthetics shall be compatible with the intent statement of the character district: 1) Beach Village; 2) Resort Paradise; and 3) Coastal Casual.
- 3. Any decision of the Front Beach Road Program Team can be appealed to the Board of Adjustments.

#### **FINAL APPROVAL:**

- 1. A perspective of the project is preferred along with a material board, which would be presented to the Front Beach Road Program Team at the final review meeting for the project. The final review should include detailed specifications on the color, material information, textures, scale of elements and a landscape plan.
- 2. Once approved by the Front Beach Road Program Team, the Design Development drawings (stamped/signed by a team representative) together with all streetscape plans and technical specifications shall be submitted to City Building and Planning Department for compliance review and design approval; and process design drawings, through various required departments to secure all required permits. The submittal requirements shall include:
  - a) Five (5) sets of Architectural and Civil Plans;
  - b) Three (3) sets of Landscape Plans; and
  - c) Three (3) sets of any other required materials (i.e., Traffic Study, Environmental Report, etc.)
- 3. Once approved by the Engineering Department and all other departments, the Development Order can be issued.
- 4. Execute a Streetscape Agreement.
- 5. Execute a Performance Bond.



#### **CONSTRUCTION APPROVAL:**

- 1. During construction, inspections will be made by the City Inspectors. Inspections of Streetscape construction will be separate from the building inspections.
- 2. Execute a Maintenance Bond.
- 3. After final walk-throughs and approvals, submit "Certificate of Final Inspection and Compliance" form to the City Engineering Department Plans Review Engineer.

In addition to the required formal procedures, it is strongly recommended that informal early and ongoing contact be made with all agencies affected by the project. This will help reduce delays of the projects and assist the developer in planning ahead for a smoother approval and construction process. Some of the agencies which should be involved are:

#### 1. City of Panama City Beach Public Works Department

- Must approve any work involving street or sidewalk closing and must approve any traffic maintenance and protection plans.
- May require Developer to install traffic pole foundations or underground conduit; developer should request such information early to include it in his design drawings.
- Must approve any temporary or permanent modifications to pavement, curbs, striping, meters, or traffic signs.
- Acts as the City's representative on all matters regarding design, approval and inspection of Streetscape construction.
- Must review, approve and sign all required forms.
- All Streetscape design reviews and field inspections will be for full compliance with the Streetscape Design Guidelines Manual.
- Must review and approve in writing any changes in the originally approved Streetscape design or materials.
- Must review and approve design and materials for stormwater, sanitary system and items relating to public works and safety.
- Must review bond and insurance forms for appropriateness.
- Conduct a Pre-Construction Meeting.
- Monitor construction deficiencies, changes in the work, schedules and progress. Provide CRA weekly status reports.
- Coordinate transfer of tree and irrigation maintenance responsibility at the time of completion.

#### 2. Utility Companies

- Early contact to allow them to review the Streetscape design and schedule any of their system upgrades.
- Protect underground systems during constructions. Locations of these systems
  are furnished by the respective utilities at the request of the Developer. Damage
  to utilities can result in significant fines to the Developer.



# 3. Fire Department

- Must approve any fire hydrant relocation.
- Must be allowed continuing free access to hydrants during construction.
- Must be notified of any road or travel lane closures which could alter emergency access routes.

