

Section 4, Township 29 South, Range 16 East

7. ALL TREE PLANTING SHALL BE FROM 3 GALLON SIZE CONTAINERS TO BE PLANTED 10 FT. ON CENTERS. ALL HERBACEOUS PLANT MATERIAL SHALL BE 1" CONTAINERS PLANTED 3 FT. ON CENTERS.
8. A MINIMUM OF 3" OF TOP SOIL, OR ORGANIC MULCH WILL BE USED TO INCREASE THE SURVIVAL RATE OF WETLAND SPECIES AND THE SUCCESS OF THE MITIGATION AREAS. SOURCE OF THE TOP SOIL OR ORGANIC MULCH WILL BE THE WETLANDS ON ISOLATED WETLANDS BEING CONSUMED BY THE PROJECT.
9. WITHIN THE VEGETATED PORTION OF THE ENHANCEMENT AREA, ALL NUSSANCE VEGETATION SHALL BE HAND REMOVED OR SPRAYED WITH ROBOC HERBICIDE FOR LATER REMOVAL. TARGET SPECIES INCLUDE SOUTHERN CATTAILS, PRIMROSES, WILLOW, TORPEDO GRASS, BRAZILIAN PEPPER AND OTHER SPECIES AS NUISANCE BY THE AGENCIES. THE INTENT IS TO REMOVE ALL NOXIOUS PLANTS WITH MAXIMUM EFFICIENCY WITH MINIMUM DAMAGE TO DESIRED OR INSTALLED SPECIES WITHIN THE ENHANCEMENT AREA. EXCISE OR NUSSANCE SPECIES SHALL BE MAINTAINED AT LEVELS NOT TO EXCEED 10% COVER.

HARBOR HIGHLANDS
P.B. 15, PG. 19

-
- UPLAND
- SWALE
- 10'
- 15'
- BUTTER
- 10'
- 5'
- WETLAND
- VARIES
- POOL
- 20.0'
- 19.6'
- Section 1
- Basin A1-B

- [illegible]

-
- UPLAND
- Buffer
- Live Oak (Quercus Virgiliana) - 10' O.C.
Shore Pine (Pinus Elliptica) - 10' O.C.
Red Maple (Acer Rubrum) - 5' O.C.
- Wetland
- Blackberry (Rubus cuneifolius) - 3' O.C.
Tule Grass (Scleropogon brevifolius) - 3' O.C.
Wetland (Spartina patens) - 3' O.C.
- POOL
- 15'
- VARIES
- 15'
- 19.92
19.18
- SECTION 2
- BUTLER CROSS-SECTION FOR BASIN A

-
- UPLAND
- MITIGATION
- SAND CORDGRASS (SPURTING BOWLES) - 3' O.C.
- SAND FLANK (JINCEAS EFFLUENT) - 3' O.C.
- SWALE
- SAND FLANK (SANDRA CONDUIT) - 3' O.C.
- SAND FLANK (JINCEAS EFFLUENT) - 3' O.C.
- SAND CORDGRASS (SPURTING BOWLES) - 3' O.C.
- DEPM
- OFFSITE
- SECTION 2 UPLAND
- 9' 8' 9' 2' 9'
- 18.2
- SECTION 5
(OUTFALL SWALE BASIN A ENHANCEMENT)
- N.T.S.

-
- SECTION 3**
(CHANNEL "E" BANK ENHANCEMENT)
- Materials and Dimensions:**
- Sidewalk
 - Gravel Fill
 - CHANNEL "E"
 - Sand Cordgrass (Spartina Boreas) 5' O.C.
 - Wet Mirtle (Myrica Carlinea) 5' O.C.
 - Damson (Roly) (Ilex Cassia) 10' O.C.
 - 15' UPLAND BUFFER
 - MAINTENANCE BERM
 - Transition (Free Standing Structure) 10' O.C.
 - Lowland (Free Standing Structure) 10' O.C.
 - Lowland (Free Standing Structure) 10' O.C.
 - Grass (Transition Detention) 10' O.C.
 - WETLAND
 - BANK "B" (B-2 OR C)
 - Wetland
- Table:**
- | SHW./INP | BASIN | ELEV. |
|----------|-------|-------|
| | B-1 | 19.61 |
| | B-2 | 19.61 |
| | C | 19.66 |

-
- 15' UPLAND BUFFER
- Swamp Bay (*Persic. Palustris*) 10' O.C.
 Bald Cypress (*Taxodium Distichum*) 10' O.C.
 Burittman (*Cephaanthus Occidentalis*) 5' O.C.
 Sand Cudgrass (*Spartina Bakers*) 3' O.C.
 Soft Stem Bulrush (*Scirpus Volubilis*) 3' O.C.
 Pickerel Weed (*Najasacis Cordata*) 3' O.C.
 Common Arrowweed (*Sagittaria Latifolia*) 3' O.C.
 Fragrant Water Lily (*Nymphaea odorata*) 3' O.C.
- MITIGATION
- CHANNEL "E"
- EXISTING
- PROPOSED
- CHANNEL BOTTOM
- 17.6
- 16.1
- 1
- SECTION 6
- (WETLAND MITIGATION AREA WITH ADJACENT UPLAND BUFFER) CHANNEL "E" I/T

NOTE: SEE SHEET NO. 13



COMMON NAME	LATIN NAME	SPACING ON CENTER	NUMBER
SECTION 1	(510 + 800) = 1310 LF		
Live Oak	(<i>Quercus Virginiana</i>)	10'	131
Slash Pine	(<i>Pinus Elliotti</i>)	10'	131
Wax Myrtle	(<i>Myrica Cerifera</i>)	5'	131
Fetter Bush	(<i>Lyonia Lucida</i>)	5'	131
Tickleberry	(<i>Coccoloba Leavenworthii</i>)	3'	131
Mulley Grass	(<i>Muhlenbergia Capillaris</i>)	3'	131
Wiregrass	(<i>Aristida Stricta</i>)	3'	131
SECTION 2	(720 + 120 + 220 + 210) = 1270 LF		
Live Oak	(<i>Quercus Virginiana</i>)	10'	127
Slash Pine	(<i>Pinus Elliotti</i>)	10'	127
Wax Myrtle	(<i>Myrica Cerifera</i>)	5'	127
Fetter Bush	(<i>Lyonia Lucida</i>)	5'	127
Tickleberry	(<i>Coccoloba Leavenworthii</i>)	3'	423
Mulley Grass	(<i>Muhlenbergia Capillaris</i>)	3'	423
Wiregrass	(<i>Aristida Stricta</i>)	3'	423
SECTION 3	(340 + 400) = 740 LF		
Sand Cordgrass	(<i>Spartina Bakeri</i>)	3'	247
Wax Myrtle	(<i>Myrica Cerifera</i>)	5'	148
Dahoon Holly	(<i>Ilex Cassine</i>)	10'	74
Sweetgum	(<i>Liquidambar styraciflua</i>)	10'	74
Laural Oak	(<i>Quercus Laurifolia</i>)	10'	74
Bald Cypress	(<i>Taxodium Distichum</i>)	10'	74

SECTION QUANTITIES

NAME	NAME	ON CENTER	NUMBER
SECTION 4	Shore Line (750 ± 275) = 450 LF		
Swamp Bay	(<i>Pernis Pavorita</i>)	10'	45
Bald Cypress	(<i>Taxodium Distichum</i>)	10'	45
Buttfish	(<i>Copelinus Occidentalis</i>)	5'	90
(4045 ± 100) / 117 Acres (6.405F)			
Sand Cordgrass	(<i>Spartina Bakeri</i>)	3'	115
Soft Stem Bulrush	(<i>Scirpus Validus</i>)	3'	115
Pickeral Weed	(<i>Pontederica Cordata</i>)	3'	115
Common Arrowhead	(<i>Sagittaria Latifolia</i>)	3'	115
Fragrant Water Lilly	(<i>Nymphaea Odorata</i>)	3'	115
SECTION 5	(210 ± 155) = 365 LF		
Sand Cordgrass	(<i>Spartina (Bakeri)</i>)	3'	244
Soft Rush	(<i>Juncus Effusus</i>)	3'	244
Lizard's Tail	(<i>Saururus Cernuus</i>)	3'	172
SECTION 6	Shore Line (160 ± 209) = 369 LF		
Swamp Bay	(<i>Pernis Palustris</i>)	10'	37
Bald Cypress	(<i>Taxodium Distichum</i>)	10'	37
Buttfish	(<i>Copelinus Occidentalis</i>)	5'	74
24 Acres (10.654 SF)			
Sand Cordgrass	(<i>Spartina Bakeri</i>)	3'	232
Soft Stem Bulrush	(<i>Scirpus Validus</i>)	3'	232
Pickeral Weed	(<i>Pontederica Cordata</i>)	3'	232
Common Arrowhead	(<i>Sagittaria Latifolia</i>)	3'	232
Fragrant Water Lilly	(<i>Nymphaea Odorata</i>)	3'	232

NAME	NAME	ON CENTER	NUMBER
SECTION 7 Littoral Shelf Quantities			
WET TREATMENT BASIN B2 .16 Acres (7,100 SF)			
Sand Cordgrass	(Spartina Bakeri)	3'	158
Soft Stem Bulrush	(Scirpus Validus)	3'	158
Pickrel Weed	(Pontederia Cordata)	3'	158
Common Arrowweed	(Sagittaria Lancifolia)	3'	158
Fragrant Water Lilly	(Nymphaea Odorata)	3'	158
WET TREATMENT BASIN C .30 Acres (37,220 x 35%= 13,027 SF)			
Sand Cordgrass	(Spartina Bakeri)	3'	289
Soft Stem Bulrush	(Scirpus Validus)	3'	289
Pickrel Weed	(Pontederia Cordata)	3'	289
Common Arrowweed	(Sagittaria Lancifolia)	3'	289
Fragrant Water Lilly	(Nymphaea Odorata)	3'	289
TREATMENT TEMPORARY SEWER CONSTRUCTION AREA X-X .31 Acres (13,200 SF)			
WETLANDS IN NATURAL STATE ARE NOT SUCCESSFUL			
Sand Cordgrass	(Spartina Bakeri)	3'	293
Soft Stem Bulrush	(Scirpus Validus)	3'	293
Pickrel Weed	(Pontederia Cordata)	3'	293
Common Arrowweed	(Sagittaria Lancifolia)	3'	293
Fragrant Water Lily	(Nymphaea Odorata)	3'	293

OLD HARBOR PLACE
TOWERMARC CONSTRUCTION CORP.

JCLA
John C. Landon & Associates
CIVIL & ENVIRONMENTAL ENGINEERS
PLANNERS - SURVEYORS
31622 U.S. 19 North
Palm Harbor, Florida 34684
Phone (813)789-5010
Fax (813)787-4394

S
H
E
E
T

14

OF 15

WETLAND/UPLAND - MITIGATION/ENHANCEMENT PLAN