



CITY OF PORT ST. LUCIE

SAGAMORE STORMWATER RETROFIT

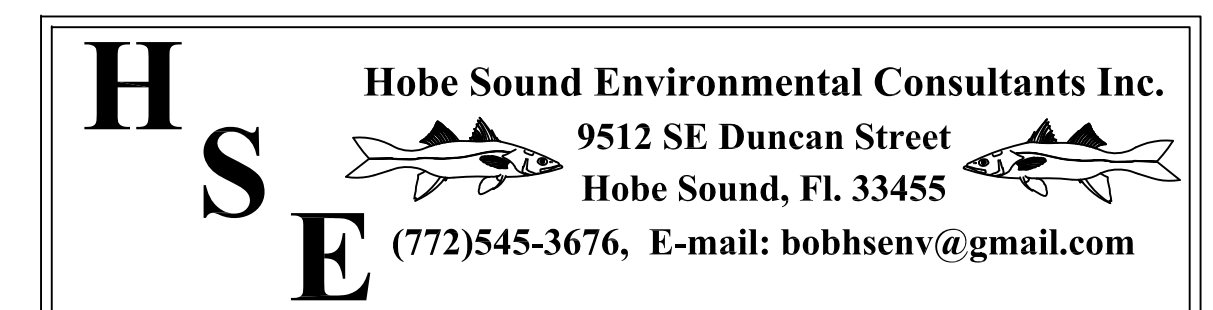
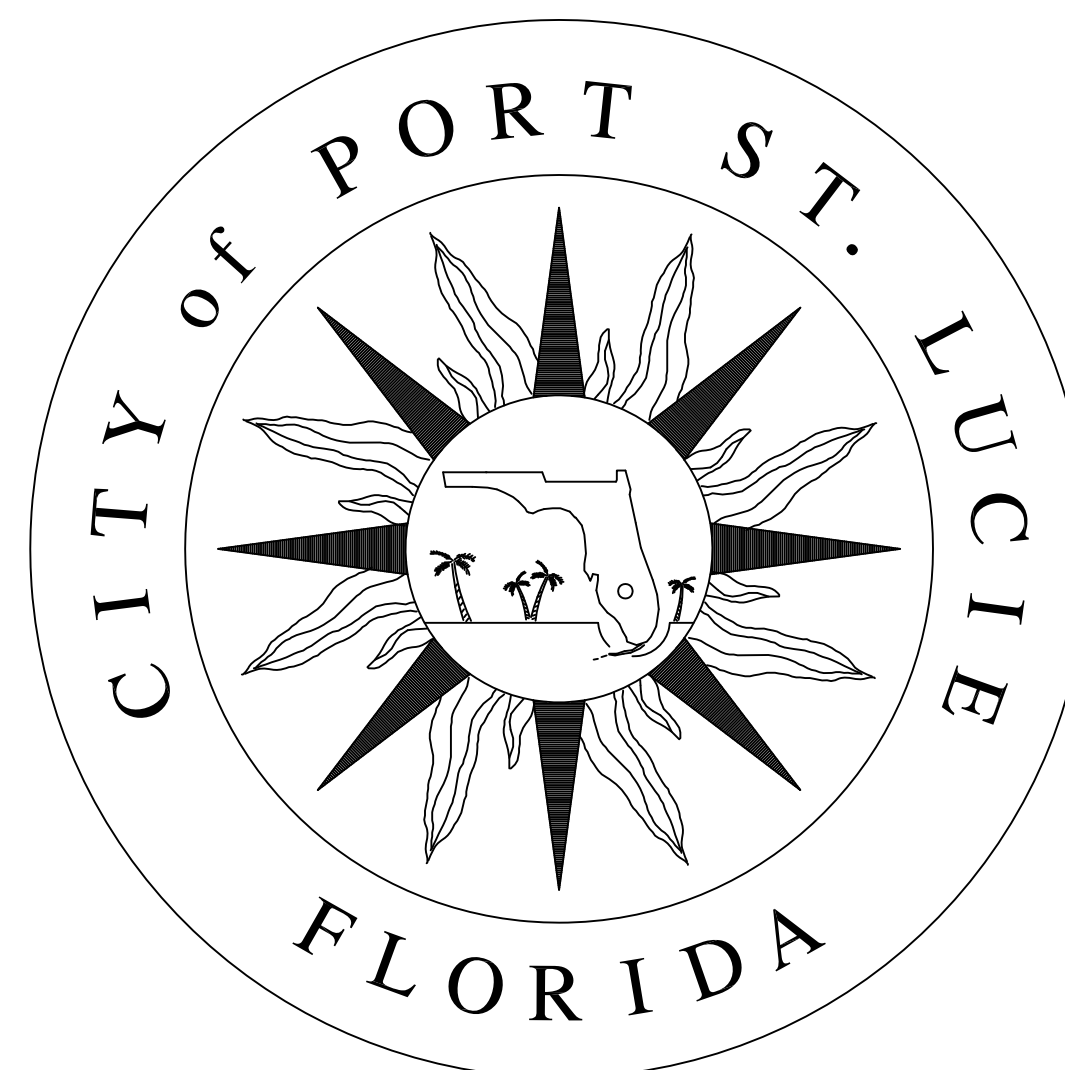
STA 1 WEST AND STA 2 EAST

<u>TABLE OF CONTENTS</u>	<u>SHEET</u>
STA 1 WEST PLANTING PLAN	1 OF 4
STA 2 EAST PLANTING PLAN	2 OF 4
DETAIL SHEET #1	3 OF 4
DETAIL SHEET #2	4 OF 4



• 301 NW Flagler Ave
Stuart, Florida 34994
Phone: (772) 692-4344
Fax: (772) 692-4341
E-mail: Captec1@aol.com

Engineering Business
No. EB-0007657

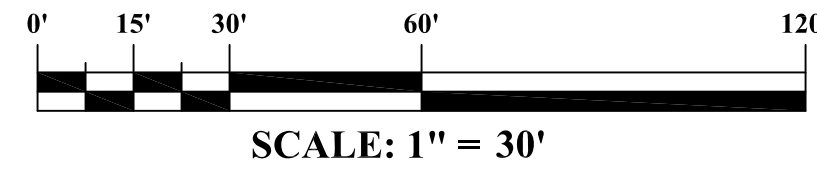
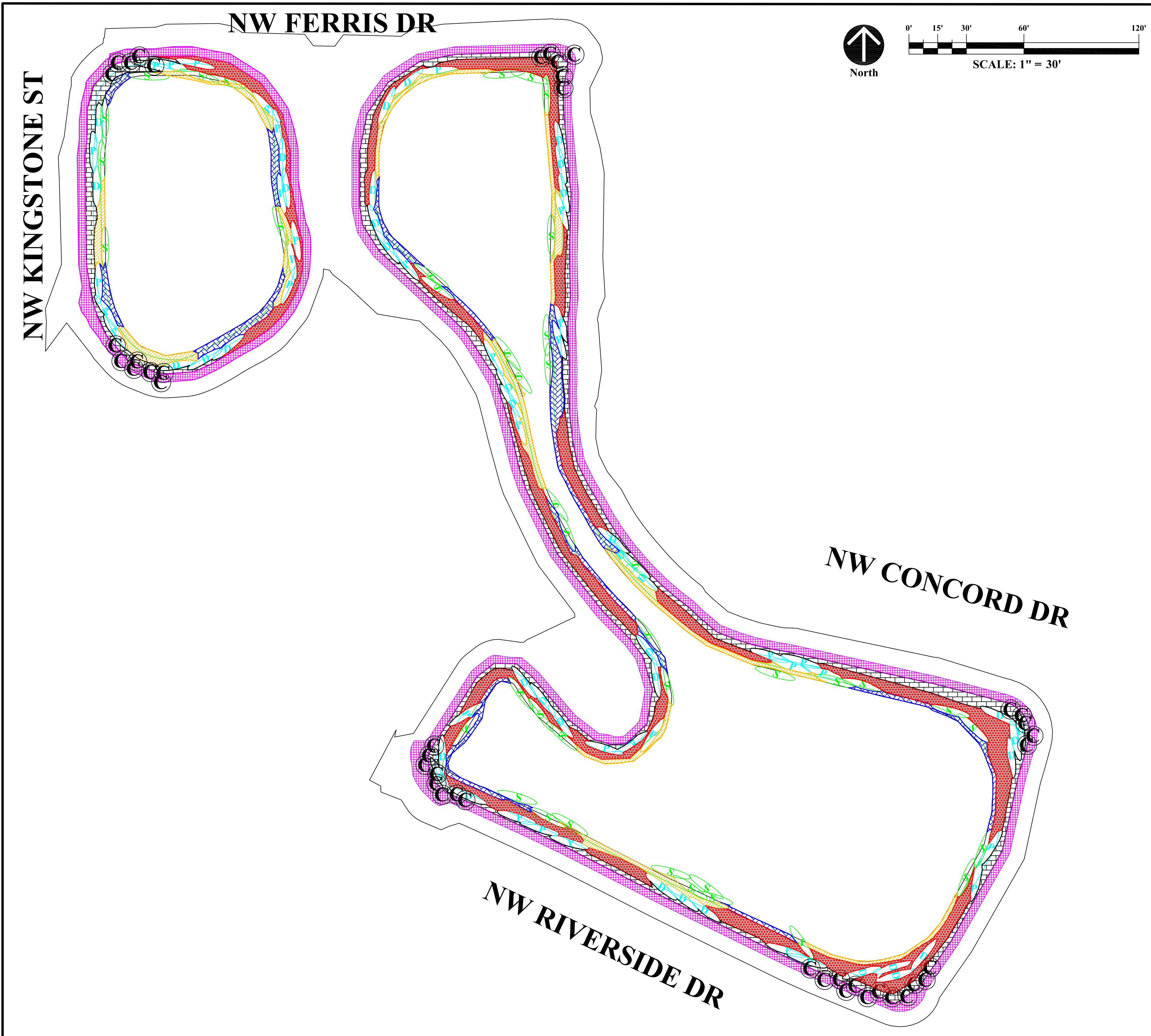


NOT A SURVEY:



301 NW Flagler Ave
Stuart, Florida 34994
Phone: (772) 692-4344
Fax: (772) 692-4341
E-mail: Captect@aol.com

Engineering Business
No. EB-0007657

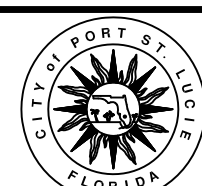


TYPICAL PLANTS STA 1 WEST 1' O.C.

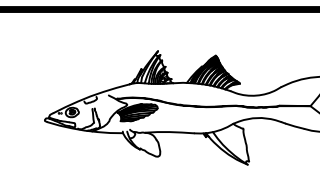
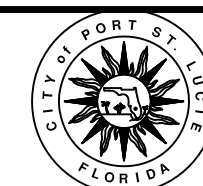
COMMON NAME	SCIENTIFIC NAME	DENSITY	SIZE	ACRES	UNITS	EST. UNIT COST	EST. TOTAL COST
DUCK POTATO	<i>Sagittaria latifolia</i>	1' O.C.	BR	0.04	1750		
GIANT BULRUSH	<i>Schoenoplectus californicus</i>	1' O.C.	BR	0.04	1750		
JOINTED SPIKERUSH	<i>Eleocharis interstincta</i>	1' O.C.	BR	0.14	6100		
MAIDENCANE	<i>Panicum hemitomon</i>	1' O.C.	BR	1.28	55800		
PICKERELWEED	<i>Pontederia cordata</i>	1' O.C.	BR	0.04	1750		
SAND CORDGRASS	<i>Spartina bakeri</i>	1' O.C.	BR	0.20	8720		
SPATTER-DOCK	<i>Nuphar lutea</i>	1' O.C.	BR	0.06	2620		
THREE-SQUARE RUSH	<i>Schoenoplectus pungens</i>	1' O.C.	BR	0.54	23550		
EST. TOTAL PRICE OF WETLAND PLANTS							
BALD CYPRESS	<i>Taxodium distichum</i>	10' O.C.	25G	0.1	43		

SOURCE:HSE

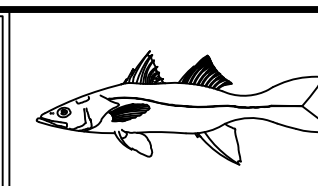
PLANVIEW	LATITUDE: N 27°19'43.046"	DATE REVISED: 20 FEBRUARY 2020	SCALE: 1" = 30'	HSE JOB NO.: 17-040.02	SEC.	TWP.	R.	CITY: PORT ST. LUCIE
	LONGITUDE: W 080°21'54.014"	DRAWN BY: MRS	CHECKED BY: FRP	APPROVED BY: RLW	20	36S	40E	STATE: FLORIDA



STORMWATER TREATMENT AREA (STA) 1 WEST
CITY OF PORT ST. LUCIE
STORMWATER RETROFIT
PLANTING PLAN



HSE Hobe Sound Environmental Consultants Inc.
9512 SE Duncan Street
Hobe Sound, FL 33455
(772)545-3676, E-mail: bobhsenv@gmail.com



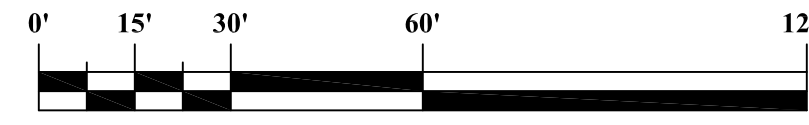
DRAWING NO.
01 & 02 - PLANTING PLAN.DWG
FIGURE:
1 OF 4

NOT A SURVEY:

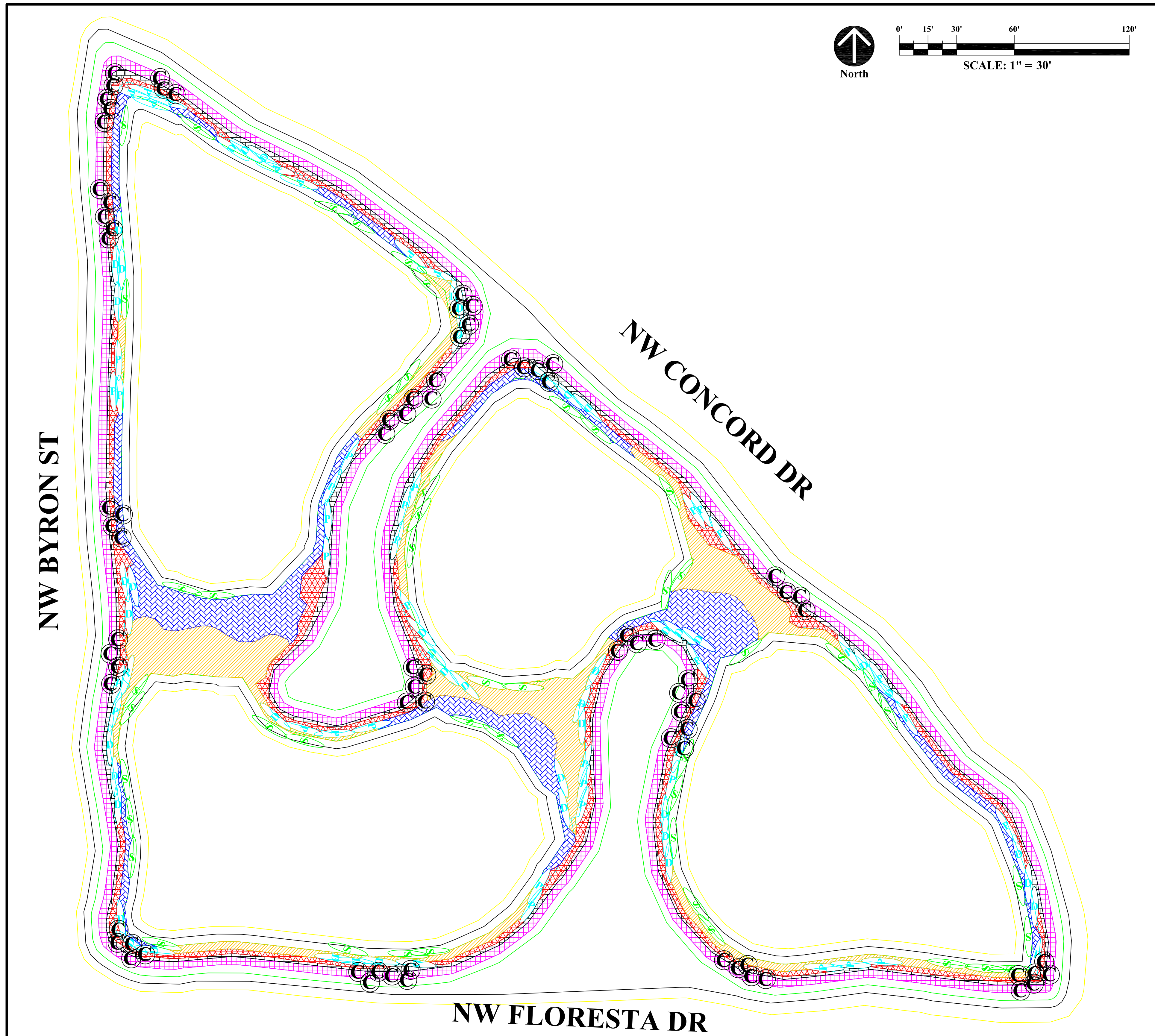


301 NW Flagler Ave
Stuart, Florida 34994
Phone: (772) 692-4344
Fax: (772) 692-4341
E-mail: Captecl@aol.com

Engineering Business
No. EB-0007657



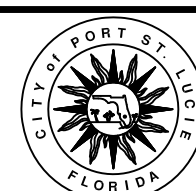
SCALE: 1" = 30'



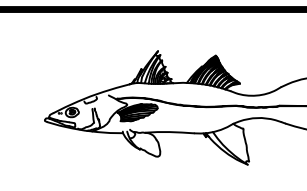
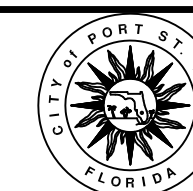
TYPICAL PLANTS STA 2-EAST 1' O.C.							
COMMON NAME	SCIENTIFIC NAME	DENSITY	SIZE	ACRES	UNITS	EST. UNIT COST	EST. TOTAL COST
DUCK POTATO	<i>Sagittaria latifolia</i>	1' O.C.	BR	0.05	2200		
GIANT BULRUSH	<i>Schoenoplectus californicus</i>	1' O.C.	BR	0.16	7000		
JOINTED SPIKERUSH	<i>Eleocharis interstincta</i>	1' O.C.	BR	0.01	450		
MAIDENCANE	<i>Panicum hemitomon</i>	1' O.C.	BR	0.09	4000		
PICKERELWEED	<i>Pontederia cordata</i>	1' O.C.	BR	0.05	2200		
SAND CORDGRASS	<i>Spartina bakeri</i>	1' O.C.	BR	0.23	10100		
SPATTER-DOCK	<i>Nuphar luca</i>	1' O.C.	BR	0.08	3500		
THREE-SQUARE RUSH	<i>Schoenoplectus pungens</i>	1' O.C.	BR	0.17	7450		
EST. TOTAL PRICE OF WETLAND PLANTS							
© BALD CYPRESS	<i>Taxodium distichum</i>	10' O.C.	25G 10 - 12'	0.12	79		

SOURCE:HSE

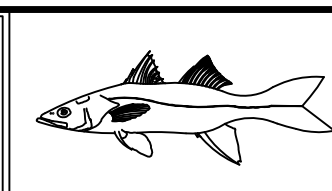
PLANVIEW	LATITUDE: N 27°19'34.891"	DATE REVISED: 20 FEBRUARY 2020	SCALE: 1" = 30"	HSE JOB NO.: 17-040.02	SEC.	TWP.	R.	CITY: PORT ST. LUCIE
	LONGITUDE: W 080°21'23.549"	DRAWN BY: MRS	CHECKED BY: FRP	APPROVED BY: RLW	20	36S	40E	STATE: FLORIDA



STORMWATER TREATMENT AREA (STA) 2 EAST
CITY OF PORT ST. LUCIE
STORMWATER RETROFIT
PLANTING PLAN



HSE Hobe Sound Environmental Consultants Inc.
9512 SE Duncan Street
Hobe Sound, FL 33455
(772)545-3676, E-mail: bobhsenv@gmail.com



DRAWING NO.
01 & 02 PLANTING PLAN.DWG
FIGURE:
2 OF 4

THIS DRAWING, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, IS AN INSTRUMENT OF SERVICE. IT IS THE SOLE PROPERTY OF HSE AND IS TO BE USED ONLY FOR THE SPECIFIC PROJECT AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OR MODIFICATION OF THIS DRAWING WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY THE ORIGINAL ENVIRONMENTAL CONSULTANT SHALL BE WITHOUT LIABILITY TO HSE SOUND ENVIRONMENTAL CONSULTANTS INC.

GENERAL NOTES

1. PLANTS NATIVE TO FLORIDA MAY BE SUBSTITUTED FOR THOSE LISTED, ACCORDING TO AVAILABILITY AND SIZE, WITH THE WRITTEN AUTHORIZATION OF THE AGENCIES AND THE ENVIRONMENTAL CONSULTANT.
2. LOCATION OF PLANTS MAY BE FIELD ADJUSTED IN ORDER TO PROVIDE THE BEST GROWING CONDITIONS.
3. PLANT MATERIAL SHALL BE INSPECTED BY THE ENVIRONMENTAL CONSULTANT PRIOR TO INSTALLATION.
4. ALL PLANTS SHALL BE INSTALLED IN HEALTHY AND VIGOROUS CONDITION, AND SHALL BE FREE OF WEEDS, DISEASE, AND INSECT PESTS, EGGS OR LARVAE.
5. CONTRACTOR IS RESPONSIBLE FOR THE PROPER WATERING AND FERTILIZATION OF THE INSTALLED PLANTS FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR.
6. ROOT BOUND CONTAINER PLANTS WILL NOT BE ACCEPTED.
7. USE FLORIDA GOLD NO FLOAT CYPRESS MULCH OR EQUIVALENT.

GENERAL NOTES

GRADE STANDARDS AND QUALITY

QUALITY OF ALL PLANTS SHALL BE AT LEAST EQUAL TO THAT OUTLINED AS NO. 1 IN GRADES AND STANDARDS FOR NURSERY PLANTS, PART 1, 1963, REVISED EDITION AND PART 1, PALMS AND TREES, BY THE STATE PLANT BOARD OF FLORIDA. ALL PLANTS SHALL BE SOUND, HEALTHY AND VIGOROUS, WELL BRANCHED, AND DENSELY FOLIATED WHEN IN LEAF. THEY SHALL HAVE HEALTHY, WELL DEVELOPED ROOT SYSTEMS, AND SHALL BE FREE OF DISEASES AND INSECT PESTS, EGGS, OR LARVAE. ALL PLANTS SHALL CONFORM TO THE MEASUREMENTS SPECIFIED HEREIN OR INDICATED ON THE CONTRACT DRAWINGS.

TRANSPORTATION AND INSPECTION

PLANT TRANSPORTATION SHALL COMPLY WITH ALL FEDERAL AND STATE REGULATIONS, THEREFORE, AND UPON DELIVERY AT THE SITE, ALL PLANTS SHALL BE INSPECTED BY THE PROJECTS ENVIRONMENTAL CONSULTANT FOR CONFORMITY TO SPECIFICATIONS AND FOR HANDLING DAMAGE. THE CONTRACTOR SHALL PROVIDE THE ENVIRONMENTAL CONSULTANT WITH A 24-HOUR NOTICE BEFORE ANY REQUESTED INSPECTION. REJECTED PLANTS SHALL BE REMOVED IMMEDIATELY FROM THE SITE BY THE CONTRACTOR. TREES THAT HAVE TO BE TRANSPORTED MORE THAN ONE (1) MILE TO REACH THE PROJECT SITE SHALL BE TREATED WITH "WILT PRUF" AND COVERED WITH A 70 % SHADE-CLOTH-TARP OR EQUIVALENT TO PREVENT WIND BURN.









GENERAL NOTES

1. ALL EXOTIC AND NUISANCE VEGETATION (ACCORDING TO FLORIDA EXOTIC PEST PLANT COUNCIL'S CATEGORY I INVASIVE EXOTIC SPECIES) MUST BE ERADICATED FROM THE SITE PRIOR TO PLANTING.
2. THIS SHALL BE ACCOMPLISHED IN THE LEAST ENVIRONMENTALLY DAMAGING METHOD POSSIBLE, AS THERE ARE NATIVE TREES AND HERBACEOUS PLANTS THAT WILL REMAIN ON-SITE.
3. EXOTIC AND NUISANCE VEGETATION SHOULD BE CUT WITH A WEED EATER, TAKING CARE TO ENSURE THAT EXISTING TREES ARE NOT DAMAGED.
4. TWO TO THREE WEEKS LATER, EXOTIC AND NUISANCE VEGETATION SHALL BE TREATED WITH AN APPROVED HERBICIDE ACCORDING TO THE FLORIDA DEPARTMENT OF AGRICULTURE AND THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION STANDARDS.
5. FOLLOWING ERADICATION, THE DEAD MATERIAL SHALL BE REMOVED BY RAKING WITH A BOBCAT OR OTHER EQUIVALENT SMALL EQUIPMENT. IN AREAS THAT ARE DOMINATED BY NATIVE VEGETATION, ALL REMOVAL WILL BE DONE BY HAND.

SILT FENCE CONSTRUCTION SPECIFICATIONS

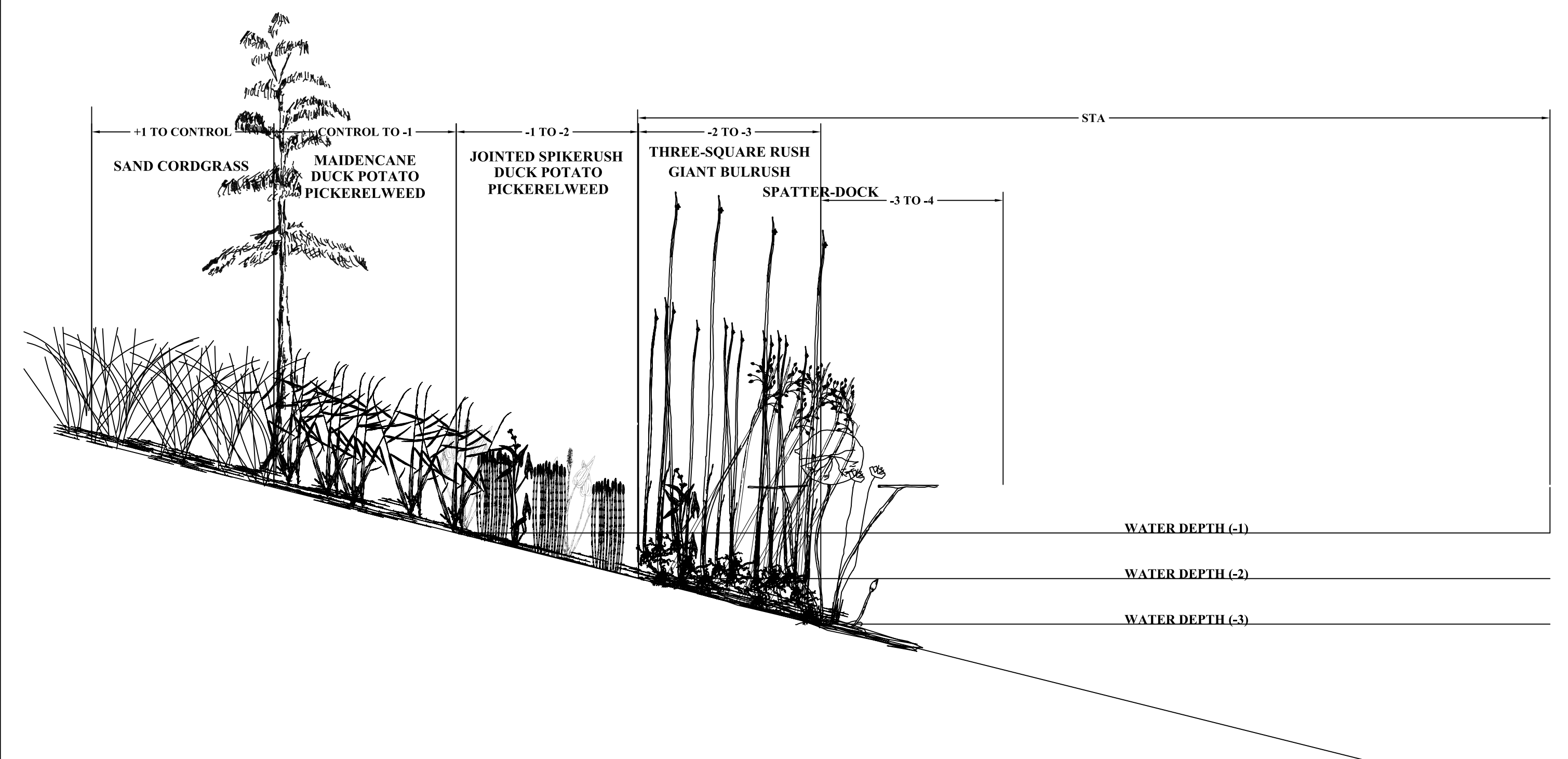
1. THE HEIGHT OF A SILT FENCE SHALL NOT EXCEED 36 INCHES (90 cm). HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE.
2. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED AS IN # 8 BELOW.
3. POSTS SHALL BE SPACED A MAXIMUM OF 10 FEET (3m) APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 12 INCHES (30cm). WHEN EXTRA STRENGTH FABRIC IS USED WITHOUT THE WIRE SUPPORT FENCE, POST SPACING SHALL NOT EXCEED 6 FEET (1.8m).
4. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4 TO 6 INCHES WIDE AND 4 TO 6 INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
5. WHEN STANDARD STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POST USING HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH (25mm) LONG, TIE WIRES, OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 2 INCHES (5cm) AND SHALL NOT EXTEND MORE THAN 36 INCHES (90cm) ABOVE THE ORIGINAL GROUND SURFACE.
6. THE STANDARD STRENGTH FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE, AND 8 INCHES (20cm) OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES (90 cm) ABOVE THE ORIGINAL GROUND SURFACE.
7. WHEN EXTRA STRENGTH FILTER FABRIC AND CLOSER POST SPACING ARE USED, THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED. IN SUCH A CASE, THE FILTER FABRIC IS STAPLED OR WIRED DIRECTLY TO THE POST WITH ALL OTHER PROVISIONS OF ITEM NO. 6 APPLYING.
8. WHEN ATTACHING TWO SILT FENCES TOGETHER, PLACE THE END POST OF THE SECOND FENCE INSIDE THE END POST OF THE FIRST FENCE. ROTATE BOTH POSTS AT LEAST 180 DEGREES IN A CLOCKWISE DIRECTION TO CREATE A TIGH SEAL WITH THE FILTER FABRIC. DRIVE BOTH POSTS INTO THE GROUND AND BURY THE FLAP. (SEE ATTACHING TWO SILT FENCES DETAIL)
9. THE TRENCH SHALL BE BACK FILLED AND THE SOIL COMPACTED OVER THE FILTER FABRIC.
10. THE MOST EFFECTIVE APPLICATION CONSISTS OF A DOUBLE ROW OF SILT FENCE SPACED A MINIMUM OF THREE FEET APART. THE THREE FOOT SEPARATION IS SO THAT IF THE FIRST ROW COLLAPSES IT WILL NOT FALL ON THE SECOND ROW. WIRE OR SYNTHETIC MESH MAY BE USED TO REINFORCE THE FIRST ROW. (REFER TO DOUBLEROW SILT FENCE DETAIL).
11. WHEN USED TO CONTROL SEDIMENTS FROM A STEEP SLOPE, SILT FENCES SHOULD BE PLACED AWAY FROM THE TOE OF THE SLOPE FOR INCREASED HOLDING CAPACITY (REFER TO PROPER PLACEMENT OF A SILT FENCE DETAIL).
12. SILT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.

TYPICAL PLANTS COMBINED 1' O.C.

COMMON NAME	SCIENTIFIC NAME	DENSITY	SIZE	ACRES	UNITS	EST. UNIT COST	EST. TOTAL COST
 DUCK POTATO	<i>Sagittaria latifolia</i>	1' O.C.	BR	0.09	3950		
 GIANT BULRUSH	<i>Scirpus californicus</i>	1' O.C.	BR	0.20	8750		
 JOINTED SPIKERUSH	<i>Eleocharis interstincta</i>	1' O.C.	BR	0.15	6550		
 MAIDENCANE	<i>Panicum hemitomon</i>	1' O.C.	BR	1.37	59800		
 PICKERELWEED	<i>Pontederia cordata</i>	1' O.C.	BR	0.09	3950		
 SAND CORDGRASS	<i>Spartina bakeri</i>	1' O.C.	BR	0.43	18820		
 SPATTER-DOCK	<i>Nuphar lutea</i>	1' O.C.	BR	0.14	6120		
 THREE-SQUARE RUSH	<i>Scirpus americanus</i>	1' O.C.	BR	0.71	31000		
EST. TOTAL PRICE OF WETLAND PLANTS							

SOURCE:HSE

©BALD CYPRESS *Taxodium distichum* 10' O.C. 25G 10 - 12' 0.22 122

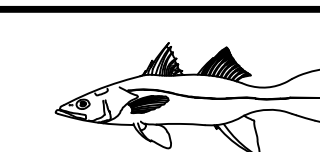


DETAIL SHEET #1

LATITUDE: STA 1 WEST: N 27°04'38.60"	DATE REVISED: 20 FEBRUARY 2020	SCALE: NOT TO SCALE	HSE JOB NO.: 17-040.02	SEC.	TWP.	R.	CITY: PORT ST. LUCIE
LONGITUDE: STA 1 WEST: W 80°21'54.814"	DRAWN BY: MRS	CHECKED BY: FRP	APPROVED BY: RLW	20	36S	40E	STATE: FLORIDA



STORMWATER TREATMENT AREAS STA 1 WEST AND STA 2 EAST
CITY OF PORT ST. LUCIE
STORMWATER RETROFIT
DETAL SHEET #1



HSE Hobe Sound Environmental Consultants Inc.
9512 SE Duncan Street
Hobe Sound, FL 33455
(772)545-3676, E-mail: bobhsen@gmail.com

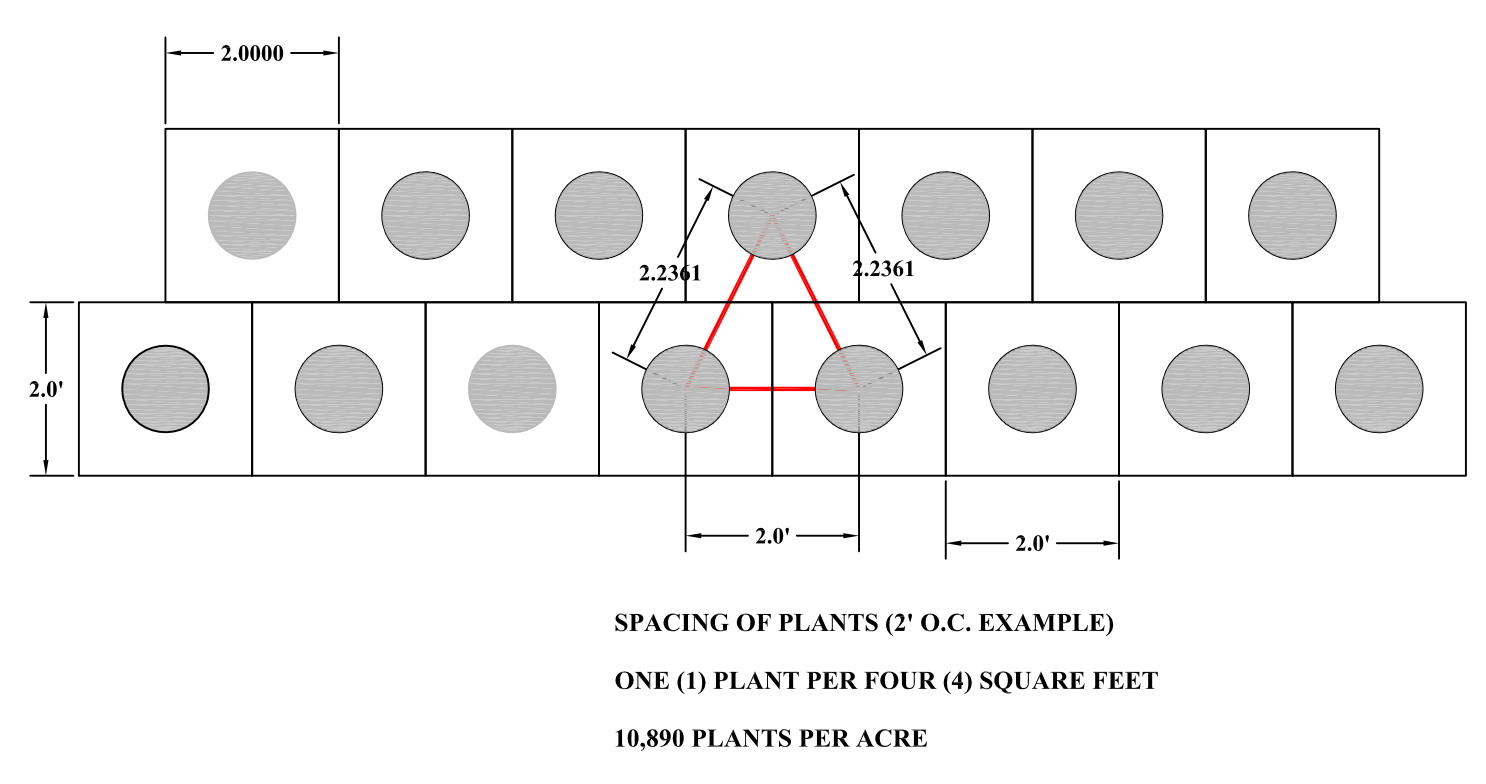


DRAWING NO.
DETAIL SHEET 1.DWG
FIGURE:
3 OF 4

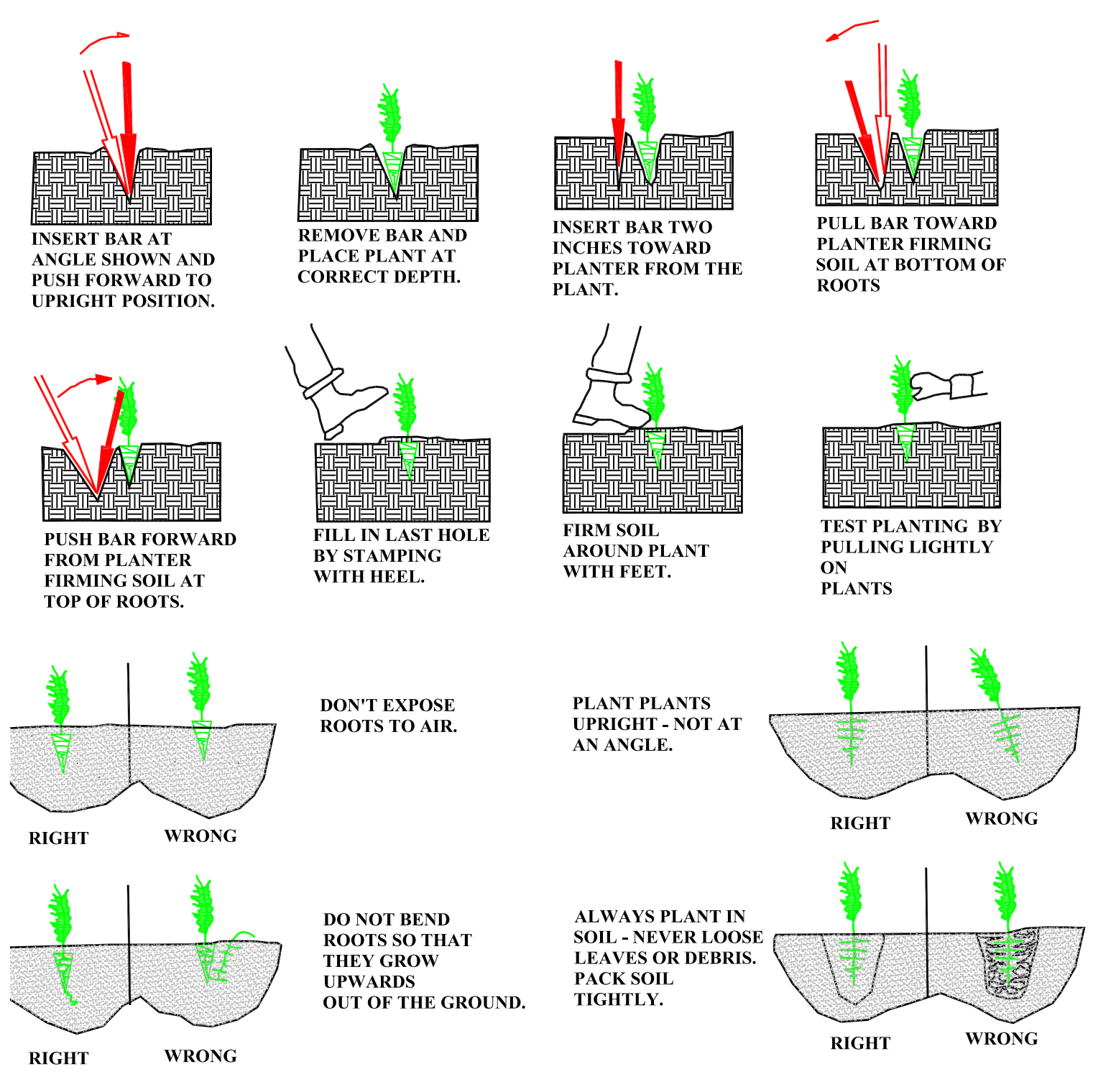
THIS DRAWING, TOGETHER WITH THE CONCEPT AND DESIGN PRESENTED HEREIN, IS AN INSTRUMENT OF SERVICE, AS DEFINED BY THE PROFESSIONAL ENGINEERING AND ARCHITECTURE ACT, CHAPTER 481, PART I, F.S. THE CLIENT'S SOLE RESPONSIBILITY IS TO OBTAIN NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES FOR WHICH THE DRAWING WAS PREPARED. THE CLIENT'S SOLE RESPONSIBILITY IS TO OBTAIN NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES FOR WHICH THE DRAWING WAS PREPARED. RELIANCE ON THIS DRAWING WITHOUT WRITTEN AUTHORIZATION AND ADJUSTMENT TO THE DRAWING IS AT THE USER'S SOLE RISK. HOBBSOUND ENVIRONMENTAL CONSULTANTS, INC.

**CALL 48 HOURS BEFORE
YOU DIG IN FLORIDA
1-800-432-4770**

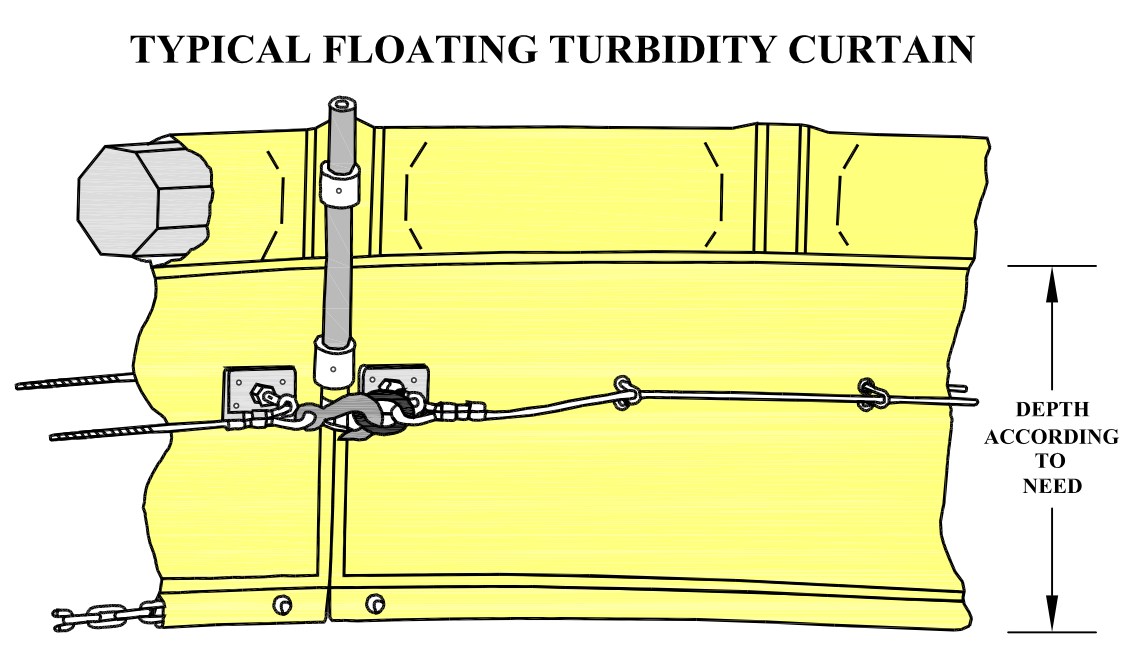
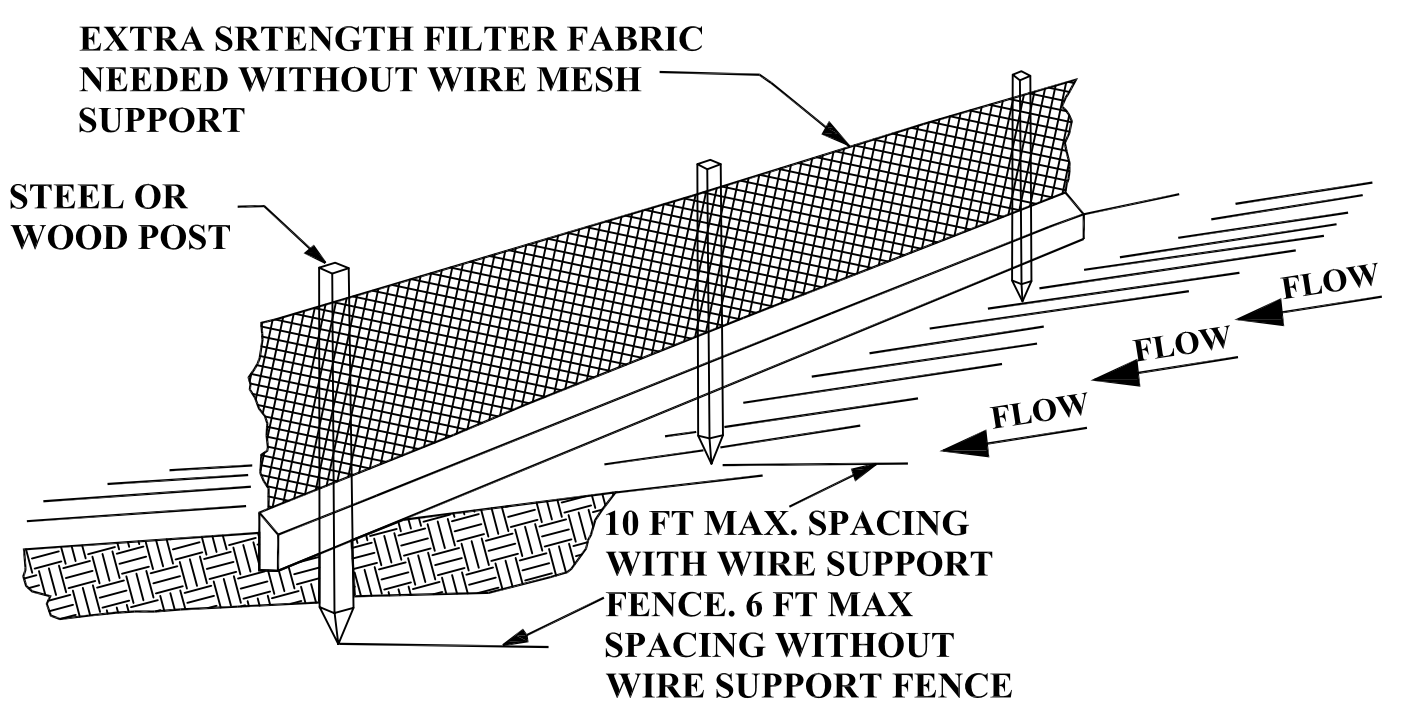
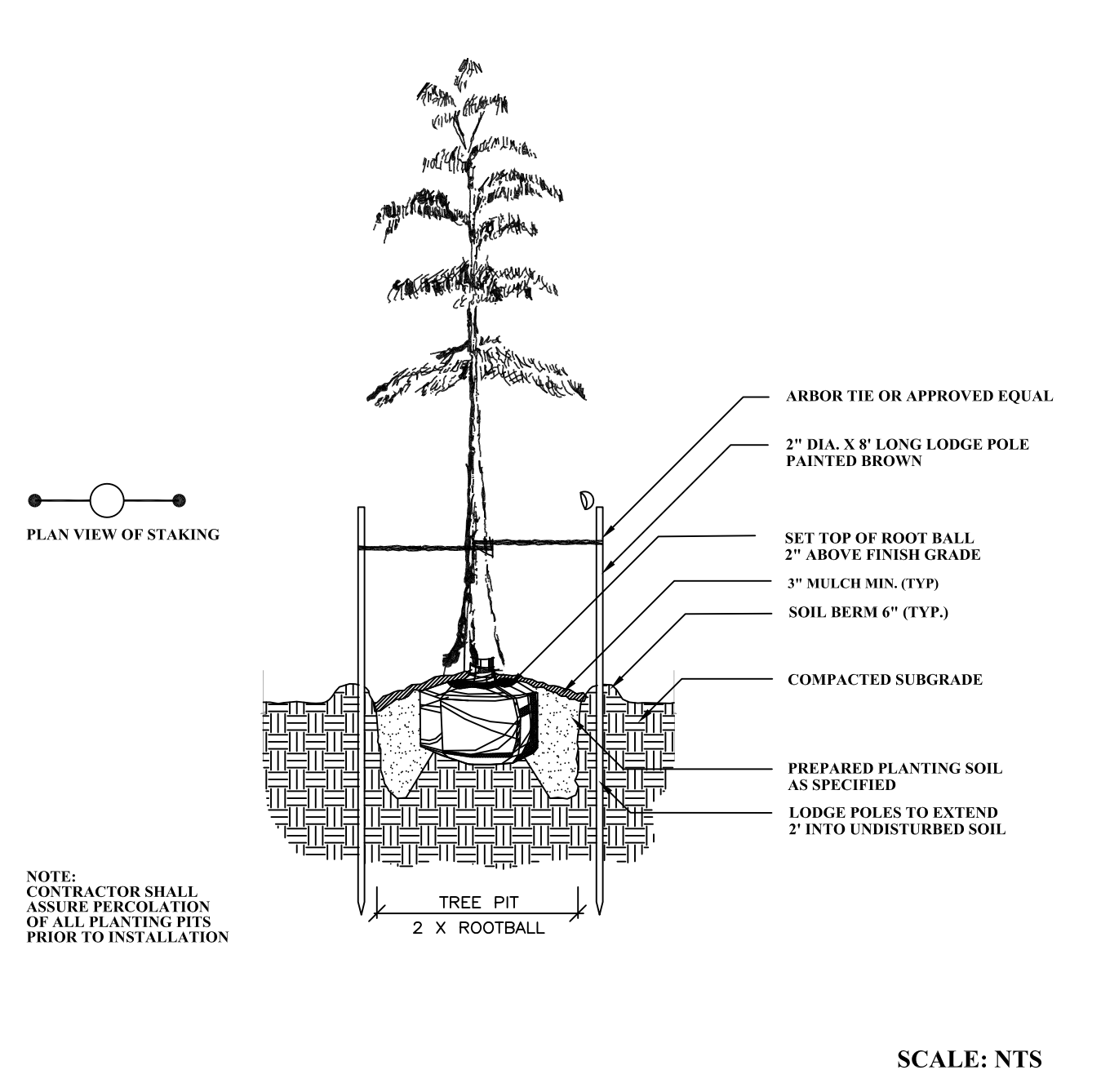
**IT'S THE LAW!
SUNSHINE STATE ONE CALL
OF FLORIDA, INC.**



PLANTING BARE ROOT PLANTS

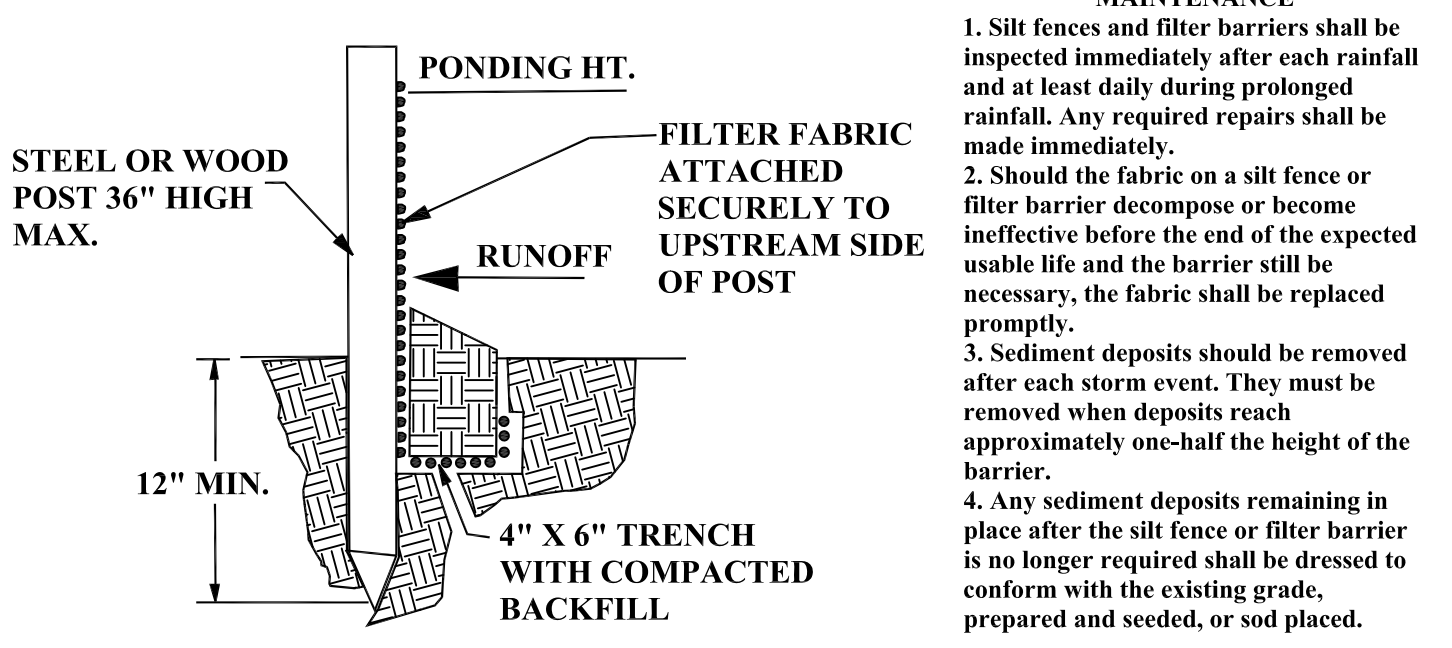


TREE PLANTING DETAIL (15 TO 30 GAL.)



SPECIFICATIONS:
 FABRIC: HIGH STRENGTH NYLON REINFORCED VINYL, HIGH VISIBILITY YELLOW, 22 OZ./YD. WEIGHT.
 CONNECTOR: SNAP HOOKS AND RINGS CONNECT LOAD LINES WITH SLOTTED REINFORCED PVC PIPE FOR FABRIC CLOSURE, OPTIONAL EXTRUDED ALUMINUM CONNECTORS.
 FLOTATION: 12\"/>

TURBIDITY CURTAINS ARE TO REMAIN IN PLACE FOR A PERIOD OF TIME NOT LESS THAN SEVEN (7) DAYS AFTER WORK HAS BEEN COMPLETED AND TURBIDITY LEVELS ARE EQUAL TO OR BELOW BACKGROUND N.T.U. LEVELS.



**STANDARD DETAIL
TRENCH WITH NATIVE BACKFILL
N.T.S.**

PLANTING PODS
45 PLANTS PER PLANTING POD

BASED ON 1' O.C.

WARNING
**DO NOT HARM THE
GOPHER TORTOISE**
Gopherus polyphemus

DESCRIPTION: A large terrestrial tortoise with a broad, rounded head and short tail. It is distinguished from other Florida tortoises by its dark shell, average length of 10 inches to 14 inches. The average weight of an adult Gopher Tortoise is 100 lbs. (45 kg). It is found in the southeastern United States, primarily in the southeastern United States.

RANGE: The gopher tortoise occurs throughout Florida and in much of the southeastern United States. Its range extends from the Atlantic to the Gulf of Mexico.

REASON FOR CONCERN: The Florida Gopher Tortoise (GOT) is a species of special concern due to its restricted range, slow growth, and low reproductive rate. It is a keystone species in its ecosystem, creating burrows that provide habitat for many other species.

REQUIREMENTS: The gopher tortoise is a species of special concern due to its restricted range, slow growth, and low reproductive rate. It is a keystone species in its ecosystem, creating burrows that provide habitat for many other species.

FEEDING HABITS: The gopher tortoise consumes grasses, forbs, and other vegetation. It is a herbivore and its diet is primarily composed of plant matter.

REPRODUCTION AND DEVELOPMENT: The gopher tortoise lays large, oval eggs. The eggs are buried in the ground and incubated for approximately 100 days. The hatchlings are very small and vulnerable to predators.

LEGAL PROTECTION: The gopher tortoise is a protected species under the Endangered Species Act of 1973. It is listed as a species of special concern by the Florida Fish and Wildlife Conservation Commission (FWC).

EXERCISES: A permit is required for the collection, possession, or transport of any specimen of the gopher tortoise or any part of its body. A permit is also required for the collection, possession, or transport of any specimen of the gopher tortoise or any part of its body.

**HOBBSOUND
ENVIRONMENTAL CONSULTANTS, INC.**
9512 SE Dunbar Street
Hobe Sound, FL 33455
(772) 545-3676, E-mail: hobsound@hobe.com