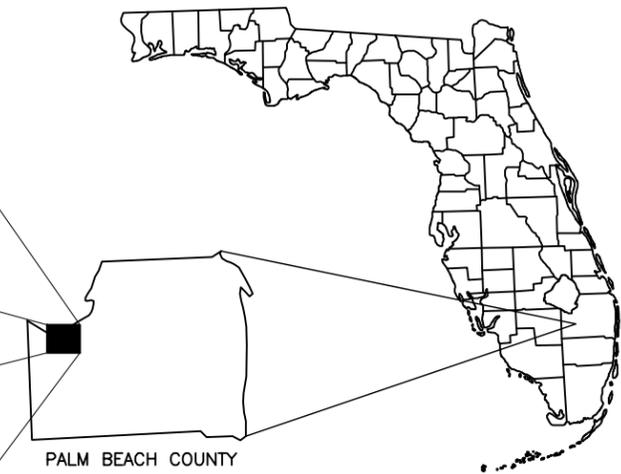
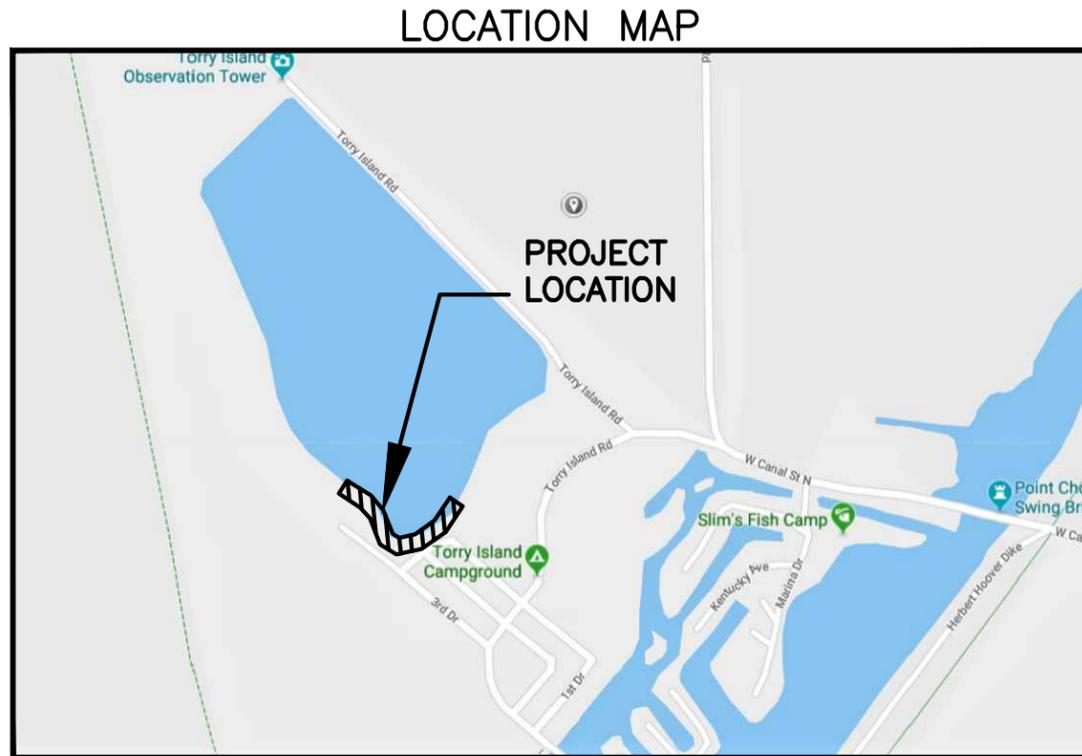


PAVILION LAKE PIERS, DOCKS & GANGWAYS

ENGINEERING IMPROVEMENTS



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COMMISSIONER	LARRY UNDERWOOD
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DEPUTY CITY MANAGER	BEVERLY J. SCOTT
PUBLIC WORKS	JOHNNY GOODEN

SECTION 35, TOWNSHIP 43 SOUTH, RANGE 36 EAST

PREPARED FOR:
CITY OF
BELLE GLADE

CAS PROJECT No. 19-2037



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(561) 314-4445 WWW.CRAIGASMITH.COM
CERTIFICATE OF AUTHORIZATION NUMBER: LB0003110



JAMES R. ORTH, P.E. (CIVIL)
DATE _____
FLORIDA PROFESSIONAL ENGINEER NO. 50126

\\cas-depot\Projects\Cities_Villages_Towns\Belle_Glade\19-2037-IL-5-Torry_Island_Pavilion_Lake_Piers\09-Plans\00-2037-G-00-COVR.dwg, 7/9/2019 9:57:57 AM, mmarranco, 1:2

\\cas-depot\Projects\Cities_Villages_Towns\Belle_Glade\19-2037-11-5-Ton1 Island\Pavilion Lake Piers\09-Plans\00-2037-G-02-KEY.dwg, 7/9/2019 10:11:13 AM, mmarenco, 1:2



0 30 60 120
 HORIZONTAL GRAPHIC SCALE
 24" X 36" SCALE: 1" = 60'-0"
 11" X 17" SCALE: 1" = 120'-0"

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Date: 04/22/19
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 Checked: JRO

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 DATE: _____
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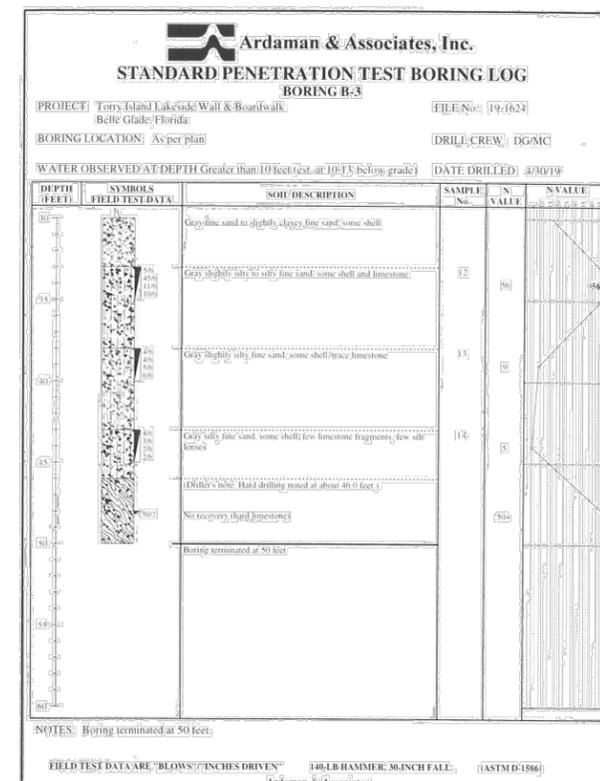
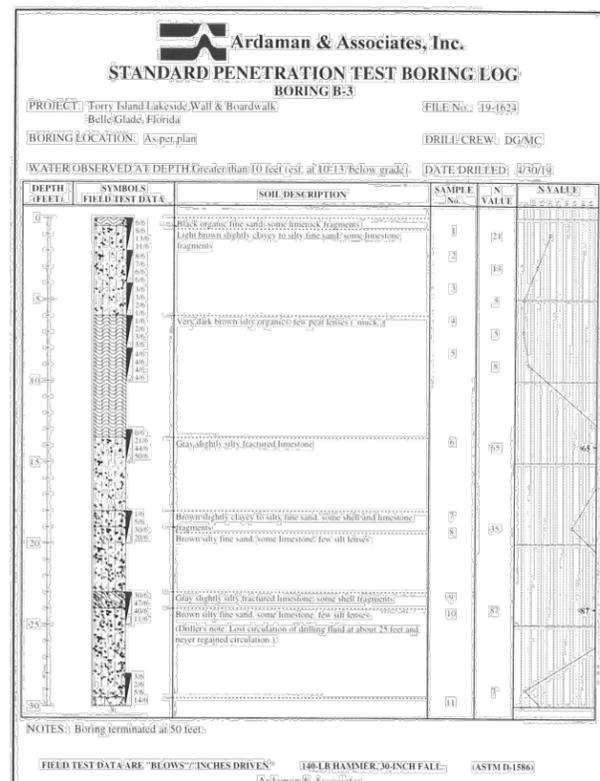
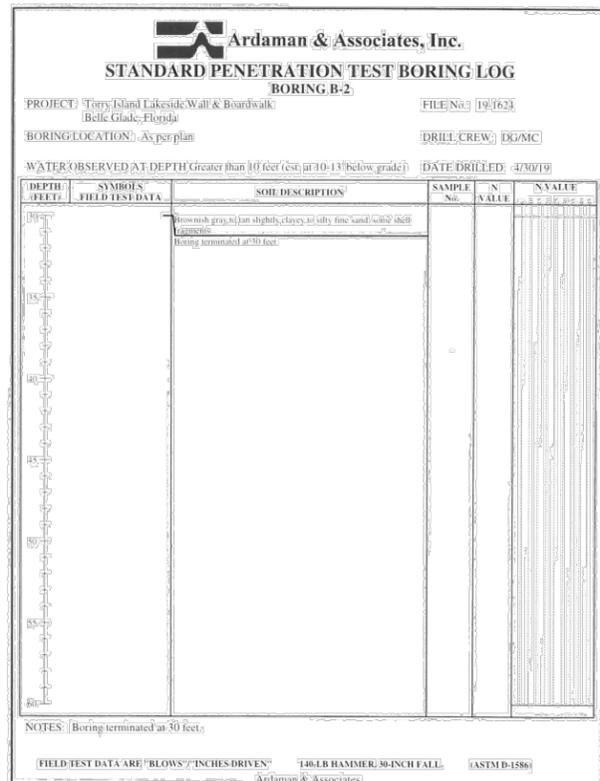
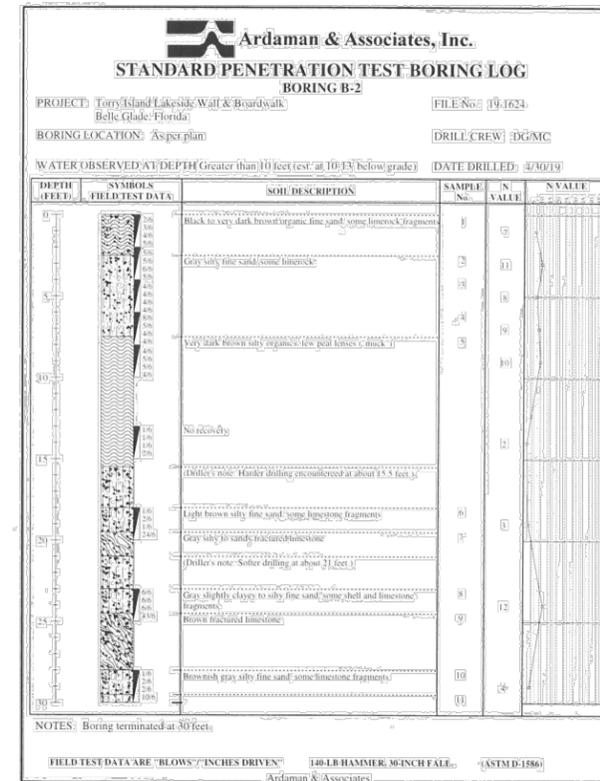
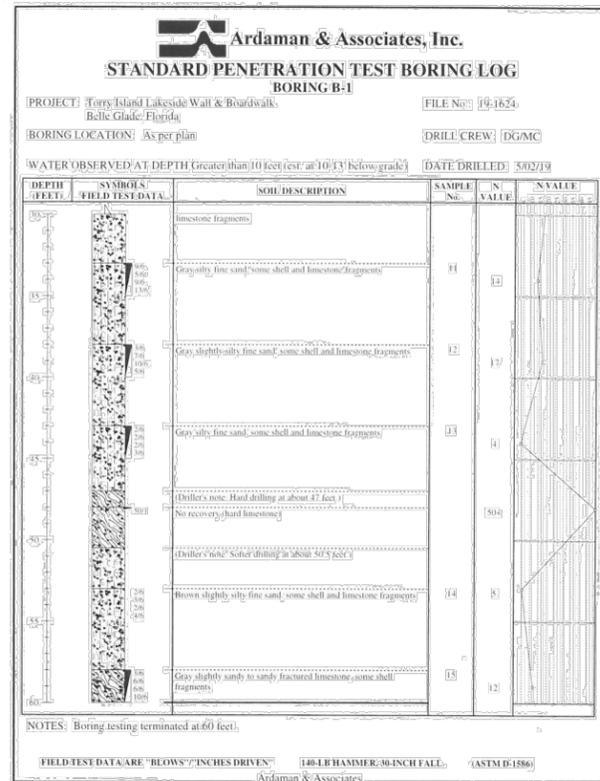
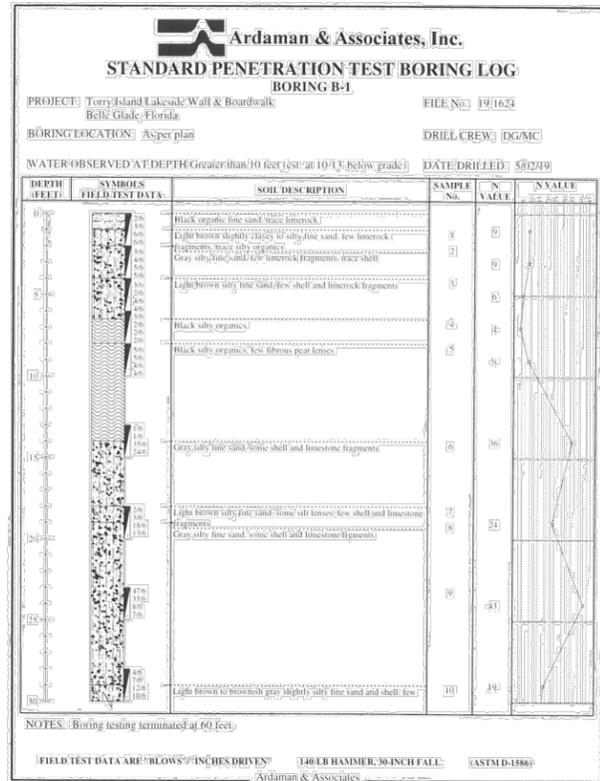
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PAVILION LAKE PIERS, DOCKS & GANGWAYS
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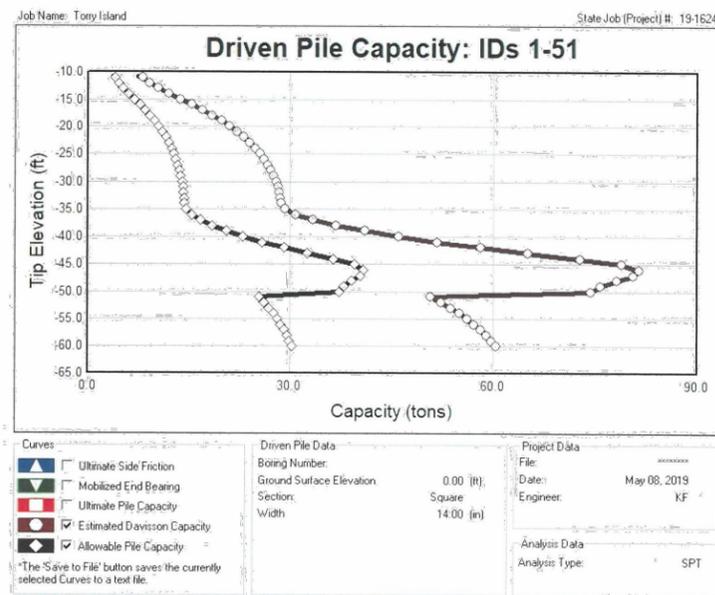
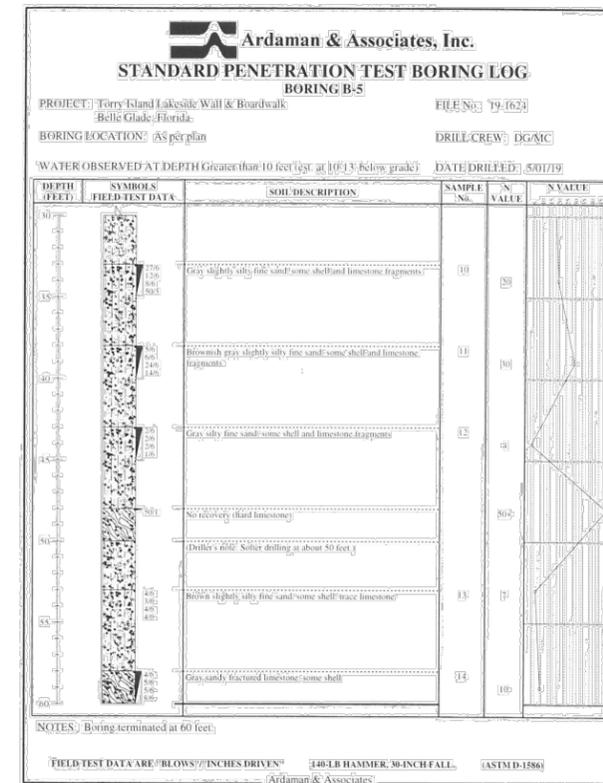
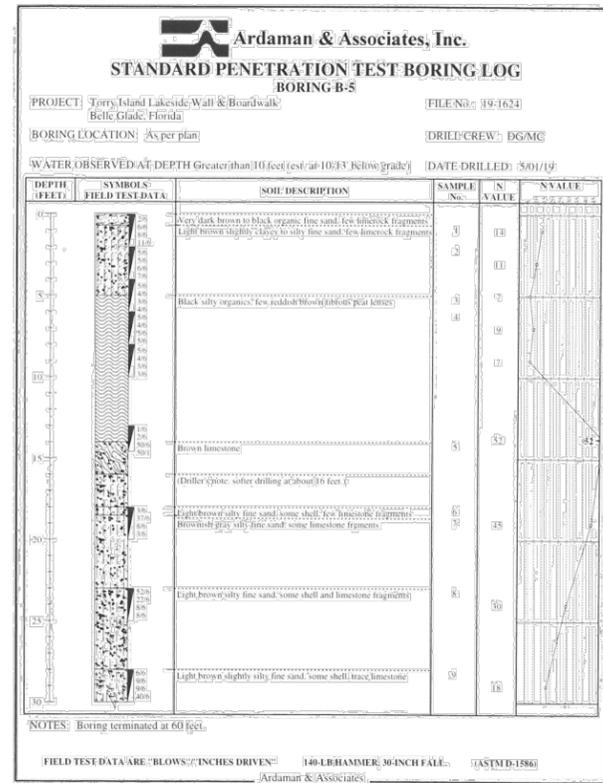
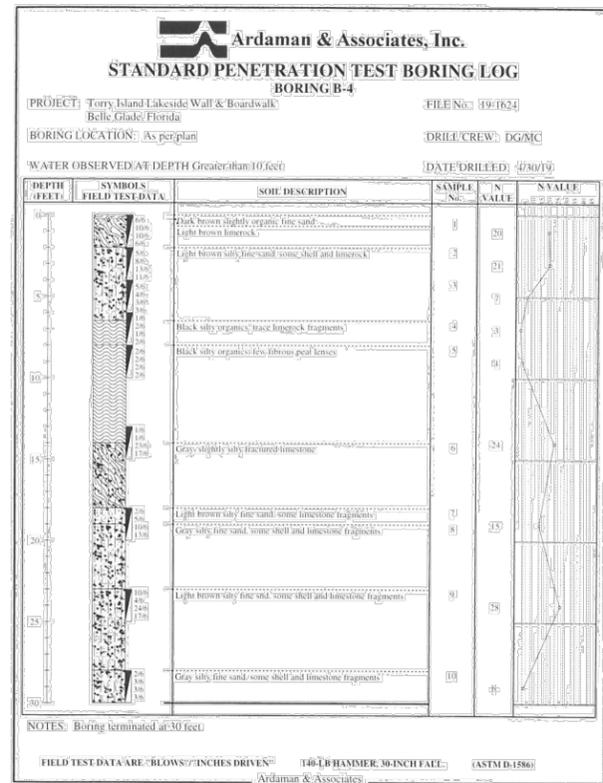
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GENERAL ABBREVIATIONS

ABRV	DESCRIPTION	ABRV	DESCRIPTION
A/C	AIR CONDITION PAD	NTS	NOT TO SCALE
ACP	ASBESTOS CEMENT PIPE	ORB	OFFICIAL RECORDS BOOK
ALUM	ALUMINUM	O / S	OFF SET
APPROX	APPROXIMATELY	(P)	PLAT
B.C.R.	BROWARD COUNTY RECORDS	P.B.	PLAT BOOK
B/L	BASELINE	P.B.C.R.	PALM BEACH COUNTY RECORDS
BOTT	BOTTOM	PC	POINT OF CURVE
(C)	CALCULATED	PCP	PERMANENT CONTROL POINT
CIP	CAST IRON PIPE	PGS	PAGES
CL	CENTER LINE	PHDPE	PERFORATED HIGH DENSITY POLYETHYLENE
CONC	CONCRETE	PI	POINT OF INTERSECTION
D	DEED/DESCRIPTION	PK&D	PK NAIL AND DISK
D.E.	DRAINAGE EASEMENT	PRC	POINT OF REVERSE CURVE
DIA	DIAMETER	PROP	PROPOSED
DIP	DUCTILE IRON PIPE	PRM	PERMANENT REFERENCE MARKER
ELEV	ELEVATION	PSM	PROFESSIONAL SURVEYOR AND MAPPER
EW	EDGE OF WATER	PT	POINT OF TANGENCY
EP	EDGE OF PAVEMENT	PVC	POLY VINYL CHLORIDE
EXIST	EXISTING	R	RADIUS
FF	FINISHED FLOOR	RCP	REINFORCED CONCRETE PIPE
FND	FOUND	R.E.	RIM ELEVATION
FPL	FLORIDA POWER & LIGHT	RGE	RANGE
GFF	GARAGE FINISHED FLOOR	R/W	RIGHT-OF-WAY LINE
HDPE	HIGH DENSITY POLYETHYLENE	SEC	SECTION
I.E.	INVERT ELEVATION	TOB	TOP OF BANK
IR	IRON ROD	TOE	TOE OF SLOPE
IR&C	IRON ROD AND CAP	TOP	TOP OF PIPE
IP	IRON PIPE	TWP	TOWNSHIP
L	ARC LENGTH	TYP	TYPICAL
LB	LICENSED BUSINESS	U.E.	UTILITY EASEMENT
LF	LINEAR FEET	VCP	VITRIFIED CLAY PIPE
(M)	MEASURED	Δ	DELTA

STANDARD LINETYPES

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
---	BASELINE	--- BTC ---	BURIED TRAFFIC CONTROL
---	PARCEL LINE	--- <C> ---	COMMUNICATIONS DUCTBANK CL
---	BOUNDARY LINE	--- <F> ---	FIBER OPTIC DUCTBANK CL
---	EASEMENT LINE	--- OHW ---	OVERHEAD WIRE
---	LOT LINE	--- BE ---	BURIED ELECTRIC
---	RIGHT OF WAY LINE	--- SL ---	BURIED STREET LIGHTING
---	CENTER LINE	--- <E> ---	ELECTRICAL DUCTBANK CENTER LINE
---	SECTION LINE	--- FM ---	FORCE MAIN
---	LANDSCAPE LINE	--- SAN ---	SANITARY SEWER
---	EDGE OF WATER	--- SNS ---	SANITARY SERVICE
---	RR TRACKS	--- VS ---	VACUUM SEWER
---	PLAT LINE	--- SD ---	STORM DRAIN
---	CURB & GUTTER	--- FIRE ---	FIRE LINE
---X---X---X---X---	FENCE LINE	--- RWL ---	RAW WATER LINE
---	GUARD RAIL	--- WL ---	WATER LINE MAIN
--- UNK --- UNK ---	UNKNOWN UTILITY	--- WLC ---	WATER LINE CHILLED
---	ABANDONED UTILITY	--- WS ---	WATER SERVICE
--- NFVU --- NFVU ---	NON FIELD VERIFIED UTILITY	--- IRR ---	IRRIGATION LINE
--- BCTV --- BCTV ---	BURIED CABLE TV	--- GAS ---	GAS LINE ABOVE GROUND
--- BCL --- BCL ---	BURIED COMMUNICATIONS LINE	--- BG ---	BURIED GAS LINE
--- FOC --- FOC ---	FIBER OPTIC CABLE	--- GS ---	BURIED GAS SERVICE LINE
--- BT ---	BURIED TELEPHONE	--- FUEL ---	FUEL LINE

GENERAL SYMBOL LEGEND

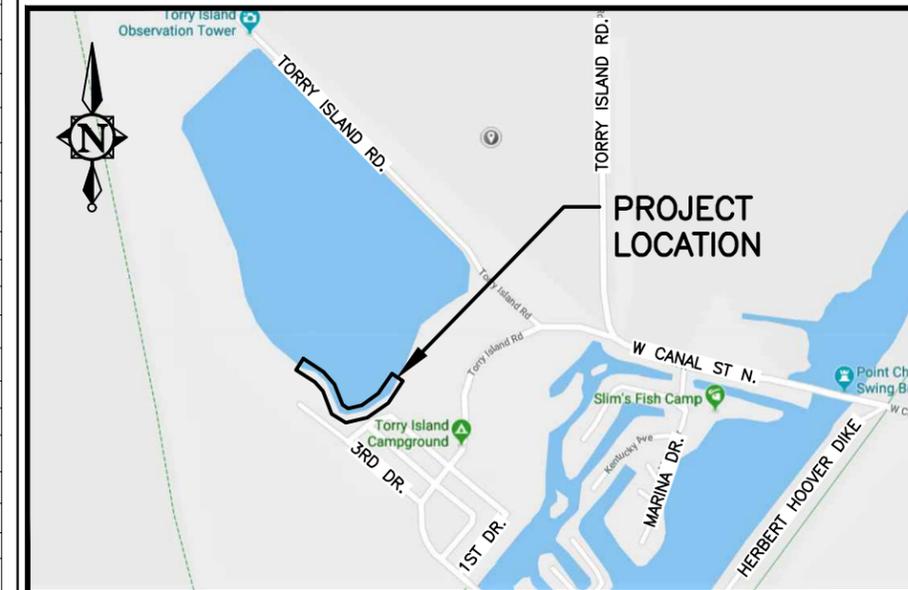
SYM.	DESCRIPTION	SYM.	DESCRIPTION
☒	AERIAL TARGET	GM	GAS METER
⊙	BENCH MARK	GMH	GAS MANHOLE
⊠	CONCRETE MONUMENT	GSV	GAS VALVE
○	IRON PIPE	MW	MONITORING WELL
●	IRON ROD	VEP	VAPOR EXTRACTION POINT
⊙ ND	NAIL & DISC	GSP	FUEL PUMP DISPENSER
△	TRAVERSE POINT	GASM	GAS MARKER
⊙	IRON ROD AND CAP	VTP	VENT PIPE
⊗	X CUT	VBG	GAS VALVE BOX
● DH	DRILL HOLE	FCAP	FUEL FILL CAP
┌	11.25° PIPE BEND	PJB	TELEPHONE JUNCTION BOX
└	22.5° PIPE BEND	PR	TELEPHONE RISER
└└	45° PIPE BEND	TMH	TELEPHONE MANHOLE
└└└	90° PIPE BEND	FIBO	FIBER OPTIC CABLE MARKER
┌┌	CROSS PIPE FITTING	CATV	CATV RISER
┌┌┌	TEE PIPE FITTING	TM	TELEPHONE MARKER
┌┌┌┌	WYE PIPE FITTING	N	BACKFLOW PREVENTOR
┌┌┌┌└	REDUCER PIPE FITTING	BO	BLOW OFF
○ EMH	ELECTRIC MANHOLE	ARV	AIR RELEASE VALVE
○ EMTR	ELECTRIC MOTOR	SP	SAMPLE POINT
⊕	ELECTRICAL OUTLET	FH	FIRE HYDRANT
⊕	GROUND LIGHT	SIA	SIAMESE CONNECTION
⊕ EJB	ELECTRIC JUNCTION BOX	WM	WATER METER
⊕ EM	ELECTRIC METER	WV	WATER VALVE
⊕ LPB	LIGHT POLE BOX	T	WATER SPIGOT
⊕ TCB	TRAFFIC CONTROL BOX	ICV	IRRIGATION CONTROL VALVE
⊕ ER	ELECTRICAL RISER	IM	IRRIGATION METER
⊕ FPL	TRANSFORMER	SPR	SPRINKLER
⊕ CW	CROSSWALK POST	12	CITRUS TREE (TRC)
←	GUY WIRE	12	CYPRESS TREE (TRCY)
⊕	GUY POLE	12	GENERIC TREE (TRG)
⊕	LIGHT POLE	12	OAK TREE (TRO)
⊕	CONCRETE UTILITY POLE	12	PINE TREE (TRP)
⊕	METAL UTILITY POLE	12	PALM TREE (TRPL)
⊕	WOOD UTILITY POLE	12	MANGROVE (TRMG)
○	MAST ARM POLE	GPR	GROUND PENETRATING RADAR
○ CO	CLEAN OUT	●	BORING HOLE
○ SMH	SANITARY MANHOLE	⊕ M	METER (UNKNOWN)
○ SO	STUB OUT	⊕	BOLLARD
⊕	STAND PIPE	⊕	COLUMN
⊕ SV	SEWER VALVE	⊕ MB	MAIL BOX
○ GRND	GRINDER	● FP	FLAG POLE
⊕ CB	CATCH BASIN	♿	HANDICAP MARKER
○ SDMH	STORM DRAIN MANHOLE	○ MH	MANHOLE (UNKNOWN)
⊕ YD	YARD DRAIN	⊕	SATELLITE DISH
⊕ DR	DRAIN	⊕	SIGN
⊕	CURB INLET	⊕ PM	PARKING METER
⊕	CURB INLET W/ MANHOLE	⊕	POST
⊕	CURB INLET W/ GRATE	⊕ UB	UTILITY BOX
⊕ CI W/ MANHOLE & GRATE		⊕ UR	UTILITY RISER
		⊕	CEMETERY HEAD STONE
		⊕ HH	HAND HOLE
		●	GATE POST
		○ TC	TRASH CAN
		⊕ NPB	NEWSPAPER BOX
		← BR	BIKE RACK
		⊕ PP	PAY PHONE

HATCH PATTERNS

▒	CONCRETE	▒	STONE
▒	BRICK	▒	ASPHALT

LOCATION MAP

SCALE: N.T.S.



SURVEYOR'S NOTES:

- REPRODUCTIONS OF THIS SURVEY ARE NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.
- NO SEARCH OF THE PUBLIC RECORDS WAS UNDERTAKEN FOR EASEMENTS, RIGHTS OF WAYS, RESTRICTIONS OR OTHER RECORDED OR EVIDENCE OF UNRECORDED DOCUMENTS BY THIS FIRM, NOR WERE ANY SUCH RECORDS SUPPLIED.
- ELEVATIONS SHOWN HEREON ARE RELATIVE TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD '88) AND ARE BASED ON REAL TIME KINEMATIC OBSERVATIONS ON SITE ON THE DATE OF THIS SURVEY AND VERIFIED UTILIZING NATIONAL GEODETIC SURVEY "OPUS-RS" SOLUTIONS.
- THE INTENT OF THIS "MAP OF TOPOGRAPHIC SURVEY" IS TO AID IN THE DESIGN OF MISCELLANEOUS IMPROVEMENTS WITHIN THE AREAS SHOWN HEREON. THIS IS NOT A BOUNDARY SURVEY.
- THERE MAY BE UNDERGROUND "FOOTINGS", DRAINAGE, UTILITIES, ETC. NOT SHOWN OR INDICATED HEREON. UTILITY SURFACE MARKS SHOWN HEREON ARE PER CRAIG A SMITH & ASSOCIATES LOCATES DEPARTMENT.
- THE ACCURACY OF THIS SURVEY IS PREMISED ON THE EXPECTED USE OF THE SURVEY. THE EXPECTED USE/PREMISE OF THIS SURVEY IS THE DESIGN OF WALK, PIER AND GANGWAY IMPROVEMENTS. TRIMBLE R2 AND R6 GNSS INSTRUMENTS WITH TRIMBLE TSC-3 DATA COLLECTION WERE UTILIZED TO ESTABLISH HORIZONTAL SURVEY CONTROL AND LOCATE MISC. FEATURES IN AREAS REQUESTED. A TOPCON ES-102 INSTRUMENT WITH RANGER (TDS) DATA COLLECTION WAS UTILIZED TO COLLECT DATA IN BOTH THE HORIZONTAL AND VERTICAL PLANES. SOUNDINGS WERE GATHERED WITHIN THE LAKE BY TAG LINE.
- THE DIGITAL DATA PROVIDED IS INTENDED TO BE VIEWED AT A SCALE OF 1" = 40' OR SMALLER.
- ALL DISTANCES AND ELEVATIONS SHOWN HEREON ARE IN ACCORD WITH THE UNITED STATES STANDARD USING FEET AND DECIMALS THEREOF.

SURVEYORS CERTIFICATE:

I HEREBY CERTIFY THAT THIS SURVEY IS ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF AND MEETS APPLICABLE SECTIONS OF THE STANDARDS OF PRACTICE AS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 5J-17, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES, SUBJECT TO QUALIFICATIONS NOTED HEREON.

FOR THE FIRM BY:

ROBERT D. KEENER
PROFESSIONAL SURVEYOR & MAPPER
FLORIDA REGISTRATION NO. 4846

FIELD DATE: 05/10/19

SIGNATURE DATE: _____

BID SET

NO.	DATE	FB / PG	DWN	REVISION	CKD
3	05/10/19	1913/36	SEE	ADD UTILITIES	RDK
3	05/02/19	1911/21	SEE	ADD UTILITIES AND ASPHALT DRIVEWAYS	RDK
2	04/30/19	1911/21	SEE	MAP OF TOPOGRAPHIC SURVEY	RDK
1	04/15/19	1911/21	SEE	MAP OF TOPOGRAPHIC SURVEY	RDK

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CITY OF BELLE GLADE

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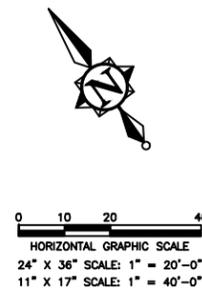
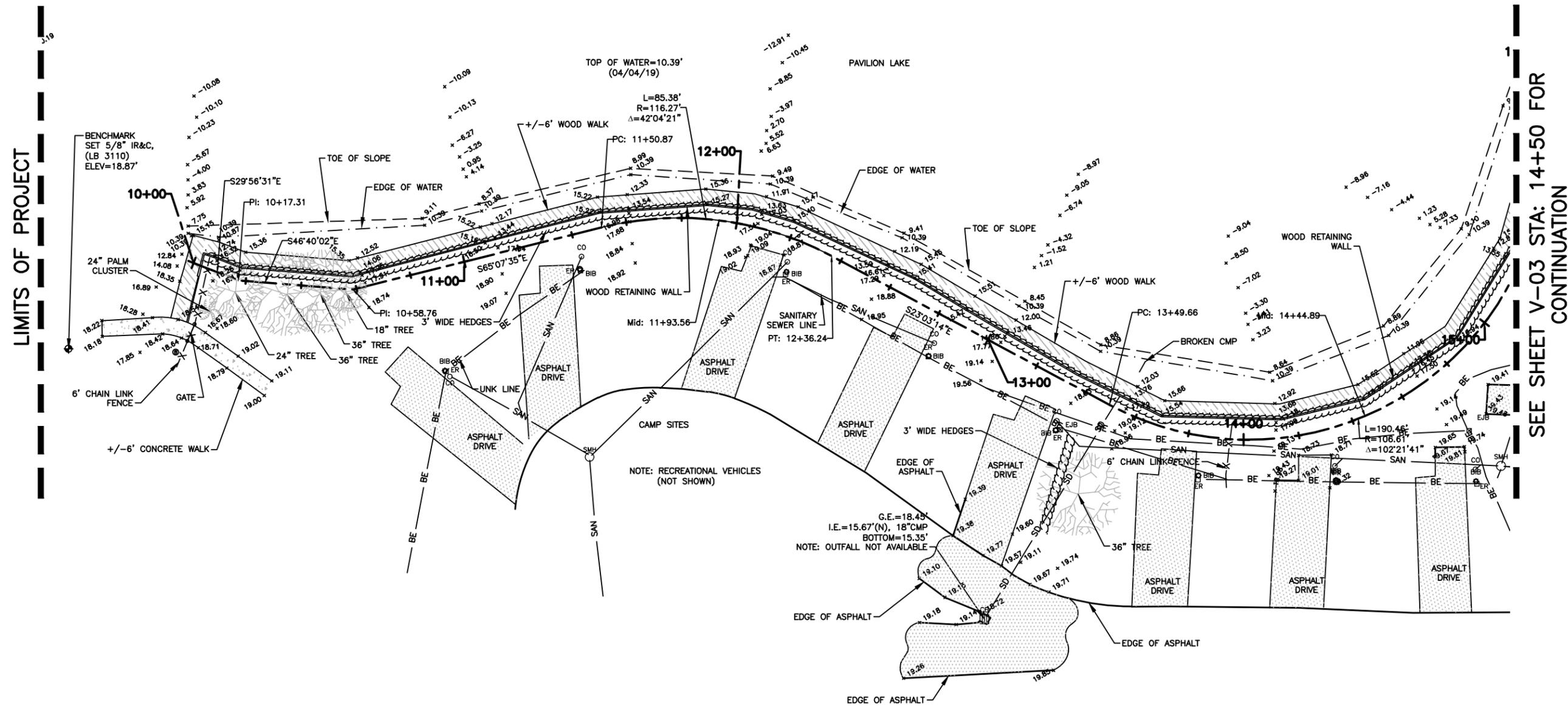
MAP OF
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SURVEY

PAVILION LAKE
PIERS, DOCKS AND GANGWAYS

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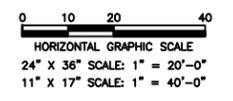
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MAP OF
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 SURVEY

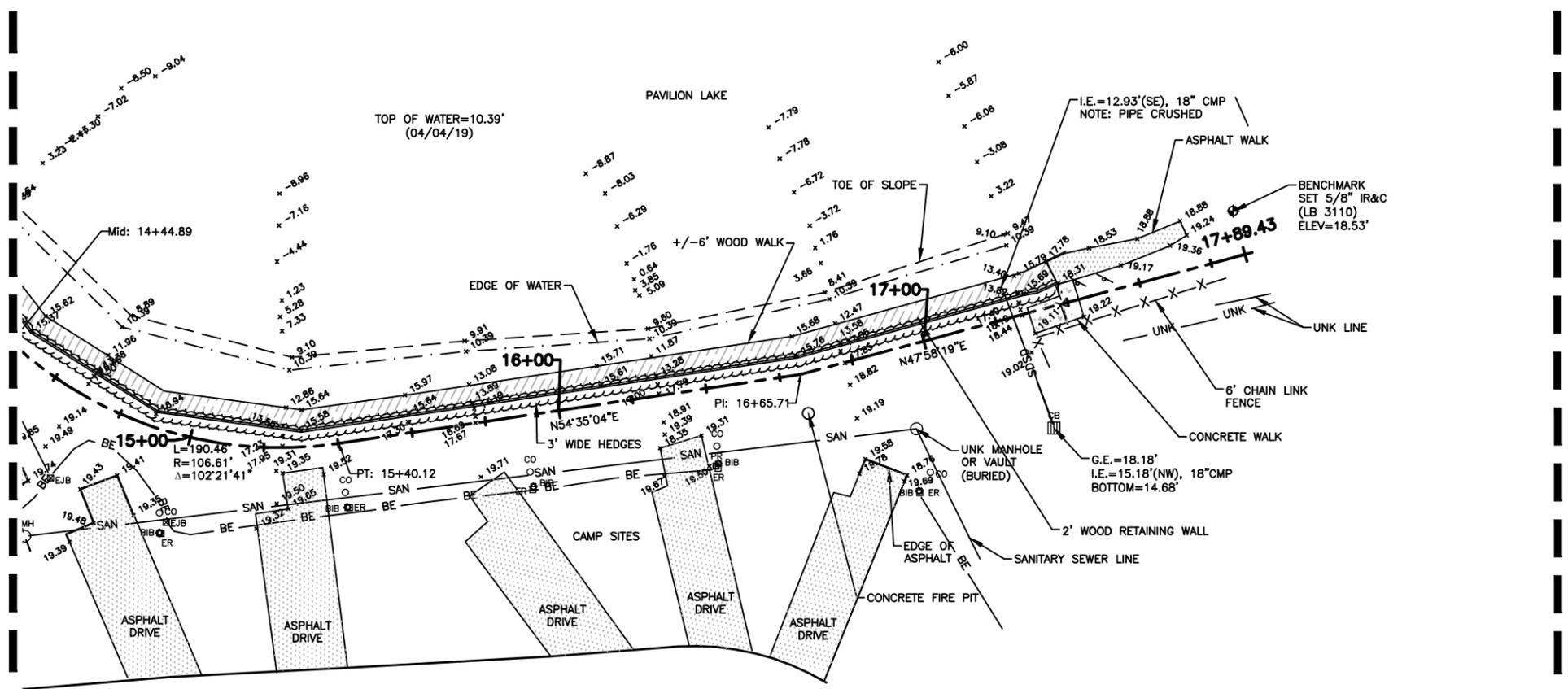
PAVILLION LAKE
 PIERS, DOCKS AND GANGWAYS

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LIMITS OF PROJECT

NOTE: RECREATIONAL VEHICLES (NOT SHOWN)

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CERTIFICATE NO. LB0003110

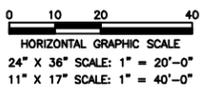
MAP OF
TOPOGRAPHIC
SURVEY

PAVILION LAKE
PIERS, DOCKS AND GANGWAYS

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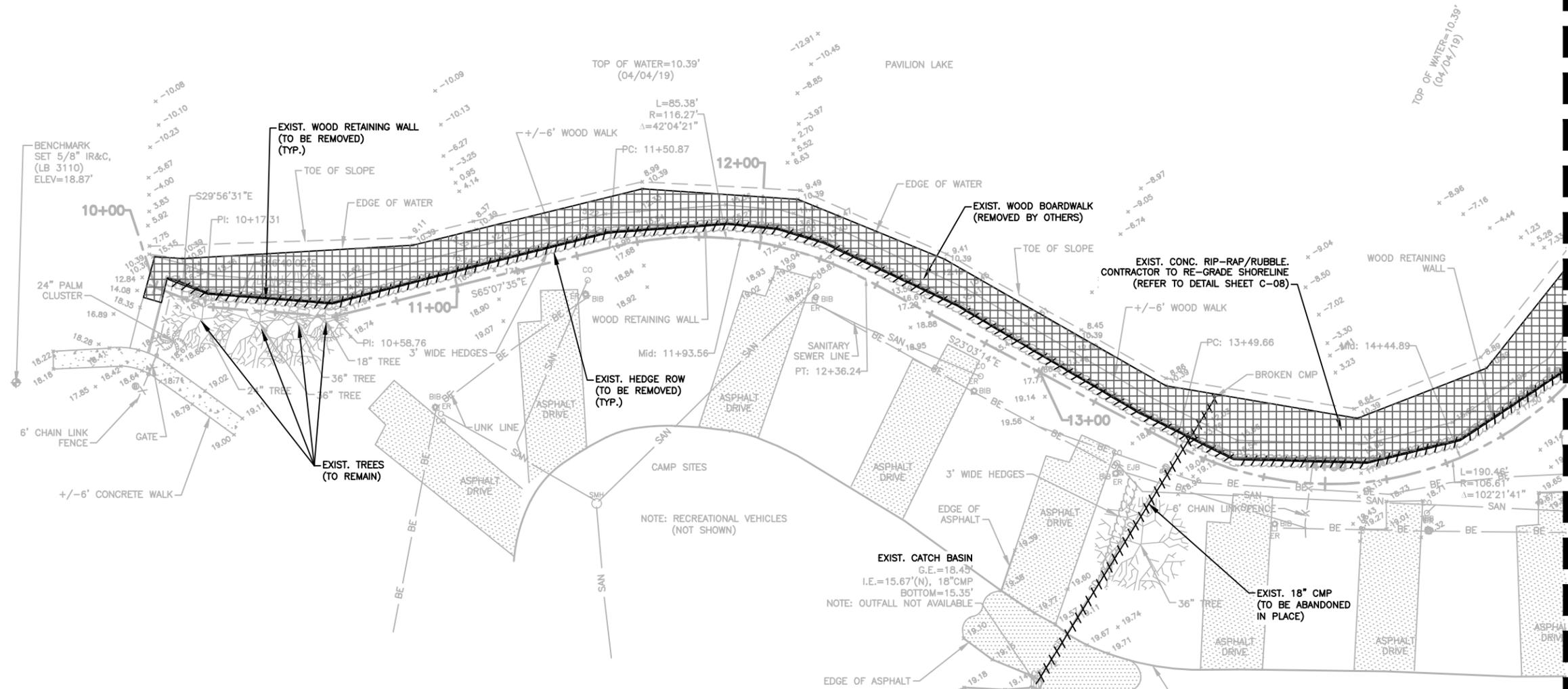
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NOTES:
1. THE INTEGRITY OF THE EXISTING DRAINAGE OUTFALL PIPE IS TO BE VERIFIED. THE CONTRACTOR IS TO EXPOSE THE PIPE AND REPLACE ANY DAMAGED PIPE UP TO THE UNIMPAIRED SECTION OF PIPE.

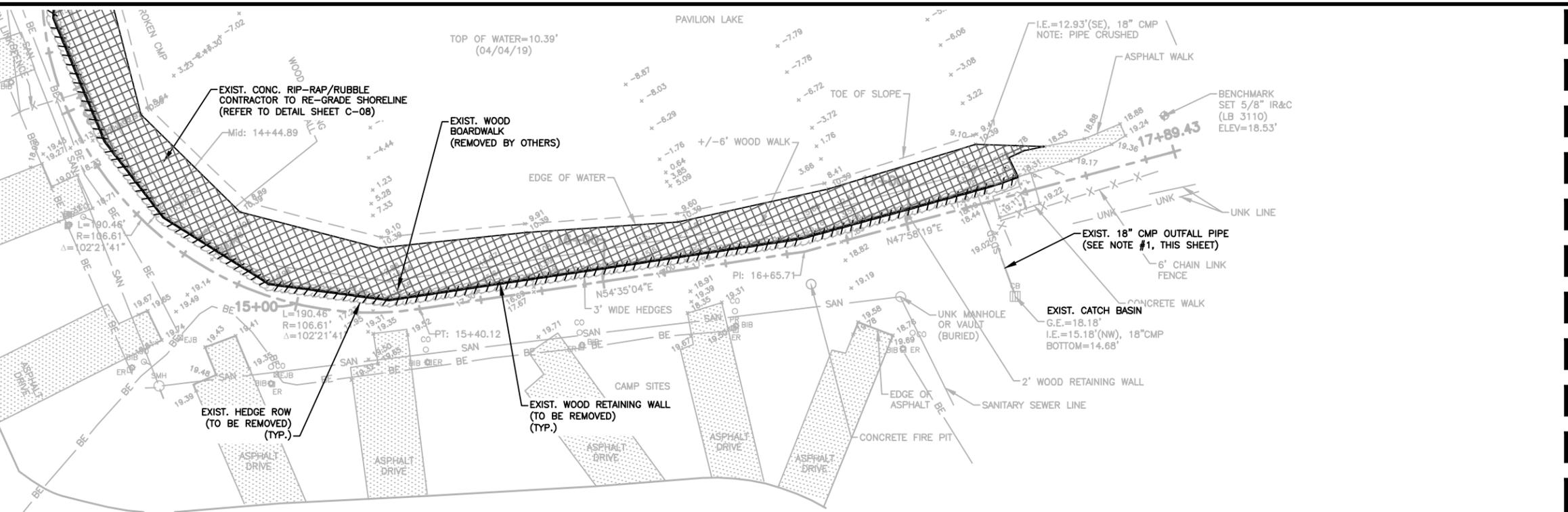
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LIMITS OF PROJECT



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Checked: JRO

APPROVED BY: JAMES R. ORTH, P.E.
DATE _____
FLORIDA PROFESSIONAL ENGINEER NO. 50126

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CONSULTING ENGINEERS-PLANNERS-SURVEYORS
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BOCA RATON, FLORIDA 33486
(561) 314-4445
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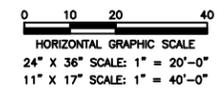
**PAVILION LAKE PIERS, DOCKS & GANGWAYS
ENGINEERING IMPROVEMENTS**

DEMOLITION PLAN

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SHEET
C-01

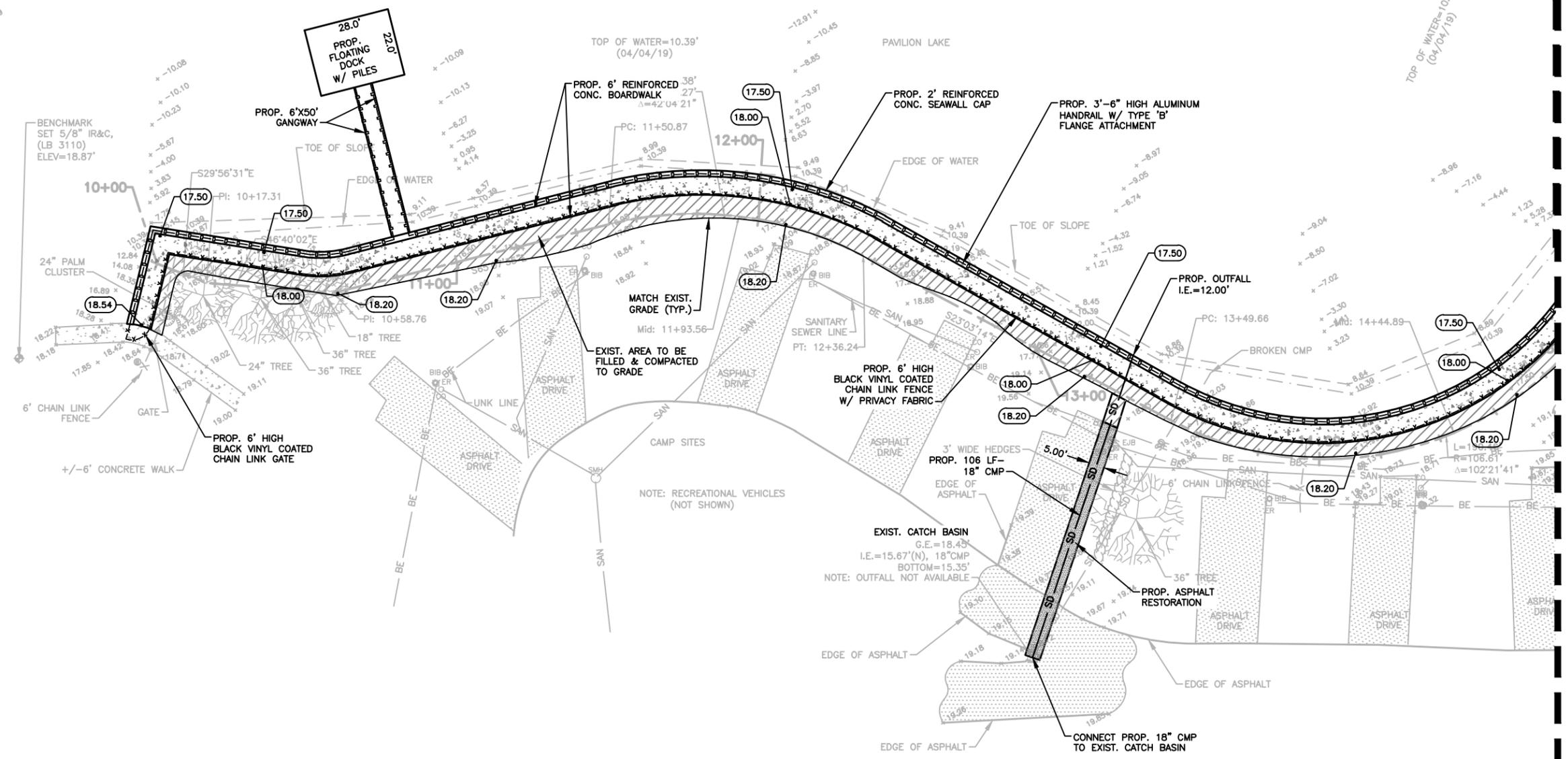
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NOTES:
1. SEE MUEngineers, INC. STRUCTURAL PLANS FOR FLOATING DOCK PILE DETAILS & NOTES.

LIMITS OF PROJECT

SEE SHEET C-3 FOR CONTINUATION



BID SET

NO.	DATE	REVISION	BY
		N.R.T.S.	

Date: 04/22/19
 Designed: AC
 Drawn: MM
 Checked: JRO

APPROVED BY: JAMES R. ORTH, P.E.
 DATE: _____
 FLORIDA PROFESSIONAL ENGINEER NO. 50126

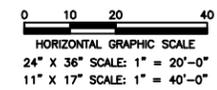
CRAIG A. SMITH & ASSOCIATES
 CONSULTING ENGINEERS-PLANNERS-SURVEYORS
 21045 COMMERCIAL TRAIL
 BOCA RATON, FLORIDA 33486
 (561) 314-4445
 CERTIFICATE NO. LB0003110 

PREPARED FOR:
CITY OF BELLE GLADE

PAVILION LAKE PIERS, DOCKS & GANGWAYS
 ENGINEERING IMPROVEMENTS
 CONSTRUCTION PLAN

FILE NAME: 20-2037-C-02-PLAN.dwg
 LAST SAVED: 06/17/19 - 1:32pm
 CAS PROJECT NUMBER
 19-2037

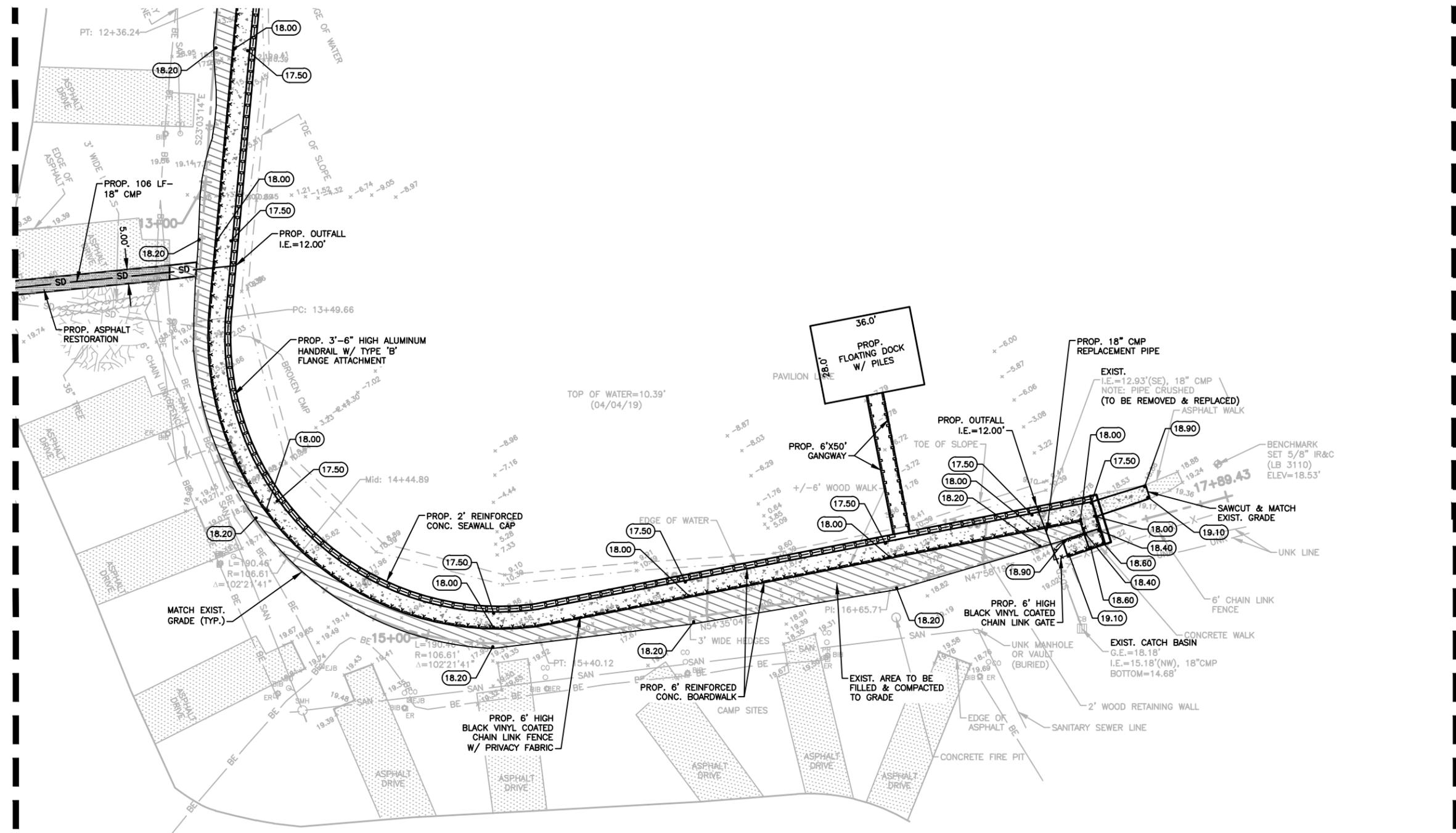
SHEET
C-02



- NOTES:**
- CONTRACTOR TO UNCOVER EXISTING NORTHERN DRAINAGE OUTFALL PIPE AND REPLACE TO THE JOINT WHERE THE INTEGRITY OF THE PIPE IS IN GOOD CONDITION.
 - SEE MUEngineers, INC. STRUCTURAL PLANS FOR FLOATING DOCK PILE DETAILS & NOTES.

LIMITS OF PROJECT

SEE SHEET C-2 FOR CONTINUATION



NOTE: RECREATIONAL VEHICLES (NOT SHOWN)

BID SET

NO.	DATE	REVISION	BY

Date: 04/22/19
 Designed: AC
 Drawn: MM
 Checked: JRO

APPROVED BY: JAMES R. ORTH, P.E.
 DATE: _____
 FLORIDA PROFESSIONAL ENGINEER NO. 50126

CRAIG A. SMITH & ASSOCIATES
 CONSULTING ENGINEERS-PLANNERS-SURVEYORS
 21045 COMMERCIAL TRAIL
 BOCA RATON, FLORIDA 33486
 (561) 314-4445
 CERTIFICATE NO. LB0003110 

PREPARED FOR:
CITY OF BELLE GLADE

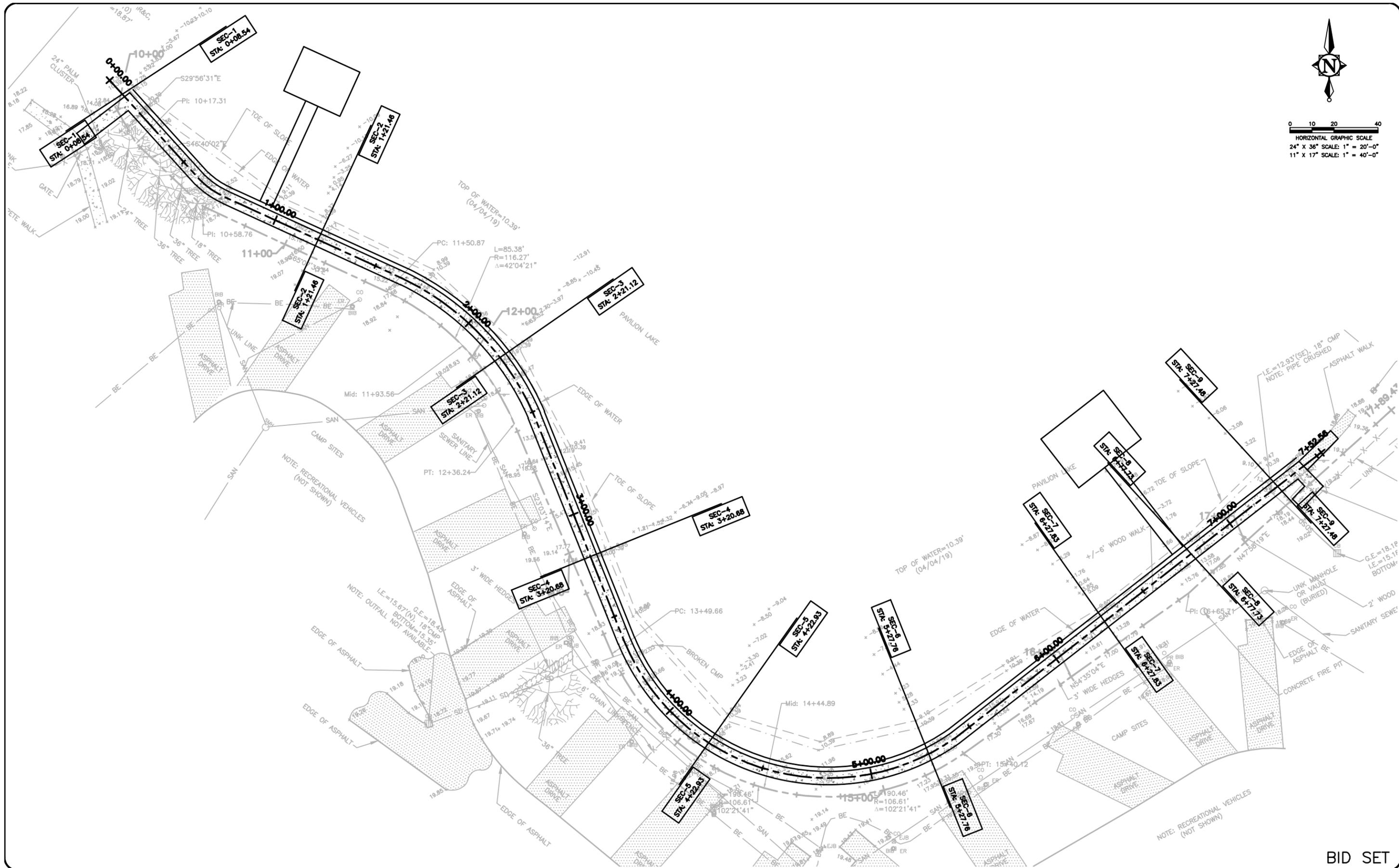
PAVILION LAKE PIERS, DOCKS & GANGWAYS
 ENGINEERING IMPROVEMENTS
 CONSTRUCTION PLAN

FILE NAME: 20-2037-C-03-PLAN.dwg
 LAST SAVED: 06/17/19 - 1:43pm
 CAS PROJECT NUMBER
 19-2037

SHEET
C-03



0 10 20 40
 HORIZONTAL GRAPHIC SCALE
 24" X 36" SCALE: 1" = 20'-0"
 11" X 17" SCALE: 1" = 40'-0"



NO.	DATE	REVISION	BY

Date: 04/22/19
 Designed: AC
 Drawn: MM
 Checked: JRO

APPROVED BY: JAMES R. ORTH, P.E.
 DATE: _____
 FLORIDA PROFESSIONAL ENGINEER NO. 50126

CRAIG A. SMITH & ASSOCIATES
 CONSULTING ENGINEERS-PLANNERS-SURVEYORS

 21045 COMMERCIAL TRAIL
 BOCA RATON, FLORIDA 33486
 (561) 314-4445
 CERTIFICATE NO. LB0003110

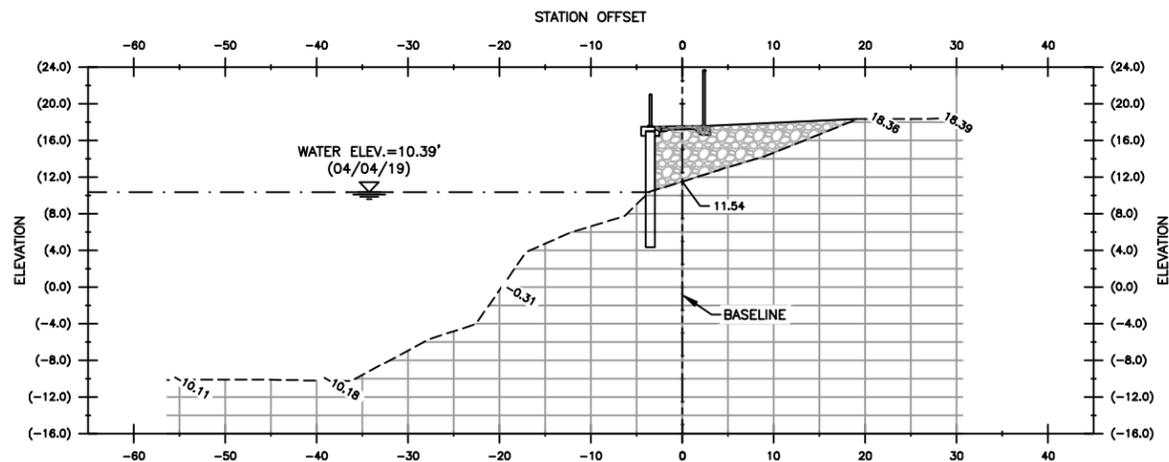
PREPARED FOR:
CITY OF BELLE GLADE

PAVILION LAKE PIERS, DOCKS & GANGWAYS
 ENGINEERING IMPROVEMENTS
CROSS SECTION
PLAN SHEET

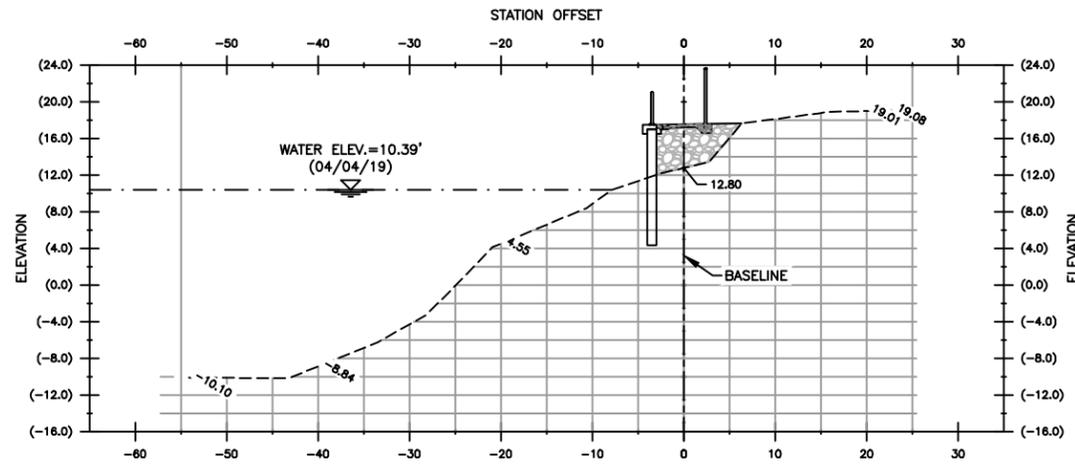
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 CAS PROJECT NUMBER
 19-2037

SHEET
C-04

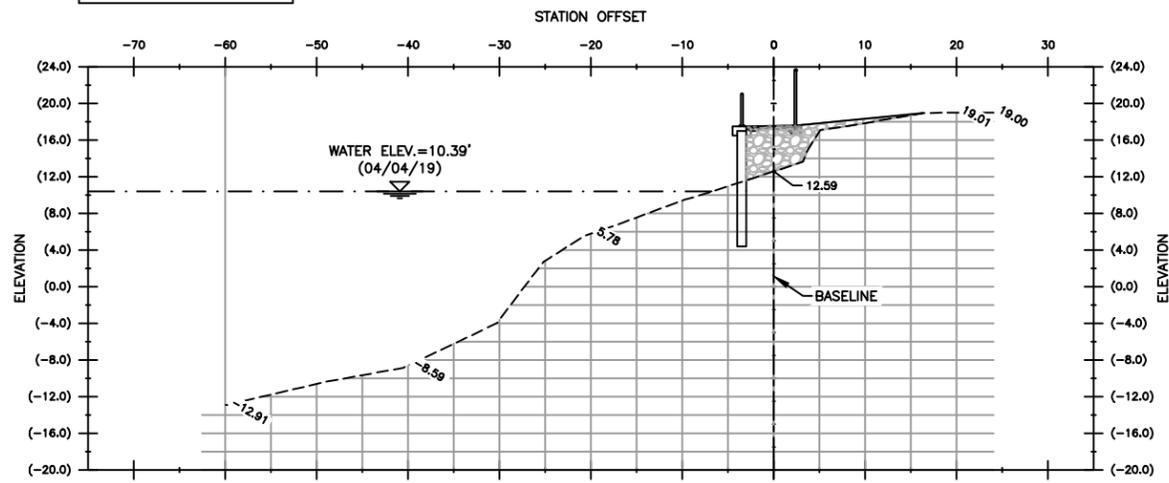
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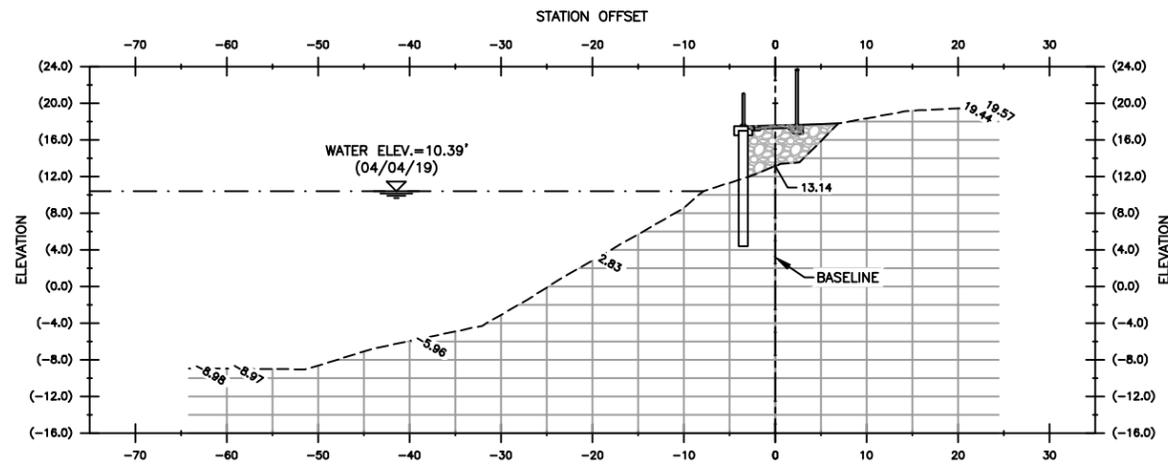
PAVILION LAKE
SECTION - 1
STATION: 0+09
V SCALE: 1" = 10'-0"



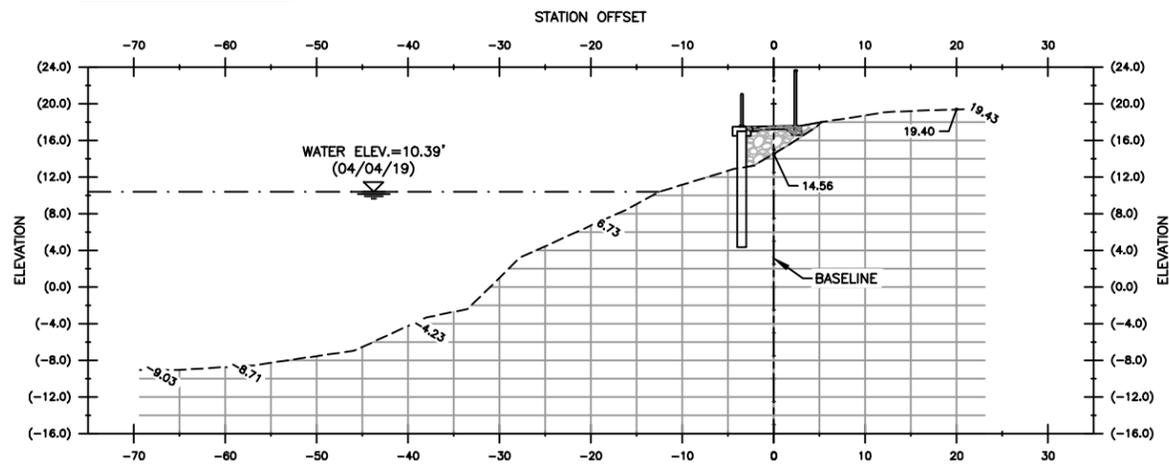
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SECTION - 2
STATION: 1+21
V SCALE: 1" = 10'-0"



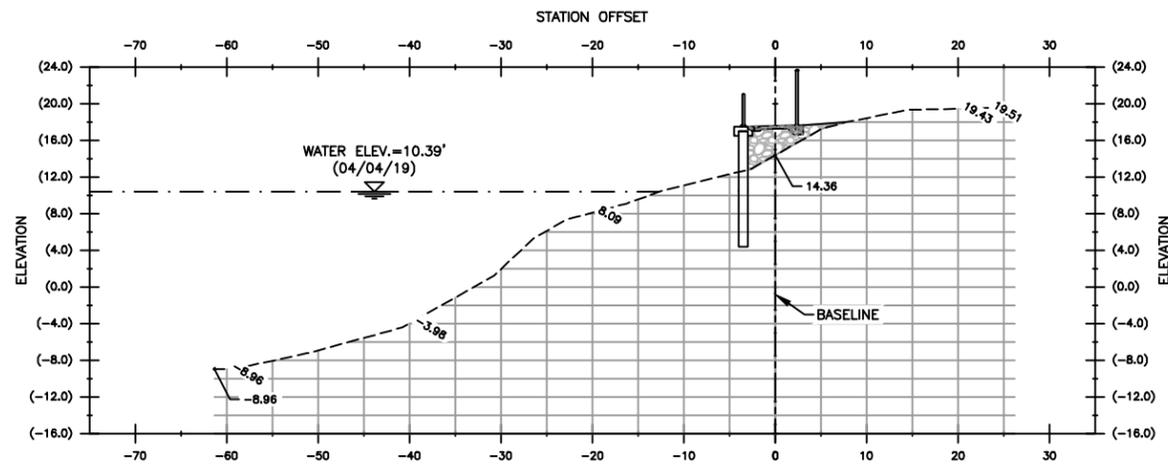
PAVILION LAKE
SECTION - 3
STATION: 2+21
V SCALE: 1" = 10'-0"



PAVILION LAKE
SECTION - 4
STATION: 3+21
V SCALE: 1" = 10'-0"



PAVILION LAKE
SECTION - 5
STATION: 4+23
V SCALE: 1" = 10'-0"



PAVILION LAKE
SECTION - 6
STATION: 5+28
V SCALE: 1" = 10'-0"

BID SET

NO.	DATE	REVISION	BY

Date: 04/22/19
Designed: AC
Drawn: MM
Checked: JRO

APPROVED BY: JAMES R. ORTH, P.E.
DATE: _____
FLORIDA PROFESSIONAL ENGINEER NO. 50126

CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS
21045 COMMERCIAL TRAIL
BOCA RATON, FLORIDA 33486
(561) 314-4445
CERTIFICATE NO. LB0003110

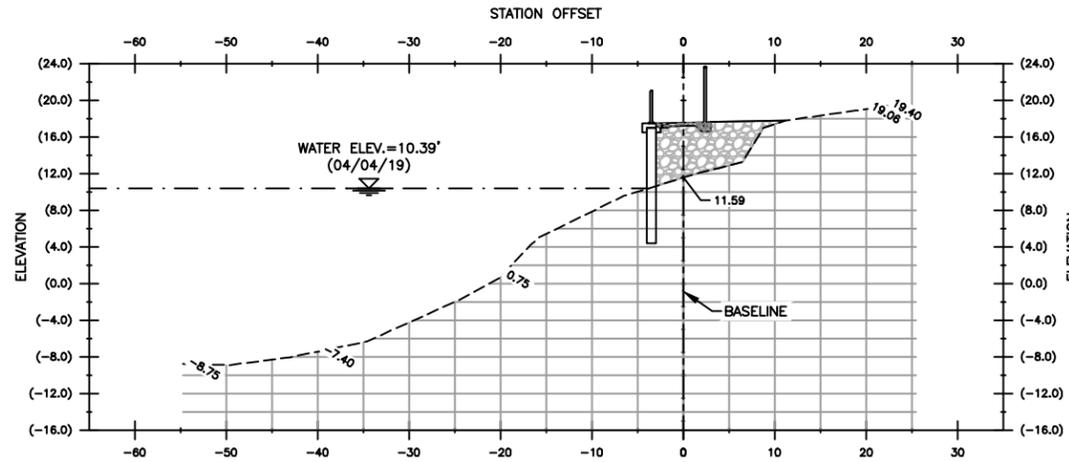
PREPARED FOR:
CITY OF BELLE GLADE

PAVILION LAKE PIERS, DOCKS & GANGWAYS
ENGINEERING IMPROVEMENTS
CROSS SECTIONS

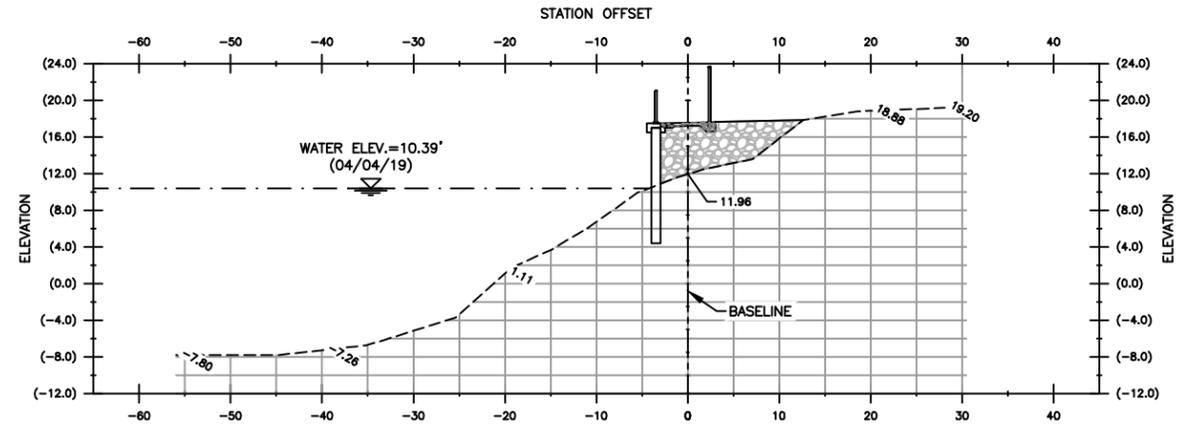
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LAST SAVED: 06/11/19 - 10:21am
CAS PROJECT NUMBER
19-2037

SHEET
C-05

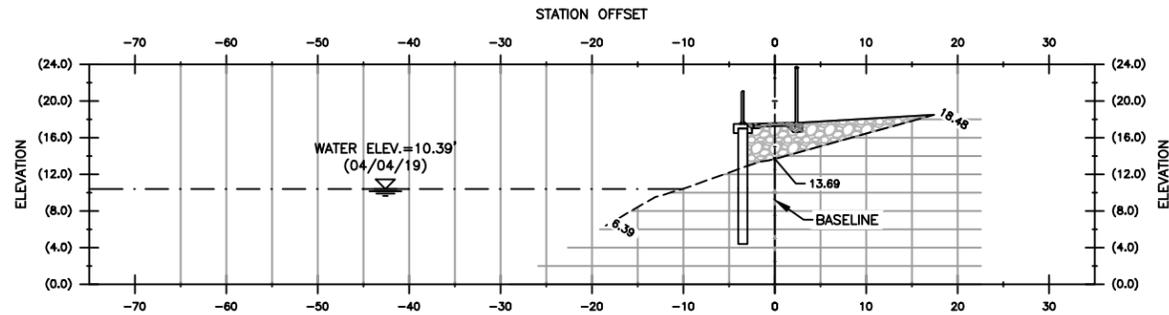
\\cas-depot\Projects\Cities_Villages_Towns\Belle_Glade\19-2037-115-Tony_Island\Pavilion_Lake_Piers\09-Plans\20-2037-C-06-XSEC.dwg, 7/19/2019 9:54:09 AM, mmarenco, 1:2



PAVILION LAKE
 SECTION - 7
 STATION: 6+28
 V SCALE: 1" = 10'-0"



PAVILION LAKE
 SECTION - 8
 STATION: 6+78
 V SCALE: 1" = 10'-0"



PAVILION LAKE
 SECTION - 9
 STATION: 7+27
 V SCALE: 1" = 10'-0"

BID SET

NO.	DATE	REVISION	BY

Date: 04/22/19
 Designed: AC
 Drawn: MM
 Checked: JRO

APPROVED BY: JAMES R. ORTH, P.E.
 DATE: _____
 FLORIDA PROFESSIONAL ENGINEER NO. 50126

CRAIG A. SMITH & ASSOCIATES
 CONSULTING ENGINEERS-PLANNERS-SURVEYORS

 21045 COMMERCIAL TRAIL
 BOCA RATON, FLORIDA 33486
 (561) 314-4445
 CERTIFICATE NO. LB0003110

PREPARED FOR:
CITY OF BELLE GLADE

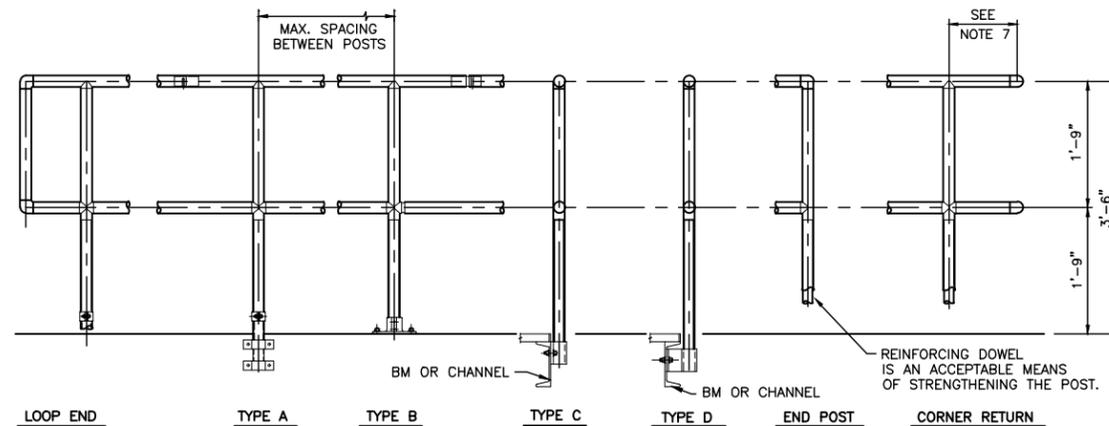
PAVILION LAKE PIERS, DOCKS & GANGWAYS
 ENGINEERING IMPROVEMENTS
 CROSS SECTIONS

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 CAS PROJECT NUMBER
 19-2037

SHEET
C-06

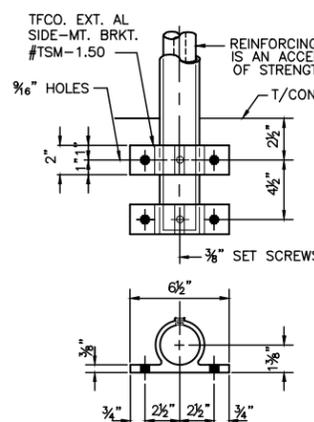
GUARD RAIL SPECIFICATIONS

1. THE MANUFACTURER SHALL SUBMIT CALCULATIONS TO THE ENGINEER FOR APPROVAL. TESTING OF BASE CASTINGS OR BASE EXTUSIONS BY AN INDEPENDENT LAB OR MANUFACTURER'S LAB (IF MANUFACTURER'S LAB MEETS THE REQUIREMENTS OF THE ALUMINUM ASSOCIATION) WILL BE AN ACCEPTABLE SUBSTITUTE FOR CALCULATIONS. CALCULATIONS WILL BE REQUIRED FOR APPROVAL OF ALL OTHER DESIGN ASPECTS.
2. EXPANSION BOLTS SHALL BE SPACED 10d APART & 5d EDGE DISTANCE FOR NO REDUCTION IN PULLOUT STRENGTH. A SAFETY FACTOR OF 4 SHALL BE USED ON EXPANSION BOLT PULLOUT VALUES PUBLISHED BY THE MANUFACTURE. EXPANSION BOLTS SHALL BE STAINLESS STEEL TYPE 316 WEDGE BOLTS & SHALL BE FURNISHED BY THE HANDRAIL MANUFACTURER.
3. ALUMINUM SURFACES IN CONTACT WITH CONCRETE, GROUT OR DISSIMILAR METALS WILL BE PROTECTED WITH A COAT OF BITUMINOUS PAINT, MYLAR ISOLATORS OR OTHER APPROVAL MATERIAL.
4. ALUMINUM STAIR THREADS SHALL BE GRIP STRUT PLANK AS MANUFACTURED BY McNICHOLS CO. OR EQUAL.

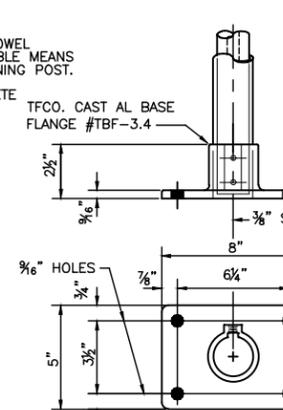


TYPICAL HANDRAIL DETAILS

SCALE: NTS



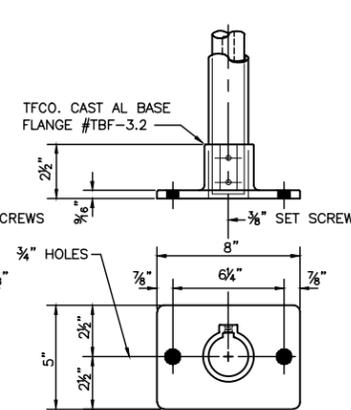
TYPE "A"



TYPE "B" (4 HOLES)

(COMPLIES WITH SBC & UBC)

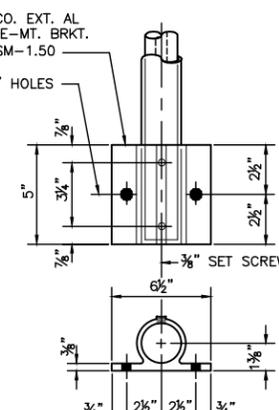
LOCATE SET SCREWS IN BASE FLANGE AT 90 DEG FROM CENTERLINE OF H.R. RUN AND ON SIDE AWAY FROM WALKING SURFACE.



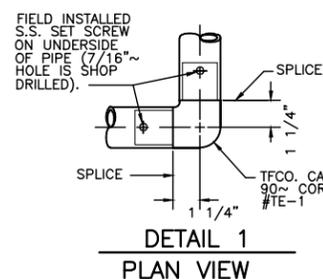
TYPE "B" (2 HOLES)

(COMPLIES WITH SBC & UBC)

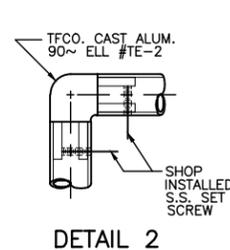
LOCATE SET SCREWS IN BASE FLANGE AT 90 DEG FROM CENTERLINE OF H.R. RUN AND ON SIDE AWAY FROM WALKING SURFACE.



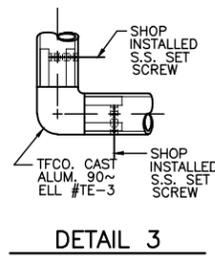
TYPE "C"



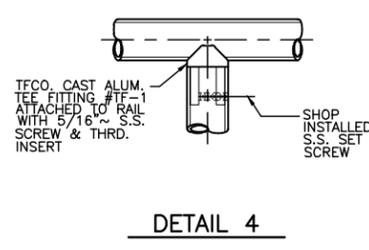
**DETAIL 1
PLAN VIEW**



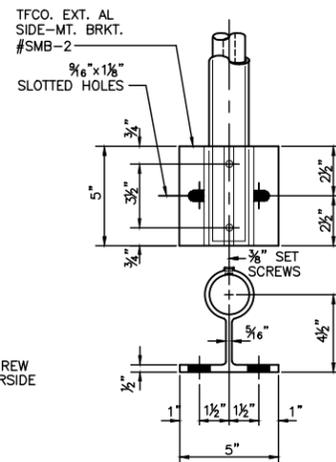
DETAIL 2



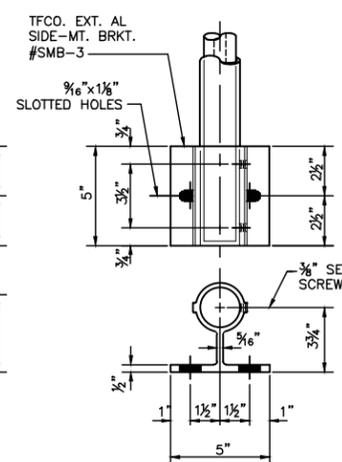
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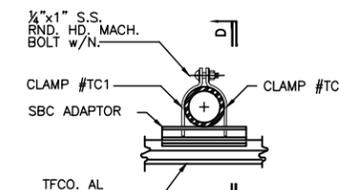
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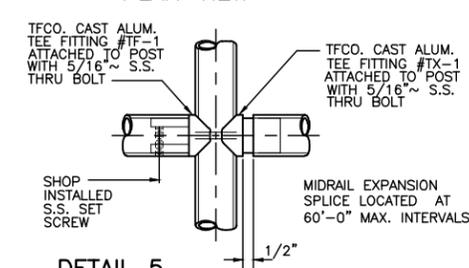
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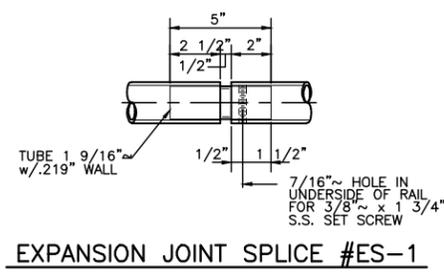
TYPE "E"



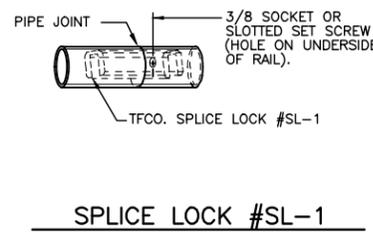
NOTE:
HAND RAILS SHALL BE ALUMINUM, ANCHOR BOLTS, AND SETSCREWS SHALL BE 316 STAINLESS STEEL WITH 304 STAINLESS STEEL NUTS & LOCK WASHERS WHERE REQUIRED.



DETAIL 5



EXPANSION JOINT SPLICE #ES-1



SPLICE LOCK #SL-1

NO.	DATE	REVISION	BY

Date: 04/22/19
Designed: AC
Drawn: MM
Checked: JRO

APPROVED BY: JAMES R. ORTH, P.E.
DATE: _____
FLORIDA PROFESSIONAL ENGINEER NO. 50126

CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS
21045 COMMERCIAL TRAIL
BOCA RATON, FLORIDA 33486
(561) 314-4445
CERTIFICATE. NO. LB0003110

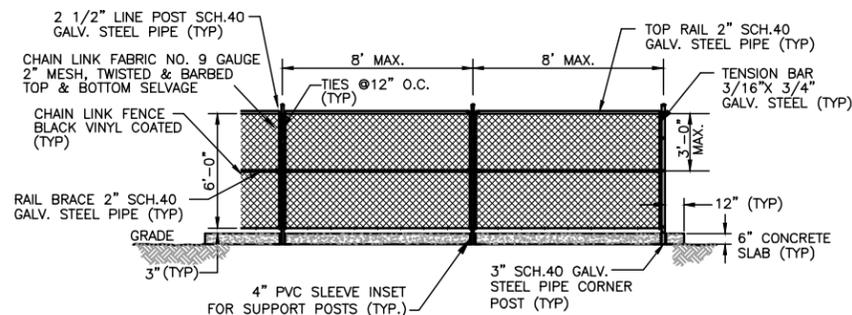
PREPARED FOR:
CITY OF BELLE GLADE

PAVILION LAKE PIERS, DOCKS & GANGWAYS
ENGINEERING IMPROVEMENTS
STANDARD DETAILS

FILE NAME: 30-1943-C-07-DTLS.dwg
LAST SAVED: 06/11/19 - 10:23am
CAS PROJECT NUMBER
19-2037

SHEET
C-07

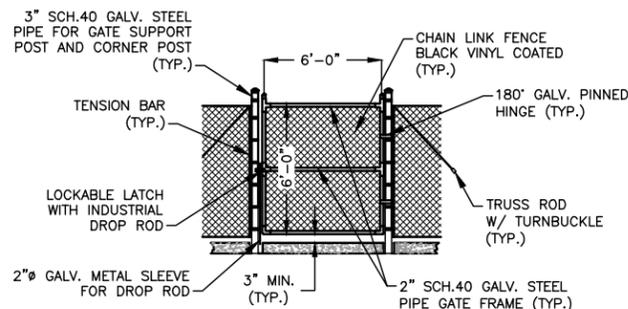
BID SET



6' FENCE DETAIL

SCALE: N.T.S.

NOTE:
1. REFER TO SECTION 3, SHEET 3.0 OF MUENGINEERS INC. PLANS FOR DETAILED STRUCTURAL INFORMATION.

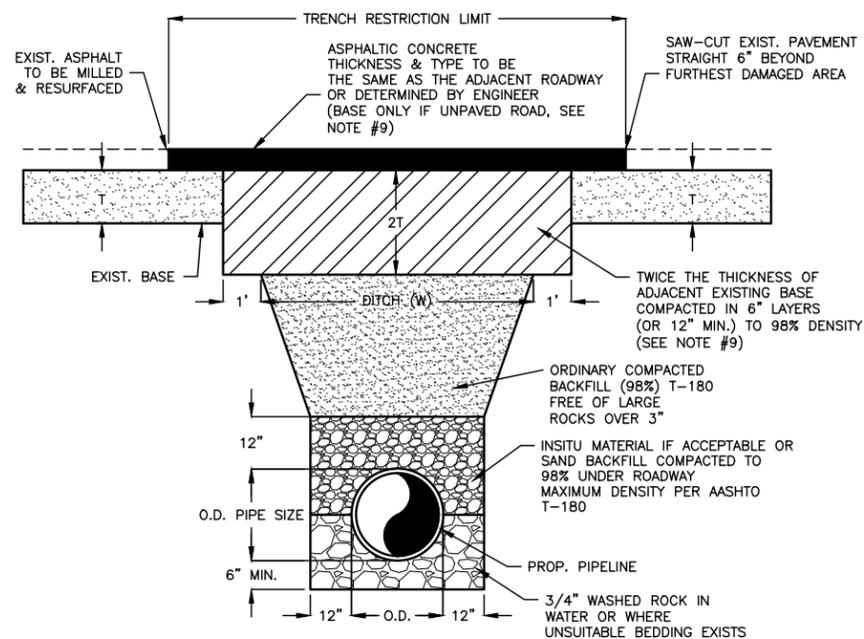


SWING GATE DETAIL

SCALE: N.T.S.

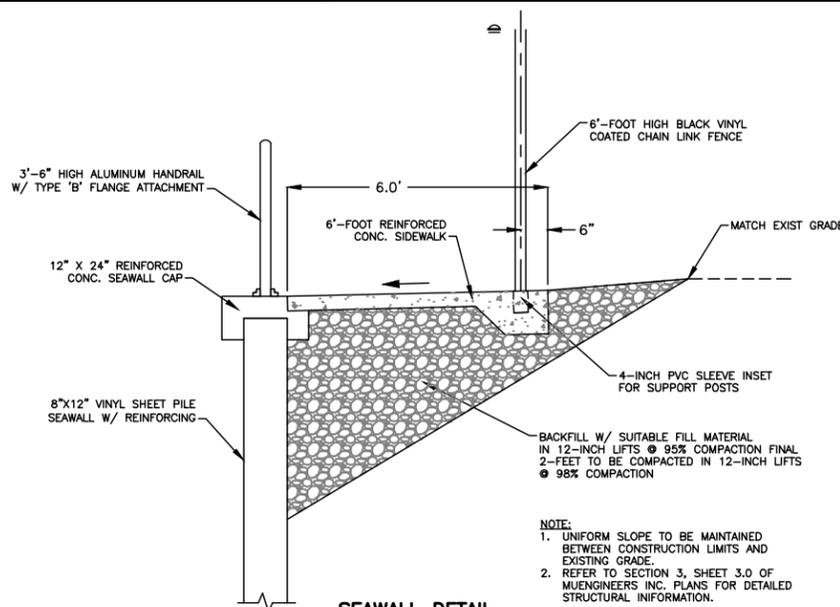
NOTES:

- CHAIN LINK FENCE SHALL BE COMMERCIAL GRADE HEAVY DUTY HF40 FRAMEWORK WITH 9 GAUGE GALVANIZED CHAIN LINK MESH.
- HEAVY DUTY BLACK VINYL COATING IS REQUIRED FOR ALL POSTS, BRACES, RAILS AND ACCESSORIES.
- PRIVACY FENCE FABRIC TO BE GREEN IN COLOR, UV TREATED, UP TO 90% PRIVACY BLOCKAGE, AND REINFORCED EYELETS AND HEM.
- ALL POSTS SHALL BE CAPPED WITH GALVANIZED STEEL TOPS. LINE POST TOPS SHALL PROVIDE FOR PASSAGE OF TOP RAIL.
- ALL WELDED JOINTS SHALL BE COATED WITH A 2 PART EPOXY PAINT.
- RAIL SPLICES TO BE LOCATED WITHIN 12" OF A FENCE POST.



SURFACE RESTORATION & INSTALLATION DETAIL

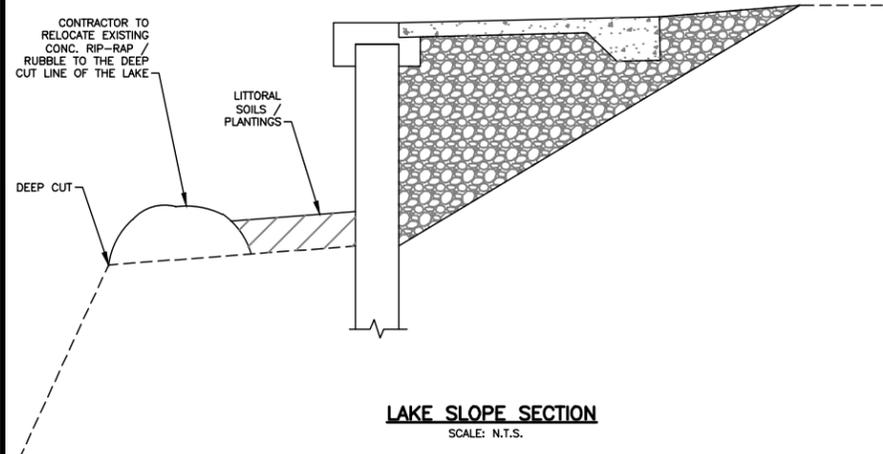
SCALE: N.T.S.



SEAWALL DETAIL

SCALE: N.T.S.

NOTE:
1. UNIFORM SLOPE TO BE MAINTAINED BETWEEN CONSTRUCTION LIMITS AND EXISTING GRADE.
2. REFER TO SECTION 3, SHEET 3.0 OF MUENGINEERS INC. PLANS FOR DETAILED STRUCTURAL INFORMATION.



LAKE SLOPE SECTION

SCALE: N.T.S.

GENERAL NOTES

- ALL SPACES AROUND PIPING ENTERING OR LEAVING MANHOLES AND CATCH BASINS SHALL BE COMPLETELY FILLED WITH 2:1 CEMENT MORTAR.
- CONTRACTOR TO PROTECT ALL EXISTING STORM WATER INLETS WITH EITHER MIRAFI PAPER OR BAILS OF HAY.
- ALL PERMANENT SOD AREAS TO RECEIVE A 2" TOP SOIL TREATMENT.
- TOP OF SOD SHALL BE FLUSH WITH THE EDGE OF PAVEMENT.
- CORRUGATED METAL PIPE TO MEET ASTM A742, A760, A762, A796 AND A798 FOR MATERIAL DESIGN AND INSTALLATION.
- THE LOCATION OF ALL EXISTING UTILITIES ON THE PLAN IS APPROXIMATE. THE CONTRACTOR SHALL LOCATE AND EXPOSE ALL EXISTING UTILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO ALLOW REDESIGN BY THE ENGINEER IF SUCH UTILITIES ARE FOUND TO BE IN CONFLICT WITH PROPOSED CONSTRUCTION.
- THE CONTRACTOR SHALL PROTECT ALL UTILITIES AND OTHER IMPROVEMENTS SHOWN ON THESE PLANS AND ALL OTHER UTILITIES AND IMPROVEMENTS NOT SHOWN. THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR REPAIRS OF UTILITIES AND OTHER IMPROVEMENTS DAMAGED DURING CONSTRUCTION AND SHALL MAINTAIN SUFFICIENT PROTECTION TO ALL UTILITIES REQUIRED TO PROTECT THEM FROM DAMAGE AND TO PROTECT THE PUBLIC DURING CONSTRUCTION.
- CONTRACTOR SHALL CONTACT THE CITY OF BELLE GLADE PUBLIC WORKS DEPARTMENTS AND THE UNDERGROUND UTILITIES NOTIFICATION CENTER 48 HOURS PRIOR TO INSTALLATION OF UTILITIES.
- CONTRACTOR SHALL NOTIFY CRAIG A. SMITH & ASSOCIATES AT (561) 314-4454 AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.
- THE CONTRACTOR SHALL NOTIFY FLORIDA POWER AND LIGHT CO., BELL SOUTH TELEPHONE CO., AND ANY OTHER UTILITY COMPANY WHICH MAY HAVE THEIR UTILITIES WITHIN THE CONSTRUCTION AREAS BEFORE BEGINNING CONSTRUCTION.
- A PRE-CONSTRUCTION MEETING IS TO BE HELD BETWEEN THE CITY OF BELLE GLADE, ENGINEER OF RECORD, AND CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- PLANS AND SPECIFICATIONS REQUIRE THAT COMPACTED BACKFILL BE PLACED ALONG SIDE OF AND OVER ALL REPLACED UTILITIES. THE ENGINEER MAY REQUIRE THAT COMPACTION TESTS BE TAKEN TO VERIFY BACKFILL COMPACTION. THE COSTS OF SUCH COMPACTION TESTS WILL BE BORNE BY THE CONTRACTOR.
- ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.
- ALL LABOR, MATERIALS, AND METHODS OF CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH THE PLANS AND CONSTRUCTION SPECIFICATIONS. SUBSTITUTIONS AND DEVIATION FROM PLANS AND SPECIFICATIONS SHALL BE PERMITTED ONLY WHEN WRITTEN APPROVAL HAS BEEN ISSUED BY THE ENGINEER.
- CONSTRUCTION INSPECTION WILL BE PERFORMED BY THE ENGINEER AND IS REQUIRED. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST 48 HOURS BEFORE BEGINNING CONSTRUCTION AND AT LEAST 48 HOURS BEFORE REQUIRING INSPECTION OF EACH AND EVERY PHASE OF WORK.
- THE CONTRACTOR SHALL MAINTAIN A CURRENT SET OF APPROVED CONSTRUCTION PLANS ON THE JOB SITE DURING ALL PHASES OF CONSTRUCTION.
- SHOP DRAWINGS OF ALL MATERIALS BEING USED SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.

PAVING, GRADING AND DRAINAGE SPECIFICATIONS

- ALL ORGANIC OR DELETERIOUS MATERIAL SHALL BE REMOVED FROM WITHIN 10 FEET OF ANY AREA ON THE SITE WHICH IS TO BE FILLED. THIS INCLUDES ALL BUILDING AREAS AND PAVEMENT AREAS WHICH ARE BEING FILLED. ANY SUCH MATERIAL SHALL BE REPLACED BY APPROVED GRANULAR FILL WHICH SHALL BE COMPACTED TO 100% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-99C.
- STABILIZED SUBGRADE SHALL HAVE A MINIMUM LIMEROCK BEARING RATIO (LBR) OF 40 AND SHALL BE COMPACTED TO 98% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.
- LIMEROCK BASE COURSE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 911 OF FLORIDA D.O.T. STANDARD SPECIFICATIONS, FOR ROAD AND BRIDGE CONSTRUCTION (LATEST VERSION) EXCEPT THAT THE MINIMUM PERCENTAGE OF CARBONATES OF CALCIUM AND MAGNESIUM SHALL BE 60%. COMPACTED TO 98% OF MAX. DENSITY AS DETERMINED AASHTO T-180.
- ASPHALTIC CONCRETE SURFACE COURSE SHALL BE TYPE S-III AND SHALL CONFORM TO THE REQUIREMENTS OF SECTIONS 330, 331, AND 334 FLORIDA D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
- PRIME COAT AND TACK COAT FOR BASE COURSES SHALL CONFORM TO THE REQUIREMENTS OF SECTIONS 300-1 THROUGH 300-7 OF FLORIDA D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. PRIME COAT SHALL BE APPLIED AT A RATE OF 0.25 GALLONS PER SQUARE YARD AND TACK COAT AT A RATE OF 0.08 GALLONS PER SQUARE YARD UNLESS A VARIATION RATE IS APPROVED BY THE ENGINEER.
- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS UNLESS OTHERWISE NOTED.
- ASPHALT CONCRETE PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED.

EROSION CONTROL NOTES

- THE CONTRACTOR SHALL MAKE EVERY EFFORT DURING CONSTRUCTION TO CONTROL WIND AND WATER EROSION OF THE SOIL ON THE SITE.
- THE CONTRACTOR SHALL CONTROL EXCESSIVE RUNOFF FROM THE PROJECT DURING THE CLEARING AND GRUBBING OPERATION OF THE PROJECT.
- TYPE I HAY BALES, SILT FENCE & FLOATING TURBIDITY BARRIERS SHALL BE INSTALLED ON THE SITE TO PREVENT EROSION FROM STORM WATER DISCHARGE AND TO PREVENT STORM WATER FROM ENTERING ONTO ADJACENT PROPERTIES. HAY BALES, SILT FENCE AND FLOATING TURBIDITY BARRIERS SHALL BE INSTALLED IN ACCORDANCE WITH FDOT INDEX 102 & 103. SILT FENCE SHALL BE PLACED AROUND THE PROJECT AS REQUIRED AND/OR SHOWN ON THE PLANS AND SHALL BE MAINTAINED THROUGHOUT THE ENTIRETY OF THE PROJECT.
- SHOULD THE SITE BECOME EXCESSIVELY DRY, AND WIND AND SOIL EROSION BECOMES PREVALENT AND A NUISANCE TO THE COMMUNITY, THE CONTRACTOR SHALL WATER AND/OR SEED AND MULCH THE AREA, AND/OR PROVIDE FENCING AS NECESSARY AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL PROTECT ALL STORM SEWER INLETS TO PREVENT SEDIMENT FROM CLOGGING THE STORM SEWER SYSTEM.
- THE CONTRACTOR SHALL CHECK AND REMOVE ALL SILTS AND SEDIMENTS FROM ALL STORM SEWER INLETS BI-WEEKLY UNTIL SITE HAS BEEN ACCEPTED.

FLOATING DOCKS AND GANGWAYS

- DECK SHALL BE COMPOSITE PVC (UV RATING 80) OR CONCRETE SURFACE MATERIAL. WOOD DECKING MATERIAL SHALL NOT BE USED.
- DOCK AND GANGWAY FINISHES SHALL HAVE A NON-SKID TEXTURE SURFACE.
- ALL DECKING SUPPORTS, STRINGERS AND FRAMING SHALL BE MARINE GRADE MADE OF 6061-T6 SERIES ALUMINUM.
- CONNECTORS AND ATTACHMENTS WILL BE BOLTED WITH 304 SERIES STAINLESS STEEL HARDWARE.
- STANDARD RAILINGS WILL BE 1 1/2" SCHEDULE 40 ALUMINUM PIPE.
- ALL DOCKS AND GANGWAYS SHALL HAVE A MINIMUM 15 YEAR WARRANTY.
- MINIMUM FREEBOARD FOR DOCKS SHALL BE 16 INCHES.
- FLOATING DOCKS SHALL HAVE A LIVE LOAD OF 50 PSF; GANGWAYS SHALL HAVE A LIVE LOAD OF 100 PSF.
- CLEATS ARE TO BE S-STYLE ALUMINUM WITH 1/2" MOUNTING HARDWARE.

RECORD DRAWING NOTES

- RECORD DRAWINGS SHALL BE PREPARED IN THE STATE PLANE COORDINATE SYSTEM.
- ALL DESIGN FEATURES SHALL BE SHOWN IN THEIR AS-BUILT LOCATION.

BID SET

NO.	DATE	REVISION	BY

Date:	04/22/19
Designed:	AC
Drawn:	MM
Checked:	JRO

APPROVED BY:	JAMES R. ORTH, P.E.
DATE:	
FLORIDA PROFESSIONAL ENGINEER NO.	50126

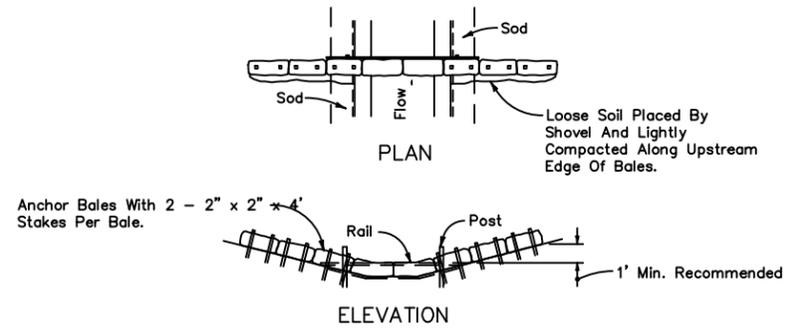
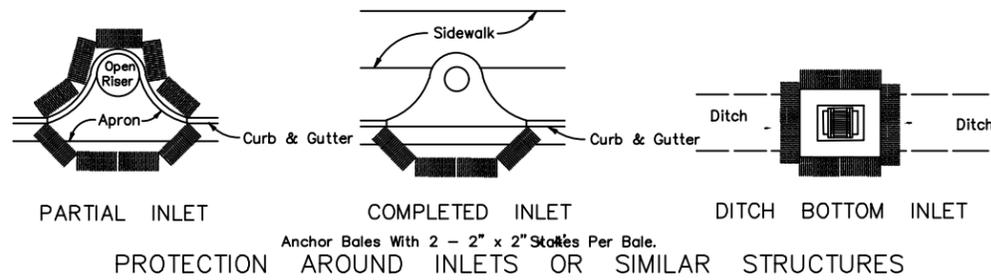
CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS
21045 COMMERCIAL TRAIL
BOCA RATON, FLORIDA 33486
(561) 314-4445
CERTIFICATE NO. LB0003110

PREPARED FOR:
CITY OF BELLE GLADE

PAVILION LAKE PIERS, DOCKS & GANGWAYS
ENGINEERING IMPROVEMENTS
STANDARD DETAILS

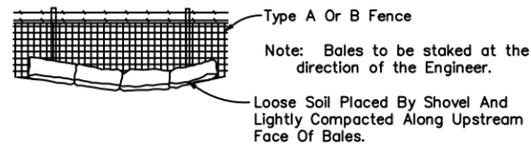
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LAST SAVED: 06/18/19 - 8:08am
CAS PROJECT NUMBER
19-2037

SHEET
C-08

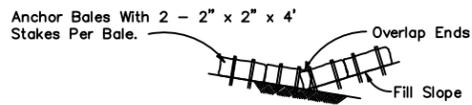
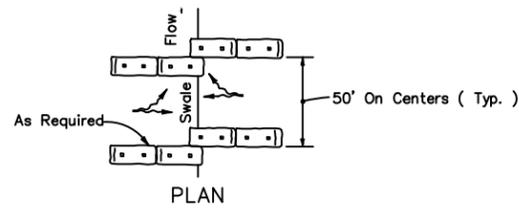


Spacing: Bale barriers for paved ditches should be spaced in accordance with Chart J, Sheet 1 of 3, Index No. 102

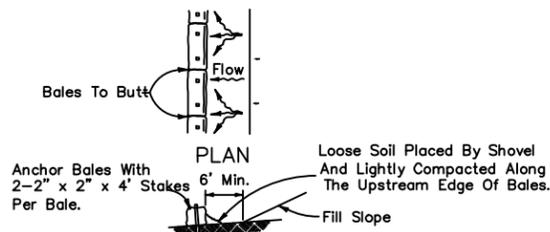
BARRIER FOR PAVED DITCH



BALES BACKED BY FENCE

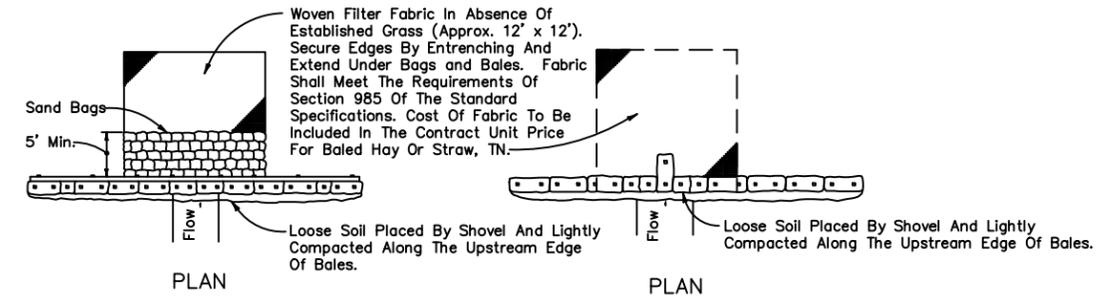


ELEVATION
TO BE USED AT SELECTED SITES WHERE THE NATURAL GROUND SLOPES TOWARD THE TOE OF SLOPE



ELEVATION
TO BE USED AT SELECTED SITES WHERE THE NATURAL GROUND SLOPES TOWARD THE TOE OF SLOPE

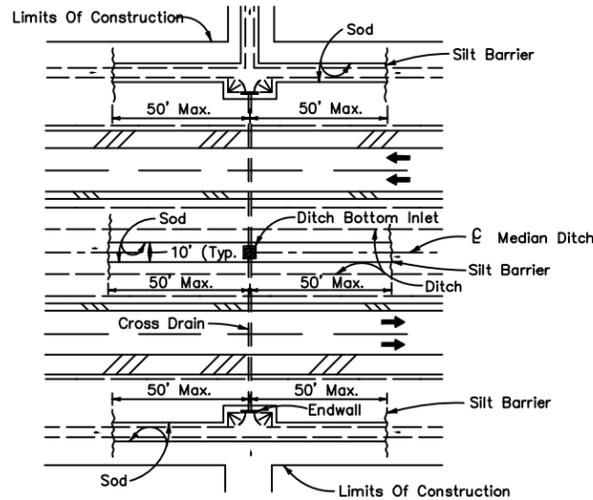
BARRIERS FOR FILL SLOPES



Anchor Lower Bales With 2 - 2" x 2" x 4' Stakes Per Bale.
Anchor Top Bales To Lower Bales With 2 - 2" x 2" x 4' Stakes Per Bale

ELEVATION
Application and Spacing: The use of Types I & II bale barriers should be limited to the conditions outlined in Chart I, Sheet 1 of 3, Index No. 102

TYPE II
TYPE I
BARRIER FOR UNPAVED DITCHES



DITCH INSTALLATIONS AT DRAINAGE STRUCTURES

BID SET

NO.	DATE	REVISION	BY

Date: 04/22/19
Designed: AC
Drawn: MM
Checked: JRO

APPROVED BY: JAMES R. ORTH, P.E.
DATE: _____
FLORIDA PROFESSIONAL ENGINEER NO. 50126

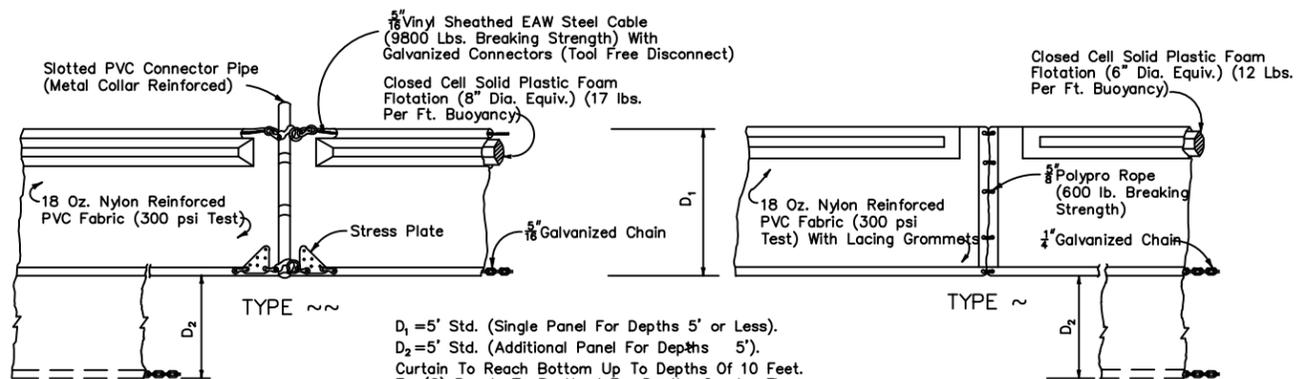
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21045 COMMERCIAL TRAIL
BOCA RATON, FLORIDA 33486
(561) 314-4445
CERTIFICATE NO. LB0003110

PREPARED FOR:
CITY OF
BELLE GLADE

PAVILION LAKE PIERS, DOCKS & GANGWAYS
ENGINEERING IMPROVEMENTS
GUIDE FOR SEDIMENT & EROSION
CONTROL BMP'S

FILE NAME: 30-1943-C-09-DTLS.dwg
LAST SAVED: 06/11/19 - 10:23am
CAS PROJECT NUMBER
19-2037

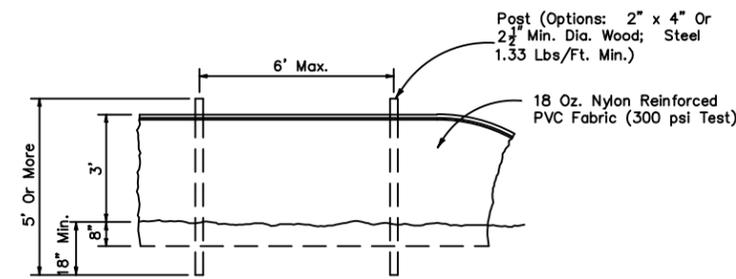
SHEET
C-09



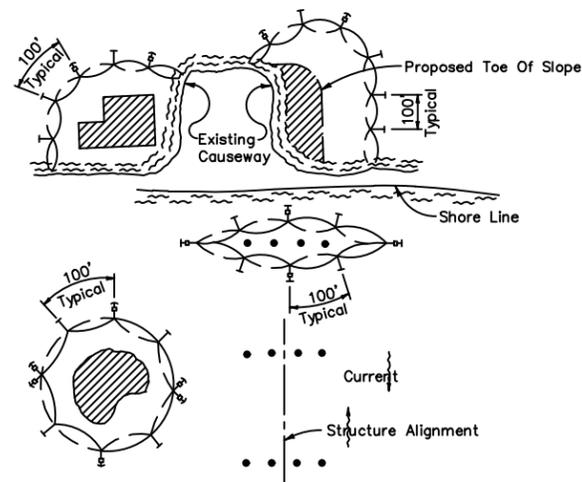
TYPE ~
 $D_1 = 5'$ Std. (Single Panel For Depths 5' or Less).
 $D_2 = 5'$ Std. (Additional Panel For Depths > 5').
 Curtain To Reach Bottom Up To Depths Of 10 Feet.
 Two(2) Panels To Be Used For Depths Greater Than 10 Feet Unless Special Depth Curtains Specifically Called For In The Plans Or As Determined By The Engineer.

NOTICE: COMPONENTS OF TYPES ~ AND ~ MAY BE SIMILAR OR IDENTICAL TO PROPRIETARY DESIGNS. ANY INFRINGEMENT ON THE PROPRIETARY RIGHTS OF THE DESIGNER SHALL BE THE SOLE RESPONSIBILITY OF THE USER. SUBSTITUTIONS FOR TYPES ~ AND ~ SHALL BE AS APPROVED BY THE ENGINEER.

FLOATING TURBIDITY BARRIERS

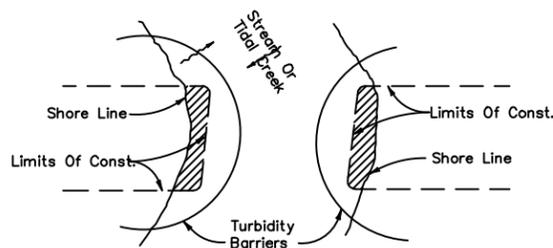


STAKED TURBIDITY BARRIER



LEGEND

- Pile Locations
- ▨ Dredge Or Fill Area
- Mooring Buoy w/Anchor
- Anchor
- Barrier Movement Due To Current Action



Note:
 Turbidity barriers for flowing streams and tidal creeks may be either floating, or staked types or any combinations of types that will suit site conditions and meet erosion control and water quality requirements. The barrier type(s) will be at the Contractors option unless otherwise specified in the plans, however payment will be under the pay item(s) established in the plans for Floating Turbidity Barrier and/or Staked Turbidity Barrier. Posts in staked turbidity barriers to be installed in vertical position unless otherwise directed by the Engineer.

NOTES:

1. Turbidity barriers are to be used in all permanent bodies of water regardless of water depth.
2. Number and spacing of anchors dependent on current velocities.
3. Deployment of barrier around pile locations may vary to accommodate construction operations.
4. Navigation may require segmenting barrier during construction operations.
5. For additional information see Section 104 of the Standard Specifications.

TURBIDITY BARRIER APPLICATIONS

GENERAL NOTES

1. Floating turbidity barriers are to be paid for under the contract unit price for Floating Turbidity Barrier, LF.
2. Staked turbidity barriers are to be paid for under the contract unit price for Staked Turbidity Barrier, LF.

BID SET

NO.	DATE	REVISION	BY

Date: 04/22/19
 Designed: AC
 Drawn: MM
 Checked: JRO

APPROVED BY: JAMES R. ORTH, P.E.
 DATE: _____
 FLORIDA PROFESSIONAL ENGINEER NO. 50126

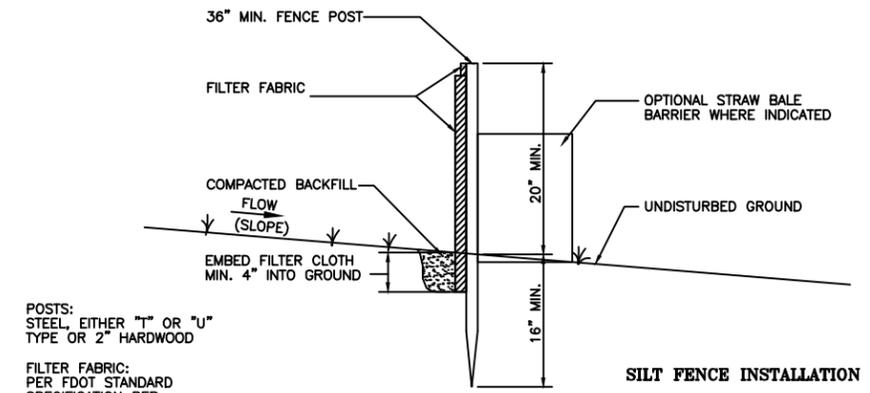
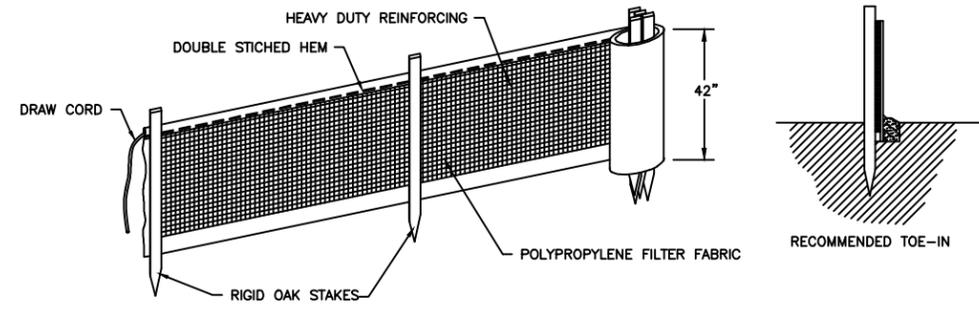
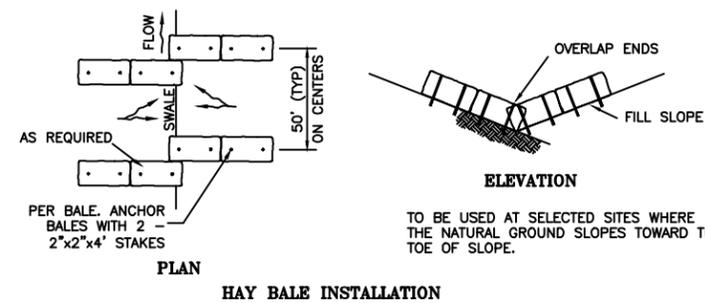
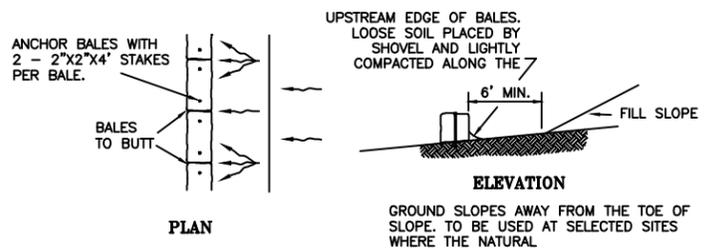
CRAIG A. SMITH & ASSOCIATES
 CONSULTING ENGINEERS-PLANNERS-SURVEYORS
 21045 COMMERCIAL TRAIL
 BOCA RATON, FLORIDA 33486
 (561) 314-4445
 CERTIFICATE NO. LB0003110

PREPARED FOR:
CITY OF BELLE GLADE

PAVILION LAKE PIERS, DOCKS & GANGWAYS
 ENGINEERING IMPROVEMENTS
 GUIDE FOR SEDIMENT & EROSION
 CONTROL BMP'S

FILE NAME: 30-1943-C-10-DTLS.dwg
 LAST SAVED: 06/11/19 - 10:23am
 CAS PROJECT NUMBER
 19-2037

SHEET
C-10

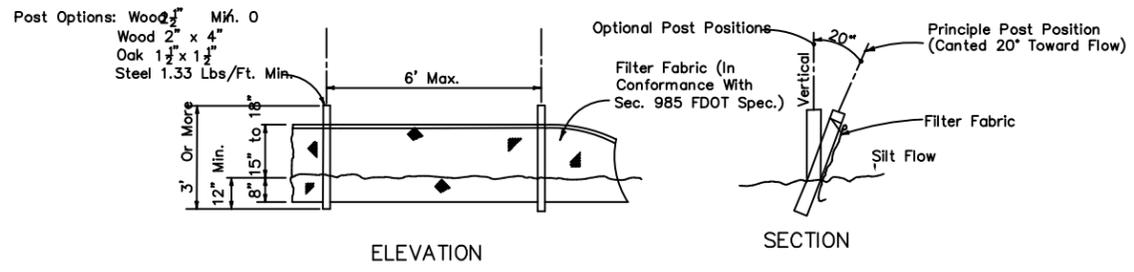


POSTS: STEEL, EITHER "T" OR "U" TYPE OR 2" HARDWOOD

FILTER FABRIC: PER FDOT STANDARD SPECIFICATION PER FDOT INDEX 102

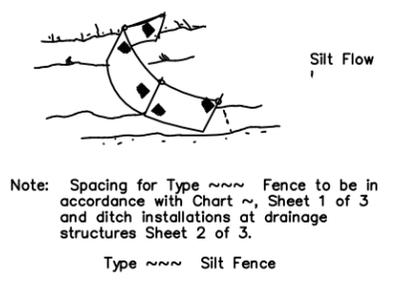
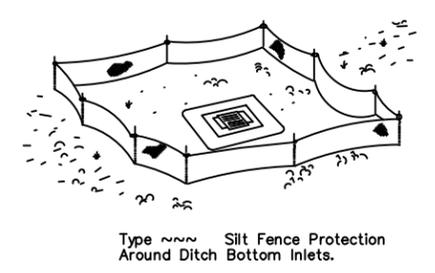
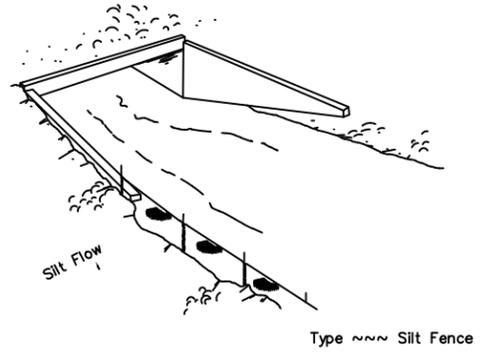
PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL

- SILT FENCE NOTES:**
1. FILTER FABRIC FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
 2. FILTER CLOTH TO BE FASTENED SECURELY TO POSTS WITH TIES SPACED EVERY 24 INCHES AT TOP AND MID. SECTION.
 3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
 4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE OR DEPTH OF ACCUMULATED SEDIMENT REACHES 6 INCHES.
 5. SILT FENCE SHALL BE INSTALLED PER MANUFACTURERS SPECIFICATIONS PRIOR TO THE START OF CONSTRUCTION AND SHALL NOT BE REMOVED UNTIL CONSTRUCTION IS COMPLETE.
 6. THE CONTRACTOR SHALL INSPECT AND REPAIR THE SILT FENCE AFTER EACH RAIN EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
 7. REMOVED SEDIMENT SHALL BE DEPOSITED IN AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFFSITE AND CAN BE PERMANENTLY STABILIZED.
 8. THE SILT FENCE SHALL BE PLACED ON SLOPE CONTOUR TO MAXIMIZE ITS PONDING EFFICIENCY.
 9. IF DITCH LEVEL IS DEEPER THAN 30", THEN A FLOATING SILT SCREEN SHALL BE USED



Note: Silt Fence to be paid for under the contract unit price for Staked Silt Fence (LF).

TYPE III SILT FENCE



Do not deploy in a manner that silt fences will act as a dam across permanent flowing watercourses. Silt fences are to be used at upland locations and turbidity barriers used at permanent bodies of water.

SILT FENCE APPLICATIONS

BID SET

NO.	DATE	REVISION	BY

Date: 04/22/19
Designed: AC
Drawn: MM
Checked: JRO

APPROVED BY: JAMES R. ORTH, P.E.
DATE: _____
FLORIDA PROFESSIONAL ENGINEER NO. 50126

CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS

21045 COMMERCIAL TRAIL
BOCA RATON, FLORIDA 33486
(561) 314-4445
CERTIFICATE NO. LB0003110

PREPARED FOR:
CITY OF BELLE GLADE

PAVILION LAKE PIERS, DOCKS & GANGWAYS
ENGINEERING IMPROVEMENTS
SILT FENCE DETAILS

FILE NAME: 30-1943-C-11-DTLS.dwg
LAST SAVED: 06/11/19 - 10:25am
CAS PROJECT NUMBER
19-2037

SHEET
C-11

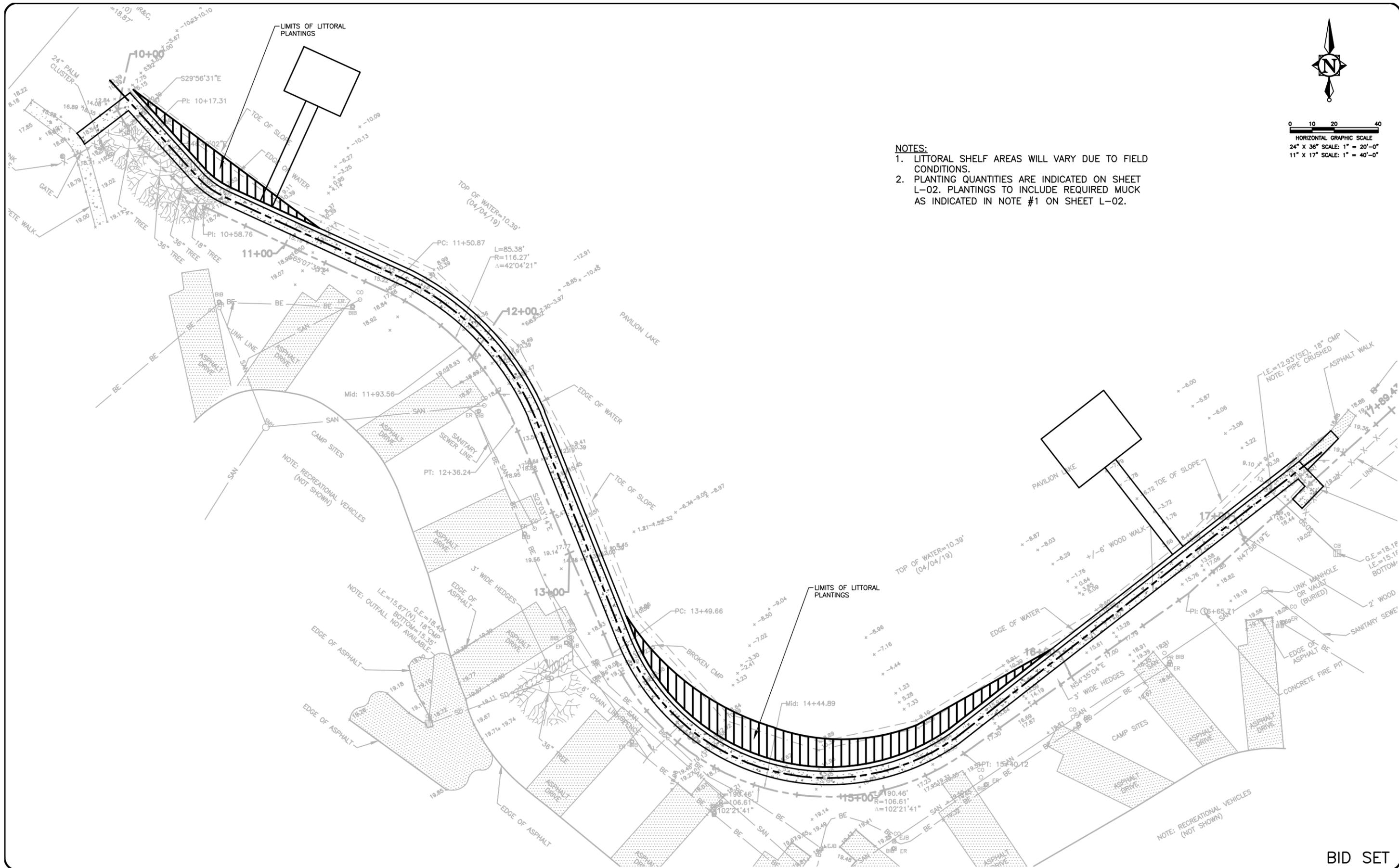
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0 10 20 40
 HORIZONTAL GRAPHIC SCALE
 24" X 36" SCALE: 1" = 20'-0"
 11" X 17" SCALE: 1" = 40'-0"

NOTES:

- LITTORAL SHELF AREAS WILL VARY DUE TO FIELD CONDITIONS.
- PLANTING QUANTITIES ARE INDICATED ON SHEET L-02. PLANTINGS TO INCLUDE REQUIRED MUCK AS INDICATED IN NOTE #1 ON SHEET L-02.



BID SET

NO.	DATE	REVISION	BY

Date: 04/22/19
 Designed: AC
 Drawn: MM
 Checked: JRO

APPROVED BY: JAMES R. ORTH, P.E.
 DATE: _____
 FLORIDA PROFESSIONAL ENGINEER NO. 50126

CRAIG A. SMITH & ASSOCIATES
 CONSULTING ENGINEERS-PLANNERS-SURVEYORS
 21045 COMMERCIAL TRAIL
 BOCA RATON, FLORIDA 33486
 (561) 314-4445
 CERTIFICATE NO. LB0003110 

PREPARED FOR:
CITY OF BELLE GLADE

PAVILLION LAKE PIERS, DOCKS & GANGWAYS
 ENGINEERING IMPROVEMENTS
 CROSS SECTION
 PLAN SHEET

FILE NAME: 40-2037-L-01-LITTORAL.dwg
 LAST SAVED: 08/05/19 - 9:25am
 CAS PROJECT NUMBER
 19-2037

SHEET
L-01

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LITTORAL AREA PLANT LIST EL. 8.5-12.5 NGVD

COMMON NAME	SCIENTIFIC NAME	SPACING	SIZE	EL. NGVD	AMOUNT
-------------	-----------------	---------	------	----------	--------

ZONE 1

Sand Cordgrass	Spartina bakeri	2' oc	3 gallon	11.0-12.5	327
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ZONE 2

Leatherfern	Acrostichum danaeifolium	2' oc	3 gallon	10.5-11.0	108
Alligator Flag	Thalia geniculata	2' oc (clusters)	BR	10.0-10.5	108
Giant Bulrush	Scirpus californicus	2' oc (clusters)	BR	10.0-10.5	108
Swamp Lily	Crinum americanum	2' oc (clusters)	BR	9.5-10.0	108
Pickerelweed	Pontederia cordata	2' oc (clusters)	BR	9.5-10.0	108
Duck Potato	Sagittaria lancifolia	2' oc (clusters)	BR	9.5-10.0	108

ZONE 3

Spikerush	Eleocharis cellulosa	2' oc (clusters)	BR	9.0-9.5	327
Fragrant Water Lily	Nymphaea odorata	5' oc, tied & weighted down	BR	8.5-9.0	50

Maintenance and monitoring. The following maintenance and monitoring program shall be followed for all planted littoral zones.

1) The littoral zone/filter marsh shall be inspected and monitored for one year after planting. During this one year period, maintenance and monitoring shall occur 90, 180 and 360 days after planting. The maintenance and monitoring program shall consist of the following:

a) Inspection, monitoring, exotic removal and replanting during each monitoring period to maintain the minimum eighty percent (80%) survivorship criteria for the planted littoral zone/filter marsh;

b) Complete removal of exotic and invasive plant species such as cattails, primrose willow and water hyacinth, from the planted littoral zone until the required planted species attain coverage of seventy percent (70%) of the planted littoral zone/filter marsh.

c) The submittal of a monitoring report to the Village of Wellington and SFWMD representing a time zero monitoring, to be completed within thirty (30) days of initial planting; ninety (90) day, one hundred eighty (180) day and three hundred sixty (360) day monitoring reports, each report shall be submitted to the Village of Wellington within thirty (30) days of the completion of the monitoring period.

d) Each monitoring report shall assess the species, numbers, locations of planted littoral zone shelves, and multiple photographs (panoramics are preferred) of the site clearly depicting the entire littoral zone planting. Photographs must be taken at approximately the same location(s) each time. In addition, the report shall detail the species, numbers and locations of additional plantings that were made to attain the eighty percent (80%) survivorship criterion, if such plantings were necessary.

2) After the first year, the land owner or entity having maintenance responsibility for the planted littoral zone shall maintain the littoral zone in the following manner:

a) A minimum of eighty (80%) survivorship and a minimum of seventy percent (70%) coverage of the planted littoral zone is required.

b) Invasive exotic plant species, as listed by The Florida Exotic Pest Plant Council (FLEPPC) and invasive native plant species such as cattails and primrose willow shall be restricted to less than ten percent (5%) of the required planted littoral zone.

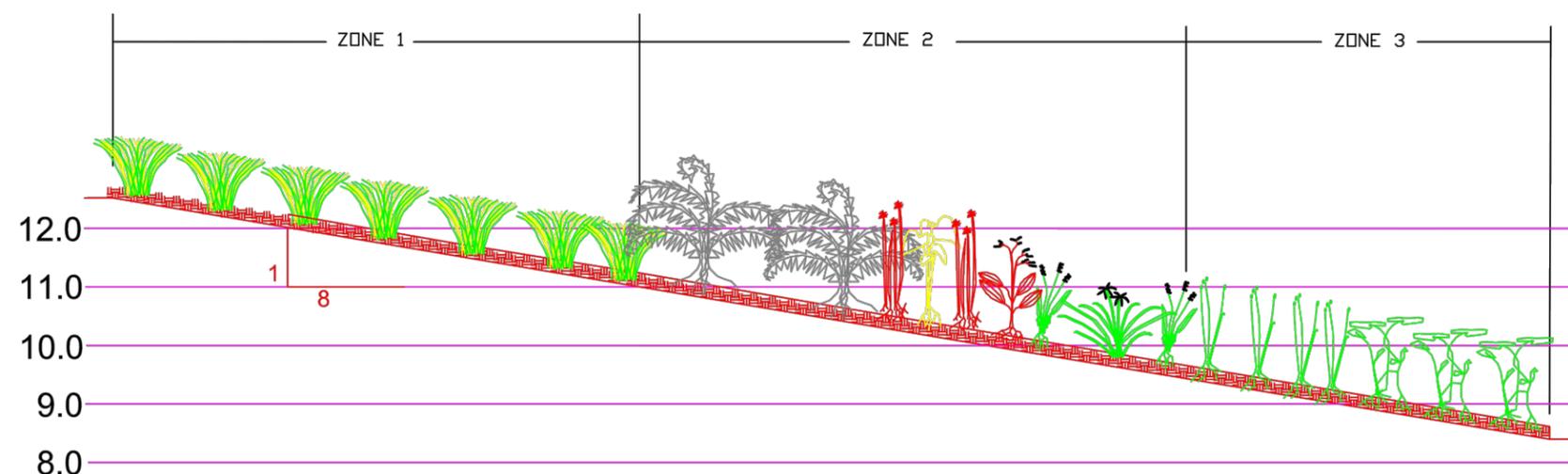
c) Areas that exhibit high mortality of planted vegetation within the littoral area will be replanted and adjusted to suitable elevation.

NOTES:

1. Install approximately 3-6' of muck throughout the entire planting area. The muck shall have a minimum of 7 percent (%) organic content.
2. Listed exotic species and native nuisance species should be maintained at 5% or less between maintenance events. These species must be treated with appropriate labeled for aquatic use by a Florida licensed aquatic herbicide applicator. A herbicide licensed applicator must be present.
3. Plant species and size shall conform to those indicated on drawings. No substitutions shall be made without approval of C & N Environmental and agencies.
4. Written descriptions supersede any scaled dimension from the site plans. Any planting locations that conflict with drainage, utilities, or other structures shall be brought to the attention of C & N Environmental and agencies.
5. Final quantities and species may be adjusted to field conditions and availability per C&N and agency approval.
6. All removed vegetation is to be disposed of by the contractor.
7. Plant zones are determined by final elevations. Grade stakes shall be provided to determine the limits of the littoral shelf.

TYPICAL CROSS SECTION

6" OF MUCK



TORRY ISLAND PAVILION PROJECT
CRAIG A. SMITH & ASSOCIATES
 CITY OF BELLE GLADE, PALM BEACH COUNTY, FL
LITTORAL SHELF PLANTING PLAN

SHEET 1 / 1

REVISION

JOB NO: 19-009

DATE: Jul 2019
 DRAWN BY: MJS
 SCALE: NTS

BID SET

NO.	DATE	REVISION	BY

Date: 04/22/19
 Designed: AC
 Drawn: MM
 Checked: JRO

APPROVED BY: JAMES R. ORTH, P.E.
 DATE: _____
 FLORIDA PROFESSIONAL ENGINEER NO. 50126

CRAIG A. SMITH & ASSOCIATES
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 21045 COMMERCIAL TRAIL
 BOCA RATON, FLORIDA 33486
 (561) 314-4445
 CERTIFICATE NO. LB0003110

PREPARED FOR:
CITY OF BELLE GLADE

PAVILION LAKE PIERS, DOCKS & GANGWAYS
 ENGINEERING IMPROVEMENTS
LITTORAL SHELF PLANTINGS

FILE NAME: 40-2037-L-02-LITTORAL.dwg
 LAST SAVED: 08/05/19 - 9:39am
 CAS PROJECT NUMBER
 19-2037

SHEET
L-02

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