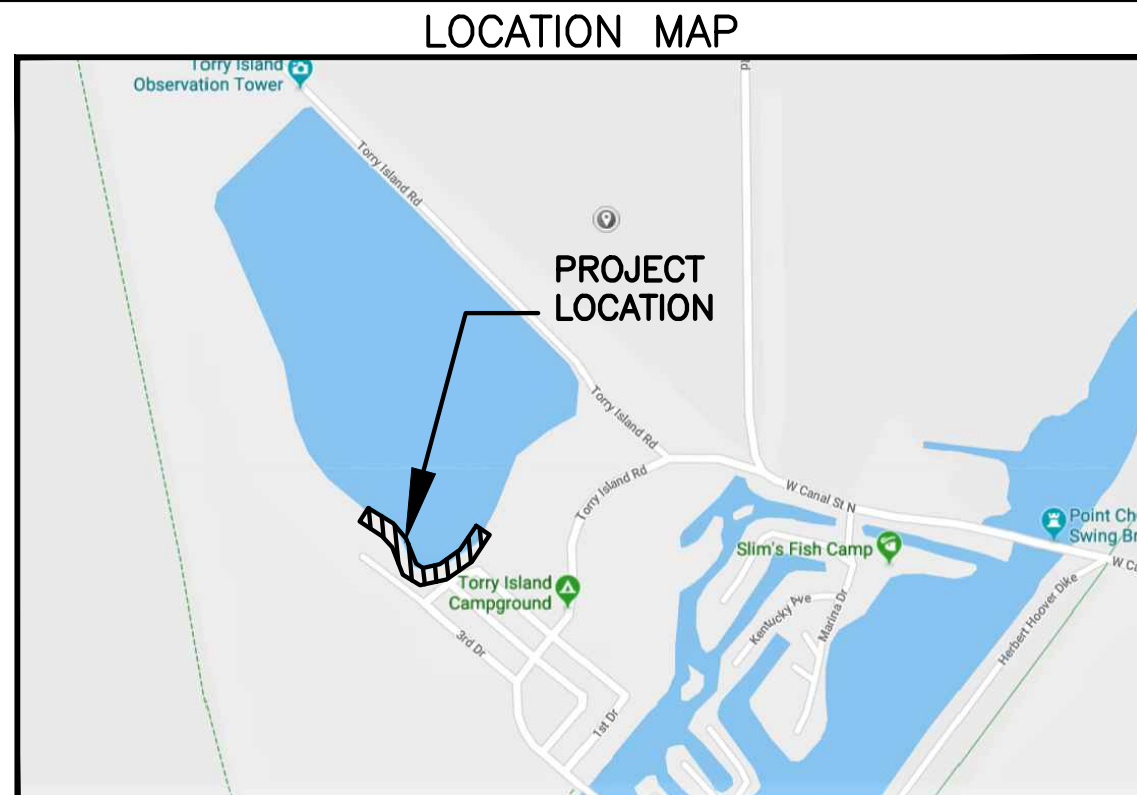


# PAVILION LAKE PIERS, DOCKS & GANGWAYS

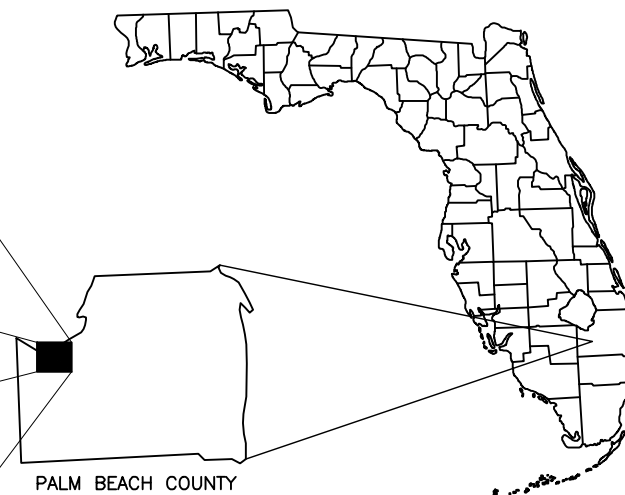
## ENGINEERING IMPROVEMENTS



BOARD OF CITY COMMISSIONERS	
MAYOR	STEVE B. WILSON
VICE MAYOR	MARY ROSS WILKERSON
TREASURER	MICHAEL C. MARTIN
COMMISSIONER	JOHNNY BURROUGHS, JR.
COMMISSIONER	LARRY UNDERWOOD
CITY MANAGER	LOMAX HARRELLE
DEPUTY CITY MANAGER	BEVERLY J. SCOTT
PUBLIC WORKS	JOHNNY GOODEN



SECTION 35, TOWNSHIP 43 SOUTH, RANGE 36 EAST



VICINITY MAP  
SCALE: N.T.S.



PREPARED FOR:  
CITY OF  
BELLE GLADE

CAS PROJECT No. 19-2037

FILE NAME: 00-2037-G-00-COVR.dwg

BID SET



**CRAIG A. SMITH & ASSOCIATES**  
CONSULTING ENGINEERS-PLANNERS-SURVEYORS  
21045 COMMERCIAL TRAIL - BOCA RATON, FLORIDA 33486  
(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\19-2037-115-Tony Island\Pavilion Lake Piers\09-Plans\00-2037-G-01-LGND.dwg, 10/29/2019 12:56:18 PM, mmarento, 1:2

## 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
℄	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
EOW	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		BURIED TRAFFIC CONTROL
	PARCEL LINE		COMMUNICATIONS DUCTBANK CL
	BOUNDARY LINE		FIBER OPTIC DUCTBANK CL
	EASEMENT LINE		OVERHEAD WIRE
	LOT LINE		BURIED ELECTRIC
	RIGHT OF WAY LINE		BURIED STREET LIGHTING
	CENTER LINE		ELECTRICAL DUCTBANK CENTER LINE
	SECTION LINE		FORCE MAIN
	LANDSCAPE LINE		SANITARY SEWER
	EDGE OF WATER		SANITARY SERVICE
	RR TRACKS		VACUUM SEWER
	PLAT LINE		STORM DRAIN
	CURB & GUTTER		FIRE LINE
	FENCE LINE		RAW WATER LINE
	HANDRAIL		WATER LINE MAIN
	UNKNOWN UTILITY		WATER LINE CHILLED
	ABANDONED UTILITY		WATER SERVICE
	NON FIELD VERIFIED UTILITY		IRRIGATION LINE
	BURIED CABLE TV		GAS LINE ABOVE GROUND
	BURIED COMMUNICATIONS LINE		BURIED GAS LINE
	FIBER OPTIC CABLE		BURIED GAS SERVICE LINE
	BURIED TELEPHONE		FUEL LINE

## GENERAL SYMBOL LEGEND

SYM.	DESCRIPTION	SYM.	DESCRIPTION
	AERIAL TARGET		GAS METER
	BENCH MARK		GAS MANHOLE
	CONCRETE MONUMENT		GAS VALVE
	IRON PIPE		MONITORING WELL
	IRON ROD		VAPOR EXTRACTION POINT
	NAIL & DISC		FUEL PUMP DISPENSER
	TRAVERSE POINT		GAS MARKER
	IRON ROD AND CAP		VENT PIPE
	X CUT		GAS VALVE BOX
	DRILL HOLE		FUEL FILL CAP
	11.25° PIPE BEND		TELEPHONE JUNCTION BOX
	22.5° PIPE BEND		TELEPHONE RISER
	45° PIPE BEND		TELEPHONE MANHOLE
	90° PIPE BEND		FIBER OPTIC CABLE MARKER
	CROSS PIPE FITTING		CATV RISER
	TEE PIPE FITTING		BACKFLOW PREVENTOR
	WYE PIPE FITTING		BLOW OFF
	REDUCER PIPE FITTING		AIR RELEASE VALVE
	ELECTRIC MANHOLE		SAMPLE POINT
	ELECTRIC MOTOR		FIRE HYDRANT
	ELECTRICAL OUTLET		SIAMESE CONNECTION
	GROUND LIGHT		WATER METER
	ELECTRIC JUNCTION BOX		WATER VALVE
	ELECTRIC METER		WATER SPIGOT
	LIGHT POLE BOX		IRRIGATION CONTROL VALVE
	TRAFFIC CONTROL BOX		IRRIGATION METER
	ELECTRICAL RISER		SPRINKLER
	TRANSFORMER		CITRUS TREE
	GUY WIRE		CYPRESS TREE
	GUY POLE		GENERIC TREE
	LIGHT POLE		OAK TREE
	CONCRETE UTILITY POLE		PINE TREE
	METAL UTILITY POLE		PALM TREE
	WOOD UTILITY POLE		MANGROVE
	MAST ARM POLE		GROUND PENETRATING RADAR
	CLEAN OUT		BORING HOLE
	SANITARY MANHOLE		METER (UNKNOWN)
	STUB OUT		BOLLARD
	STAND PIPE		COLUMN
	SEWER VALVE		MAIL BOX
	CATCH BASIN		FLAG POLE
	STORM DRAIN MANHOLE		HANDICAP MARKER
	YARD DRAIN		MANHOLE (UNKNOWN)
	CURB INLET		SATELLITE DISH
	CURB INLET W/ MANHOLE		SIGN
	CURB INLET W/ GRATE		PARKING METER
	CI W/ MANHOLE & GRATE		POST
	CONCRETE		UTILITY BOX
	BRICK		UTILITY RISER
	STONE		CEMETERY HEAD STONE
	ASPHALT		

## STANDARD HATCH PATTERNS

SYM	DESCRIPTION	SYM	DESCRIPTION
	CONCRETE		STONE
	BRICK		ASPHALT

## SHEET INDEX

SHEET	DESCRIPTION
G-00	COVER SHEET
G-01	CIVIL ABBREVIATIONS & SHEET INDEX
G-02	KEY SHEET
G-03 - G-04	GEOTECHNICAL PLAN - BORINGS
V-01	SURVEY ABBREVIATIONS & LEGEND SHEET
V-02 - V-03	MAP OF SPECIFIC PURPOSE SURVEY
C-01	DEMOLITION PLAN
C-02 - C-03	CONSTRUCTION PLANS
C-04 - C-06	CROSS SECTIONS PLAN & PROFILES
C-07 - C-08	STANDARD DETAILS
C-09 - C-11	SEDIMENT & EROSION CONTROL/SILT FENCES
S-0.00 - S-3.00	STRUCTURAL PLANS & DETAILS
L-01 - L-02	LITTORAL SHELF PLANTINGS

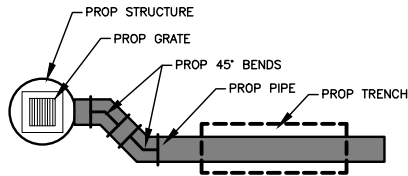
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EXISTING	SHADED SOLID LINES & TEXT DENOTE EXISTING EQUIPMENT, STRUCTURES AND WORK.
FUTURE	NON-SHADED DASHED LINES & TEXT DENOTE FUTURE EQUIPMENT, STRUCTURES AND WORK.
PROPOSED	NON-SHADED, BOLD, SOLID LINES & TEXT DENOTE PROPOSED EQUIPMENT, STRUCTURES AND WORK.

NOTE: FOR GRAPHICAL CLARIFICATION ON PLANS  
CONTAINING BACKGROUND AERIAL PHOTOS  
EXISTING ITEMS ARE SHOWN HOLLOW WHERE  
AS PROPOSED ARE SHOWN SOLID.



## PIPE LEGEND

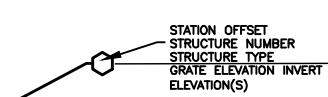


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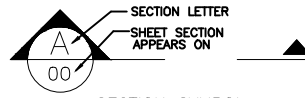
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	22.5° BEND		90° BEND
	TEE		WYE
	REDUCER		PLUG
	CAP		

NOTE: THE LEGEND SHOWN HEREON IS  
REPRESENTATIVE OF ALL CAS DRAFTING  
STANDARDS AND IS NOT PROJECT SPECIFIC.

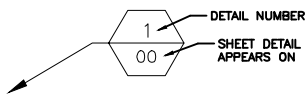
## TAGS



STRUCTURE CALLOUT



SECTION SYMBOL



DETAIL SYMBOL

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

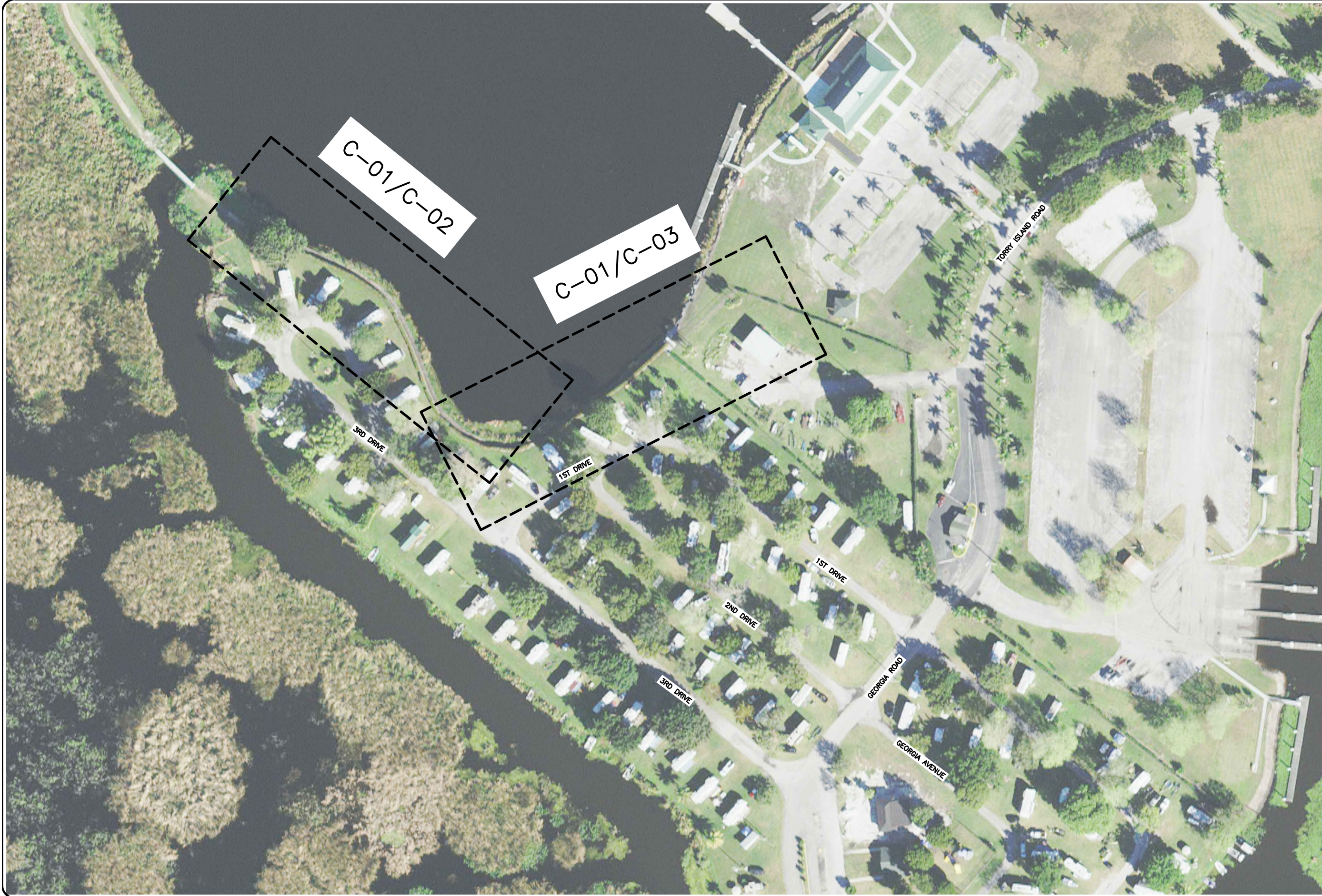
PAVILION LAKE PIERS, DOCKS & GANGWAYS  
ENGINEERING IMPROVEMENTS  
CIVIL ABBREVIATIONS  
& SHEET INDEX

FILE NAME: 00-2037-G-01-LGND.dwg  
LAST SAVED: 09/20/19 - 10:55am

CAS PROJECT NUMBER  
19-2037

SHEET  
G-01





0 30 60 120  
HORIZONTAL GRAPHIC SCALE  
24" X 36" SCALE: 1" = 60'-0"  
11" X 17" SCALE: 1" = 120'-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: \_\_\_\_\_  
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CERTIFICATE NO. LB0003110

PREPARED FOR:  
**CITY OF  
BELLE GLADE**

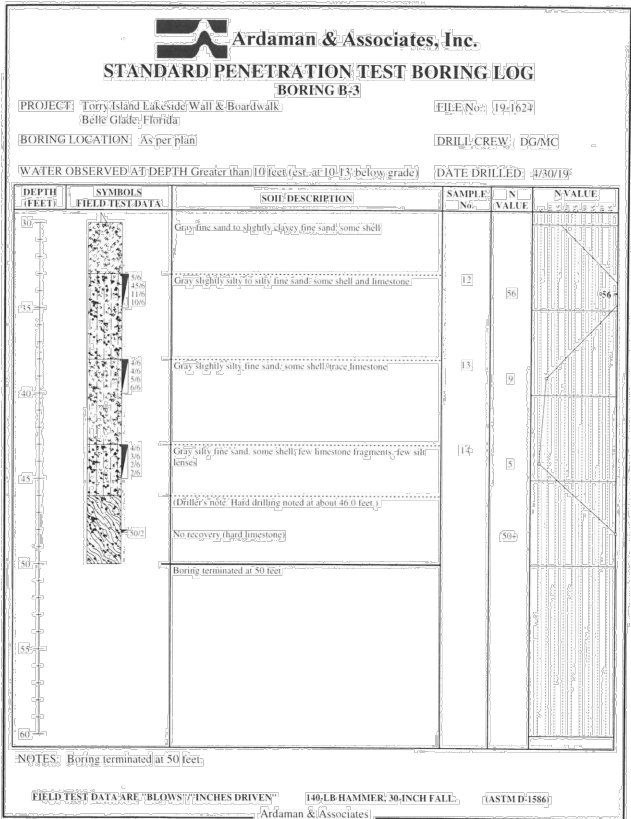
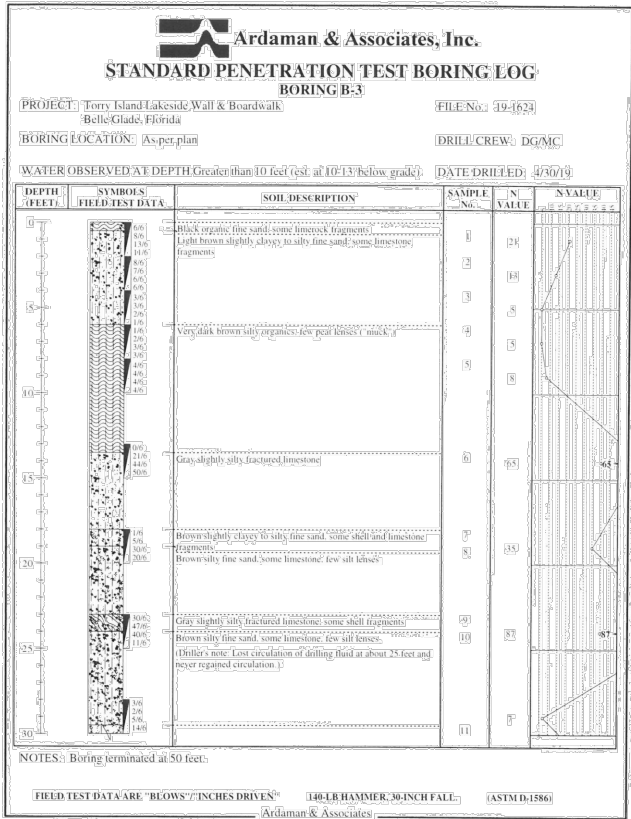
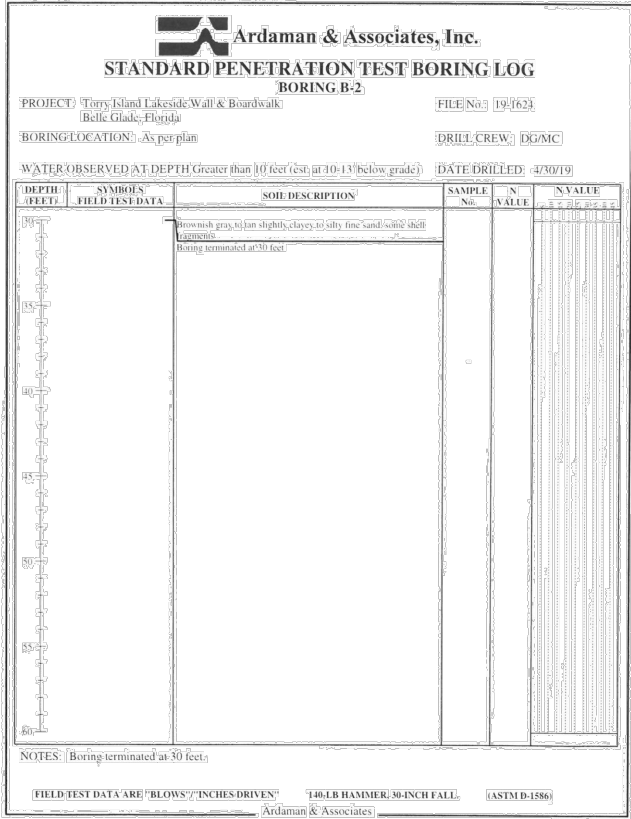
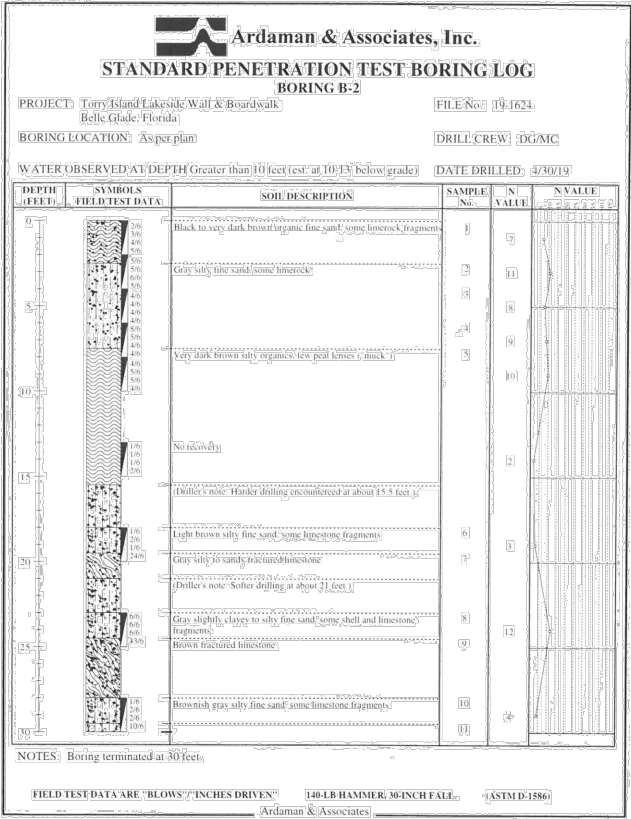
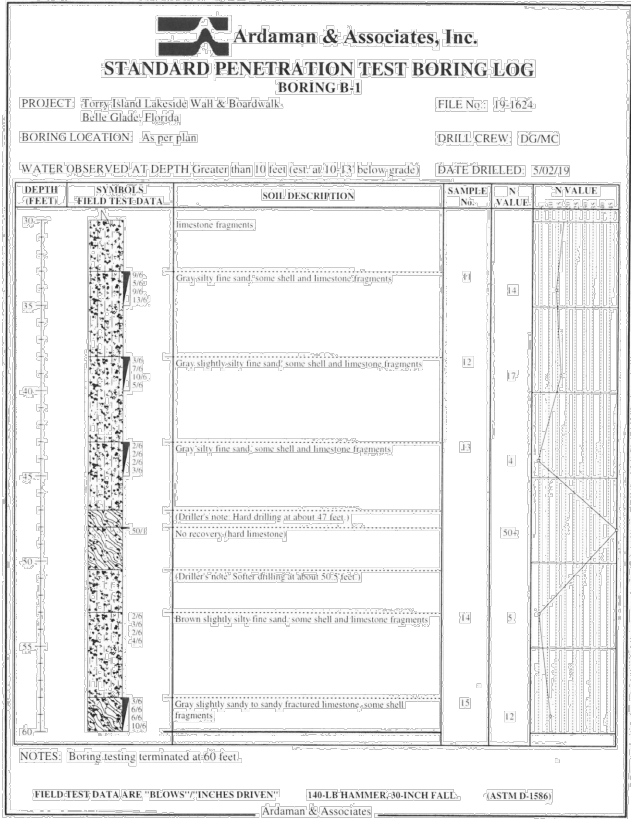
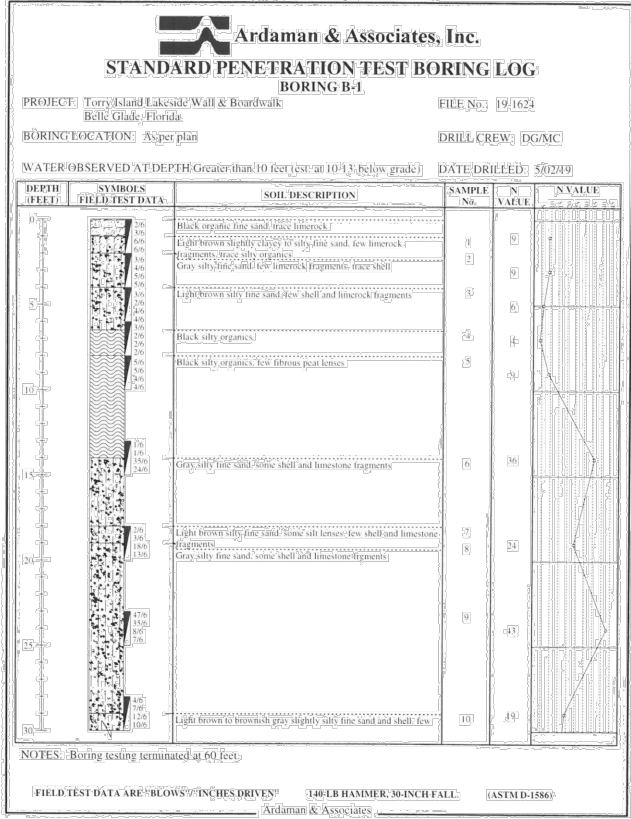
PAVILION LAKE PIERS, DOCKS & GANGWAYS  
ENGINEERING IMPROVEMENTS  
  
KEY SHEET

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CAS PROJECT NUMBER  
19-2037

SHEET  
**G-02**



\\cas-depot\Projects\Cities\_Villages\_Towns\Belle Glade\19-2037-115-Ton Island Pavilion Lake Piers\09-Plans\19-2037-G-03-BORINGS.dwg, 7/9/2019 9:43:54 AM, mmarenco, 1:2



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

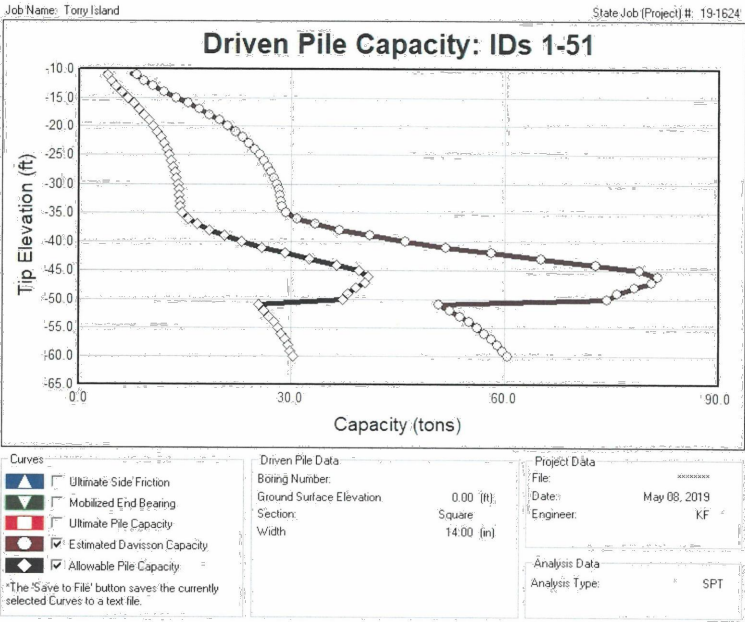
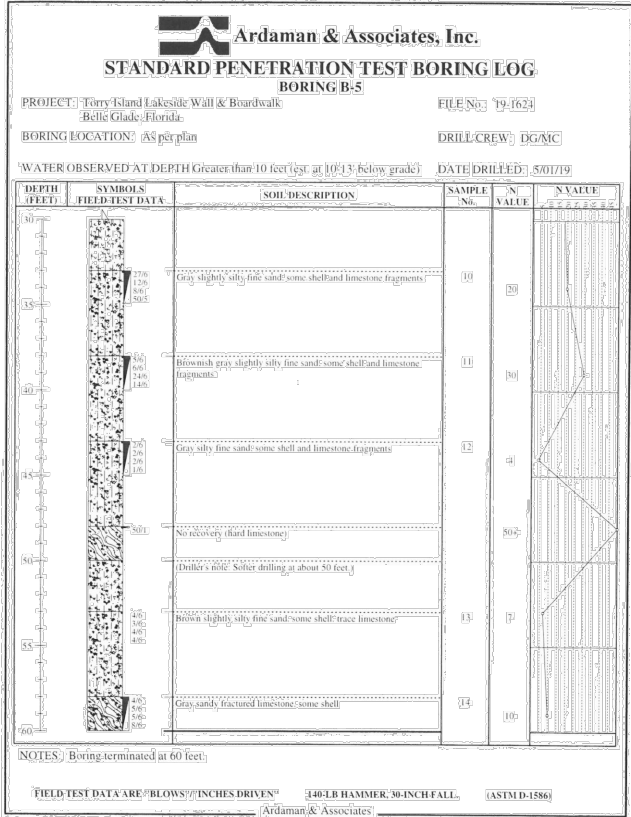
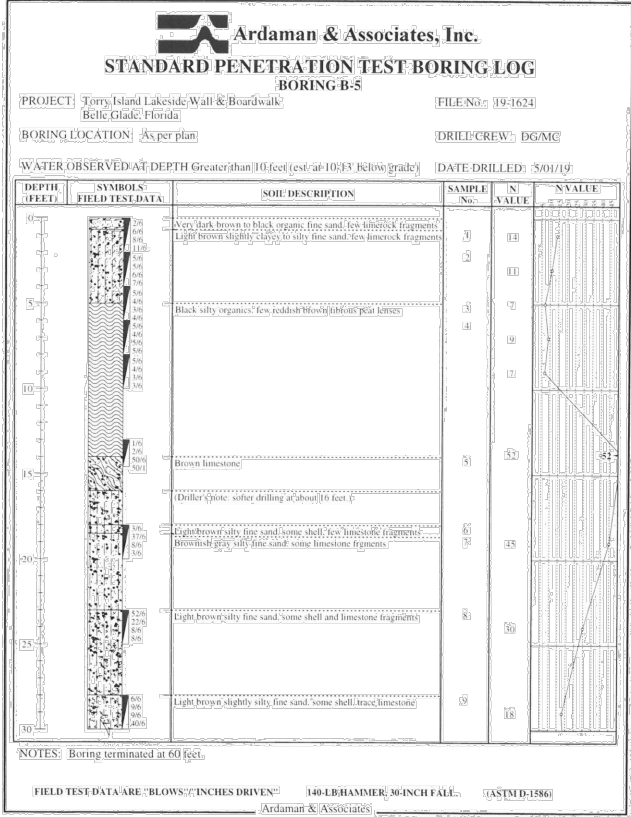
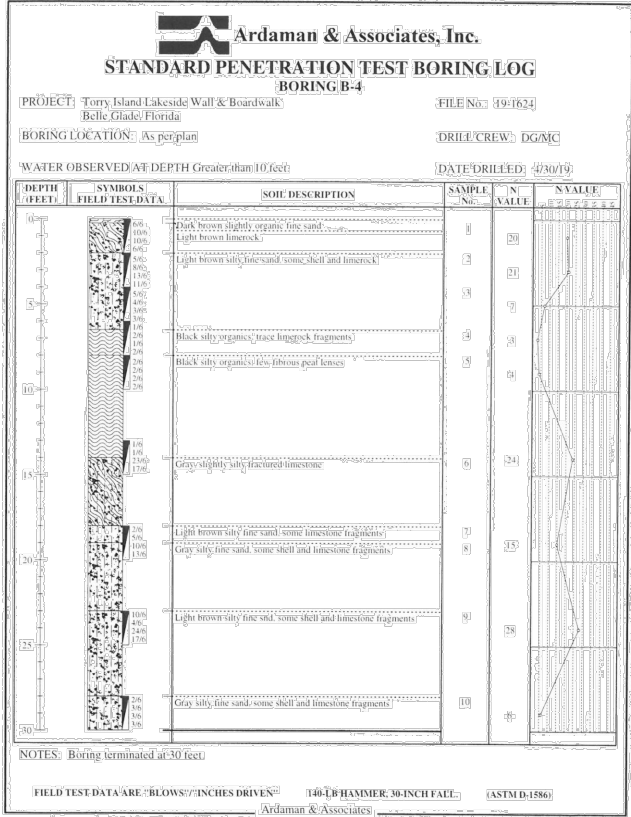
PAVILION LAKE PIERS, DOCKS & GANGWAYS  
ENGINEERING IMPROVEMENTS  
GEOTECHNICAL PLAN  
BORINGS

FILE NAME: 00-2037-G-03-BORINGS.dwg  
LAST SAVED: 06/11/19 - 10:15am  
CAS PROJECT NUMBER  
19-2037

SHEET  
G-03



\\cas-depot\Projects\Cities\_Villages\_Towns\Belle\_Glade\19-2037-115-Tony Island Pavilion Lake Piers\09-Plans\00-2037-G-04-BORINGS.dwg, 7/9/2019 9:44:36 AM, mmarenco, 1:2



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  
GEOTECHNICAL PLAN  
BORINGS**

FILE NAME: 00-2037-G-04-BORINGS.dwg  
LAST SAVED: 06/11/19 - 10:16am  
CAS PROJECT NUMBER  
19-2037

SHEET  
**G-04**

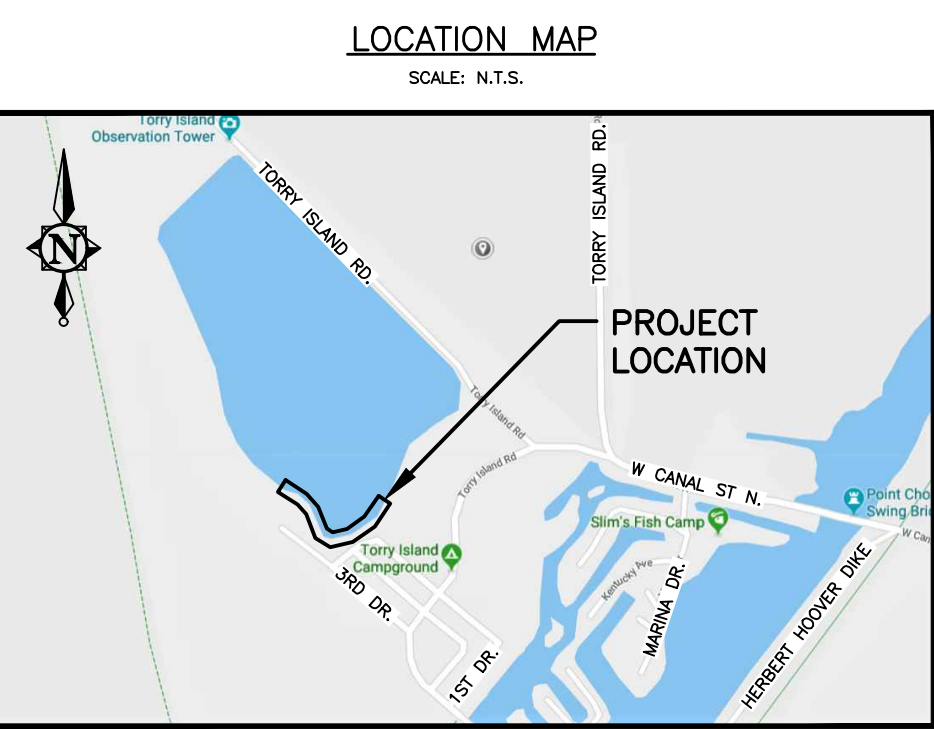


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GENERAL ABBREVIATIONS			
ABRV	DESCRIPTION	ABRV	DESCRIPTION
A/C	AIR CONDITION PAD	NTS	NOT TO SCALE
ACP	ASBESTOS CEMENT PIPE	ORB	OFFICIAL RECORDS BOOK
ALUM	ALUMINUM	O / S	OFF SET
APPROX	APPROXIMATELY	(P)	PLAT
B.C.R.	BROWARD COUNTY RECORDS	P.B.	PLAT BOOK
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
EOW	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 --- BTC ---	BURIED TRAFFIC CONTROL
---	PARCEL LINE	--- <C> --- <C> ---	COMMUNICATIONS DUCTBANK CL
---	BOUNDARY LINE	--- <F> --- <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> --- <E> ---	ELECTRICAL DUCTBANK CENTER LINE
---	SECTION LINE	--- FM ---	FORCE MAIN
---	LANDSCAPE LINE	--- SAN ---	SANITARY SEWER
---	EDGE OF WATER	--- SNS --- SNS ---	SANITARY SERVICE
	RR TRACKS	--- VS ---	VACUUM SEWER
---	PLAT LINE	--- SD ---	STORM DRAIN
---	CURB & GUTTER	--- FIRE --- FIRE ---	FIRE LINE
---X---X---X---X---	FENCE LINE	--- RWL --- RWL ---	RAW WATER LINE
---□---□---□---	GUARD RAIL	--- WL ---	WATER LINE MAIN
--- UNK --- UNK ---	UNKNOWN UTILITY	--- WLC --- 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 ---	FUEL LINE

GENERAL SYMBOL LEGEND							
SYM.		DESCRIPTION		SYM.		DESCRIPTION	
CONTROL			AERIAL TARGET			GAS METER	
			BENCH MARK			GAS MANHOLE	
			CONCRETE MONUMENT			GAS VALVE	
			IRON PIPE			MONITORING WELL	
			IRON ROD			VAPOR EXTRACTION POINT	
		ND	NAIL & DISC			FUEL PUMP DISPENSER	
			TRAVERSE POINT			GAS MARKER	
			IRON ROD AND CAP			VENT PIPE	
			X CUT			GAS VALVE BOX	
		DH	DRILL HOLE			FUEL FILL CAP	
PIPE FITTINGS			11.25" PIPE BEND			TELEPHONE JUNCTION BOX	
			22.5" PIPE BEND			TELEPHONE RISER	
			45" PIPE BEND			TELEPHONE MANHOLE	
			90" PIPE BEND			FIBER OPTIC CABLE MARKER	
			CROSS PIPE FITTING			CATV RISER	
			TEE PIPE FITTING			TELEPHONE MARKER	
			WYE PIPE FITTING			BACKFLOW PREVENTOR	
			REDUCER PIPE FITTING			BLOW OFF	
ELECTRICAL		EMH	ELECTRIC MANHOLE			AIR RELEASE VALVE	
		EMTR	ELECTRIC MOTOR			SAMPLE POINT	
			ELECTRICAL OUTLET			FIRE HYDRANT	
			GROUND LIGHT			SIAMESE CONNECTION	
		EJB	ELECTRIC JUNCTION BOX			WATER METER	
		EM	ELECTRIC METER			WATER VALVE	
		LPB	LIGHT POLE BOX			WATER SPIGOT	
		TCB	TRAFFIC CONTROL BOX			IRRIGATION CONTROL VALVE	
		ER	ELECTRICAL RISER			IRRIGATION METER	
		FPL	TRANSFORMER			SPRINKLER	
		CROSSWALK POST		12	CITRUS TREE (TRC)		
UTILITY POLES			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			MANGROVE (TRMG)	
			MAST ARM POLE			GROUND PENETRATING RADAR	
		CO	CLEAN OUT			BORING HOLE	
SAN SWR		SMH	SANITARY MANHOLE			METER (UNKNOWN)	
		SO	STUB OUT			BOLLARD	
			STAND PIPE			COLUMN	
		SV	SEWER VALVE			MAIL BOX	
		GRND	GRINDER			FLAG POLE	
STORM		CB	CATCH BASIN			HANDICAP MARKER	
		SDMH	STORM DRAIN MANHOLE			MANHOLE (UNKNOWN)	
		YD	YARD DRAIN			SATELLITE DISH	
		DR	DRAIN			SIGN	
			CURB INLET			PARKING METER	
			CURB INLET W/ MANHOLE			POST	
			CURB INLET W/ GRATE			UTILITY BOX	
			CI W/ MANHOLE & GRATE			UTILITY RISER	
						CEMETERY HEAD STONE	
HATCH PATTERNS						HAND HOLE	
	CONCRETE		STONE			GATE POST	
	BRICK		ASPHALT			TRASH CAN	
						NEWSPAPER BOX	
						BIKE RACK	
						PAY PHONE	



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

PREPARED FOR

CITY OF BELLE GLADE

CRAIG A. SMITH & ASSOCIATES

CONSULTING ENGINEERS-PLANNERS-SURVEYORS

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

MAP OF  
TOPOGRAPHIC  
SURVEY

PAVILION LAKE  
PIERS, DOCKS AND GANGWAYS

FILE NAME: 10-2037-V-01-SRVY.dwg  
LAST SAVED: 07/09/19 - 10:01am

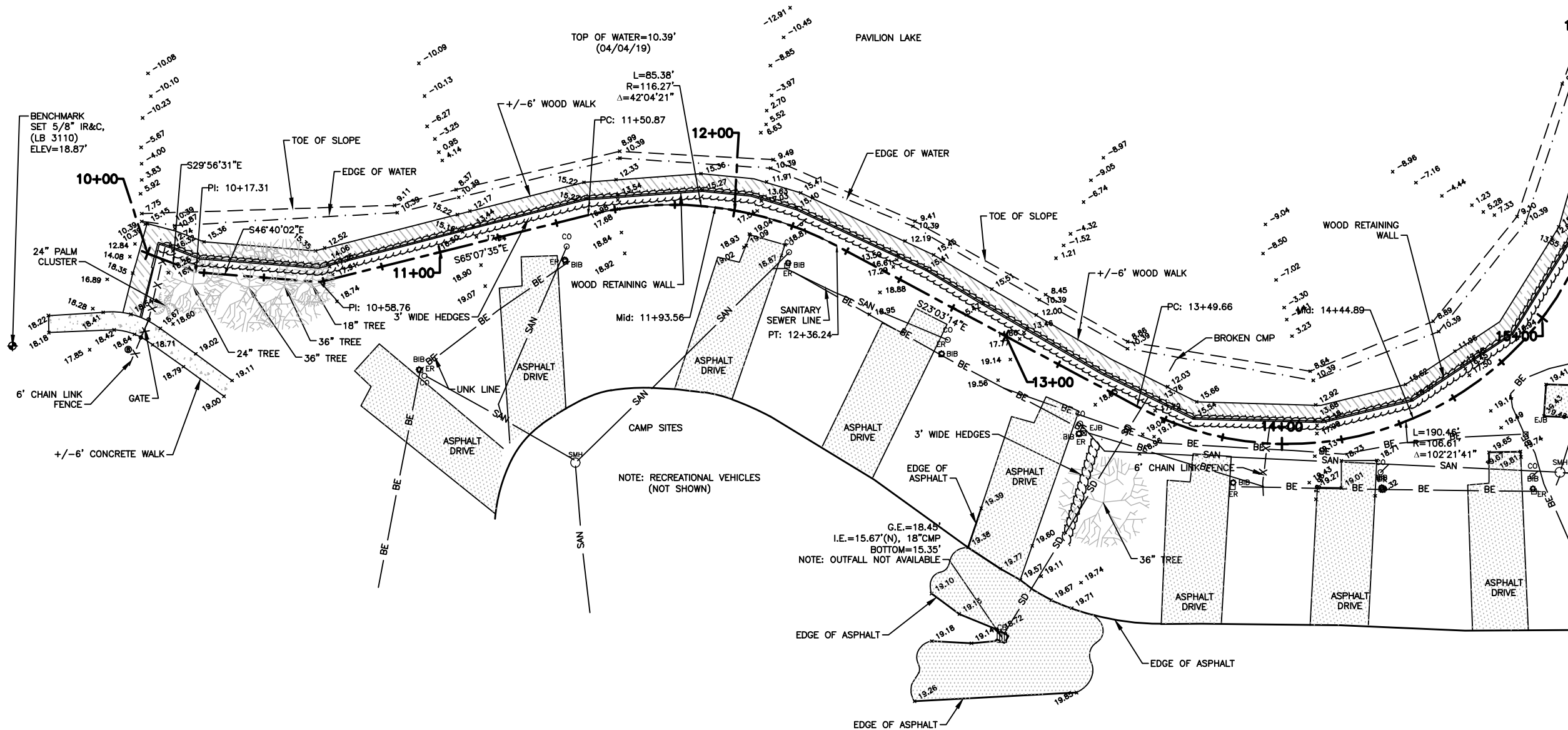
CAS PROJECT NUMBER  
19-2037

SHEET  
V-01  
OF  
03

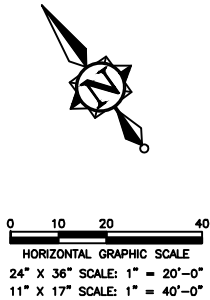


\\cas-depot\Projects\Cities\_Villages\_Towns\Pelle\_Glade\9-2037-V-02-SRVY.dwg, 7/9/2019 10:06:05 AM, mmarenco, 1/2

LIMITS OF PROJECT



SEE SHEET V-03 STA: 14+50 FOR  
CONTINUATION



BID SET

NO.	DATE	FB / PG	DWN	REVISION	CKD
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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

CITY OF BELLE GLADE

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

MAP OF  
TOPOGRAPHIC  
SURVEY

PAVILION LAKE  
PIERS, DOCKS AND GANGWAYS

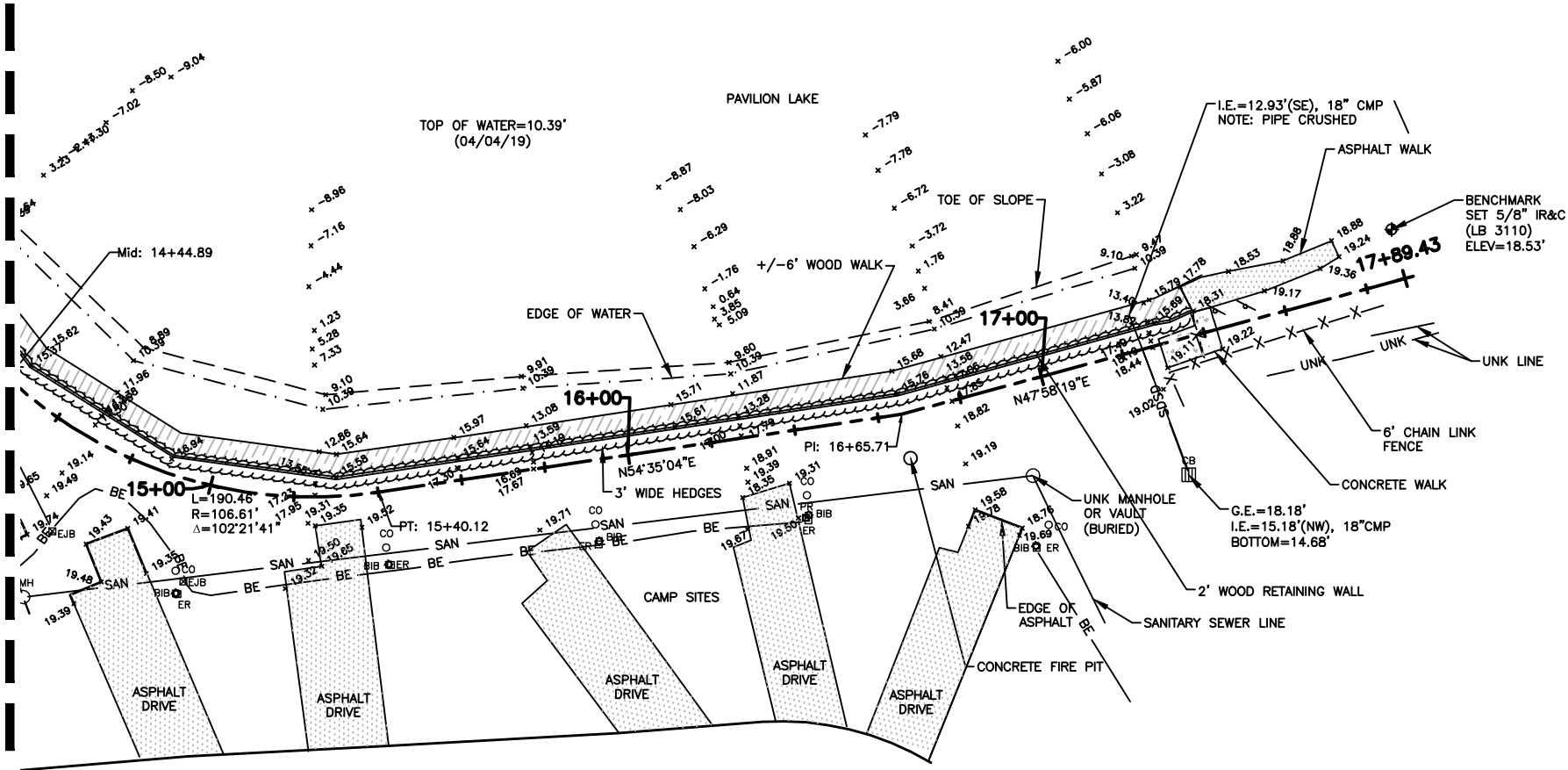
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**19-2037**

SHEET  
**V-02**  
OF  
03

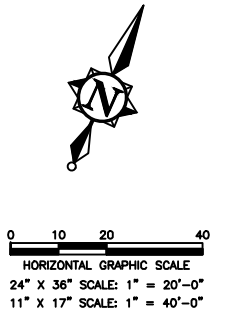


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SEE SHEET V-02 STA: 14+50.00 FOR CONTINUATION



NOTE: RECREATIONAL VEHICLES (NOT SHOWN)



LIMITS OF PROJECT

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

CITY OF BELLE GLADE

PREPARED FOR

CRAIG A. SMITH & ASSOCIATES

CONSULTING ENGINEERS-PLANNERS-SURVEYORS

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

MAP OF TOPOGRAPHIC SURVEY

PAVILION LAKE  
PIERS, DOCKS AND GANGWAYS

FILE NAME: 10-2037-V-03-SRVY.dwg  
LAST SAVED: 05/14/19 - 9:08am

CAS PROJECT NUMBER  
19-2037

SHEET  
V-03

OF  
03



P:\Cities\_Villages\_Towns\Belle\_Glade\19-2037-IL5-Tony Island Pavilion Lake Piers\09-Plans\20-2037-C-01-DEMO.dwg, 2/21/2020 10:57:42 AM, mmarcano, l:2

LIMITS OF PROJECT

SEE BOTTOM LEFT (THIS SHEET)  
FOR CONTINUATION



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

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.

SEE TOP RIGHT (THIS SHEET)  
FOR CONTINUATION

LIMITS OF PROJECT



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

DEMOLITION PLAN

FILE NAME: 20-2037-C-01-DEMO.dwg  
LAST SAVED: 06/17/19 - 1:11pm

CAS PROJECT NUMBER  
19-2037

SHEET

C-01



SHEET

**C-02**

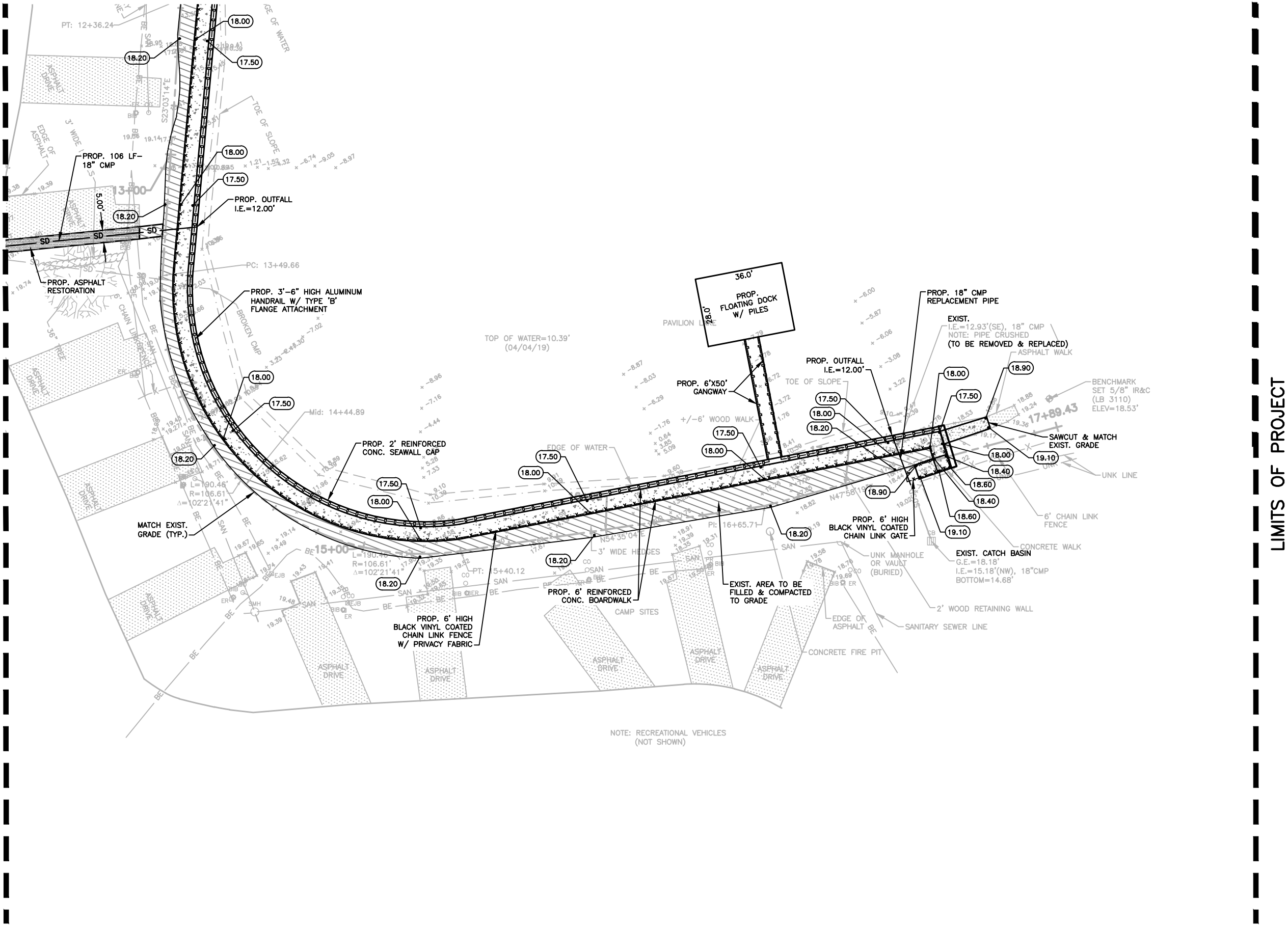
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CAS PROJECT NUMBER  
19-2037



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SEE SHEET C-2 FOR CONTINUATION



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

BID SET

NO.	DATE	N.R.T.S.	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

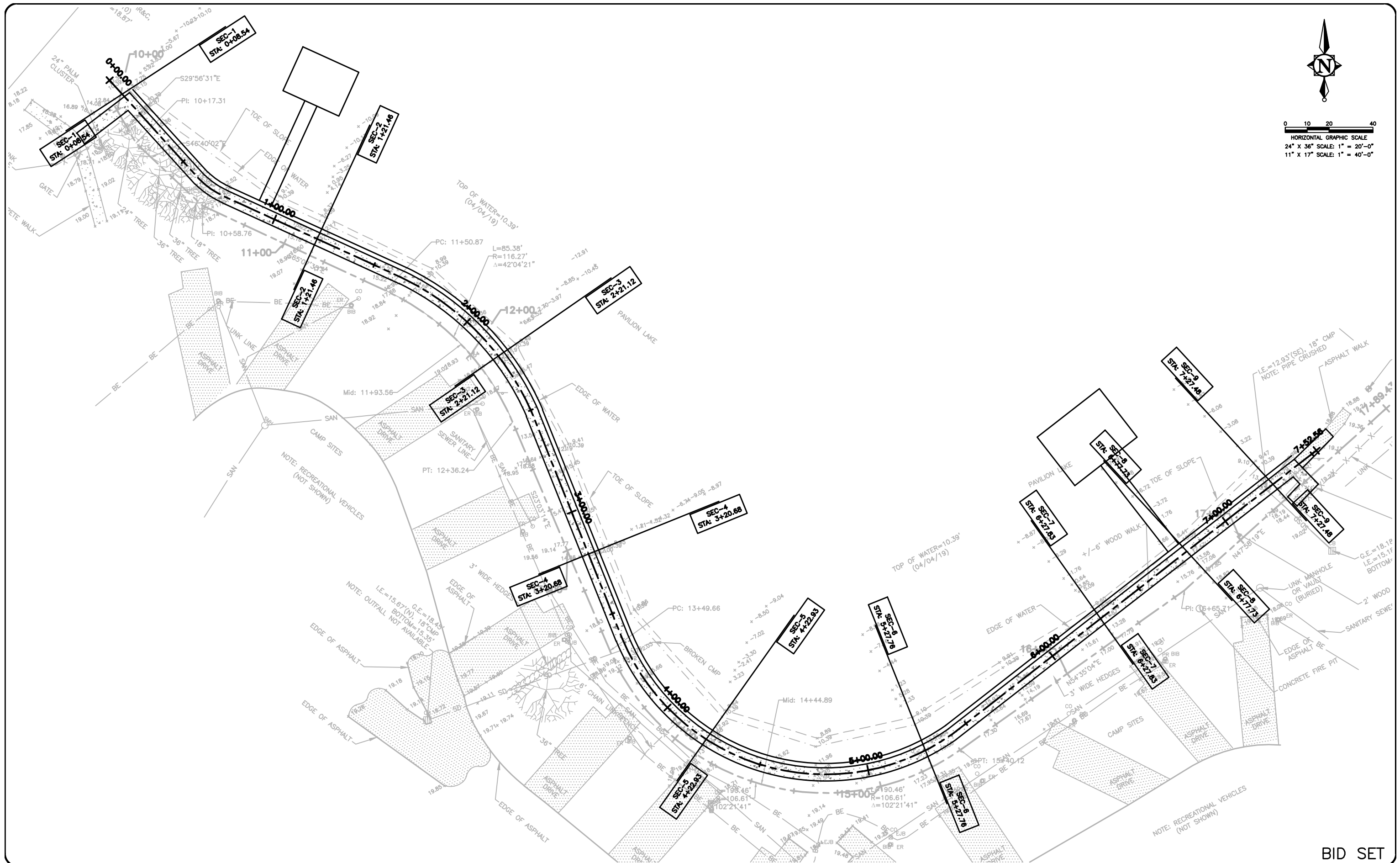
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CAS PROJECT NUMBER

19-2037

SHEET

C-03



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

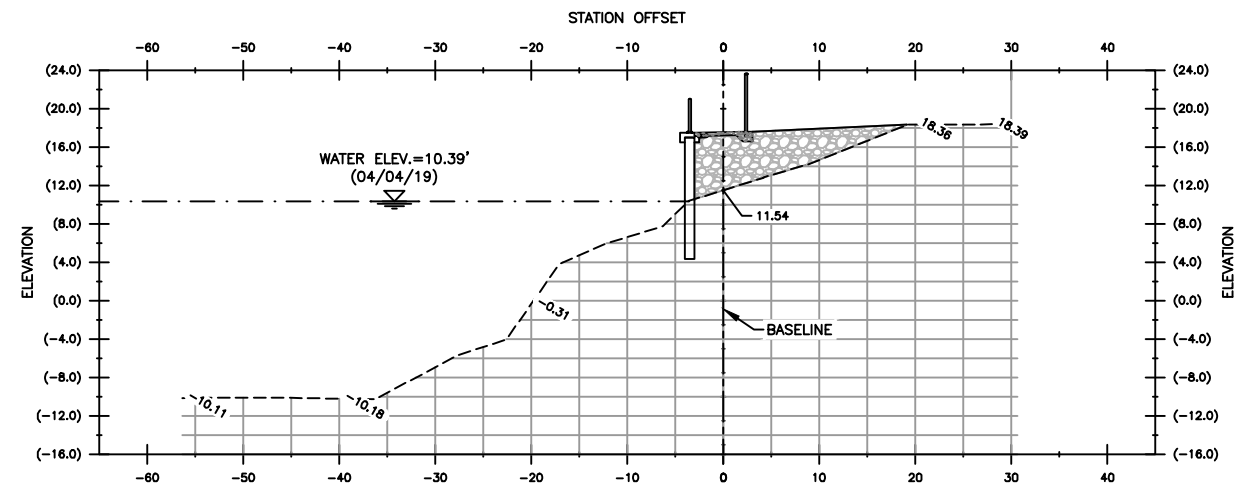
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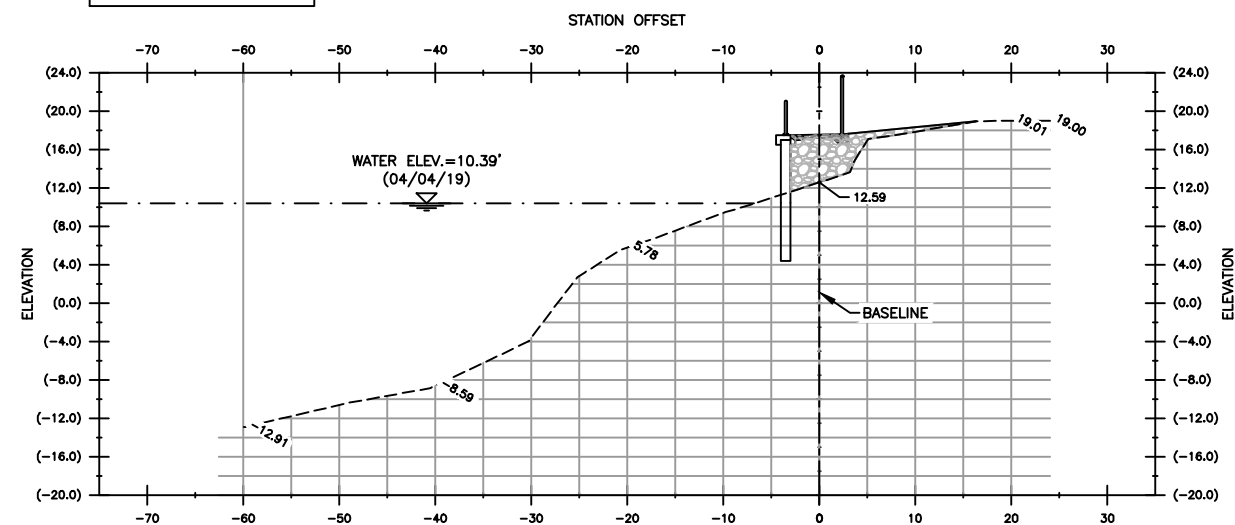
CAS PROJECT NUMBER  
19-2037

HEET  
-04

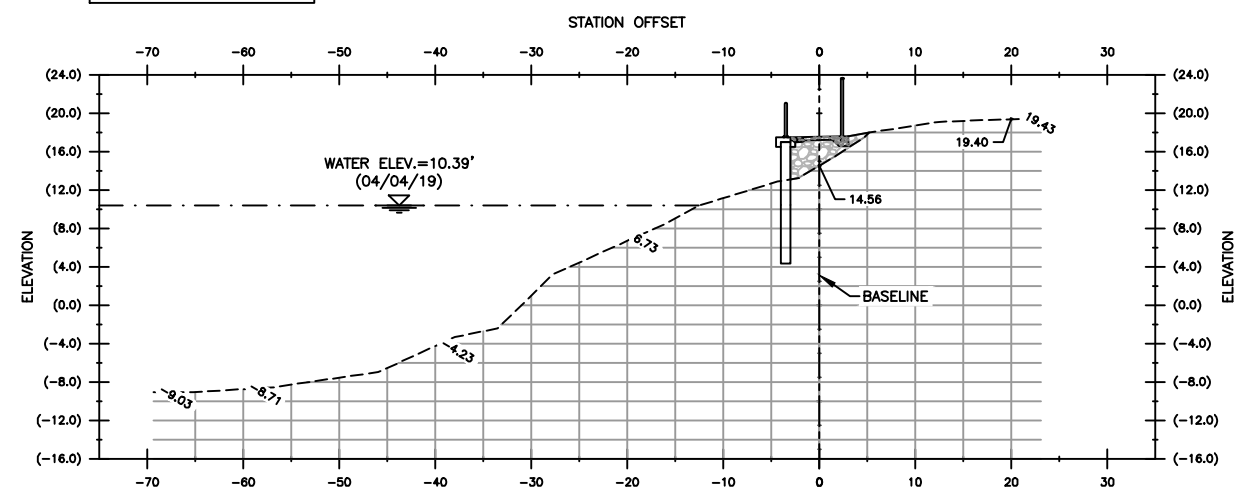




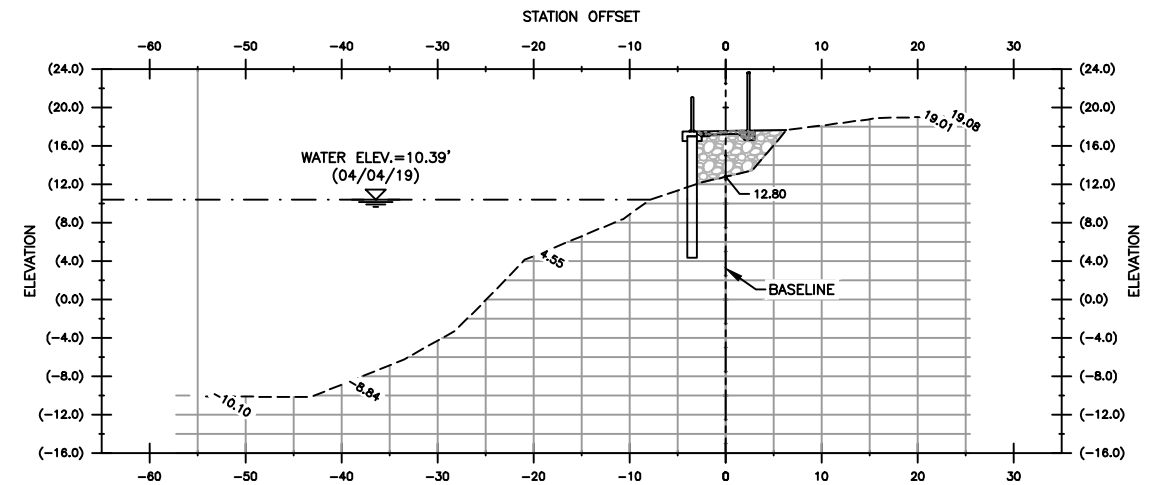
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SECTION - 1  
STATION: 0+09  
V SCALE: 1" = 10'-0"



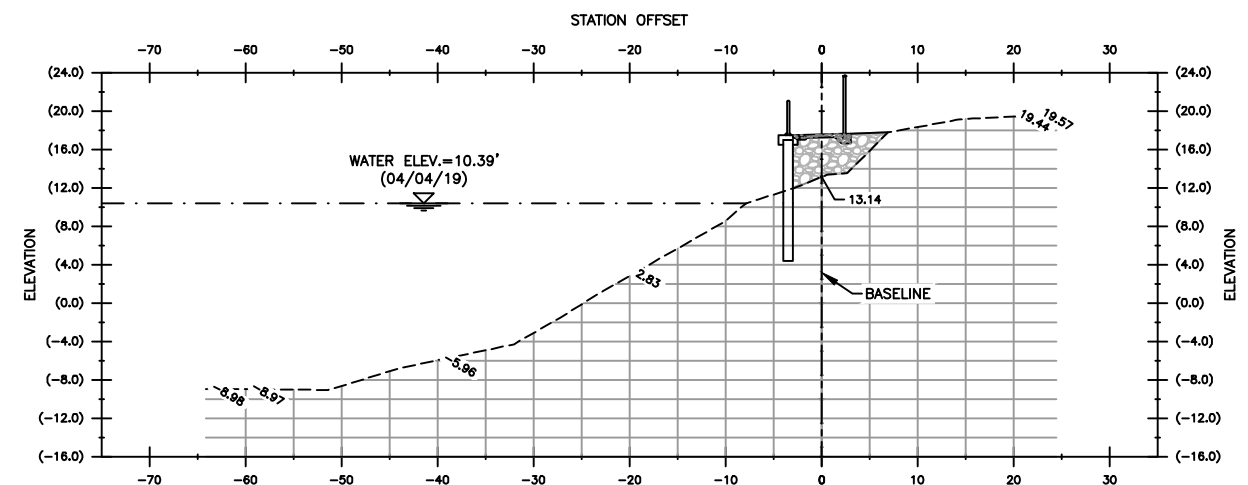
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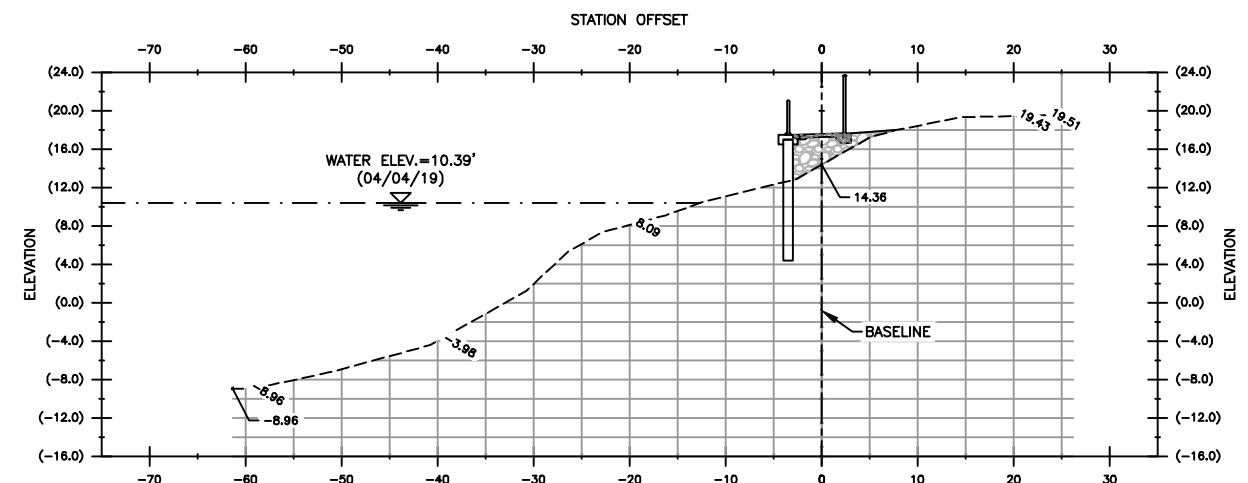
PAVILION LAKE  
SECTION - 5  
STATION: 4+23  
V SCALE: 1" = 10'-0"



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



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



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

BID SET ]

		N.R.T.S.	
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

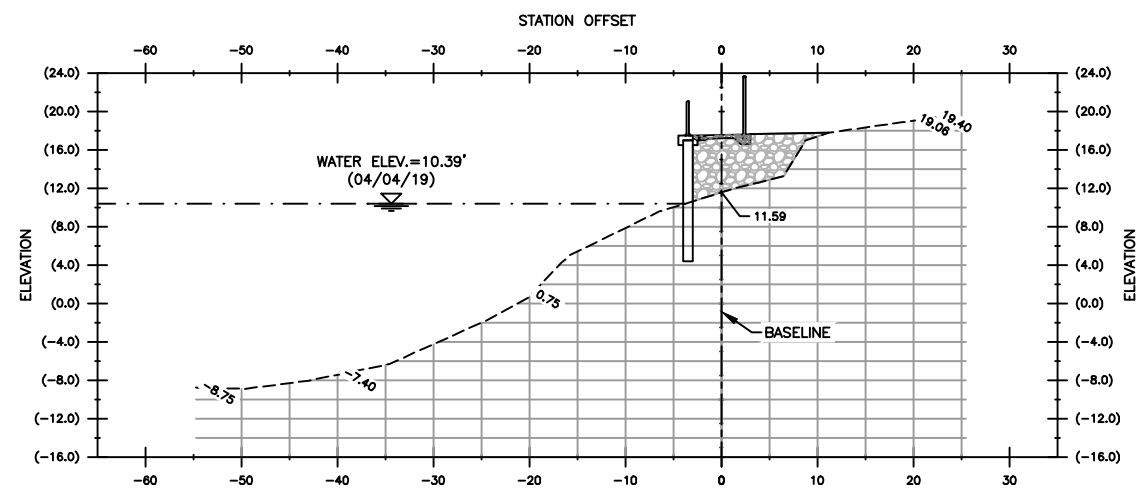
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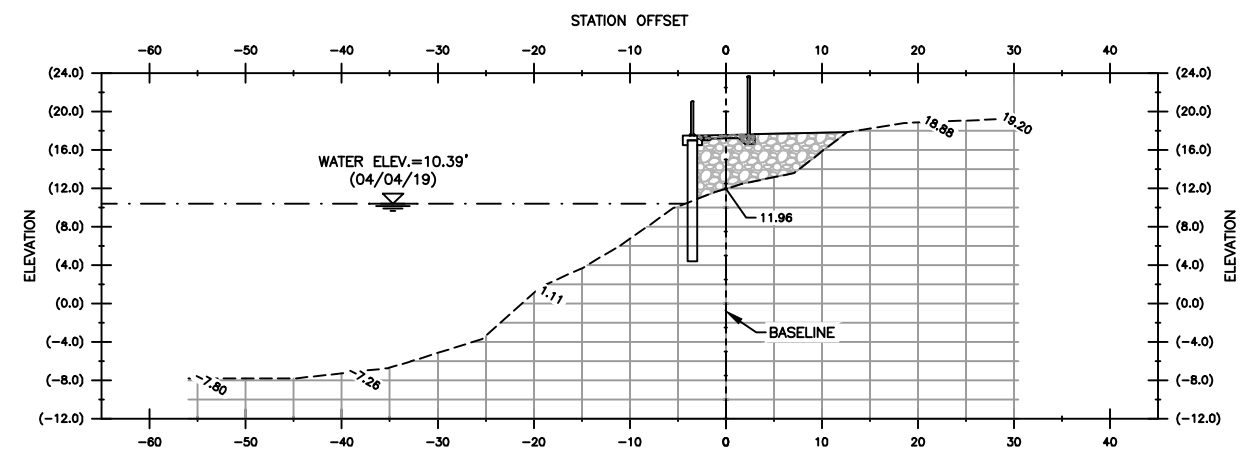
CAS PROJECT NUMBER  
19-2037

SHEET

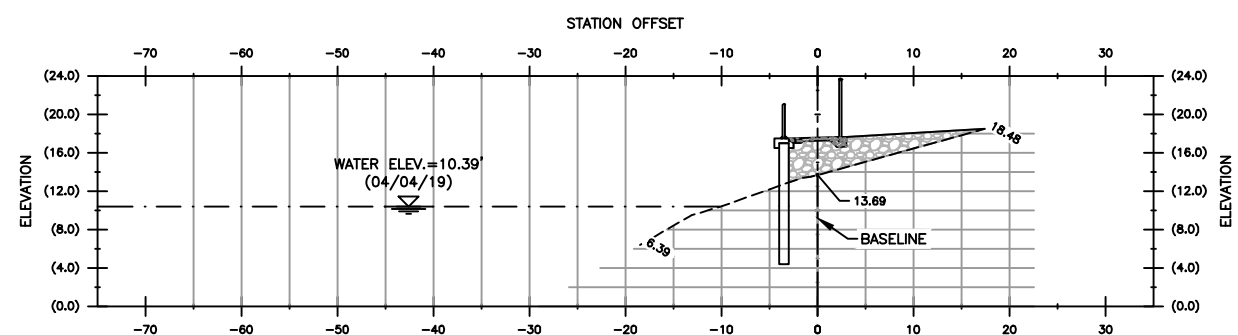
C-05



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

		N.R.T.S.	
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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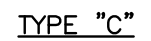
CAS PROJECT NUMBER  
19-2037

SHEET

**C-06**



1. THE MANUFACTURER SHALL SUBMIT CALCULATIONS TO THE ENGINEER FOR APPROVAL. TESTING OF BASE CASTINGS OR BASE EXTENSIONS 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.



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

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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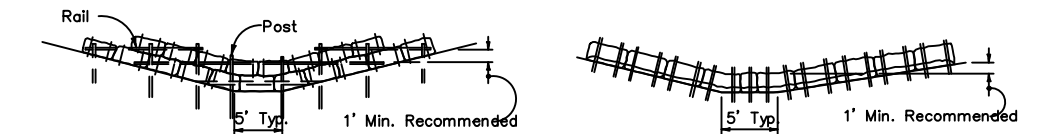
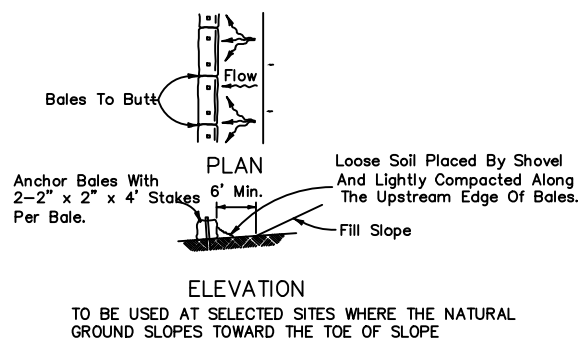
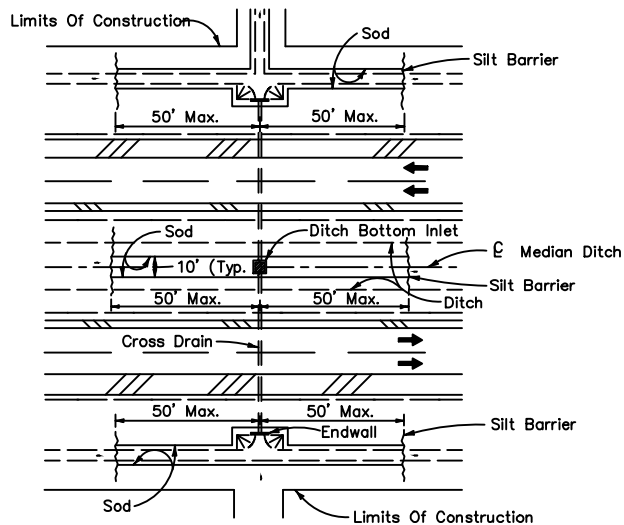
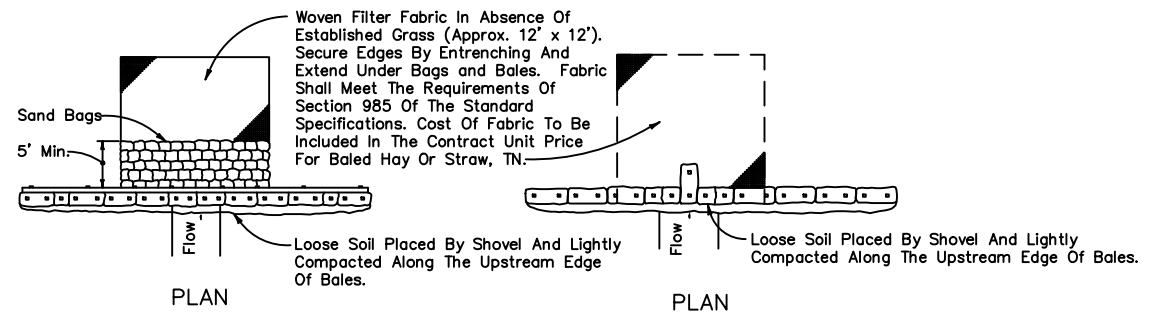
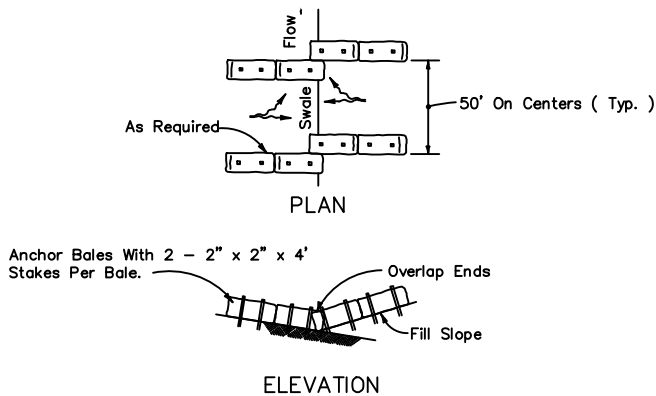
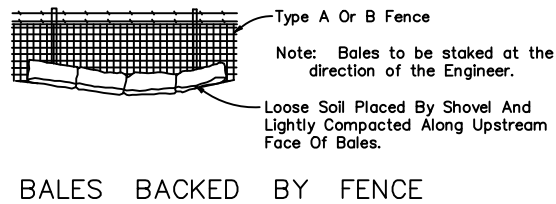
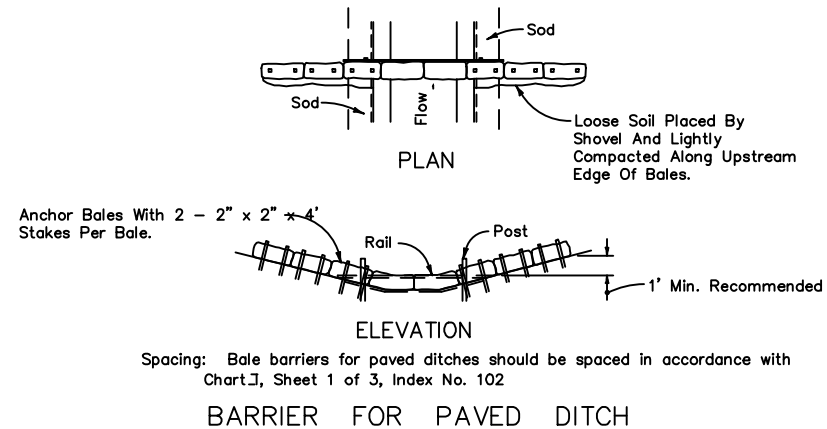
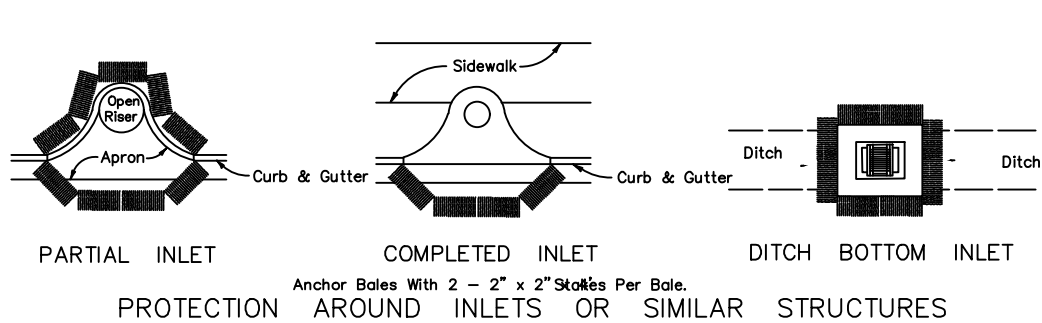
CAS PROJECT NUMBER  
19-2037

SHEET

C-07







DITCH INSTALLATIONS AT DRAINAGE STRUCTURES

BARRIERS FOR FILL SLOPES

TYPE II  
TYPE I  
BARRIER FOR UNPAVED DITCHES

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

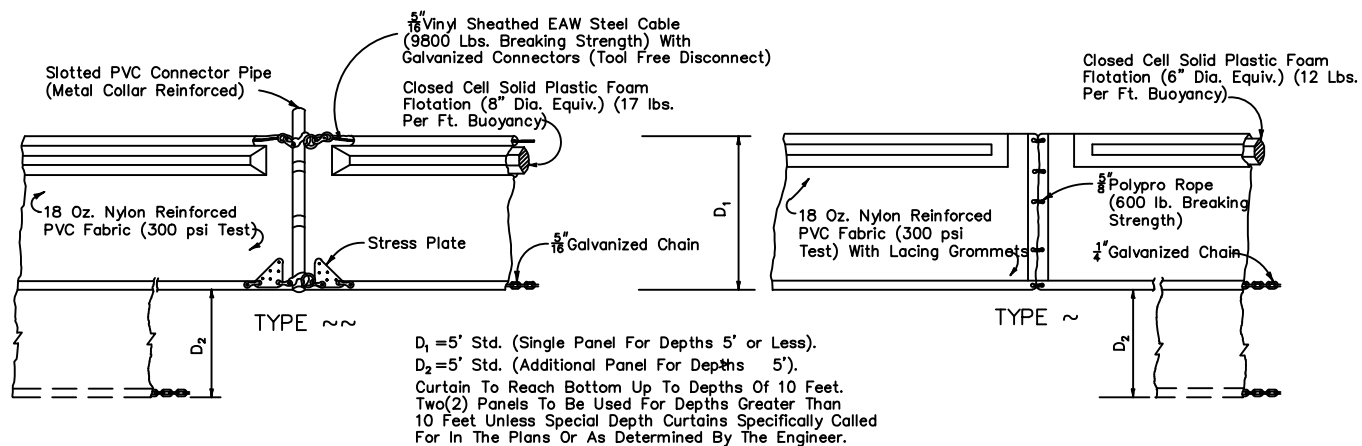
CRAIG A. SMITH & ASSOCIATES  
CONSULTING ENGINEERS-PLANNERS-SURVEYORS  
21045 COMMERCIAL TRAIL  
BOCA RATON, FLORIDA 33486  
(561) 314-4445  
CERTIFICATE NO. LB0003110

PREPARED FOR:  
CITY OF  
BELLE GLADE

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

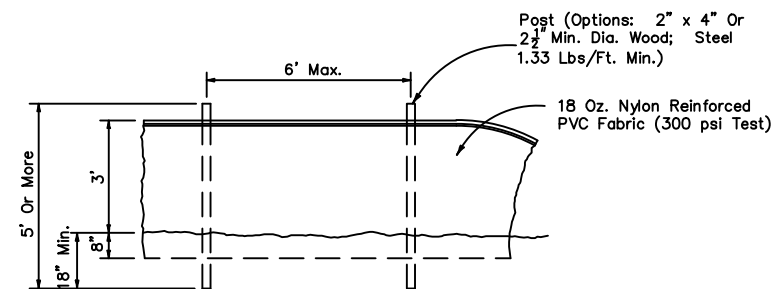
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LAST SAVED: 06/11/19 - 10:23am  
C/S PROJECT NUMBER  
19-2037

SHEET  
C-09

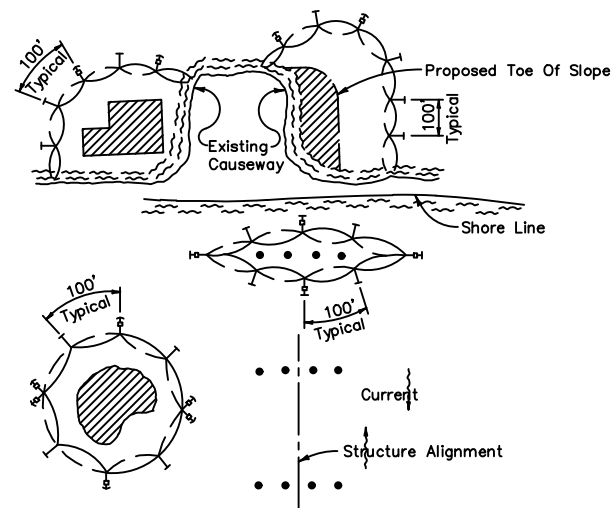


NOTICE: COMPONENTS OF TYPES ~ AND ~~ MAY BE SIMILAR OR IDENTICAL TO PROPRIETARY DESIGNS. ANY INFRINGEMENT ON THE PROPRIETARY RIGHTS OF THE DESIGNER SHALL BE THE SOLE RESPONSIBILITY OF THE USER. SUBSTITUTIONS FOR TYPES ~ AND ~~ SHALL BE AS APPROVED BY THE ENGINEER.

### FLOATING TURBIDITY BARRIERS

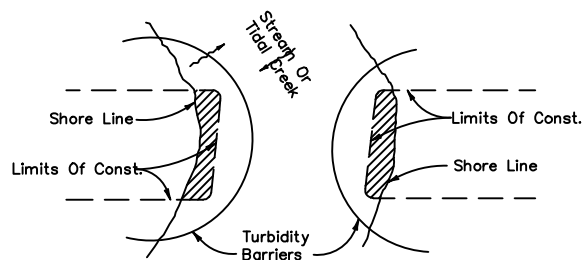


### STAKED TURBIDITY BARRIER



#### 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:

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

#### GENERAL NOTES

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

### TURBIDITY BARRIER 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**

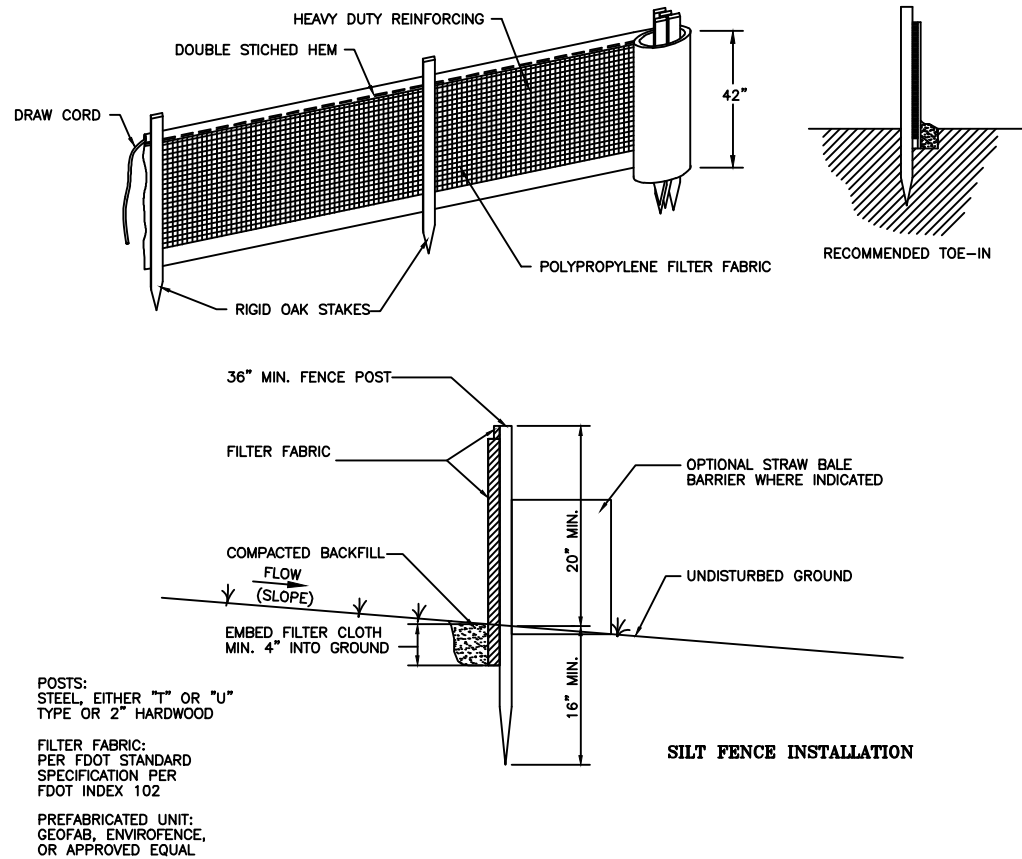
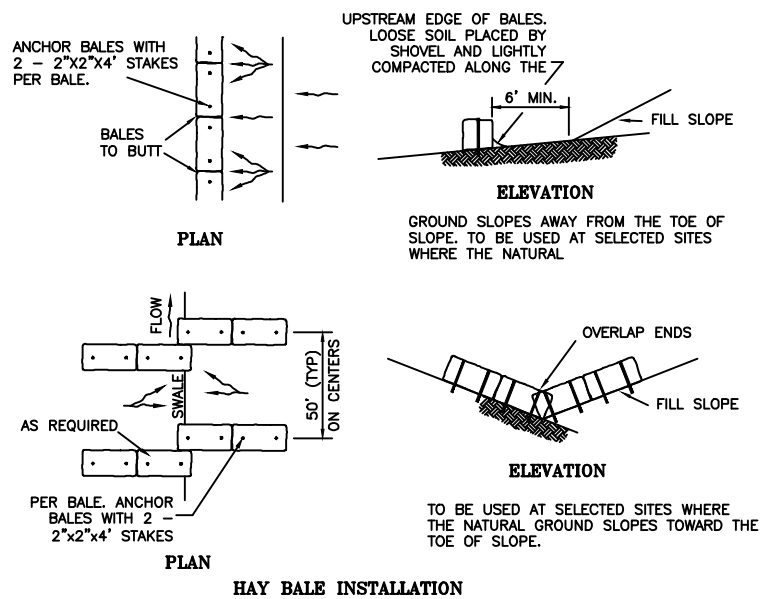
PAVILION LAKE PIERS, DOCKS & GANGWAYS  
ENGINEERING IMPROVEMENTS  
GUIDE FOR SEDIMENT & EROSION  
CONTROL BMP'S

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LAST SAVED: 06/11/19 - 10:23am

CAS PROJECT NUMBER  
19-2037

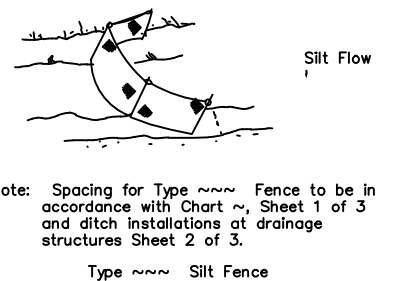
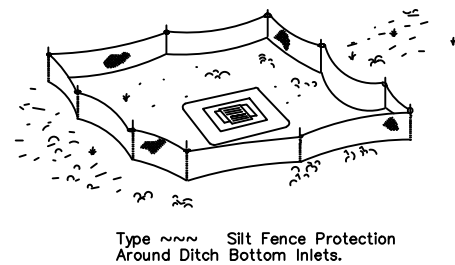
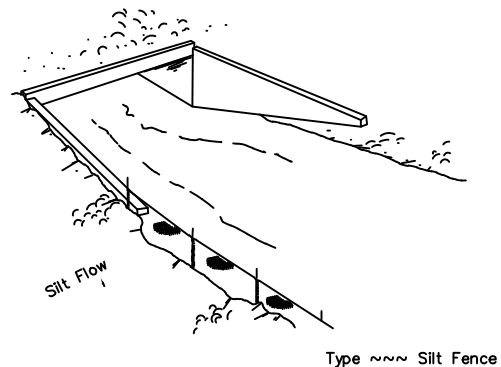
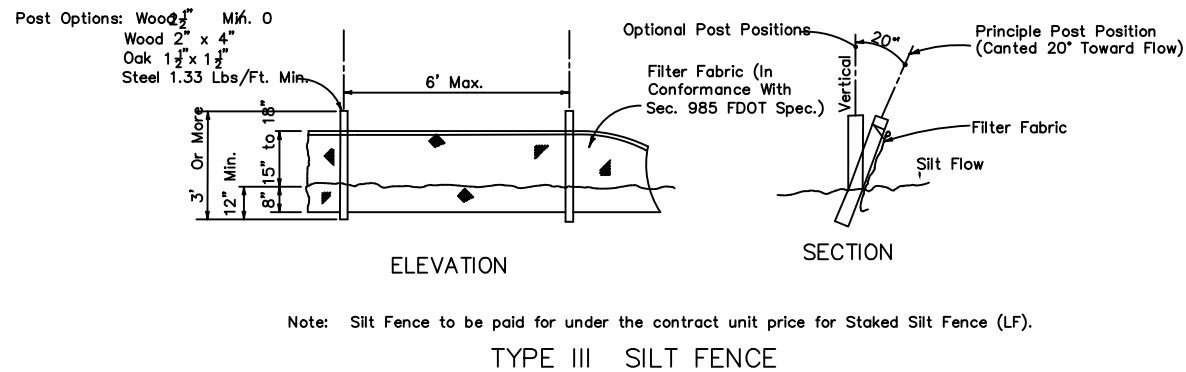
SHEET

**C-10**



#### 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 MANUFACTURES 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



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

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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



- ELECTRONIC VERSIONS OF STRUCTURAL DRAWINGS ARE THE SOLE, COPYRIGHTED PROPERTY OF MUENGINEERS, INC.
- ELECTRONIC VERSIONS OF DRAWINGS ARE NOT TO BE USED OR TRANSFERRED WITHOUT THE EXPRESS, WRITTEN PERMISSION OF MUENGINEERS, INC.

1. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH JOB SPECIFICATIONS AND CIVIL AND SITE DRAWINGS AND SITE SURVEY.
2. CONSULT THESE DRAWINGS FOR DIMENSIONS AND ELEVATIONS NOT INDICATED ON THE STRUCTURAL DRAWINGS.
3. DIMENSIONS AND CONDITIONS MUST BE VERIFIED IN THE FIELD. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE AFFECTED PART OF THE WORK.
4. ALL SCALE DRAWINGS SHALL BE TO THE SAME SCALE.
5. NOTES, TYPICAL DETAILS AND SCHEDULES APPLY TO ALL STRUCTURAL WORK UNLESS OTHERWISE NOTED. FOR CONDITIONS NOT SPECIFICALLY SHOWN, PROVIDE DETAILS OF A SIMILAR NATURE. VERIFY APPLICABILITY BY SUBMITTING THE DRAWINGS FOR REVIEW.
6. AT ALL TIMES THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONDITIONS OF THE JOBSITE INCLUDING SAFETY OF PERSONS AND PROPERTY. MUENIGERS' PRESENCE OR REVIEW OF WORK DOES NOT INCLUDE THE ADEQUACY OF THE CONSTRUCTION MEANS OR METHODS OF CONSTRUCTION.
7. THE PROTECTING OF EXISTING STRUCTURES AND ADJACENT STRUCTURES AND GRADE DURING CONSTRUCTION IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. PROTECT AND MAINTAIN THE INTEGRITY OF ADJACENT STREETS, BUILDINGS AND ALL OTHER STRUCTURES.
8. ALL STRUCTURES ARE DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE STRUCTURE IS COMPLETE.
9. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ERECTION PROCEDURES AND SEQUENCE TO INSURE SAFETY OF THE BUILDING AND ITS ADJACENT STRUCTURES DURING CONSTRUCTION. THIS MAY INCLUDE THE USE OF SHORING, SHEETING, TEMPORARY BRACING, GUYS OR TIEDOWNS.
10. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. THE ENGINEER OF RECORD IS NOT RESPONSIBLE FOR ANY MEANS OR METHODS OF CONSTRUCTION OR FOR ANY RELATED SAFETY PRECAUTIONS OR PROGRAMS.

1. THE STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE 2017 FLORIDA BUILDING CODE AND APPLICABLE REFERENCE STANDARDS.
2. THE FOLLOWING SUPERIMPOSED LOADINGS HAVE BEEN UTILIZED:
  - o **SIDEWALK:**
    - LIVE LOAD 30 psf
  - o **WIND:**
    - ASCE 7-10
    - RISK CATEGORY II
    - ULTIMATE DESIGN WIND SPEED  $V_{ult}=175$  MPH (3-SECOND GUST)
    - NOMINAL DESIGN WIND SPEED  $V_{asd}=136$  MPH (3-SECOND GUST)
    - EXPOSURE D

1. SHOP DRAWINGS SHALL BE SUBMITTED IN ELECTRONIC PDF FORMAT ONLY.
2. SHOP DRAWINGS SHALL BE SUBMITTED VIA E-MAIL TO [ADMIN@MUENIGENERS.COM](mailto:ADMIN@MUENIGENERS.COM).
3. PRINTED PAPER COPIES WILL NOT BE REVIEWED AND RETURNED WITHOUT MUENIGENERS' REVIEW.
4. SHOP DRAWING SUBMITTALS ARE REQUIRED FOR ALL FRAMING SHOWN ON THESE DRAWINGS INCLUDING, BUT NOT LIMITED TO: CONCRETE MIXES, RAILINGS, FENCES, SHEET PILE PRODUCTS, ETC.
5. ELECTRONIC VERSIONS OF STRUCTURAL DRAWINGS ARE THE SOLE, COPYRIGHTED PROPERTY OF MUENIGENERS, INC. ELECTRONIC VERSIONS OF DRAWINGS ARE NOT TO BE COPIED OR TRANSFERRED WITHOUT THE EXPRESS, WRITTEN PERMISSION OF MUENIGENERS, INC. USERS WILL SIGN A LICENSE.
6. SHOP DRAWINGS WILL BE REVIEWED FOR GENERAL COMPLIANCE WITH THE DESIGN INTENT OF THE CONTRACT DOCUMENTS ONLY.
7. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY COMPLIANCE WITH THE CONTRACT DOCUMENTS AS TO QUANTITY, LENGTH, ELEVATIONS, CONNECTIONS, CONDITIONS, DIMENSIONS, CODES, DIMENSIONING, OTHER TRADE REQUIREMENTS ETC. PRIOR TO SUBMITTAL TO THE ARCHITECT/ENGINEER.
8. DRAWINGS WITHOUT CONTRACTOR'S APPROVAL STAMP AND WHICH HAVE NOT BEEN REVIEWED BY THE CONTRACTOR WILL BE RETURNED WITHOUT MUENIGENERS' REVIEW.
9. MUENIGENERS RESERVES A TWO-WEEK SHOP DRAWING REVIEW TIME (FROM DATE OF RECEIPT).
10. IN CASES OF A CONFLICT, INFORMATION PRESENTED ON STRUCTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER THAT WITHIN SHOP DRAWINGS, UNLESS SPECIFICALLY NOTED BY MUENIGENERS IN WRITING.
11. THROUGH THE PROCESS OF A CURSORY REVIEW, MUENIGENERS ASSUMES NO RESPONSIBILITY FOR DIMENSIONS, QUANTITIES, ERRORS OR OMISSIONS, ANY ERROR OR OMISSIONS, HEREON, OF MUENIGENERS' COMMENTS OR DURATION OF THE REVIEW SHALL BE THE RESPONSIBILITY OF AND MUST BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL SERVICE CHARGE EVEN IF SUCH WORK WAS DONE IN ACCORDANCE WITH THE SHOP DRAWINGS.
12. CHANGES AND ADDITIONS MADE ON RE-SUBMITTALS SHALL BE CLEARLY FLAGGED AND NOTED. THE PERCENTAGE OF RE-SUBMITTALS SHALL BE CLEARLY NOTED ON THE BOTTOM OF TRANSMITTAL SHEET. RE-SUBMITTALS TO THE FLAGGED AND NOTED ITEMS CAUSING THE RE-SUBMITTAL.

1. SHOP DRAWINGS SHALL BE SUBMITTED IN ELECTRONIC PDF FORMAT ONLY.
2. SHOP DRAWINGS SHALL BE SUBMITTED VIA E-MAIL TO [ADMIN@MUENGIENERS.COM](mailto:ADMIN@MUENGIENERS.COM).
3. SHOP DRAWING PAPER COPIES WILL NOT BE REVIEWED AND RETURNED WITHOUT MUENGIENERS' REVIEW.
4. THE FOLLOWING SYSTEMS AND COMPONENTS AS A MINIMUM REQUIRE FABRICATION AND ERECTION DRAWINGS PREPARED BY A DELEGATED ENGINEER:
  - o CHAIN LINK FENCES AND FENCE CONNECTIONS
  - o RAILINGS AND RAILING CONNECTIONS
  - o PREFABRICATED RAMPS AND RAMP CONNECTIONS
  - o FLOATING DOCKS
  - o PRECAST PILES
  - o ANY OTHER COMPONENTS INDICATED ON THE DRAWINGS AS EITHER "NOT DESIGNED BY MUENGIENERS" OR "DESIGNED BY OTHER"
5. DELEGATED ENGINEER SHALL POSSESS CURRENT PROFESSIONAL LICENSURE IN THE LOCALITY OF THE PROJECT AND SHALL MAINTAIN MINIMUM LIABILITY INSURANCE COVERAGE OF \$1,000,000.
6. SUBMITTALS SHALL CLEARLY IDENTIFY THE SPECIFIC PROJECT AND APPLICABLE CODES, LIST THE DESIGN CRITERIA, AND SHOW ALL DETAILS AND PLANS NECESSARY FOR PROPER FABRICATION AND INSTALLATION.
7. CALCULATIONS AND SHOP DRAWINGS SHALL IDENTIFY SPECIFIC PRODUCT UTILIZED.
8. GENERIC PRODUCTS WILL NOT BE ACCEPTED.
9. SHOP DRAWINGS AND CALCULATIONS SHALL BE PREPARED UNDER THE DIRECT SUPERVISION AND CONTROL OF THE DELEGATED ENGINEER.
10. SHOP DRAWINGS AND CALCULATIONS REQUIRE THE SEAL, DATE AND SIGNATURE OF THE DELEGATED ENGINEER.
11. DRAWINGS PREPARED SOLELY TO SERVE AS A GUIDE FOR FABRICATION AND INSTALLATION (SUCH AS REINFORCING STEEL SHOP DRAWINGS OR STRUCTURAL STEEL ERECTION DRAWINGS) AND REQUIRING NO ENGINEERING DO NOT REQUIRE THE SEAL AND SIGNATURE OF THE ENGINEER.
12. CATALOG INFORMATION ON STANDARD PRODUCTS DOES NOT REQUIRE THE SEAL OF A DELEGATED ENGINEER.
13. REVIEW OF SUBMITTALS BY MUENGIENERS IS LIMITED TO VERIFYING THE FOLLOWING:
  - o THAT THE SPECIFIED STRUCTURAL SUBMITTALS HAVE BEEN FURNISHED.
  - o THAT THE STRUCTURAL SUBMITTALS HAVE BEEN SIGNED AND SEALED BY THE DELEGATED ENGINEER.
  - o THAT THE DELEGATED ENGINEER HAS UNDERSTOOD THE DESIGN INTENT AND HAS USED THE SPECIFIED STRUCTURAL CRITERIA (NO DETAILED CHECK OF CALCULATIONS WILL BE MADE).
  - o THAT THE CONFIGURATION SET FORTH IN THE STRUCTURAL SUBMITTALS IS CONSISTENT WITH THE CONTRACT DOCUMENTS (NO DETAILED CHECK OF DIMENSIONS OR OF THE DIMENSIONS WILL BE MADE).
  - o THAT THE SUBMITTALS NOT MEETING THE ABOVE CRITERIA WILL NOT BE REVIEWED.

1. PROPOSED CHANGES OR SUBSTITUTIONS TO STRUCTURAL DETAILS OR PLANS SHALL BE SUBMITTED TO MUENGINERS FOR REVIEW AND APPROVAL.
2. SUBMITTALS SHALL CONTAIN FULL DOCUMENTATION OF CHANGES OR SUBSTITUTIONS WITH SUPPORTING, SEALED CALCULATIONS (WHERE APPLICABLE).
3. THE REVIEW OF CHANGES AND SUBSTITUTIONS, RE-ANALYSIS AND/OR RE-DRAFTING TO INCORPORATE CHANGES OR SUBSTITUTIONS INTO CONTRACT DOCUMENTS ARE ADDITIONAL SERVICES FOR THE EOR.
4. CONSTRUCTION COST REVISIONS ARE BETWEEN THE CONTRACTOR AND OWNER AND ARE NOT REVIEWED BY MUENGINERS.

1. ALL SITE PREPARATION, EXCAVATION WORK AND BACK FILL WORK IS TO BE PERFORMED IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT AND THE SUBSURFACE INVESTIGATION.
2. SEE THE FOLLOWING REPORT FOR COMPLETE GEOTECHNICAL RECOMMENDATIONS AND INSTALLATION PROCEDURES.
  - REPORT NO.: 19-1624
  - PREPARED BY: ANDAMAN & ASSOCIATES, INC.
  - TITLED: SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING EVALUATION WALL/BOARDWALK & FLOATING DOCK REPORT TORRY ISLAND, BELLE GLADE, FLORIDA
  - DATED: MAY 2019
3. THIS REPORT SHALL BE CONSIDERED PART OF THE CONTRACT DOCUMENTS  
SOILS SUPPORTING SIDE WALK SLABS, THE SHEET PILE INSTALLATION AND  
PRECAST PILE INSTALLATION SHALL BE INSPECTED AND APPROVED BY A  
LICENSED GEOTECHNICAL ENGINEER DURING INSTALLATION.
4. THE GEOTECHNICAL ENGINEER SHALL ISSUE AN APPROVAL IN WRITING  
INDICATING THAT THE PILES HAVE BEEN INSTALLED AND THAT THE SHEET PILES  
AND PRECAST PILES HAVE BEEN INSTALLED IN ACCORDANCE WITH THE  
GEOTECHNICAL REPORT.

1. VINYL STEEL SHEET PILING SHALL CONSIST OF APPROVED CONTINUOUS, INTERLOCKING PANELS SUCH AS TRULINE 800 SERIES OR ENGINEER OF RECORD APPROVED EQUAL.
2. BOLTS AND NUTS SHALL CONFORM TO ASTM A588.
3. CONCRETE CAP AND DEAD END BRACE SHALL BE:
  - o PROVIDE KEYWAY CONTROL JOINTS AT A MAXIMUM SPACING OF 12 FEET ON CENTER (MIDWAY BETWEEN ANCHOR RODS.)
  - o PROVIDE 1 INCH EXPANSION JOINTS AT A MAXIMUM SPACING OF 48 FEET ON CENTER.
  - o STOP REINFORCING 3 INCHES FROM EACH FACE OF THE JOINT.
  - o CAP JOINTS AND PILING & CAP INTERFACES SHALL BE SEALED WITH AN APPROVED SEALANT.

1. PRE-STRESSED CONCRETE PILING SHALL BE INSTALLED IN ACCORDANCE WITH THE GEOTECHNICAL RECOMMENDATIONS AND INSTALLATION PROCEDURES CONTAINED IN THE GEOTECHNICAL REPORT:

- o PILING SHALL BE MANUFACTURED WITH A MIX DESIGNED BY A RECOGNIZED TESTING LABORATORY TO ATTAIN A STRENGTH OF 5,000 psi AT DRIVING.
- o CONCRETE SHALL ATTAIN A STRENGTH OF 3,000 psi. MINIMUM BEFORE STRANDS ARE RELEASED.
- o THE USE OF HIGH EARLY CEMENT OR ADDITIVES SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND EVALUATION PRIOR TO FABRICATION.
- o STRANDS SHALL COMPLY WITH ASTM A-416.
- o PROVISIONS SHALL BE MADE TO TEST ONE STRAND SPECIMEN FROM EACH ROLL OF STRAND USED.
- o THE TEST SHALL BE MADE IN AN APPROVED TESTING LABORATORY WHICH SHALL INSPECT TENSIONING AND PLACEMENT OF STRANDS, PLACEMENT OF SPIRAL, PLACEMENT OF CONCRETE, MAKING OF TEST CYLINDERS AND SHALL INSCRIBE THEIR MARK AND DATE AFTER CONCRETE HAS TAKEN ITS INITIAL SET.
- o TESTING LABORATORY SHALL STAMP PILING WITH THEIR MARK WHEN ORDERED OUT AT THE CONSTRUCTION YARD ASSERTING THAT THE PILING HAVE ATTAINED DRIVING STRENGTH.
- o PRICE OF PILING SHALL INCLUDE COST OF RETAPPING.

- o THE DESIGN IS BASED ON A MAXIMUM WORKING CAPACITY OF 10 TONS PER PILE IN COMPRESSION, 10 TONS PER PILE IN TENSION, AND 1 TON PER PILE LATERAL.
- o PILE DIMENSIONS SHALL BE 14x14 INCHES.

4. LOCATION OF PILES:

- o SINGLE PILES SHALL BE INSTALLED WITHIN 1-1/2 INCHES OF DESIGN LOCATION.
- o VARIATION FROM PLUMB SHALL NOT EXCEED 1/2 INCH IN TWO FEET.

AN AS-BUILT SURVEY OF PILE LOCATIONS SHALL BE PERFORMED BY A FLORIDA REGISTERED LAND SURVEYOR.

- o PILES SHALL BE LOCATED ON THE AS-BUILT DRAWINGS HORIZONTALLY AND VERTICALLY FROM THE DESIGN LOCATION.
- o SUBMIT THE AS-BUILT DRAWINGS TO THE STRUCTURAL ENGINEER FOR APPROVAL.
- o CONTRACTOR IS RESPONSIBLE FOR ENGINEERING COSTS ASSOCIATED WITH RE-ANALYSIS AND REDESIGNS CAUSED BY PILE S IMPROPERLY INSTALLED.

1. HELICAL PILES SHALL BE DESIGNED BY A REGISTERED FLORIDA GEOTECHNICAL ENGINEER AND SIGNED AND SEALED SUBMITTALS INCLUDING DESIGN CALCULATION, SECTIONS AND DETAILS SHALL BE PROVIDED TO MIUNGENEERS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION AND INSTALLATION.
2. SHALL BE INSTALLED IN ACCORDANCE WITH THE GEOTECHNICAL RECOMMENDATIONS AND INSTALLATION PROCEDURES CONTAINED IN THE GEOTECHNICAL REPORT AND BY THE SPECIALTY ENGINEER RECOMMENDATIONS.
3. PILING
  - o THE HELICAL PIER SHALL PENETRATE INTO THE LIMESTONE FORMATION
  - o THE LEAD SECTION SHOULD CONSIST OF A 3 1/2 INCH SQUARE STEEL SHAFT TO WHICH ARE AFFIXED THREE HELIX PLATES WITH DIAMETERS OF 3.0 AND 12 INCH
  - o CUTTING TEETH SHOULD BE MOUNTED ON THE PLATES AS NEEDED TO FACILITATE ADVANCEMENT OF THE LEAD SECTION INTO CARBONATE ROCK FORMATION.
4. PILE CAPACITY:
  - o THE DESIGN IS BASED ON A MAXIMUM WORKING CAPACITY OF 30.0 TONS PER PILE IN TENSION.
5. LOCATION OF PILES:
  - o AN AS-BUILT SURVEY OF PILE LOCATIONS SHALL BE PERFORMED BY A FLORIDA REGISTERED LAND SURVEYOR.
  - o PILES SHALL BE LOCATED ON THE AS-BUILT DRAWINGS HORIZONTALLY FROM THE DESIGN LOCATIONS.
  - o SUBMIT THE AS-BUILT DRAWINGS TO THE STRUCTURAL AND CIVIL ENGINEER FOR APPROVAL.
  - o CONTRACTOR IS RESPONSIBLE FOR ENGINEERING COSTS ASSOCIATED WITH RE-ANALYSIS AND REDESIGNS CAUSED BY PILES IMPROPERLY INSTALLED.

- o SHALL BE ASTM A615 GRADE 60 DEFORMED BARS, FREE FROM OIL, SCALE AND RUST AND PLACED IN ACCORDANCE WITH THE TYPICAL BENDING DIAGRAM AND PLACING DETAILS OF ACI STANDARDS AND SPECIFICATIONS.
- o SECURE APPROVAL OF SHOP DRAWINGS PRIOR TO COMMENCING FARRICATION

- o TO CONFORM TO ASTM A-185, FREE FROM OIL, SCALE AND RUST AND PLACED IN ACCORDANCE WITH THE TYPICAL PLACING DETAILS OF ACI STANDARDS AND SPECIFICATIONS. MINIMUM LAP SHALL BE PLUS TWO INCHES. USE OF FLAT MANUFACTURED SHEETS IS RECOMMENDED.

- o SHALL BE PER AN APPROVED MIX DESIGN PROPORTIONED TO ACHIEVE A STRENGTH AT 28 DAYS AS LISTED BELOW WITH A PLASTIC AND WORKABLE MIX:
  - 6000 psi FOR THE SEA WALL

- 3000 psi FOR OTHER STRUCTURAL CONCRETE
- SUBMIT PROPOSED TEST METHOD TO THE RECENT FIELD CYLINDER OR LAB TESTS FOR REVIEW PRIOR TO USE.
- MIX SHALL BE UNIQUELY IDENTIFIED BY MIX NUMBER OR OTHER POSITIVE IDENTIFICATION.
- MIX SHALL MEET THE REQUIREMENTS OF ASTM C33 FOR COARSE AGGREGATE.
- CONCRETE SHALL COMPLY WITH THE REQUIREMENTS OF ASTM STANDARD C94 FOR MEASURING, MIXING, TRANSPORTING, ETC.
- CONCRETE TICKETS SHALL BE TIME STAMPED WHEN CONCRETE IS BATCHED.
- THE MAXIMUM TIME ALLOWED FROM THE TIME THE MIXING WATER IS ADDED UNTIL IT IS DEPOSITED IN ITS FINAL POSITION SHALL NOT EXCEED ONE AND ONE HALF (1-1/2) HOURS.
- FOR ANY REASON THIS IS A LONGER DELAY THAN THAT STATED ABOVE, THE CONCRETE SHALL BE DISCARDED.

8. CONCRETE (CONT.):

- o IT SHALL BE THE RESPONSIBILITY OF THE TESTING LAB TO NOTIFY THE OWNER'S REPRESENTATIVE AND THE CONTRACTOR OF ANY NONCOMPLIANCE WITH THIS ABOVE.
- o SLABS SHALL BE CURED USING A DISSIPATING CURING COMPOUND MEETING ASTM STANDARD C309 TYPE 1-D AND SHALL HAVE A FUGITIVE DYE. THE COMPOUND SHALL BE PLACED AS SOON AS THE FINISHING IS COMPLETED OR AS SOON AS THE WATER HAS LEFT THE UNFINISHED CONCRETE. SCAFFOLD OR BROKEN AREAS IN THE CURING MEMBRANE SHALL BE RECOATED DAILY. CALCIUM CHLORIDES SHALL NOT BE UTILIZED; OTHER ADMIXTURES MAY BE USED ONLY WITH THE APPROVAL OF THE ENGINEER.
- o CONCRETE MIX DESIGNS SHALL INCLUDE A WRITTEN DESCRIPTION INDICATING WHERE EACH PARTICULAR MIX IS TO BE PLACED WITHIN THE STRUCTURE.
- o CONCRETE DESIGN MIX SUBMITTALS SHALL INCLUDE TESTED, STATISTICAL BACK-UP DATA AS PER CHAPTER 5 OF ACI 318.

- AN INDEPENDENT TESTING LABORATORY SHALL PERFORM THE FOLLOWING TESTS ON CAST IN PLACE CONCRETE:
  - ASTM C143 "STANDARD TEST METHOD FOR SLUMP OF PORTLAND CEMENT CONCRETE". MAXIMUM SLUMP SHALL BE 5 INCHES.
  - ASTM C98 "STANDARD TEST METHOD FOR COMPRESSIVE STRENGTH OF CYLINDRICAL CONCRETE SPECIMENS". A SEPARATE TEST SHALL BE CONDUCTED FOR EACH CLASS, FOR EVERY 30 CUBIC YARDS (OR FRACTION THEREOF) PLACED PER DAY. REQUIRED CYLINDER(S) QUANTITIES AND TEST AGE CLASS FOLLOWS:
    - 1 AT 3 DAYS
    - 1 AT 7 DAYS
    - 2 AT 28 DAYS
- ONE ADDITIONAL RESERVE CYLINDER TO BE TESTED UNDER THE DIRECTION OF THE ENGINEER, IF REQUIRED. IF 28 DAY STRENGTH IS ACHIEVED, THE ADDITIONAL CYLINDER(S) MAY BE DISCARDED.

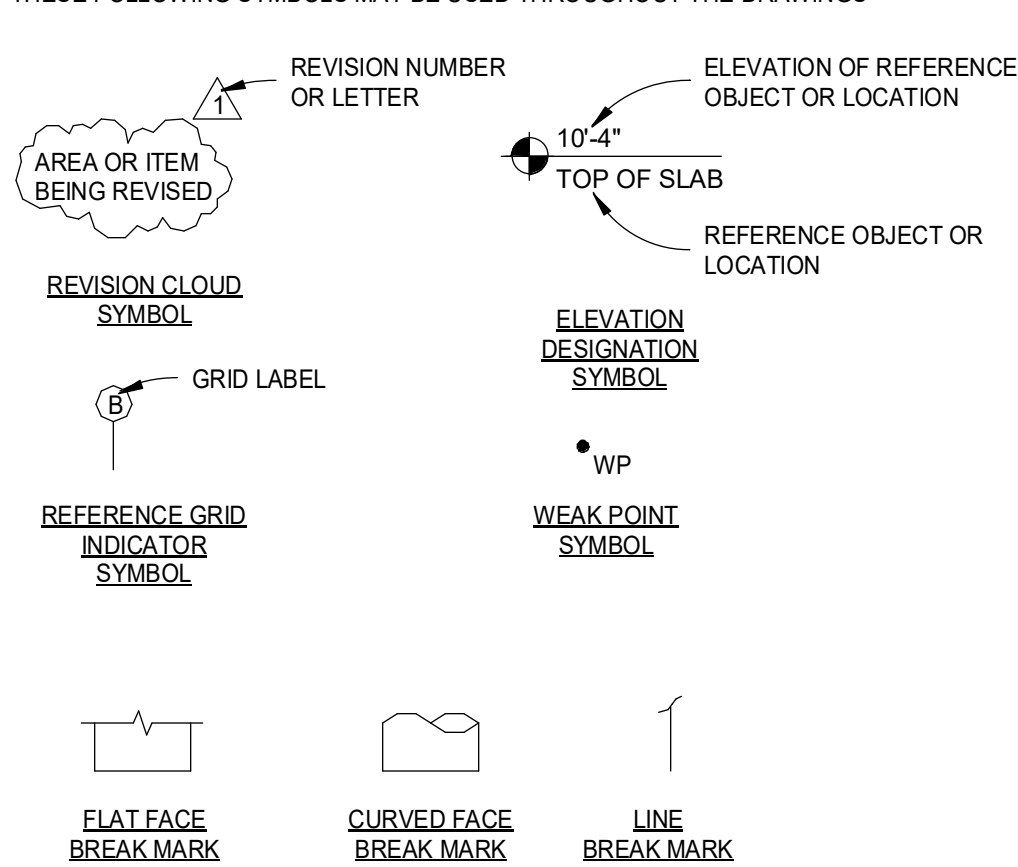
- o POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE DRAWINGS.
- o CONTRACTOR SHALL OBTAIN APPROVAL FROM ENGINEER OF RECORD PRIOR TO USING POST-INSTALLED ANCHORS FOR MISSING OR MISPLACED CAST-IN-PLACE ANCHORS.
- o CARE SHALL BE GIVEN TO AVOID CONFLICTS WITH EXISTING REBAR AND POST TENSIONING STRANDS WHEN DRILLING HOLES. HOLES SHALL BE DRILLED AND CLEANED PER THE MANUFACTURER'S INSTRUCTIONS.
- o UNLESS SPECIFIED OTHERWISE, ANCHORS SHALL BE EMBEDDED IN THE APPROPRIATE SUBSTRATE WITH A MINIMUM EMBEDMENT OF 8 TIMES THE NOMINAL ANCHOR DIAMETER OR THE EMBEDMENT REQUIRED TO SUPPORT THE INTENDED LOAD.
- o ANCHORS SHALL BE INSTALLED PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AT NOT LESS THAN MINIMUM EDGE DISTANCE AND/OR SPACINGS INDICATED IN THE MANUFACTURER'S LITERATURE.
- o SUBSTITUTION REQUESTS, FOR PRODUCTS OTHER THAN THOSE LISTED BELOW, SHALL BE SUBMITTED TO THE ENGINEER WITH CALCULATIONS THAT ARE PREPARED AND SIGNED BY A REGISTERED PROFESSIONAL ENGINEER SHOWING THAT THE SUBSTITUTED PRODUCT WILL ACHIEVE AN EQUIVALENT CAPACITY USING THE APPROPRIATE DESIGN PROCEDURE REQUIRED BY THE BUILDING CODE.
- o ACCEPTABLE PRODUCTS
  - EXPANSION ANCHORS FOR NON-CRACKED CONCRETE ONLY:
    - WEDGE-ALL (WA), BY SIMPSON STRONG-TIE
    - KWIK BOLT 3, BY HILTI
  - CRACKED CONCRETE MECHANICAL ANCHORS:
    - STRONG-BOLT (STB), BY SIMPSON STRONG-TIE
    - KWIK BOLT (TZ), BY HILTI
  - SCREW ANCHORS:
    - TITEN HD (THD), BY SIMPSON STRONG-TIE
    - HUS-H, BY HILTI
  - ADHESIVE ANCHORS FOR ANCHORING INTO SOLID BASE MATERIAL
    - ACRYLIC-ITE (AT)
    - SET EPOXY-ITE (SET) WITH RETROFIT BOLTS (RFB), BY SIMPSON STRONG-TIE
    - HIT RE 300, BY HILTI
  - ADHESIVE ANCHORS FOR ANCHORING INTO HOLLOW BASE MATERIAL
    - CONTACT ENGINEER OF RECORD

1. THE CONFIGURATION OF THE RAILING SYSTEM SHALL BE AS SHOWN ON THE CIVIL DRAWINGS
2. THE RAILING SYSTEM AND CONNECTIONS SHALL BE DESIGNED FOR APPLICABLE LOADS AS INDICATED ON THE PLANS AND IN THE LATEST EDITION OF THE FLORIDA BUILDING CODE.
3. THE LOADS SHALL BE CLEARLY INDICATED ON SHOP DRAWINGS.
4. SHOP DRAWINGS SHALL SHOW AND SPECIFY CONNECTIONS UTILIZED WITHIN THE RAILING SYSTEM AS WELL AS CONNECTIONS TO AND LOADS IMPOSED UPON THE STRUCTURAL SYSTEM SHOWN ON THESE PLANS.
5. ENGINEERED RAILING SYSTEM AND CONNECTION OF SAME TO THIS STRUCTURE SHALL BE DESIGNED BY AN ENGINEER REGISTERED IN THE STATE OF FLORIDA.
6. SHOP DRAWINGS SHALL BE SUBMITTED TO THE SIGNATURE OF THE ENGINEER FOR REVIEW PRIOR TO FABRICATION.

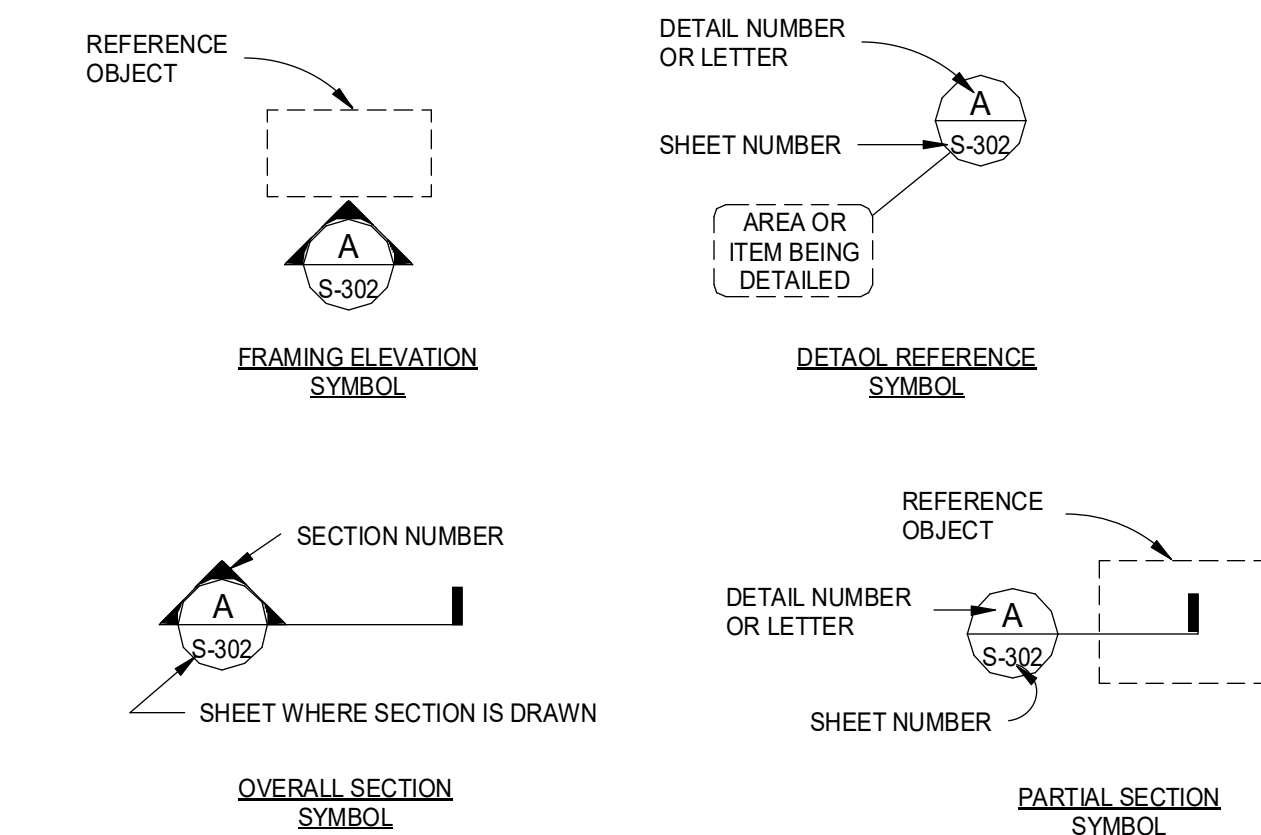
THE FOLLOWING ABBREVIATIONS MAY BE USED IN THE DRAWINGS

NUMBER	
&	AND
ASV	AT
AHR	ABOVE
AISC	ANCHOR
ALT	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALUM.	ALTERNATE
AF	ALUMINUM
ASTM	ANCHOR ROD
CJ	AMERICAN SOCIETY OF TESTING AND MATERIALS
CJP	CONSTRUCTION/CONTROL JOINT
CL	COMPLETE JOINT PENETRATION
CONC	CENTERLINE
CONN	CONCRETE
CONSTR	CONNECTION
CONT	CONSTRUCTION
COORD	CONTINUOUS
COV	COORDINATE
D&E	COVER
DET	DRILL AND EPOXY
DWVG	DETAIL
EJ	DRAWING
EF	EACH
ENGR	EACH FACE
EQ	EXPANSION JOINT
EQUIV	ENGINEER
EW	EQUAL
EXP	EQUIVALENT
FBC	EACH WAY
fc=	EXPANSION BUILDING CODE
FV	FLORIDA BUILDING CODE
Fy=	28 DAY CONCRETE STRENGTH=
GA	FIELD VERIFY
GALV/	FYIELD STRENGTH=
GC	GAGE
IN	GALVANIZED(D)
INFO	GENERAL CONTRACTOR
JT	INCH
K	INFORMATION
KSF	JOINT
KSI	K (1000 LBS)
LBS	KIPS PER SQUARE FOOT
MISC	KIPS PER SQUARE INCH
NA	POUNDS
NC	MISCELLANEOUS
NTS	NOT APPLICABLE
Ø	NOT IN CONTRACT
PCF	NOT TO SCALE
PCY	Ø
PROP	ROUND, DIMENSION
PSI	POUNDS PER CUBIC FOOT
RC	POUNDS PER CUBIC YARD
REINF	PROPERTY
SECT	POUNDS PER SQUARE FOOT
SIM	POUNDS PER SQUARE INCH
SST	REINFORCED CONCRETE
STD	REINFORCEMENT
STL	SECTION
STRUCT	SIMILAR
TYP	STEEL
UNO	STRUCTURE, STRUCTURAL
VAR	TYPICAL
W/	UNLESS NOTED OTHERWISE
W/O	VARIES
	WITH
	WITH OUT

THESE FOLLOWING SYMBOLS MAY BE USED THROUGHOUT THE DRAWINGS



THESE FOLLOWING SYMBOLS MAY BE USED THROUGHOUT THE DRAWING S TO REFER TO REFER TO OTHER VIEWS:



SHEET INDEX			
SHT NO.	DESCRIPTION	CURRENT REVISION	CURRENT REVISION DATE
S-0.00	STRUCTURAL NOTES		
S-1.00	NEW CONSTRUCTION PLAN		
S-2.00	SECTIONS AND DETAILS		
S-3.00	3D VIEWS		



MUEngineers, Inc.

CONSULTING STRUCTURAL  
ENGINEERS

3440 N.E. 12TH AVENUE  
OAKLAND PARK, FL 33334  
PH: 954-324-4730  
FAX: 954-653-4170

MARCUS O. UNTERWEGER  
FL P.E. # 63860  
JUNE 18, 2019

MARCUS O. UNTERWEGER, STATE OF FLORIDA,  
PROFESSIONAL ENGINEER, LICENSE NO: 63860

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SEAWALL AND WALKWAY  
AT TORRY ISLAND

BELLE GLADE, FLORIDA

DATE: 06.18.2019

[illegible]

**DRAWING:**

## STRUCTURAL NOTES

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NOTE: MUE19020701

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SEAWALL AND WALKWAY  
AT TORRY ISLAND

BELLE GLADE, FLORIDA

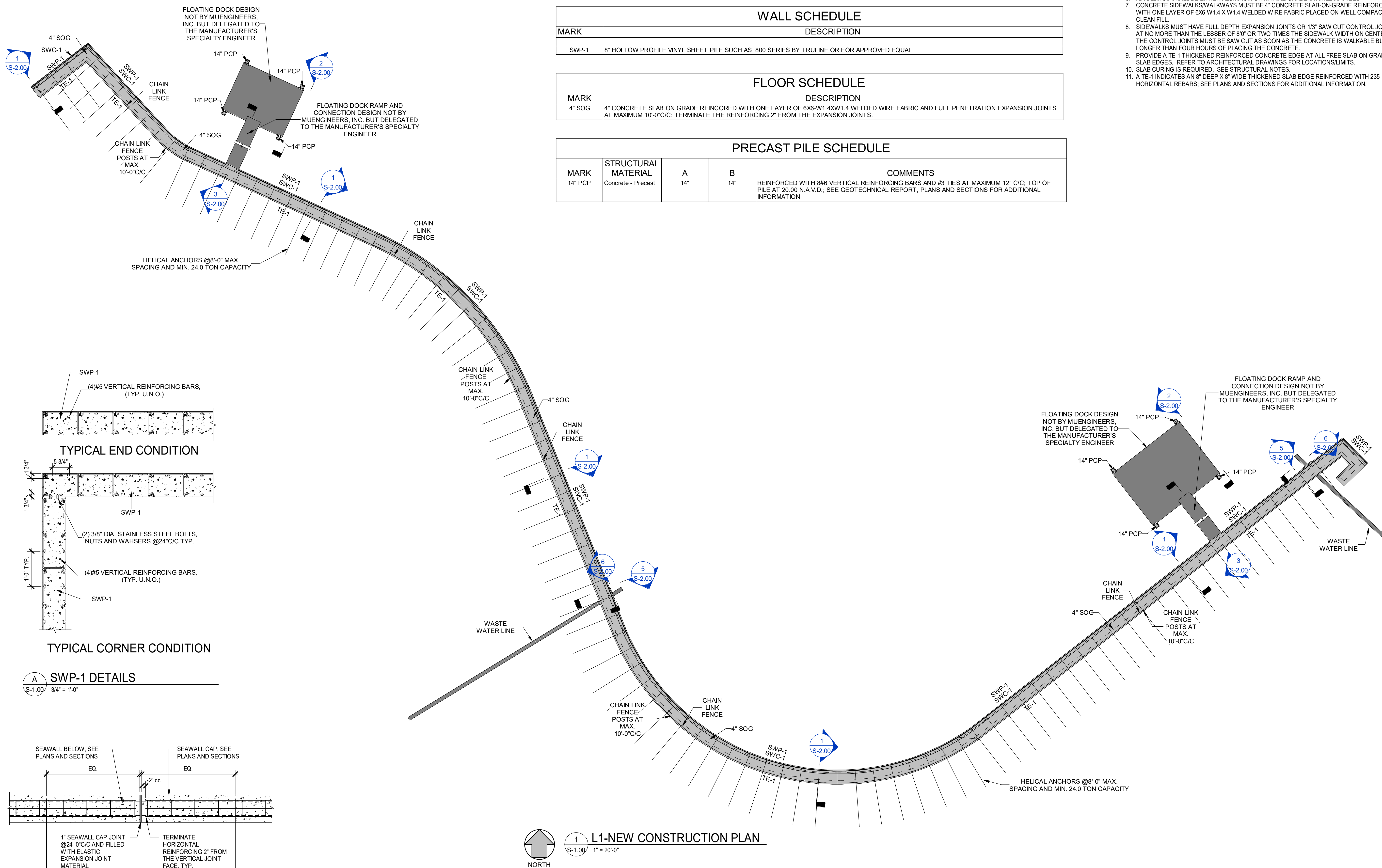
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S-1.00

PRECAST PILE SCHEDULE				
MARK	STRUCTURAL MATERIAL	A	B	COMMENTS
14" PCP	Concrete - Precast	14"	14"	REINFORCED WITH #6 VERTICAL REINFORCING BARS AND #3 TIES AT MAXIMUM 12" C/C. TOP OF PILE AT 20.00 N.A.V.D.; SEE GEOTECHNICAL REPORT, PLANS AND SECTIONS FOR ADDITIONAL INFORMATION

1. GC MUST BE RESPONSIBLE TO STABILIZE SOILS AS NEEDED FOR NEW CONSTRUCTION.
2. FOR DIMENSIONS NOT SHOWN SEE FOUNDATION PLAN AND CIVIL DRAWINGS.
3. VERIFY ALL DIMENSIONS, ELEVATIONS AND SLAB FINISHES WITH CIVIL DRAWINGS AND SITE SURVEY DATA AND EXISTING CONCRETE.
4. ALL HARDWARE: BOLTS, NUTS, NAILS, SCREWS, WASHERS, ETC. MUST BE MARINE GRADE STAINLESS STEEL.
5. ALL FENCE POSTS SHALL BE HOT-DIP GALVANIZED.
6. AIR RAILINGS SHALL BE EITHER ALUMINUM OR MARINE GRADE STAINLESS STEEL.
7. OVER EXISTING CONCRETE, JOINTS MUST BE SEaled AT ALL JOINTS ON CONCRETE SLAB ON GRADE REINFORCED WITH ONE LAYER OF 6X6 W1.4 X 1/4 WELDED WIRE FABRIC PLACED ON WELL COMPACTED CLEAN FILL.
8. SIDEWALKS MUST HAVE FULL DEPTH EXPANSION JOINTS OR 1/3" SAW CUT CONTROL JOINTS AT NO MORE THAN THE LESSER OF 8'0" OR TWO TIMES THE SIDEWALK WIDTH ON CENTER.
9. ALL CONCRETE JOINTS MUST BE SEaled AT ALL JOINTS ON CONCRETE SLAB ON GRADE REINFORCED WITH ONE LAYER OF 6X6 W1.4 X 1/4 WELDED WIRE FABRIC PLACED ON WELL COMPACTED CLEAN FILL. NO LONGER THAN FOUR HOURS OF PLACING THE CONCRETE.
10. PROVIDE A TE-1 THICKENED REINFORCED CONCRETE EDGE AT ALL FREE SLAB ON GRADE SLAB EDGES. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS/LIMITS.
11. SLAB CURING IS REQUIRED. SEE STRUCTURAL NOTES.
12. TE-1 INDICATES AN 8" DEEP X 8" WIDE THICKENED CONCRETE SLAB EDGE REINFORCED WITH 235 HORIZONTAL REBARS. SEE PLANS AND SECTIONS FOR ADDITIONAL INFORMATION.



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JUNE 18, 2019

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SEAWALL AND WALKWAY  
AT TORRY ISLAND

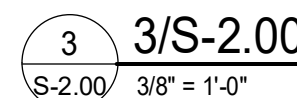
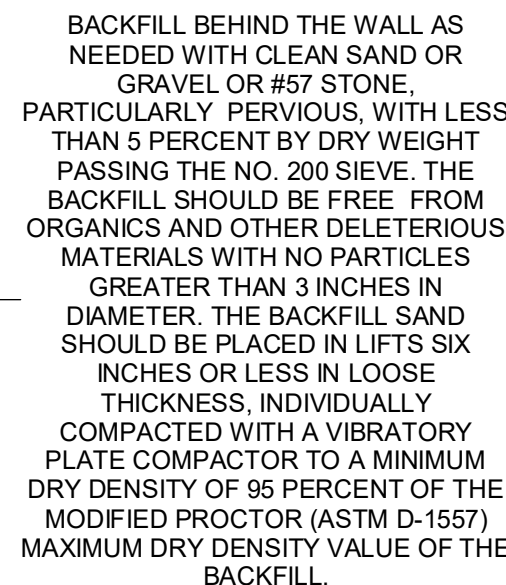
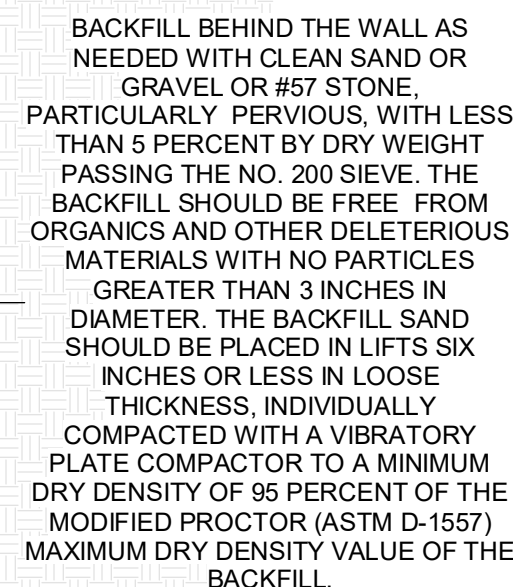
BELLE GLADE, FLORIDA

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## SECTIONS AND DETAILS

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SEAWALL AND WALKWAY  
AT TORRY ISLAND

BELLE GLADE, FLORIDA

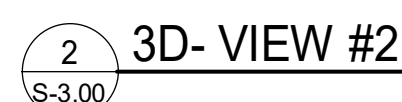
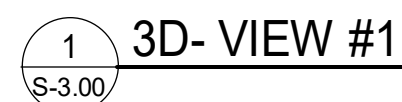
DATE:	06.18.2019
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DRAWING:  
3D VIEWS

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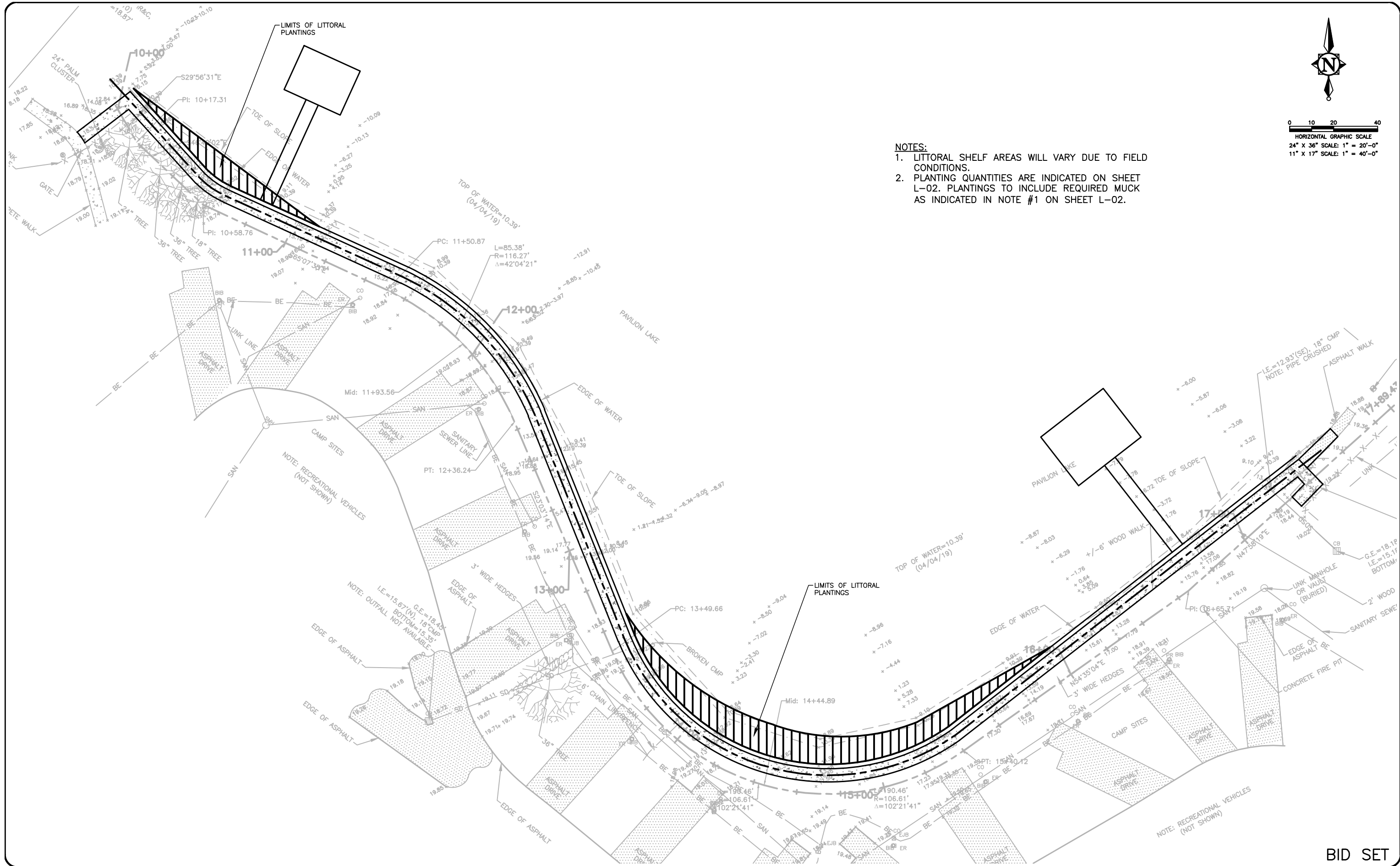
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NO.	DATE	REVISION	BY

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

FILE NAME: 40-2037-L-01-LITTORAL.dwg

LAST SAVED: 08/05/19 - 9:25am

CAS PROJECT NUMBER

19-2037

SHEET

L-01

BID SET

LITTORAL AREA PLANT LIST EL. 8.5-12.5 NGVD

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

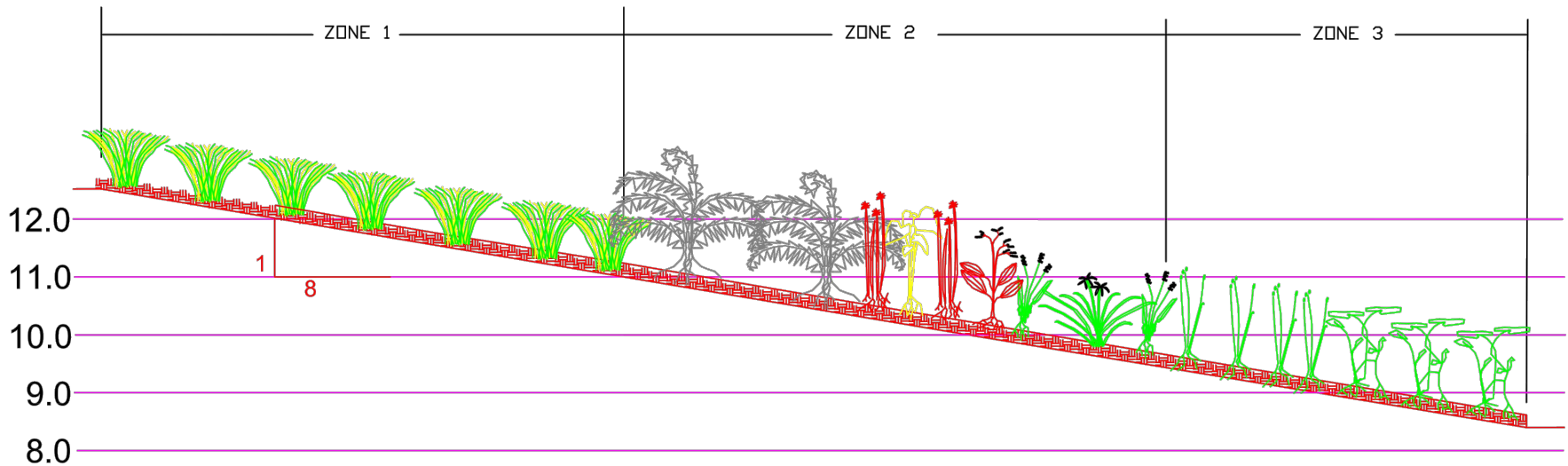
c) Areas that exhibit high mortality of planted vegetation within the littoral area will be replanted and adjusted to suitable elevation.

NOTES:

1. Install approximately 3-6' of muck throughout the entire planting area. The muck shall have a minimum of 7 percent (2%) 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



C&N ENVIRONMENTAL  
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mail@cnenvironment.com

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

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PREPARED FOR:  
CITY OF  
BELLE GLADE

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

FILE NAME: 40-2037-L-02-LITTORAL.dwg  
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CAS PROJECT NUMBER  
19-2037

SHEET  
L-02