

PALM BEACH COUNTY
BOARD OF COUNTY COMMISSIONERS
AGENDA ITEM SUMMARY

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Meeting Date: July 22, 2014	<input checked="" type="checkbox"/> (X) Consent	<input type="checkbox"/> () Regular
	<input type="checkbox"/> () Workshop	<input type="checkbox"/> () Public Hearing

Department

Submitted By: Environmental Resources Management

Submitted For: Environmental Resources Management

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I. EXECUTIVE BRIEF

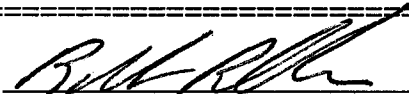
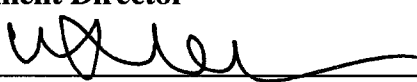
Motion and Title: Staff recommends motion to approve: Work Order No. ERM 14C-08 to the Palm Beach County Annual Pathway and Minor Construction Contract Project No. 2013051 (R2013-0427) with Wynn and Sons Environmental Construction Co. Inc. not to exceed \$542,866.90 to construct public use facilities at the Winding Waters Natural Area.

Summary: The Board of County Commissioners (BCC) approved an annual construction Contract with Wynn and Sons Environmental Construction Co. Inc., a Palm Beach County SBE company, for the Palm Beach County Annual Pathway and Minor Construction Contract Project No. 2013051 (R2013-0427) on April 16, 2013. Work Order No. ERM 14C-08 authorizes Wynn and Sons to construct the public use facilities for the Winding Waters Natural Area. Wynn committed to an overall 100% SBE participation in the Contract. The project is supported by the Natural Area Fund, a non-advalorem source, and a Federal pass-through grant from Florida Department of Environmental Protection (FDEP) for \$175,566. District 7 (JM)

Background and Justification: On May 6, 2014, the Board of County Commissioners approved (R-2014-0610) Project Agreement No. T13009 with the FDEP to construct passive recreational facilities on the County's Winding Waters Natural Area. The Work Order with Wynn and Sons Environmental Construction Co. Inc will be issued to construct the facilities in compliance with the Project Agreement.

Attachment:
Work Order No. ERM 14C-08

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Recommended by:	<u></u>	<u>6/21/14</u>
	Department Director	Date
Approved by:	<u></u>	<u>7/7/14</u>
	County Administrator	Date

II. FISCAL IMPACT ANALYSIS

A. Five Year Summary of Fiscal Impact:

Fiscal Years	2014	2015	2016	2017	2018
Capital Expenditures	\$542,867	_____	_____	_____	_____
Operating Costs	_____	_____	_____	_____	_____
External Revenues	(\$175,566)	_____	_____	_____	_____
Program Income (County)	_____	_____	_____	_____	_____
In-Kind Match (County)	_____	_____	_____	_____	_____
NET FISCAL IMPACT	\$367,301	_____	_____	_____	_____
# ADDITIONAL FTE POSITIONS (Cumulative)	_____	_____	_____	_____	_____

Is Item Included in Current Budget? Yes X No _____
Budget Account No.: Fund 3654 Department 381 Unit E433 Object 6504

B. Recommended Sources of Funds/Summary of Fiscal Impact:

Natural Areas Funds Transfer FDEP T1309-CFDA 20.219

C. Department Fiscal Review:

JF

III. REVIEW COMMENTS

A. OFMB Fiscal and /or Contract Dev. and Control Comments:

[Signature] *[Signature]* 7/11/14
OFMB *AK* Contract Development and Control
6/25 6/24/14 7-1-14 *[Signature]*

B. Legal Sufficiency:

[Signature]
Assistant County Attorney

C. Other Department Review:

Department Director

WORK ORDER ANNUAL CONTRACT

PROJECT NAME: Annual Pathway & Minor Construction Contract **PROJECT #:** 2013051

DEPARTMENT: ENVIRONMENTAL RESOURCES MANAGEMENT (ERM)

ERM WORK ORDER PROJECT NAME: Winding Waters Natural Area Public Use Facilities
COMMISSIONER DISTRICT #: 7

WORK ORDER NO.: ERM 14C-08

BUDGET LINE ITEM: 3654-381-E433-6504-N132-NWIW-005

[Fiscal approval of Budget Availability: Jim Ruzic]

DATE: June 16, 2014

TO: WYNN & SONS ENVIRONMENTAL CONSTRUCTION CO. INC.

In accordance with the terms of your Contract (R2013-0427) dated April 16, 2013, you are directed to provide the following supplies and services: Construct parking lot, kiosk, wooden boardwalks, observation deck, lean-to shelters and concrete sidewalk, and provide standing seam metal roofing for six structures, as per attached plans for Public Use Facilities at Winding Waters Natural Area.

The above work shall be performed at: Winding Waters Natural Area, 6161 N Haverhill Rd, West Palm Beach, Florida 33407

commencing upon execution by Contractor and County, and shall be completed by December 12, 2014.

The total amount of this Work Order, shall not exceed \$542,866.90 as identified in your estimate, dated June 4, 2014.

This work shall be coordinated with:

Steven Pisano

Name _____

Sr. Environmental Analyst

Title

561-233-2521

Telephone Number

Please indicate your receipt of this Work Order and agreement with work schedule by signing and returning two originals. This Work Order is not valid until signed by Palm Beach County.

**WYNN & SONS ENVIRONMENTAL
CONSTRUCTION CO., INC.**

Company

7268 Belvedere Road

Address

West Palm Beach, FL 33411

City & State

~~Signature~~

Date _____

PALM BEACH COUNTY, FL

A Political Subdivision of the State of Florida

BOARD OF COUNTY COMMISSIONERS

Owner

2300 North Jog Road, 4th Floor

Address

West Palm Beach, FL 33411-2743

City & State

Signature

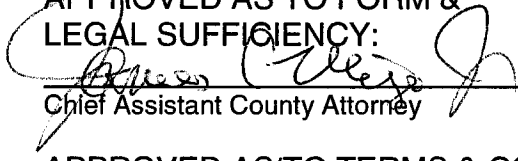
Priscilla A. Taylor, Mayor

Date _____

ATTEST:
Sharon R. Bock, Clerk & Comptroller

Deputy Clerk

APPROVED AS TO FORM &
LEGAL SUFFICIENCY:



Chief Assistant County Attorney

APPROVED AS TO TERMS & CONDITIONS:



Daniel Bates, Deputy Director
Dept. of Environmental Resources Management

cc: Finance (Downtown)
David Young, P.E., Engineering & Public Works/Roadway Production
Irwin Jacobowitz, Director, Contract Development and Control

WYNN & SONS ENVIRONMENTAL CONSTRUCTION CO.
INC.

7268 BELVEDERE RD
WEST PALM BEACH,FL. 33411

Estimate

DATE	ESTIMATE NO.
6/4/2014	753

BOARD OF COUNTY COMMISSIONERS
PALM BEACH COUNTY FINANCE DEPT
PO BOX 4036
WEST PALM BEACH,FL 33402-4036
CONTRACT

Ship To

MR. PISANO
WINDING WATER NATURAL AREA

ITEM				
ITEM NO.	DESCRIPTION	QTY	UNIT PRICE	AMOUNT
#157	CLEARING & GRUBBING PER ACRE	2	50.00	100.00
#165	EXCAVATION PER CY	300	7.00	2,100.00
#166	EMBANKMENT PER CY	1,969	10.00	19,690.00
#169	SEEDING & MULCH PER SY	1,554	0.35	543.90
#175	8"BASE INC. PRIME COAT PER SY	2,538	15.00	38,070.00
#184	ACSC TYPE S >100 TONS PER TON	222	135.00	29,970.00
#194	6" CONCRETE PATHWAY OR DRIVEWAY >35 SY PER SY	1,693	42.00	71,106.00
#204	WHEEL STOPS FURNISH & INSTALL EACH	10	25.00	250.00
#206	THERMOPLASTIC PAVEMENT MARKING ALL WIDTH & COLORS PER S/F	413	10.00	4,130.00
#207	TRAFFIC PAINT ALL WIDTHS & COLORS PER S/F	215	5.00	1,075.00
#208	ADA HANDICAP PARKING SIGNS EACH	1	100.00	100.00
#211	CONCRETE CURB TYPE D PER L/F	440	10.00	4,400.00
#230	MISC CONCRETE INCLUDING STEEL PER CY	20.14	750.00	15,105.00
#246	STEEL BOLLARD EACH	2	50.00	100.00
#248	15"RCP PER LF	46	32.00	1,472.00
#250	24" RCP PER LF	85	40.00	3,400.00
#268	DITCH BOTTOM INLET EACH	1	3,000.00	3,000.00
#291	SOUTHERN YELLOW PINE FURNISH & INSTALL PER BF	16,876	7.50	126,570.00
#293	IPE BOARD DECKING & TOP RAIL 5/4 X 6" FURNISH & INSTALL PER LF	5,646	12.00	67,752.00
#305	12" CONCRETE PILE PER LF	2,028	62.00	125,736.00
#306	14" SQUARE PRECAST PRE STRESSED CONCRETE PILING PER LF	168	69.00	11,592.00
NIIC	Furnish and install aluminum standing seam metal roofing (including all fasteners, flashing, and underlayment) for the six structures as per plans. per s/f	1,107	15.00	16,605.00
Total				\$542,866.90
Phone # 561-686-6077 Fax # 561-686-2433 rickatwynnandsons@comcast.net				

ERM's CONTRACT HISTORY FOR
Wynn & Sons Environmental Construction Co. Inc.
Engineering Dept's. Annual Pathway & Minor Construction Contract
Project # 2013051

Contract R No. R2013-0427 expiring 10/1/14 Contract Date: April 16, 2013
Change Order No. 2 dated September 11, 2013; Change Order No. 3 dated October 3, 2013, Change Order No. 4 dated April 15, 2014
Original Contract \$: \$ 900,000.00
Increased ERM Allotment \$ 950,000.00
SBE \$: \$ 1,850,000.00
SBE %: 100.00%

WORK ORDER NUMBER	WORK ORDER TOTAL / SBE AMOUNT	DUE DATE	WORK ORDER DESCRIPTION	APPROVED BY/DATE
ERM13C-04	\$ 179,985.25	6/21/13	Pine Glades Natural Area Public Use Facilities, Phase 1	CRC/ 4/24/13
ERM13C-07	204,547.50	12/13/13	Pine Glades Natural Area Public Use Facilities, Phase 2	BCC/ 6/18/13
ERM13C-07, Change Order 1	3,780.00	12/13/13	Pine Glades Natural Area Public Use Facilities, Phase 2, Quantity Adjustment	ERM/ 2/5/14
ERM13C-09	15,972.00	6/28/13	Pine Glades North Berm Restoration	ERM/ 6/12/13
ERM13C-13	38,620.00	12/20/13	Pine Glades Natural Area Public Use Facilities, Phase 3	ERM/ 10/11/13
ERM13C-13, Change Order 1	300.00	12/20/13	Pine Glades Natural Area Public Use Facilities, Phase 3, Quantity Adjustment	ERM/ 2/5/14
ERM14C-02	449,852.50	7/11/14	North Jupiter Flatwoods Natural Area Public Use Facilities	BCC/ 3/11/14
ERM14C-06	156,401.00	7/1/14	Hatcher Control Structures	CRC/ 3/19/14
ERM14C-08	542,866.90	12/12/14	Winding Waters Natural Area Public Used Facilities	BCC/

Total Issued: \$ 1,592,325.15
ERM Allot.: \$ 1,850,000.00
Allot. Bal.: \$ 257,674.85

Report File Date: June 13, 2014

COUNTY OF PALM BEACH STATE OF FLORIDA

WINDING WATERS NATURAL AREA PUBLIC USE FACILITIES

BOARD OF COUNTY COMMISSIONERS

HAL R. VALECHE
District 1

PRISCILLA A. TAYLOR
District 7

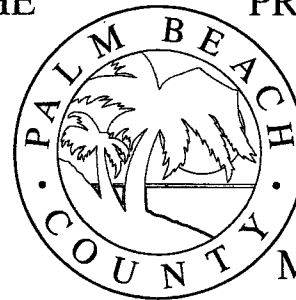
PAULETTE BURDICK
District 2

JESS R. SANTAMARIA
District 6

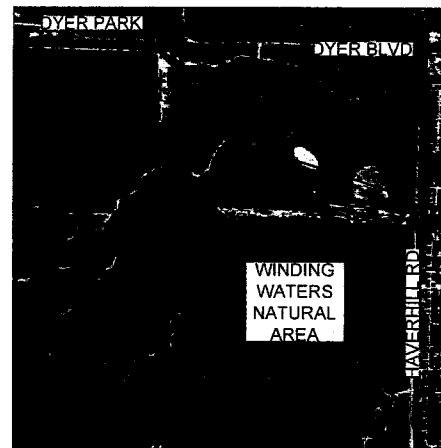
SHELLEY VANA
District 3

MARY LOU BERGER
District 5

STEVEN L. ABRAMS
District 4

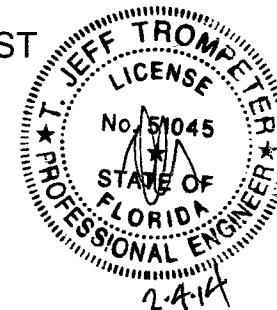


INDEX OF DRAWINGS	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2-3	NOTES & DETAILS
4	OVERALL SITE PLAN
5-9	PLANS & PROFILES
10-11	PLAN SHEETS
S1-S17	STRUCTURAL DRAWINGS



LOCATOR MAP

AREAS OF INTEREST



PALM BEACH COUNTY
DEPARTMENT OF ENVIRONMENTAL
RESOURCES MANAGEMENT
2300 NORTH JOG ROAD, 4th FLOOR
WEST PALM BEACH, FLORIDA 33411-2743
(561) 233-2400



By:	
Date:	
Revision:	
No:	
Scale:	N/A
Approved:	ERM
Drawn:	DL
Checked:	JT
Date:	12/8/2013
Field Book No:	

SEAL

Project:
WINDING WATERS
NATURAL AREA
PUBLIC USE FACILITIES

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GENERAL NOTES

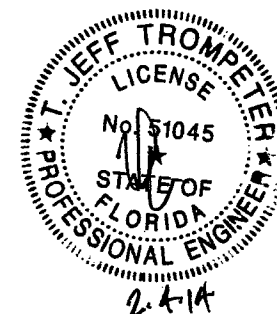
1. ALL NORTHING AND EASTING COORDINATES ARE GRID PER THE NAD 83/1990 ADJUSTMENT STATE PLANE.
2. ALL ELEVATIONS ARE IN THE NAVD '88 DATUM.
3. THE CENTERLINE GEOMETRY OF THE CONCRETE WALKWAYS IS BASED ON GPS FIELD LOCATES PERFORMED BY PBC. THE INTENT OF THE WALKWAY IS TO BE RADIAL ALONG THE CENTERLINE BASED ON A "POINT-TO-POINT" LAYOUT TO BE FIELD VERIFIED BY PBC PRIOR TO CLEARING, FORM WORK, AND PLACEMENT OF CONCRETE.
4. THE PLAN AND PROFILE SHEETS ARE PROVIDED FOR REFERENCE AND BASIC DESIGN INTENT TO CONFIRM ADA ACCESSIBILITY OF THE CONCRETE WALKWAY.
5. MAINTENANCE OF TRAFFIC SHALL BE IN ACCORDANCE WITH CURRENT FDOT ROADWAY TRAFFIC DESIGN SPECIFICATIONS AND STANDARDS AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D., LATEST EDITION).
6. ANY PUBLIC LAND CORNER WITHIN THE LIMITS OF CONSTRUCTION SHALL BE PROTECTED. IF A CORNER MONUMENT IS IN DANGER OF BEING DISTURBED, AND HAS NOT BEEN PROPERLY REFERENCED, THE CONTRACTOR SHALL NOTIFY THE PALM BEACH COUNTY SURVEY SECTION, WITHOUT DELAY BY PHONE.
7. THE CONTRACTOR SHALL PROTECT ALL PERMANENT REFERENCE MONUMENTS AND TAKE ALL PRECAUTIONS NECESSARY TO AVOID DAMAGE TO SURVEY MARKERS DURING CONSTRUCTION, UNLESS OTHERWISE DIRECTED BY PBC.
8. THE LOCATION OF UTILITIES SHALL BE DETERMINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. IN ADDITION, THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY IF OTHER UTILITIES (NOT SHOWN ON PLANS) EXIST WITHIN THE AREA OF CONSTRUCTION. SHOULD THERE BE UTILITY CONFLICTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER, AND THE RESPECTIVE UTILITY OWNER(S) TO RESOLVE THE UTILITY CONFLICTS AND UTILITY ADJUSTMENTS AS REQUIRED.
9. PRIOR TO ANY EXCAVATION THE CONTRACTOR SHALL COMPLY WITH FLORIDA STATUTE 553.851 FOR THE PROTECTION OF UNDERGROUND GAS PIPELINES.
10. THE CONTRACTOR SHALL NOTIFY SUNSHINE STATE ONE-CALL OF FLORIDA, INC AT 1-800-432-4770 AND ALL AFFECTED UTILITIES 48 HOURS IN ADVANCE OF ANY EXCAVATION INVOLVING THEIR FACILITIES SO THAT A COMPANY REPRESENTATIVE MAY BE PRESENT.
11. UTILITIES ARE TO BE ADJUSTED OR RELOCATED BY OTHERS AS DIRECTED BY THE COUNTY.
12. ALL EXISTING DRAINAGE STRUCTURES AND PIPES WITHIN THE LIMITS OF THE PROJECT SHALL REMAIN UNLESS OTHERWISE NOTED.
13. FOR FURTHER UTILITY INFORMATION CONTACT THE FOLLOWING:
 - 13.1. FLORIDA POWER AND LIGHT LEONARD CHIOCCA 561-742-2024
 - 13.2. ATT/ DISTRIBUTION BOB LOWEN 561-329-5451 (CELL)
 - 13.3. COMCAST HENRY PATINO 561-454-5807
 - 13.4. CWPB UTILITIES MANNY GONZALEZ 561-494-1085
14. THE CONTRACTOR SHALL UTILIZE CONSTRUCTION METHODS AND DEVICES SUCH AS TURBIDITY CURTAINS AND FLOATING SILT BARRIERS WHERE NECESSARY IN ORDER TO COMPLY WITH STATE AND LOCAL WATER QUALITY STANDARDS. COST OF SUCH METHODS OR DEVICES SHALL BE INCORPORATED IN THE COST OF THE PROJECT'S NPDES COMPLIANCE.
15. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION (FDOT STANDARD SPECIFICATIONS).
16. ALL PAVING AND RELATED WORK SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE STANDARDS OF PALM BEACH COUNTY, TOWN OF JUPITER AND FLORIDA DEPARTMENT OF TRANSPORTATION.
17. ALL EXCAVATED OR GRUBBED UNSUITABLE MATERIAL SUCH AS MUCK, MARL, AND DEBRIS, SHALL BE REMOVED FROM THE LIMITS OF CONSTRUCTION AND DISPOSED OF LEGALLY.
18. ADDITIONAL FILL MATERIAL FOR SUBBASE SHALL BE FREE OF MUCK, STUMPS, ROOTS, UNDERBRUSH, VEGETATIVE MATTER, GARBAGE, TRASH OR ANY MATERIAL THAT WILL NOT PROVIDE A SUITABLE STABLE, CLEAN SUBGRADE.
19. NO CONSTRUCTION SHALL COMMENCE UNTIL ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN SECURED, AND THE CONTRACTOR IS ISSUED A NOTICE TO PROCEED.
20. THE CONTRACTOR SHALL ARRANGE A PRE-CONSTRUCTION MEETING WITH THE COUNTY PRIOR TO ANY SITE WORK BEING PERFORMED. JOB SITE SUPERINTENDENT AND APPROPRIATE MANAGEMENT PERSONNEL SHALL BE IN ATTENDANCE.

PAVING & GRADING NOTES

1. ALL CONCRETE SURFACES SHALL BE 0" TO 1" ABOVE THE GRADE ADJACENT TO THE CONCRETE UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
2. ALL CONSTRUCTION SHALL BE VERIFIED IN THE FIELD AND ADJUSTED TO MINIMIZE IMPACTS TO SURROUNDING AREAS INCLUDING MINIMIZING CUT/FILL REQUIREMENTS TO THE MAXIMUM EXTENT POSSIBLE WHILE STILL PROVIDING AN ADA ACCESSIBLE TRAIL.
3. SUBBASE SHALL BE COMPACTED IN ACCORDANCE WITH THE FDOT STANDARD SPECIFICATIONS. IF UNABLE TO REACH COMPACTION REQUIREMENTS, SUBGRADE WILL NEED TO BE STABILIZED UNTIL REQUIREMENTS ARE MET.
4. SUBBASE SHALL BE FREE OF MUCK, STUMPS, ROOTS, UNDERBRUSH, VEGETATIVE MATTER, GARBAGE, TRASH OR ANY MATERIAL THAT WILL NOT PROVIDE A SUITABLE STABLE, CLEAN SUBGRADE.
5. ANY MUCK ENCOUNTERED ON THE SITE MUST BE COMPLETELY REMOVED TO 5 FEET OUTSIDE THE EDGE OF ANY PROPOSED PAVEMENT.
6. WHERE GUMBO OR OTHER PLASTIC CLAY IS ENCOUNTERED, IT SHALL BE REMOVED FROM WITHIN THE PROJECT SITE UP TO ONE FOOT BELOW THE COMPACTED SUBGRADE, EXTENDING HORIZONTALLY TO BEYOND THE EDGE OF PROPOSED PAVEMENT.
7. THE SEQUENCE OF CONSTRUCTION SHALL BE SUCH THAT ALL UNDERGROUND INSTALLATIONS OF ANY KIND, INCLUDING IRRIGATION AND ELECTRICAL CONDUITS THAT WILL REMAIN UNDER THE PROPOSED PAVEMENT OR WITHIN 10 FEET OF ITS EDGES SHALL BE INSTALLED PRIOR TO CONSTRUCTION OF THE BASE.
8. ALL SIDEWALK CONCRETE SHALL BE 6 INCHES THICK AND DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 4,000 P.S.I. AT 28 DAYS, UNLESS SPECIFIED OTHERWISE. ALL CEMENT SHALL BE TYPE I.
9. RE-GRADING FROM EXISTING TO PROPOSED ELEVATIONS SHALL INCLUDE A COMPACTED 1' WIDE FLAT AREA ADJACENT TO THE CONCRETE WALKWAY AND THEN GRADED DOWN TO EXISTING NO STEEPER THAN 4H:1V NOR FLATTER THAN 20H:1V, UNLESS OTHERWISE SPECIFIED.

UTILITIES NOTES:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN THE EXACT LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES' WHETHER SHOWN OR NOT, PRIOR TO CONSTRUCTION. NOTIFY ALL UTILITIES INVOLVED PRIOR TO CONSTRUCTION.
2. EXISTING UTILITIES, ROADWAY AND DRAINAGE FACILITIES ARE LOCATED AND IDENTIFIED BASED ON THE AVAILABLE INFORMATION. THE CONTRACTOR IS TO VERIFY, WHERE NECESSARY, FOR PROPOSED CONSTRUCTION. ALL COSTS ASSOCIATED WITH VERIFICATION, PROTECTION OF EXISTING SYSTEMS OR CONNECTION TO THOSE ITEMS AS CALLED FOR ON THE PLANS IS INCLUDED IN THE BASE BID.



Civil Design, Inc.
112 10th Street
West Palm Beach, FL 33411
T 561 659 5760
F 561 659 5772
www.civil-design.com
Cert. of Auth. No. 9664

PALM BEACH COUNTY
DEPARTMENT OF ENVIRONMENTAL
RESOURCES MANAGEMENT
2300 NORTH JOC ROAD, 4TH FLOOR
WEST PALM BEACH, FLORIDA 33411-2743
(561) 233-2400



Revised:	By:	Date:
No:		
Scale:	N/A	
Approved:	ERM	
Drawn:	DL	
Checked:	JT	
Date:	12/6/2013	
Field Book No:		

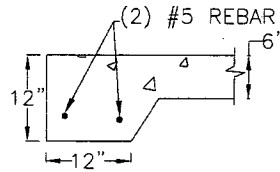
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Project:
WINDING WATERS
NATURAL AREA
PUBLIC USE FACILITIES

Sheet:

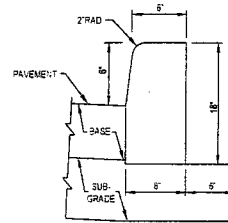
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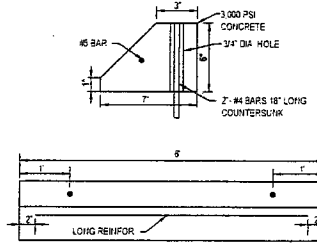


CONCRETE SIDEWALK THICKENED EDGE DETAIL
N.T.S.

FOR USE AT CONNECTION TO BOARDWALKS
COORDINATE w/STRUCTURAL DRAWINGS

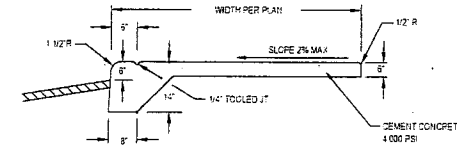


TYPE 'D' CURB
N.T.S.

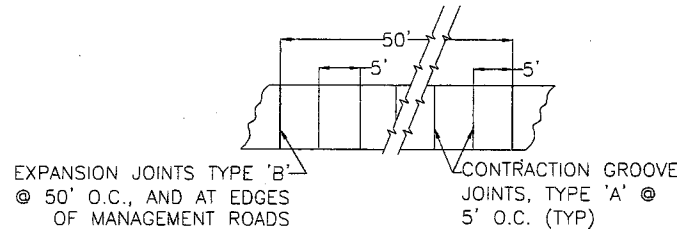


CONCRETE WHEEL STOP DETAIL
N.T.S.

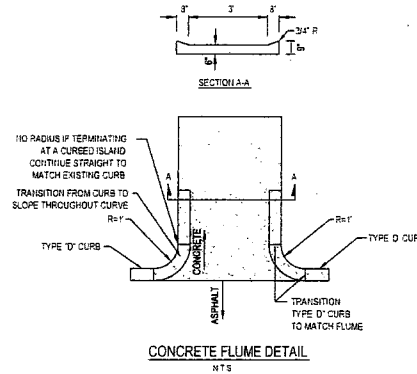
PAVING SPECIFICATIONS			
TYPE	WEARING SURFACE	BASE	SUBGRADE
ASPHALT PAVEMENT	1 3/4" THICK, TYPE S-III A.C.S.C. - TWO LIFTS (FIRST LIFT TO BE 3/4" AND 2ND LIFT TO BE 1")	8" THICK, BASEROCK COMPACTED IN TWO EQUAL LIFTS TO 98% MAXIMUM DRY DENSITY A.A.S.H.T.O. T-180 (LBR 100)	12" THICK, COMPACTED TO 98% MAXIMUM DRY DENSITY A.A.S.H.T.O. T-180
		EXTEND BASEROCK AT A MIN. 4" THICKNESS UNDER FLUMES AND 3' PAST EDGE OF UNCURBED PAVEMENT FOR STABILIZED SHOULDERS.	



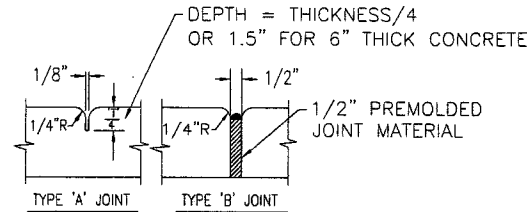
MONOLITHIC CURB AND SIDEWALK DETAIL
TO BE USED WHERE SIDEWALK ADJUTS PAVEMENT
UNLESS OTHERWISE NOTED ON PLANS
N.T.S.



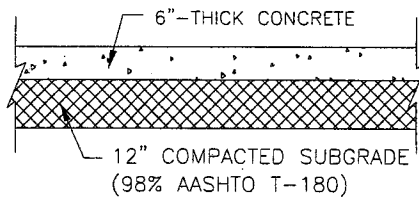
CONCRETE SIDEWALK DETAILS
N.T.S.



CONCRETE FLUME DETAIL
N.T.S.

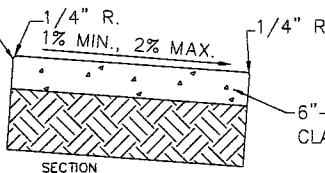


SIDEWALK JOINT DETAIL
N.T.S.



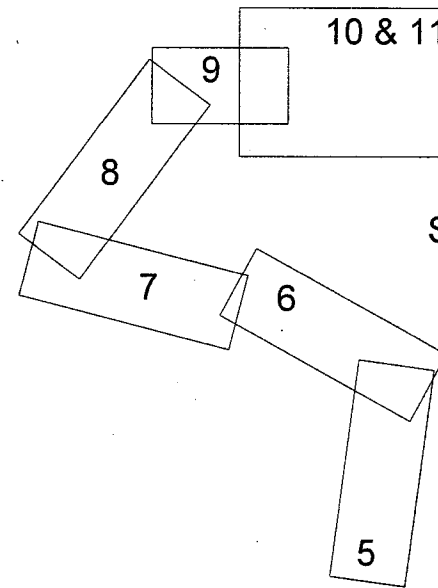
TYPICAL SIDEWALK SECTION
N.T.S.

TOP OF CONCRETE SURFACE
0" TO 1" (MAX.) ABOVE
EXISTING NATURAL GRADE



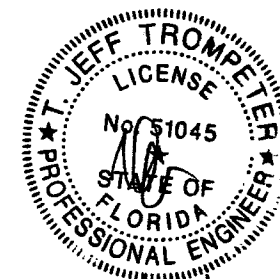
NOTE: BROOM FINISH
ALL CONC. SIDEWALK

FULLY-ACCESSIBLE SIDEWALK TRAIL DETAILS
N.T.S.



WINDING
WATERS
NATURAL
AREA

SHEET INDEX TO
PLANS &
PROFILES

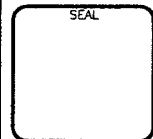


CIVIL DESIGN, INC.
312 9th Street
West Palm Beach, FL 33411
P: 561.659.1761
F: 561.659.3772
www.civil-design.com
Cert. of Auth. No. 0004

PALM BEACH COUNTY
DEPARTMENT OF ENVIRONMENTAL
RESOURCES MANAGEMENT
2300 NORTH JOG ROAD, 4TH FLOOR
WEST PALM BEACH, FLORIDA 33411-2743
(561) 233-2400



Date: _____
By: _____
Revision: _____
No: _____
Scale: N/A
Approved: ERM
Drawn: DL
Checked: JT
Date: 12/6/2013
Field Book No: _____



Project: WINDING WATERS
NATURAL AREA
PUBLIC USE FACILITIES

Sheet: 3
OF 31

ELEVATED BOARDWALK;
TIE-IN AT EAST END
ELEV = 15.0; WEST
END ELEV = 16.75
REFER TO STRUCTURAL
PLANS FOR ADDITIONAL
INFORMATION.

PARKING LOT, KIOSK, ETC. REFER TO
SHEETS 9 & 10 FOR ADDITIONAL PLAN
INFORMATION. REFER TO DETAILS &
STRUCTURAL SHEETS FOR ADDITIONAL
INFORMATION.

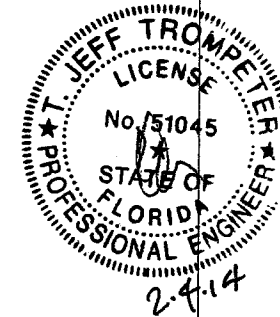
ADA CONCRETE
TRAIL; REFER TO
PLANS, PROFILES, &
DETAILS

WINDING WATERS NATURAL AREA

ELEVATED
BOARDWALK &
OBSERVATION
PLATFORM; REFER TO
STRUCTURAL PLANS

ELEVATED BOARDWALK & OBSERVATION PLATFORM

1. TRANSITION SOUTHERN DIRT TRAIL TO TIE-IN TO BOARDWALK SOUTH TERMINUS @ ELEVATION 15.5.
 - 1.1. DIRT TRAIL TO BE NO STEEPER THAN 12H:1V LONGITUDINALLY
 - 1.2. TRANSITION DIRT TRAIL SIDE SLOPES AT 4H:1V MAX. DOWN TO MATCH EXIST. CONDITIONS.
2. USE EXISTING MATERIAL EXCAVATED FROM SITE FOR EMBANKMENT. COORDINATE WITH PBC.
3. CONCRETE TRAIL TO TIE-IN TO BOARDWALK NORTH TERMINUS @ ELEVATION 16.0.
4. REFER TO STRUCTURAL PLANS FOR ADDITIONAL INFORMATION.



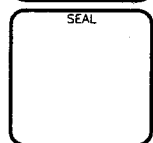
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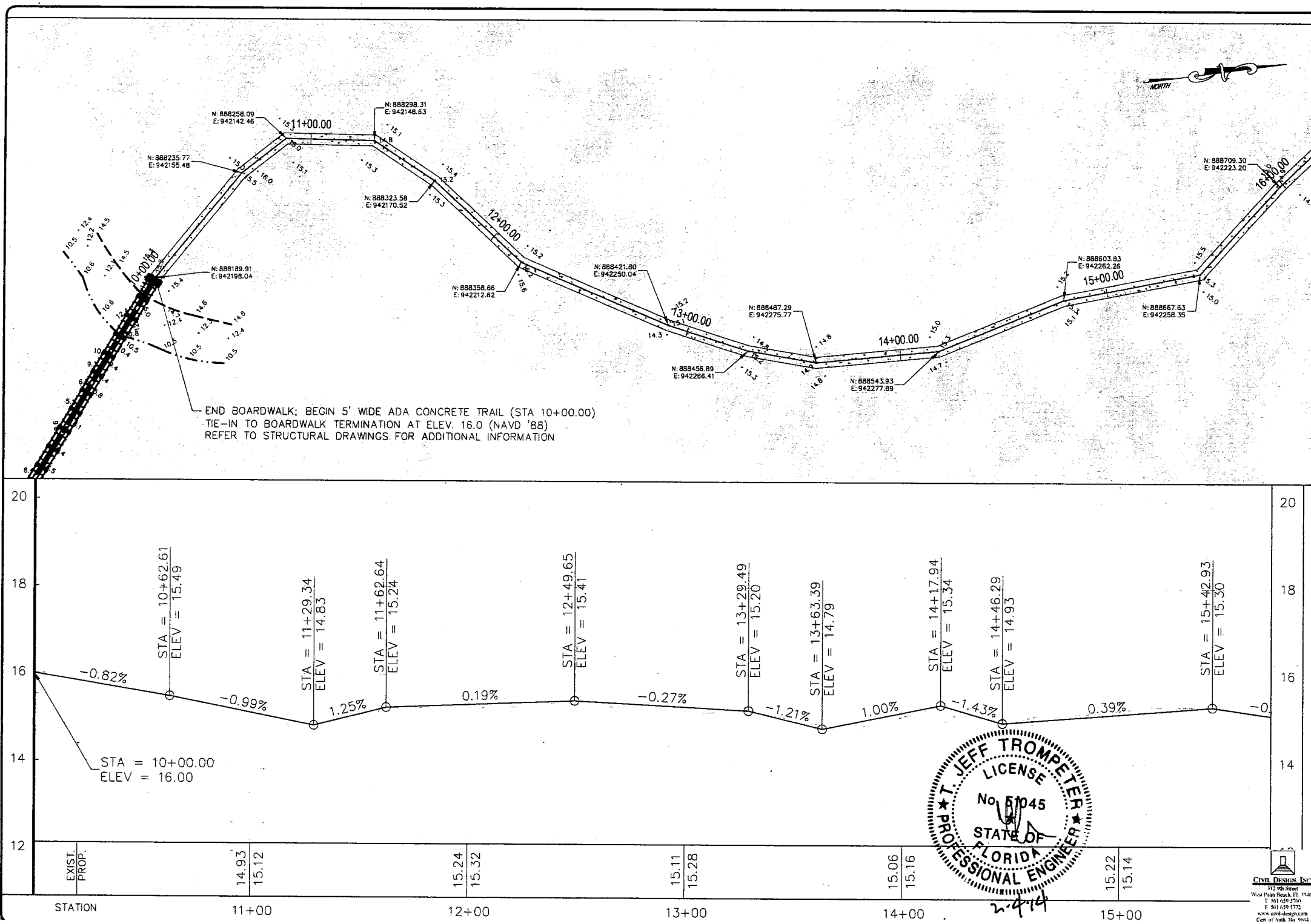


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Project:
**WINDING WATERS
NATURAL AREA**
PUBLIC USE FACILITIES

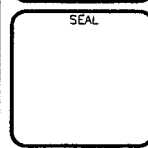
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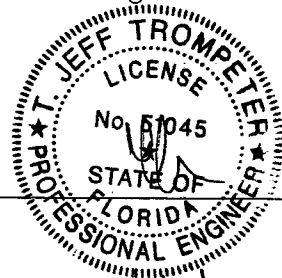


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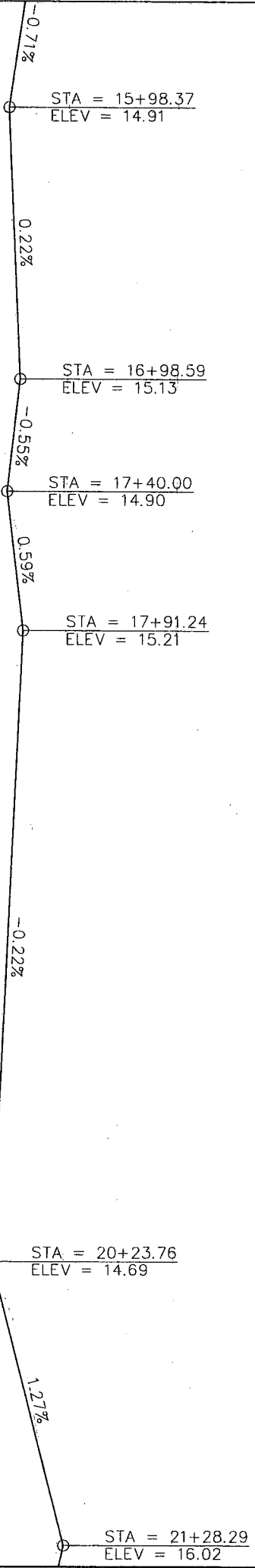
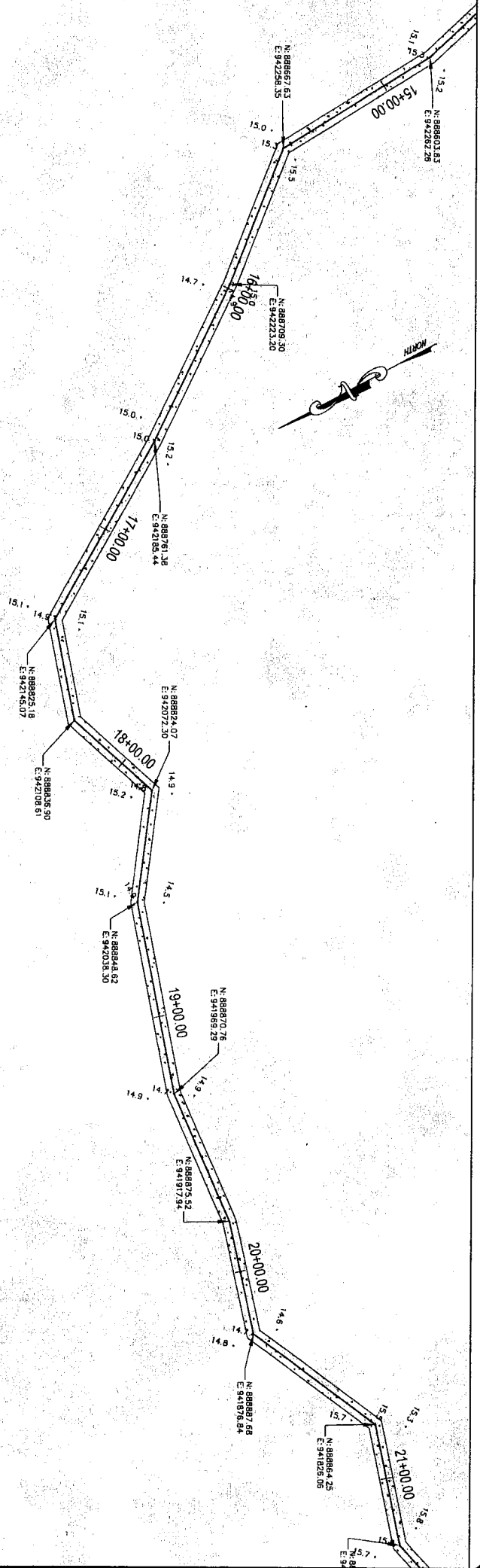


Project:
**WINDING WATERS
NATURAL AREA**
PUBLIC USE FACILITIES

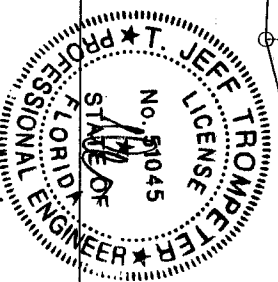
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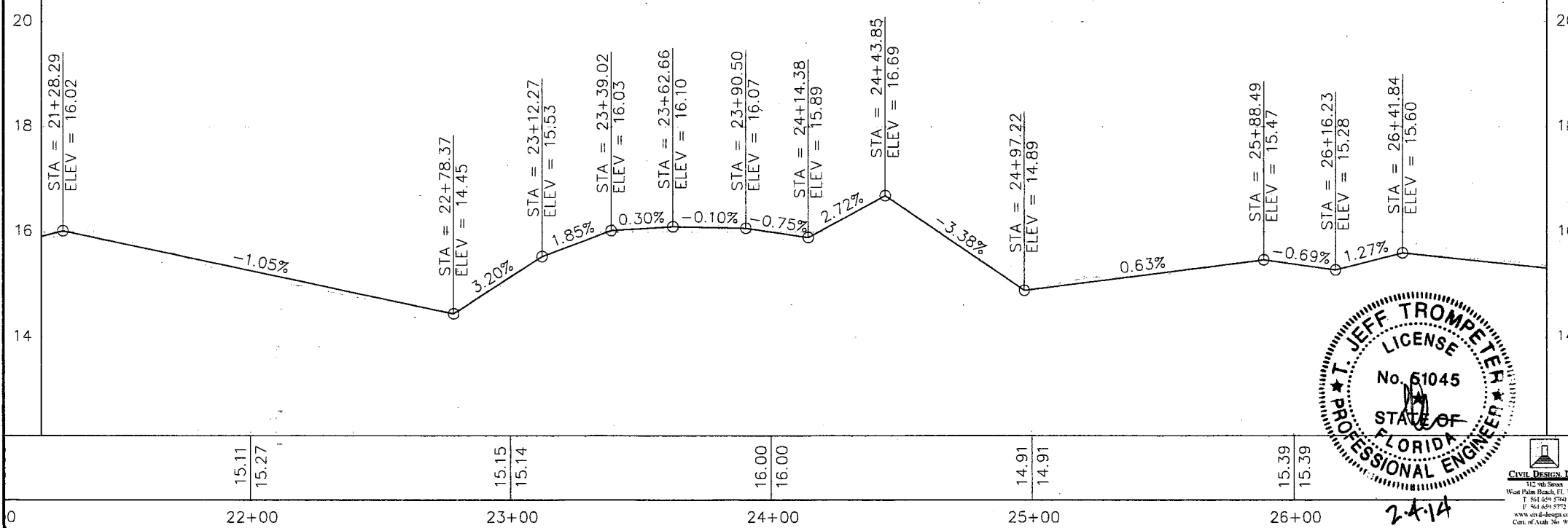
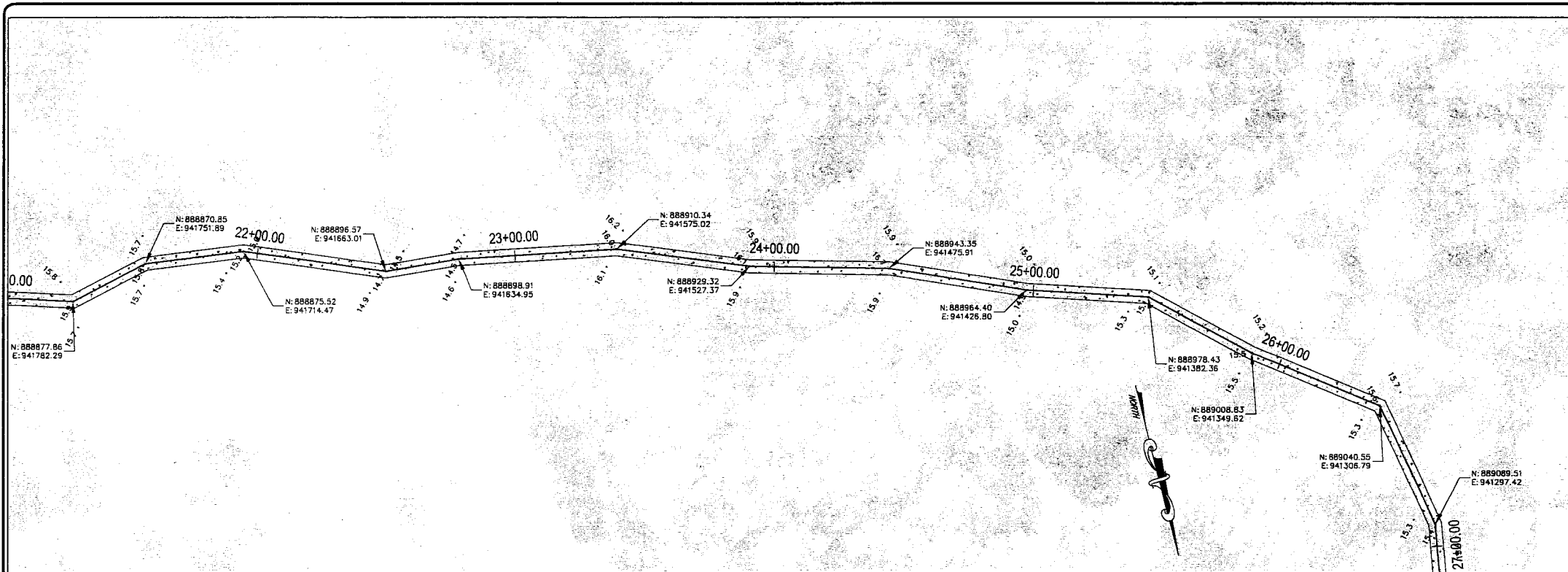


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16+00	14.91	14.91
17+00	15.12	15.13
18+00	15.20	15.19
19+00	14.79	14.97
20+00	14.73	14.75
21+00	15.66	15.66

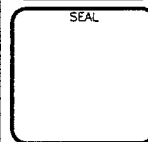




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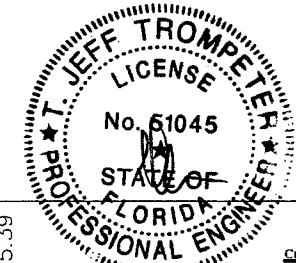


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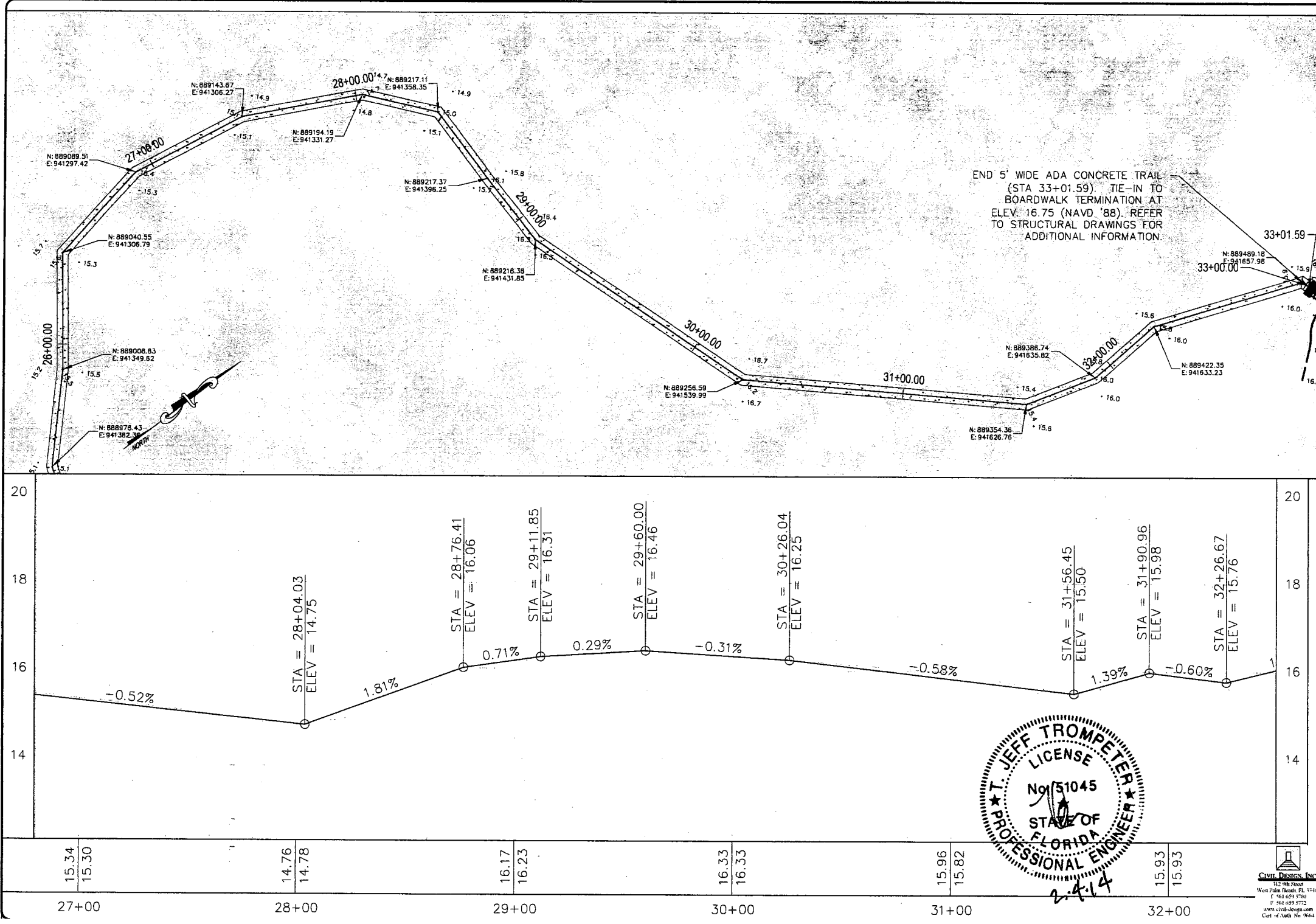


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Sheet:

8

of 31

Scale:

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12/6/2013

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By:

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LICENSE
No. 51045
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PROFESSIONAL ENGINEER

15.34
15.30
14.76
14.78
16.17
16.23
16.33
16.33
15.96
15.82
15.93
15.93

27+00
28+00
29+00
30+00
31+00
32+00

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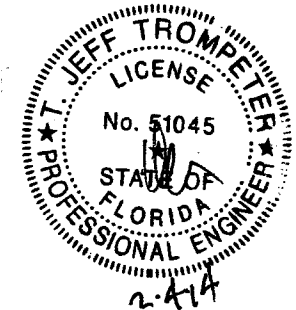
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NATURAL AREA
PUBLIC USE FACILITIES

Sheet: 9

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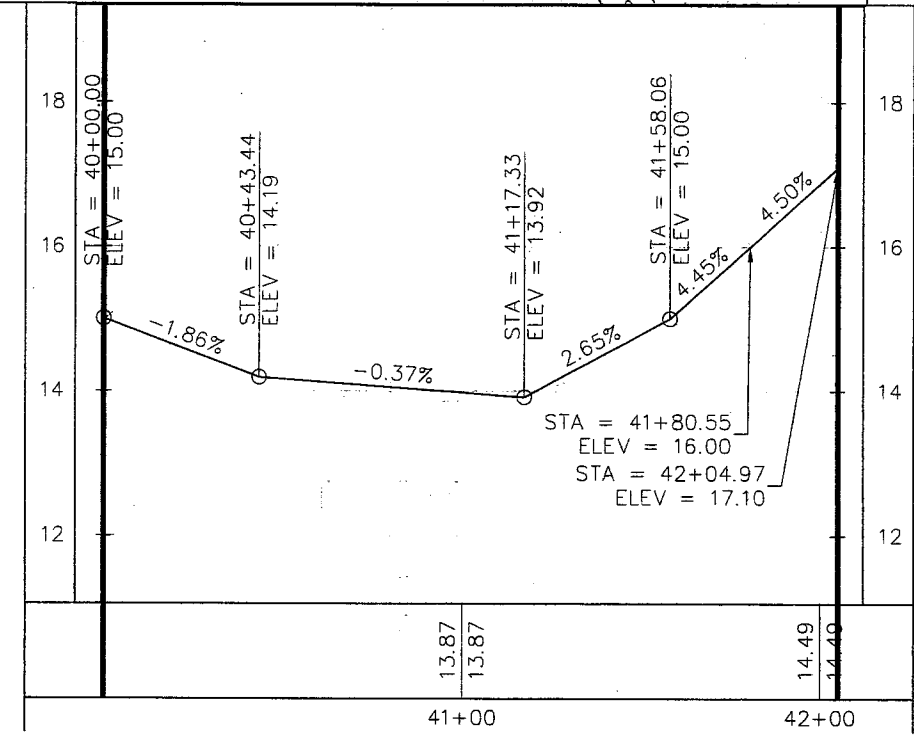
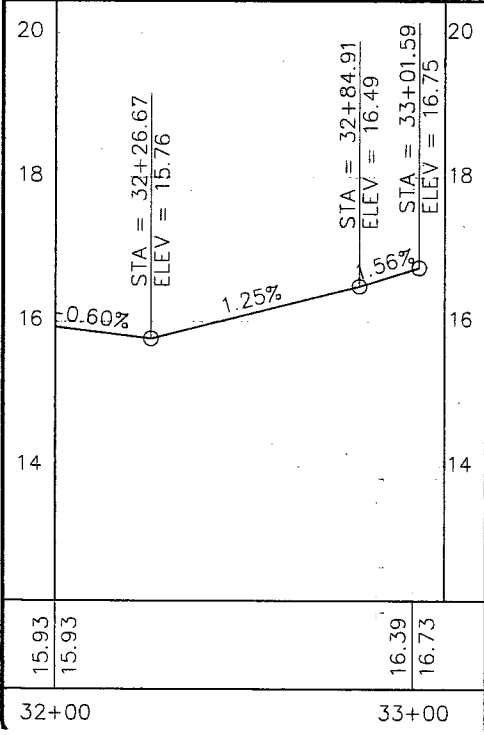
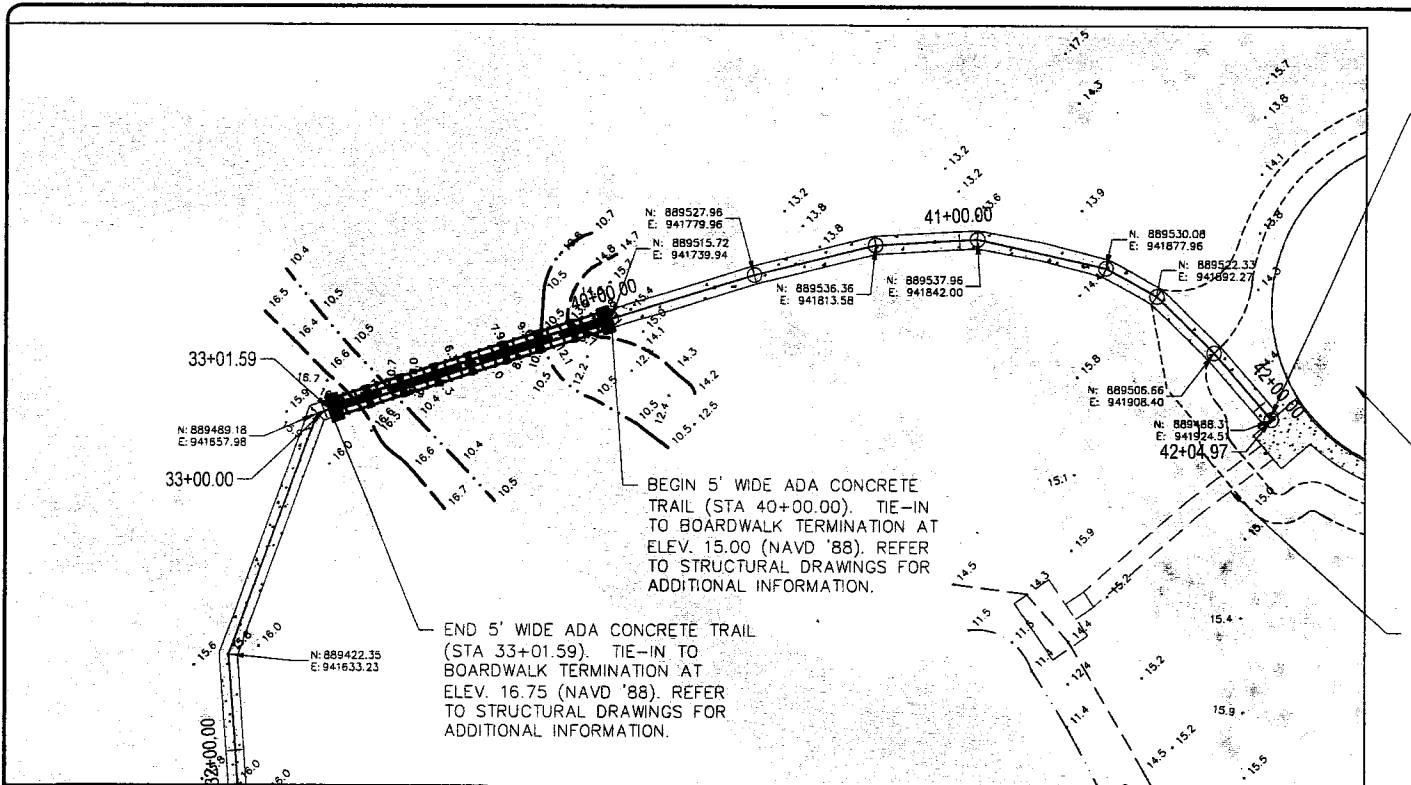
END 5' WIDE ADA CONCRETE TRAIL (STA 42+04.97). TIE-IN TO PARKING LOT PORTION OF PROJECT AT ELEV. 17.10 (NAVD '88). REFER TO PLAN SHEETS 10 AND 11 FOR ADDITIONAL INFORMATION.

REFER TO SHEET 10 FOR PARKING LOT & ADDITIONAL PATHWAY GRADING

FUTURE PATH TO CANOE LAUNCH

BEGIN 5' WIDE ADA CONCRETE TRAIL (STA 40+00.00). TIE-IN TO BOARDWALK TERMINATION AT ELEV. 15.00 (NAVD '88). REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.

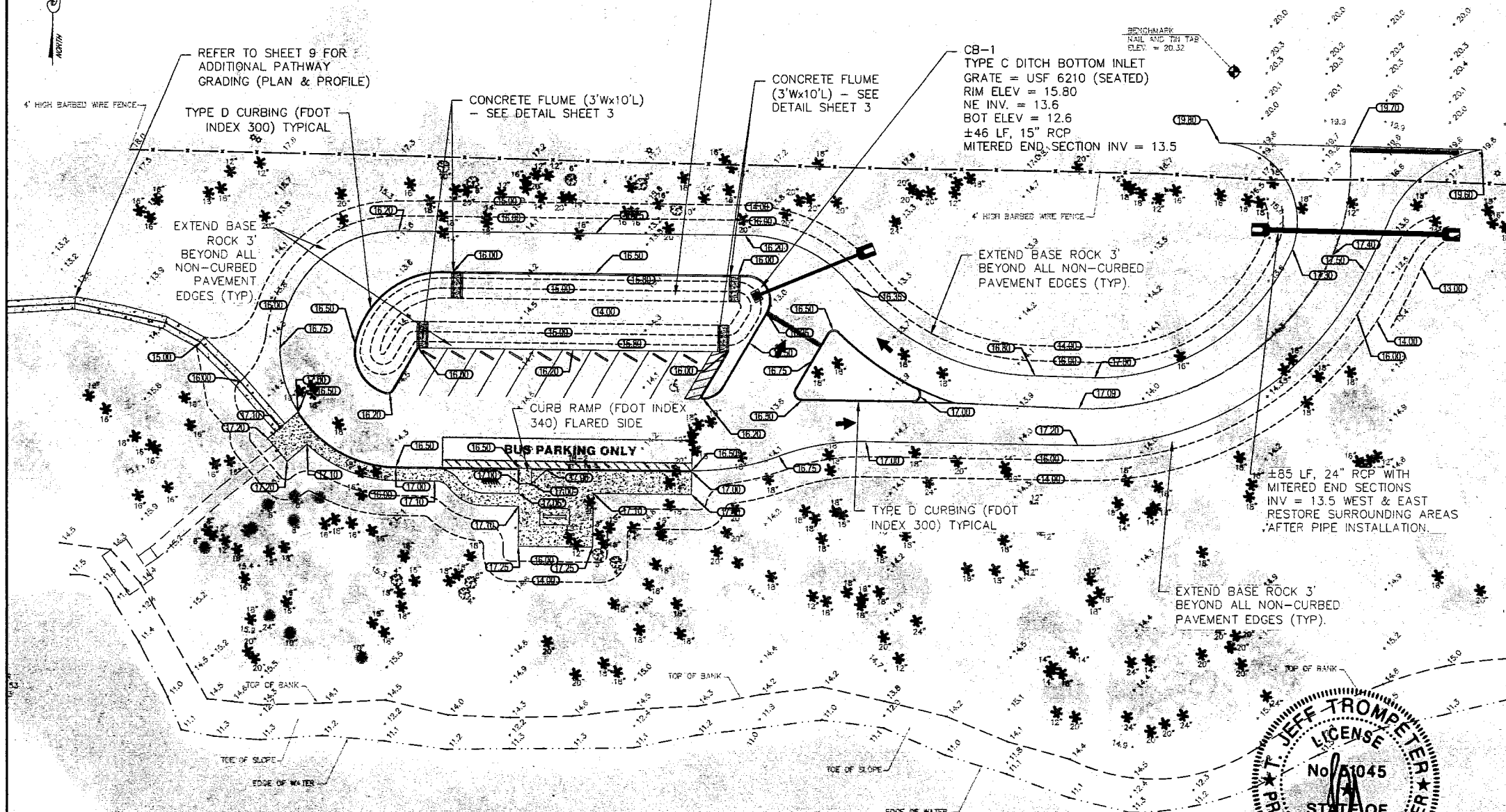
END 5' WIDE ADA CONCRETE TRAIL (STA 33+01.59). TIE-IN TO BOARDWALK TERMINATION AT ELEV. 16.75 (NAVD '88). REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.



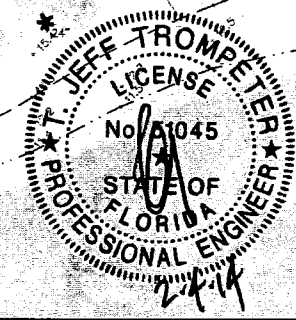


WATER QUALITY (WQ) CALCS:
IMPERVIOUS AREA = ±22,840 SF (ASPHALT)
PROVIDE 2.5" OVER AREA FOR WQ
REQ'D WQ = 2.5" x 1'12" x 22,840 SF = 4,758 CF

VOLUME = AVG AREA x DEPTH
AREA @ TOB (15.8) = 4,000 SF
AREA @ TOE (14.0) = 1,300 SF
VOL = (4,000 SF + 1,300 SF)/2 x 1.8' DEPTH
VOL PROVIDED = 4,770 CF > 4,758 CF REQ'D

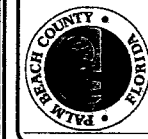


EXIST. LAKE - CWE = 13.0 NAVD '88



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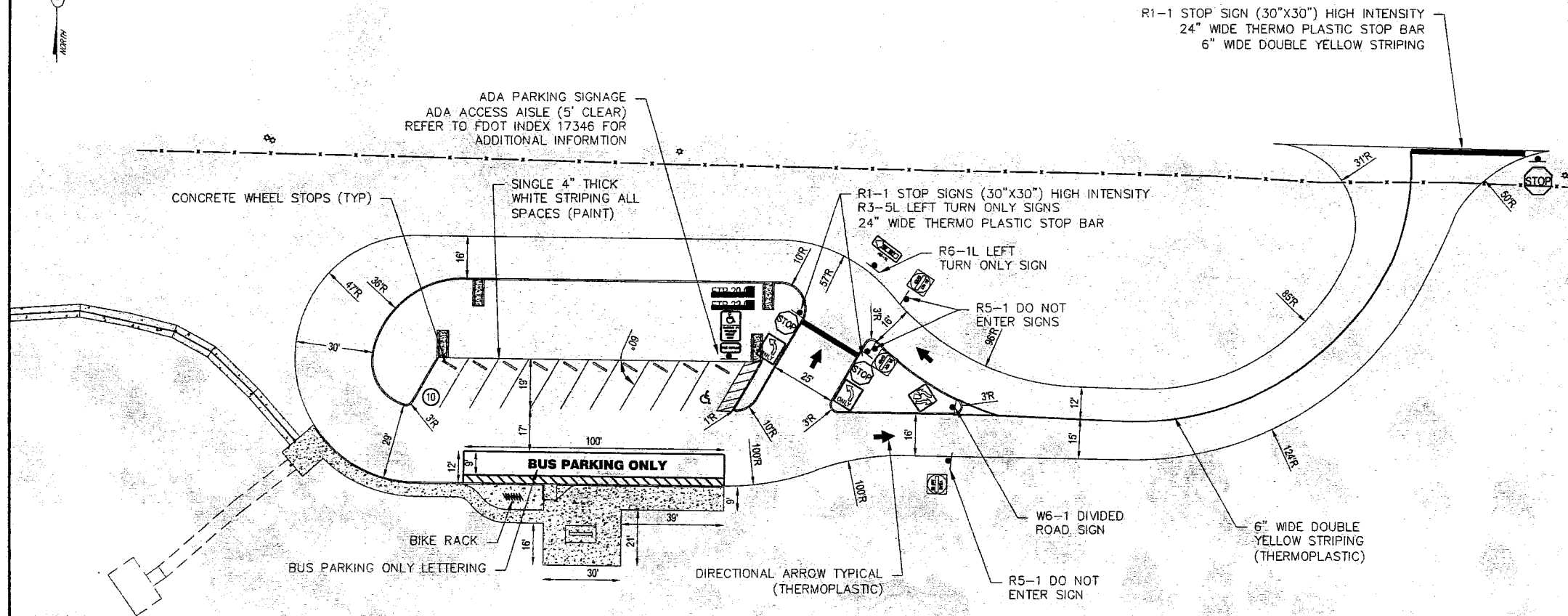


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Project:
WINDING WATERS
NATURAL AREA
PUBLIC USE FACILITIES

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R1-1 STOP SIGN (30"x30") HIGH INTENSITY
24" WIDE THERMO PLASTIC STOP BAR
6" WIDE DOUBLE YELLOW STRIPING

R1-1 STOP SIGNS (30"x30") HIGH INTENSITY
R3-5L LEFT TURN ONLY SIGNS
24" WIDE THERMO PLASTIC STOP BAR

R6-1L LEFT
TURN ONLY SIGN

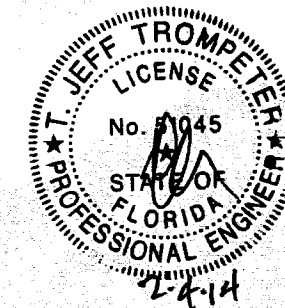
R5-1 DO NOT
ENTER SIGNS

W6-1 DIVIDED
ROAD SIGN

R5-1 DO NOT
ENTER SIGN

6" WIDE DOUBLE
YELLOW STRIPING
(THERMOPLASTIC)

DIRECTIONAL ARROW TYPICAL
(THERMOPLASTIC)

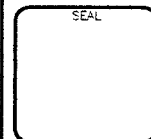


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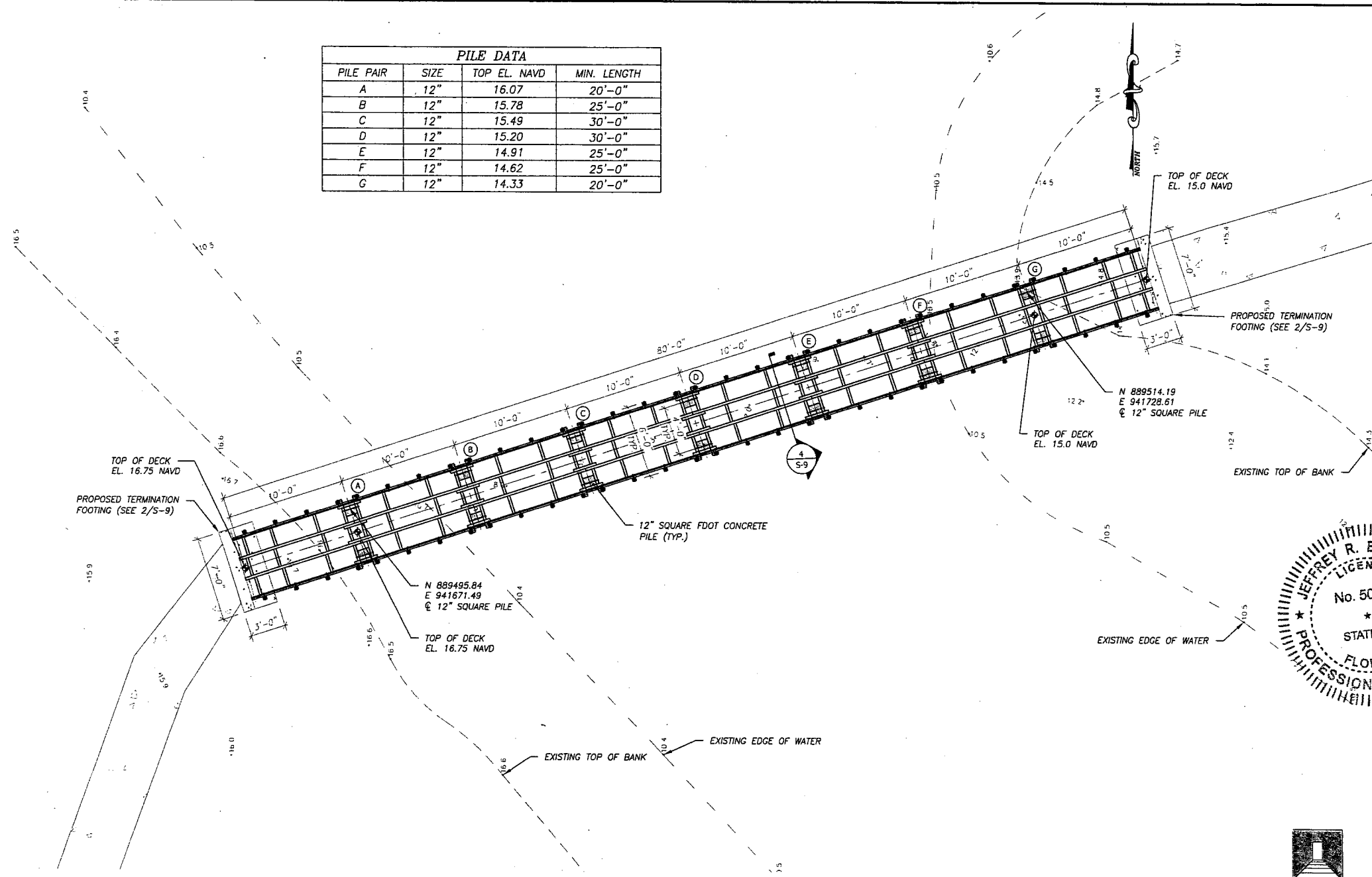
Project:
WINDING WATERS
NATURAL AREA
PUBLIC USE FACILITIES

Sheet:	11
OF 31	

DATE Dec 26, 2013 - 11:13am S:\2013-Jobs\15 569 Winding Waters natural Area\07 Structural Dwg\1-CADD\S-2 General Notes and Specifications.dwg

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OF 31

PILE DATA			
PILE PAIR	SIZE	TOP EL. NAVD	MIN. LENGTH
A	12"	16.07	20'-0"
B	12"	15.78	25'-0"
C	12"	15.49	30'-0"
D	12"	15.20	30'-0"
E	12"	14.91	25'-0"
F	12"	14.62	25'-0"
G	12"	14.33	20'-0"



1 ENLARGED PLAN VIEW - NORTH BOARDWALK
S-5
GRAPHIC SCALE IN FEET
6 FT WIDTH

NOTE:
ELEVATIONS SHOWN HEREON ARE NAVD '88 U.N.O.

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BY: _____
REVISION: _____
NO: _____
SCALE: _____
APPROVED: _____
DRAWN: _____
CHECKED: _____
DATE: 10/11/2011

JEFFREY R. BEYER
LICENSED PROFESSIONAL ENGINEER
No. 50159
STATE OF FLORIDA
WINDING WATER'S NATURAL AREA
PUBLIC USE FACILITIES

Project: WINDING WATER'S NATURAL AREA
Sheet: S-5
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13-569



PILE PAIR	SIZE	TOP EL. NAVD	MIN. LENGTH
H	12"	16.06	25'-0"
J	12"	16.06	30'-0"
K	12"	16.81	30'-0"
L	12"	17.56	30'-0"
M	12"	18.31	35'-0"
N	12"	18.31	35'-0"
O	12"	17.56	35'-0"
P	12"	16.81	30'-0"

NOTE:
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1 ENLARGED PLAN VIEW - SOUTH BOARDWALK
S-6 2 0 4 6 FT WIDTH
GRAPHIC SCALE IN FEET



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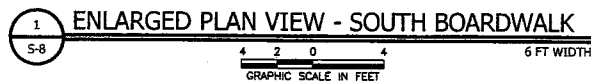
Project **WINDING WATERS
NATURAL AREA**
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Sheet
S-6
OF 31

DATE: Dec 26, 2013 - 11:44am S:\2013-John\13-569 Winding Waters natural Area\07 Structural Design\CAD\13-569 South Boardwalk.dwg

PILE DATA			
PILE PAIR	SIZE	TOP EL. NAVD	MIN. LENGTH
X	SEE SHEET S-7		
BB	12"	17.56	30'-0"
CC	12"	16.81	30'-0"
DD	12"	16.06	30'-0"
EE	12"	16.06	30'-0"
FF	12"	15.31	30'-0"
GG	12"	14.81	30'-0"
HH	12"	14.81	25'-0"

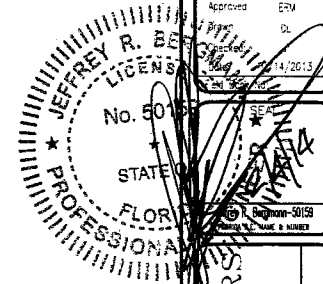
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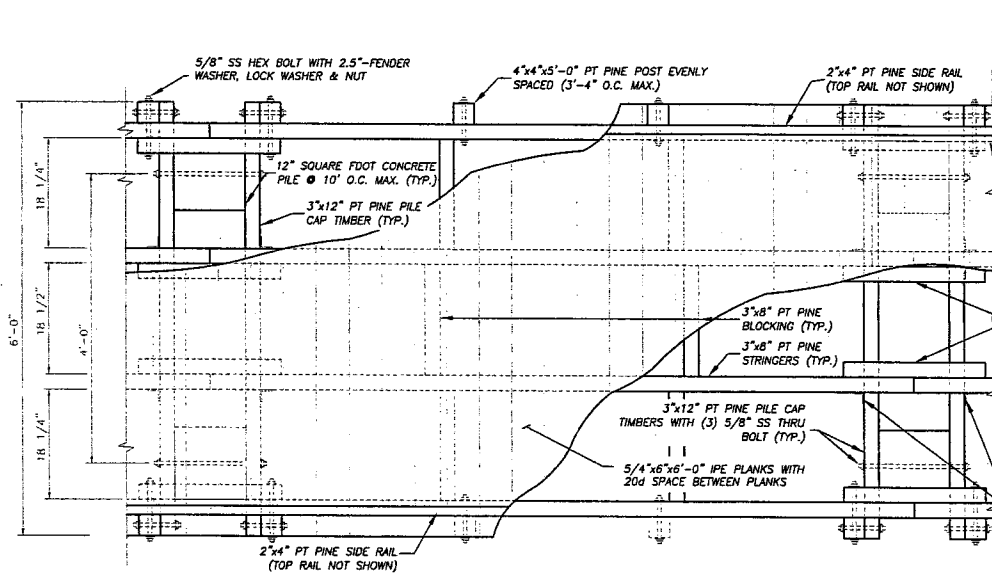


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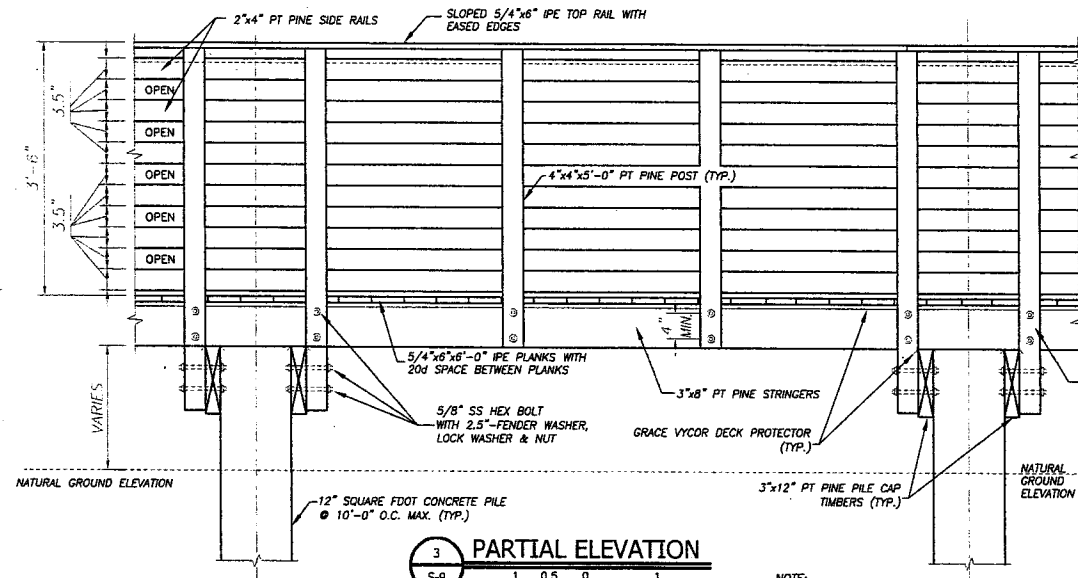
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REVISION	
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DRAWN	DL

WINDING WATERS
NATURAL AREA
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1 PARTIAL PLAN VIEW
S-9
GRAPHIC SCALE IN FEET

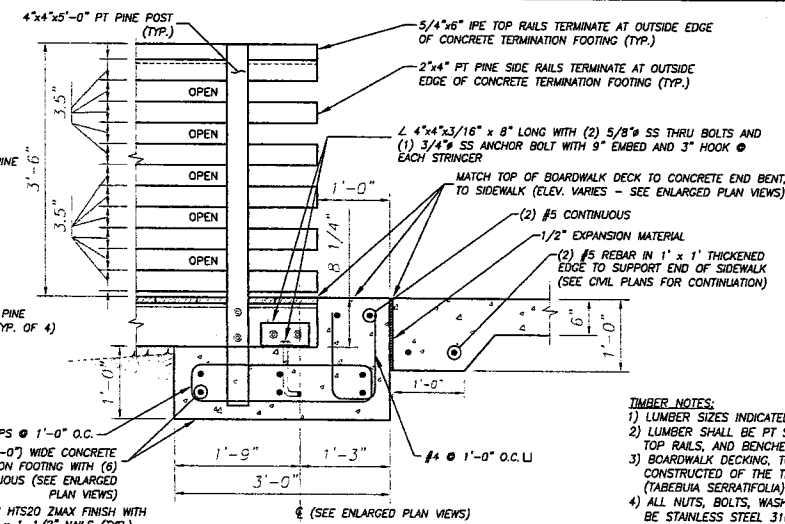


3 PARTIAL ELEVATION
S-9
GRAPHIC SCALE IN FEET

NOTE:
1. BOARDWALK SHALL BE FIELD PLACED TO MINIMIZE NEGATIVE IMPACTS TO NATIVE VEGETATION.
2. BOARDWALK DECK SHALL NOT EXCEED 5% GRADE (20H:1V).

PILING NOTES:

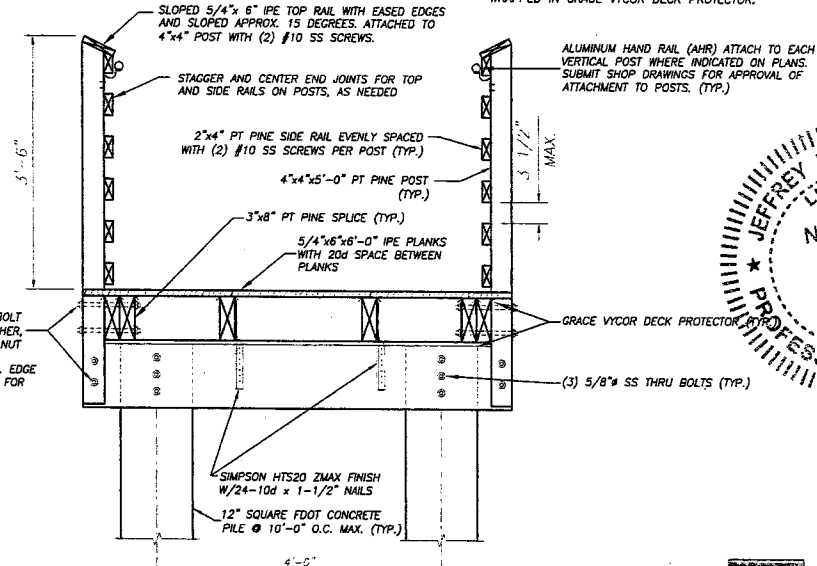
1. ALL PILES SHALL BE DRIVEN TO A MINIMUM EMBEDMENT OF 15'-0" BELOW THE MUDLINE/GRADE.
2. MAXIMUM PILE SPACING SHALL BE 10'-0" O.C.
3. PILES SHALL HAVE A 5 TON SERVICE LOAD, MINIMUM.
4. PILES SHALL BE 12" SQUARE FOOT PRESTRESSED CONCRETE PER FDOT INDEX 20612.



2 BOARDWALK TERMINATION DETAIL
S-9
GRAPHIC SCALE IN FEET

TIMBER NOTES:

- 1) LUMBER SIZES INDICATED ARE NOMINAL.
- 2) LUMBER SHALL BE PT SYP GRADE 1, EXCEPT FOR DECKING, TOP RAILS, AND BENCHES, WHICH SHALL BE IPE.
- 3) BOARDWALK DECKING, TOP RAILS, AND BENCHES SHALL BE CONSTRUCTED OF THE TROPICAL HARDWOOD IPE AMARELO (TABERUA SERRATIFOLIA).
- 4) ALL NUTS, BOLTS, WASHERS AND FRAMING HARDWARE SHALL BE STAINLESS STEEL 316 (U.N.O.).
- 5) IPE FASTENERS SHALL BE #8x3" STAINLESS STEEL 316 WOODPECKER TRIM HEAD FINISH SCREWS BY SWAN SECURE OR EQUAL APPROVED BY COUNTY. TWO SCREWS ARE REQUIRED PER STRINGER LOCATION. DECKING SHALL BE PRE-DRILLED FOR A FLUSH SCREW SET. STAINLESS STEEL DECK SCREWS SHALL BE ALIGNED WITH CHALK SNAP LINE (0.203").
- 6) CONTRACTOR SHALL SPACE IPE DECKING WITH 20d NAIL (0.203").
- 7) 1-3/8" MIN., 1-5/8" MAX. EDGE TO BOLT HOLE CLEARANCE FOR PT 3"x8" PINE STRINGER.
- 8) STRINGERS, BLOCKING AND PILE CAP TIMBERS TO BE WRAPPED IN GRACE VYCOR DECK PROTECTOR.



4 BOARDWALK CROSS-SECTION
S-9
GRAPHIC SCALE IN FEET

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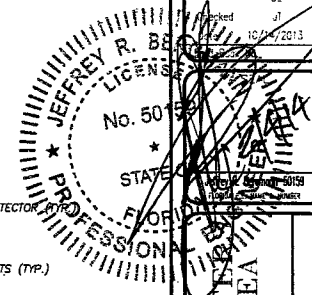
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Rev	Description	By	Date
1	Issue for Review	JR	10/15/2013
2	Issue for Review	JR	10/15/2013
3	Issue for Review	JR	10/15/2013
4	Issue for Review	JR	10/15/2013
5	Issue for Review	JR	10/15/2013
6	Issue for Review	JR	10/15/2013
7	Issue for Review	JR	10/15/2013
8	Issue for Review	JR	10/15/2013
9	Issue for Review	JR	10/15/2013
10	Issue for Review	JR	10/15/2013

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Checked: JI
10/15/2013



WINDING WATER
NATURAL AREA
PUBLIC USE FACILITIES

Sheet
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OF 31

DATE: Feb 04, 2014 2:12pm S:\2013\wbs\11-369 Buiding Rules natural Area\01 Structural Drgs\CD01\5-10 Enlarged Plan View - Observation Deck.dwg

14" SQUARE FOOT CONCRETE PILE (TYP.)

3"x10" PT PINE STRINGERS (TYP.)

TOP OF DECK
EL. 16.75 NAVD

PROPOSED BOARDWALK
(SEE SHEET S-7)

PROPOSED BENCHES
(SEE 7/S-11)

L 4"x6"x1/2" x 8" LONG SS ANGLE (TYP.)

4"x4"x4'-8" PT PINE POST WITH 5/8" BOLTS
(SEE 7/S-11 - TYP.)

N 888137.20
E 942309.93
@ 14" SQUARE PILE

3"x8" PT PINE
BLOCKING (TYP.)

LOWER HANDRAIL TO 2'-10" ABOVE
DECK (TYP. THREE LOCATIONS)

3"x12" PT PINE PILE CAP TIMBERS WITH (4)
1" SS THRU BOLT AT EACH PILE (TYP.)

2"x10" PT PINE
FASCIA (TYP.)
N 888129.37
E 942303.71
@ 14" SQUARE PILE

L 4"x6"x1/2" x 8" LONG SS ANGLE WITH (2) 5/8" SS HEX
BOLTS AND WASHERS (TYP.). PROVIDE AT ALL INTERFACE MEMBERS
BETWEEN BOARDWALK/BOARDWALK AND BOARDWALK/OBSERVATION
DECK.

NOTE:
DECKING NOT SHOWN FOR CLARITY.

PILE DATA

PILE PAIR	SIZE	TOP EL. NAVD	MIN. LENGTH
OB1	14"	25.25	40'-0"
OB2	14"	25.25	40'-0"

1 ENLARGED PLAN VIEW - OBSERVATION DECK

GRAPHIC SCALE IN FEET

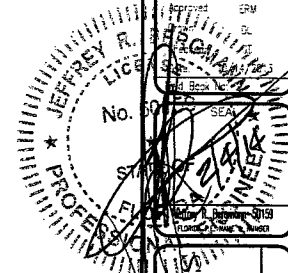
NOTE:
ELEVATIONS SHOWN HEREON ARE NAVD '88 U.N.O.

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1402 Royal Palm Beach Blvd., Suite 204, Royal Palm Beach, FL 33411
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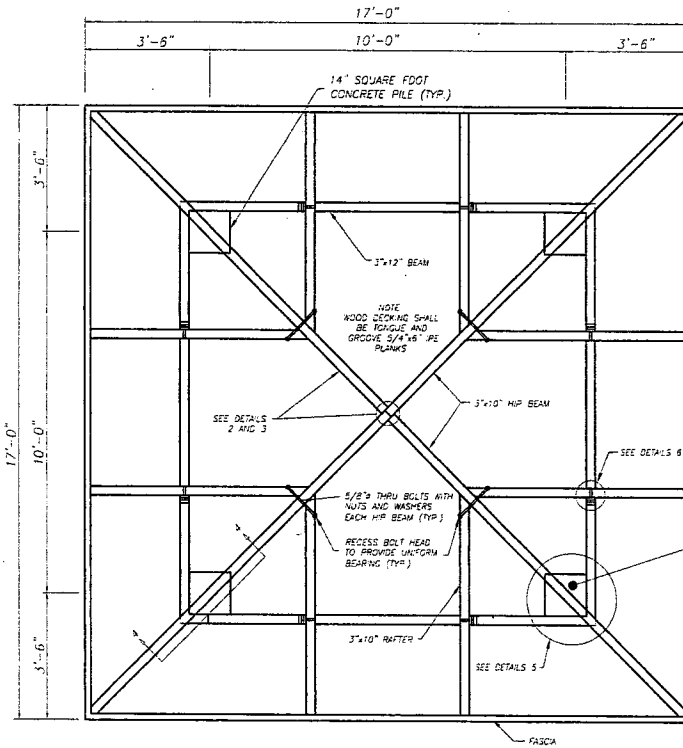
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DEPARTMENT OF ENVIRONMENTAL
RESOURCES MANAGEMENT
2800 NORTH JOE ROAD, 4TH FLOOR
WEST PALM BEACH, FLORIDA 33411-2743
(561) 233-2400



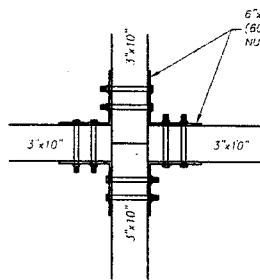
WINDING WATERS
NATURAL AREA
PUBLIC USE FACILITIES

S-10

DATE: Dec 26, 2013 - 8:29am 5:1011-Jobs11-568 Windward Waters Natural Area DP Structural Drawings (DWG) S-11 Proposed Observation Deck Details.dwg

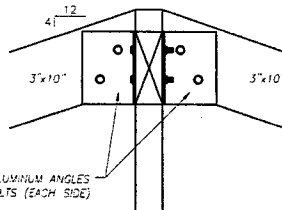


1 ROOF FRAMING PLAN
SCALE 1/2" = 1'-0" (SHEET 22x15)
SCALE 1/4" = 1'-0" (SHEET 11x17)



2 PLAN DETAIL AT RIDGE
SCALE 1/2" = 1'-0"

6"x6"x3/8" LONG ALUMINUM ANGLES (6061-T6) WITH (2) 5/8" THRU BOLTS WITH NUTS AND WASHERS (EACH SIDE)



3 ELEVATION DETAIL AT RIDGE
SCALE 1-1/2" = 1'-0" (SHEET 22x15)
SCALE 3/4" = 1'-0" (SHEET 11x17)

NOTES:

- ALL NUTS, BOLTS, AND WASHERS SHALL BE STAINLESS STEEL TYPE 316 (SS) UNLESS NOTED OTHERWISE.
- LUMBER SIZES INDICATED ARE NOMINAL.
- LUMBER SHALL BE 0.4 PRESSURE TREATED (PT) SOUTHERN YELLOW PINE (SYP) EXCEPT FOR STRUCTURAL LUMBER WHICH SHALL BE 0.6 PT SYP AND EXCEPT FOR IPE DECKING AND TOP RAIL, WHICH SHALL NOT BE TREATED.
- BOARDWALK DECKING, TOP RAILS AND BENCH TOPS SHALL BE CONSTRUCTED OF THE TROPICAL HARDWOOD IPE AMARELO (TABEQUIA SERRATIFOLIA).
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.

8'-6" ABOVE DECK TOP OF PILE

5/4" x 6" IPE TOP RAIL WITH EASED EDGES AND SLOPED APPROX 15 DEGREES

4"x4"x5'-0" PT PINE POST (TYP)

5/4"x6" TONGUE AND GROOVE IPE PLANKS

5/8" x 6" HEX BOLTS WITH WASHER AND NUT (TYP)

(4) 1" x 5" SS HEX BOLTS WITH WASHER AND NUT

PT 3"x12" PT PINE

ALUMINUM STANDING SEAM METAL ROOFING ON "ICE & WATERSHIELD" MEMBRANE WATERPROOFING ON PT SYP 2"x6" TONGUE AND GROOVE WOOD DECKING WITH (2) SS #12 SCREWS @ EACH 3"x (TYP)

WELD 1/4" PLATE EACH SIDE OF 3x10 PT TO 5/4"x1/4" FULL LENGTH ALL SIDES WITH 3/16" FILLET (TYP)

(2) 1" x 5" SS THRU BOLTS

3"x10" HIP BEAM

ALUMINUM DRIP EDGE ON 1"x3" PT WALKER

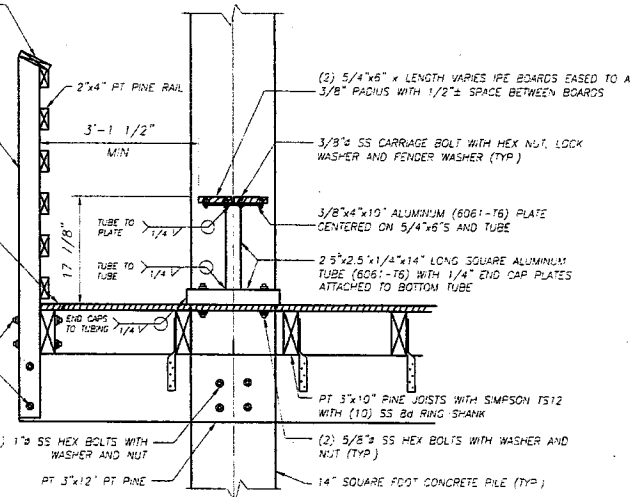
2"x10" PT FASCIA

(2) 1" x 5" SS BOLT

3"x12" BEAM WITH MITERED END

4'-1 1/2"

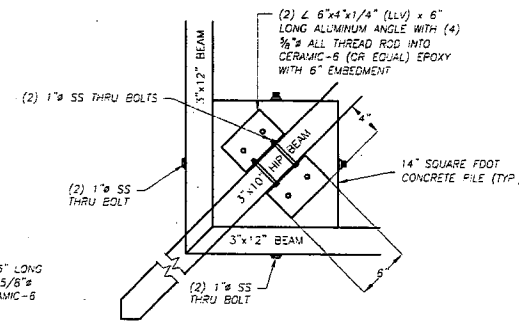
4 ELEVATION DETAIL AT EAVE
SCALE 1" = 1'-0" (SHEET 22x15)
SCALE 1/2" = 1'-0" (SHEET 11x17)



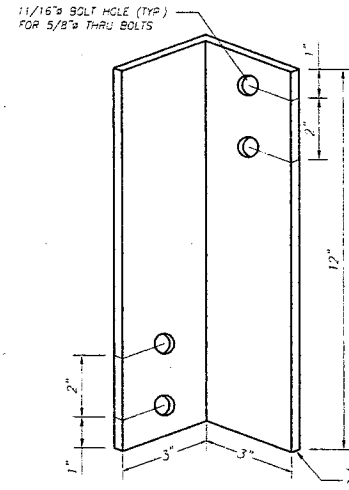
7 BENCH DETAIL OBSERVATION PLATFORM
SCALE 1/2" = 1'-0"

PILING NOTES:

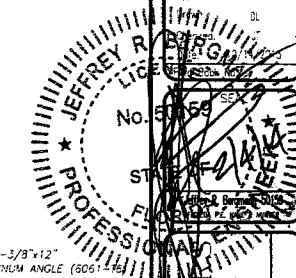
- ALL PILES SHALL BE DRIVEN TO A MINIMUM EMBEDMENT OF 15'-0" BELOW THE MUDLINE/GRADE.
- MAXIMUM PILE SPACING SHALL BE 10'-0" O.C.
- PILES SHALL HAVE A 10 TON SERVICE LOAD, MINIMUM.
- PILES SHALL BE 14" SQUARE FOOT PRESTRESSED CONCRETE PER FOOT INDEX 20614.



5 PLAN DETAIL AT COLUMN
SCALE 1-1/2" = 1'-0" (SHEET 22x15)
SCALE 3/4" = 1'-0" (SHEET 11x17)



6 SHADE SHELTER RAFTER BRACKET DETAIL
SCALE 1/2" = 1'-0"



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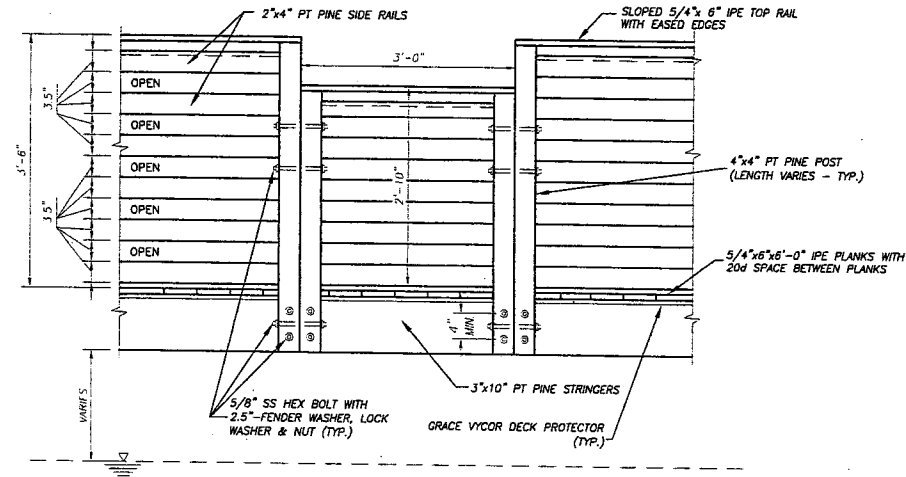
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Rev	Description	Date
1	Issue for Review	12/26/13
2	Issue for Construction	01/15/14

WINDWARD WATERS
NATURAL AREA
PUBLIC USE FACILITIES

Sheet
S-11
OF 31

DATE: Dec 26, 2015 - 4:22pm S:\2015-Jobs\15-569 Windway Walkers Natural Area\107 Structural Drawings\15-569 Windway Observation Deck Detailing.dwg



1 PARTIAL ELEVATION
S-11A
GRAPHIC SCALE IN FEET
1 0.5 0 1

NOTES:

1. ALL NUTS, BOLTS, AND WASHERS SHALL BE STAINLESS STEEL TYPE 316 (SS) UNLESS NOTED OTHERWISE.
2. LUMBER SIZES INDICATED ARE NOMINAL.
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4. BOARDWALK DECKING, TOP RAILS AND BENCH TOPS SHALL BE CONSTRUCTED OF THE TROPICAL HARDWOOD IPE AMARELO (TABEBUIA SERRATIFOLIA).
5. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.



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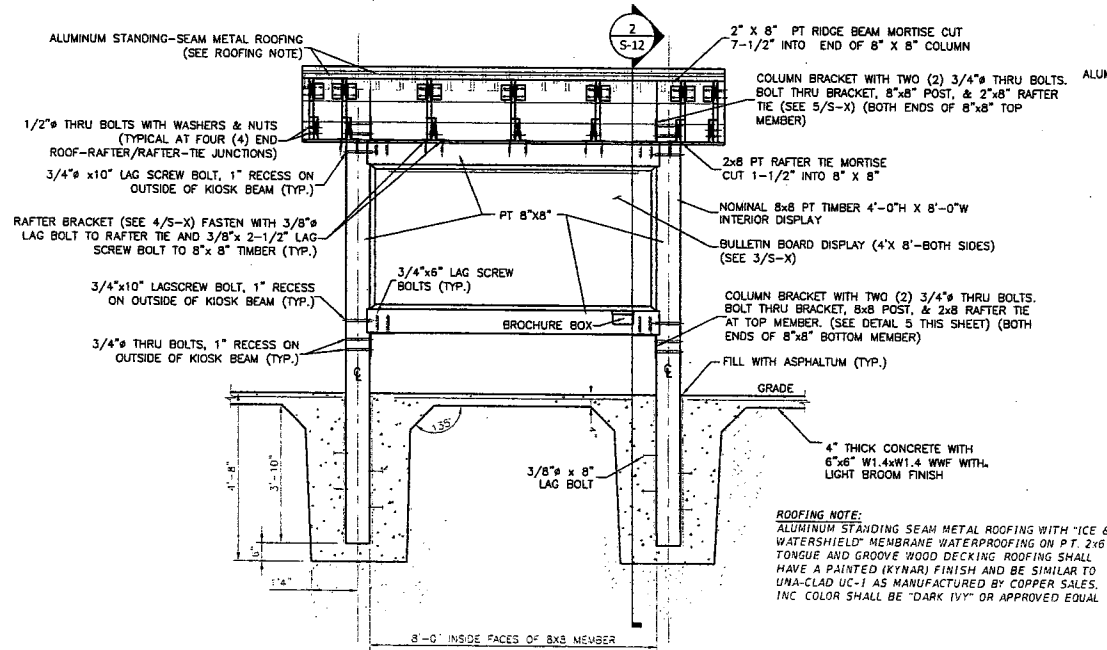


Time	
By	
Revised	
No.	
Scale	
Notes	
State	
Professional	
Project	

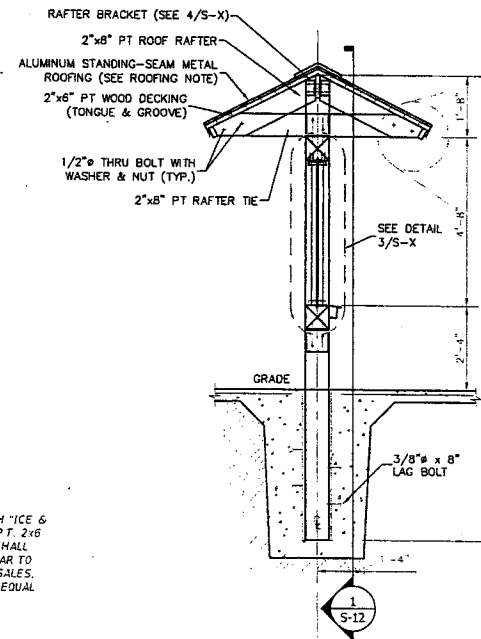
WINDING WATER
NATURAL AREA
PUBLIC USE FACILITIES

Sheet
S-11A
OF 31

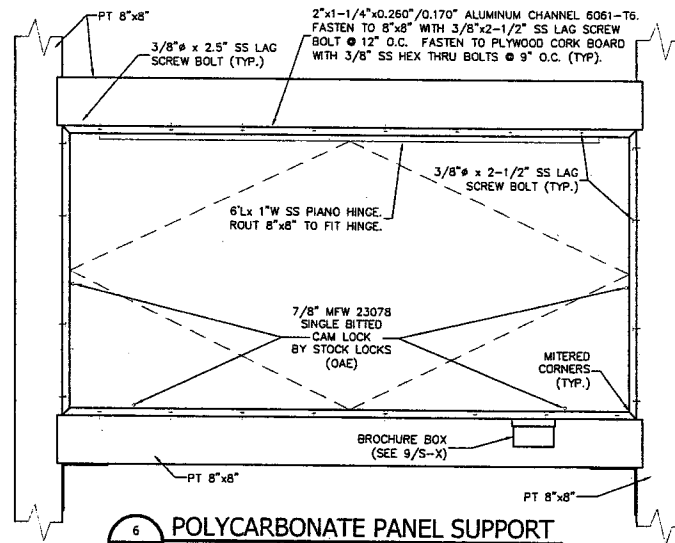
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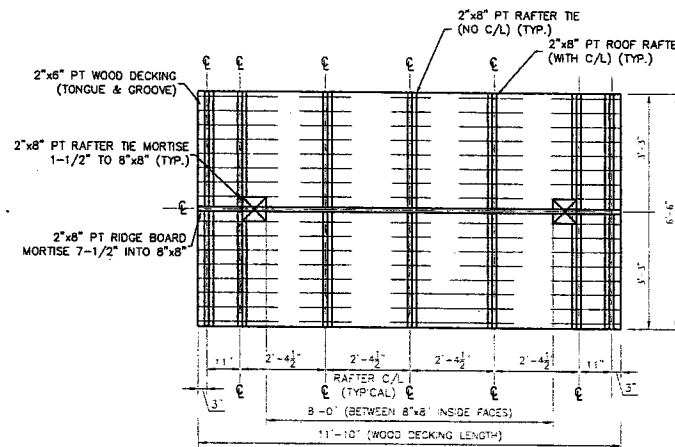
1 SECTION "A"
S-12
GRAPHIC SCALE IN FEET



2 SECTION "B"
S-12
GRAPHIC SCALE IN FEET



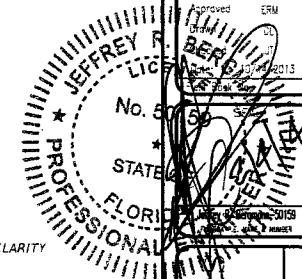
6 POLYCARBONATE PANEL SUPPORT
S-12
GRAPHIC SCALE IN FEET



8 ROOF FRAMING PLAN
S-12
GRAPHIC SCALE IN FEET

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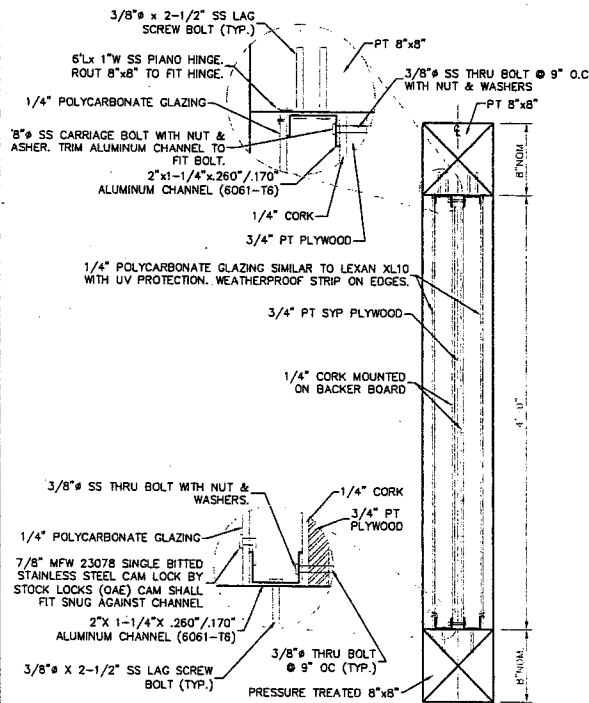


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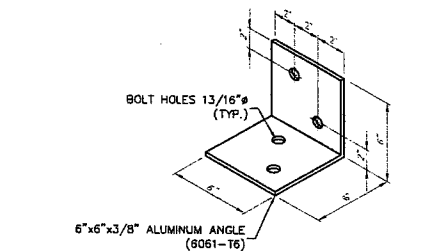
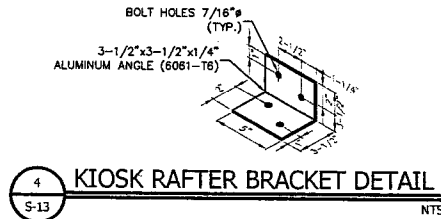
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Date: 12/26/2013
Project: WINDING WATERS NATURAL AREA
Sheet: S-12

WINDING WATERS
NATURAL AREA
PUBLIC USE FACILITIES

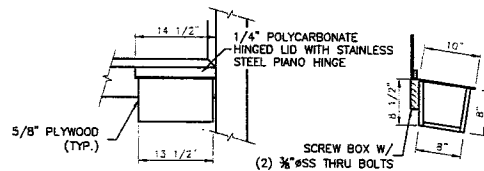
Sheet
S-12
OF 31



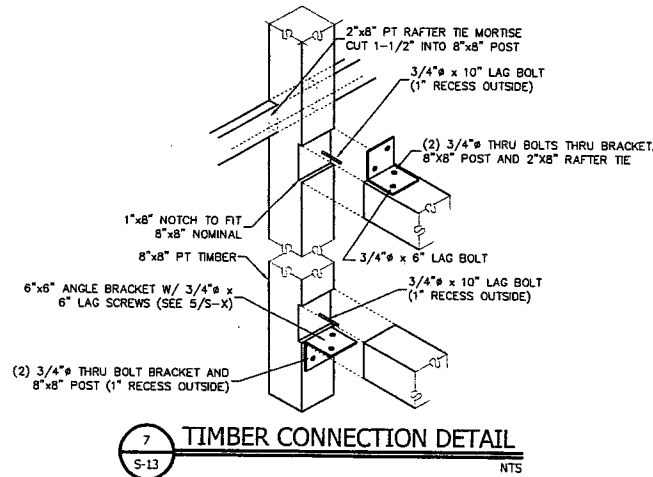
3 BULLETIN BOARD SECTION
S-13
GRAPHIC SCALE IN FEET
2 1 0 2



5 COLUMN BRACKET DETAIL
S-13
NTS



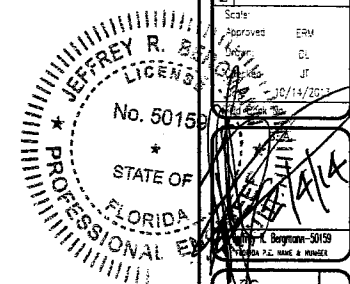
9 BROCHURE BOX DETAIL
S-13
NTS
NOTE:
BROCHURE BOX TO BE PROVIDED BY PBC,
AND INSTALLED ON KIOSK BY CONTRACTOR.



7 TIMBER CONNECTION DETAIL
S-13
NTS

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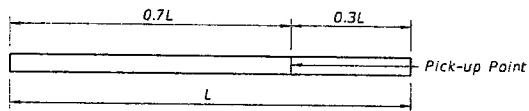
**PALM BEACH COUNTY
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By	
Reviewed	
Scale	Approved
Drawn	By
Check	By
Design	By
Project	By
Date	10/14/2013

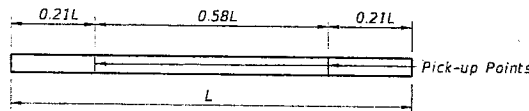
**WINDING WATER
NATURAL AREA**
PUBLIC USE FACILITIES

Sheet
S-13
OF 31

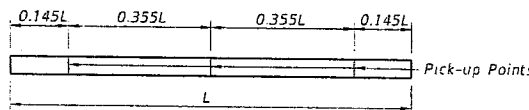
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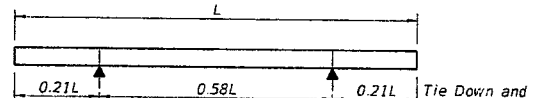
1-POINT PICK-UP



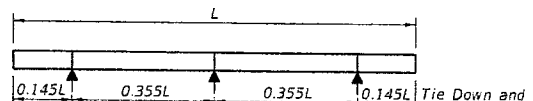
2-POINT PICK-UP



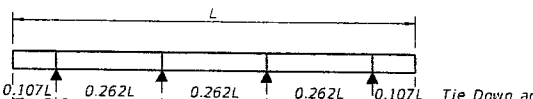
3-POINT PICK-UP
PILE PICK-UP DETAILS



2-POINT SUPPORT

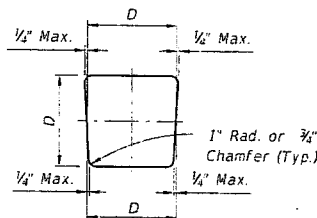


3-POINT SUPPORT

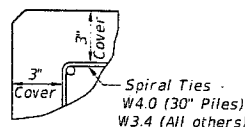


4-POINT SUPPORT
STORAGE AND TRANSPORTATION SUPPORT DETAILS

TABLE OF MAXIMUM PILE PICK-UP AND SUPPORT LENGTHS								
	D = Square Pile Size (inches)						Required Storage and Transportation Detail	Pick-Up Detail
	12	14	18	20	24	30		
Maximum Pile Length (Feet)	48	52	59	62	68	87	2, 3, or 4 point	1 Point
	69	75	85	89	98	124	2, 3, or 4 point	2 Point
	99	107	121	128	140	178	3 or 4 point	3 Point



TYPICAL PILE SHAPE
FOR MOLD FORMS



DETAIL SHOWING
TYPICAL COVER

PRESTRESSED CONCRETE PILE NOTES:

DESIGN SPECIFICATIONS:

Florida Department of Transportation (FDOT) "Structures Design Guidelines", current edition.

American Association of State Highway and Transportation Officials (AASHTO) "LRFD Bridge Design Specifications", current edition.

SPIRAL TIES:

Each wrap of spirals shall be tied to at least two corner strands. One turn required for spiral splices.

CONCRETE CLASS:

Concrete for all piles shall be Class V (Special) except designated High Moment Capacity Piles (Index 20631) shall be Class VI.

Concrete for the High Capacity Collar Splice shall be Class V (Special).

See "GENERAL NOTES" in Structures Plans for any specific locations where the use of Silica Fume is required.

CONCRETE STRENGTH:

The pile cylinder strength shall be 6,000 psi minimum at 28 days and 4,000 psi minimum at time of transfer of the Prestressing Force. The cylinder strength for designated High Moment Capacity Piles (Index 20631) shall be 8,500 psi minimum at 28 days and 6,500 psi minimum at time of transfer of the Prestressing Force.

SPLICE BONDING MATERIAL:

The material to fill dowel holes and form the joint between pile sections shall be a Type B Epoxy Compound in accordance with Specification Section 926 and shall be contained on the Qualified Products List (QPL). Use Epoxy Bonding Compound or Epoxy Mortar as recommended by the Manufacturer. For Epoxy Mortar only use sand or other filler material supplied by the manufacturer and in the proportions recommended.

PICK-UP POINTS:

Piles shall be marked at the pick-up points to indicate proper points for attaching handling lines.

REINFORCING STEEL:

All reinforcing steel shall be Grade 60, except that spiral ties shall be manufactured from cold-drawn steel wire meeting the requirements of ASTM A82.

PRESTRESSING STEEL:

Prestressing steel shall be seven-wire strand, Grade 270, Low-Relaxation Strand (LRS).

CORROSION PROTECTION OF EXPOSED STRANDS:

For all piles having ends exposed to the environment and not embedded under final conditions, protect the strands as follows: Prior to shipment, cut strands at appropriate end(s) back to a minimum depth of 1 inch below the concrete surface and patch with a Type F epoxy compound meeting the requirements of Specification Section 926.

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LAST REVISION	DESCRIPTION:
01/01/12	



FDOT DESIGN STANDARDS
FY 2012/2013

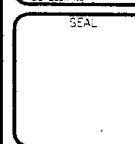
NOTES AND DETAILS FOR SQUARE PRESTRESSED
CONCRETE PILES

INDEX NO. 20600
SHEET NO. 1

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Scale	
Approved	23M
Drawn	DL
Checked	JT
Date	10/14/2013
Field Book No.	



WINDING WATERS
NATURAL AREA
PUBLIC USE FACILITIES

Sheet
S-15
OF 21

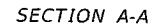
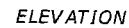


Diagram of a square pile cap with the following dimensions and details:

- Overall width: 12"
- Overall height: 12"
- Internal width segments: 1 1/4" (left), 1 1/4" (right)
- Internal height segments: 1 1/4" (top), 1 1/4" (bottom)
- Reinforcement:
 - W3.4 Spiral Ties @ 6" pitch, full length
 - 4 - No. 10 Dowels
 - 4 - No. 6 Bars (Full Length)
- Other labels:
 - Center of Pile (indicated by a line from the center of the cap)
 - 3" Cover (Typ.) (indicated for the bars)

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CF 31

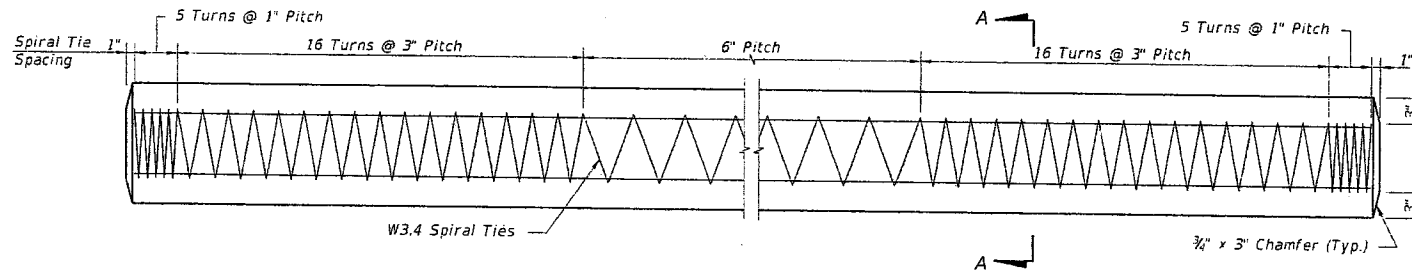
Idade	
Sexo	
Residência	
Idioma	
Scale	
Approved	ERM
Drawn	BL
Checked	JF
Date	10/14/2013
Field Book No.	

SEAL

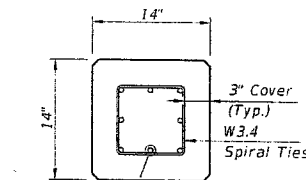
Project

**WINDING WATERS
NATURAL AREA**

PUBLIC USE FACILITIES



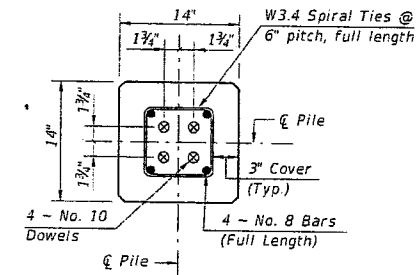
ELEVATION



SECTION A-A

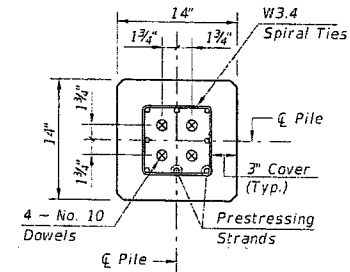
ALTERNATE STRAND PATTERNS

- 8 ~ 0.6" Ø, Grade 270 LRS, at 33 kips
- 8 ~ 1/2" Ø (Special), Grade 270 LRS, at 31 kips
- 8 ~ 1/2" Ø, Grade 270 LRS, at 31 kips
- 12 ~ 7/16" Ø, Grade 270 LRS, at 21 kips
- 16 ~ 3/8" Ø, Grade 270 LRS, at 16 kips



SECTION D-D

(See Nondrivable Unforeseen Reinforced Precast Splice Detail)



SECTION E-E

(See Drivable Unforeseen Prestressed Precast Splice Detail)

PILE SPLICE REINFORCEMENT DETAILS

NOTES:

1. Work this Index with Index No. 20600 - Notes and Details for Square Prestressed Concrete Piles and Index No. 20601 - Square Prestressed Concrete Pile Splices.
2. Any of the given Alternate Strand Patterns may be utilized. The strands shall be located as follows:
Place one strand at each corner and place the remaining strands equally spaced between the corner strands.
The total strand pattern shall be concentric with the nominal concrete section of the pile.



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13-569

LAST REVISION	DESCRIPTION:
01/01/12	



FDOT DESIGN STANDARDS
FY 2012/2013

14" SQUARE PRESTRESSED CONCRETE PILE

INDEX NO.	SHEET NO.
20614	1

PALM BEACH COUNTY
DEPARTMENT OF ENVIRONMENTAL
RESOURCES MANAGEMENT
2300 NORTH JOE ROAD, 4TH FLOOR
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No.	Scale	Approved	Drawn	Checked	Date	Field Book No.
		EPH	DL	JT	10/14/2013	

SEAL

WINDING WATERS
NATURAL AREA
PUBLIC USE FACILITIES

Sheet
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