

Date: October 2, 2019

These documents were provided to the Planning and Zoning Board/Local Planning Agency by Mrs. Marla Molina for Public Hearing Agenda Item “400” at the October 2, 2019 Planning and Zoning Board/Local Planning Agency Regular Meeting.

# COMMISSION AGENDA

## ITEM 401

<b>Informational</b>	
<b>Consent</b>	
<b>Public Hearings</b>	<b>X</b>
<b>Regular</b>	

March 13, 2017

KS

BF

Regular Meeting

City Manager

Department

**REQUEST:**

The Community Development Department requests the City Commission hold a public hearing for the approval of 1) Final Engineering Plans; and 2) Waiver Request for Northern Oaks, a proposed 35-lot single-family residential subdivision located just east of the intersection of State Road 434 and State Road 417.

**SYNOPSIS:**

Northern Oaks is a proposed 35-lot single-family residential subdivision on 20.48 acres located east of the intersection of State Road 434 and State Road 417. The applicant, Madichristo Land Holdings, LLC, is requesting approval of the Final Engineering Plans and a waiver request for the side and rear setbacks.

**CONSIDERATIONS:**

APPLICANT AND PROPERTY INFORMATION:

- Applicant/Owner name and address and authorized representative: Madichristo Land Holdings, LLC, 1520 Whitstable Court, Lake Mary, FL 32746
- Property addresses: 908 West SR 434
- Current FLUM Designations: City of Winter Springs Low Density Residential
- Current Zoning Designations: City of Winter Springs R-1 (one-family dwelling district)

Lot #	Parcel ID	Street #	Street Name
1	04-21-31-511-0000-0010	957	TALON PLACE
2	04-21-31-511-0000-0020	961	TALON PLACE
3	04-21-31-511-0000-0030	965	TALON PLACE
4	04-21-31-511-0000-0040	969	TALON PLACE
8	04-21-31-511-0000-0080	985	TALON PLACE
9	04-21-31-511-0000-0090	993	TALON PLACE
10	04-21-31-511-0000-0100	997	TALON PLACE
12	04-21-31-511-0000-0120	1005	TALON PLACE
13	04-21-31-511-0000-0130	1009	TALON PLACE
14	04-21-31-511-0000-0140	980	TALON PLACE
15	04-21-31-511-0000-0150	976	TALON PLACE
16	04-21-31-511-0000-0160	972	TALON PLACE
17	04-21-31-511-0000-0170	968	TALON PLACE
18	04-21-31-511-0000-0180	964	TALON PLACE
19	04-21-31-511-0000-0190	960	TALON PLACE
21	04-21-31-511-0000-0210	948	TALON PLACE
22	04-21-31-511-0000-0220	944	TALON PLACE
23	04-21-31-511-0000-0230	940	TALON PLACE
24	04-21-31-511-0000-0240	906	TALON PLACE
25	04-21-31-511-0000-0250	905	TALON PLACE
26	04-21-31-511-0000-0260	909	TALON PLACE
27	04-21-31-511-0000-0270	913	TALON PLACE
28	04-21-31-511-0000-0280	917	TALON PLACE
29	04-21-31-511-0000-0290	921	TALON PLACE
30	04-21-31-511-0000-0300	925	TALON PLACE
31	04-21-31-511-0000-0310	929	TALON PLACE
32	04-21-31-511-0000-0320	933	TALON PLACE
33	04-21-31-511-0000-0330	937	TALON PLACE
34	04-21-31-511-0000-0340	941	TALON PLACE
35	04-21-31-511-0000-0350	945	TALON PLACE

**RECOMMENDATION:**

**Staff recommends the City Commission approve the Final Engineering Plans and Aesthetic Review for RaceTrac.**

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Mr. Brian Fields, P.E., Director, Community Development Department provided background information and an overview of the proposed project to the City Commission.

*Mayor Lacey opened the "Public Input" portion of the Agenda Item.*

No one spoke.

*Mayor Lacey closed the "Public Input" portion of the Agenda Item.*

**"ITEM '400', I WILL MAKE THE MOTION TO APPROVE." MOTION BY COMMISSIONER RESNICK. SECONDED BY DEPUTY MAYOR CARROLL. DISCUSSION.**

**VOTE:**

**DEPUTY MAYOR CARROLL: AYE  
COMMISSIONER KENDRICK: AYE  
COMMISSIONER RESNICK: AYE  
COMMISSIONER HOVEY: AYE  
COMMISSIONER CANNON: AYE  
MOTION CARRIED.**

**PUBLIC HEARINGS****401. Community Development Department****REQUEST:**

**The Community Development Department requests the City Commission hold a public hearing for the approval of 1) Final Engineering Plans; and 2) Waiver Request for Northern Oaks, a proposed 35-lot single-family residential subdivision located just east of the intersection of State Road 434 and State Road 417.**

**FISCAL IMPACT:**

**Approval of the Final Engineering Plan and Aesthetic Review allows the subject property to be developed into a single-family residential subdivision. Development of the subject property is anticipated to provide an increase to the City's taxable value. The potential tax revenue of the proposed project is as follows:**

- **Fee Simple Single Family Residential Units - 35 units**
- **Units - 35 assessed at \$200,000 = \$7,000,000 assessed tax value**
  - **\$10,800,000/1000 = 7,000**
  - **\$7,000.00 x(2.4300) = \$17,010**
  - **\$17,010 (less the 4% statutory discount) = \$16,329.60 tax revenue**

**COMMUNICATION EFFORTS:**

This Agenda Item has been electronically forwarded to the Mayor and City Commission, City Manager, City Attorney/Staff, and is available on the City's Website, LaserFiche, and the City's Server. Additionally, portions of this Agenda Item are typed verbatim on the respective Meeting Agenda which has also been electronically forwarded to the individuals noted above, and which is also available on the City's Website, LaserFiche, and the City's Server; has been sent to applicable City Staff, Media/Press Representatives who have requested Agendas/Agenda Item information, Homeowner's Associations/Representatives on file with the City, and all individuals who have requested such information. This information has also been posted outside City Hall, posted inside City Hall with additional copies available for the General Public, and posted at six (6) different locations around the City. Furthermore, this information is also available to any individual requestors. City Staff is always willing to discuss this Agenda Item or any Agenda Item with any interested individuals.

**RECOMMENDATION:**

Staff recommends that the City Commission approve: 1) Final Engineering Plans, and 2) Waivers to Sections 20-186(2) and 20-186(3) of the Code of Ordinances for Northern Oaks.

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This Agenda Item was introduced by Mr. Fields.

Deputy Mayor Pam Carroll asked about traffic signalization to help residents with ingress and egress out of this property.

Mr. Fields briefly addressed the process and how Seminole County would handle traffic timing and added, "I am sure they will address that."

Commissioner Cade Resnick asked about drainage issues. Mr. Fields explained what they are requiring of the home builder at the time of construction for this project. Furthermore, Mr. Fields remarked, "We've implemented the proper tools to address drainage on those very narrow size lots."

Commissioner Cannon asked about recent Quiet Title action. City Attorney Anthony A. Garganese noted that they have been provided with a copy of a Deed. Mr. Fields then commented, "We have the signed copy of a Deed that is being recorded any day now, as I understand it."

*Mayor Lacey opened the "Public Input" portion of the Agenda Item.*

No one spoke.

*Mayor Lacey closed the "Public Input" portion of the Agenda Item.*

**"I MAKE A MOTION TO APPROVE ITEM '401.'" MOTION BY COMMISSIONER RESNICK. SECONDED BY COMMISSIONER CANNON. DISCUSSION.**

**VOTE:**

**COMMISSIONER HOVEY: AYE**  
**COMMISSIONER CANNON: AYE**  
**COMMISSIONER KENDRICK: AYE**  
**COMMISSIONER RESNICK: AYE**  
**DEPUTY MAYOR CARROLL: AYE**  
**MOTION CARRIED.**

With brief comments, Mr. Fields said, “On the Aesthetic Review, that will come back under a separate Public Hearing at a later date for City Commission approval.”

❖❖ **AGENDA NOTE: THE FOLLOWING PUBLIC HEARINGS AGENDA ITEMS “402”, “403”, AND “404” WERE DISCUSSED SIMULTANEOUSLY, AS DOCUMENTED, FOLLOWED BY THE REST OF THE AGENDA. ❖❖**

**PUBLIC HEARINGS AGENDA****PUBLIC HEARINGS****402. Community Development Department****REQUEST:**

The Community Development Department – Planning Division requests that the City Commission hold a Public Hearing to consider both a Small-Scale Future Land Use Map Amendment and a Rezoning for approximately 6.25 acres, generally located at 1379 State Road 434 as described within Ordinances 2017-02 and 2017-03.

**FISCAL IMPACT:**

The proposed Small-Scale future land use amendment, which re-designates the property from City of Winter Springs "Greenway Interchange District (GID)" with a "Conservation Overlay" to Winter Springs "Commercial" with a "Conservation Overlay," will increase the potential for additional taxable value to the City. The administrative Small Scale Plan Amendment is expected to increase the probability of future commercial and/or office development activity within this particular area.

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1117 East Robinson St.  
Orlando, FL 32801  
Phone: 407.425.0452  
Fax: 407.648.1036

October 2, 2019

Ms. Rachel Gironella  
Civil Engineer  
City of Winter Springs  
1126 E SR 434  
Winter Springs, FL 32708

RE: Northern Oaks - plan review  
CPH project W04183

Dear Rachel,

We reviewed the permitted plans and storm water calculations we retrieved from the St. Johns River Water Management District (SJRWMD) to verify if the total impervious area per lot can be increased from 40% to 50%, maximum.

The calculations for the two wet ponds indicate there is more volume than required for the original design. We were able to verify the total impervious area for each lot and recalculated based on an additional 10% impervious area for each lot to determine a new total impervious area.

Based on our calculations, the ponds, as designed and permitted through the SJRWMD have sufficient capacity to allow the developer to increase the impervious area on each lot to 50% coverage.

We do not have any objections to the City approving the additional area for each lot, to a maximum of 50% for each lot.

Sincerely,  
**CPH, Inc.**

A handwritten signature in cursive script that reads "Allen C. Lane, Jr.".

Allen C. Lane, Jr., P.E.  
Project Engineer

J:\W04183\Civil\1-City Plan Review\Northern Oaks\letter\ltr to City re impervious area.doc

**PD BOUNDARY/LEGAL DESCRIPTION PER ON BISHMAN SURVEYING AND MAPPING INC. DATED: FEB. 2015**

**DESCRIPTION - PARCEL A**  
 THAT PART OF THE NORTHEAST 1/4 OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4, OF SECTION 4, TOWNSHIP 21 SOUTH, RANGE 31 EAST, SEMINOLE COUNTY, FLORIDA, BEING DESCRIBED AS FOLLOWS: COMMENCE AT THE INTERSECTION OF THE SOUTH LINE OF THE NORTHEAST 1/4 OF SAID SOUTHWEST 1/4, SECTION 4 WITH THE WEST LINE OF THE NORTHEAST 1/4 OF SAID SOUTHWEST 1/4, SECTION 4; THENCE RUN N00°17'39"W, 46.96 FEET, TO THE POINT OF BEGINNING; THENCE CONTINUE N00°17'39"W, 46.96 FEET, TO THE POINT OF BEGINNING; THENCE RUN S04°21'12"E, 125.24 FEET, TO THE POINT OF BEGINNING; THENCE RUN S04°21'12"E, 125.24 FEET, TO THE POINT OF BEGINNING; THENCE RUN S88°06'21"W, 242.56 FEET, TO THE POINT OF BEGINNING; THENCE RUN S88°06'21"W, 242.56 FEET, TO THE POINT OF BEGINNING; THENCE RUN S04°21'12"E, 125.24 FEET, TO THE POINT OF BEGINNING; THENCE RUN S04°21'12"E, 125.24 FEET, TO THE POINT OF BEGINNING; THENCE RUN S88°06'21"W, 242.56 FEET, TO THE POINT OF BEGINNING; THENCE RUN S88°06'21"W, 242.56 FEET, TO THE POINT OF BEGINNING; THE ABOVE DESCRIBED PARCEL OF LAND CONTAINS 6.18 ACRES MORE OR LESS.

**DESCRIPTION - PARCEL B**  
 THAT PART OF THE NORTHEAST 1/4 OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4, OF SECTION 4, TOWNSHIP 21 SOUTH, RANGE 31 EAST, SEMINOLE COUNTY, FLORIDA, BEING DESCRIBED AS FOLLOWS: COMMENCE AT THE INTERSECTION OF THE SOUTH LINE OF THE NORTHEAST 1/4 OF SAID SOUTHWEST 1/4, SECTION 4 WITH THE WEST LINE OF THE NORTHEAST 1/4 OF SAID SOUTHWEST 1/4, SECTION 4; THENCE RUN N00°17'39"W, 46.96 FEET, TO THE POINT OF BEGINNING; THENCE CONTINUE N00°17'39"W, 46.96 FEET, TO THE POINT OF BEGINNING; THENCE RUN S04°21'12"E, 125.24 FEET, TO THE POINT OF BEGINNING; THENCE RUN S04°21'12"E, 125.24 FEET, TO THE POINT OF BEGINNING; THENCE RUN S88°06'21"W, 242.56 FEET, TO THE POINT OF BEGINNING; THENCE RUN S88°06'21"W, 242.56 FEET, TO THE POINT OF BEGINNING; THENCE RUN S04°21'12"E, 125.24 FEET, TO THE POINT OF BEGINNING; THENCE RUN S04°21'12"E, 125.24 FEET, TO THE POINT OF BEGINNING; THENCE RUN S88°06'21"W, 242.56 FEET, TO THE POINT OF BEGINNING; THENCE RUN S88°06'21"W, 242.56 FEET, TO THE POINT OF BEGINNING; THE ABOVE DESCRIBED PARCEL OF LAND CONTAINS 6.18 ACRES MORE OR LESS.

**DESCRIPTION - PARCEL C**  
 THAT PART OF THE NORTHEAST 1/4 OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4, OF SECTION 4, TOWNSHIP 21 SOUTH, RANGE 31 EAST, SEMINOLE COUNTY, FLORIDA, BEING DESCRIBED AS FOLLOWS: COMMENCE AT THE INTERSECTION OF THE SOUTH LINE OF THE NORTHEAST 1/4 OF SAID SOUTHWEST 1/4, SECTION 4 WITH THE WEST LINE OF THE NORTHEAST 1/4 OF SAID SOUTHWEST 1/4, SECTION 4; THENCE RUN N00°17'39"W, 46.96 FEET, TO THE POINT OF BEGINNING; THENCE CONTINUE N00°17'39"W, 46.96 FEET, TO THE POINT OF BEGINNING; THENCE RUN S04°21'12"E, 125.24 FEET, TO THE POINT OF BEGINNING; THENCE RUN S04°21'12"E, 125.24 FEET, TO THE POINT OF BEGINNING; THENCE RUN S88°06'21"W, 242.56 FEET, TO THE POINT OF BEGINNING; THENCE RUN S88°06'21"W, 242.56 FEET, TO THE POINT OF BEGINNING; THENCE RUN S04°21'12"E, 125.24 FEET, TO THE POINT OF BEGINNING; THENCE RUN S04°21'12"E, 125.24 FEET, TO THE POINT OF BEGINNING; THENCE RUN S88°06'21"W, 242.56 FEET, TO THE POINT OF BEGINNING; THENCE RUN S88°06'21"W, 242.56 FEET, TO THE POINT OF BEGINNING; THE ABOVE DESCRIBED PARCEL OF LAND CONTAINS 6.18 ACRES MORE OR LESS.

# FINAL SUBDIVISION PLAN FOR NORTHERN OAKS SUBDIVISION CITY OF WINTER SPRINGS, FLORIDA

## PROJECT TEAM:

**OWNER/DEVELOPER**  
 MADICHRISTO LAND HOLDINGS, LLC  
 MANAGER: CHRIS DORWORTH  
 1520 WHITSTABLE COURT  
 HEATHROW, FL 32746  
 PHONE: (407) 310-7375  
 FAX: (407) 878-4976  
 EMAIL: CHRIS@DORWORTH.COM

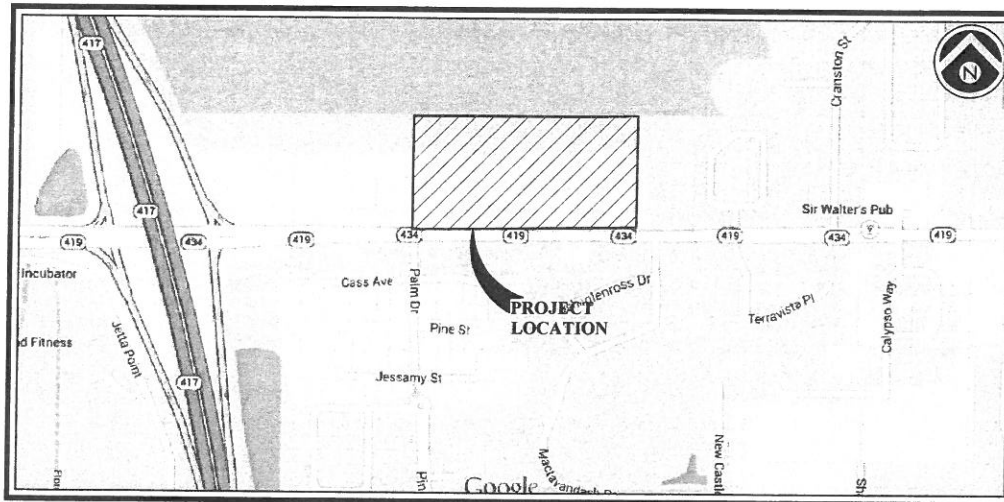
**ENGINEER**  
 APPIAN ENGINEERING, LLC  
 ENGINEER: LUKE M. CLASSON, P.E.  
 2221 LEE ROAD-SUITE 17  
 WINTER PARK, FL 32789  
 PHONE: (407) 960-5868  
 FAX: (866) 571-8179  
 EMAIL: LCLASSON@APPIANFL.COM

**SURVEYOR**  
 BISHMAN SURVEYING & MAPPING, INC.  
 SURVEYOR: ARON D. BISHMAN, PSM  
 32 WEST PLANT STREET  
 WINTER GARDEN, FL 34787  
 PHONE: (407) 905-8877  
 EMAIL: ARON@BISHMANSURVEYING.COM

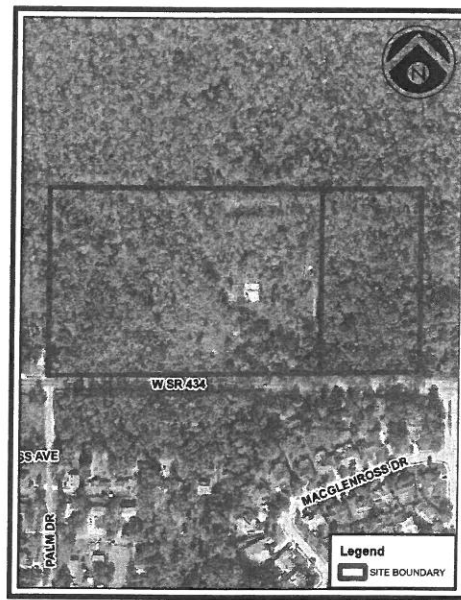
**GEOTECHNICAL ENGINEER**  
 G.E.O. ENGINEERING & SCIENCES, INC.  
 ENGINEER: GABI STEPHAN  
 250 S RONALD REAGAN BLVD #114  
 LONGWOOD, FL 32750  
 PHONE: (407) 379-9510  
 EMAIL: GSTEPHAN@GEOENGINEERINGINC.COM

**LANDSCAPE ARCHITECT**  
 LANDSCAPE DESIGNS, LLC.  
 LANDSCAPE ARCHITECT: CARL KELLY, RLA  
 4465 GABRIELLA LANE  
 WINTER PARK, FL 32792  
 PHONE: (407) 484-3414  
 EMAIL: CKELLY1@CFL.RR.COM

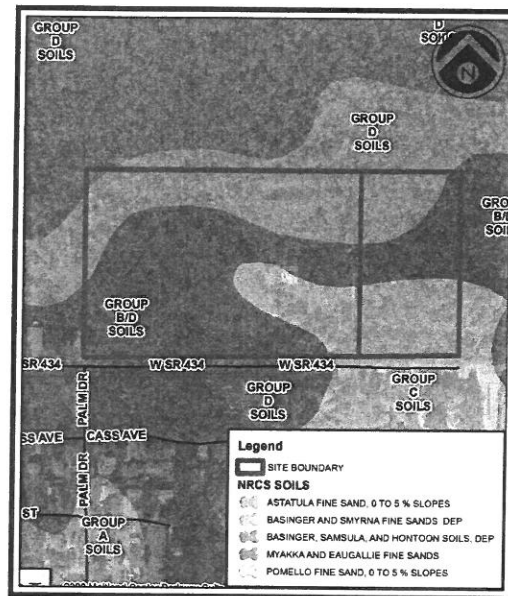
WAIVER NUMBER	CODE #	CODE REQUIREMENT	REQUEST	JUSTIFICATION
1	Sec. 20-163(d)(1)(b)	Back yard minimum building setback of twenty-five (25) feet.	Back yard minimum building setback of twenty (20) feet.	The Home Builder who is purchasing the development has a model they would like to offer which is 84" deep with options. Most of the home models will sit in a 90 foot deep lot or less (giving a rear setback of 25 feet or greater), however one of the proposed homes they would like to offer goes to 84" with the extended lot option.
2	Sec. 20-186(c)	Side yards shall be provided on each side of every dwelling of not less than six (6) feet.	Side yards shall be provided on each side of every dwelling of not less than five (5) feet.	Based on feedback from the interested home builders the market for this site is for five (5) foot side setbacks, giving a minimum of 10 feet between adjacent homes.



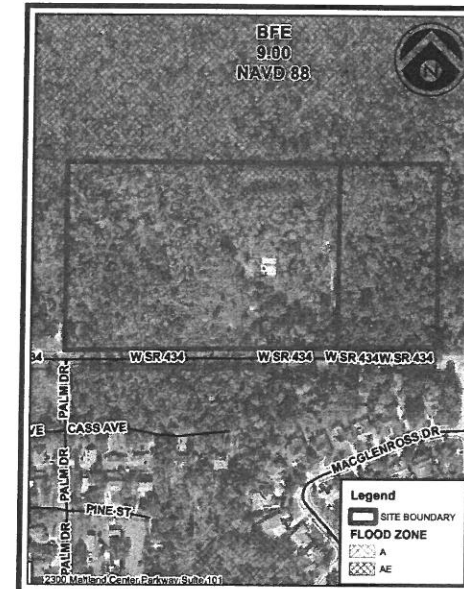
**VICINITY MAP**  
 SCALE: 1" = 500'



**AERIAL MAP**  
 SCALE: 1" = 300'



**SOILS MAP**  
 SCALE: 1" = 300'



**FEMA FLOOD MAP**  
 SCALE: 1" = 300'

## SHEET INDEX:

- C1.0 COVER SHEET
- C1.1 GENERAL NOTES
- C1.2 EXISTING CONDITIONS PLAN
- C1.3 EROSION CONTROL / M.O.T. / DEMO PLAN
- C1.4 EROSION CONTROL / M.O.T. DETAILS
- C1.5 GEOMETRY PLAN
- C1.6 CROSS SECTION
- C1.7 FIRE TRUCK ROUTE PLAN
- C1.8 STRIPING AND SIGNAGE PLAN
- C1.9 LIGHTING PLAN
- C1.10 UTILITY NOTES
- C1.11 UTILITY PLAN
- C1.12 LIFT STATION DETAILS
- C1.13 LIFT STATION CONTROL PANEL DETAILS
- C1.14 LIFT STATION CONTROL PANEL DETAILS
- C1.15 PAVING & GRADING PLAN
- C1.16 DRAINAGE PLAN
- C1.17 PLAN & PROFILE - STREET 'B'
- C1.18 PLAN & PROFILE - STREET 'A' STA. 9+00 - STA. 2+50
- C1.19 PLAN & PROFILE - STREET 'A' STA. 2+50 - STA. 8+00
- C1.20 PLAN & PROFILE - STREET 'A' STA. 8+00 - STA. 15+12
- C1.21 CIVIL DETAILS
- C1.22 CITY OF WINTER SPRINGS UTILITY DETAILS
- C1.23 CITY OF WINTER SPRINGS UTILITY DETAILS
- C1.24 DRAINAGE DETAILS
- C1.25 DRAINAGE DETAILS
- C1.26 DRAINAGE DETAILS
- C1.27 TREE MITIGATION PLAN
- C1.28 LANDSCAPE SITE PLAN
- C1.29 LANDSCAPE SITE PLAN & PLANTING DETAILS
- C1.30 IRRIGATION PLAN
- C1.31 IRRIGATION PLAN
- C1.32 HARDSCAPE PLAN
- C1.33 HARDSCAPE PLAN
- C1.34 BOUNDARY AND TOPOGRAPHIC SURVEY
- C1.35 BOUNDARY AND TOPOGRAPHIC SURVEY

## SITE DATA:

SCPA - PARCEL ID #'s:	04-21-31-300-0090-0000 04-21-31-300-0091-0000
TOTAL PROPERTY AREA:	20.13 Ac.
EXISTING WETLAND AREA:	13.39 AC.
PROPOSED CONSERVATION AREA:	7.64 AC.
WETLAND AREA TO REMAIN:	5.75 AC.
FEMA FLOOD INSURANCE RATE MAP FLOOD ZONE:	X & AE (EL. 9)
FIRM PANEL #12117C0180F DATED SEPT. 28, 2007	
FUTURE LAND USE (FLU):	LDR - LOW DENSITY RESIDENTIAL
ADJACENT FUTURE LAND USE:	
NORTH	CONSERVATION
SOUTH	LDR/COM
EAST	COM
WEST	COM/GID
ZONING:	R-1
ADJACENT ZONING:	
NORTH	PD
SOUTH	A-1/C-1/W-1
EAST	C-1
WEST	A-1/GID
R-1 ZONING REQUIREMENTS:	
MINIMUM LOT AREA	6,600 SF
MINIMUM LOT WIDTH	60 ft.
MAXIMUM BUILDING HEIGHT	35 ft.
SETBACKS:	
FRONT YARD	25 ft.
SIDE YARD	5 ft.
REAR YARD	20 ft.
CORNER SIDE YARD	15 ft.
THE PROPOSED PROJECT SHALL INCLUDE SINGLE FAMILY RESIDENTIAL HOMES RANGING IN SIZE FROM 2,500 SF TO 4,999 SF OF LIVING SPACE.	
OPEN SPACE PROVIDED:	50.17% (10.10 Ac.)
CONSERVATION AREA	7.62 Ac. (37.85%)
STORMWATER RETENTION AREA	2.36 Ac. (11.72%)
OPEN SPACE TRACT	0.12 Ac. (0.60%)
MAXIMUM ALLOWED GROSS DENSITY	3.50 DU/AC
PROPOSED GROSS DENSITY (35 DU/20.13 AC)	1.74 DU/AC
SCHOOL AGE CHILDREN:	
ELEMENTARY (35 DU * 0.249 CHILD/DU)	9 CHILDREN
MIDDLE (35 DU * 0.114 CHILD/DU)	4 CHILDREN
HIGH (35 DU * 0.124 CHILD/DU)	5 CHILDREN
TOTAL	18 SCHOOL AGE CHILDREN
WATER SERVICE PROVIDED BY CITY OF WINTER SPRINGS	
NO RECLAIMED WATER SERVICE IS AVAILABLE	
SANITARY SEWER SERVICE PROVIDED BY CITY OF WINTER SPRINGS	
SERVICE DEMANDS:	
WATER (35 DU * 350 GPD/DU)	12,250 GPD
SEWER (35 DU * 300 GPD/DU)	10,500 GPD
TRAFFIC (35 DU * 10.74 TRIPS/DU)	375.9 TRIPS
FIRE PROTECTION WILL BE PROVIDED AND DESIGNED TO MEET CITY OF WINTER SPRINGS AND NFPA REQUIREMENTS.	
STORMWATER SYSTEM WILL BE PROVIDED AND DESIGNED TO MEET CITY OF WINTER SPRINGS AND SRWMD DRAINAGE REQUIREMENTS.	
ALL UTILITY LINES SHALL BE DESIGNED TO MEET CITY OF WINTER SPRINGS CODE.	
UTILITY EASEMENTS DEDICATED TO CITY OF WINTER SPRINGS SHALL BE PROVIDED OVER ALL WATER AND SEWER MAINS LOCATED OUTSIDE THE PUBLIC RIGHT OF WAY.	
ALL POST DEVELOPMENT FLOOD PLAINS WILL BE PLACED IN CONSERVATION EASEMENT.	
AN HOA SHALL BE CREATED TO PROVIDE FOR THE MANAGEMENT OF ALL COMMON AREA AND FACILITIES.	
PROJECT SIGNAGE SHALL COMPLY WITH CITY OF WINTER SPRINGS LAND DEVELOPMENT CODE.	
PROJECT LANDSCAPING/IRRIGATION SHALL COMPLY WITH THE CITY OF WINTER SPRINGS LAND DEVELOPMENT CODE.	
THE DEVELOPMENT WILL BE CONSTRUCTED AS A SINGLE PHASE.	
PROJECT CONTAINS ON SITE WETLANDS.	
*TOTAL PROJECT AREA REDUCED BY 0.35 AC TO REMOVE THE PARCEL OF LAND DEEDED TO THE HENDRIX'S AT THE SOUTHWEST CORNER OF THE PROJECT.	

48 HOURS BEFORE DIGGING	CALL TOLL FREE
811 or 1-800-432-4770	FLORIDA STATE ONE CALL CENTER

ENGINEER'S PROJECT NO. CED-003

**B&S ENGINEERING CONSULTANTS, LLC DBA  
 APPIAN ENGINEERING, LLC**

2221 LEE ROAD, SUITE 17  
 WINTER PARK, FLORIDA 32789  
 (407) 960-5868

BOARD OF PROFESSIONAL  
 ENGINEERING CERTIFICATE  
 NO. 28973

PERMITS REQUIRED					DATE	DESCRIPTION	BY
AGENCY	PERMIT TYPE	DATE APPLIED	DATE APPROVED	APPROVAL NO.	REV.	DATE	DESCRIPTION
CITY OF WINTER SPRINGS	SITE PERMIT					12/27/16	CITY OF WINTER SPRINGS (ZP2016-00000033) COMMENTS 12/22/16
S.J.R.W.M.D.	ERP					02/06/17	CITY OF WINTER SPRINGS (ZP2016-00000033) COMMENTS 02/01/17
F.D.E.P.	WATER					02/06/17	SRWMD COMMENTS (APPLICATION No. 148397-1) 01.26.17
F.D.E.P.	WASTEWATER						
F.D.E.P.	NPDES						



**NOTES:**

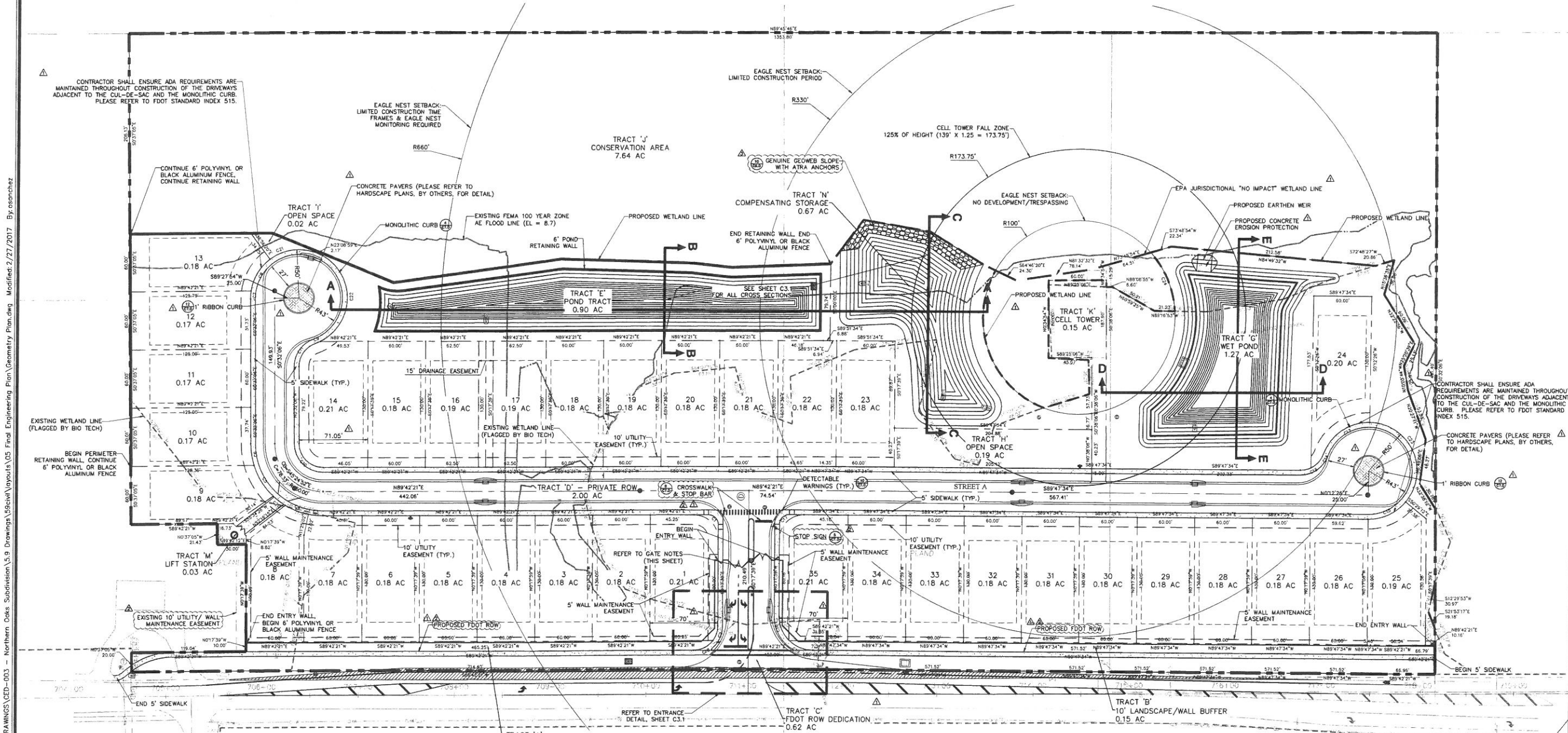
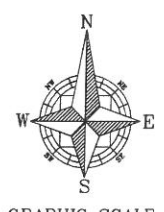
- ALL ROADS WITHIN THE SUBDIVISION WILL BE PRIVATE.
- ALL ENTRANCE ROADWAYS SHALL HAVE AN UNOBSTRUCTED CLEAR HEIGHT OF NOT LESS THAN 13 FEET 6 INCHES (13.5') PER NFPA 1-18.2.2.2.
- THE FOLLOWING IS REQUIRED FOR ACCESS SIGNAGE FOR NEW CONSTRUCTION:
  - SIGNAGE SIGN SHALL READ "FIRE DEPARTMENT ACCESS" AND SHALL INCLUDE SITE ADDRESS, OR RANGE OF ADDRESSES, FOR ALL COMMERCIAL SITES AND RESIDENTIAL SITES.
  - SIZE: THE TWO-SIDED SIGN PLATE SHALL BE A MINIMUM OF 4X4 FEET
  - COLOR: THE SIGN SHALL HAVE A RED BACKGROUND WITH A WHITE LETTERING
  - LETTERING FOR THE SIGN SHALL BE FOUR INCH
  - ADDRESS ON SIGN SHALL BE TWO AND ONE HALF INCH
  - LOCATION: SIGN SHALL BE INSTALLED AT EACH POINT OF ENTRY
  - BOTTOM OF SIGN SHALL BE SIX FEET ABOVE GRADE ON POSTS
- IF STRUCTURES ARE CONSTRUCTED 3 FEET OR CLOSER TO THE PROPERTY LINE, THEY WILL REQUIRE RATED EXTERIOR WALLS AND SOFFITS PER FBC (2014) 5TH EDITION.

**GATE NOTES:**

- SEPARATE GATE PERMITS ARE REQUIRED. (NFPA1, 18.2.2.2)
- PROPOSED SWING GATES SHALL BE PROVIDED WITH SIREN OPERATED SENSOR WITH BATTERY BACK-UP FOR ACCESS BY EMERGENCY VEHICLES. (REFER TO HARD SCAPES PLANS)
- VEHICLE ACCESS GATES SHALL HAVE AN UN- OBSTRUCTED CLEAR WIDTH OF NOT LESS THAN 14 FEET FOR A SINGLE GATE AND 20 FEET FOR A DOUBLE GATE, AS WELL AS A CLEAR HEIGHT OF 13 FEET 6 INCHES (NFPA 1,18.2.2.2)
- THE GATE SHALL BE AT LEAST 45 FEET BACK FROM THE EDGE OF THE CROSS STREET FROM WHICH THE APPROACH IS ACCESSED. SWINGING GATES SHALL SWING AWAY FROM THE DIRECTION OF VEHICLE TRAVEL (NFPA 1,18.2.2.2)
- ELECTRICALLY OPERATED GATES ARE REQUIRED TO PROVIDE SIREN ACTIVATED PRE-EMPTIVE SENSING DEVICE (SOS SYSTEM) AND KNOX GATE KEY SWITCH. IF A KEY PAD IS USED A SPECIFIC EMERGENCY ACCESS CODE SHALL ALSO BE PROVIDED. (NFPA 1,18.2.2.2)

**LEGEND**

- LOT LINES
- EASEMENTS
- SETBACKS
- X X FENCE
- EXISTING WETLAND LINE
- EPA "NO IMPACT" WETLAND LINE
- PROPOSED WETLAND LINE
- SR 434 WIDENING
- GENUINE GEOWEB SLOPE WITH ATRA ANCHORS



P:\PROJECT DRAWINGS\CED-003 - Northern Oaks Subdivision\5.9 Drawings\5.9 Final Engineering Plan\Geometry Plan.dwg Modified: 2/27/2017 By: osanchez

NOTE: FDOT SR 434 RIGHT-OF-WAY IMPROVEMENTS SHOWN FOR REFERENCE PURPOSES ONLY. ALL DEMOLITION AND PROPOSED IMPROVEMENTS WITHIN THE RIGHT-OF-WAY SHALL BE PERMITTED THROUGH FDOT.

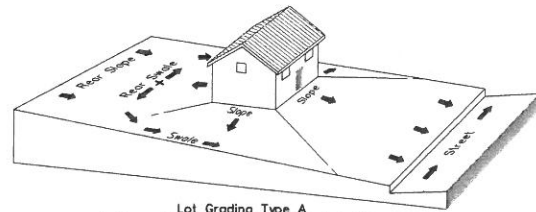
**48 HOURS BEFORE DIGGING**  
 CALL TOLL FREE  
 811 or 1-800-432-4770  
 SUNSHINE STATE ONE CALL CENTER

B&S ENGINEERING CONSULTANTS, LLC DBA  
**APPIAN ENGINEERING, LLC**  
 2221 LEE ROAD, SUITE 17  
 WINTER PARK, FLORIDA 32789  
 (407) 960-5868

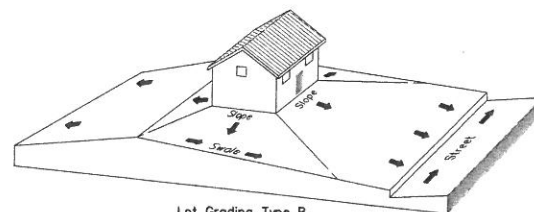
**GEOMETRY PLAN**  
 NORTHERN OAKS SUBDIVISION  
 CITY OF WINTER SPRINGS, FLORIDA

SCALE	1" = 40'
DRAWN	O. SANCHEZ
DESIGNED	L. CLASSON
CHECKED	L. CLASSON
DATE	1/24/2017
PROJECT	CEC-003
SHEET	C3.0
BOARD OF PROFESSIONAL ENGINEERING CERTIFICATE NO. 28973	

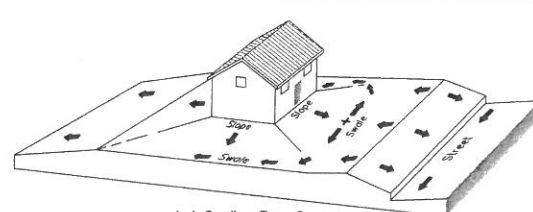
REV	DATE	DESCRIPTION
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2	02.06.17	CITY OF WINTER SPRINGS (P2016-0000033) COMMENTS 02.01.17
3	12.27.16	CITY OF WINTER SPRINGS (P2016-0000033) COMMENTS 12.27.16



**Lot Grading Type A**  
Drainage Directed Toward Front of Building



**Lot Grading Type B**  
Drainage Directed Toward Front and Rear of Building



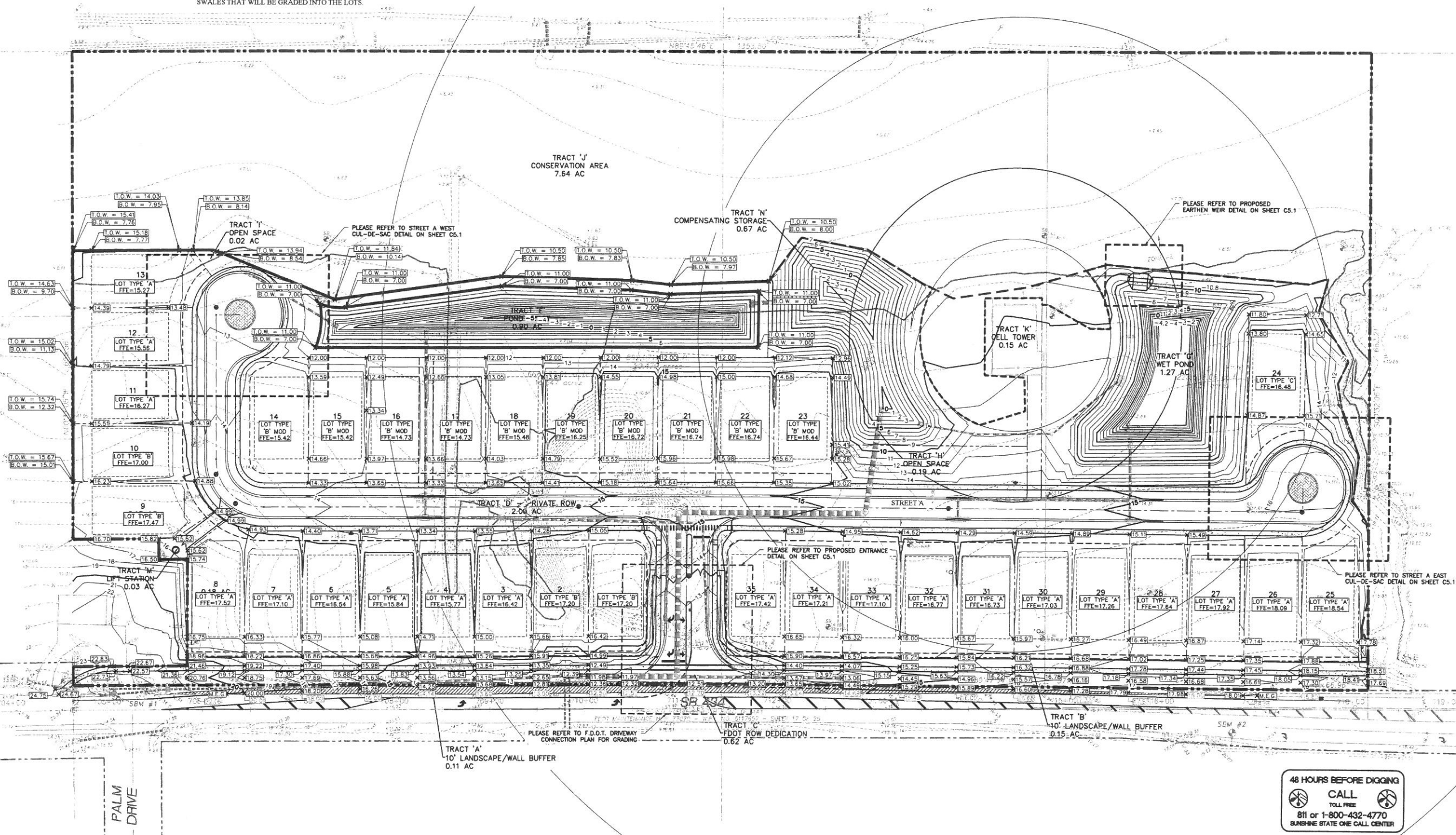
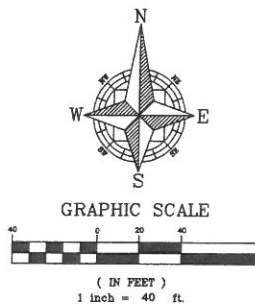
**Lot Grading Type C**  
Drainage Directed Toward Rear of Building

**NOTES:**

- REFER TO THE CROSS SECTIONS SHEET C3.1 FOR ALL CROSS SECTIONS.
- ALL GRADED LOT SURFACES AND SWALES SHALL HAVE MINIMUM 1.25% SLOPE.
- FINISHED FLOOR TO BE SET 18" ABOVE THE ELEVATION OF 100 YEAR FLOOD FOR THOSE SITES LOCATED IN SPECIAL FLOOD HAZARD AREA, AND / OR 1' ABOVE THE DESIGN HIGH WATER ELEVATION OF ADJACENT STORMWATER RETENTION / DETENTION PONDS.
- ALL GRADED LOTS SHALL PROVIDE A MINIMUM OF 2.0% SLOPE AWAY FROM THE HOUSE FOR A MINIMUM OF 5 FEET ON ALL SIDES.
- ALL HOMES ARE TO BE INSTALLED WITH GUTTERS AND/OR YARD DRAINS, IN ADDITION TO THE STANDARD SWALES THAT WILL BE GRADED INTO THE LOTS.

**DRY POND NOTES:**

- CONTRACTOR IS TO REMOVE THE SURFICIAL TOPSOIL LAYERS AND ORGANIC SOIL LAYERS FOR DRY POND BOTTOMS AND BERMS.
- THE REPLACEMENT SOILS SHALL CONSIST OF CLEAN FINE SAND WITH MAXIMUM 5% PASSING THE NO. 200 SIEVE AND A MINIMUM SATURATED PERMEABILITY OF 20 FEET PER DAY.
- DRY POND BOTTOMS ARE NOT TO BE SODDED OR SEEDED. PLEASE REFER TO POND CROSS SECTIONS ON SHEET C3.1 FOR THE LIMITS OF SOD.



REV	DATE	DESCRIPTION
1	01.24.17	ISSUE FOR PERMIT
2	02.06.17	ISSUE FOR PERMIT
3	02.06.17	ISSUE FOR PERMIT
4	12.27.16	ISSUE FOR PERMIT

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**APIAN ENGINEERING, LLC**  
2221 LEE ROAD, SUITE 17  
WINTER PARK, FLORIDA 32789  
(407) 960-5868

**PAVING & GRADING PLAN**  
NORTHERN OAKS SUBDIVISION  
CITY OF WINTER SPRINGS, FLORIDA

SCALE: 1" = 40'  
PROJECT: CED-003  
SHEET: C5.0

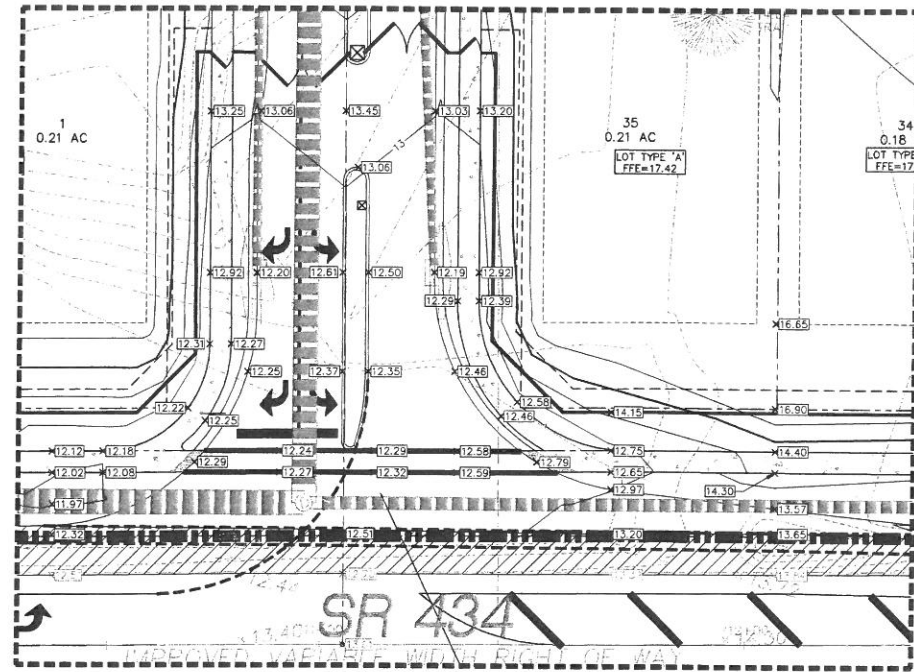
BOARD OF PROFESSIONAL ENGINEERING CERTIFICATE NO. 28973

DRAWN: O. SANCHEZ  
DESIGNED: L. CLASSON  
CHECKED: L. CLASSON  
DATE: 1/24/2017

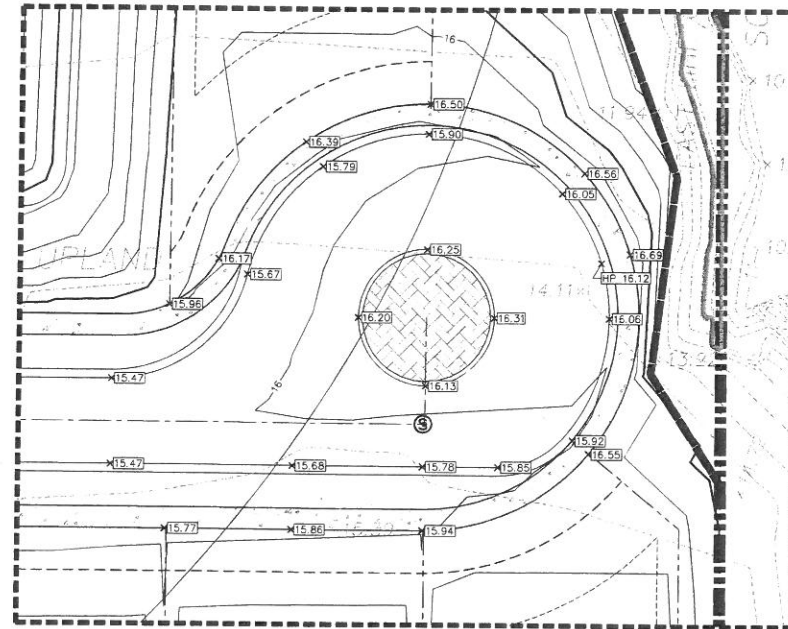


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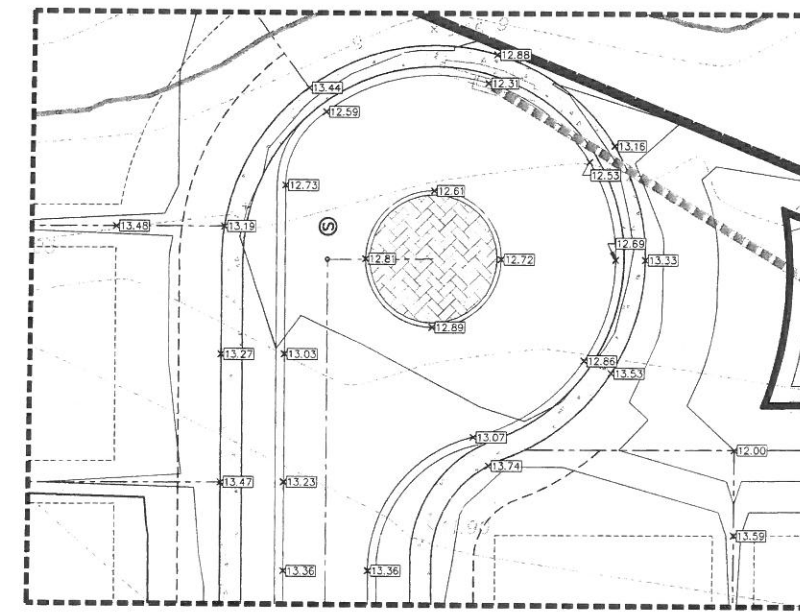
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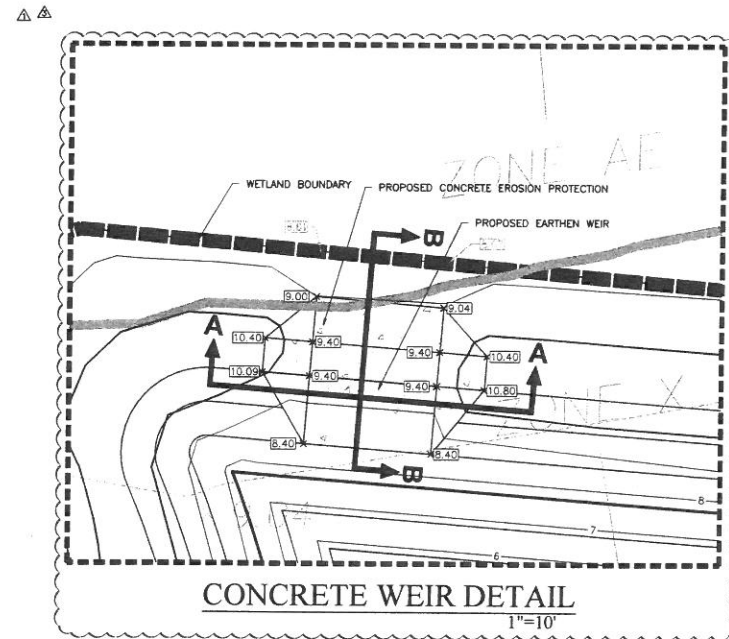
**PROPOSED ENTRANCE DETAIL**  
1" = 20'



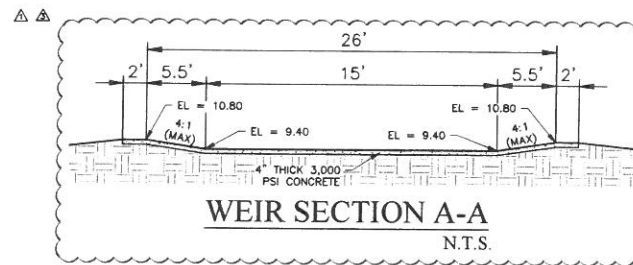
**STREET 'A' EAST CUL-DE-SAC DETAIL**  
1" = 20'



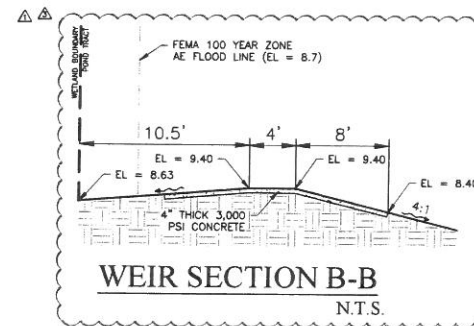
**STREET 'A' WEST CUL-DE-SAC DETAIL**  
1" = 20'



**CONCRETE WEIR DETAIL**  
1" = 10'



**WEIR SECTION A-A**  
N.T.S.



**WEIR SECTION B-B**  
N.T.S.

B&S ENGINEERING CONSULTANTS, LLC DBA <b>APPIAN ENGINEERING, LLC</b>		2221 LEE ROAD, SUITE 17 WINTER PARK, FLORIDA 32789 (407) 960-5868																					
PAVING & GRADING PLAN		NORTHERN OAKS SUBDIVISION CITY OF WINTER SPRINGS, FLORIDA																					
SCALE: N.T.S.	DRAWN: O. SANCHEZ	DESIGNED: L. GLASSON	DATE: 1/24/2017																				
PROJECT: CED-003	CHECKED: L. GLASSON	SHEET: C5.1																					
BOARD OF PROFESSIONAL ENGINEERING CERTIFICATE NO. 28973																							
<table border="1"> <thead> <tr> <th>REV</th> <th>DATE</th> <th>DESCRIPTION</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>02.08.17</td> <td>ISSUED COMMENTS (APPROXIMATE)</td> <td>O.S.</td> </tr> <tr> <td>2</td> <td>02.08.17</td> <td>CITY OF WINTER SPRINGS (P201-000003)</td> <td>O.S.</td> </tr> <tr> <td>3</td> <td>02.08.17</td> <td>CITY OF WINTER SPRINGS (P201-000003) COMMENTS 02.01.17</td> <td>O.S.</td> </tr> <tr> <td>4</td> <td>12.27.16</td> <td>CITY OF WINTER SPRINGS (P201-000003) COMMENTS 12.27.16</td> <td>O.S.</td> </tr> </tbody> </table>				REV	DATE	DESCRIPTION	BY	1	02.08.17	ISSUED COMMENTS (APPROXIMATE)	O.S.	2	02.08.17	CITY OF WINTER SPRINGS (P201-000003)	O.S.	3	02.08.17	CITY OF WINTER SPRINGS (P201-000003) COMMENTS 02.01.17	O.S.	4	12.27.16	CITY OF WINTER SPRINGS (P201-000003) COMMENTS 12.27.16	O.S.
REV	DATE	DESCRIPTION	BY																				
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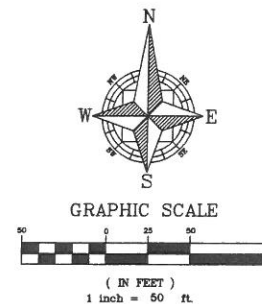
48 HOURS BEFORE DIGGING  
CALL TOLL FREE  
811 or 1-800-432-4770  
SUNSHINE STATE ONE CALL CENTER

**DRAINAGE NOTES:**

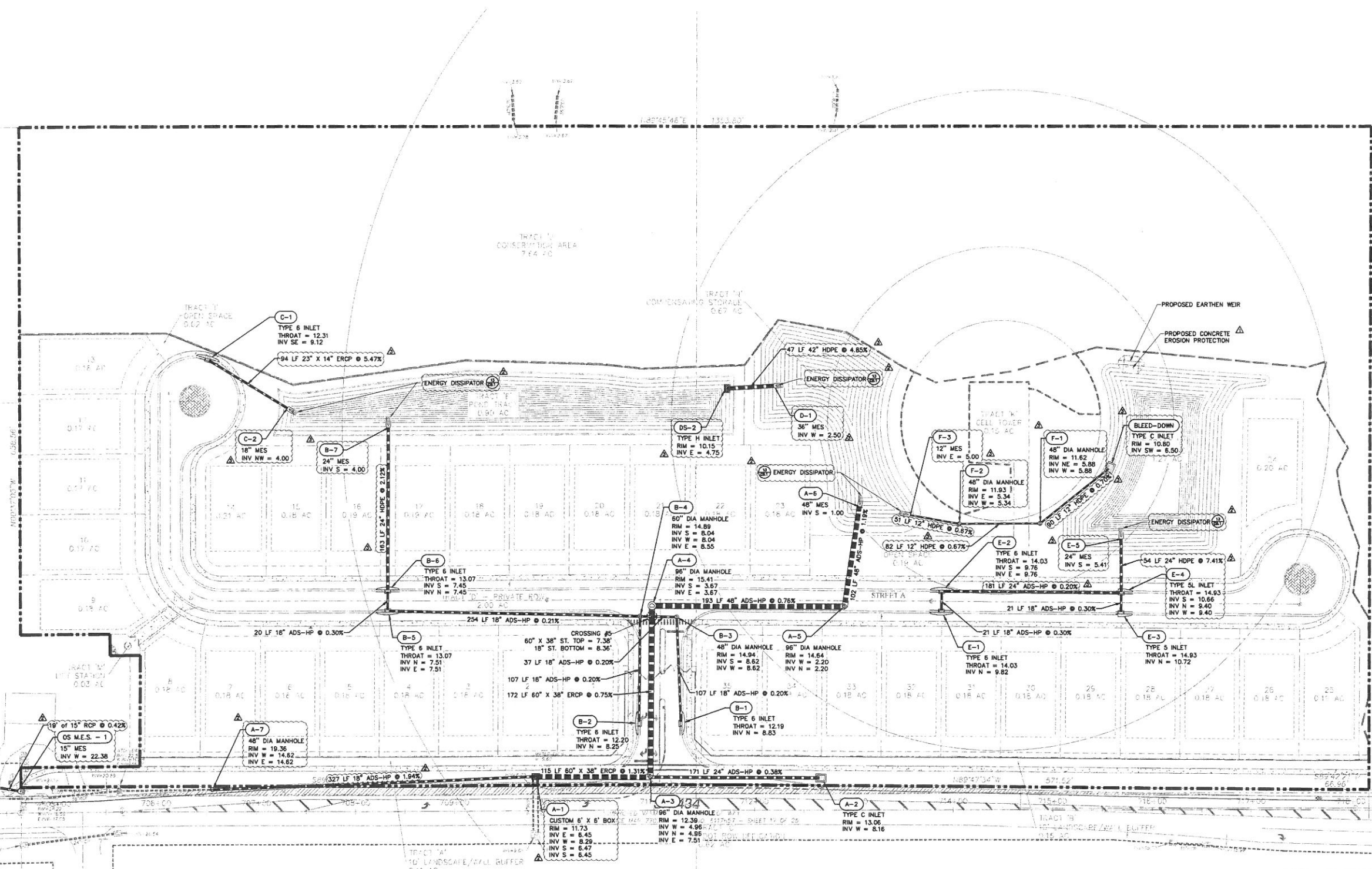
1. ALL REINFORCED CONCRETE PIPE (RCP) SHALL BE CLASS III UNLESS OTHERWISE SPECIFIED.
2. STORM SEWER TO BE VIDEO INSPECTED, WITH A DVD COPY PROVIDED TO THE CITY OF WINTER SPRINGS FOR REVIEW, ALONG WITH THE AS-BUILTS.

**LEGEND:**

- ⊙ STORM MANHOLE
- TYPE C INLET
- ▣ TYPE H INLET
- ⌒ MITER END SECTION
- ▭ FOOT TYPE 6 INLET
- ▭ FOOT TYPE 5 INLET



P:\PROJECT DRAWINGS\CED-003 - Northern Oaks Subdivision\5.9 Drawings\5.9 Civil\5.9 Civil\5.9 Final Engineering Plan\Drainage Plan.dwg Modified: 2/24/2017 By: asanchez



REV	DATE	DESCRIPTION
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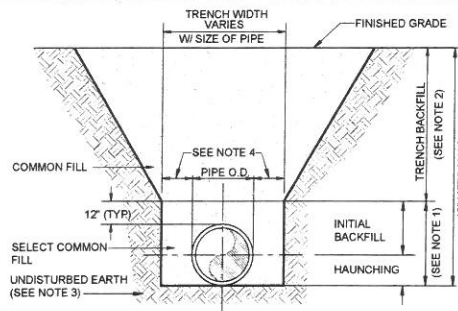
B&S ENGINEERING CONSULTANTS, LLC DBA  
**APPIAN ENGINEERING, LLC**  
 2221 LEE ROAD, SUITE 17  
 WINTER PARK, FLORIDA 32789  
 (407) 960-5868

**DRAINAGE PLAN**  
 NORTHERN OAKS SUBDIVISION  
 CITY OF WINTER SPRINGS, FLORIDA

SCALE:	1" = 50'
DRAWN:	O. SANCHEZ
DESIGNED:	L. CLASSON
CHECKED:	L. CLASSON
DATE:	1/24/2017
PROJECT:	CFD-003
SHEET:	C5.2
BOARD OF PROFESSIONAL ENGINEERING CERTIFICATE NO. 28973	

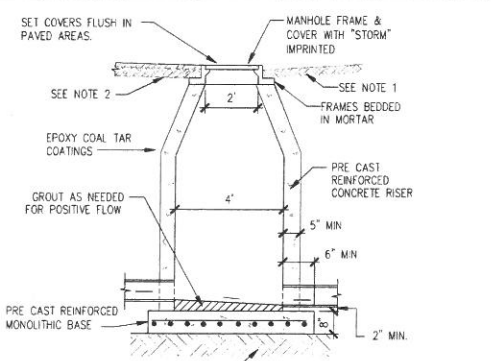


MACTAVANDASH DRIVE



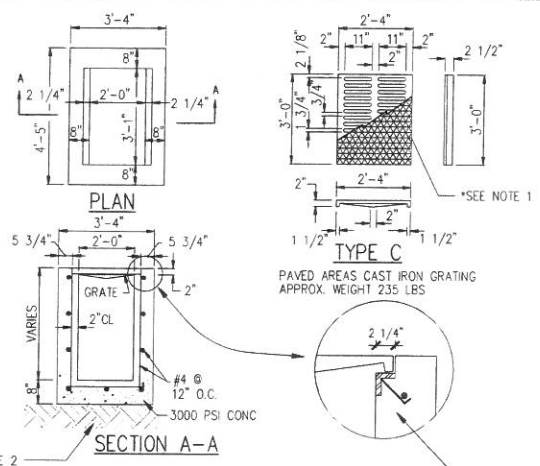
- NOTES:
- INITIAL BACKFILL AND HAUNCHING: SELECT COMMON FILL COMPACTED TO 95% (98% UNDER PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
  - TRENCH BACKFILL: COMMON FILL COMPACTED TO 98% (98% UNDER PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
  - PIPE BEDDING: SHALL BE COMPACTED TO 95% (MIN) OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY. BEDDING ROCK CAN BE USED FOR BEDDING IF SUBGRADE SOILS ARE TOO WET TO COMPACT, OR AS DIRECTED BY THE ENGINEER.
  - 15" MAX. (12" MIN) FOR PIPE DIAMETER LESS THAN 24" AND 24" MAX (12" MIN) FOR PIPE DIAMETER 24" AND LARGER.
  - WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION.
  - ALL PIPE TO BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE FLOW.
  - FINAL RESTORATION IN IMPROVED AREAS SHALL BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS OF GOVERNING AGENCIES.

**1 TRENCH DETAIL**  
N.T.S.



- NOTE:
- IN UNPAVED AREAS TOP OF FRAME SHALL BE 2" ABOVE FINISHED GRADE.
  - ALL IN-PAVED STRUCTURES MUST CONFORM TO H20 LOADING STANDARDS.
  - 12 INCHES OF STONE BEDDING (FOOT #57 STONE, NON-CALCAREOUS) CAN BE USED FOR BEDDING IF SUBGRADE SOILS ARE TOO WET TO COMPACT.

**2 MANHOLE**  
N.T.S.



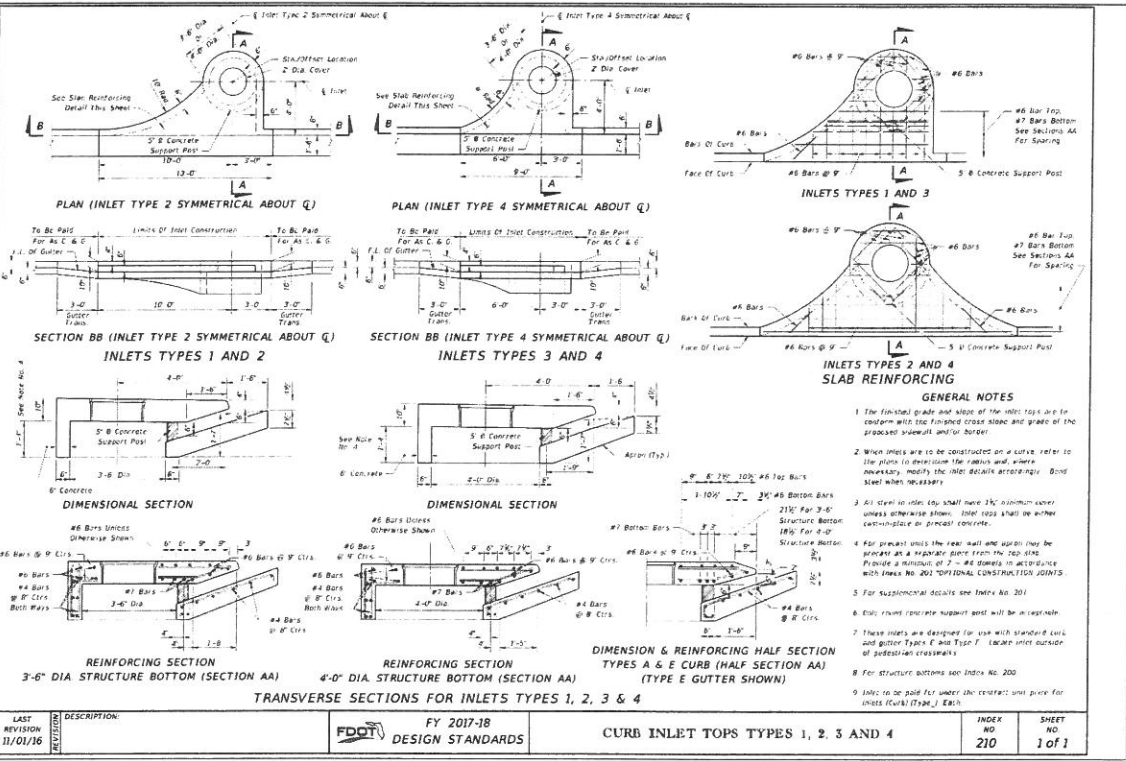
- NOTE:
- FOR PEDESTRIAN AND VEHICULAR USE, USE CAST IRON GRATE. FOR NON VEHICULAR USE, USE STEEL GRATE.
  - SUBGRADE SHALL BE COMPACTED TO 95% (98% UNDER PAVEMENT) OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY.

**3 TYPE "C" INLET**  
N.T.S.

D	DIMENSIONS AND QUANTITIES										
	A	B	C	E	F	G	SINGLE PIPE		TRIPLE PIPE	QUAD PIPE	
15"	1.92	2.18	4.10	2.06	5.122	4.63	7.21	9.79	12.37	13.42	
18"	1.97	2.24	4.71	2.56	6.141	4.92	7.75	10.58	13.42	14.47	
24"	2.06	3.85	5.91	3.62	7.173	5.50	8.92	12.33	15.75	16.80	
30"	2.15	4.95	7.10	4.56	8.200	6.08	10.33	14.58	18.83	19.88	
36"	2.25	6.08	8.33	5.56	9.224	6.67	11.75	16.83	21.92	22.97	
42"	2.34	7.21	9.55	6.56	10.245	7.25	13.25	19.25	25.25	26.30	
48"	2.43	8.33	10.76	7.56	11.265	7.83	14.58	21.33	28.08	29.13	
54"	2.52	9.44	11.96	8.56	12.283	8.42	16.08	23.75	31.42	32.47	
60"	2.62	10.56	13.18	9.56	13.300	9.00	17.50	26.00	34.50	35.55	
66"	2.71	11.68	14.39	10.56	14.318	9.58	18.75	27.92	37.08	38.13	
72"	2.80	12.80	15.60	11.56	15.330	10.16	20.16	30.16	40.16	41.21	

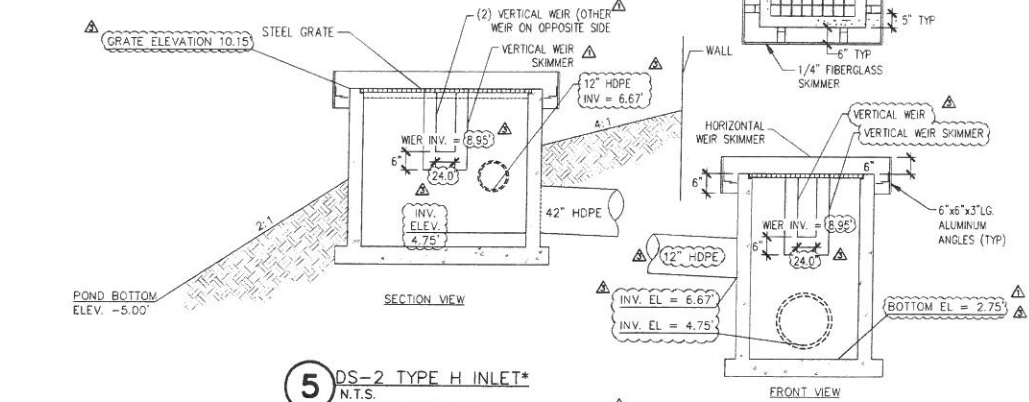
- \*SLOPE: 4:1 MITER - TO C PIPE FOR PIPES 18" AND SMALLER  
2:1 FOR PIPES 24" AND LARGER  
2:1 MITER - TO E PIPE FOR PIPES 18" AND SMALLER  
1:1 FOR PIPES 24" AND LARGER

**8 MITERED END SECTION (RCP)**  
FOOT STD. INDEX 272 N.T.S.



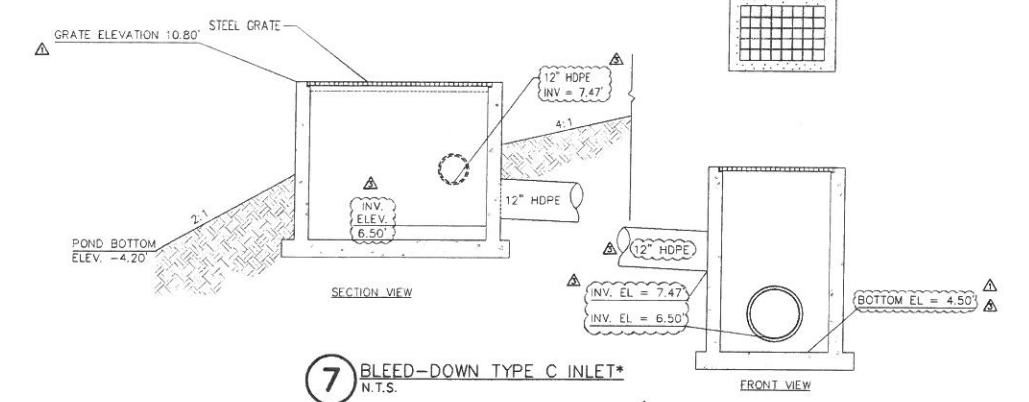
**9 FDOT TYPE 3/4 INLET (STANDARD INDEX 210)**  
N.T.S.

**4 NOT USED**

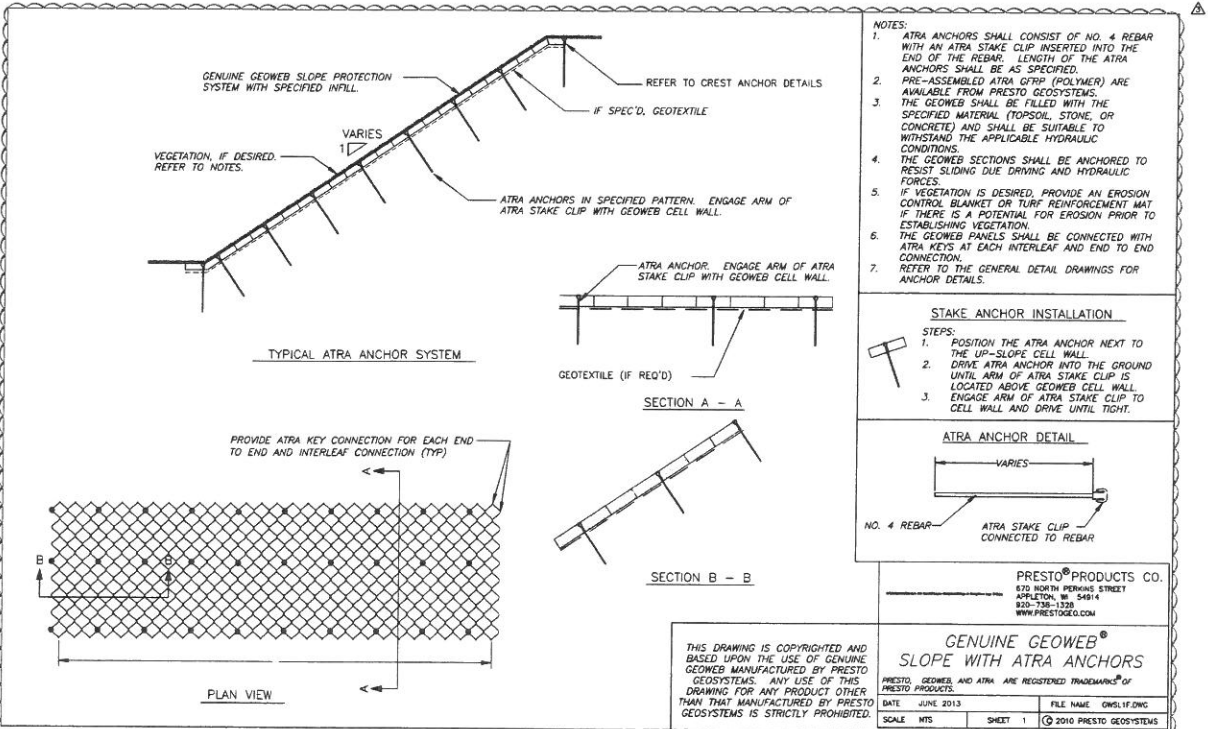


**5 DS-2 TYPE H INLET\***  
N.T.S.

**6 NOT USED**



**7 BLEED-DOWN TYPE C INLET\***  
N.T.S.



**10 GENUINE GEOWEB SLOPE WITH ATRA ANCHORS**  
N.T.S.

REV	DATE	DESCRIPTION
01	02.06.17	ISSUED FOR PERMITS (APPROX. NO. 14897-1) 01.26.17
02	02.06.17	CITY OF WINTER SPRINGS (272018-0000033) COMMENTS 02.01.17
03	12.27.16	CITY OF WINTER SPRINGS (272018-0000033) COMMENTS 02.21.16

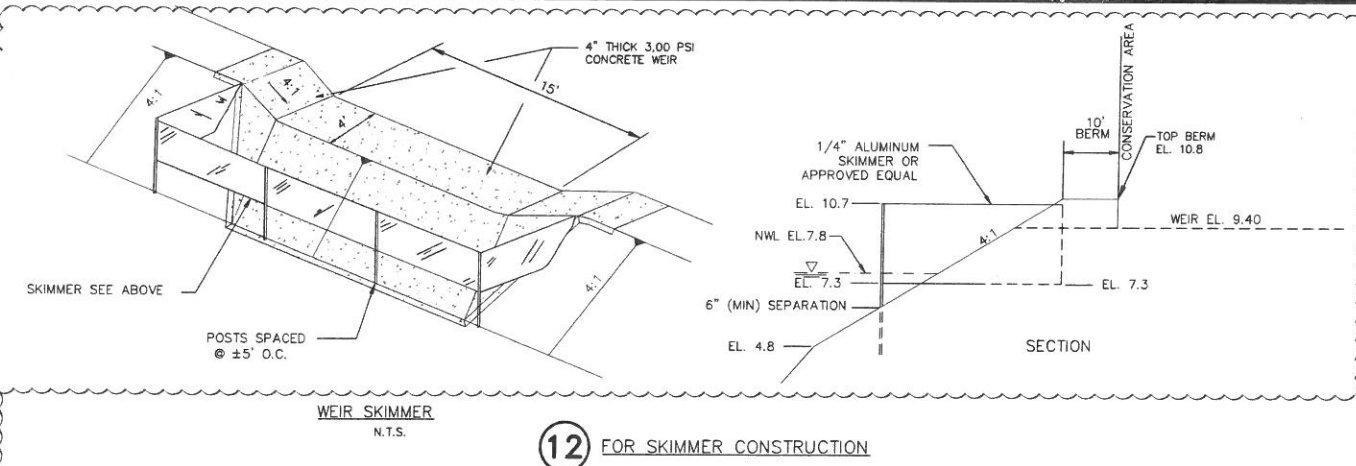
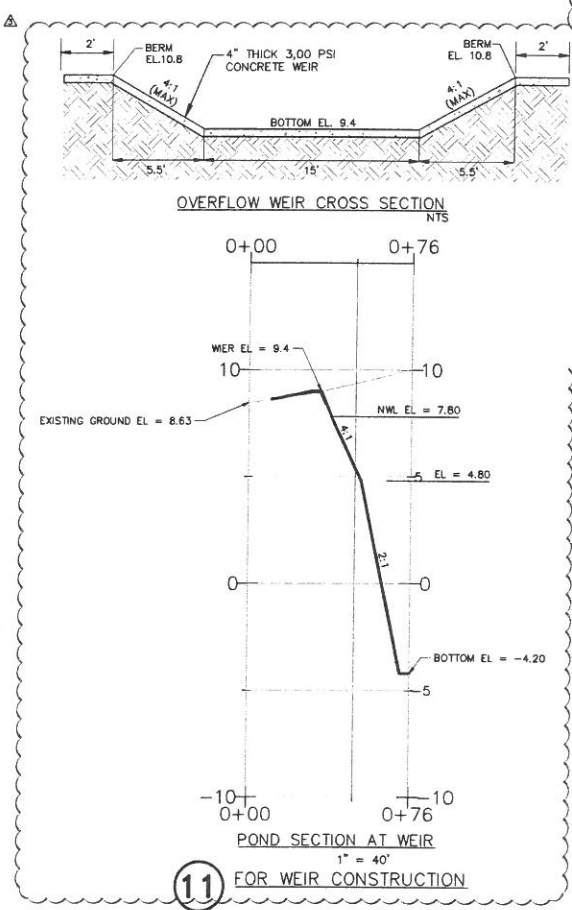
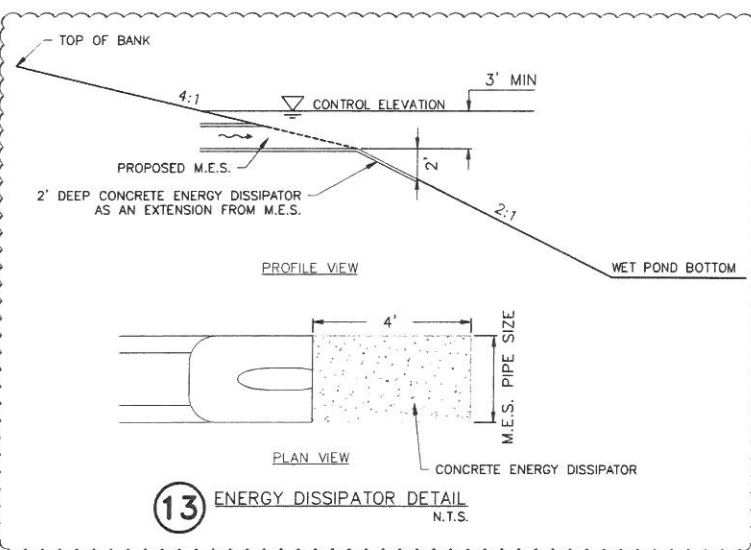
B&S ENGINEERING CONSULTANTS, LLC DBA  
**APIAN ENGINEERING, LLC**  
2221 LEE ROAD, SUITE 17  
WINTER PARK, FLORIDA 32789  
(407) 960-5868

**DRAINAGE DETAILS**  
NORTHERN OAKS SUBDIVISION  
CITY OF WINTER SPRINGS, FLORIDA

SCALE	DESIGNED	CHECKED	DATE
N.T.S.	O. SANCHEZ	L. GLASSON	1/24/2017
PROJECT	CED-003	SHEET	C9.0

BOARD OF PROFESSIONAL ENGINEERING CERTIFICATE NO. 28973

P:\PROJECT DRAWINGS\CED-003 - Northern Oaks Subdivision\5.9 Drawings\99civil\layouts\05 Final Engineering Plan\Drainage Details.dwg Modified: 3/1/2017 By: osanchez



14 NOT USED

SCALE N.T.S.		DRAWN: O. SANCHEZ		DESIGNED: L. CLASSON		CHECKED: L. CLASSON		DATE: 1/24/2017													
PROJECT CED-003		PROJECT CED-003		PROJECT CED-003		PROJECT CED-003		PROJECT CED-003													
SHEET C9.1		SHEET C9.1		SHEET C9.1		SHEET C9.1		SHEET C9.1													
BOARD OF PROFESSIONAL ENGINEERING CERTIFICATE NO. 28973																					
DRAINAGE DETAILS				B&S ENGINEERING CONSULTANTS, LLC DBA APPIAN ENGINEERING, LLC			2221 LEE ROAD, SUITE 17 WINTER PARK, FLORIDA 32789 (407) 960-5868														
NORTHERN OAKS SUBDIVISION CITY OF WINTER SPRINGS, FLORIDA				NORTHERN OAKS SUBDIVISION CITY OF WINTER SPRINGS, FLORIDA			NORTHERN OAKS SUBDIVISION CITY OF WINTER SPRINGS, FLORIDA														
<table border="1"> <tr> <th>REV.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> <tr> <td>AA</td> <td>02.06.17</td> <td>SAVAD COMMENTS (APPLICATION NO. 148192-1) 01.28.17</td> </tr> <tr> <td>AA</td> <td>02.06.17</td> <td>CITY OF WINTER SPRINGS (P2016-00000033) COMMENTS 02.01.17</td> </tr> <tr> <td>AA</td> <td>12.27.16</td> <td>CITY OF WINTER SPRINGS (P2016-00000033) COMMENTS 12.22.16</td> </tr> </table>										REV.	DATE	DESCRIPTION	AA	02.06.17	SAVAD COMMENTS (APPLICATION NO. 148192-1) 01.28.17	AA	02.06.17	CITY OF WINTER SPRINGS (P2016-00000033) COMMENTS 02.01.17	AA	12.27.16	CITY OF WINTER SPRINGS (P2016-00000033) COMMENTS 12.22.16
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AA	12.27.16	CITY OF WINTER SPRINGS (P2016-00000033) COMMENTS 12.22.16																			

# SUNTREE TECHNOLOGIES INC.™ NUTRIENT REMOVING FILTRATION SYSTEM™ MODEL NO: NRFS-4-8-TBD

**GENERAL NOTES:**

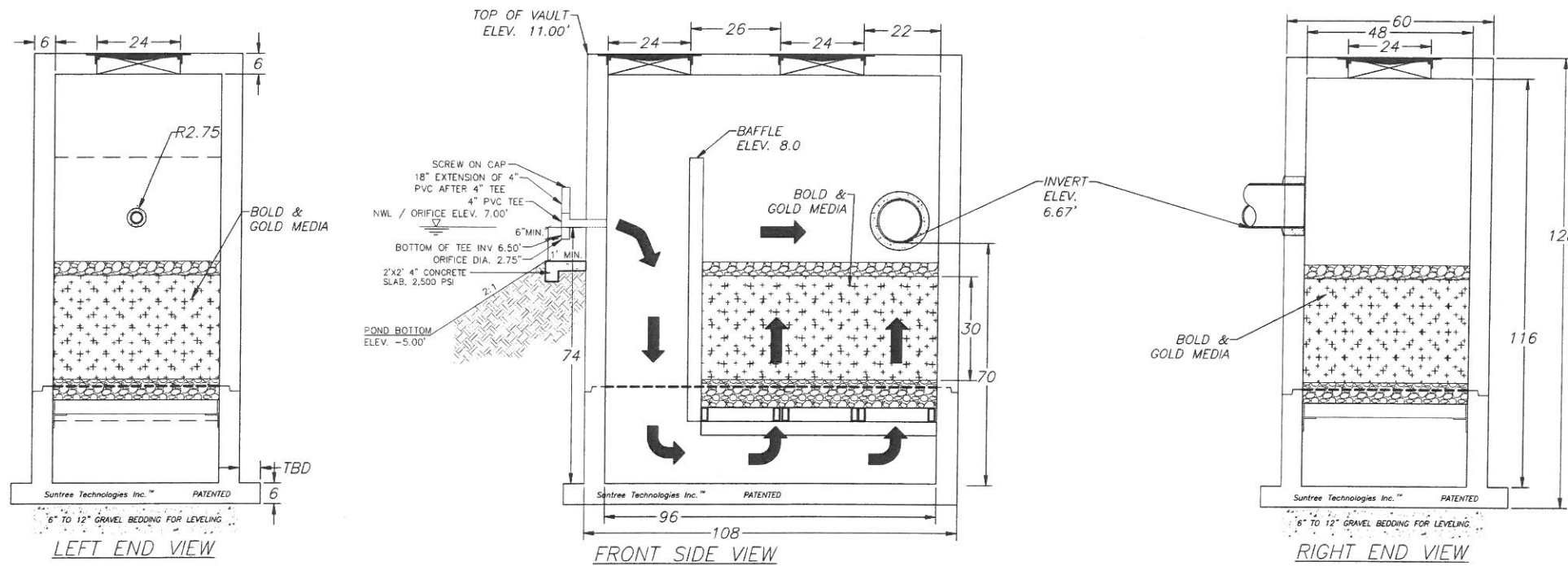
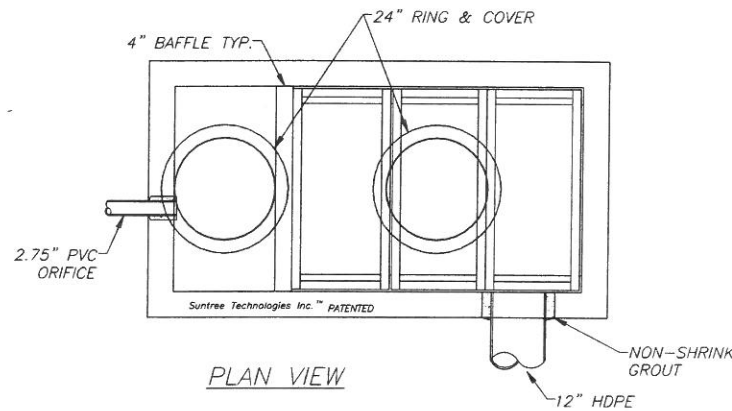
1. Pipe inflow area = TBD ft<sup>2</sup>
2. Cubic feet of Media = 56.66 ft<sup>3</sup>
3. FLOOR OF VAULT TO HAVE HYDRO-SLIDE SYSTEM.
4. CONCRETE 28 DAY COMPRESSIVE STRENGTH FC=5000 PSI
5. REINFORCING: ASTM A-615 GRADE 60
6. SUPPORTS AN H2O LOADING AS INDICATED BY AASHTO.
7. JOINT SEALANT: BUTYL RUBBER SS-5-00210
8. ALL WALLS 6", BOTTOM 6", & TOP TO BE 6"
9. INFLOW AND OUTFLOW PIPES ARE TO BE FLUSH WITH THE INSIDE SURFACE OF THE CONCRETE STRUCTURE. (CAN NOT INTRUDE BEYOND FLUSH)
10. MANUFACTURER TO SUPPLY ALL MATERIALS UNLESS OTHERWISE NOTED
11. MINIMUM CRITICAL DIMENSIONS ARE SHOWN IN A PENTAGON BLOCK

**INSTALLATION NOTES:**

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURERS SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURERS CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM OF 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE TO VERIFY PROJECT ENGINEERS RECOMMENDED BASE SPECIFICATIONS.
3. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE. (PIPES CANNOT INTRUDE BEYOND FLUSH). ALL PIPES SHALL BE SEALED WATER TIGHT WITH A NON-SHRINK GROUT PER MANUFACTURERS STANDARD CONNECTION DETAIL AND SHALL MEET OR EXCEED REGIONAL PIPE CONNECTION STANDARDS.
4. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES.
5. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL RISERS, MANHOLES, AND HATCHES (UNLESS CAST INTO THE TOP). CONTRACTOR TO GROUT ALL MANHOLES AND HATCHES TO MATCH FINISH SURFACE UNLESS SPECIFIED OTHERWISE.

1. The BAM media shall be primarily of a mineral content. No more than 5% of the media passing the 200 sieve is allowed. The mix is composed of tire chips, with no metals, and a 3/8" blend of expanded clay. The mix has an average dry weight of less than sixty (60) pounds per cubic foot, non-flammable up to 482 degrees Fahrenheit (250 degrees Celsius), and a moisture holding capacity of a least 20%. The filtered water has no change in pH and water from the media must have no acute or chronic toxicity. Water holding capacity must be at least 30% as measured by fillable porosity. The permeability is less than two (2) gallons per minute per square foot of new clean filter media as measured at static head of six (6) inches. The removable capacity must exceed 0.2mg OP/gram of media during normal operating conditions. An example of the blend to meet these specifications is known as "Bold & Gold".

2. The Bold and Gold (BAM) will be qualified by the receipt of a letter of authenticity from the supplier of said media. On said letter of authenticity, there will be a specific identification number for the qualifying blend of media, verifying the media meets the patented formulations set forth by the University of Central Florida (UCF), as well as identifying the specific project where it will be utilized.



**PATENTED**  
AND PATENTS PEND.

Suntree Technologies Inc.  
798 Clearlake Road, Cocoa, Florida 32922  
PH: 321-637-7552 Fax: 321-637-7554

SUNTREE TECHNOLOGIES INC.™ 798 CLEARLAKE RD, SUITE #2 COCOA, FL 32922		PROJECT LOC:	CAD	REVISIONS	DATE
NUTRIENT REMOVING FILTRATION SYSTEM MODEL NO: NRFS-4-4-TBD		PROJECT NAME:	A.B.1	-----	00/00/00
START DATE: 00/00/00	SCALE: N/A				
DRAFTER: A.B.1.	UNITS: INCHES				
CHECKED BY: A.B.1.	PO #: 00000	00-00-00-00-00			

**15** NUTRIENT REMOVING FILTRATION SYSTEM MEDIA FILTER  
(B&G ECT) WITH BOLD & GOLD (BAM) FOR WEST WET POND

CONTRACTOR TO COORDINATE FILTRATION SYSTEM SIZING & SPECIFICS WITH:  
SUNTREE TECHNOLOGIES, INC C/O  
EVAN SELBIGER  
PHONE: (321) 637-7522  
EMAIL: EVANS@SUNTREETECH.COM

P:\PROJECT DRAWINGS\CED-003 - Northern Oaks Subdivision\5.9 Drawings\59civil\layouts\05 Final Engineering Plan\Drainage Details.dwg Modified: 3/1/2017 By: asanchez

SCALE	N.T.S.	PROJECT	CED-003	SHEET	C9.2	DATE	1/24/2017
DRAWN	O. SANCHEZ	DESIGNED	L. GLASSON	CHECKED	L. GLASSON	DATE	1/24/2017
BOARD OF PROFESSIONAL ENGINEERING CERTIFICATE NO. 28973							
DRAINAGE DETAILS				NORTHERN OAKS SUBDIVISION CITY OF WINTER SPRINGS, FLORIDA			
B&S ENGINEERING CONSULTANTS, LLC DBA APPIAN ENGINEERING, LLC				2221 LEE ROAD, SUITE 17 WINTER PARK, FLORIDA 32789 (407) 960-5868			

# SUNTREE TECHNOLOGIES INC.™ NUTRIENT REMOVING FILTRATION SYSTEM™ MODEL NO: NRFS-4-4-TBD

**GENERAL NOTES:**

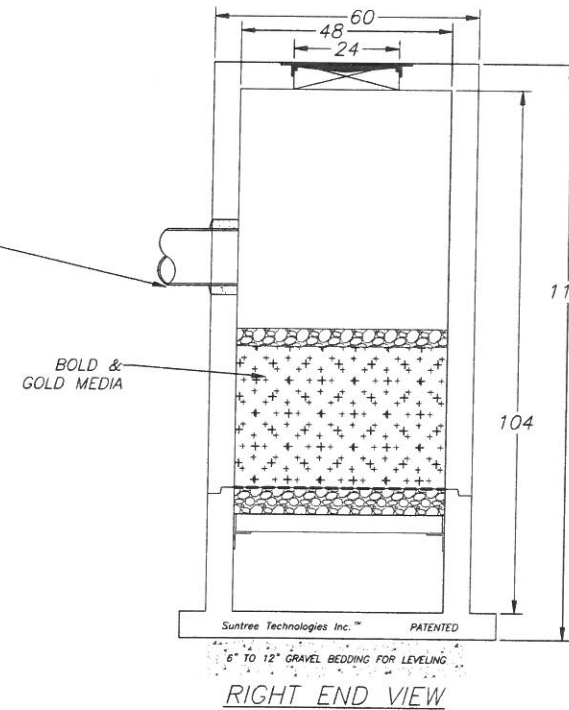
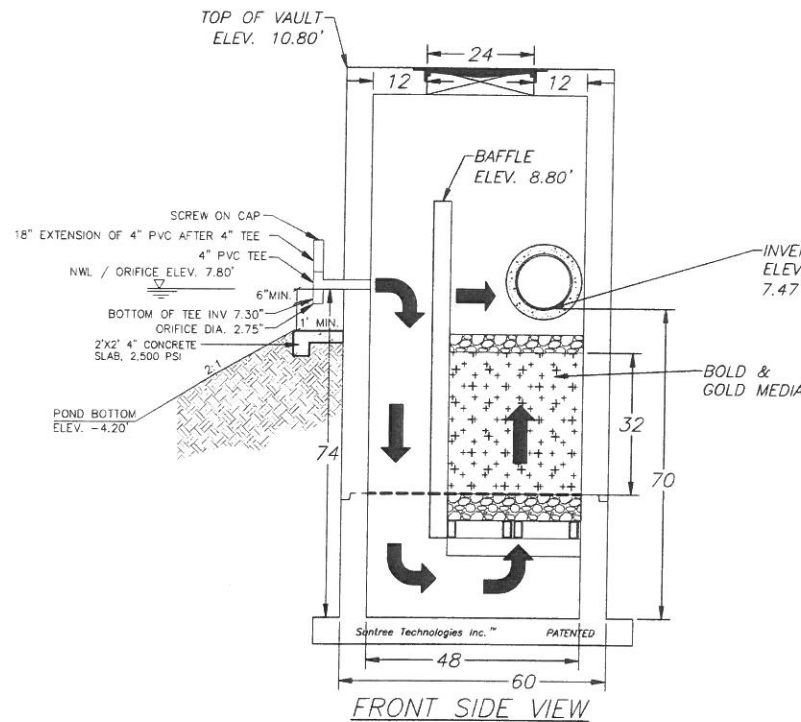
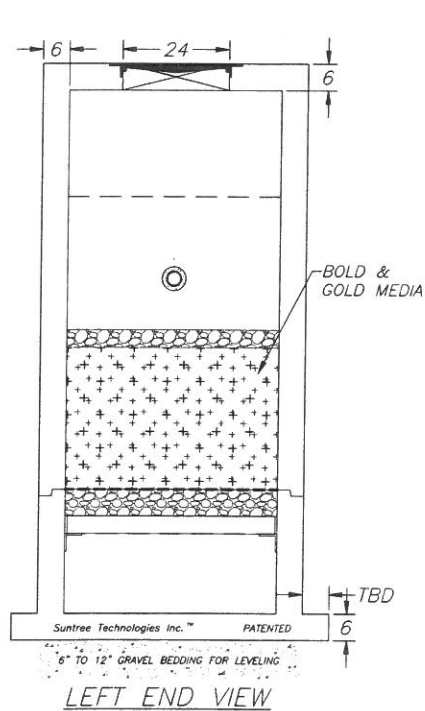
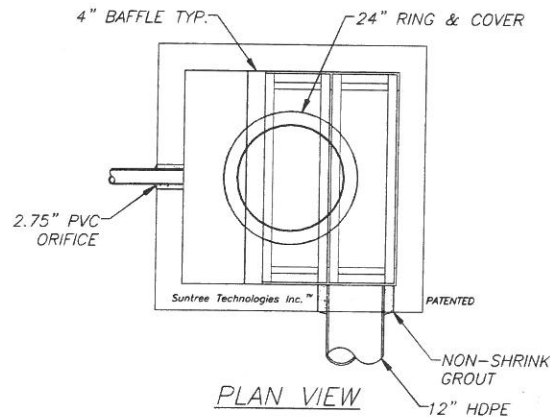
1. Pipe inflow area = TBD ft<sup>2</sup>
2. Cubic feet of Media = 27.00 ft<sup>3</sup>
3. FLOOR OF VAULT TO HAVE HYDRO-SLIDE SYSTEM.
4. CONCRETE 28 DAY COMPRESSIVE STRENGTH FC=5000 PSI
5. REINFORCING: ASTM A-615 GRADE 60
6. SUPPORTS AN H2O LOADING AS INDICATED BY AASHTO.
7. JOINT SEALANT: BUTYL RUBBER SS-S-00210
8. ALL WALLS 6", BOTTOM 6", & TOP TO BE 6"
9. INFLOW AND OUTFLOW PIPES ARE TO BE FLUSH WITH THE INSIDE SURFACE OF THE CONCRETE STRUCTURE. (CAN NOT INTRUDE BEYOND FLUSH)
10. MANUFACTURER TO SUPPLY ALL MATERIALS UNLESS OTHERWISE NOTED
11. MINIMUM CRITICAL DIMENSIONS ARE SHOWN IN A PENTAGON BLOCK

**INSTALLATION NOTES:**

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURERS SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURERS CONTRACT.
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**PATENTED  
AND PATENTS PEND.**

Suntree Technologies Inc.  
798 Clearlake Road, Cocoa, Florida 32922  
PH: 321-637-7552 Fax: 321-637-7554

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SUNTREE TECHNOLOGIES INC.™ 798 CLEARLAKE RD. SUITE #2 COCOA, FL 32922		PROJECT LOC:	CAD	REVISIONS	DATE
NUTRIENT REMOVING FILTRATION SYSTEM MODEL NO: NRFS-4-4-TBD		PROJECT NAME:	A.B.1	-----	00/00/00
START DATE: 00/00/00	SCALE: N/A				
DRAFTER: A.B.1.	UNITS: INCHES				
CHECKED BY: A.B.1.	PO #: 00000	00-00-00-00-00			

**16** NUTRIENT REMOVING FILTRATION SYSTEM MEDIA FILTER  
(B&G ECT) WITH BOLD & GOLD (BAM) FOR EAST WET POND  
N.T.S.

CONTRACTOR TO COORDINATE FILTRATION SYSTEM SIZING & SPECIFICS WITH:  
SUNTREE TECHNOLOGIES, INC C/O  
EVAN SELBINGER  
PHONE: (321) 637-7522  
EMAIL: EVANS@SUNTREETECH.COM

P:\PROJECT DRAWINGS\CED-003 - Northern Oaks Subdivision\5.9 Drawings\59a\civil\layouts\05 Final Engineering Plan\Drainage Details.dwg Modified: 3/1/2017 By: asanchez

SCALE	N.T.S.	PROJECT	CED-003	SHEET	C9.3	DATE	1/24/2017
DRAWN:	O. SANCHEZ	DESIGNED:	L. GLASSON	CHECKED:	L. GLASSON	DATE:	1/24/2017
BOARD OF PROFESSIONAL ENGINEERING CERTIFICATE NO. 28973							
DRAINAGE DETAILS				NORTHERN OAKS SUBDIVISION CITY OF WINTER SPRINGS, FLORIDA			
B&S ENGINEERING CONSULTANTS, LLC DBA APPIAN ENGINEERING, LLC				2221 LEE ROAD, SUITE 17 WINTER PARK, FLORIDA 32789 (407) 960-5868			
REV.	DATE	DESCRIPTION					
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