

SERENOA (FKA AVALON GROVES) VILLAGES 1 & 2 - PHASE 1A



HEIDT DESIGN

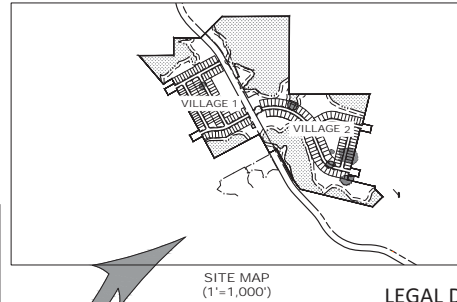
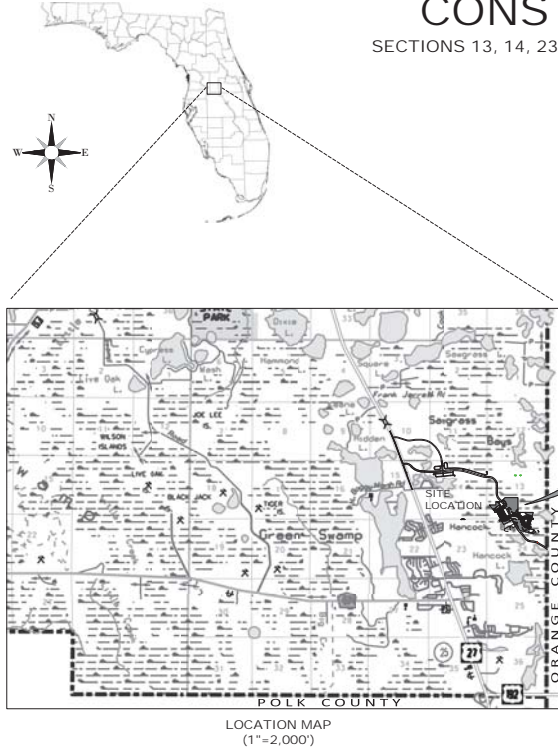
Civil Engineering • Planning & GIS
Transportation Engineering
Ecological Services • Landscape Architecture

Engineering Business Certificate of Authorization No. 28782
Landscape Architecture Certificate of Authorization No. LC26000405

CONSTRUCTION PLAN SECTIONS 13, 14, 23, & 24 TOWNSHIP 24 SOUTH, RANGE 26 EAST LAKE COUNTY, FLORIDA

CALL 48 HOURS BEFORE YOU DIG

1-800-432-4770



Prepared For:
VK AVALON GROVES, LLC
8875 HIDDEN RIVER PARKWAY
TAMPA, FL 33637
Phone: (813) 615-1244

Sheet Number	Sheet Title
C-100	COVER SHEET
C-101 - C-103	GENERAL NOTES
C-104	AERIAL SITE PLAN
C-105	EXISTING CONDITIONS
C-200	TYPICAL ROADWAY SECTIONS
C-300	MASTER GRADING & DRAINAGE PLAN
C-301 - C-306	GRADING & DRAINAGE PLAN
C-307	STORM STRUCTURE DATA
C-308	CONTROL STRUCTURE DETAIL
C-309 - C-310	GRADING & DRAINAGE SECTIONS
C-311 - C-315	DRAINAGE DETAILS
C-501 - C-509	ROADWAY PLAN & PROFILE
C-900	CONSTRUCTION SURFACE WATER MANAGEMENT PLAN
C-901	CONSTRUCTION SURFACE WATER MANAGEMENT PLAN NOTES
C-904 - C-905	DRAINAGE SUB-BASIN AREA MAP
C-906 - C-907	UPLAND BUFFER

LEGAL DESCRIPTION

PHASE 1A LEGAL DESCRIPTION
A PORTION OF SECTIONS 13 AND 24, TOWNSHIP 24 SOUTH, RANGE 26 EAST, LYING WITHIN LAKE COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:
COMMENCE AT THE NORTHWEST CORNER OF THE SOUTH 1/2 OF SOUTHWEST 1/4 OF SAID SECTION 13, TOWNSHIP 24 SOUTH, RANGE 26 EAST; THENCE NORTH 89°54'57" EAST ALONG THE NORTH LINE OF THE SOUTH 1/2 OF THE SOUTHWEST 1/4 OF SAID SECTION 13, A DISTANCE OF 69.25 FEET TO THE POINT OF BEGINNING; THENCE CONTINUE NORTH 89°54'57" EAST, ALONG SAID LINE, A DISTANCE OF 588.07 FEET; THENCE DEPARTING SAID NORTH LINE, RUN NORTH 00°17'48" EAST, A DISTANCE OF 302.83 FEET; THENCE SOUTH 89°22'17" EAST, A DISTANCE OF 458.67 FEET; THENCE NORTH 45°17'48" EAST, A DISTANCE OF 517.52 FEET; THENCE NORTH 89°54'29" EAST, ALONG THE NORTH LINE OF THE SOUTH 1/2 OF THE NORTH 1/2 OF THE SOUTHWEST 1/4, A DISTANCE OF 1,146.75 FEET; THENCE SOUTH 00°14'52" WEST, ALONG THE WEST LINE OF THE SOUTHEAST 1/4, A DISTANCE OF 1,326.86 FEET TO THE NORTHWEST CORNER OF THE SOUTH 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 13; THENCE NORTH 89°56'13" EAST, ALONG SAID LINE, RUN SOUTH 13°45'33" WEST, A DISTANCE OF 563.43 FEET; THENCE SOUTH 43°39'47" WEST, A DISTANCE OF 32.38 FEET; THENCE DEPARTING SAID LINE, RUN SOUTH 13°45'33" WEST, A DISTANCE OF 741.80 FEET; THENCE SOUTH 22°24'36" WEST, A DISTANCE OF 50.58 FEET; THENCE SOUTH 13°45'33" WEST, A DISTANCE OF 125.00 FEET; THENCE SOUTH 76°14'27" EAST, A DISTANCE OF 396.30 FEET TO A POINT ON A NON-TANGENT CURVE TO THE LEFT, CONCAVE NORTH, HAVING A RADIUS OF 291.18 FEET AND A CENTRAL ANGLE OF 152°27'29"; A CHORD THAT BEARS SOUTH 82°00'15" EAST, A DISTANCE OF 82.49 FEET; THENCE EASTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 62.74 FEET TO A POINT ON SAID CURVE; THENCE DEPARTING SAID CURVE, RUN SOUTH 05°32'50" EAST, A DISTANCE OF 52.72 FEET; THENCE NORTH 44°28'25" EAST, A DISTANCE OF 187.24 FEET; THENCE SOUTH 45°31'35" WEST, A DISTANCE OF 243.35 FEET; THENCE NORTH 76°14'27" EAST, A DISTANCE OF 1,265.24 FEET TO A POINT ON A NON-TANGENT CURVE TO THE RIGHT, CONCAVE NORTHEAST, HAVING A RADIUS OF 864.93 FEET AND A CENTRAL ANGLE OF 14°09'25"; A CHORD THAT BEARS NORTH 35°35'11" WEST, A DISTANCE OF 237.82 FEET; THENCE NORTHWESTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 238.42 FEET TO A POINT ON SAID CURVE; THENCE NORTH 28°30'28" WEST, A DISTANCE OF 559.35 FEET; THENCE SOUTH 61°29'31" WEST, A DISTANCE OF 144.00 FEET; THENCE NORTH 28°30'28" WEST, A DISTANCE OF 362.71 FEET; THENCE SOUTH 62°08'16" WEST, A DISTANCE OF 867.92 FEET; THENCE NORTH 28°30'28" WEST, A DISTANCE OF 455.87 FEET; THENCE NORTH 31°02'22" WEST, A DISTANCE OF 500.95 FEET; THENCE NORTH 38°30'29" WEST, A DISTANCE OF 850.00 FEET; THENCE NORTH 15°09'52" WEST, A DISTANCE OF 51.39 FEET; THENCE NORTH 28°30'29" WEST, A DISTANCE OF 125.00 FEET; THENCE SOUTH 05°31'35" WEST, A DISTANCE OF 48.50 FEET TO A POINT ON A CURVE TO THE LEFT, CONCAVE SOUTHWEST, HAVING A RADIUS OF 600.00 FEET AND A CENTRAL ANGLE OF 05°51'28"; A CHORD THAT BEARS SOUTH 58°33'47" WEST, A DISTANCE OF 61.32 FEET; THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 61.34 FEET TO A POINT ON SAID CURVE; THENCE DEPARTING SAID CURVE, RUN NORTH 40°13'23" WEST, A DISTANCE OF 641.74 FEET TO THE POINT OF BEGINNING.
CONTAINING 6,179,251 SQUARE FEET OR 141,856 ACRES, MORE OR LESS.

- OWNER/DEVELOPER:**
VK AVALON GROVES, LLC
8875 HIDDEN RIVER PARKWAY
TAMPA, FL 33637
(813) 615-1244
ATTN: GREG MEATH,
V.P. LAND DEVELOPMENT
(813) 615-1244
- GEOTECHNICAL ENGINEER:**
FAULKNER ENGINEERING
SERVICES, INC.
DAVID W. FAULKNER, P.E.
2734 CAUSEWAY CENTER DRIVE
TAMPA, FLORIDA 33619
(813) 621-8168
- SURVEYOR:**
AMERICAN SURVEYING &
MAPPING
DAVID D'ERILIPPO
3191 MAGUIRE BOULEVARD,
SUITE 200
ORLANDO, FL 32803
(407) 426-7579
- CIVIL ENGINEER:**
HEIDT DESIGN, LLC
GARY D. MILLER P.E.
5806-B BRECKENRIDGE PARKWAY
TAMPA, FLORIDA 33610
(813) 253-5311

NOTE: PER LDF CH. 6.06.01(F), SOIL REMOVAL OFFSETS SHALL NOT EXCEED 200% OF THE MINIMUM STORMWATER RETENTION/DETENTION VOLUME REQUIRED.

SERENOA (FKA AVALON GROVES)
VILLAGES 1 & 2 - PHASE 1A

VK AVALON GROVES, LLC

DATE	DESCRIPTION	DATE	DESCRIPTION

© COPYRIGHT 2017 HEIDT DESIGN, LLC. ALL RIGHTS RESERVED. NO DOCUMENTATION (INCLUDING BUT NOT LIMITED TO DRAWINGS OR EXHIBITS) MAY BE COPIED, REPRODUCED, OR DISTRIBUTED UNLESS SPECIFIC WRITTEN PERMISSION HAS BEEN OBTAINED FROM HEIDT DESIGN, LLC. IN ADVANCE. CONSENT IS HEREBY GRANTED SPECIFICALLY TO GOVERNMENTAL AGENCIES TO REPRODUCE THIS DOCUMENTATION IN COMPLIANCE WITH F.S. CHAPTER 119.

HEIDT DESIGN

Civil Engineering • Planning & GIS
Transportation Engineering
Ecological Services • Landscape Architecture

ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION: NAVD 88 TO NGVD 29 = +0.86

ADDRESS CONTROL NUMBER	
WATER COMMITMENT	
SEWER COMMITMENT	
BYPASS	
WATER DEP	
SEWER DEP	
FLOOD	

PERMIT / FILE NUMBERS


FLORIDA PROFESSIONAL ENGINEER

DocuSigned by:
Gary D. Miller PE, using a
Digital Signature. Printed copies
of this document are not
considered signed and sealed
unless verified on any
electronic copies.

GARY D. MILLER
DATE: 8/13/2017
REGISTRATION NO. 82717

FILE: PROJECT NO:	COVER KLP-AG-1009
DESIGN BY: DRAWN BY:	FRANCIS JONES
DESIGN BY: DRAWN BY:	FRANCIS JONES
COVER SHEET C-100	

2	3	4	5	6
<p>GENERAL EROSION AND TURBIDITY CONTROL NOTES</p> <p>1. THE SITE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF ALL EROSION AND TURBIDITY CONTROLS AND THE QUALITY AND QUANTITY OF OFFSITE OR WETLAND/DISCONTINUATION ACTIVITIES, IN ACCORDANCE WITH THE NOTED REUSE REQUIREMENTS FOR EACH TYPE. ALTHOUGH SOME SOIL MATERIAL QUALITY CONTROL TESTING WILL BE RANDOMLY AND PERIODICALLY PERFORMED BY THE PROJECT GEOTECHNICAL CONSULTANT, AS REQUIRED, WORKING FOR THE OWNER, IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO REUSE ONSITE SOIL MATERIALS AS DESCRIBED AND SPECIFIED BELOW. ALL DISCOVERED OR FUTURE FILLING OR MATERIAL REUSE MUST BE IN ACCORDANCE OR COMPLIANCE WITH THESE NOTES, OR ANY FUTURE ADVERSE IMPACTS OR CONSEQUENCES RESULTING FROM THE CONTRACTOR'S FAILURE TO PROPERLY REUSE SOIL MATERIALS ONITE AS SPECIFICALLY DESCRIBED BELOW, WILL BE THE CONTRACTOR'S SOLE RESPONSIBILITY FOR REMEDY AND REPAIR AT HIS/HERS COST. IF THE CONTRACTOR HAS ANY QUESTIONS REGARDING ANY OF THE SOIL MATERIALS ONITE, THE PROJECT GEOTECHNICAL REPORTS WHICH MUST BE OBTAINED FROM THE OWNER OR GEOTECHNICAL CONSULTANT/ENGINEER, OR ANY QUESTIONS ASSOCIATED WITH THE NOTES BELOW, IT IS PRESUMED THAT THE CONTRACTOR WILL SATISFACTORILY RESOLVE SUCH QUESTIONS/CONCERNS PRIOR TO SITE DEMOLITION, CLEARING, GRUBBING, STRIPPING AND EXCAVATION OPERATIONS BEGIN.</p> <p>PLEASE NOTE: LOCAL, STATE AND FEDERAL RULES, LAWS, AND REGULATIONS PROHIBITING SOIL REUSE AS DESCRIBED BELOW SHALL TAKE PRECEDENCE AND SHALL BE FOLLOWED TO THE FULLEST EXTENT.</p> <p>1. SITE DEMOLITION DEBRIS (SITE DEMOLITION DEBRIS, NOT GENERALLY CONSIDERED AN ENVIRONMENTAL/CONTAMINATION HAZARD), INCLUDING SUCH ITEMS AS WOOD PIECES, CONCRETE PIECES, PLASTIC PIPE PIECES, CERTAIN METALS/STEEL PIECES, OR SIMILAR. IF ANY SUCH DEBRIS OR OTHER DEMOLITION DEBRIS IS CONSIDERED AN ENVIRONMENTAL/CONTAMINATION HAZARD, OR IF BURIAL ONSITE OF SUCH MATERIALS IS PROHIBITED BY THE GOVERNING ENVIRONMENTAL AGENCY, THEN ALL SUCH DEBRIS SHALL BE HAULED OFF SITE BY THE CONTRACTOR FOR PROPER DISPOSAL, IN ACCORDANCE WITH ALL APPLICABLE GOVERNING ENVIRONMENTAL AGENCY REQUIREMENTS. IN NO CASE, SHALL ANY SUCH DEBRIS MATERIALS REMAIN, OR BE PLACED BY THE CONTRACTOR, BENEATH ANY TYPE OF STRUCTURE, PAVEMENT, ROADWAY, HOUSE, BUILDING, PIPELINE, SLAB, ETC.)</p> <p>ALL SITE DEMOLITION DEBRIS SHALL BE REMOVED FROM THE SITE DEVELOPMENT AND DISPOSED OF PROPERLY IN ACCORDANCE WITH ALL APPLICABLE GOVERNING ENVIRONMENTAL AGENCY REQUIREMENTS.</p> <p>2. CLEARING AND GRUBBING DEBRIS (SITE CLEARING AND GRUBBING DEBRIS INCLUDES ALL LARGER ORGANIC MATERIALS SUCH THAT THESE WOULD BE SUITABLE FOR FUTURE FLOATING USE OF DEBRIS; AND FOR ALL ORGANIC DEBRIS MUST BE EITHER "BURIED" OR "MULCHED" BY THE CONTRACTOR PRIOR TO REUSE OR DISPOSAL ONSITE.)</p> <p>IF ACCEPTABLE TO THE GOVERNING ENVIRONMENTAL AGENCY, THEN ALL SUCH "BURIED" OR "MULCHED" SITE CLEARING/GRUBBING DEBRIS, IF APPROVED IN WRITING FIRST BY THE OWNER/GEOTECHNICAL CONSULTANT/ENGINEER, COULD BE:</p> <p>A) PLACED AS "MULCH" MATERIAL SURFACE DRESSING IN FUTURE LANDSCAPE AREAS, STOCKPILING OF SUCH MATERIALS (ACCEPTABLE TO THE GOVERNING ENVIRONMENTAL AGENCY) WILL BE DIRECTED BY THE OWNER/GEOTECHNICAL CONSULTANT/LANDSCAPE ARCHITECT/ENGINEER;</p> <p>B) PLACED IN TEMPORARILY EXCAVATED LITTORAL SHELF AREAS IN SELECTED STORMWATER PONDS, OR IN TEMPORARILY EXCAVATED SELECTED WETLAND MITIGATION PONDS, IN EITHER CASE NOT IN SIDE BANKS AND NOT BELOW THE PERMITTED DESIGN DEPTH OF THE POND, OR SUCH DEBRIS COULD BE BURED IN TEMPORARILY EXCAVATED PASSIVE RECREATION/PARK AREAS (AT LEAST 30 FEET FROM ANY STRUCTURE) AT APPROVED DEPTHS/LOCATIONS, BUT ALL THESE DISPOSAL AREAS WILL REQUIRE ADEQUATE SOIL MIXING (MIX SOIL WITH THE MULCH) AND THEN REFILLING (WITH COMPACTION) TO REQUIRED DESIGN GRADES;</p> <p>C) PLACED ALONG THE BOTTOM OF SELECTED FLOODPLAIN MITIGATION PONDS (NOT IN SIDE BANKS), NOT BELOW THE PERMITTED EXCAVATION DEPTH OF THE POND, BUT WILL REQUIRE ADEQUATE SOIL COVER;</p> <p>D) PLACED ALONG THE BOTTOM OF SELECTED DEEPER STORMWATER PONDS (NOT IN SIDE BANKS), NOT BELOW THE PERMITTED DESIGN DEPTH, BUT WILL REQUIRE ADEQUATE SOIL COVER.</p> <p>IN ALL INSTANCES, THE MINIMUM POND DEPTH (INCLUDING FLOODPLAIN AND WETLAND MITIGATION AREAS) SHALL BE NO LESS THAN 2 FEET.</p> <p>ALL ORGANIC DEBRIS BURIAL AREAS IN STORMWATER POND AREAS AND FLOODPLAIN MITIGATION POND AREAS WILL REQUIRE ADEQUATE SOIL COVER OF 18" - 24 inches (WITH COMPACTION) BY THE CONTRACTOR, MEANING AT LEAST AN ADEQUATE WEIGHT/THICKNESS OF SOIL MATERIAL OVERTOP THE BURIED ORGANIC DEBRIS, SUCH THAT THERE WILL BE NO FUTURE FLOATING UP OF DEBRIS; AND FOR ALL ORGANIC DEBRIS BURIAL AREAS IN LITTORAL SHELF AREAS, WETLAND MITIGATION POND AREAS, AND PASSIVE RECREATION/PARK AREAS, ADEQUATE SOIL/MULCH MIXING (WITH COMPACTION) WILL BE NECESSARY BY THE CONTRACTOR, SUCH THAT NO SIGNIFICANT FUTURE UNACCEPTABLE SETTLEMENT OF A LITTORAL SHELF AREA, CREATED WETLAND AREA, OR PARK/GRASSSED AREA WILL OCCUR.</p> <p>IF ANY OF THESE PROCEDURES ARE CONTEMPLATED BY THE CONTRACTOR, THEN THE CONTRACTOR SHALL NOTIFY THE OWNER/GEOTECHNICAL CONSULTANT/ENGINEER IN WRITING, AT THE START OF CONSTRUCTION, WITH SOME SPECIFIC INFORMATION, INCLUDING THE ESTIMATED QUANTITY AND TYPES OF MATERIALS, TO WHICH STORMWATER PONDS, FLOODPLAIN MITIGATION PONDS, WETLAND MITIGATION PONDS, AND PASSIVE RECREATION/PARK AREAS THEY PROPOSE TO USE FOR THIS TYPE OF ORGANIC DEBRIS DISPOSAL, AND WHAT APPROXIMATE ELEVATIONS WILL BE THE TOP AND BOTTOM OF THE ORGANIC DEBRIS.</p> <p>IF ACCEPTABLE TO THE GOVERNING ENVIRONMENTAL AGENCY, THEN ALL SUCH MUCK/PPEAT (SIGNIFICANT ORGANIC MATERIALS, IF APPROVED IN WRITING FIRST BY THE OWNER/GEOTECHNICAL CONSULTANT/ENGINEER, COULD BE:</p> <p>A) PLACED AS "PEAT/MUCK/ORGANIC MATTER" SURFACE LAYER IN NEW OR CREATED WETLAND MITIGATION AREAS, STOCKPILING OF SUCH "SIGNIFICANT ORGANIC" MATERIALS (AMOUNTS/LOCATIONS), IF ACCEPTABLE, WILL BE DIRECTED BY THE OWNER/WETLAND CONSULTANT;</p> <p>B) PLACED IN TEMPORARILY EXCAVATED LITTORAL SHELF AREAS IN SELECTED STORMWATER PONDS, OR IN TEMPORARILY EXCAVATED SELECTED WETLAND MITIGATION PONDS, IN EITHER CASE NOT IN SIDE BANKS AND NOT BELOW THE PERMITTED DESIGN DEPTH OF THE POND, OR SUCH ORGANIC MATERIALS COULD BE BURIED IN TEMPORARILY EXCAVATED PASSIVE RECREATION/PARK AREAS (AT LEAST 30 FEET FROM ANY STRUCTURE) AT APPROVED DEPTHS/LOCATIONS, BUT ALL THESE DISPOSAL AREAS WILL REQUIRE ADEQUATE SOIL MIXING (MIX SOIL WITH THE ORGANIC MATERIALS) AND THEN REFILLING (WITH COMPACTION) TO REQUIRED DESIGN GRADES;</p> <p>C) PLACED ALONG THE BOTTOM OF SELECTED FLOODPLAIN MITIGATION PONDS (NOT IN SIDE BANKS), NOT BELOW THE PERMITTED EXCAVATION DEPTH OF THE POND, BUT WILL REQUIRE ADEQUATE SOIL COVER;</p> <p>D) PLACED ALONG THE BOTTOM OF SELECTED DEEPER STORMWATER PONDS (NOT IN SIDE BANKS), NOT BELOW THE PERMITTED DESIGN DEPTH, BUT WILL REQUIRE ADEQUATE SOIL COVER.</p> <p>ALL ORGANIC DEBRIS BURIAL AREAS IN STORMWATER POND AREAS AND FLOODPLAIN MITIGATION POND AREAS WILL REQUIRE ADEQUATE SOIL COVER OF 18" - 24 inches (WITH COMPACTION) BY THE CONTRACTOR, MEANING AT LEAST AN ADEQUATE WEIGHT/THICKNESS OF SOIL MATERIAL OVERTOP THE BURIED ORGANIC DEBRIS, SUCH THAT THERE WILL BE NO FUTURE FLOATING UP OF DEBRIS; AND FOR ALL ORGANIC DEBRIS BURIAL AREAS IN LITTORAL SHELF AREAS, WETLAND MITIGATION POND AREAS, AND PASSIVE RECREATION/PARK AREAS, ADEQUATE SOIL/MULCH MIXING (WITH COMPACTION) WILL BE NECESSARY BY THE CONTRACTOR, SUCH THAT NO SIGNIFICANT FUTURE UNACCEPTABLE SETTLEMENT OF A LITTORAL SHELF AREA, CREATED WETLAND AREA, OR PARK/GRASSSED AREA WILL OCCUR.</p> <p>IF ANY OF THESE PROCEDURES ARE CONTEMPLATED BY THE CONTRACTOR, THEN THE CONTRACTOR SHALL NOTIFY THE OWNER/GEOTECHNICAL CONSULTANT/ENGINEER IN WRITING, AT THE START OF CONSTRUCTION, WITH SOME SPECIFIC INFORMATION, INCLUDING THE ESTIMATED QUANTITY AND TYPES OF MATERIALS, TO WHICH STORMWATER PONDS, FLOODPLAIN MITIGATION PONDS, WETLAND MITIGATION PONDS, AND PASSIVE RECREATION/PARK AREAS THEY PROPOSE TO USE FOR THIS TYPE OF ORGANIC DEBRIS DISPOSAL, AND WHAT APPROXIMATE ELEVATIONS WILL BE THE TOP AND BOTTOM OF THE ORGANIC DEBRIS.</p> <p>IF ACCEPTABLE TO THE GOVERNING ENVIRONMENTAL AGENCY, ALL SUCH CLAYEY SAND/CLAY MATERIALS, IF APPROVED IN WRITING FIRST BY THE OWNER/GEOTECHNICAL CONSULTANT/ENGINEER, COULD BE:</p> <p>A) PLACED AS FILL IN NEW (LARGER) LANDSCAPE/GRASS COMMON AREAS OR LANDSCAPE BERM AREAS (WITH COMPACTION), STOCKPILING OF SUCH "TOPSOILS/ORGANIC LADEN SAND MATERIALS" (AMOUNTS/LOCATIONS), IF ACCEPTABLE, WILL BE DIRECTED BY THE OWNER/LANDSCAPE CONSULTANT;</p> <p>B) PLACED IN TEMPORARILY EXCAVATED LITTORAL SHELF AREAS IN SELECTED STORMWATER PONDS, OR IN TEMPORARILY EXCAVATED SELECTED WETLAND MITIGATION PONDS, IN EITHER CASE NOT IN SIDE BANKS AND NOT BELOW THE PERMITTED DESIGN DEPTH OF THE POND, OR SUCH CLAYEY SAND/CLAY MATERIALS COULD BE BURIED IN TEMPORARILY EXCAVATED PASSIVE RECREATION/PARK AREAS (AT LEAST 30 FEET FROM ANY STRUCTURE) AT APPROVED DEPTHS/LOCATIONS, BUT ALL THESE DISPOSAL AREAS WILL REQUIRE REFILLING (WITH COMPACTION) TO REQUIRED DESIGN GRADES;</p> <p>C) PLACED ALONG THE BOTTOM OF SELECTED FLOODPLAIN MITIGATION PONDS (NOT IN SIDE BANKS), NOT BELOW THE PERMITTED EXCAVATION DEPTH OF THE POND; HOWEVER, A 12-INCH LAYER (MIN.) OF SAND MATERIAL OVERTOP THE CLAYEY MATERIALS WILL BE NECESSARY FOR TURBIDITY CONTROL.</p> <p>D) PLACED ALONG THE BOTTOM OF SELECTED DEEPER STORMWATER PONDS (NOT IN SIDE BANKS), NOT BELOW THE PERMITTED DESIGN DEPTH, HOWEVER, A 12-INCH LAYER (MIN.) OF SAND MATERIAL OVERTOP THE CLAYEY MATERIALS WILL BE NECESSARY FOR TURBIDITY CONTROL.</p> <p>ALL CLAYEY SAND/CLAY DISPOSAL AREAS IN LITTORAL SHELF AREAS, WETLAND MITIGATION POND AREAS, PASSIVE RECREATION/PARK AREAS, OR LANDSCAPE/BERM AREAS WILL REQUIRE ADEQUATE COMPACTION BY THE CONTRACTOR, SUCH THAT NO SIGNIFICANT FUTURE UNACCEPTABLE SETTLEMENT OF A LITTORAL SHELF AREA, CREATED WETLAND AREA, PARK/GRASSSED AREA, OR LANDSCAPE BERM WILL OCCUR.</p> <p>IF ANY OF THESE PROCEDURES ARE CONTEMPLATED BY THE CONTRACTOR, THEN THE CONTRACTOR SHALL NOTIFY THE OWNER/GEOTECHNICAL CONSULTANT/ENGINEER IN WRITING, AT THE START OF CONSTRUCTION, WITH SOME SPECIFIC INFORMATION, INCLUDING THE ESTIMATED QUANTITY AND TYPES OF MATERIALS, TO WHICH STORMWATER PONDS, FLOODPLAIN MITIGATION PONDS, WETLAND MITIGATION PONDS, PASSIVE RECREATION/PARK AREAS, OR LANDSCAPE BERM AREAS THEY PROPOSE TO USE FOR THIS TYPE OF CLAYEY SAND/CLAY DISPOSAL, AND WHAT APPROXIMATE ELEVATIONS WILL BE THE TOP AND BOTTOM OF THE CLAYEY MATERIALS.</p> <p>6.) STRUCTURAL SAND FILL MATERIALS (TYPICALLY GENERATED FROM POND/LAKE EXCAVATIONS, CUT FROM HIGHER ELEVATION AREAS, OR FROM UTILITY PIPELINE/MANHOLE EXCAVATIONS, SUCH SAND MATERIALS WITH TYPICALLY 35% FINES OR MORE PASSING THE NO. 200 SIEVE, DESIGNATED EITHER SP, SM, SM OR A-2-A, A-2-B OR A-3, PER THE UNIFIED AND AASHTO SOIL CLASSIFICATION SYSTEMS, RESPECTIVELY; SUCH SAND MATERIALS BEING UNSUITABLE FOR REUSE BY THE CONTRACTOR AS BUILDING PAD FILL, STRUCTURAL FILL, ROADWAY EMBANKMENT FILL, AND PIPELINE OR MANHOLE EXCAVATION BACKFILL.)</p> <p>ALL SUCH SAND MATERIALS SHALL BE REUSED ONSITE BY THE CONTRACTOR, PER THE GEOTECHNICAL REPORTS, AS BUILDING PAD FILL, STRUCTURAL FILL, ROADWAY EMBANKMENT FILL, AND PIPELINE OR MANHOLE EXCAVATION BACKFILL. IF THE CONTRACTOR IN LOOSE LIFTS NOT EXCEEDING 2-INCHES, COMPACTED TO AT LEAST 95% OR 98% MODIFIED PROCTOR (PER ASTM D-1557 OR AASHTO T-180), WHICH IS APPLICABLE DEPENDING UPON THE FUTURE USE OF THE FILLED AREA (SEE GEOTECHNICAL REPORTS), WITH DENSITY TESTING OF EACH LIFT FOR ACCEPTANCE BY THE GEOTECHNICAL CONSULTANT, UPON CONTRACTOR REQUEST, PRIOR TO THE NEXT FILL LIFT BEING PLACED.</p>				
2	3	4	5	6



HEIDT DESIGN
 5886-B Beckoning Pt.
 Tampa, Florida 33634
 Office: 813.253.5111
 Fax: 813.446.9629
 www.HeidtDesign.com

SIRENOA (PKA AVALON GROVES) VILLAGES 1 & 2 - PHASE 1A

GENERAL NOTES

PKA AVALON GROVES, LLC

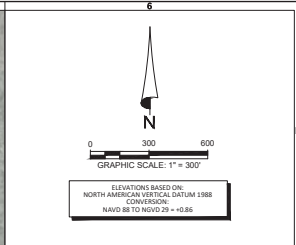
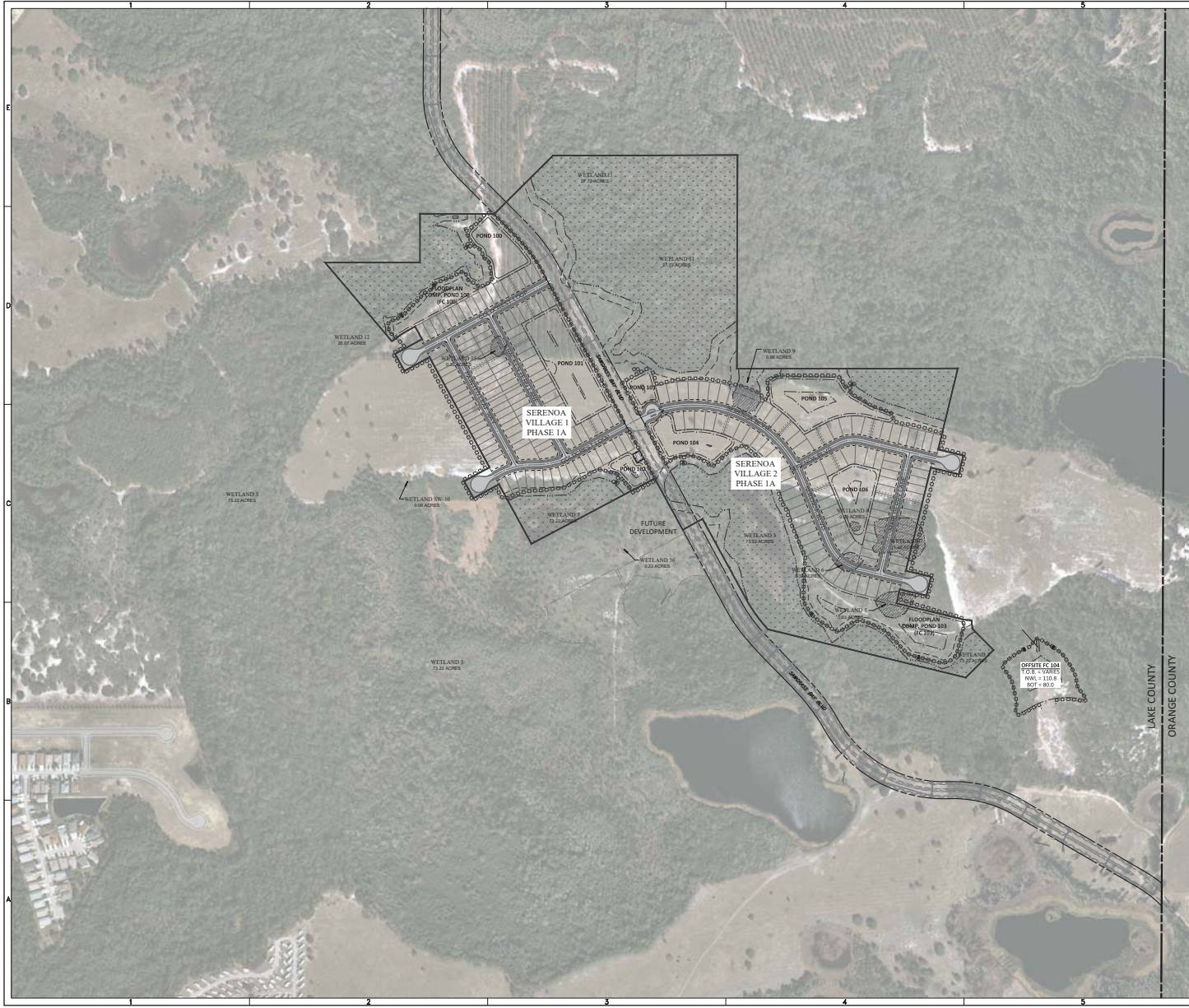
	DATE		
PROJECT NO.	DATE	REVISION	BY
KIP-AC-11003	12/15/2014	REVISED BY	DATE
FILES	DATE	REVISED BY	DATE
DESIGN BY	DATE	REVISED BY	DATE
DRAWN BY	DATE	REVISED BY	DATE
FRANCIS	DATE	REVISED BY	DATE
JONES	DATE	REVISED BY	DATE
FLORIDA PROFESSIONAL ENGINEER			

This item has been electronically signed and sealed by Gary D. Miller, P.E. using a Digital Signatures Product. If you are not the recipient of this document, any use of the information contained herein is unauthorized. If you are the recipient, any use of the information contained herein is unauthorized unless you have received written consent from the sender.

GARY D. MILLER
 REGISTRATION NO. 52717

C-101

SIRENOA (PKA AVALON GROVES) VILLAGES 1 & 2 - PHASE 1A - GENERAL NOTES - 20170715 11:07 AM ET (GMT-05:00) - 11/11/2014 11:07 AM ET (GMT-05:00)



GENERAL LEGEND

- PROPERTY LINE
- PHASE LINE
- WETLAND LINE
- WETLAND CONS. AREA SETBACK (WCAS) (50')

NOTE:
 THIS EXHIBIT WAS PREPARED FOR ILLUSTRATIVE PURPOSES ONLY. THE LATEST AVAILABLE DIGITAL AERIAL FILES HAVE BEEN USED HOWEVER THIS MAY NOT ACCURATELY DEPICT CURRENT SITE CONDITIONS. ADDITIONAL ENGINEERING, ENVIRONMENTAL REVIEWS, FIELD SURVEYING AND DATA COLLECTION ARE NECESSARY TO OBJECTIVELY PORTRAY ACTUAL SITE CONDITIONS. THIS EXHIBIT IS SUBJECT TO CHANGE WITHOUT NOTICE BASED ON THE ABOVE.

DATE OF PHOTO: 2014

NOTE:
 FOR SAWGRASS BAY BOULEVARD REFER TO MADDEN MOREHEAD & STOKES, INC. PLANS

NO.	DATE	REVISION / SUBMITTAL	DESCRIPTION

PROJECT NO.	KP-AG-1000
FILE NO.	AGP
DESIGN BY:	FRANCIS
DRAWN BY:	JONES
FLORIDA PROFESSIONAL ENGINEER	
This item has been electronically signed and sealed by Gary D. Miller, P.E. using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.	
GARY D. MILLER	DATE: _____
REGISTRATION NO. 52717	
C-104	

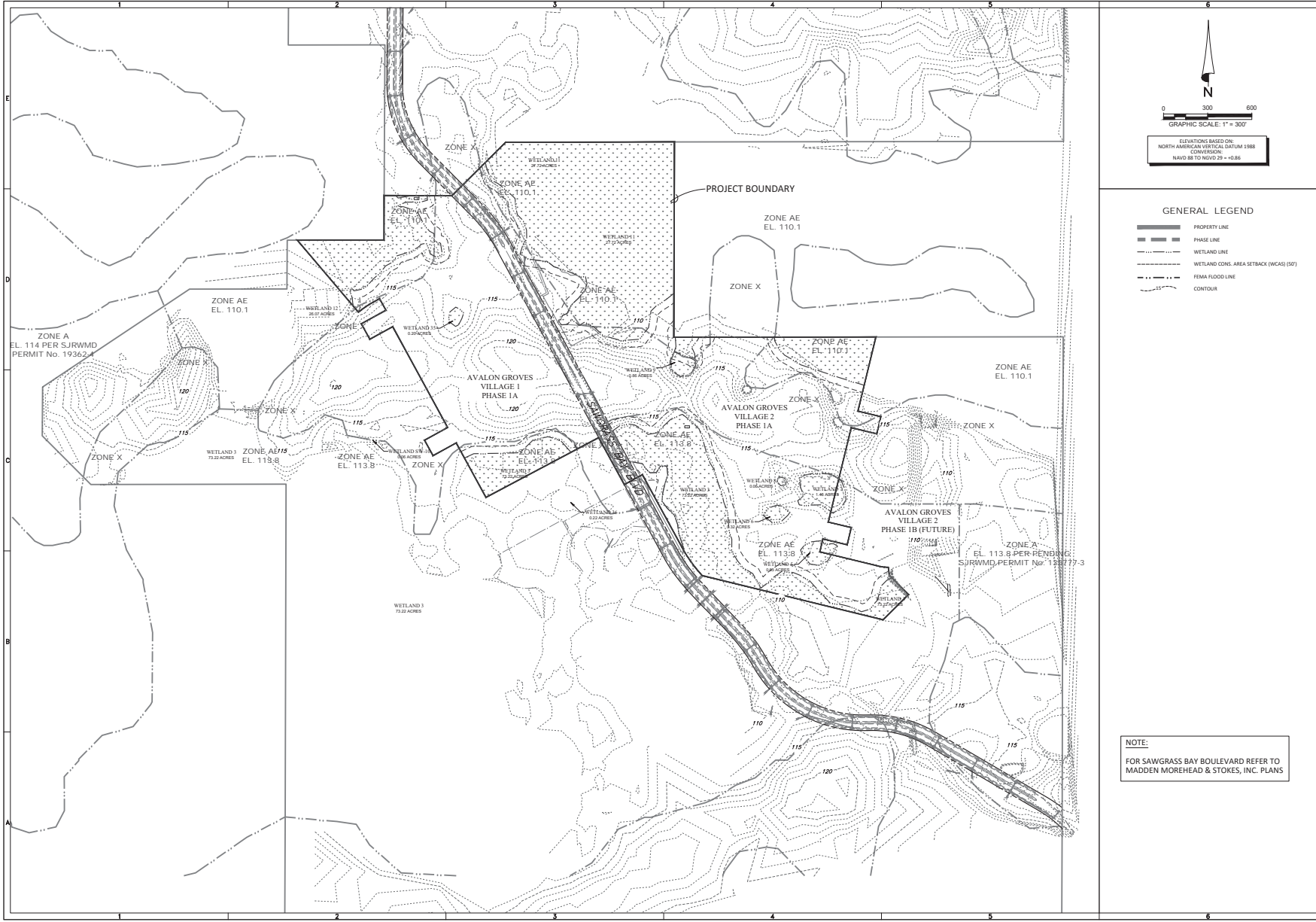
HEIDT DESIGN
 586-B Rockledge Plaza
 Rockledge, Florida 32955
 Phone: 321.253.5111
 Fax: 321.646.7029
 www.HeidtDesign.com

Engineering Services • Landscape Architecture
 Environmental Engineering • Planning
 Construction Management • Surveying

Professional Engineer License No. 24727
 Landscape Architect License No. LC00000010

SERENOA (FKA AVALON GROVES) VILLAGES 1 & 2 - PHASE 1A
AERIAL SITE PLAN
 PREPARED BY: VK-AVALON GROVES, LLC

LAKE COUNTY ORANGE COUNTY



ELEVATIONS BASED ON:
 NORTH AMERICAN VERTICAL DATUM 1988
 CONVERSION:
 NAVD 83 TO NAD 83 = +0.82

- GENERAL LEGEND**
- PROPERTY LINE
 - PHASE LINE
 - - - WETLAND LINE
 - - - WETLAND CONTS. AREA SETBACK (WCAS) (50')
 - - - FEMA FLOOD LINE
 - CONTOUR

NOTE:
 FOR SAWGRASS BAY BOULEVARD REFER TO
 MADDEN MOREHEAD & STOKES, INC. PLANS



**SERENOA (fka AVALON GROVES)
 VILLAGES 1 & 2 - PHASE 1A
 EXISTING SITE CONDITIONS**

PREPARED BY: **VK AVALON GROVES, LLC**

DATE	DESCRIPTION

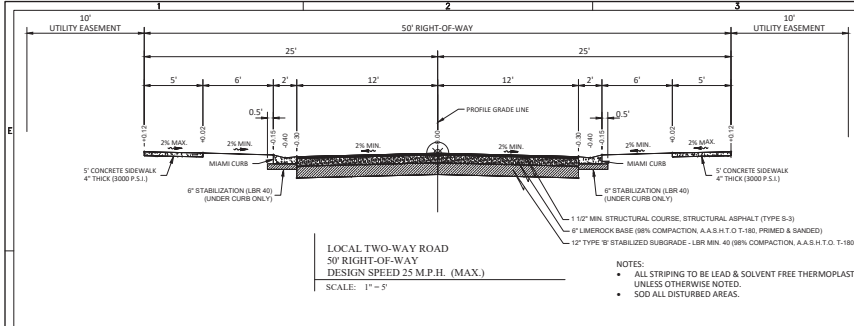
DATE	REVISION

PROJECT NO: K3P-AG-1000
 EX-SITE
 DESIGN BY: FRANCIS
 DRAWN BY: JONES
 FLORIDA PROFESSIONAL ENGINEER

This Item has been electronically signed and sealed by Gary D. Miller, P.E. using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.

GARY D. MILLER
 DATE: 10/27/2014
 REGISTRATION NO. 52717

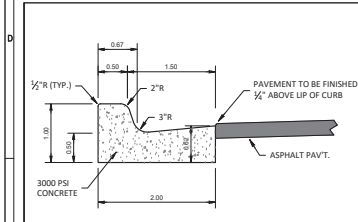
K:\SERENOA\SERENOA_DWG\021814\021814_01_1A_SAWGRASS_BAY_BOULEVARD.dwg
 DATE: 10/27/2014 10:30:00 AM
 USER: gdmiller



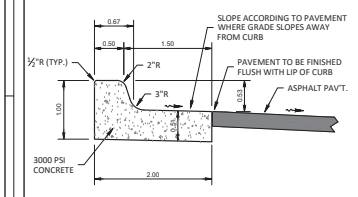
NOTES:

- ALL STRIPING TO BE LEAD & SOLVENT FREE THERMOPLASTIC, UNLESS OTHERWISE NOTED.
- SOD ALL DISTURBED AREAS.

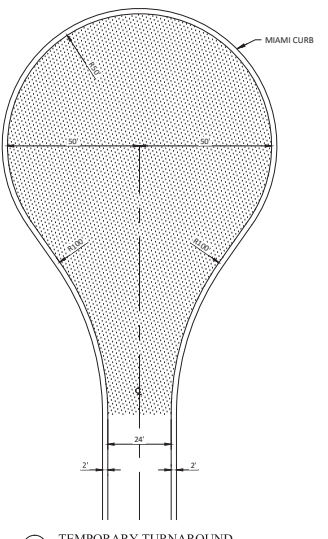
1 1/2" MIN. STRUCTURAL COURSE, STRUCTURAL ASPHALT (TYPE S-3)
 5" LIMEROCK BASE (98% COMPACTION, A.A.S.H.T.O. T-180, PRIMED & SANDED)
 12" TYPE "B" STABILIZED SUBGRADE - LBR MIN. 40 (98% COMPACTION, A.A.S.H.T.O. T-180)



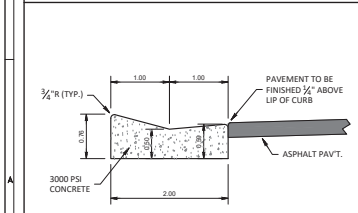
TYPE "F" CURB & GUTTER
SCALE: 1" = 1'



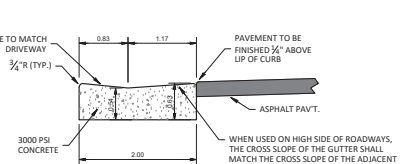
TYPE "F" CURB & GUTTER ROTATED
SCALE: 1" = 1'



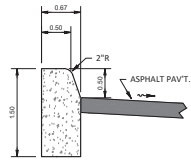
TEMPORARY TURNAROUND
SCALE: NTS



STANDARD MIAMI CURB
SCALE: 1" = 1'



DROP CURB
SCALE: 1" = 1'



TYPE "D" CURB
SCALE: 1" = 1'

PAVEMENT CONSTRUCTION NOTES:

- SUBGRADE**
THE FOLLOWING ARE MINIMUM STANDARDS FOR THE STABILIZED SUBGRADE:
WIDTH - THE SUBGRADE SHALL BE TWO (2) FEET WIDER THAN THE BASE COURSE ONE (1) FOOT EACH SIDE AND IN THE CASE OF CURB AND GUTTER SHALL EXCEED SIX (6) INCHES BEHIND THE CURB.
DEPTH - THE SUBGRADE SHALL HAVE A MINIMUM DEPTH OF 12 INCHES.
COMPACTION - THE SUBGRADE SHALL BE COMPACTED TO 98% DENSITY HAVING A MINIMUM FLORIDA BEARING VALUE (FBV) OF 50 POUNDS PER SQUARE INCH.
CARE OF SUBGRADE - TRUCKS WILL BE ALLOWED ON FINISHED SUBGRADE TO DUMP BASE COURSE, BUT CONTRACTOR WILL BE REQUIRED TO LEVEL OUT RUTS IN THE EVENT THE TRUCKS CAUSE TOO MUCH DAMAGE TO THE SUBGRADE, THE COUNTY MANAGER OR DESIGNEE MAY REQUIRE DUMPING, SPREADING, AND HAULING ON THE BASE COURSE.
- SHOULDERS**
THE FOLLOWING ARE MINIMUM STANDARDS FOR SHOULDERS:
WIDTH - SHOULDERS SHALL BE EIGHT FEET WIDE. A REDUCTION IN THE WIDTH REQUIREMENT MAY BE ALLOWED IF APPROVED BY THE COUNTY MANAGER OR DESIGNEE.
DEPTH - SHOULDERS SHALL HAVE A MINIMUM DEPTH OF SIX INCHES.
COMPACTION - SHOULDERS SHALL BE COMPACTED TO A MINIMUM FLORIDA BEARING VALUE OF 50 POUNDS PER SQUARE INCH.
- BASE COURSE**
THE FOLLOWING ARE MINIMUM STANDARDS FOR THE BASE COURSE:
MATERIAL - OCALA LIMEROCK OR SOIL CEMENT ARE ACCEPTABLE MATERIAL TYPES FOR THE ROAD BASE. OTHER MATERIALS MAY BE USED IF APPROVED BY THE COUNTY MANAGER OR DESIGNEE. SOIL CEMENT MAY NOT BE UTILIZED ON HEAVY DUTY ROADS WITHOUT SPECIFIC APPROVAL BY THE COUNTY MANAGER OR DESIGNEE.
WIDTH - ALL BASES SHALL BE ONE (1) FOOT WIDER (SIX (6) INCHES EACH SIDE) THAN THE FINISHED SURFACE.
DEPTH - THE BASE SHALL HAVE A MINIMUM DEPTH OF SIX INCHES. HEAVY DUTY ROADS SHALL HAVE A BASE WITH A MINIMUM DEPTH OF EIGHT INCHES PLACED IN TWO LIFTS.
COMPACTION - LIMEROCK BASE SHALL BE COMPACTED TO A MINIMUM 98% DENSITY AS DETERMINED BY ASSHTO T-180.
STRENGTH - SOIL CEMENT BASE SHALL HAVE A SEVEN DAY DESIGN COMPRESSIVE STRENGTH OF AT LEAST 300 PSI.
FORMS - NO FORM BOARDS WILL BE REQUIRED UNLESS, IN THE OPINION OF THE COUNTY MANAGER OR DESIGNEE, THE CONTRACTOR IS NOT TAKING PRECAUTIONS TO OBTAIN THE FULL DEPTH AT THE EDGES.
GRADING - THE BASE SHALL BE GRADED AND ROLLED TO CONFORM TO THE GRADE AND CROSS-SLOPE OF THE FINISHED ROADWAY.
PRIME COAT - PRIME COAT SHALL BE APPLIED TO ALL BASE COURSES, AND SAND SEALED.

- WEARING SURFACE**
THE FOLLOWING ARE MINIMUM STANDARDS FOR PAVEMENT WEARING SURFACE:
MATERIAL - TYPE III ASPHALTIC CONCRETE SHALL BE USED FOR THE ROAD WEARING SURFACE. OTHER ASPHALT TYPES MAY BE USED IF APPROVED BY THE COUNTY MANAGER OR DESIGNEE.
DEPTH - ROADS SHALL HAVE A MINIMUM 1 1/2" INCH DEPTH OF WEARING SURFACE. THE MINIMUM DEPTH MAY BE INCREASED IF REQUIRED BY THE COUNTY MANAGER OR DESIGNEE.
HEAVY DUTY ROADS - HEAVY DUTY SHALL HAVE A WEARING SURFACE CONSISTING OF MINIMUM OF TWO INCHES OF S-1 ASPHALTIC CONCRETE OVERLAYED WITH A ONE INCH FRICTION COURSE. THE TYPE OF MATERIAL TO BE USED FOR THE FRICTION COURSE SHALL BE DETERMINED BY THE COUNTY MANAGER OR DESIGNEE.
GRADING - ROAD SURFACES SHALL BE GRADED WITH A MINIMUM CROSS-SLOPE OF 1/4" INCH FOOT.
- CURB AND GUTTER**
THE WIDTH OF CURB AND GUTTER SHALL BE A MINIMUM OF TWENTY-FOUR (24) INCHES AND SHALL BE EITHER FLORIDA DEPARTMENT OF TRANSPORTATION TYPE 'F' (STANDARD CURB AND GUTTER) OR MIAMI TYPE, DEPENDING UPON THE FLOW TO BE HANDLED. FOOT TYPE 'D' (SIMPLE VERTICAL CURBING) WILL NOT BE ACCEPTABLE. FOOT TYPE 'A' (MOUNTABLE MEDIAN CURB) MAY BE USED AROUND MEDIAN DIVIDERS ON THE HIGH SIDE OF PAVEMENT. THERE SHALL BE A STABILIZED SUBGRADE BENEATH ALL CURB AND GUTTER.
NO WATER VALVE BOXES, METERS, PORTIONS OF MANHOLES, OR OTHER APPURTENANCES OF ANY KIND RELATING TO ANY UNDERGROUND UTILITIES SHALL BE LOCATED IN ANY PORTION OF A CURB AND GUTTER SECTION.
THE CURB AND GUTTER FLOW LINE GRADES SHALL RUN PARALLEL TO THE ROAD CENTERLINE GRADE. THE MINIMUM ALLOWABLE FLOW LINE GRADE OF CURBS AND GUTTERS SHALL BE 0.30%, EXCEPT IN INTERSECTIONS WHERE FLATTER GRADES SHALL BE ALLOWABLE.
JOINTS SHALL BE SAWS (UNLESS AN ALTERNATE METHOD IS USED) AT INTERVALS OF TEN (10) FEET, EXCEPT WHERE SHORTER INTERVALS ARE REQUIRED FOR CLOSURES, BUT, IN NO CASE, LESS THAN FOUR (4) FEET. JOINTS SHALL BE CUT ON THE SAME DAY THAT THE CURB AND GUTTER IS POURED.
ALL CROSS-STREET VALLEY GUTTERS SHALL BE CONSTRUCTED OF CONCRETE.

- DECORATIVE PAVEMENT**
THE USE OF DECORATIVE PAVEMENT SHALL BE SUBJECT TO THE APPROVAL OF THE COUNTY MANAGER OR DESIGNEE. THE COUNTY SHALL NOT ASSUME THE MAINTENANCE OF DECORATIVE PAVEMENT SECTIONS. MAINTENANCE SHALL BE THE RESPONSIBILITY OF A HOMEOWNERS ASSOCIATION OR OTHER ACCEPTABLE ENTITY.
THE COUNTY SHALL HAVE THE RIGHT TO MODIFY, ALTER, OR REMOVE ALL OR A PORTION OF THE DECORATIVE PAVEMENT AS NECESSARY FOR ROADWAY IMPROVEMENTS OR IMPROVEMENTS FOR TRAFFIC SAFETY.
BOMANITE PAVEMENT - BOMANITE PAVEMENTS SHALL MEET THE REQUIREMENTS FOR CONCRETE PAVEMENT IN THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. THE DEVELOPER SHALL SUBMIT TO THE COUNTY, FOR APPROVAL, MANUFACTURER SPECIFICATIONS CONFIRMING ADHERENCE TO THESE REGULATIONS.
PAVING BRICKS - THE USE OF PAVING BRICKS SHALL BE SUBJECT TO THE APPROVAL OF THE COUNTY. THE DEVELOPER SHALL SUBMIT TO THE COUNTY, FOR APPROVAL, MANUFACTURER'S LITERATURE AND TECHNICAL SPECIFICATIONS REGARDING THE STRUCTURAL STRENGTH, SKID RESISTANCE AND SUBGRADE REQUIREMENTS.
- TESTING**
TESTING SHALL BE PROVIDED AS PART OF CONSTRUCTION AND SHALL BE AT NO COST TO THE COUNTY. TESTING SHALL BE PERFORMED BY AN INDEPENDENT ENGINEERING TESTING LABORATORY CERTIFIED IN THE STATE OF FLORIDA.
THE FOLLOWING ARE MINIMUM TESTING REQUIREMENTS:
SUBGRADE - TESTING FOR THE SUBGRADE THICKNESS, BEARING VALUE AND DENSITY SHALL BE LOCATED NO MORE THAN FIVE HUNDRED (500) FEET APART AND SHALL BE STAGGERED TO THE LEFT, RIGHT AND ON THE CENTERLINE OF THE ROADWAY. THE COUNTY MAY ALSO REQUIRE ADDITIONAL TEST LOCATIONS AS DIRECTED BY THE COUNTY MANAGER OR DESIGNEE. THERE SHALL BE NO LESS THAN ONE (1) TEST PER ROAD. TESTING SHALL BE IN ACCORDANCE WITH APPLICABLE FOOT, AASHTO, OR ASTM STANDARDS. CERTIFIED TEST RESULTS SHALL BE SUBMITTED TO THE COUNTY FOR APPROVAL PRIOR TO PROCEEDING WITH THE BASE COURSE.
LIMEROCK BASE - TESTING FOR THE BASE THICKNESS AND DENSITY SHALL BE LOCATED NO MORE THAN 500 FEET APART AND SHALL BE STAGGERED TO THE LEFT, RIGHT AND ON THE CENTERLINE OF THE ROADWAY. THE COUNTY MAY ALSO REQUIRE ADDITIONAL TEST LOCATIONS AS DIRECTED BY THE COUNTY MANAGER OR DESIGNEE. THERE SHALL BE NO LESS THAN ONE TEST PER ROAD. TESTING SHALL INCLUDE: MODIFIED PROCTOR MAXIMUM DENSITY, IN-PLACE FIELD DENSITY AND THICKNESS. TESTING SHALL BE IN ACCORDANCE WITH APPLICABLE FOOT, AASHTO, OR ASTM STANDARDS. CERTIFIED TEST RESULTS SHALL BE SUBMITTED TO THE COUNTY FOR APPROVAL PRIOR TO PROCEEDING WITH THE WEARING SURFACE.
SOIL / CEMENT BASE - TESTING FOR THE BASE THICKNESS AND STRENGTH SHALL BE LOCATED NO MORE THAN 500 FEET APART AND SHALL BE STAGGERED TO THE LEFT, RIGHT AND ON THE CENTERLINE OF THE ROADWAY. THE COUNTY MAY ALSO REQUIRE ADDITIONAL TEST LOCATIONS AS DIRECTED BY THE COUNTY MANAGER OR DESIGNEE. THERE SHALL BE NO LESS THAN ONE TEST PER ROAD. TESTING SHALL INCLUDE: TEST CORES TAKEN AFTER SEVEN DAYS TO VERIFY THICKNESS AND TESTING TO VERIFY A MINIMUM SEVEN DAY COMPRESSIVE STRENGTH OF 300 PSI. TESTING SHALL BE IN ACCORDANCE WITH APPLICABLE FOOT, AASHTO, OR ASTM STANDARDS. CERTIFIED TEST RESULTS SHALL BE SUBMITTED TO THE COUNTY FOR APPROVAL PRIOR TO PROCEEDING WITH THE WEARING SURFACE.
WEARING SURFACE - TESTING FOR WEARING SURFACE THICKNESS SHALL BE LOCATED NO MORE THAN 500 FEET APART AND SHALL BE STAGGERED TO THE LEFT, RIGHT AND ON THE CENTERLINE OF THE ROADWAY. THE COUNTY MAY ALSO REQUIRE ADDITIONAL TEST LOCATIONS AS DIRECTED BY THE COUNTY MANAGER OR DESIGNEE. THERE SHALL BE NO LESS THAN ONE TEST PER ROAD. TESTING SHALL INCLUDE: CERTIFIED DESIGN MIX SUBMITTED FOR APPROVAL PRIOR TO PLACING ASPHALT, EXTRACTIONS TAKEN IN FIELD AT LEAST ONE PER DAY AND CORINGS TO VERIFY THICKNESS. TESTING SHALL BE IN ACCORDANCE WITH APPLICABLE FOOT, AASHTO, OR ASTM STANDARDS. CERTIFIED TEST RESULTS SHALL BE SUBMITTED TO THE COUNTY FOR APPROVAL.

CONTRACTOR MAY PROPOSE ALTERNATE PAVEMENT DESIGNS. CONTRACTOR SHALL SUBMIT ANY PAVEMENT ALTERNATIVES TO ENGINEER FOR APPROVAL PRIOR TO FINAL SUBGRADE PREPARATIONS.

HEIDT DESIGN
Civil Engineering
Professional Seal
Engineering Services • Landscaping Architecture

586-B Rockledge Pkwy
Ft. Pierce, Florida 34948
Office: 813.253.5111
Fax: 813.484.7027

www.HeidtDesign.com

SIRENOA (PKA AV ALON GROVES) VILLAGES 1 & 2 - PHASE 1A

TYPICAL ROADWAY SECTIONS

PREPARED BY: **VK AV ALON GROVES, LLC**

DATE: _____

DESCRIPTION: _____

NO.	DATE	DESCRIPTION
1	10/27/2014	REVISED PER SUBMITTAL
2		REVISED PER SUBMITTAL
3		REVISED PER SUBMITTAL
4		REVISED PER SUBMITTAL
5		REVISED PER SUBMITTAL
6		REVISED PER SUBMITTAL
7		REVISED PER SUBMITTAL
8		REVISED PER SUBMITTAL
9		REVISED PER SUBMITTAL
10		REVISED PER SUBMITTAL

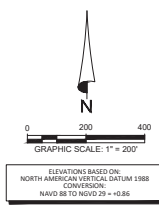
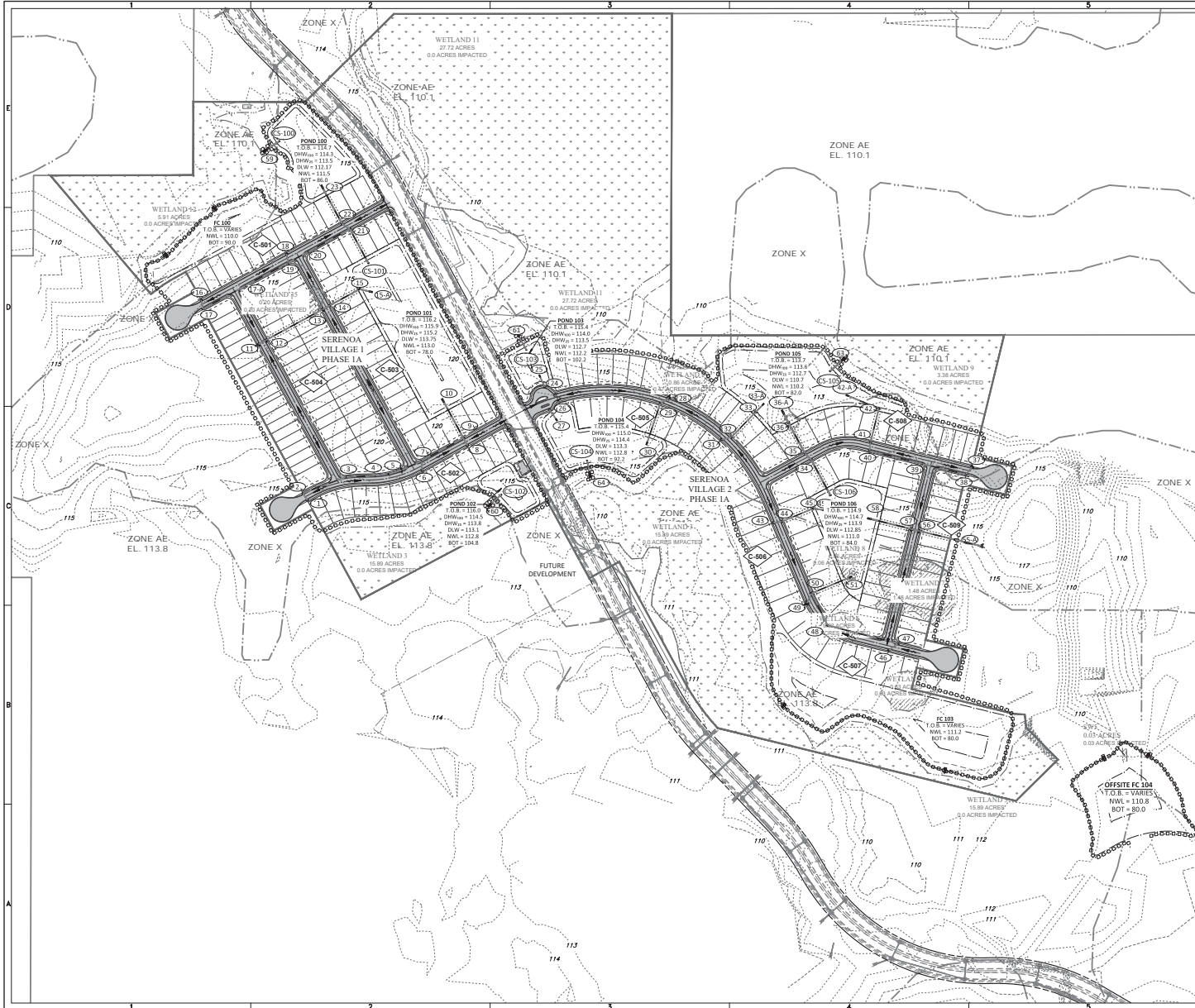
PROJECT NO: KIP-26-1009
 FILE: RS-486C
 DESIGN BY: FRANCIS
 DRAWN BY: JONES
 FLORIDA PROFESSIONAL ENGINEER

This Item has been electronically signed and sealed by Gary D. Miller, P.E. using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.

GARY D. MILLER
 DATE: _____
 REGISTRATION NO. 52717

C-200

FLORIDA PROFESSIONAL ENGINEER: 586-B ROCKLEDGE PKWY, FT. PIERCE, FLORIDA 34948, TEL: 813-253-5111, FAX: 813-484-7027, WWW.HEIDTDESIGN.COM



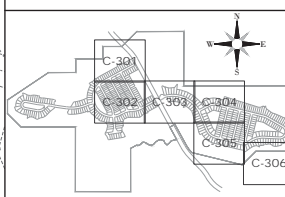
GENERAL LEGEND

- PROPERTY LINE
- PHASE LINE
- WETLAND LINE
- WETLAND CONS. AREA SETBACK (WCAS) (50')
- STAKED EROSION CONTROL
- ◆ PLAN & PROFILE SHEET NUMBER

DRAINAGE LEGEND

- EXISTING PROPOSED
- STORM DRAINAGE STRUCTURE & PIPE
- STRUCTURE NO.
- DIRECTION OF SURFACE FLOW
- CONTOUR
- FEMA FLOOD LINE

LAKE / POND EXCAVATION NOTE:
 NO EXCAVATION SHALL EXTEND BELOW THE PERMITTED DESIGN DEPTHS/ELEVATIONS SHOWN ON THE DRAWINGS, UNLESS ADDITIONAL TESTING SUPPORTS OTHERWISE. NO SEMI-CONFINING UNIT CLAYEY SOIL MATERIAL AND/OR NO LIMESTONE MATERIALS SHALL BE EXCAVATED, REGARDLESS IF THESE MATERIALS ARE ENCOUNTERED WITHIN THE PERMITTED EXCAVATION DEPTHS/ELEVATIONS. IF ANY LOWER SEMI-CONFINING UNIT CLAYEY SOIL MATERIAL OR LIMESTONE MATERIALS ARE ENCOUNTERED ABOVE THE PERMITTED DEPTHS/ELEVATIONS, THEN EXCAVATION OPERATIONS SHALL CEASE IN THE GENERAL AREA AND THE ENGINEER OF RECORD SHALL BE NOTIFIED IMMEDIATELY. IN THE ABSENCE OF ANY CONFINING OR SEMI-CONFINING UNIT CLAYEY SOILS, A MINIMUM OF FIVE FEET OF UNDISTURBED SOIL MUST REMAIN ABOVE THE UNDERLYING LIMESTONE. IF SUBSEQUENT SUBSURFACE GEOTECHNICAL INVESTIGATIONS SUPPORT EXCAVATION BELOW DESIGN/PERMITTED DEPTHS/ELEVATIONS, THE ADDITIONAL EXCAVATION SHALL NOT BEGIN UNTIL THE ENGINEER OF RECORD HAS RECEIVED VERBAL AND/OR WRITTEN PERMISSION FROM THE APPROPRIATE GOVERNING AGENCY.



SHEET KEY MAP

HEIDT DESIGN
 INCORPORATED
 Ecological Services • Landscaping Architecture
 Engineering • Surveying • Construction Management

5806-B Brockmeagle Pike
 Tampa, Florida 33606
 Office: 813.253.5111
 Fax: 813.464.7029
 www.HeidtDesign.com

SERENOA (PKA AVALON GROVES) VILLAGES 1 & 2 - PHASE 1A MASTER GRADING & DRAINAGE PLAN

PREPARED BY: VK AVALON GROVES, LLC
 DATE: 02/24/2017

NO.	DESCRIPTION	DATE
1	PRELIMINARY	02/24/2017
2	REVISED PER COMMENTS	02/24/2017
3	REVISED PER COMMENTS	02/24/2017

PROJECT NO.	KP-20-1009
FILE:	MD-K21
DESIGN BY:	FRANCIS
DRAWN BY:	JONES

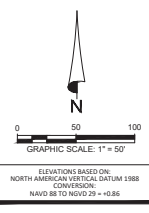
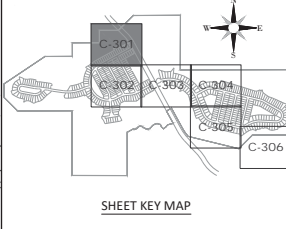
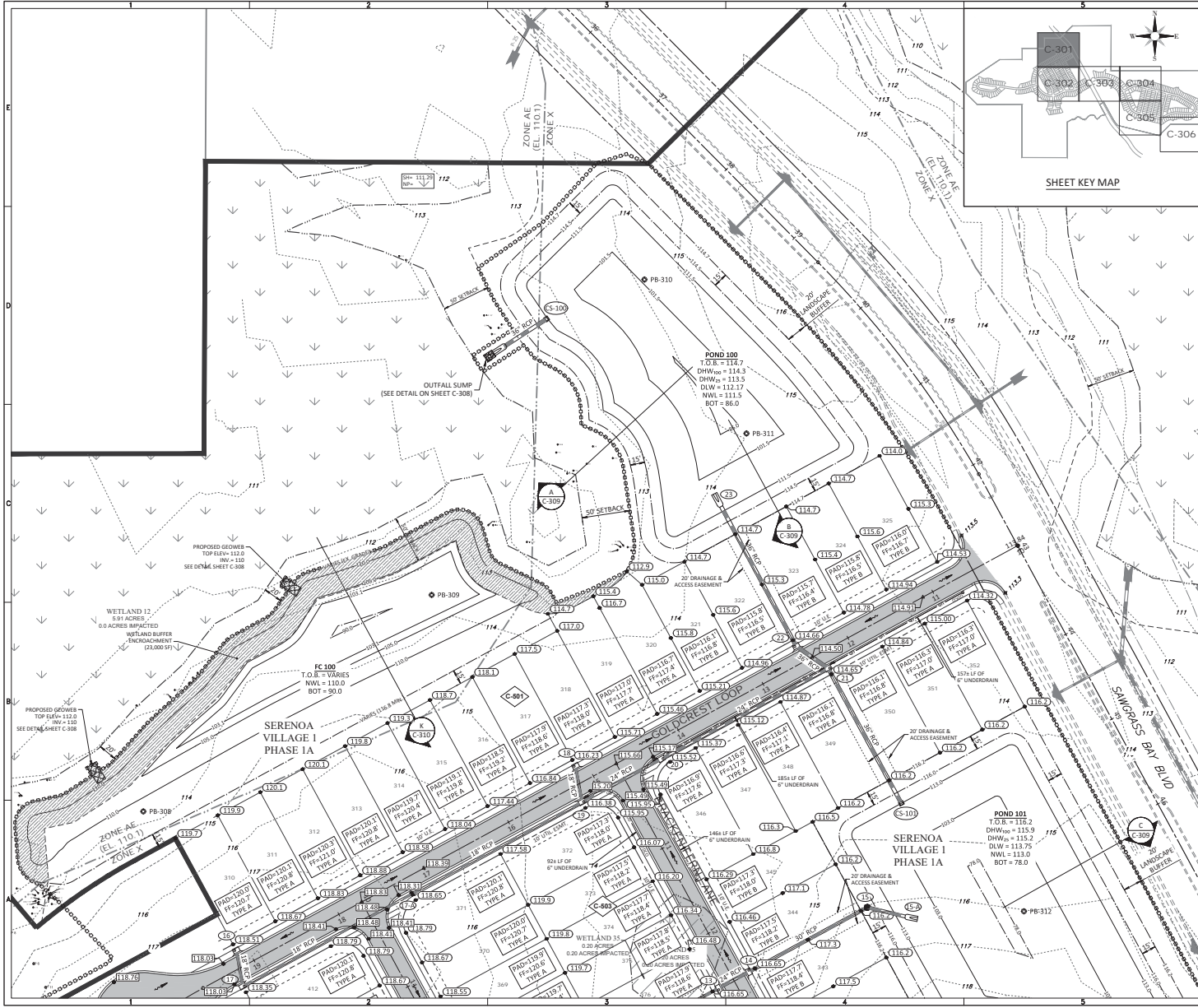
FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Gary D. Miller, P.E. using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.

GARY D. MILLER
 DATE: 02/24/2017
 REGISTRATION NO. 52717

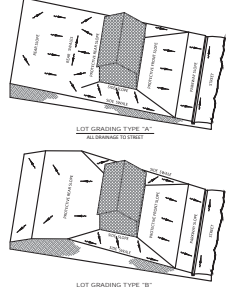
C-300

1"=40' HORIZONTAL SCALE, 1"=20' VERTICAL SCALE, UNLESS OTHERWISE NOTED. DATE PLOTTED: 02/24/2017 10:45 AM.



GENERAL LEGEND

- PROPERTY LINE
 - - - PHASE LINE
 - - - WETLAND LINE
 - - - WETLAND CONS. AREA SETBACK (WCA) (50')
 - ◊ STAKED EROSION CONTROL
 - PLAN & PROFILE SHEET NUMBER
- DRAINAGE LEGEND**
- EXISTING STORM DRAINAGE STRUCTURE & PIPE
 - PROPOSED STORM DRAINAGE STRUCTURE & PIPE
 - STRUCTURE NO.
 - DIRECTION OF SURFACE FLOW
 - CONTOUR
 - FEMA FLOOD LINE
 - SPOT ELEVATION GRAOUND
 - SPOT ELEVATION PAVEMENT
 - PROFILE GRADE ELEVATION REFERENCE
 - FF=000.00 FINISH FLOOR ELEVATION
 - SOIL BORING LOCATION (PONDS)
 - EXISTING TREE TO BE PROTECTED
 - SECTION ID LABEL
 - SECTION SHEET NUMBER
 - ▨ WETLAND SETBACK ENCROACHMENT
 - ▨ WETLAND SETBACK COMPENSATION



NEIGHBORHOOD GRADING PLAN NOTES:

- PAD AND FINISHED FLOOR ELEVATIONS SHOWN ARE MINIMUM GRADES. ELEVATIONS OF ADDING LOTS, EXISTING TREES, AND OTHER FIELD CONDITIONS MAY WARRANT LEAVING LOTS WHICH ARE HIGHER IN THEIR NATURAL STATE. THE CONTRACTOR SHOULD CONSULT WITH THE DEVELOPER/BUILDER AND THE ENGINEER PRIOR TO GRADING ACTIVITIES WHEN THESE CONDITIONS EXIST. NOTE DEVIATIONS IN EXCESS OF THREE INCHES (3") UNDERMINARY REQUIRE REVIEW AND APPROVAL THROUGH THE APPLICABLE REVIEWING AGENCY.
- PADELEVATIONS INDICATE FINISH GROUND ELEVATION AT PERIMETER OF BUILDING ENVELOPE.
- LOTS WITH TWO (2) FEET OR MORE OF FULL PLACEMENT ABOVE EXISTING (NATURAL) GRADE REQUIRE PROCESSING PER DATA SHEET NO. 75.0 IF PFA FRANKING IS TO BE PROVIDED. SIMILAR TESTING REGRADING SHALL TAKE PLACE UNDER A QUALITY CONTROL PROGRAM IN THE ABSENCE OF PFA REQUIRED TESTING.
- FOR ALL LOTS ABUTTING WETLANDS NO GRADING SHALL TAKE PLACE BEYOND THE EROSION CONTROL LINE UNLESS SPECIFICALLY SHOWN ON THE APPLICABLE CONSTRUCTION PLANS.
- SIDE SWALES SHALL BE CONSTRUCTED SIMULTANEOUSLY WITH HOUSE CONSTRUCTION. DURING THE SITE GRADING ACTIVITIES, THE CONTRACTOR SHALL GRADE THE SIDE YARDS TO AN ELEVATION NO LOWER THAN 0.2 FT. BELOW THE ADJOINING HOUSING PAD GRADE.
- FOR TYPE "A" LOT GRADING RECEIVING RUNOFF FROM ABUTTING TYPE "B" LOTS, ALL RUNOFF SHALL BE DIRECTED TO SIDE YARD SWALLE.
- FOR TYPE "B" LOT GRADING ABUTTING TYPE "A" LOT GRADING, ALL REAR LOTS, ALL RUNOFF SHALL BE DIRECTED TO SIDE YARD SWALLE.
- FOR TYPE "B" LOT GRADING NOT ABUTTING STORMWATER FACILITIES, THE BUILDER SHALL MAKE EVERY PRACTICAL EFFORT TO DIRECT ROOF RUNOFF TO THE FRONTING RIGHT OF WAY UNLESS OTHERWISE DIRECTED BY THE ENGINEER OF RECORD.
- MINIMUM SIDE YARD SWALE SLOPES SHALL BE 1.0%.



SERENOA (PKA AVALON GROVES) VILLAGES 1 & 2 - PHASE 1A GRADING & DRAINAGE PLAN

PREPARED BY: VK AVALON GROVES, LLC

NO.	DATE	DESCRIPTION
1	02/12/2017	ISSUE FOR PERMITS
2	02/12/2017	ISSUE FOR PERMITS
3	02/12/2017	ISSUE FOR PERMITS
4	02/12/2017	ISSUE FOR PERMITS
5	02/12/2017	ISSUE FOR PERMITS
6	02/12/2017	ISSUE FOR PERMITS
7	02/12/2017	ISSUE FOR PERMITS
8	02/12/2017	ISSUE FOR PERMITS
9	02/12/2017	ISSUE FOR PERMITS
10	02/12/2017	ISSUE FOR PERMITS

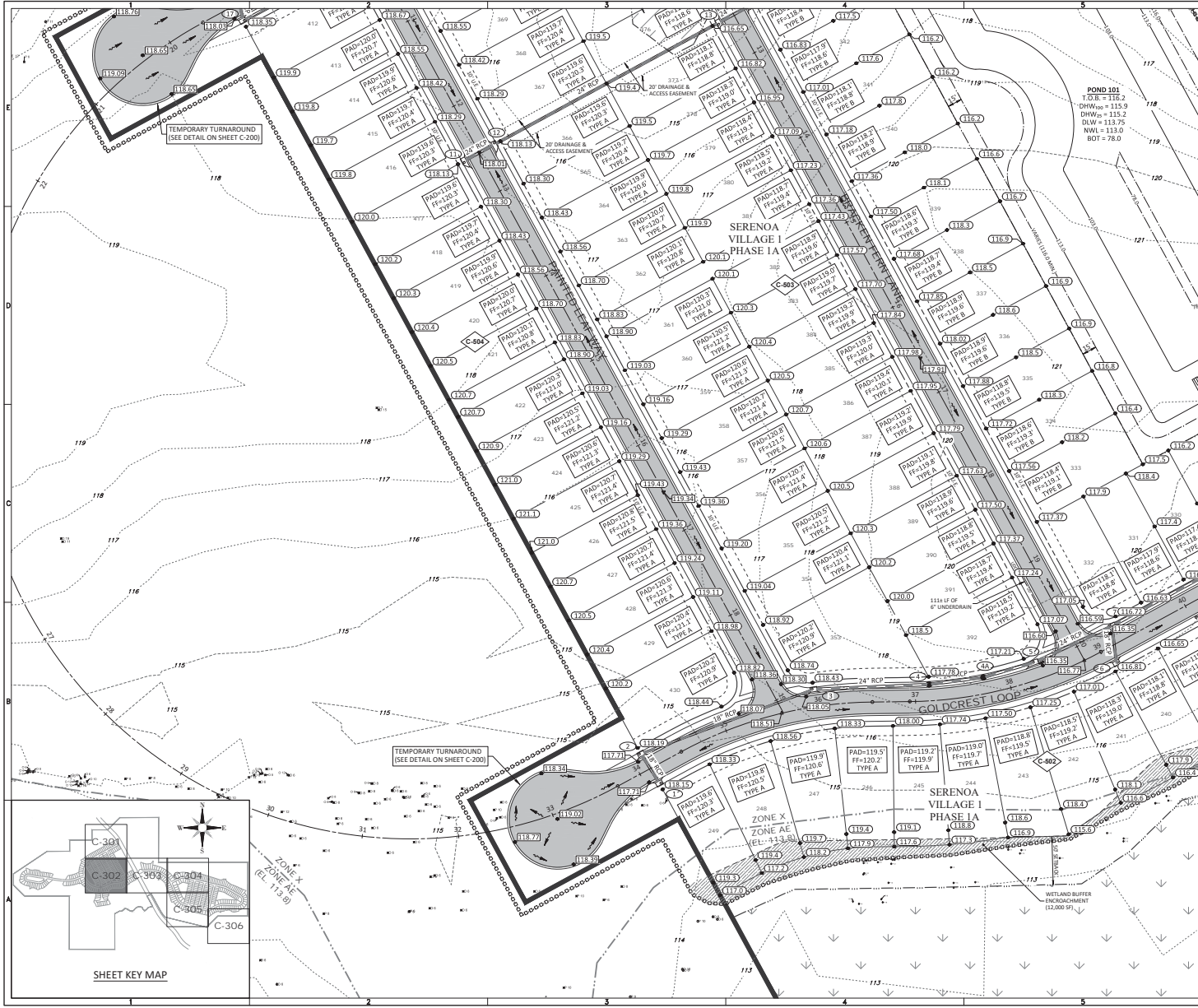
PROJECT NO: KSP-AG-1009
 FILE: G2
 DESIGN BY: FRANCIS JONES
 DRAWN BY: JONES
 FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Gary D. Miller, P.E. using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.

GARY D. MILLER
 DATE: 02/12/2017
 REGISTRATION NO. 52717

C-301

SERENOA GROVES (PKA AVALON GROVES) VILLAGES 1 & 2 - PHASE 1A GRADING & DRAINAGE PLAN - SHEET C-301



GENERAL LEGEND

- PROPERTY LINE
- PHASE LINE
- WETLAND LINE
- WETLAND CONS. AREA SETBACK (WCAS) (50')
- STAKED EROSION CONTROL
- PLAN & PROFILE SHEET NUMBER

DRAINAGE LEGEND

- EXISTING STORM DRAINAGE STRUCTURE & PIPE
- PROPOSED STORM DRAINAGE STRUCTURE & PIPE
- DIRECTION OF SURFACE FLOW
- CONTOUR
- FEMA FLOOD LINE
- SPOT ELEVATION GRADING
- SPOT ELEVATION PAVEMENT
- PROFILE GRADE ELEVATION REFERENCE
- FF=000.00 FINISH FLOOR ELEVATION
- PB# SOIL BORING LOCATION (PONDS)
- EXISTING TREE TO BE PROTECTED
- SECTION ID LABEL
- SECTION SHEET NUMBER
- WETLAND SETBACK ENCROACHMENT
- WETLAND SETBACK COMPENSATION

NEIGHBORHOOD GRADING PLAN NOTES:

- PAD AND FINISHED FLOOR ELEVATIONS SHOWN ARE MINIMUM GRADES. ELEVATIONS OF ADDING LOTS, EXISTING TREES, AND OTHER FIELD CONDITIONS MAY WARRANT LEAVING LOTS WHICH ARE HIGHER IN THEIR NATURAL STATE. THE CONTRACTOR SHOULD CONSULT WITH THE DEVELOPER/BUILDER AND THE ENGINEER PRIOR TO GRADING ACTIVITIES WHEN THESE CONDITIONS EXIST. NOTE: DEVIATIONS IN EXCESS OF THREE INCHES (3") THEREAFTER MAY REQUIRE REVIEW AND APPROVAL THROUGH THE APPLICABLE REVIEWING AGENCY.
- PAD ELEVATIONS INDICATE FINISH GROUND ELEVATION AT PERIMETER OF BUILDING ENVELOPE.
- LOTS WITH TWO (2) FEET OR MORE OF FULL PLACEMENT ABOVE EXISTING (NATURAL) GRADE REQUIRE PROCESSING PER PHA DATA SHEET NO. 79.5 IF PHA FINANCING IS TO BE PROVIDED. SHALLOW TESTING IS CONSIDERED AS A QUALITY CONTROL PROGRAM IN THE ABSENCE OF PHA REQUIRED TESTING.
- FOR ALL LOTS ABUTTING WETLANDS NO GRADING SHALL TAKE PLACE BEYOND THE EROSION CONTROL LINE UNLESS SPECIFICALLY SHOWN ON THE APPROVED CONSTRUCTION PLANS.
- SIDE SWALES SHALL BE CONSTRUCTED SIMULTANEOUSLY WITH HOUSE CONSTRUCTION. DURING THE SITE GRADING ACTIVITIES, THE CONTRACTOR SHALL GRADE THE SIDE YARDS TO AN ELEVATION NO LOWER THAN 0.2 FT. BELOW THE ADDINGHOUSE PAD GRADE.
- FOR TYPE "A" LOT GRADING RECEIVING RUNOFF FROM ABUTTING TYPE "B" LOTS, ALL RUNOFF SHALL BE DIRECTED TO SIDE YARD SWALES.
- FOR TYPE "B" LOT GRADING ABUTTING TYPE "A" LOT GRADING, ALL REAR LOTS, ALL RUNOFF SHALL BE DIRECTED TO SIDE YARD SWALES.
- FOR TYPE "B" LOT GRADING NOT ABUTTING STORMWATER FACILITIES, THE BUILDER SHALL MAKE EVERY PRACTICAL EFFORT TO DIRECT ROOF RUNOFF TO THE FRONTING RIGHT-OF-WAY UNLESS OTHERWISE DIRECTED BY THE ENGINEER OF RECORD.
- MINIMUM SIDE YARD SWALE SLOPES SHALL BE 1.0%.

LOT GRADING TYPE "A"

LOT GRADING TYPE "B"

LOT GRADING TYPE "C"

HEIDT DESIGN
 Environmental Services & Landscaping Architecture
 Engineering Reviewer Certificate of Accreditation No. 2072
 Landscaping Evaluation Certificate of Accreditation No. LC00000001

586-B Rockledge Pkwy
 Tampa, Florida 33606
 Office: 813.253.5111
 Fax: 813.646.7029
 www.HeidtDesign.com

SERENOA (PKA AVALON GROVES) VILLAGES 1 & 2 - PHASE 1A GRADING & DRAINAGE PLAN

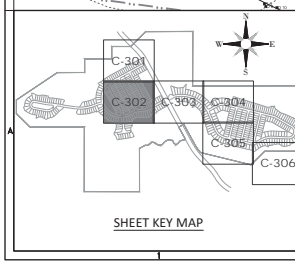
PREPARED BY: [Name]
 DATE: [Date]
 CHECKED BY: [Name]
 DATE: [Date]
 DESIGNED BY: [Name]
 DATE: [Date]
 DRAWN BY: [Name]
 DATE: [Date]

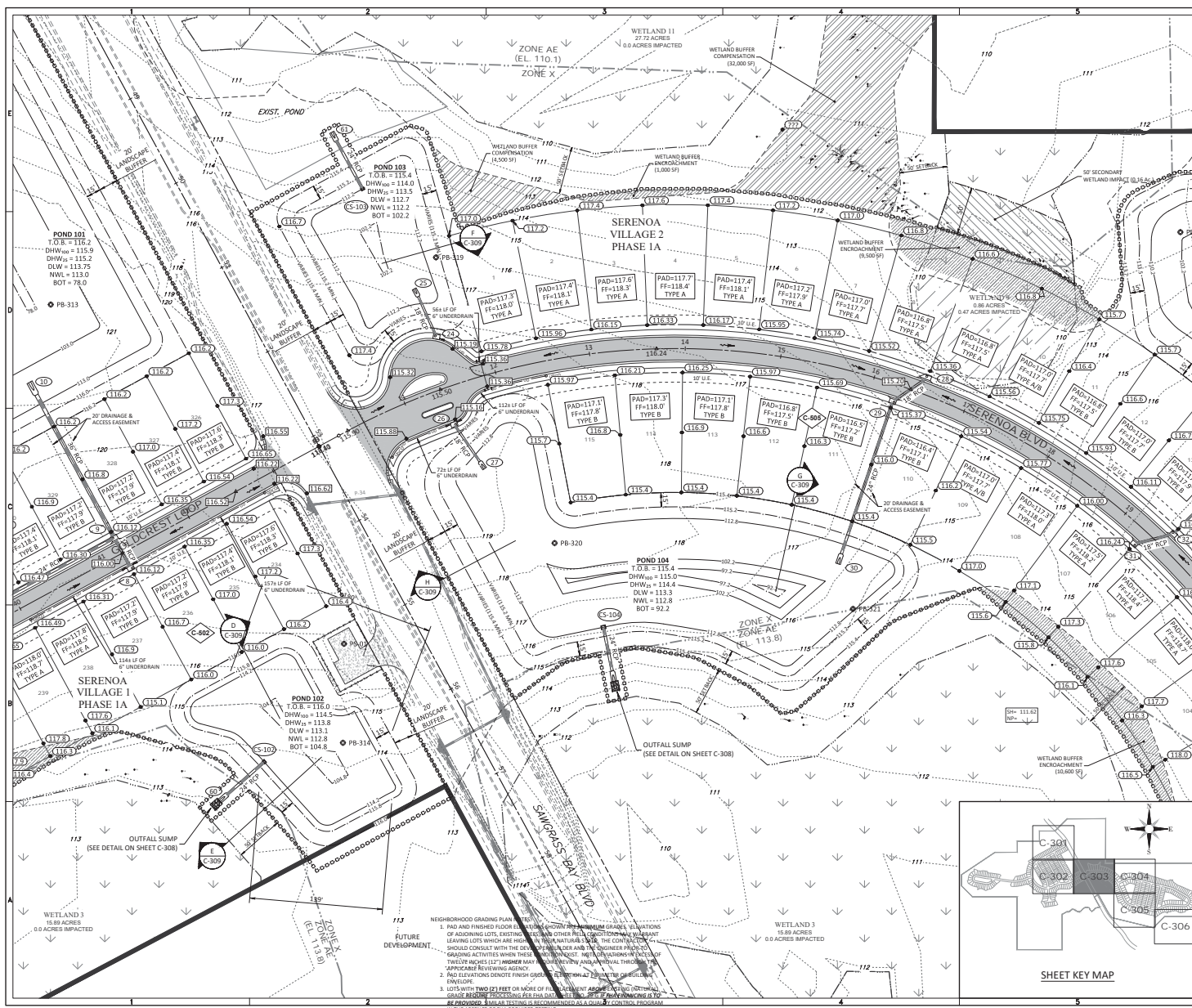
PROJECT NO: KFP-AG-1009
 FILE: G2
 DESIGN BY: FRANCIS JONES
 DRAWN BY: FRANCIS JONES
 FLORIDA PROFESSIONAL ENGINEER

This form has been electronically signed and sealed by Gary D. Miller, PE, using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.

GARY D. MILLER
 DATE: [Date]
 REGISTRATION NO. 52717

C-302





GRAPHIC SCALE: 1" = 50'

ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION
NAVD 83 TO NGVD 29 = +16.86

GENERAL LEGEND

	PROPERTY LINE
	PHASE LINE
	WETLAND LINE
	WETLAND CONS. AREA SETBACK (WCAS) (SOS)
	STAKED EROSION CONTROL
	PLAN & PROFILE SHEET NUMBER

DRAINAGE LEGEND

	EXISTING STORM DRAINAGE STRUCTURE & PIPE
	PROPOSED STORM DRAINAGE STRUCTURE & PIPE
	STRUCTURE NO.
	DIRECTION OF SURFACE FLOW
	CONTOUR
	PRIMA FLOOD LINE
	SPOT ELEVATION GROUND
	SPOT ELEVATION PAVEMENT
	PROFILE GRADE ELEVATION REFERENCE
	FF=000.00 FINISH FLOOR ELEVATION
	SOL BORING LOCATION (PONDS)
	EXISTING TREE TO BE PROTECTED
	SECTION ID LABEL
	SECTION SHEET NUMBER
	WETLAND SETBACK ENCROACHMENT
	WETLAND SETBACK COMPENSATION

LOT GRADING TYPE "A" - ALL DRAINAGE TO STREET

LOT GRADING TYPE "B" - "WETLAND BUFFER TYPE" AND TO NEAR LOT LINE

SHEET KEY MAP

HEIDT DESIGN
Civil Engineers & Architects
Ecological Services & Landscape Architecture
Engineering Review Certificate of Accreditation No. 20792
Landscape Architecture Certificate of Accreditation No. LC00000001
www.HeidtDesign.com

SERENOA (PKA AVALON GROVES)
VILLAGES 1 & 2 - PHASE 1A
GRADING & DRAINAGE PLAN

PREPARED BY: GARY D. MILLER
DATE: 02/21/2017

DATE: 02/21/2017
DESIGNER: FRANCIS JONES
DRAWN BY: FRANCIS JONES
CHECKED BY: FRANCIS JONES
DATE: 02/21/2017
REVIEWER: FRANCIS JONES
DATE: 02/21/2017
DATE: 02/21/2017

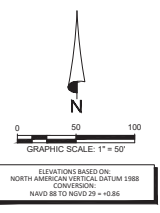
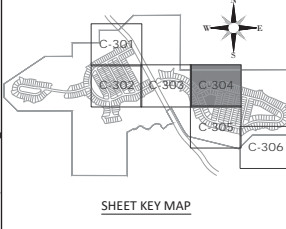
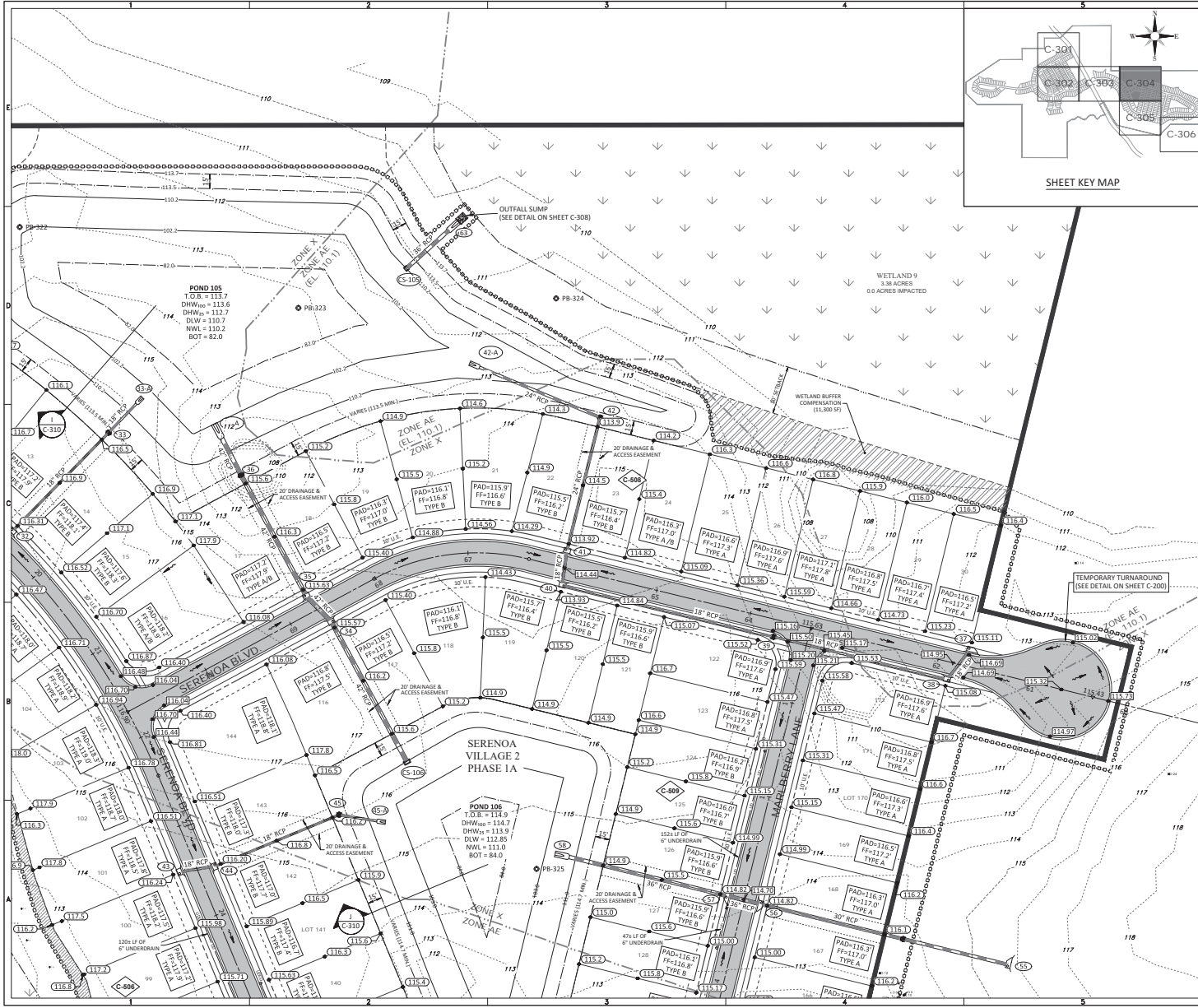
PROJECT NO: KFP-AG-1009
FILE: G2
DESIGN BY: FRANCIS JONES
DRAWN BY: FRANCIS JONES
FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Gary D. Miller, P.E. using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.

GARY D. MILLER
DATE: 02/21/2017
REGISTRATION NO: 52717

C-303

- NEIGHBORHOOD GRADING PLAN NOTES:
- PAD AND FINISHED FLOOR ELEVATIONS AND EROSION CONTROL MEASURES SHALL BE DETERMINED BY CONSIDERING THE ELEVATIONS OF ADJOINING LOTS, EXISTING WETLANDS AND OTHER RELEVANT CONDITIONS AS WELL AS LEAVING LOTS WHOSE HIGH POINTS ARE NATURAL BARRIERS. THE CONTRACTOR SHALL CONSULT WITH THE DESIGNER PRIOR TO ANY GRADING OR EROSION CONTROL ACTIVITIES WHEN THESE CONDITIONS AFFECT THE GRADING OR EROSION CONTROL ACTIVITIES OF TWO (2) ACRES OR MORE. APPROVED BY THE APPLICABLE REVIEWING AGENCY.
 - PAD ELEVATIONS SHOULD PROVIDE A MINIMUM OF 2 FEET OF FINISH GRADE ABOVE THE FINISHED FLOOR ELEVATION.
 - LOTS WITH TWO (2) FEET OR MORE OF FINISH GRADE ABOVE THE FINISHED FLOOR ELEVATION SHALL BE CONSIDERED AS GRADING. GRADING SHALL BE COMPLETED PRIOR TO THE GRADING OF THE REMAINING LOTS IN THE PHASE.
 - FOR ALL LOTS RESULTING IN WETLANDS NO GRADING SHALL TAKE PLACE BEYOND THE EROSION CONTROL LINE UNLESS SPECIFICALLY SHOWN ON THE APPROVED CONSTRUCTION PLANS.
 - SIDE SWALES SHALL BE CONSTRUCTED SIMULTANEOUSLY WITH HOUSE CONSTRUCTION. DURING THE SITE GRADING ACTIVITIES THE CONTRACTOR SHALL GRADE THE SIDE YARDS TO AN ELEVATION NO LOWER THAN 0.2 FT. BELOW THE ADJOINING HOUSE PAD GRADES.

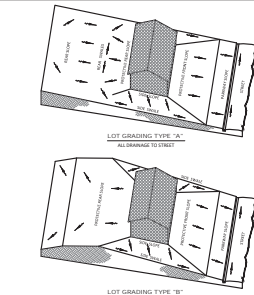


GENERAL LEGEND

- PROPERTY LINE
- PHASE LINE
- WETLAND LINE
- WETLAND CONS. AREA SETBACK (WCAS) (50')
- STAKED EROSION CONTROL
- PLAN & PROFILE SHEET NUMBER

DRAINAGE LEGEND

- EXISTING STORM STRUCTURE & PIPE
- PROPOSED STORM STRUCTURE & PIPE
- STRUCTURE NO.
- DIRECTION OF SURFACE FLOW
- CONTOUR
- FEMA FLOOD LINE
- SPOT ELEVATION GRADING
- SPOT ELEVATION PAVEMENT
- PROFILE GRADE ELEVATION REFERENCE
- FF=000.00 FINISH FLOOR ELEVATION
- SOIL BORING LOCATION (PONDS)
- EXISTING TREE TO BE PROTECTED
- SECTION ID LABEL
- SECTION SHEET NUMBER
- WETLAND SETBACK ENCROACHMENT
- WETLAND SETBACK COMPENSATION



NEIGHBORHOOD GRADING PLAN NOTES:

- PAD AND FINISHED FLOOR ELEVATIONS SHOWN ARE MINIMUM GRADES. ELEVATIONS OF ADJOINING LOTS, EXISTING TREES, AND OTHER FIELD CONDITIONS MAY WARRANT LEAVING LOTS WHICH ARE HIGHER IN THEIR NATURAL STATE. THE CONTRACTOR SHOULD CONSULT WITH THE DEVELOPER/BUILDER AND THE ENGINEER PRIOR TO GRADING ACTIVITIES WHEN THESE CONDITIONS EXIST. NOTE DEVIATIONS IN EXCESS OF THREE INCHES (3") THEREAFTER MAY REQUIRE REVIEW AND APPROVAL THROUGH THE APPLICABLE REVIEWING AGENCY.
- PAD ELEVATIONS INDICATE FINISH GROUND ELEVATION AT PERIMETER OF BUILDING ENVELOPE.
- LOTS WITH TWO (2) FEET OR MORE OF FULL PLACEMENT ABOVE EXISTING (NATURAL) GRADE REQUIRE PROCEEDING PER FPA DATA SHEET NO. 79. IF FPA FINANCING IS TO BE PROVIDED, SIMILAR TESTING IS REQUIRED AS A QUALITY CONTROL PROGRAM IN THE ABSENCE OF FPA REQUIRED TESTING.
- FOR ALL LOTS ABUTTING WETLANDS NO GRADING SHALL TAKE PLACE BEYOND THE EROSION CONTROL LINE UNLESS SPECIFICALLY SHOWN ON THE APPROVED CONSTRUCTION PLANS.
- SOIL SWALES SHALL BE CONSTRUCTED SIMULTANEOUSLY WITH HOUSE CONSTRUCTION. DURING THE SITE GRADING ACTIVITIES, THE CONTRACTOR SHALL GRADE THE SIDE YARDS TO AN ELEVATION NO LOWER THAN 0.2 FT. BELOW THE ADJOINING HOUSE PAD GRADE.
- FOR TYPE "A" LOT GRADING RECEIVING RUNOFF FROM ABUTTING TYPE "B" LOTS, ALL RUNOFF SHALL BE DIRECTED TO SIDE YARD SWALES.
- FOR TYPE "B" LOT GRADING ABUTTING TYPE "A" LOT GRADING, ALL REAR LOTS, ALL RUNOFF SHALL BE DIRECTED TO SIDE YARD SWALES.
- FOR TYPE "B" LOT GRADING NOT ABUTTING STORMWATER FACILITIES, THE BUILDER SHALL MAKE EVERY PRACTICAL EFFORT TO DIRECT ROOF RUNOFF TO THE FRONTING RIGHT-OF-WAY UNLESS OTHERWISE DIRECTED BY THE ENGINEER OF RECORD.
- MINIMUM SIDE YARD SWALE SLOPES SHALL BE 1.0%.



Engineering Review Certificate of Professional Seal No. 20737
Landscape Architecture Certificate of Professional Seal No. LC20000001

SERENOA (FKA AVALON GROVES)
VILLAGES 1 & 2 - PHASE 1A
GRADING & DRAINAGE PLAN

PREPARED BY: VK AVALON GROVES, LLC

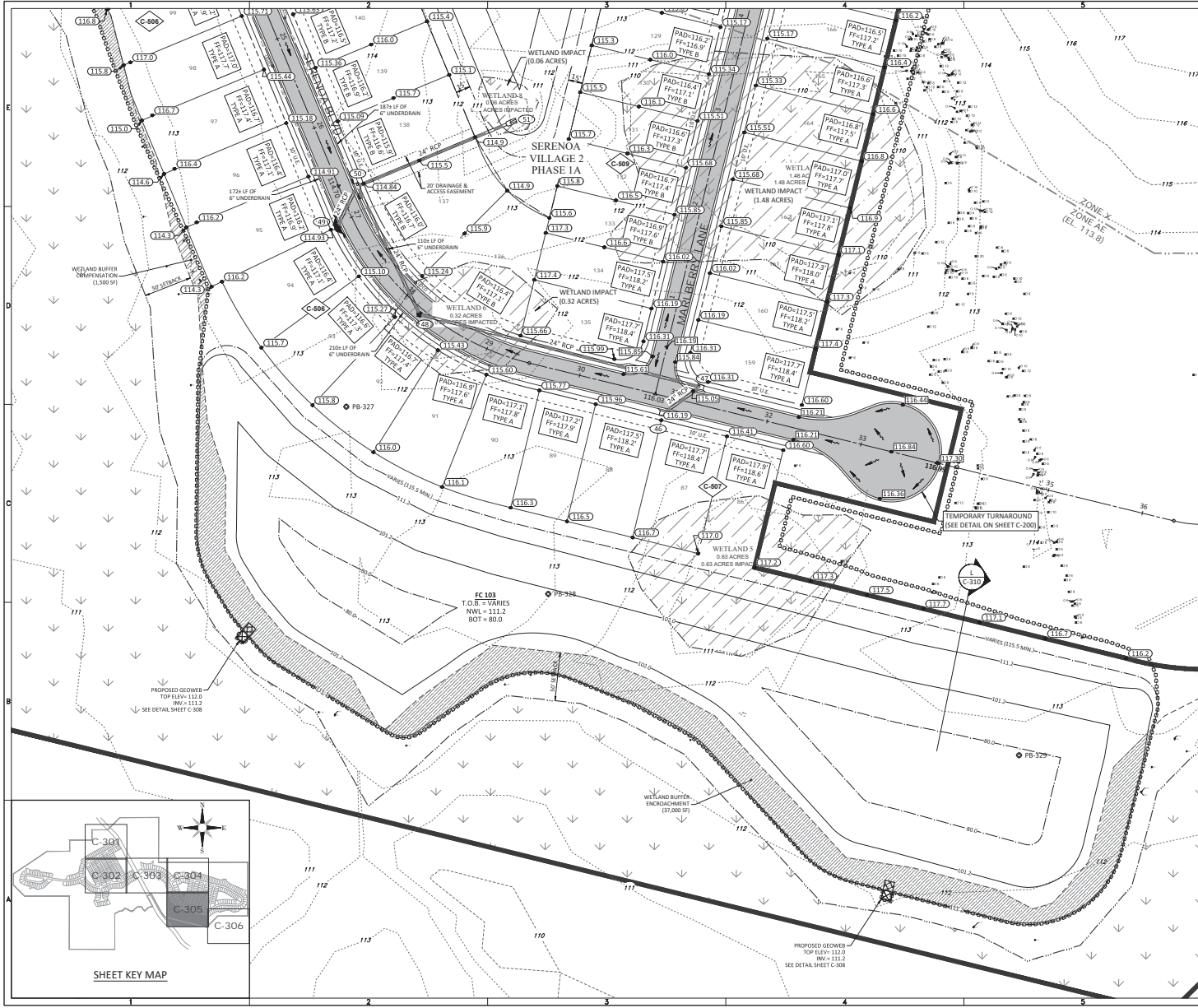
NO.	DATE	DESCRIPTION

PROJECT NO: KSP-AG-1000
 FILE: G2
 DESIGN BY: FRANCIS JONES
 DRAWN BY: JONES
 FLORIDA PROFESSIONAL ENGINEER

This form has been electronically signed and sealed by Gary D. Miller, PE, using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.

GARY D. MILLER
 DATE: 02/17/2017
 REGISTRATION NO. 52717

C-304



GENERAL LEGEND

- PROPERTY LINE
- PHASE LINE
- WETLAND LINE
- WETLAND CONS. AREA SETBACK (WCA) (50')
- STAKED EROSION CONTROL
- PLAN & PROFILE SHEET NUMBER

DRAINAGE LEGEND

- EXISTING STORM DRAINAGE STRUCTURE & PIPE
- PROPOSED STORM DRAINAGE STRUCTURE & PIPE
- STRUCTURE NO.
- DIRECTION OF SURFACE FLOW
- CONTOUR
- FEMA FLOOD LINE
- SPOT ELEVATION GROUND
- SPOT ELEVATION PAVEMENT
- PROFILE GRADE ELEVATION REFERENCE
- FF=000.00 FINISH FLOOR ELEVATION
- SOIL BORING LOCATION (PONDS)
- EXISTING TREE TO BE PROTECTED
- SECTION ID LABEL
- SECTION SHEET NUMBER
- WETLAND SETBACK ENCROACHMENT
- WETLAND SETBACK COMPENSATION

LOT GRADING TYPE "A"

 LOT GRADING TYPE "B"

NEIGHBORHOOD GRADING PLAN NOTES:

- PAD AND FINISHED FLOOR ELEVATIONS SHOWN ARE MINIMUM GRADES. ELEVATIONS OF ADDING LOTS, EXISTING TREES, AND OTHER FIELDS CONDITIONS MAY WARRANT LEAVING LOTS WHICH ARE HIGHER IN THEIR NATURAL STATE. THE CONTRACTOR SHOULD CONSULT WITH THE DEVELOPER/BUILDER AND THE ENGINEER PRIOR TO GRADING ACTIVITIES WHEN THESE CONDITIONS EXIST. NOTE DEVIATIONS IN EXCESS OF THREE INCHES (3") ENGINEER MAY REQUIRE REVIEW AND APPROVAL THROUGH THE APPLICABLE REVIEWING AGENCY.
- PAD ELEVATIONS INDICATE FINISH GROUND ELEVATION AT PERIMETER OF BUILDING ENVELOPE.
- LOTS WITH TWO (2) FEET OR MORE OF FILL PLACEMENT ABOVE EXISTING (NATURAL) GRADE REQUIRE PROCESSING PER PHA DATA SHEET NO. 75. IF PHA FINDINGS IS TO BE PROVIDED, SIMILAR TESTING IS REQUIRED AS A QUALITY CONTROL PROGRAM IN THE ABSENCE OF PHA REQUIRED TESTING.
- FOR ALL LOTS ABUTTING WETLANDS NO GRADING SHALL TAKE PLACE BEYOND THE EROSION CONTROL LINE UNLESS SPECIFICALLY SHOWN ON THE APPROVED CONSTRUCTION PLANS.
- SIDE SWALES SHALL BE CONSTRUCTED SIMULTANEOUSLY WITH HOUSE CONSTRUCTION. DURING THE SITE GRADING ACTIVITIES, THE CONTRACTOR SHALL GRADE THE SIDE YARDS TO AN ELEVATION NO LOWER THAN 0.2 FT. BELOW THE ADDING HOUSE PAD GRADE.
- FOR TYPE "A" LOT GRADING RECEIVING RUNOFF FROM ABUTTING TYPE "B" LOTS, ALL RUNOFF SHALL BE DIRECTED TO SIDE YARD SWALES.
- FOR TYPE "B" LOT GRADING ABUTTING TYPE "A" LOT GRADING, ALL REAR LOTS, ALL RUNOFF SHALL BE DIRECTED TO SIDE YARD SWALES.
- FOR TYPE "B" LOT GRADING NOT ABUTTING STORMWATER FACILITIES, THE BUILDER SHALL MAKE EVERY PRACTICAL EFFORT TO DIRECT ROOF RUNOFF TO THE FRONTING RIGHT OF WAY UNLESS OTHERWISE DIRECTED BY THE ENGINEER OF RECORD.
- MINIMUM SIDE YARD SWALE SLOPES SHALL BE 1.0%.

HEIDT DESIGN
 ENGINEERING SERVICES & LANDSCAPE ARCHITECTURE
 5806-B Rockledge Pkwy
 Tampa, Florida 33608
 Office: 813.253.5111
 Fax: 813.464.7029
 www.HeidtDesign.com

SERENOA (PKA AVALON GROVES) VILLAGES 1 & 2 - PHASE 1A GRADING & DRAINAGE PLAN

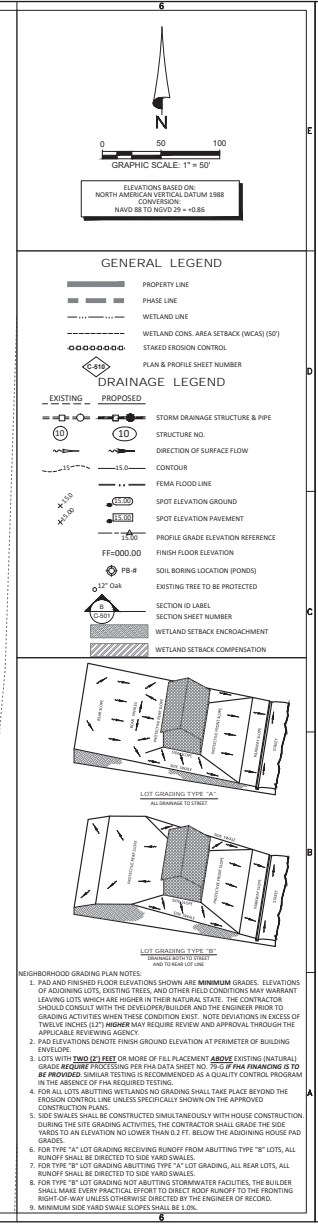
PREPARED BY: GARY D. MILLER
 DATE: 02/21/2017
 REVIEWED BY: FRANCIS JONES
 DATE: 02/21/2017
 APPROVED BY: FRANCIS JONES
 DATE: 02/21/2017

PROJECT NO: KSP-AG-1009
 FILE: G2
 DESIGN BY: FRANCIS JONES
 DRAWN BY: FRANCIS JONES
 FLORIDA PROFESSIONAL ENGINEER

This form has been electronically signed and sealed by Gary D. Miller, P.E. using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.

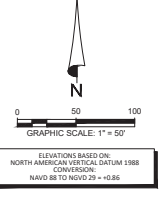
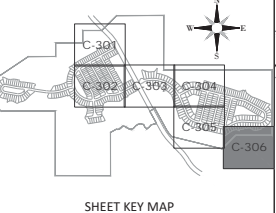
GARY D. MILLER
 DATE: 02/21/2017
 REGISTRATION NO. 52717

C-305



NEIGHBORHOOD GRADING PLAN NOTES:

1. PAD AND FINISHED FLOOR ELEVATIONS SHOWN ARE MINIMUM GRADES. ELEVATIONS OF ADDING LOTS, EXISTING TREES, AND OTHER FIELD CONDITIONS MAY WARRANT LEAVING LOTS WHICH ARE HIGHER IN THEIR NATURAL STATE. THE CONTRACTOR SHOULD CONSULT WITH THE DEVELOPER/OWNER AND THE ENGINEER PRIOR TO GRADING ACTIVITIES WHEN THESE CONDITIONS EXIST. NOTE DEVIATIONS IN EXCESS OF THREE INCHES (3") ENGINEER MAY REQUIRE REVIEW AND APPROVAL THROUGH THE APPLICABLE REVIEWING AGENCY.
2. PAD ELEVATIONS INDICATE FINISH GROUND ELEVATION AT PERIMETER OF BUILDING ENVELOPE.
3. LOTS WITH TWO (2) FEET OR MORE OF FILL PLACEMENT ABOVE EXISTING (NATURAL) GRADE REQUIRE PROCESSING PER FPA DATA SHEET NO. 75. IF FPA FINANCING IS TO BE PROVIDED, SIMILAR TESTING IS REQUIRED AS A QUALITY CONTROL PROGRAM IN THE ABSENCE OF FPA REQUIRED TESTING.
4. FOR ALL LOTS ABUTTING WETLANDS NO GRADING SHALL TAKE PLACE BEYOND THE EROSION CONTROL LINE UNLESS SPECIFICALLY SHOWN ON THE APPROVED CONSTRUCTION PLANS.
5. SIDE SWALES SHALL BE CONSTRUCTED SIMULTANEOUSLY WITH HOUSE CONSTRUCTION. DURING THE SITE GRADING ACTIVITIES, THE CONTRACTOR SHALL GRADE THE SIDE YARDS TO AN ELEVATION NO LOWER THAN 0.2 FT. BELOW THE ADDING HOUSE PAD GRADE.
6. FOR TYPE "A" LOT GRADING RECEIVING RUNOFF FROM ABUTTING TYPE "B" LOTS, ALL RUNOFF SHALL BE DIRECTED TO SIDE YARD SWALES.
7. FOR TYPE "B" LOT GRADING ABUTTING TYPE "A" LOT GRADING, ALL REAR LOTS, ALL RUNOFF SHALL BE DIRECTED TO SIDE YARD SWALES.
8. FOR TYPE "B" LOT GRADING NOT ABUTTING STORMWATER FACILITIES, THE BUILDER SHALL MAKE EVERY PRACTICAL EFFORT TO DIRECT ROOF RUNOFF TO THE FRONTING RIGHT OF WAY UNLESS OTHERWISE DIRECTED BY THE ENGINEER OF RECORD.
9. MINIMUM SIDE YARD SWALE SLOPES SHALL BE 1.0%.



SIRENOA (FKA AVALON GROVES) VILLAGES 1 & 2 - PHASE 1A

GRADING & DRAINAGE PLAN

PREPARED BY: **VK AVALON GROVES, LLC**

DATE	DESCRIPTION

DATE	DESCRIPTION
02/17/2017	REVIEW SUBMITTAL
02/17/2017	FOR SUBMITTAL

PROJECT NO.: KSP-AG-1000
 FILE #: 602
 DESIGN BY: FRANCIS
 DRAWN BY: JONES

FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Gary D. Miller, P.E., using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.

GARY D. MILLER
 DATE: 02/17/2017
 REGISTRATION NO. 52717

C-306

STRUCTURE TABLE			
STR. NO.	STR. TYPE	TOP ELEV.	COMMENTS
1	TYPE 1 CURB INLET	117.91	
2	TYPE 1 CURB INLET	117.91	
3	TYPE 1 CURB INLET	118.18	
4	TYPE P MANHOLE 4'-0" DIA.	117.60	
4A	TYPE P MANHOLE 4'-0" DIA.	117.28	
5	TYPE 2 CURB INLET	116.91	
6	TYPE 1 CURB INLET	118.03	
7	TYPE 1 CURB INLET	117.97	
8	TYPE 1 CURB INLET	115.88	
9	TYPE 1 CURB INLET	115.89	J BOTTOM
10	MES 36" RCP		
11	TYPE 2 CURB INLET	117.89	
12	TYPE 2 CURB INLET	117.89	
13	TYPE 2 CURB INLET	116.41	
14	TYPE 1 CURB INLET		
15	TYPE J MANHOLE 5'-0" DIA.	114.52	
15-A	MES 30" RCP	112.16	
16	TYPE 1 CURB INLET	118.27	
17	TYPE 1 CURB INLET	118.23	
17-A	TYPE P MANHOLE 5'-0" DIA.	118.48	
18	TYPE 1 CURB INLET	116.00	
19	TYPE 1 CURB INLET	116.14	
20	TYPE 1 CURB INLET	115.32	
21	TYPE 1 CURB INLET	114.41	J BOTTOM
22	TYPE 1 CURB INLET	114.43	
23	MES 24" RCP		
24	TYPE 1 CURB INLET	115.48	
25	MES 18" RCP		
26	TYPE 1 CURB INLET	115.55	
27	MES 18" RCP		
28	TYPE 2 CURB INLET	115.12	
29	TYPE 1 CURB INLET	115.13	
30	MES 24" RCP		
31	TYPE 1 CURB INLET	116.00	
32	TYPE 1 CURB INLET	116.07	
33	TYPE P MANHOLE 4'-0" DIA.	116.38	
33-A	MES 18" RCP		
34	TYPE 1 CURB INLET	115.73	J BOTTOM
35	TYPE 1 CURB INLET	115.78	J BOTTOM
36	TYPE J MANHOLE 5'-0" DIA.	115.50	

STRUCTURE TABLE			
STR. NO.	STR. TYPE	TOP ELEV.	COMMENTS
36-A	MES 24" RCP		
37	TYPE 2 CURB INLET	114.87	
38	TYPE 1 CURB INLET	114.84	
39	TYPE P MANHOLE 4'-0" DIA.	115.48	
40	TYPE 1 CURB INLET	114.33	
41	TYPE 1 CURB INLET	114.33	
42	TYPE P MANHOLE 4'-0" DIA.	113.79	
42-A	MES 24" RCP		
43	TYPE 1 CURB INLET	116.00	
44	TYPE 1 CURB INLET	115.97	
45	TYPE P MANHOLE 4'-0" DIA.	112.09	
45-A	MES 18" RCP		
46	TYPE 1 CURB INLET	115.95	
47	TYPE 1 CURB INLET	116.05	
48	TYPE P MANHOLE 4'-0" DIA.	115.05	
49	TYPE 3 CURB INLET	114.69	
50	TYPE 2 CURB INLET	114.60	
51	MES 24" RCP		
55	TYPE 2 CURB INLET	113.88	PH. 1A: CONSTRUCT TEMP. CONC. TOP - PH. 2A: COMPLETE TOP & THROAT
55-A	TYPE P MANHOLE 4'-0" DIA.	115.75	
56	TYPE 2 CURB INLET	114.58	
57	TYPE 2 CURB INLET	114.58	
58	MES 36" RCP		
59	MES 36" RCP		
60	MES 24" RCP		
61	MES 24" RCP		
63	MES 36" RCP		
64	MES 36" RCP		
CS-100	TYPE D CONTROL STRUCTURE	114.20	
CS-101	TYPE D CONTROL STRUCTURE	113.83	
CS-102	TYPE C CONTROL STRUCTURE	115.50	
CS-103	TYPE C CONTROL STRUCTURE	114.90	
CS-104	TYPE D CONTROL STRUCTURE	114.90	
CS-105	TYPE D CONTROL STRUCTURE	113.20	
CS-106	TYPE H CONTROL STRUCTURE	114.40	

NOTE:

- ALL INLET AND MANHOLE STRUCTURE BOTTOMS ARE SPECIFIED TYPE "P" UNLESS OTHERWISE NOTED. REFER TO FDOT DESIGN STANDARDS INDEX #200 & #201.
- ALL FLARED END SECTIONS (FES) ARE SPECIFIED FDOT INDEX #270 UNLESS OTHERWISE NOTED.
- ALL MITERED END SECTIONS (MES) ARE SPECIFIED FDOT INDEX #272 UNLESS OTHERWISE NOTED.

PIPE TABLE							
START STR.	END STR.	PIPE DIMENSION & MATERIAL	LENGTH	SLOPE	START INV.	END INV.	FALL IN FEET
1	2	18" RCP	36	0.19%	113.22	113.15	0.07
2	3	18" RCP	191	0.15%	112.15	111.86	0.29
3	4	24" RCP	120	0.10%	111.36	111.24	0.12
4	4A	24" RCP	57	0.12%	110.00	109.93	0.07
4A	5	24" RCP	56	0.10%	109.93	109.88	0.05
5	7	24" RCP	88	0.09%	109.88	109.80	0.08
6	7	18" RCP	39	0.10%	112.60	112.56	0.04
7	9	24" RCP	198	0.11%	109.80	109.59	0.21
8	9	18" RCP	36	0.14%	111.90	111.85	0.05
9	10	36" RCP	171	0.06%	107.10	107.00	0.10
11	12	24" RCP	36	0.14%	113.90	113.85	0.05
12	13	24" RCP	264	0.60%	113.35	111.76	1.59
13	14	24" RCP	36	0.11%	111.76	111.72	0.04
14	15	30" RCP	139	0.08%	109.00	108.89	0.11
15	15-A	30" RCP	42	0.05%	108.89	108.87	0.02
16	17	18" RCP	38	0.18%	112.50	112.43	0.07
17	17-A	18" RCP	200	0.15%	112.43	112.13	0.30
17-A	19	18" RCP	200	0.80%	112.13	110.53	1.60
18	19	18" RCP	38	0.18%	111.60	111.53	0.07
19	20	24" RCP	94	0.10%	108.90	108.81	0.09
20	21	24" RCP	196	0.11%	108.81	108.60	0.21
21	22	36" RCP	40	0.05%	107.60	107.58	0.02
22	23	36" RCP	166	0.05%	107.00	106.91	0.09
24	25	18" RCP	47	0.15%	108.50	108.43	0.07
26	27	18" RCP	48	0.15%	108.77	108.70	0.07
28	29	18" RCP	45	0.16%	108.93	108.86	0.07
29	30	24" RCP	169	0.09%	107.50	107.34	0.16
31	32	18" RCP	43	0.14%	111.50	111.44	0.06
32	33	18" RCP	142	0.15%	111.44	111.22	0.22
33	33-A	18" RCP	43	0.07%	105.03	105.00	0.03
34	35	42" RCP	37	0.11%	108.30	108.26	0.04
35	36	42" RCP	142	0.11%	108.26	108.11	0.15
36	36-A	42" RCP	45	0.04%	104.52	104.50	0.02
37	38	18" RCP	39	0.15%	109.80	109.74	0.06
38	39	18" RCP	185	0.15%	108.50	108.22	0.28
39	40	18" RCP	225	0.15%	108.22	107.88	0.34
40	41	18" RCP	36	0.17%	107.88	107.82	0.06
41	42	24" RCP	142	0.11%	106.60	106.45	0.15
42	42-A	24" RCP	136	0.10%	104.52	104.38	0.14
43	44	18" RCP	37	0.16%	111.20	111.14	0.06
44	45	18" RCP	140	0.14%	107.75	107.55	0.20
45	45-A	18" RCP	41	0.12%	107.55	107.50	0.05
46	47	24" RCP	48	0.63%	107.94	107.64	0.30
47	48	24" RCP	300	0.05%	107.64	107.48	0.16
48	50	24" RCP	148	0.11%	107.48	107.32	0.16
49	50	24" RCP	47	0.11%	109.00	108.95	0.05
50	51	24" RCP	168	0.10%	107.17	107.00	0.17
55-A	55	30" RCP	112	0.08%	106.38	106.30	0.08
55-A	56	30" RCP	152	0.08%	106.42	106.30	0.12
56	57	36" RCP	36	0.06%	105.80	105.78	0.02
57	58	36" RCP	170	0.01%	105.69	105.67	0.02
CS-100	59	36" RCP	52	0.19%	108.80	108.70	0.10
CS-101	21	36" RCP	159	0.31%	110.00	109.50	0.50
CS-102	60	24" RCP	52	0.19%	110.80	110.70	0.10
CS-103	61	24" RCP	57	0.35%	110.00	109.80	0.20
CS-104	64	24" RCP	48	0.42%	109.00	108.80	0.20
CS-105	63	36" RCP	59	0.17%	106.50	106.40	0.10
CS-106	34	42" RCP	165	0.06%	108.40	108.30	0.10



HEIDT DESIGN
Civil • GE
Professional Engineers
Ecological Services • Landscape Architecture
Engineering Review Certificate of Accreditation No. 2072
Landscape Architecture Certificate of Accreditation No. 120900001

5806-B Rockledge Pkwy
Ft. Palm Beach, FL 33410
Office: 813-253-5111
Fax: 813-646-7029
www.HeidtDesign.com

**SIRENOA (FKA AVALON GROVES)
VILLAGES 1 & 2 - PHASE 1A
STORM STRUCTURE DATA**

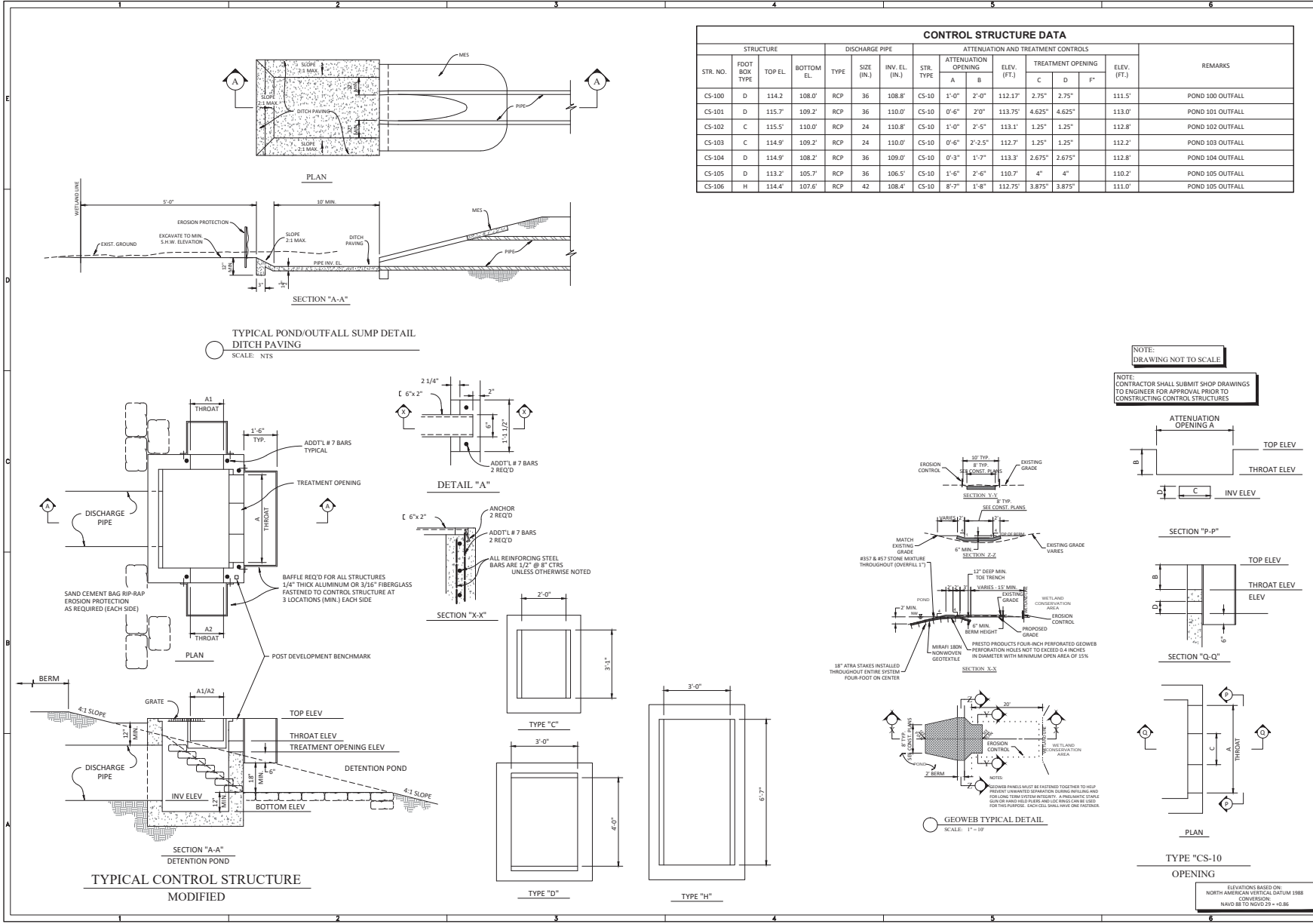
PREPARED BY: VK-AVALON GROVES, LLC

PROJECT NO. KSP-AG-1002	DATE: 08/20/2018
FILED BY: FRANCIS JONES	DATE: 08/20/2018
DESIGN BY: FRANCIS JONES	DATE: 08/20/2018
DRAWN BY: FRANCIS JONES	DATE: 08/20/2018

GARY D. MILLER
DATE: 08/20/2018
REGISTRATION NO. 52717

C-307

This item has been electronically signed and sealed by Gary D. Miller, P.E. using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.



HEIDT DESIGN
Civil & GIS
Professional Engineers
Ecological Services & Landscape Architecture
Engineering Review Certificate of Accreditation No. 20727
Landscape Architecture Certificate of Accreditation No. LC00000001
586-B Brockmeade Pkwy
Fargo, North Dakota 58103
Office: 701.323.5111
Fax: 701.344.7629
www.HeidtDesign.com

SERENOVA (FKA AVALON GROVES)
CONTROL STRUCTURE DETAIL

VK AVALON GROVES, LLC
PREPARED BY: DATE: DESCRIPTION:

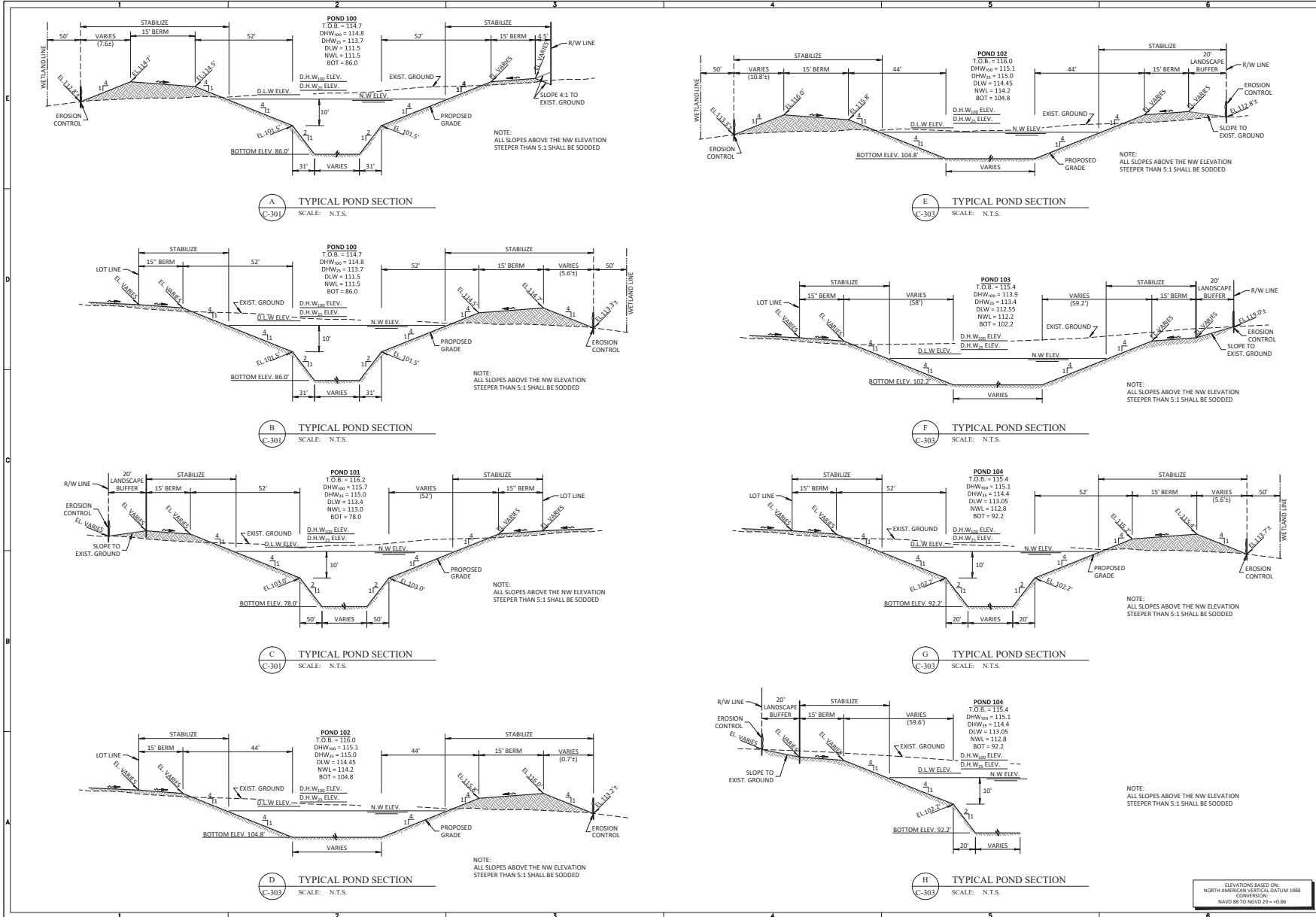
PROJECT NO.: KP-AG-1009
FILE: CSTR
DESIGN BY: FRANCIS
DRAWN BY: JONES
FLORIDA PROFESSIONAL ENGINEER


This item has been electronically signed and sealed by Gary D. Miller, P.E. using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.

GARY D. MILLER
DATE: 12/21/2017
REGISTRATION NO. 52717

C-308

REVISIONS: 1. 12/21/2017 1. 12/21/2017 2. 12/21/2017 3. 12/21/2017





HEIDT DESIGN
Professional Engineers
Engineering Review Certificate of Subcontractors No. 2072
Landscape Architecture Certificate of Subcontractors No. LC2000010

586-B Brockmeade Plaza
Fargo, Florida 32608
Office: 813.253.5111
Fax: 813.646.7029
www.HeidtDesign.com

SIRENOA (PKA AVALON GROVES) VILLAGES 1 & 2 - PHASE 1A
GRADING & DRAINAGE SECTIONS

PREPARED BY: **VK-AVALON GROVES, LLC**

DATE	DESCRIPTION

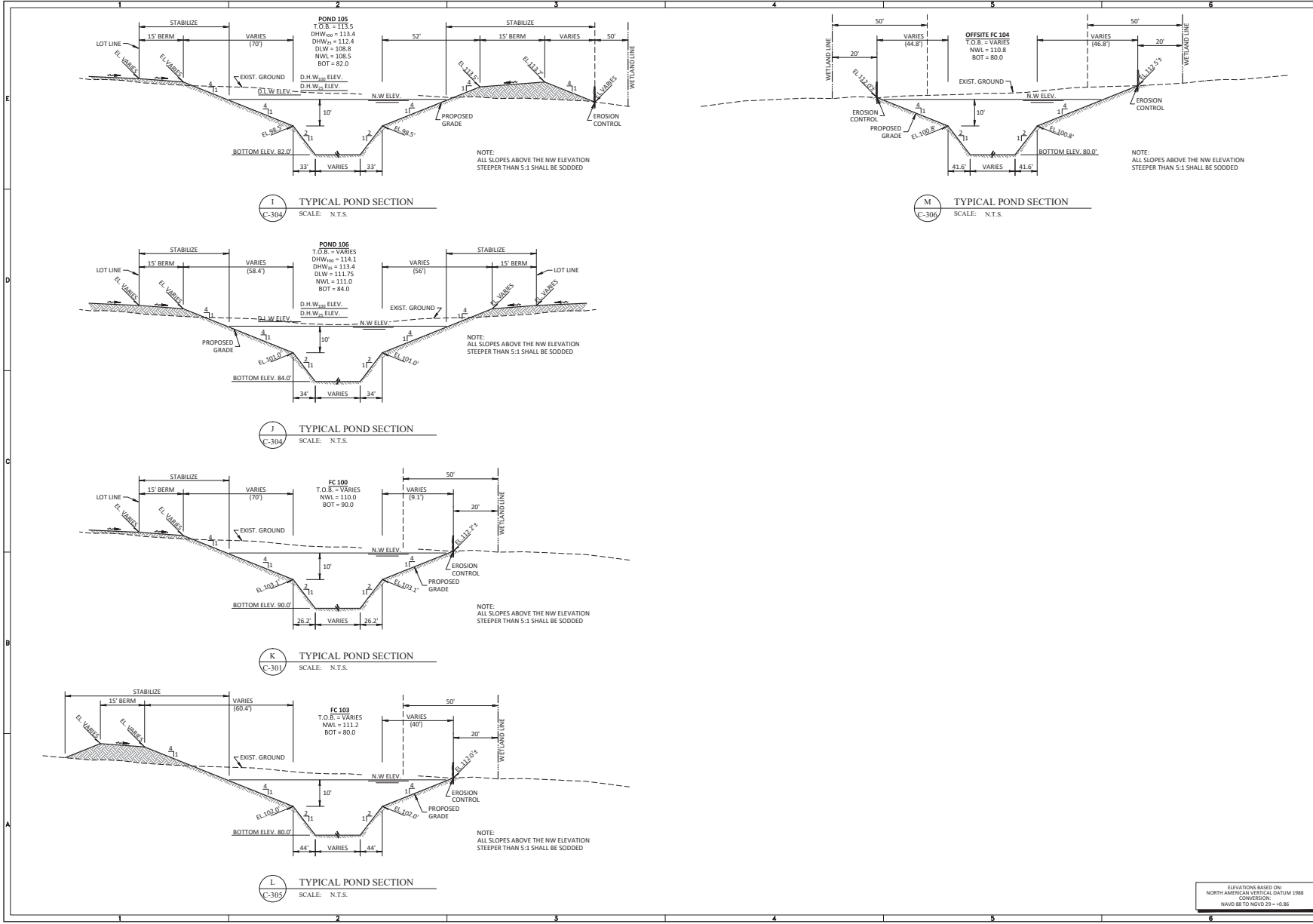
PROJECT NO: **KP-AG-1000**
 FILE:
 DESIGN BY: **FRANCIS JONES**
 DRAWN BY: **JONES**

FLORIDA PROFESSIONAL ENGINEER

This Item has been electronically signed and sealed by Gary D. Miller, P.E. using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.

GARY D. MILLER
DATE:
REGISTRATION NO. **52717**

C-309



HEIDT DESIGN
Civil, Mechanical, Electrical, Plumbing, Fire Protection, Landscape Architecture
Engineering Review Certificate of Administration No. 20172
Landscape Evaluation Certificate of Administration No. LC20000001

5806-B Rockledge Pkwy
Ft. Myers, Florida 33907
Office: 813.253.5111
Fax: 813.646.7029
www.HeidtDesign.com

SIRENOA (PKA AVALON GROVES) VILLAGES 1 & 2 - PHASE 1A GRADING & DRAINAGE SECTIONS
PREPARED BY: VK-AVALON GROVES, LLC

NO.	DATE	DESCRIPTION
1	02/11/2017	SKETCH COMMENTS
2	02/24/2018	REVIEW SUBMITTAL
3		RE SUBMITTAL

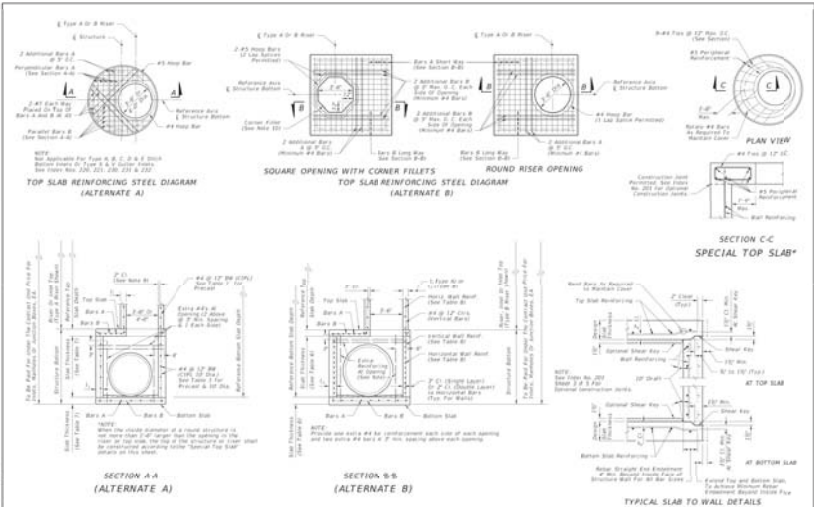
PROJECT NO: KP-AG-1009
FILE: SEC
DESIGN BY: FRANCIS
DRAWN BY: JONES
FLORIDA PROFESSIONAL ENGINEER

This Item has been electronically signed and sealed by Gary D. Miller, P.E. using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.

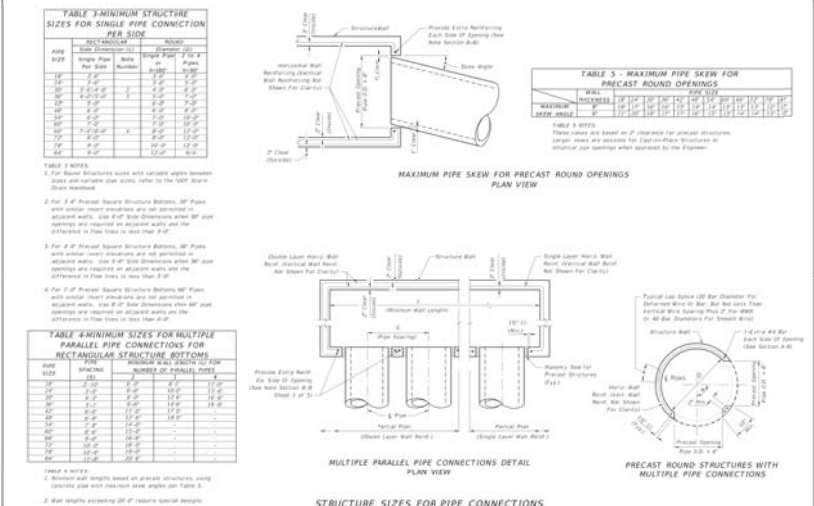
GARY D. MILLER
DATE: 02/24/2018
REGISTRATION NO. 52717

C-310

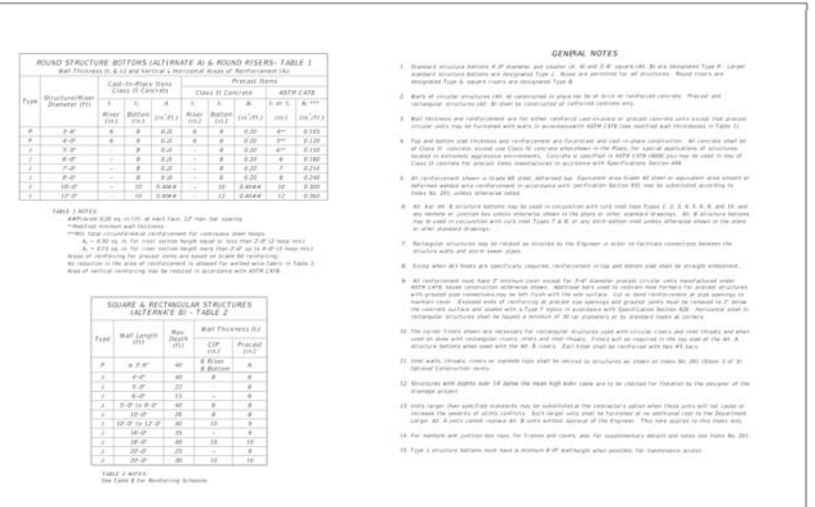
ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
NAVD 88 TO NAVD 23 = +0.86



LAST REVISION: 07/01/14	DESCRIPTION: 2016 DESIGN STANDARDS	INDEX NO: 200	SHEET NO: 1 of 5
-------------------------	------------------------------------	---------------	------------------



LAST REVISION: 07/01/07	DESCRIPTION: 2016 DESIGN STANDARDS	INDEX NO: 200	SHEET NO: 3 of 5
-------------------------	------------------------------------	---------------	------------------



LAST REVISION: 07/01/13	DESCRIPTION: 2016 DESIGN STANDARDS	INDEX NO: 200	SHEET NO: 2 of 5
-------------------------	------------------------------------	---------------	------------------



LAST REVISION: 07/01/09	DESCRIPTION: 2016 DESIGN STANDARDS	INDEX NO: 200	SHEET NO: 4 of 5
-------------------------	------------------------------------	---------------	------------------

HEIDT DESIGN

Professional Engineer
 Engineering Services & Landscape Architecture
 5806-B Rockledge Plaza
 Tampa, Florida 33610
 Office: 813.253.5111
 Fax: 813.544.7029
www.HeidtDesign.com

SIRENOA (PKA AVALON GROVES) VILLAGES 1 & 2 - PHASE 1A

DRAINAGE DETAILS

VK AVALON GROVES, LLC

DATE:	DESCRIPTION:

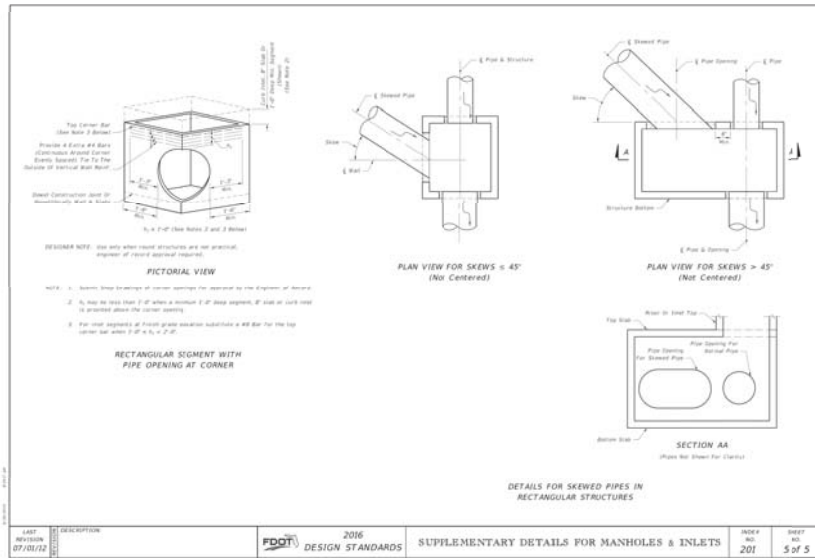
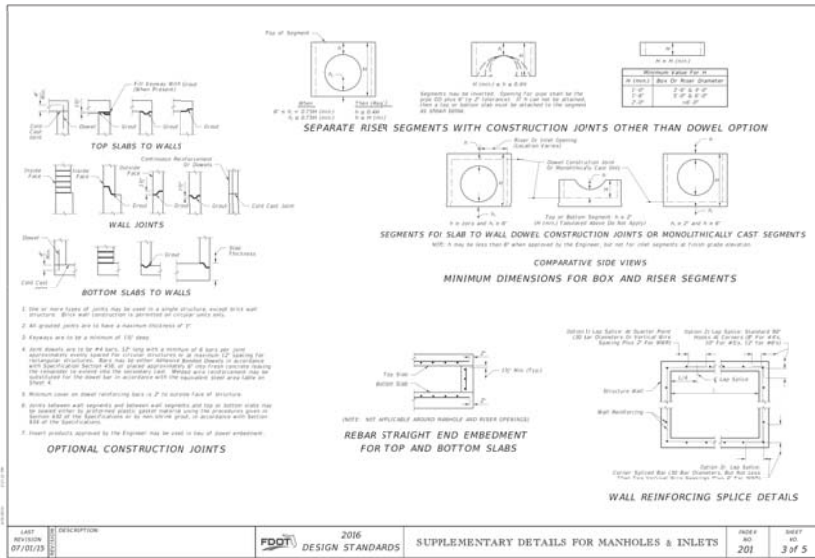
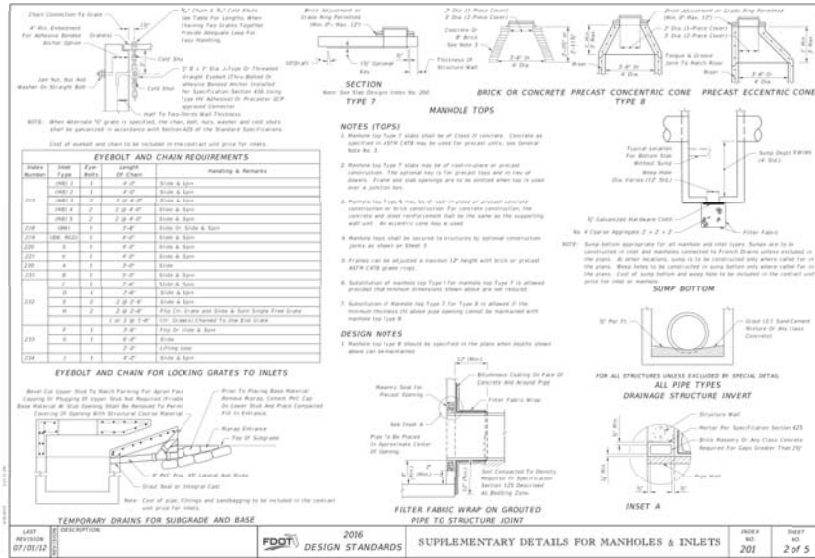
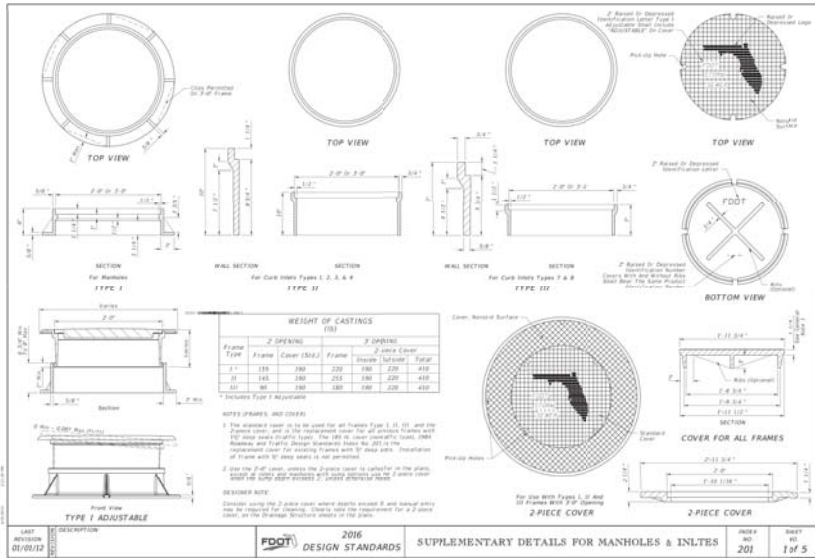
PROJECT NO:	KLR-AD-100
FILE:	DD
DESIGN BY:	FRANCIS
DRAWN BY:	JONES

FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Gary D. Miller, P.E. using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.

GARY D. MILLER
 DATE: REGISTRATION NO. 52717

C-311



HEIDT DESIGN
 Engineering Services • Landscape Architecture
 5806-B Rockledge Plaza
 Tampa, Florida 33610
 Office: 813.253.5111
 Fax: 813.244.7029
 www.HeidtDesign.com

SIRENOA (PKA AVALON GROVES) VILLAGES 1 & 2 - PHASE 1A
DRAINAGE DETAILS
 PREPARED BY: [Name]
 DATE: [Date]

VK AVALON GROVES, LLC

PROJECT NO: KLR-AG-1000
 FILE NO: [Number]
 DESIGN BY: FRANCIS JONES
 DRAWN BY: JONES
 FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Gary D. Miller, P.E., using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.

GARY D. MILLER
 DATE: [Date]
 REGISTRATION NO: 52717

C-312

HORIZONTAL WALL REINFORCING SCHEDULES (TABLE 1)

TYPE C
Recommended Maximum Pipe Size:
2" Wall - 18" Pipe
3" Wall - 24" Pipe (24" pipe with a 2" wall)

WALL DEPTH	SCHEDULE	AREA (sq. ft.)	MAX. SPACING	BAR	BAR	BAR
2'-0"	412	0.26	12"	#4	#4	#4
3'-0"						

TYPE D
Recommended Maximum Pipe Size:
2" Wall - 24" Pipe
3" Wall - 30" Pipe

WALL DEPTH	SCHEDULE	AREA (sq. ft.)	MAX. SPACING	BAR	BAR	BAR
2'-0"	412	0.26	12"	#4	#4	#4
3'-0"	412	0.26	12"	#4	#4	#4

TYPE E
Recommended Maximum Pipe Size:
2" Wall - 24" Pipe
3" Wall - 30" Pipe

WALL DEPTH	SCHEDULE	AREA (sq. ft.)	MAX. SPACING	BAR	BAR	BAR
2'-0"	412	0.26	12"	#4	#4	#4
3'-0"	412	0.26	12"	#4	#4	#4

LAST REVISION: 07/01/05 DESCRIPTION: 2016 DESIGN STANDARDS DITCH BOTTOM INLET TYPES C, D, E AND H INDEX NO. 232 SHEET NO. 1 of 7

CAST IRON GRATES

TYPE C Approx. Weight 235 lbs.
TYPE E Approx. Weight 265 lbs.
TYPE H (3-GRATE INLET) Approx. Weight 325 lbs.
TYPE H (4-GRATE INLET) Approx. Weight 365 lbs.

STEEL GRATES

TYPE C
Strap Bars 2" x 1/2"
Reinforcing Bars 1/2" x 1/2"
Bars 2" x 1/2"
Approx. Weight 235 lbs.

TYPE D
Strap Bars 2" x 1/2"
Reinforcing Bars 1/2" x 1/2"
Bars 2" x 1/2"
Approx. Weight 235 lbs.

TYPE E
Strap Bars 2" x 1/2"
Reinforcing Bars 1/2" x 1/2"
Bars 2" x 1/2"
Approx. Weight 235 lbs.

TYPE H (2-GRATE INLET)
Strap Bars 2" x 1/2"
Reinforcing Bars 1/2" x 1/2"
Bars 2" x 1/2"
Approx. Weight 325 lbs.

TYPE H (4-GRATE INLET)
Strap Bars 2" x 1/2"
Reinforcing Bars 1/2" x 1/2"
Bars 2" x 1/2"
Approx. Weight 365 lbs.

GENERAL NOTES:
1. These grates are suitable for bicycle traffic and are to be used in ditches, channels and other areas subject to vehicular traffic loadings that are to be placed in areas subject to any loads other than those shown. These grates are to be placed in areas subject to vehicular traffic loadings such as residential areas and pavement areas where pedestrians can walk around the grate.
2. Grates subject to vehicular traffic should be constructed with steel. Where steel is a desirable choice, these grates and all components shall have a minimum yield strength of 50 ksi. The reinforcement and strap bars shall be made of steel. Steel bars are to be constructed of steel with a yield strength of 50 ksi. Reinforcing bars shall be used in areas subject to vehicular traffic.
3. Steel grates are to be used on all inlets where bicycle traffic is anticipated. Steel grates are to be used on all inlets with transverse bars. If other cast iron or steel grates are to be used on inlets without where bicycle traffic is not anticipated, other cast iron or steel grates may be used on all inlets.
4. Reinforcing bars shall be constructed with steel. Where steel is a desirable choice, these grates and all components shall have a minimum yield strength of 50 ksi. The reinforcement and strap bars shall be made of steel. Steel bars are to be constructed of steel with a yield strength of 50 ksi. Reinforcing bars shall be used in areas subject to vehicular traffic.
5. All inlets shall be constructed with steel. Where steel is a desirable choice, these grates and all components shall have a minimum yield strength of 50 ksi. The reinforcement and strap bars shall be made of steel. Steel bars are to be constructed of steel with a yield strength of 50 ksi. Reinforcing bars shall be used in areas subject to vehicular traffic.
6. Reinforcing bars shall be constructed with steel. Where steel is a desirable choice, these grates and all components shall have a minimum yield strength of 50 ksi. The reinforcement and strap bars shall be made of steel. Steel bars are to be constructed of steel with a yield strength of 50 ksi. Reinforcing bars shall be used in areas subject to vehicular traffic.
7. Reinforcing bars shall be constructed with steel. Where steel is a desirable choice, these grates and all components shall have a minimum yield strength of 50 ksi. The reinforcement and strap bars shall be made of steel. Steel bars are to be constructed of steel with a yield strength of 50 ksi. Reinforcing bars shall be used in areas subject to vehicular traffic.
8. Setting to be used on all inlets not located in paved areas and used for other than the intended use for Performance Part 10.
9. For supplementary details see Index No. 202.
10. All reinforcing to be used on all inlets shall be placed in accordance with the details shown and shall be placed at each end of pipe opening.
11. All inlets shall be constructed with steel. Where steel is a desirable choice, these grates and all components shall have a minimum yield strength of 50 ksi. The reinforcement and strap bars shall be made of steel. Steel bars are to be constructed of steel with a yield strength of 50 ksi. Reinforcing bars shall be used in areas subject to vehicular traffic.

LAST REVISION: 07/01/05 DESCRIPTION: 2016 DESIGN STANDARDS DITCH BOTTOM INLET TYPES C, D, E AND H INDEX NO. 232 SHEET NO. 3 of 7

HORIZONTAL WALL REINFORCING SCHEDULES (TABLE 4)

TYPE H (2 & 3-GRATE INLET)
Recommended Maximum Pipe Size:
2" Wall - 24" Pipe
3" Wall - 30" Pipe
4" Wall - 36" Pipe
5" Wall - 42" Pipe

WALL DEPTH	SCHEDULE	AREA (sq. ft.)	MAX. SPACING	BAR	BAR	BAR
2'-0"	412	0.26	12"	#4	#4	#4
3'-0"	412	0.26	12"	#4	#4	#4
4'-0"	412	0.26	12"	#4	#4	#4
5'-0"	412	0.26	12"	#4	#4	#4

HORIZONTAL WALL REINFORCING SCHEDULES (TABLE 5)

TYPE H (4-GRATE INLET)
Recommended Maximum Pipe Size:
2" Wall - 24" Pipe
3" Wall - 30" Pipe
4" Wall - 36" Pipe
5" Wall - 42" Pipe

WALL DEPTH	SCHEDULE	AREA (sq. ft.)	MAX. SPACING	BAR	BAR	BAR
2'-0"	412	0.26	12"	#4	#4	#4
3'-0"	412	0.26	12"	#4	#4	#4
4'-0"	412	0.26	12"	#4	#4	#4
5'-0"	412	0.26	12"	#4	#4	#4

GENERAL NOTES:
See Index No. 2.

LAST REVISION: 07/01/05 DESCRIPTION: 2016 DESIGN STANDARDS DITCH BOTTOM INLET TYPES C, D, E AND H INDEX NO. 232 SHEET NO. 2 of 7

DIMENSIONS AND QUANTITIES

ITEM NO.	QTY	DESCRIPTION	8" CONCRETE SLAB (ft.)				ROOFING (sq. ft.)			
			Length	Depth	Volume	Weight	Single	Double	Triple	Weight
1	1	Concrete Slab	10.0	1.0	10.0	100	200	300	100	
2	1	Reinforcing Bars	10.0	1.0	10.0	100	200	300	100	
3	1	Strap Bars	10.0	1.0	10.0	100	200	300	100	
4	1	Cast Iron Grate	10.0	1.0	10.0	100	200	300	100	
5	1	Steel Grate	10.0	1.0	10.0	100	200	300	100	

SINGLE AND MULTIPLE ROUND CONCRETE PIPE

LAST REVISION: 07/01/05 DESCRIPTION: 2016 DESIGN STANDARDS CROSS DRAIN MITERED END SECTION INDEX NO. 272 SHEET NO. 1 of 6

HEIDT DESIGN
Professional Services & Engineering
5806-B Rockledge Pkwy.
Tampa, Florida 33610
Office: 813-253-5111
Fax: 813-646-7029
www.HeidtDesign.com

SIRENOA (PKA AVALON GROVES) VILLAGES 1 & 2 - PHASE 1A DRAINAGE DETAILS

PREPARED BY: VK AVALON GROVES, LLC
DATE: 08/20/16

PROJECT NO: KLR-AG-1009
FILE: 101
DESIGN BY: FRANCIS
DRAWN BY: JONES
FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Gary D. Miller, P.E., using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.

GARY D. MILLER
DATE: 08/20/16
REGISTRATION NO. 52717

C-313

QUANTITIES FOR 3" THICK CONCRETE SLABS (CY)

ROUND CONCRETE					ROUND CMP					CMP ARCH					ELLIPTICAL CONCRETE				
D	Single Pipe	Double Pipe	Triple Pipe	Quad Pipe	D	Single Pipe	Double Pipe	Triple Pipe	Quad Pipe	Arch	Single Pipe	Double Pipe	Triple Pipe	Quad Pipe	D	Single Pipe	Double Pipe	Triple Pipe	Quad Pipe
1.2	0.07	0.14	0.21	0.28	1.2	0.04	0.07	0.11	0.14	1.2	1.1	2.2	3.3	4.4	1.2	0.12	0.24	0.36	0.48
1.5	0.11	0.22	0.33	0.44	1.5	0.06	0.12	0.18	0.24	1.5	1.5	3.0	4.5	6.0	1.5	0.18	0.36	0.54	0.72
1.8	0.16	0.32	0.48	0.64	1.8	0.09	0.18	0.27	0.36	1.8	1.8	3.6	5.4	7.2	1.8	0.27	0.54	0.81	1.08
2.1	0.21	0.42	0.63	0.84	2.1	0.12	0.24	0.36	0.48	2.1	2.1	4.2	6.3	8.4	2.1	0.36	0.72	1.08	1.44
2.4	0.28	0.56	0.84	1.12	2.4	0.16	0.32	0.48	0.64	2.4	2.4	4.8	7.2	9.6	2.4	0.48	0.96	1.44	1.92
2.7	0.35	0.70	1.05	1.40	2.7	0.21	0.42	0.63	0.84	2.7	2.7	5.4	8.1	10.8	2.7	0.63	1.26	1.89	2.52
3.0	0.42	0.84	1.26	1.68	3.0	0.28	0.56	0.84	1.12	3.0	3.0	6.0	9.0	12.0	3.0	0.84	1.68	2.52	3.36
3.3	0.50	1.00	1.50	2.00	3.3	0.35	0.70	1.05	1.40	3.3	3.3	6.6	9.9	13.2	3.3	1.05	2.10	3.15	4.20
3.6	0.58	1.16	1.74	2.32	3.6	0.42	0.84	1.26	1.68	3.6	3.6	7.2	10.8	14.4	3.6	1.26	2.52	3.78	5.04
3.9	0.66	1.32	1.98	2.64	3.9	0.50	1.00	1.50	2.00	3.9	3.9	7.8	11.7	15.6	3.9	1.50	3.00	4.50	6.00
4.2	0.75	1.50	2.25	3.00	4.2	0.58	1.16	1.74	2.32	4.2	4.2	8.4	12.6	16.8	4.2	1.74	3.48	5.22	6.96
4.5	0.84	1.68	2.52	3.36	4.5	0.66	1.32	1.98	2.64	4.5	4.5	9.0	13.5	18.0	4.5	2.00	4.00	6.00	8.00
4.8	0.93	1.86	2.79	3.72	4.8	0.75	1.50	2.25	3.00	4.8	4.8	9.6	14.4	19.2	4.8	2.25	4.50	6.75	9.00
5.1	1.02	2.04	3.06	4.08	5.1	0.84	1.68	2.52	3.36	5.1	5.1	10.2	15.3	20.4	5.1	2.52	5.04	7.56	10.08
5.4	1.11	2.22	3.33	4.44	5.4	0.93	1.86	2.79	3.72	5.4	5.4	10.8	16.2	21.6	5.4	2.79	5.58	8.37	11.16
5.7	1.20	2.40	3.60	4.80	5.7	1.02	2.04	3.06	4.08	5.7	5.7	11.4	17.1	22.8	5.7	3.06	6.12	9.18	12.24
6.0	1.29	2.58	3.87	5.16	6.0	1.11	2.22	3.33	4.44	6.0	6.0	12.0	18.0	24.0	6.0	3.33	6.66	10.00	13.33

1.2 Slope					1.5 Slope					1.8 Slope					2.4 Slope				
D	Single Pipe	Double Pipe	Triple Pipe	Quad Pipe	D	Single Pipe	Double Pipe	Triple Pipe	Quad Pipe	D	Single Pipe	Double Pipe	Triple Pipe	Quad Pipe	D	Single Pipe	Double Pipe	Triple Pipe	Quad Pipe
1.2	0.07	0.14	0.21	0.28	1.2	0.08	0.16	0.24	0.32	1.2	0.09	0.18	0.27	0.36	1.2	0.10	0.20	0.30	0.40
1.5	0.11	0.22	0.33	0.44	1.5	0.12	0.24	0.36	0.48	1.5	0.13	0.26	0.39	0.52	1.5	0.14	0.28	0.42	0.56
1.8	0.16	0.32	0.48	0.64	1.8	0.17	0.34	0.51	0.68	1.8	0.18	0.36	0.54	0.72	1.8	0.19	0.38	0.57	0.76
2.1	0.21	0.42	0.63	0.84	2.1	0.22	0.44	0.66	0.88	2.1	0.23	0.46	0.69	0.92	2.1	0.24	0.48	0.72	0.96
2.4	0.28	0.56	0.84	1.12	2.4	0.28	0.56	0.84	1.12	2.4	0.29	0.58	0.87	1.16	2.4	0.30	0.60	0.90	1.20
2.7	0.35	0.70	1.05	1.40	2.7	0.34	0.68	1.02	1.36	2.7	0.35	0.70	1.05	1.40	2.7	0.36	0.72	1.08	1.44
3.0	0.42	0.84	1.26	1.68	3.0	0.40	0.80	1.20	1.60	3.0	0.41	0.82	1.23	1.64	3.0	0.42	0.84	1.26	1.68
3.3	0.50	1.00	1.50	2.00	3.3	0.46	0.92	1.38	1.84	3.3	0.47	0.94	1.41	1.88	3.3	0.48	0.96	1.44	1.92
3.6	0.58	1.16	1.74	2.32	3.6	0.52	1.04	1.56	2.08	3.6	0.53	1.06	1.59	2.12	3.6	0.54	1.08	1.62	2.16
3.9	0.66	1.32	1.98	2.64	3.9	0.58	1.16	1.74	2.32	3.9	0.59	1.18	1.77	2.36	3.9	0.60	1.20	1.80	2.40
4.2	0.75	1.50	2.25	3.00	4.2	0.64	1.28	1.92	2.56	4.2	0.65	1.30	1.95	2.60	4.2	0.66	1.32	1.98	2.64
4.5	0.84	1.68	2.52	3.36	4.5	0.70	1.40	2.10	2.80	4.5	0.71	1.42	2.13	2.84	4.5	0.72	1.44	2.16	2.88
4.8	0.93	1.86	2.79	3.72	4.8	0.76	1.52	2.28	3.04	4.8	0.77	1.54	2.31	3.08	4.8	0.78	1.56	2.34	3.12
5.1	1.02	2.04	3.06	4.08	5.1	0.82	1.64	2.46	3.28	5.1	0.83	1.66	2.49	3.32	5.1	0.84	1.68	2.52	3.36
5.4	1.11	2.22	3.33	4.44	5.4	0.88	1.76	2.64	3.52	5.4	0.89	1.78	2.67	3.56	5.4	0.90	1.80	2.70	3.60
5.7	1.20	2.40	3.60	4.80	5.7	0.94	1.88	2.82	3.76	5.7	0.95	1.90	2.85	3.80	5.7	0.96	1.92	2.88	3.84
6.0	1.29	2.58	3.87	5.16	6.0	1.00	2.00	3.00	4.00	6.0	1.01	2.02	3.03	4.04	6.0	1.02	2.04	3.06	4.08

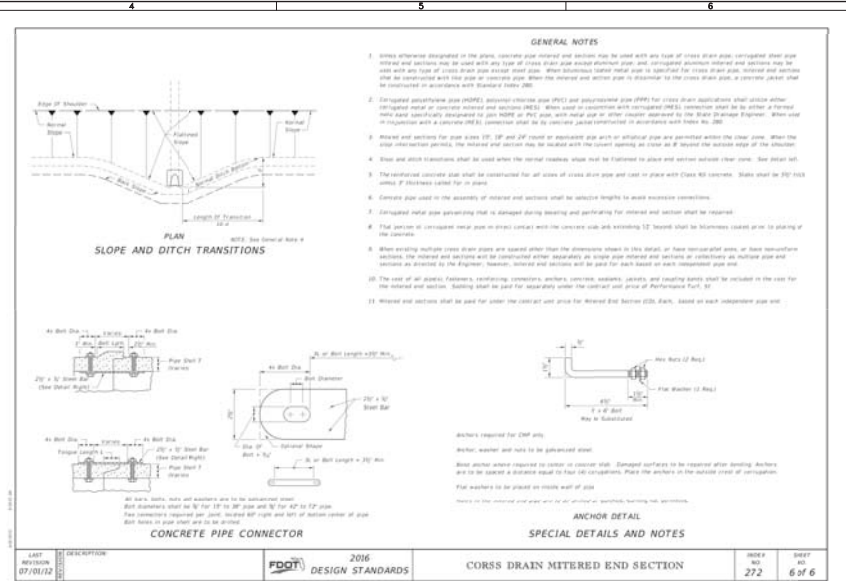
1.2 Slope					1.5 Slope					1.8 Slope					2.4 Slope				
D	Single Pipe	Double Pipe	Triple Pipe	Quad Pipe	D	Single Pipe	Double Pipe	Triple Pipe	Quad Pipe	D	Single Pipe	Double Pipe	Triple Pipe	Quad Pipe	D	Single Pipe	Double Pipe	Triple Pipe	Quad Pipe
1.2	0.07	0.14	0.21	0.28	1.2	0.08	0.16	0.24	0.32	1.2	0.09	0.18	0.27	0.36	1.2	0.10	0.20	0.30	0.40
1.5	0.11	0.22	0.33	0.44	1.5	0.12	0.24	0.36	0.48	1.5	0.13	0.26	0.39	0.52	1.5	0.14	0.28	0.42	0.56
1.8	0.16	0.32	0.48	0.64	1.8	0.17	0.34	0.51	0.68	1.8	0.18	0.36	0.54	0.72	1.8	0.19	0.38	0.57	0.76
2.1	0.21	0.42	0.63	0.84	2.1	0.22	0.44	0.66	0.88	2.1	0.23	0.46	0.69	0.92	2.1	0.24	0.48	0.72	0.96
2.4	0.28	0.56	0.84	1.12	2.4	0.28	0.56	0.84	1.12	2.4	0.29	0.58	0.87	1.16	2.4	0.30	0.60	0.90	1.20
2.7	0.35	0.70	1.05	1.40	2.7	0.34	0.68	1.02	1.36	2.7	0.35	0.70	1.05	1.40	2.7	0.36	0.72	1.08	1.44
3.0	0.42	0.84	1.26	1.68	3.0	0.40	0.80	1.20	1.60	3.0	0.41	0.82	1.23	1.64	3.0	0.42	0.84	1.26	1.68
3.3	0.50	1.00	1.50	2.00	3.3	0.46	0.92	1.38	1.84	3.3	0.47	0.94	1.41	1.88	3.3	0.48	0.96	1.44	1.92
3.6	0.58	1.16	1.74	2.32	3.6	0.52	1.04	1.56	2.08	3.6	0.53	1.06	1.59	2.12	3.6	0.54	1.08	1.62	2.16
3.9	0.66	1.32	1.98	2.64	3.9	0.58	1.16	1.74	2.32	3.9	0.59	1.18	1.77	2.36	3.9	0.60	1.20	1.80	2.40
4.2	0.75	1.50	2.25	3.00	4.2	0.64	1.28	1.92	2.56	4.2	0.65	1.30	1.95	2.60	4.2	0.66	1.32	1.98	2.64
4.5	0.84	1.68	2.52	3.36	4.5	0.70	1.40	2.10	2.80	4.5	0.71	1.42	2.13	2.84	4.5	0.72	1.44	2.16	2.88
4.8	0.93	1.86	2.79	3.72	4.8	0.76	1.52	2.28	3.04	4.8	0.77	1.54	2.31	3.08	4.8	0.78	1.56	2.34	3.12
5.1	1.02	2.04	3.06	4.08	5.1	0.82	1.64	2.46	3.28	5.1	0.83	1.66	2.49	3.32	5.1	0.84	1.68	2.52	3.36
5.4	1.11	2.22	3.33	4.44	5.4	0.88	1.76	2.64	3.52	5.4	0.89	1.78	2.67	3.56	5.4	0.90	1.80	2.70	3.60
5.7	1.20	2.40	3.60	4.80	5.7	0.94	1.88	2.82	3.76	5.7	0.95	1.90	2.85	3.80	5.7	0.96	1.92	2.88	3.84
6.0	1.29	2.58	3.87	5.16	6.0	1.00	2.00	3.00	4.00	6.0	1.01	2.02	3.03	4.04	6.0	1.02	2.04	3.06	4.08

LAST REVISION	DESCRIPTION	DATE	BY
07/01/00			

2016 DESIGN STANDARDS

CROSS DRAIN MITERED END SECTION

INDEX 9
SHEET 272
5 of 6



COARSE & FINE AGGREGATE UNDERDRAIN

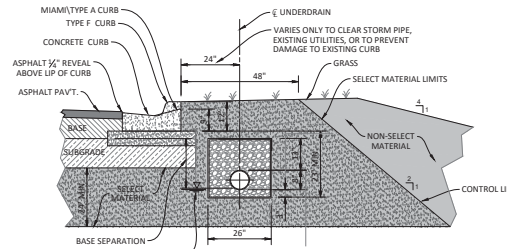
FOR URBAN SECTIONS WITH CURB & GUTTER (I.E., TYPE A, TYPE F, MIAMI CURB, ETC.)

- UNLESS OTHERWISE NOTED, REFERENCE TO "FOOT SECTION" REFERS TO FOOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION. REFERENCES TO "FOOT INDEX" REFERS TO FOOT DESIGN STANDARDS, LATEST EDITION.
 - UNLESS OTHERWISE SPECIFIED BELOW, ALL UNDERDRAIN SHALL BE IN ACCORDANCE WITH FOOT SECTION 440.
 - THE UNDERDRAIN INVERT SHALL BE DESIGNED NO LOWER THAN 0.1 FEET ABOVE THE DSHWT ELEVATION.
 - THE DSHWT ELEVATION SHALL BE ESTABLISHED BY THE DESIGN ENGINEER IN CONSIDERATION OF SOIL TYPES, EXISTING GROUNDWATER TABLE, LANDSLOPE, OUTFALL CONDITIONS AND STORMWATER MANAGEMENT SYSTEM. THE DSHWT SHALL BE ESTABLISHED NO LOWER THAN THE FOLLOWING WHERE UNDERDRAIN DISCHARGES INTO A STORMWATER MANAGEMENT SYSTEM:
 - FOR DETENTION PONDS WITH WET DETENTION WITH PERMANENT POOL VOLUME TREATMENT IS UTILIZED IN WHICH THE TREATMENT VOLUME IS VACATED WITHIN A 24 HOUR PERIOD, THE DSHWT SHALL BE ESTABLISHED 0.1 FEET ABOVE THE DESIGN NORMAL WATER ELEVATION (BOTTOM OF THE TREATMENT VOLUME)
 - FOR DETENTION POND WITH EXTENDED WETLAND TREATMENT IS UTILIZED IN WHICH THE TREATMENT VOLUME IS VACATED OVER 120 HOUR PERIOD, THE DSHWT SHALL BE ESTABLISHED AT THE 36 HOUR BLEED-DOWN LEVEL WITHIN THE STORMWATER POND AS DETERMINED BY THE ENGINEER OF RECORD.
 - IN GENERAL, UNDERDRAIN PIPE SHALL BE LAID AT THE SAME SLOPE OF THE ADJACENT CURB. TO ACCOMMODATE FIELD CONDITIONS, THE MINIMUM ALLOWABLE SLOPE SHALL BE NO LESS THAN 0.20%.
 - COARSE AGGREGATE SHALL BE NON-CALCAREOUS, NON-CEMENTING GRAVEL, OR STONE MEETING THE REQUIREMENTS OF FOOT SECTION 901-2.1, 901-2.2, OR 901-3 RESPECTIVELY. AGGREGATE GRADATION SHALL MEET SECTION 901-6, GRADES 4, 407, 5, 56 OR 57 STONE.
 - FINE AGGREGATE SHALL BE IN ACCORDANCE WITH FOOT INDEX 286.
 - UNDERDRAIN SHALL BE IN ACCORDANCE WITH FOOT SECTION 440 UNLESS OTHERWISE SPECIFIED HEREIN.
 - COARSE AGGREGATE UNDERDRAIN PIPING FOR COLLECTOR ROADWAYS SHALL BE A MINIMUM DIAMETER OF 8-INCHES.
 - ALL FINE AGGREGATE UNDERDRAIN PIPING SHALL BE A MINIMUM DIAMETER OF 6-INCHES.
 - NON-PERFORATED (SOLID) PIPE SHALL BE USED FOR ALL ROADWAY CROSSINGS. PERFORATED PIPE SHALL NOT BE PLACED UNDER STREET PAVEMENT.
 - FILTER FABRIC SHALL BE TYPE D-3 CLASS A (D-3A); IN ACCORDANCE WITH FOOT SECTION 985.
 - ALL PIPING SHALL MEET FOOT SECTION 948-1.4 (NON-PERFORATED) AND SECTION 948-1.5 (PERFORATED) FOR PVC PIPE AND SECTION 948-2.1 FOR CORRUGATED POLYETHYLENE TUBING AND PIPE.
 - ALL FILTER MATERIAL SHALL BE COMPLETELY WRAPPED IN FILTER FABRIC. ALL FILTER FABRIC SHALL HAVE AN OVERLAP OF A MINIMUM OF 1'-0" (12-INCHES).
 - SELECT SOIL (S) PER FOOT INDEX 500 AND 505 SHALL BE UTILIZED TO A MINIMUM DEPTH OF 24 INCHES (2 FEET) BELOW THE ROADWAY BASE AND SHALL EXTEND A MINIMUM OF 48 INCHES (4 FEET) BEHIND THE BACK OF CURB.
 - NO IRRIGATION PIPELINES, PLANT MATERIALS, TREE MATERIALS OR LANDSCAPE PLANTS, CONDUITS, ETC. SHOULD BE DESIGNED OR INSTALLED WITHIN 36 INCHES (3 FEET) OF THE BACK OF CURB.
- FOOT AND LOCAL GOVERNING AGENCIES MAY HAVE MINIMUM STANDARDS WHICH MAY EXCEED THOSE REFERENCED ABOVE. CONTRACTOR SHALL INSTALL UNDERDRAIN IN ACCORDANCE WITH FOOT AND LOCAL GOVERNING DISTRICTS' MINIMUM STANDARDS AND REGULATIONS AS APPLICABLE.

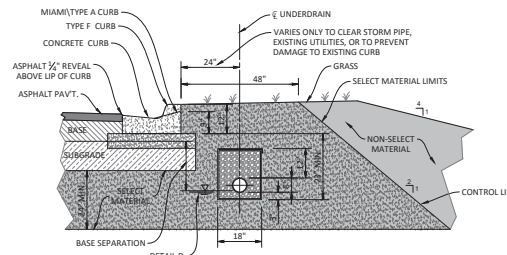
ROADWAY DESIGN CRITERIA

FOR URBAN SECTIONS WITH CURB & GUTTER (I.E., TYPE A, TYPE F, MIAMI CURB, ETC.)

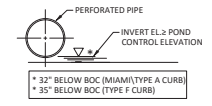
- UNLESS OTHERWISE NOTED, REFERENCE TO "FOOT SECTION" REFERS TO FOOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION. REFERENCES TO "FOOT INDEX" REFERS TO FOOT DESIGN STANDARDS, LATEST EDITION.
 - THE MINIMUM VERTICAL SEPARATION BETWEEN THE DESIGN SEASONAL HIGH WATER TABLE (DSHWT ± LOW POND CONTROL ELEVATION) AND THE BOTTOM OF THE ROADWAY BASE AT THE LOWEST EDGE OF PAVEMENT SHALL BE AS FOLLOWS:
 - LIMEROCK BASE 24 INCHES
 - SOIL CEMENT BASE 12 INCHES
 - CRUSHED CONCRETE BASE 12 INCHES
 - ASPHALT BASE COURSE (ABC) 12 INCHES
 - A MINIMUM OF TWO (2) FEET (24-INCHES) OF SELECT (S) MATERIAL IN ACCORDANCE WITH FOOT INDEX 500 AND 505 SHALL BE REQUIRED BELOW THE ROADWAY SUB-BASE (SUB-GRADE).
 - IF THE VERTICAL SEPARATION BETWEEN THE DSHWT AND THE BOTTOM OF BASE IS LESS THAN 1.5 FEET (18 INCHES), UNDERDRAINS SHALL BE INSTALLED ALONG BOTH SIDES OF THE ROAD.
 - IF THE VERTICAL SEPARATION BETWEEN THE DSHWT AND THE BOTTOM OF THE BASE IS BETWEEN 1.5 - 2.5 FEET (18 - 30 INCHES), UNDERDRAINS SHALL BE INSTALLED ALONG ONE (1) SIDE OF THE ROAD.
 - ROADWAYS CLASSIFIED AS COLLECTOR HAVING A PAVEMENT WIDTH IN EXCESS OF TWO (2) VEHICULAR TRAVEL LANES, COARSE AGGREGATE UNDERDRAINS SHALL BE INSTALLED. FOR COLLECTOR ROADWAYS WITH A NON-PAVED MEDIAN, A FINE AGGREGATE UNDERDRAIN SHALL BE INSTALLED WHEN UNDERDRAIN IS REQUIRED FROM THE CRITERIA ABOVE.
 - LOCAL ROADWAYS INCLUDING THOSE WITH STREET PARKING AND NO MORE THAN TWO (2) VEHICULAR TRAVEL LANES WHEN UNDERDRAIN IS REQUIRED, SHALL INSTALL FINE AGGREGATE UNDERDRAINS AS A MINIMUM IN ACCORDANCE WITH THE CRITERIA ABOVE.
 - FOR NON-COASTAL LOCAL ROADWAYS, THE LOW EDGE OF PAVEMENT ELEVATION SHALL BE DESIGNED NO LOWER THAN THE FOLLOWING:
 - A MINIMUM CLEARANCE OF SIX (6) INCHES (0.5 FEET) ABOVE THE 25-YEAR 24-HOUR PEAK STAGE WITHIN THE APPLICABLE RECEIVING STORMWATER MANAGEMENT SYSTEM.
 - NO LOWER THAN THE COMPUTED HYDRAULIC GRADE LINE FOR THE STORMWATER COLLECTION SYSTEM (10 YEAR RETURN).
 - NO LOWER THAN A MINIMUM OF THIRTY (30) INCHES (2.5 FEET) ABOVE THE CONTROLLED WATER ELEVATION WITHIN THE APPLICABLE RECEIVING STORMWATER MANAGEMENT SYSTEM.
 - FOR NON-COASTAL COLLECTOR ROADWAYS, THE LOW EDGE OF PAVEMENT ELEVATION SHALL BE DESIGNED NO LOWER THAN THE FOLLOWING:
 - A MINIMUM CLEARANCE OF TWELVE (12) INCHES (1.0 FEET) ABOVE THE 25-YEAR 24-HOUR PEAK STAGE WITHIN THE APPLICABLE RECEIVING STORMWATER MANAGEMENT SYSTEM.
 - NO LOWER THAN THE COMPUTED HYDRAULIC GRADE LINE FOR THE STORMWATER COLLECTION SYSTEM (10 YEAR RETURN).
 - NO LOWER THAN A MINIMUM OF THIRTY (30) INCHES (2.5 FEET) ABOVE THE CONTROLLED WATER ELEVATION WITHIN THE APPLICABLE RECEIVING STORMWATER MANAGEMENT SYSTEM.
 - TYPE 2 THRU TYPE 5 ROADWAYS SHALL CONTAIN A MINIMUM OF 1.5 INCHES OF SP ASPHALTIC CONCRETE. COLLECTOR ROADWAYS SHALL HAVE A MINIMUM OF THREE (3) INCHES OF SP ASPHALTIC CONCRETE. TYPE 1 ROADWAYS MAY BE COMPLETED IN STAGES, INITIALLY 2.25 INCHES OF SP 12.5 ASPHALT COURSE WITH REQUIRED PAVEMENT MARKINGS AND 0.75 INCHES OF SP 9.5 COURSE INSTALLED WITH ANY THERMOPLASTIC STRIPES, PRIOR TO RELEASE OF THE ASSURANCE FOR MAINTENANCE.
 - THE ROAD DESIGN DRAWINGS SHALL CONTAIN SOIL BORING LOCATIONS WITH EXISTING SOIL DATA, OBSERVED WATER LEVEL AND DSHWT SURFACE. UNDERDRAIN OUTFALL POND DATA AND APPROXIMATE WETLAND HYDROPERIOD ELEVATIONS SHALL ALSO BE IDENTIFIED AS APPLICABLE.
 - THE REQUIRED MINIMUM STRUCTURAL NUMBER (SN) SHALL BE:
 - 2.34 MIN. TYPE 2 ROADWAYS
 - 3.50 MIN. TYPE 1 ROADWAYS
 - 3.70 MIN. COUNTY COLLECTOR
 - 4.00 MIN. COUNTY ARTERIAL
 - CURB DESIGN IS SITE SPECIFIC AND SHALL BE IDENTIFIED ON PLANS
- SOIL CEMENT BASE SHALL BE CONSTRUCTED OVER A COMPACTED SUBGRADE PROOF ROLLED TO ACHIEVE A DENSITY OF NINETY-EIGHT (98) PERCENT MODIFIED PROCTOR ASSHTO 180 FOR A MINIMUM DEPTH OF TWELVE (12) INCHES. THE SUBGRADE MATERIAL BENEATH A SOIL CEMENT BASE SHALL HAVE A MINIMUM IIR OF TWENTY (20). THE MAXIMUM ALLOWABLE LAYER COEFFICIENT FOR COMPACTED SUBGRADE SHALL BE 0.04 PER INCH.



UNDERDRAIN COARSE AGGREGATE
SCALE: 1" = 2"



UNDERDRAIN FINE AGGREGATE
SCALE: 1" = 2"



DETAIL
SCALE: 1" = 1"

HEIDT DESIGN
Civil, Mechanical, Electrical, Plumbing, Fire, and Energy
Engineering Services • Landscape Architecture
Environmental Engineering • Construction Management

586-B Rockledge Plaza
Ft. Lauderdale, FL 33309
Office: 954.323.5111
Fax: 954.464.7029
www.HeidtDesign.com

SIRENOA (PKA AVALON GROVES) VILLAGES 1 & 2 - PHASE 1A DRAINAGE DETAILS

PREPARED BY: []
DATE: []
CHECKED BY: []
DATE: []
DESIGNATION: []

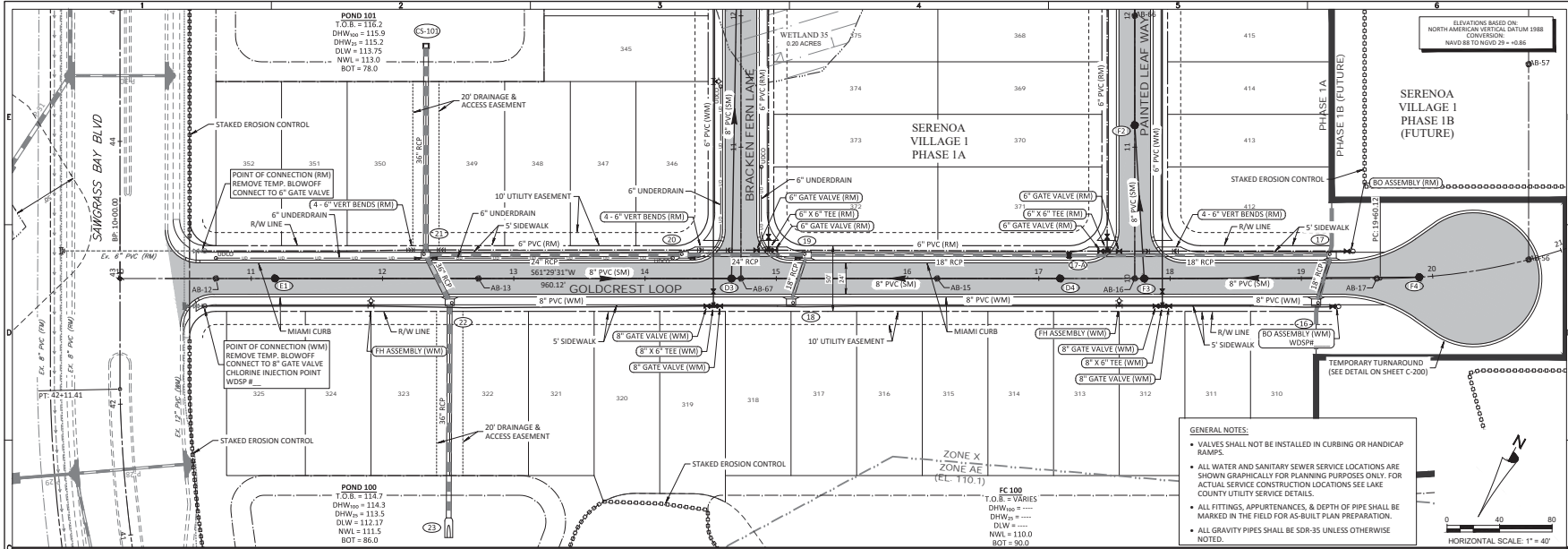
VK AVALON GROVES, LLC

PROJECT NO: KLP-AG-1009
FILE: []
DESIGN BY: FRANCIS
DRAWN BY: JONES
FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Gary D. Miller, PE, using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.

GARY D. MILLER
DATE: []
REGISTRATION NO. 52717

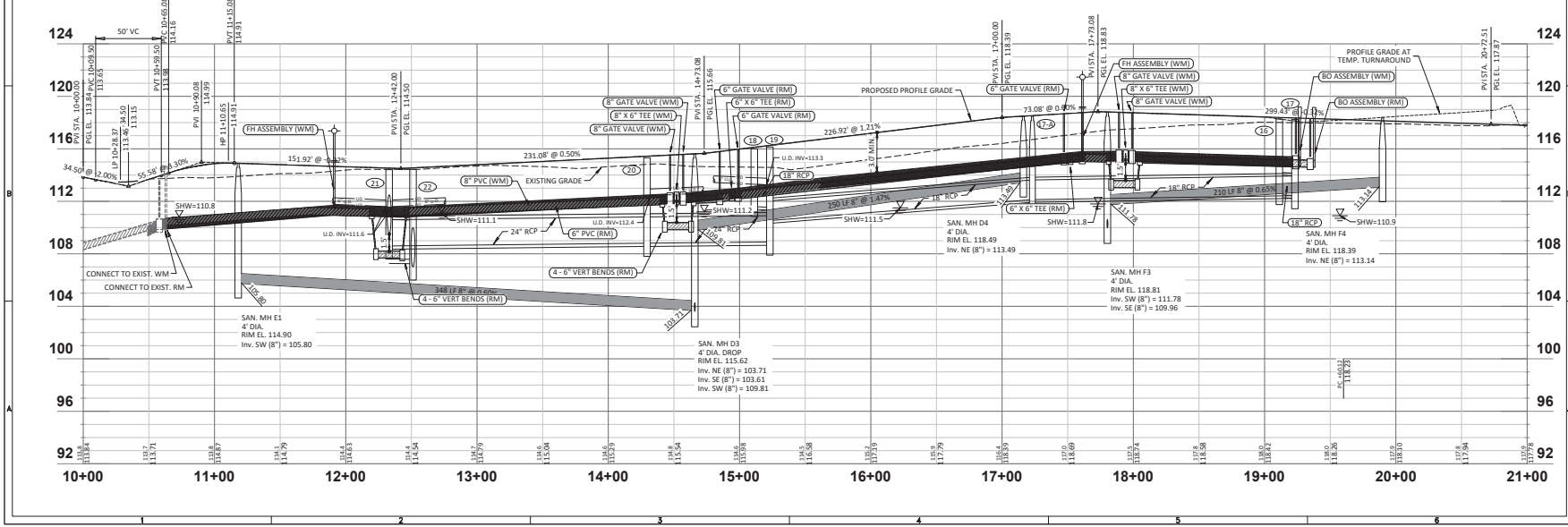
C-315



GENERAL NOTES:

- VALVES SHALL NOT BE INSTALLED IN CURBING OR HANDICAP RAMPS.
- ALL WATER AND SANITARY SEWER SERVICE LOCATIONS ARE SHOWN GRAPHICALLY FOR PLANNING PURPOSES ONLY. FOR ACTUAL SERVICE CONSTRUCTION LOCATIONS SEE LAKE COUNTY UTILITY SERVICE DETAILS.
- ALL FITTINGS, APPURTENANCES, & DEPTH OF PIPE SHALL BE MARKED IN THE FIELD FOR AS-BUILT PLAN PREPARATION.
- ALL GRAVITY PIPES SHALL BE SDR-35 UNLESS OTHERWISE NOTED.

GOLDCREST LOOP - VILLAGE 1



HEIDT DESIGN
INCORPORATED
Engineering Services & Landscape Architecture

5806-B Brockmeier Pkwy
Ft. Myers, Florida 33908
Office: 813.253.5111
Fax: 813.484.7027

SERENOA (PKA AVALON GROVES) VILLAGES 1 & 2 - PHASE 1A
ROADWAY PLAN & PROFILE

VILLAGE 1A
VILLAGE 1B (FUTURE)

DATE: 02/08/2014
DESIGNER: FRANK JONES
DRAWN BY: FRANK JONES

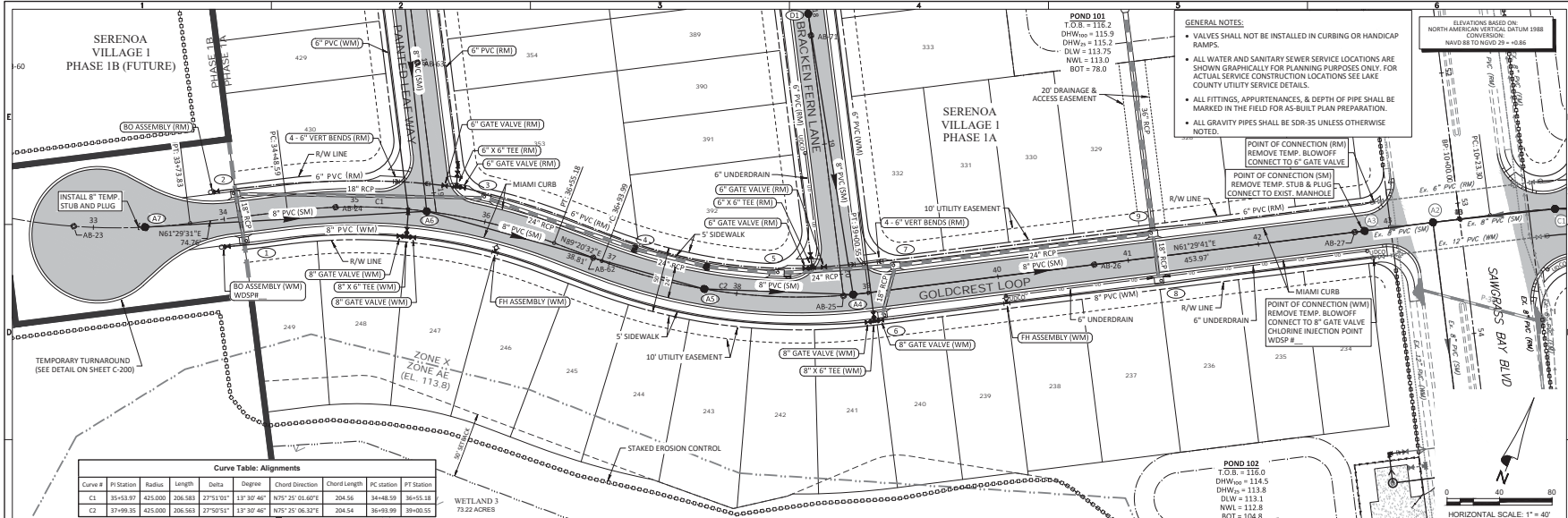
PROJECT NO: KIP-AG-1009
FILE: RP-011
DESIGN BY: FRANK JONES
DRAWN BY: FRANK JONES

FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Gary D. Miller, P.E. using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.

GARY D. MILLER
DATE: 02/08/2014
REGISTRATION NO. 52717

C-501



Curve #	PI Station	Radius	Length	Delta	Degree	Chord Direction	Chord Length	PC Station	PT Station
C1	35+53.97	425.000	206.583	27°51'01"	13°30'40"	N75°25'01.6071"	204.56	34+48.59	36+55.18
C2	37+99.35	425.000	206.563	27°50'51"	13°30'40"	N75°25'06.3212"	204.54	36+99.99	39+06.55

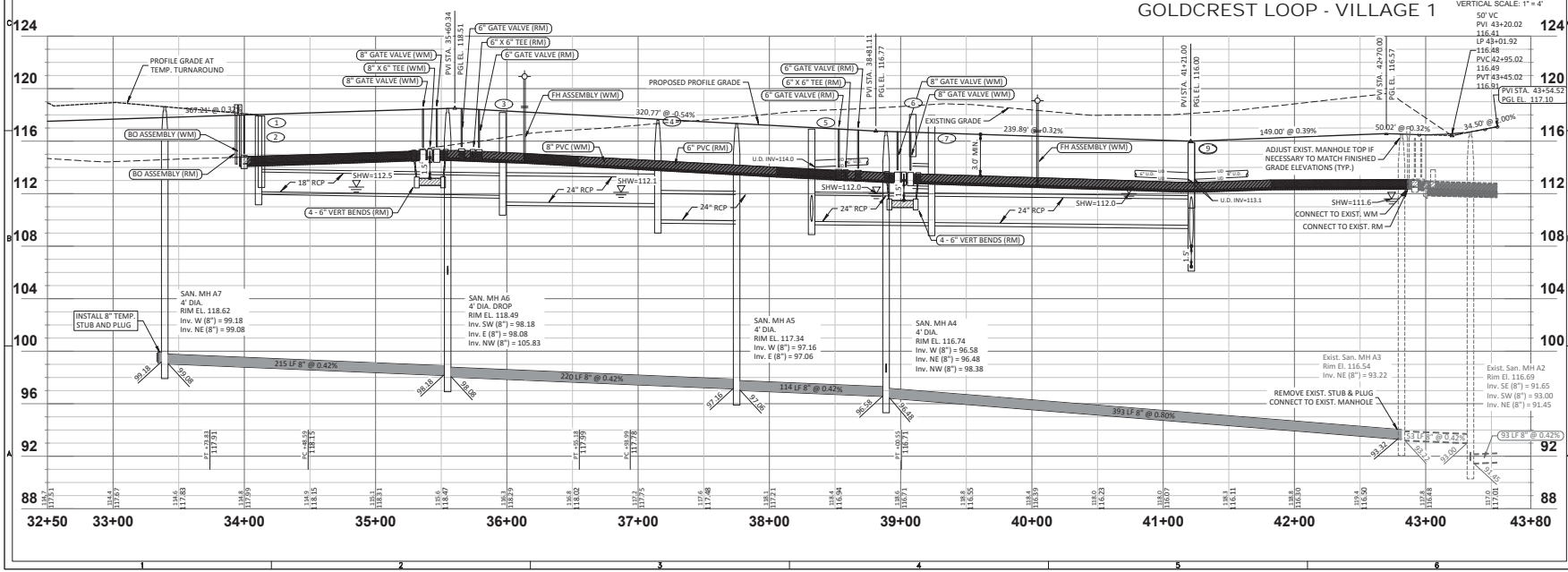
- GENERAL NOTES:**
- VALVES SHALL NOT BE INSTALLED IN CURBING OR HANDICAP RAMPS.
 - ALL WATER AND SANITARY SEWER SERVICE LOCATIONS ARE SHOWN GRAPHICALLY FOR PLANNING PURPOSES ONLY. FOR ACTUAL SERVICE CONSTRUCTION LOCATIONS SEE LAKE COUNTY UTILITY SERVICE DETAILS.
 - ALL FITTINGS, APPURTENANCES, & DEPTH OF PIPE SHALL BE MARKED IN THE FIELD FOR AS-BUILT PLAN PREPARATION.
 - ALL GRAVITY PIPES SHALL BE SDR-35 UNLESS OTHERWISE NOTED.

ELEVATIONS BASED ON:
 NORTH AMERICAN VERTICAL DATUM 1988
 CONVERSION:
 NAVD83 TO NGVD29 = +0.86

HEIDT DESIGN
 INC.
 5806-B Rockledge Pkwy
 Tampa, Florida 33610
 Office: 813.253.5111
 Fax: 813.646.7029
 www.HeidtDesign.com

Professional Engineer
 License No. 20727
 Professional Land Surveyor
 License No. 123456789

SERENOA (PKA AVALON GROVES)
 VILLAGES 1 & 2 - PHASE 1A
 ROADWAY PLAN & PROFILE
 PREPARED BY: GARY D. MILLER
 CHECKED BY: FRANCIS JONES
 DATE: 08/02/2014



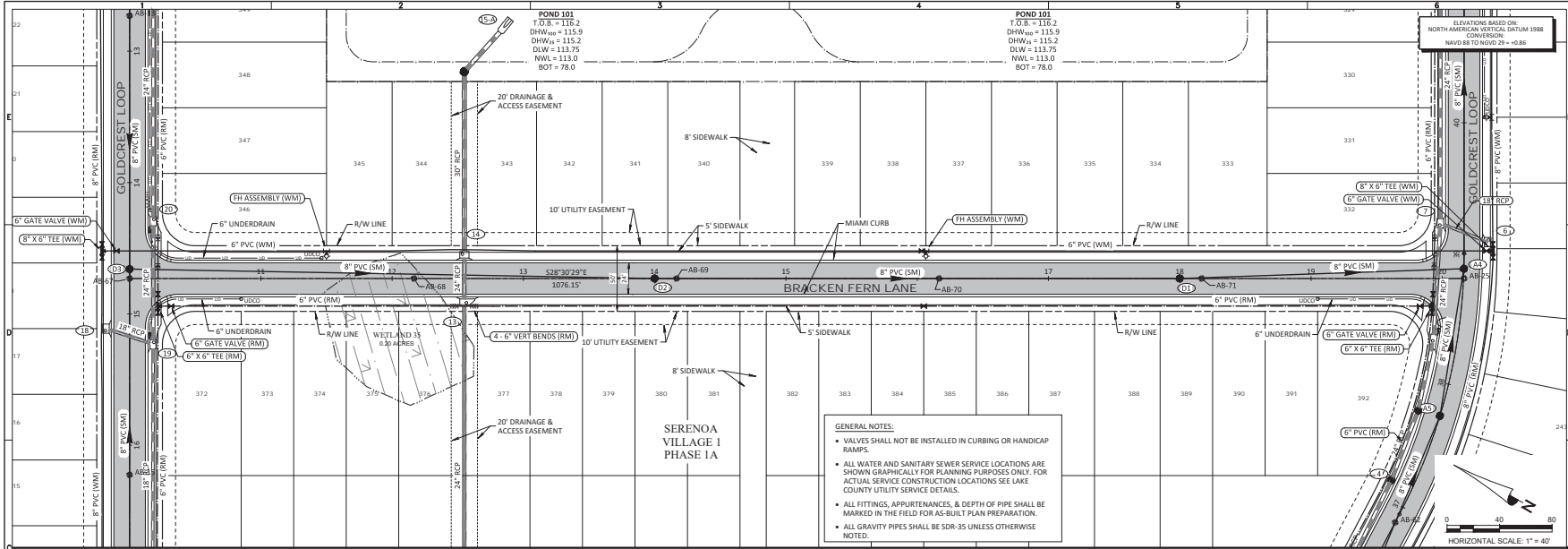
NO.	DATE	DESCRIPTION
1	08/02/2014	ISSUE FOR PERMIT

PROJECT NO: KIP-AG-1009
 FILE: 89-022
 DESIGN BY: FRANCIS JONES
 DRAWN BY: FRANCIS JONES
 FLORIDA PROFESSIONAL ENGINEER

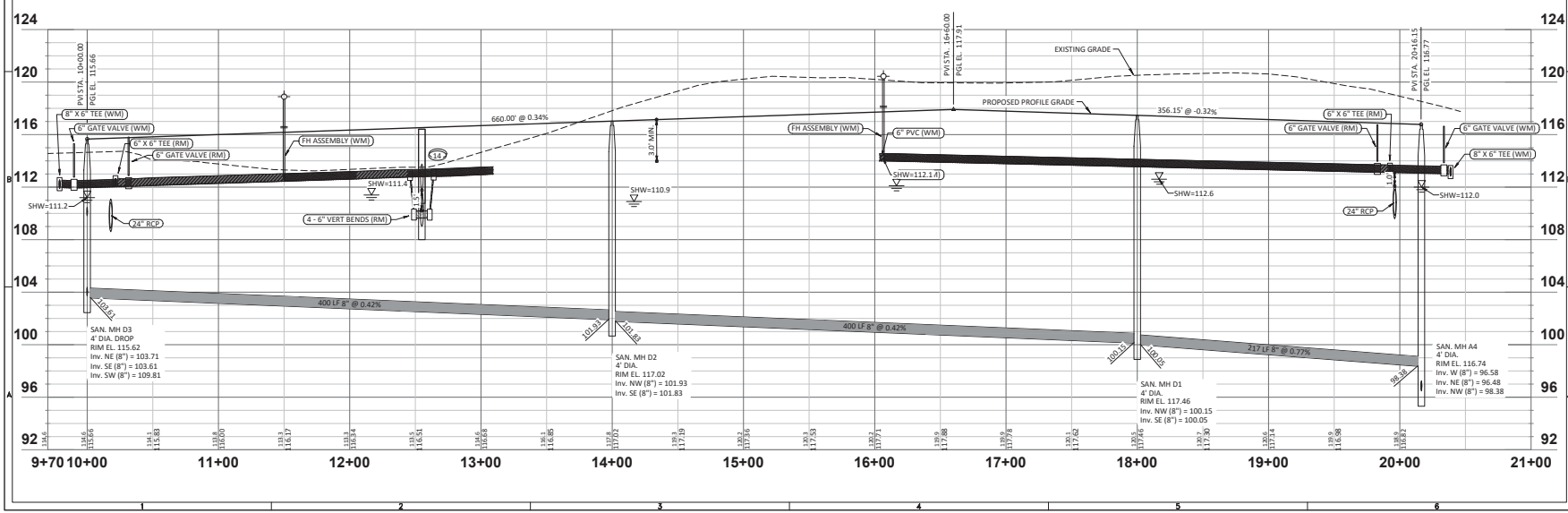
This item has been electronically signed and sealed by Gary D. Miller, P.E. using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.

GARY D. MILLER
 DATE: 08/02/2014
 REGISTRATION NO: 52717

C-502



BRACKEN FERN LANE - VILLAGE 1



HEIDT DESIGN
 ENGINEERING ARCHITECTURE
 5806-B Brockmeade Pkwy
 Tampa, Florida 33636
 Office: 813.253.5111
 Fax: 813.646.7027
 www.HeidtDesign.com

SERENOVA (PKA AVALON GROVES) VILLAGES 1 & 2 - PHASE 1A
 ROADWAY PLAN & PROFILE
 PREPARED BY: VK-AVALON GROVES, LLC

NO.	DATE	DESCRIPTION
1	09/27/2014	REVIEW SUBMITTAL
2	10/01/2014	DESIGN FINISH

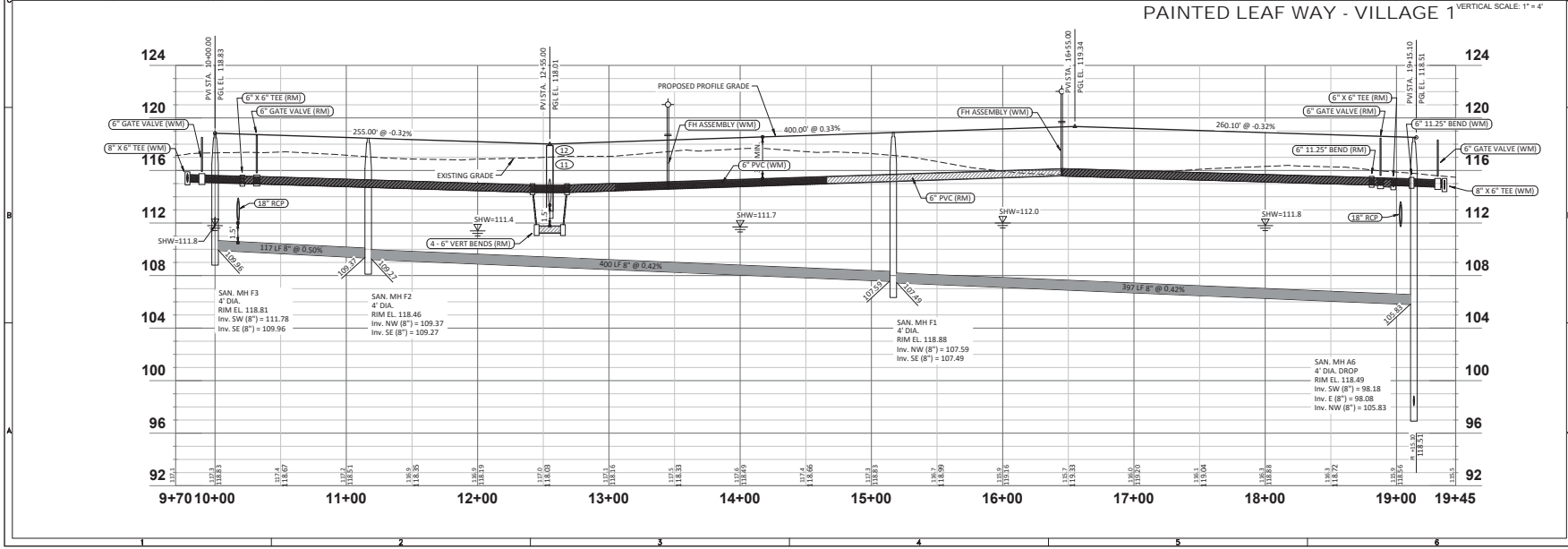
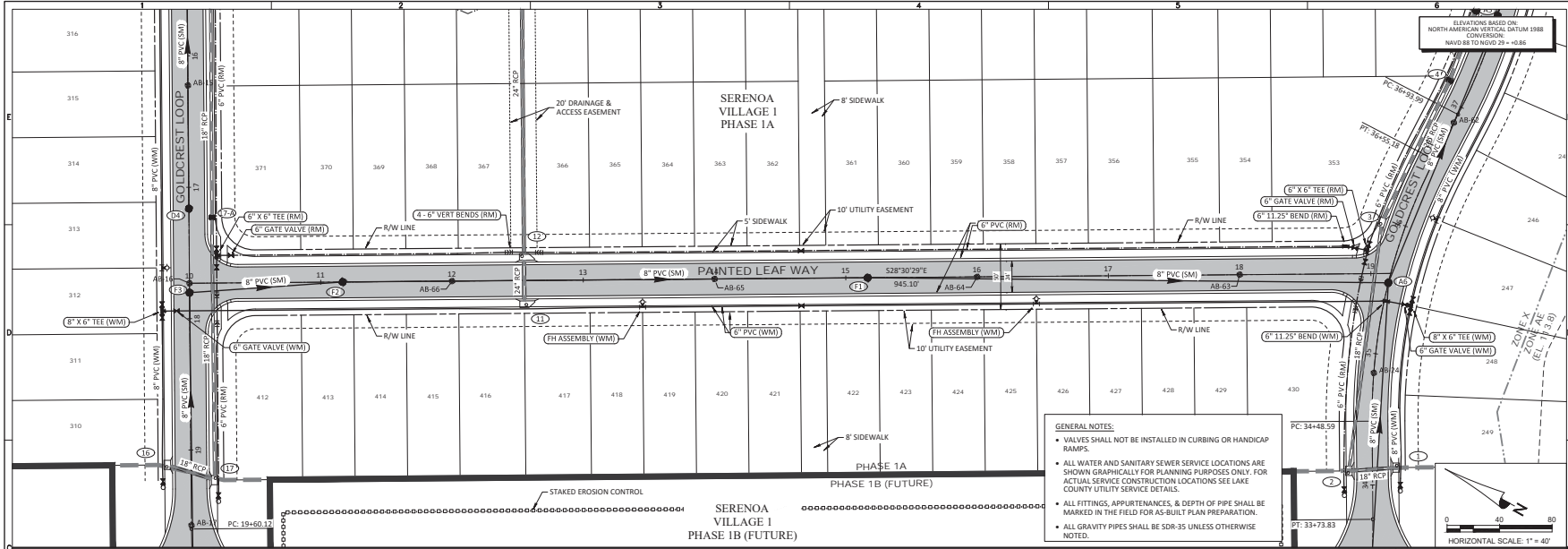
PROJECT NO.: KP-AG-1009
 FILE: RP-03
 DESIGN BY: FRANCIS JONES
 DRAWN BY: JONES

FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Gary D. Miller, P.E. using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.

GARY D. MILLER
 DATE: 10/01/2014
 REGISTRATION NO.: 52717

C-503



HEIDT DESIGN
 Civil Engineering
 Professional Engineer
 Engineering Review Certificate of Registration No. 20727
 License/Registration Certificate of Registration No. 120000001

5806-B Rockledge Pkwy
 Tampa, Florida 33606
 Office: 813.253.5111
 Fax: 813.464.7029
 www.HeidtDesign.com

SERENOA (PKA AVALON GROVES) VILLAGES 1 & 2 - PHASE 1A
ROADWAY PLAN & PROFILE

PREPARED BY: **VK-AVALON GROVES, LLC**

DATE	DESCRIPTION

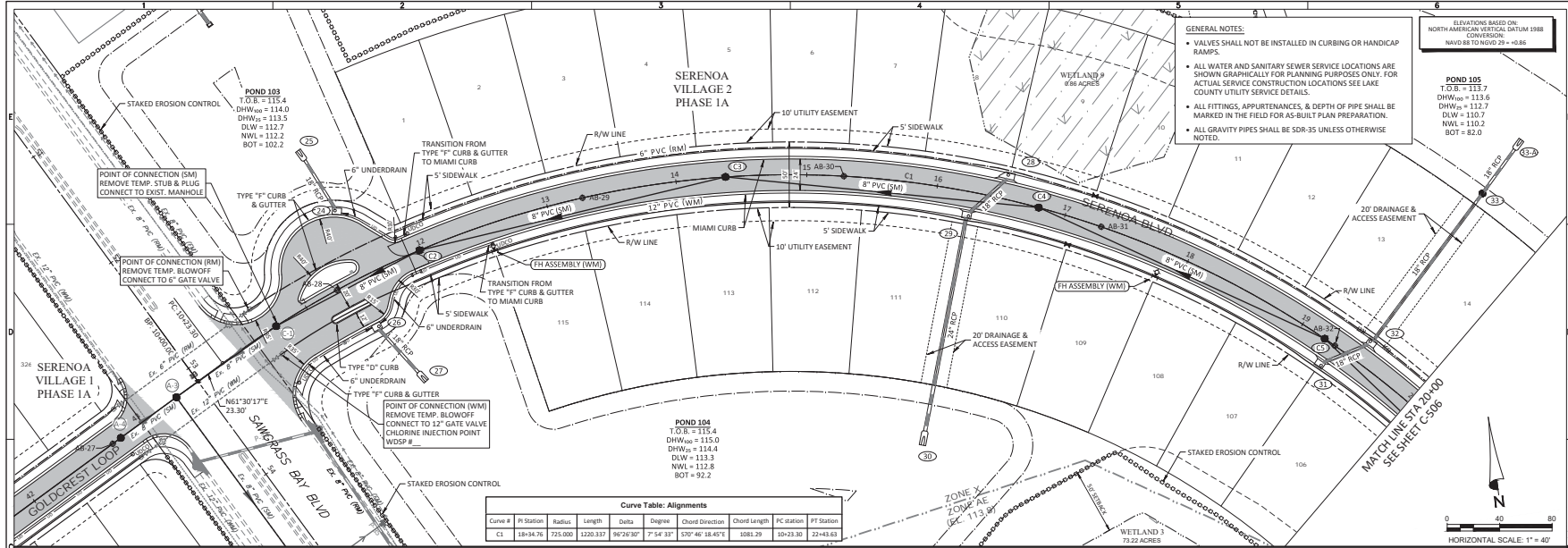
PROJECT NO: **KP-AG-1009**
 FILE: **RP-04**
 DESIGN BY: **FRANCIS**
 DRAWN BY: **JONES**

FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Gary D. Miller, P.E. using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.

GARY D. MILLER
 DATE: **08/08/2014**
 REGISTRATION NO. **52717**

C-504

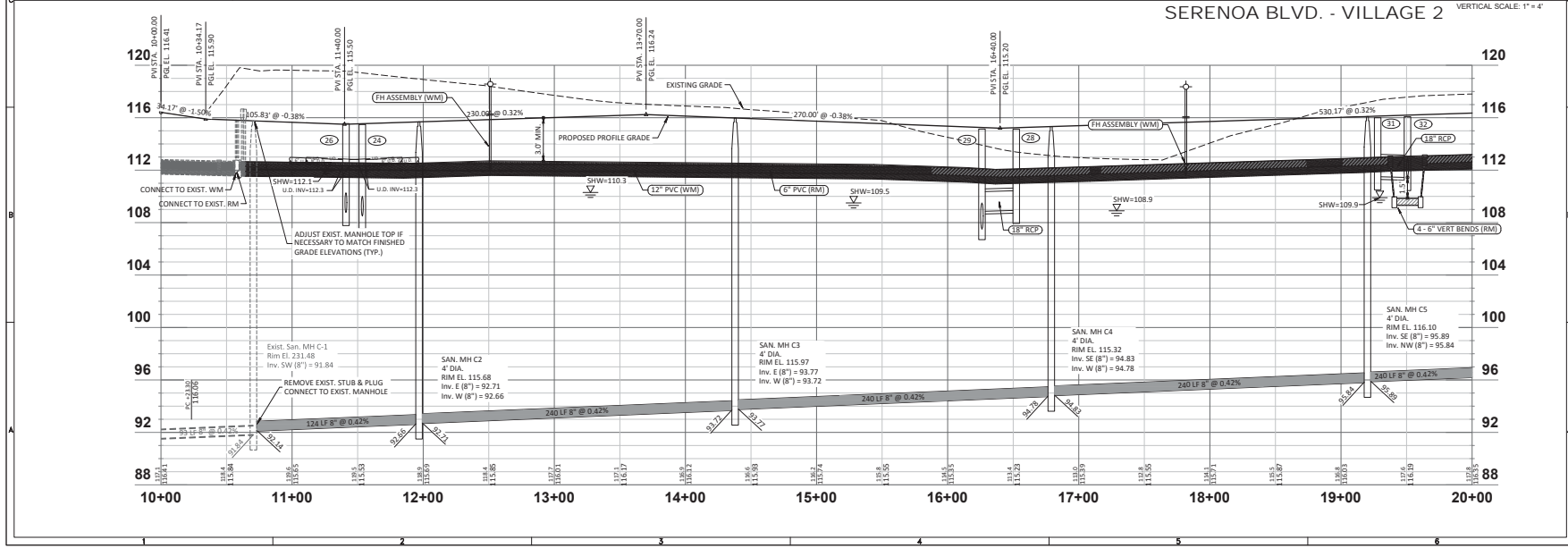


- GENERAL NOTES:**
- VALVES SHALL NOT BE INSTALLED IN CURBING OR HANDICAP RAMPS.
 - ALL WATER AND SANITARY SEWER SERVICE LOCATIONS ARE SHOWN GRAPHICALLY FOR PLANNING PURPOSES ONLY. FOR ACTUAL SERVICE CONSTRUCTION LOCATIONS SEE LAKE COUNTY UTILITY SERVICE DETAILS.
 - ALL FITTINGS, APPURTENANCES, & DEPTH OF PIPE SHALL BE MARKED IN THE FIELD FOR AS-BUILT PLAN PREPARATION.
 - ALL GRAVITY PIPES SHALL BE SDR-35 UNLESS OTHERWISE NOTED.
- ELEVATIONS BASED ON:**
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
NAVD88 TO NGVD 29 = +0.86
- POND 103**
T.O.B. = 115.4
DHW₅₀ = 114.0
DHW₁₀ = 113.5
DLW = 112.7
NWL = 112.2
BOT = 102.2
- POND 104**
T.O.B. = 115.4
DHW₅₀ = 115.0
DHW₁₀ = 114.4
DLW = 113.3
NWL = 112.8
BOT = 92.2
- POND 105**
T.O.B. = 113.7
DHW₅₀ = 113.6
DHW₁₀ = 112.7
DLW = 110.7
NWL = 110.2
BOT = 82.0

Curve Table: Alignments

Curve #	Pt Station	Radius	Length	Delta	Degree	Chord Direction	Chord Length	PC Station	PT Station
C1	18+34.76	725.000	1220.337	90°26'30"	7°54'23"	S70°46'38.45"E	1089.29	10+22.30	22+46.82

SERENOA BLVD. - VILLAGE 2



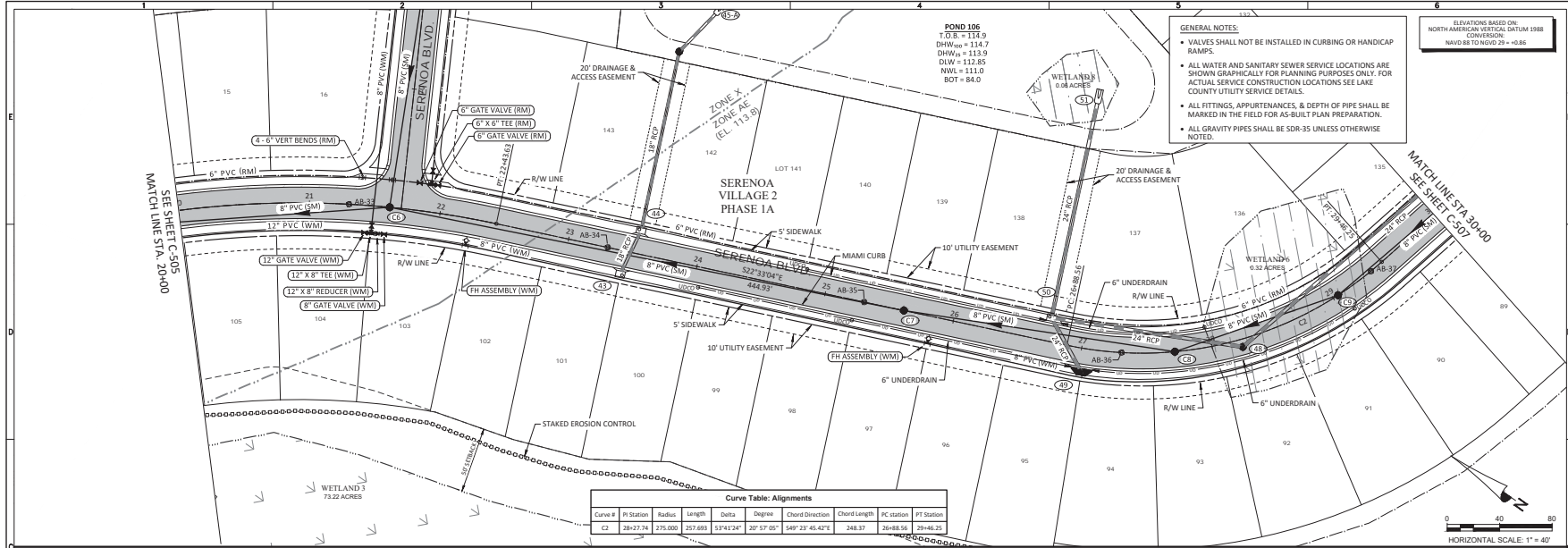
HEIDT DESIGN
Civil Engineering & Architecture
5806-B Rockledge Pkwy
Kissimmee, Florida 3500
Office: 813.253.5111
Fax: 813.484.7029
www.HeidtDesign.com

SERENOA (PKA AVALON GROVES) VILLAGES 1 & 2 - PHASE IA
ROADWAY PLAN & PROFILE
PREPARED BY: []
DATE: []
SCALE: []

FLORIDA PROFESSIONAL ENGINEER
GARY D. MILLER
DATE: []
REGISTRATION NO. 52717

C-505

This item has been electronically signed and sealed by Gary D. Miller, P.E. using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.



- GENERAL NOTES:**
- VALVES SHALL NOT BE INSTALLED IN CURBING OR HANDICAP RAMPS.
 - ALL WATER AND SANITARY SEWER SERVICE LOCATIONS ARE SHOWN GRAPHICALLY FOR PLANNING PURPOSES ONLY. FOR ACTUAL SERVICE CONSTRUCTION LOCATIONS SEE LAKE COUNTY UTILITY SERVICE DETAILS.
 - ALL FITTINGS, APPURTENANCES, & DEPTH OF PIPE SHALL BE MARKED IN THE FIELD FOR AS-BUILT PLAN PREPARATION.
 - ALL GRAVITY PIPES SHALL BE SDR-35 UNLESS OTHERWISE NOTED.

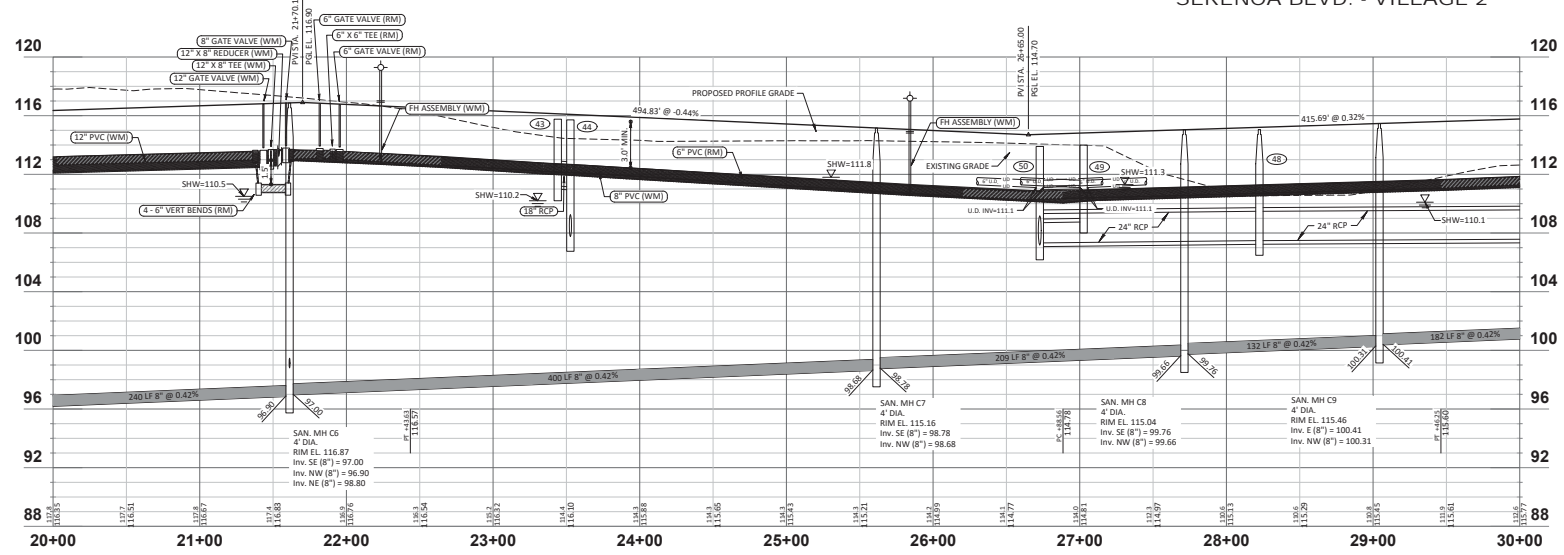
ELEVATIONS BASED ON:
 NORTH AMERICAN VERTICAL DATUM 1988
 CONVERSION:
 NAVD83 TO NAD83 = +0.86

Curve Table: Alignments

Curve #	PI Station	Radius	Length	Delta	Degree	Chord Direction	Chord Length	PC Station	PT Station
C1	28+27.74	275.000	257.693	53°41'24"	20°57'05"	S49°23'45.427°E	248.87	26+88.56	29+46.25

HORIZONTAL SCALE: 1" = 40'
 VERTICAL SCALE: 1" = 4'

SERENOA BLVD. - VILLAGE 2



SERENOA (PKA AVALON GROVES) VILLAGES 1 & 2 - PHASE 1A
 ROADWAY PLAN & PROFILE
 PREPARED BY: VK-AVALON GROVES, LLC

NO.	DATE	DESCRIPTION
1	12/27/2014	REVIEW SUBMITTAL

PROJECT NO: KIP-AG-1009
 FILE: RP-02
 DESIGN BY: FRANCIS
 DRAWN BY: JONES
 FLORIDA PROFESSIONAL ENGINEER

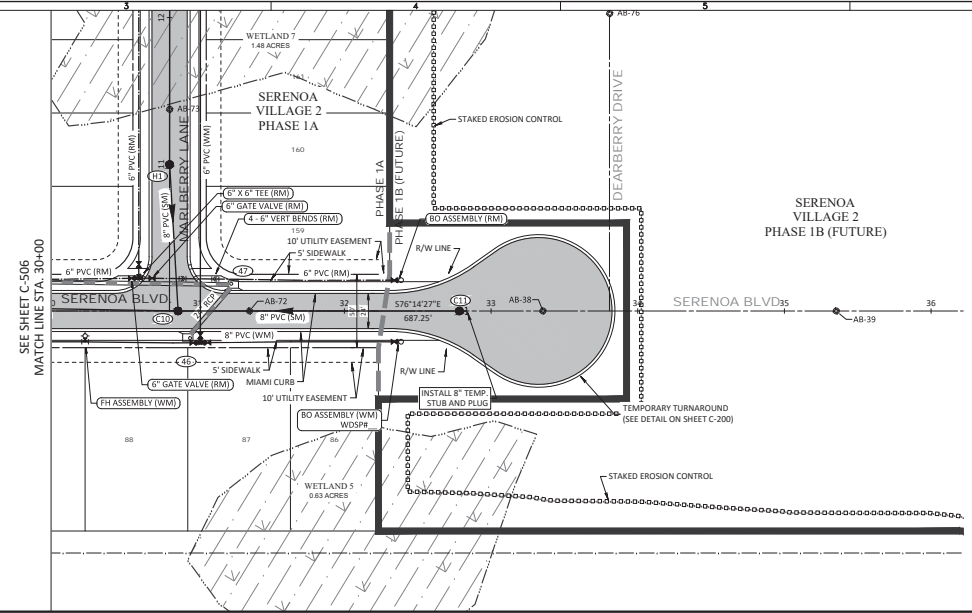
This item has been electronically signed and sealed by Gary D. Miller, P.E. using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.

GARY D. MILLER
 DATE: 12/27/2014
 REGISTRATION NO. 52717

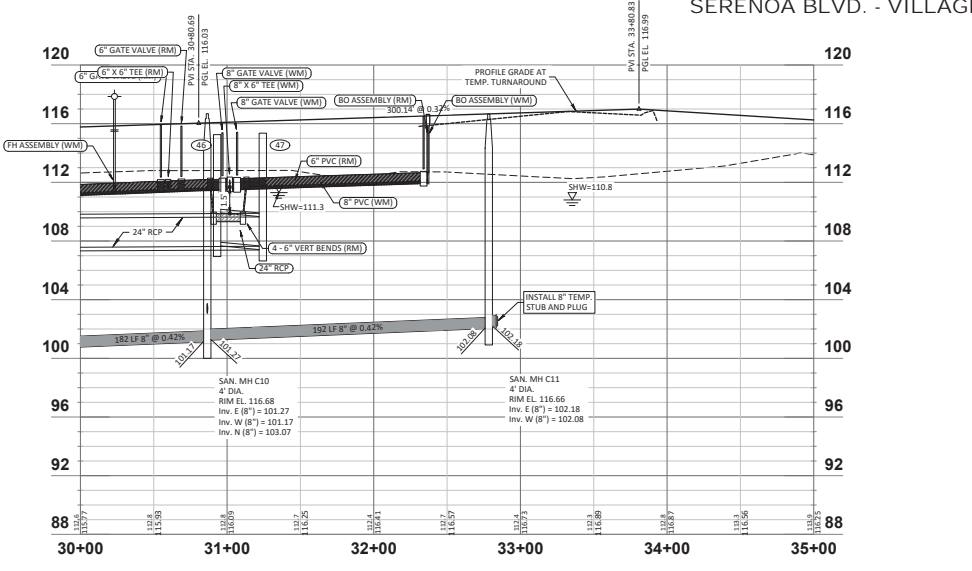
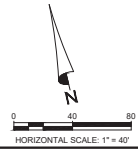
C-506

GENERAL NOTES:

- VALVES SHALL NOT BE INSTALLED IN CURBING OR HANDICAP RAMPS.
- ALL WATER AND SANITARY SEWER SERVICE LOCATIONS ARE SHOWN GRAPHICALLY FOR PLANNING PURPOSES ONLY. FOR ACTUAL SERVICE CONSTRUCTION LOCATIONS SEE LAKE COUNTY UTILITY SERVICE DETAILS.
- ALL FITTINGS, APPURTENANCES, & DEPTH OF PIPE SHALL BE MARKED IN THE FIELD FOR AS-BUILT PLAN PREPARATION.
- ALL GRAVITY PIPES SHALL BE SDR-35 UNLESS OTHERWISE NOTED.



ELEVATIONS BASED ON:
 NORTH AMERICAN VERTICAL DATUM 1988
 CONVERSION:
 NAVD88 TO NGVD 29 = +0.86



SERENOA BLVD. - VILLAGE 2
 VERTICAL SCALE: 1" = 4'

HEIDT DESIGN
 PLANNING • ENGINEERING
 Ecological Services • Landscape Architecture

5806-B Rockledge Pkwy
 Tampa, Florida 33610
 Office: 813.253.5111
 Fax: 813.646.7029
 www.HeidtDesign.com

**SERENOA (PKA AVALON GROVES)
 VILLAGES 1 & 2 - PHASE 1A**

ROADWAY PLAN & PROFILE

PREPARED BY: **VK AVALON GROVES, LLC**

DATE	DESCRIPTION

NO.	DATE	REVISION
1	10/27/2014	ISSUE FOR PERMIT

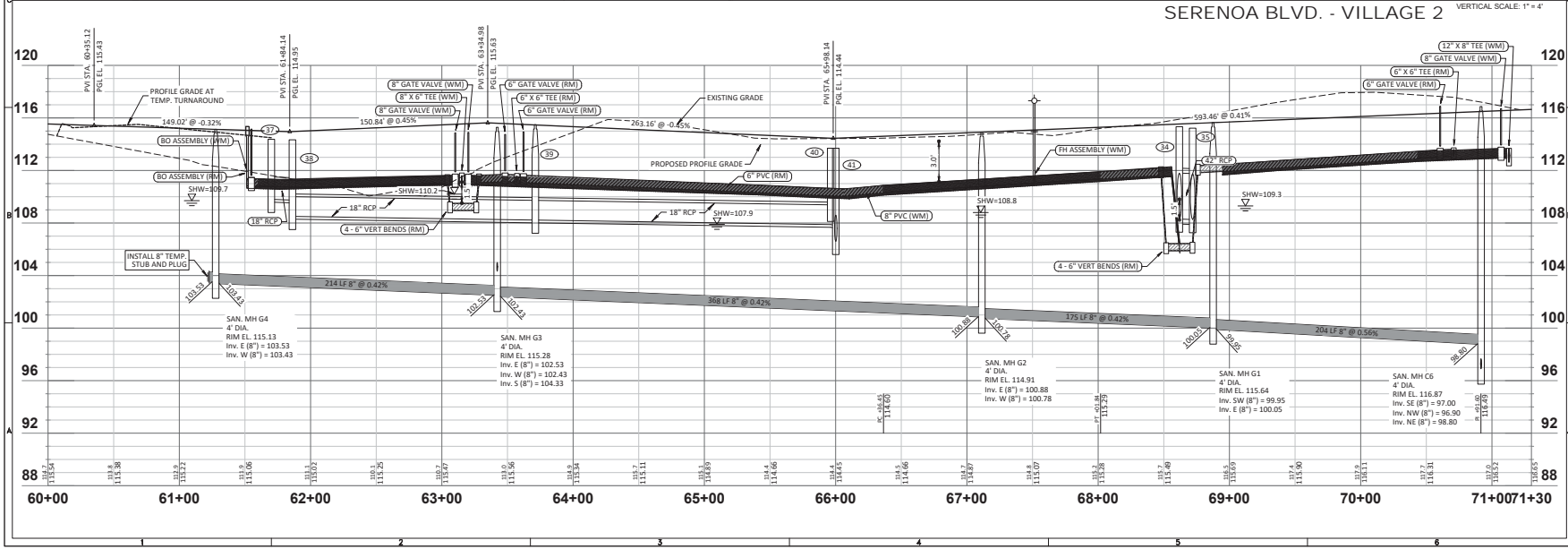
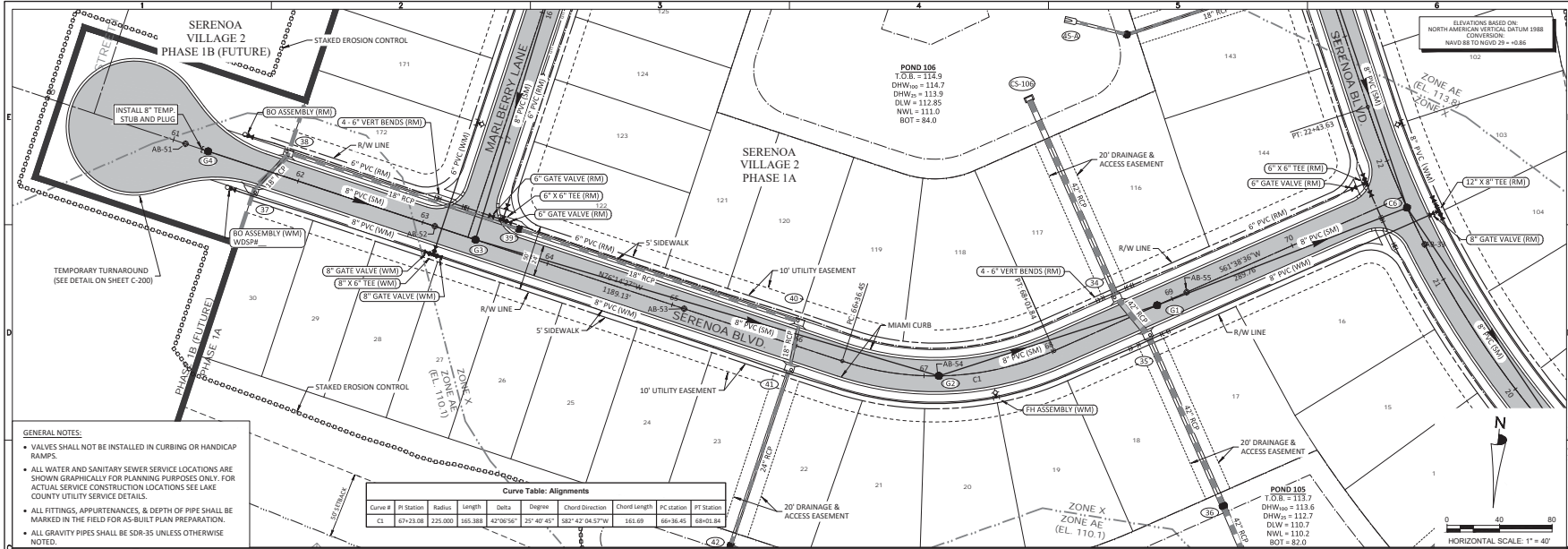
PROJECT NO:	KP-AG-1009
FILE:	8P-02
DESIGN BY:	FRANCIS
DRAWN BY:	JONES

FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Gary D. Miller, P.E. using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.

GARY D. MILLER
 DATE: _____
 REGISTRATION NO. 52717

C-507



HEIDT DESIGN
 Environmental Services • Landscape Architecture

5806-B Brockmeier Pike
 Tampa, Florida 33618
 Office: 813-253-5111
 Fax: 813-244-7029
www.HeidtDesign.com

SERENOA (PKA AVALON GROVES) VILLAGES 1 & 2 - PHASE 1A

ROADWAY PLAN & PROFILE

PREPARED BY: **VK-AVALON GROVES, LLC**

DATE: _____

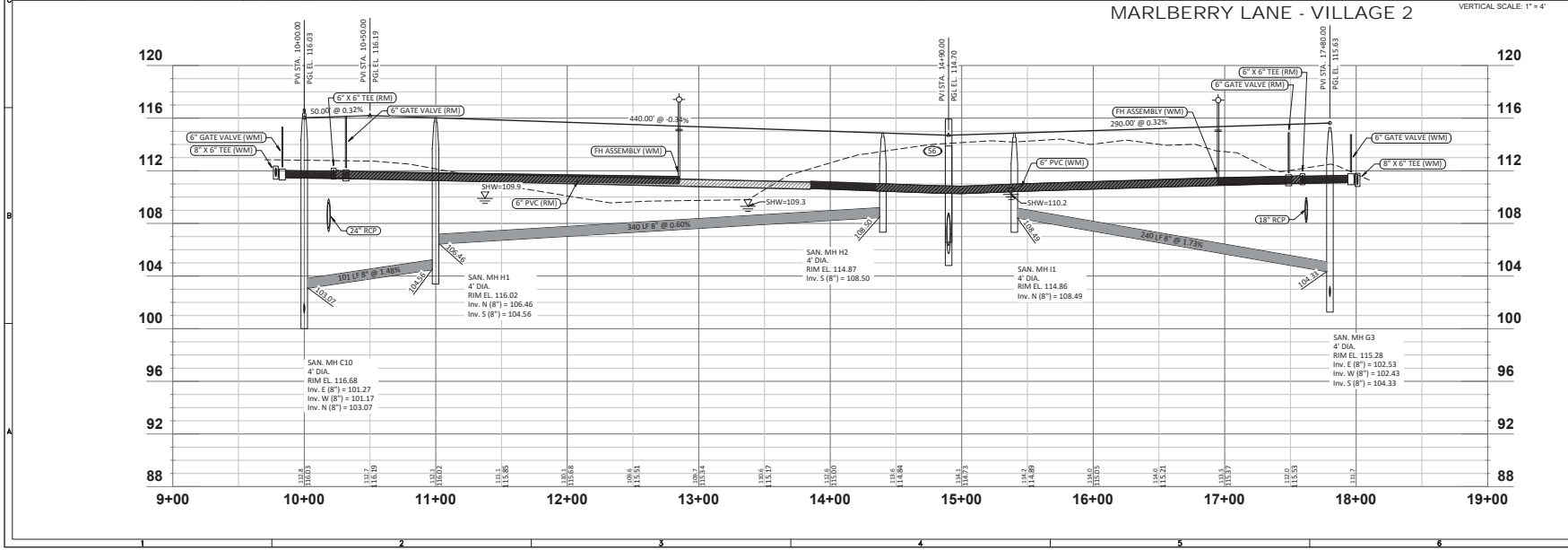
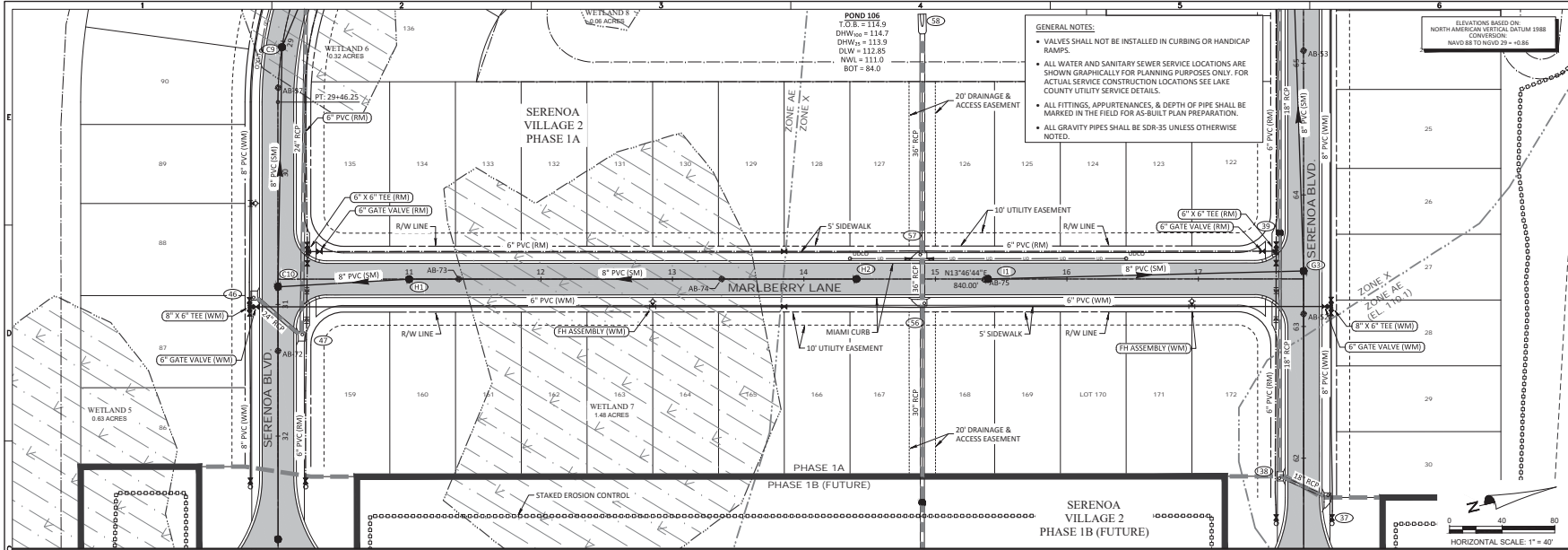
DESCRIPTION: _____

PROJECT NO.: K3P-AG-1003
 FILE: 8P-02
 DESIGN BY: FRANCIS
 DRAWN BY: JONES
 FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Gary D. Miller, P.E. using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.

GARY D. MILLER
 DATE: _____
 REGISTRATION NO.: 52717

C-508



GENERAL NOTES:
 • VALVES SHALL NOT BE INSTALLED IN CURBING OR HANDICAP RAMPS.
 • ALL WATER AND SANITARY SEWER SERVICE LOCATIONS ARE SHOWN GRAPHICALLY FOR PLANNING PURPOSES ONLY. FOR ACTUAL SERVICE CONSTRUCTION LOCATIONS SEE LAKE COUNTY UTILITY SERVICE DETAILS.
 • ALL FITTINGS, APPURTENANCES, & DEPTH OF PIPE SHALL BE MARKED IN THE FIELD FOR AS-BUILT PLAN PREPARATION.
 • ALL GRAVITY PIPES SHALL BE SDR-35 UNLESS OTHERWISE NOTED.

ELEVATIONS BASED ON:
 NORTH AMERICAN VERTICAL DATUM 1988
 CONVERSION:
 NAVD83 TO NAD83: -0.86

HORIZONTAL SCALE: 1" = 40'
 VERTICAL SCALE: 1" = 4'

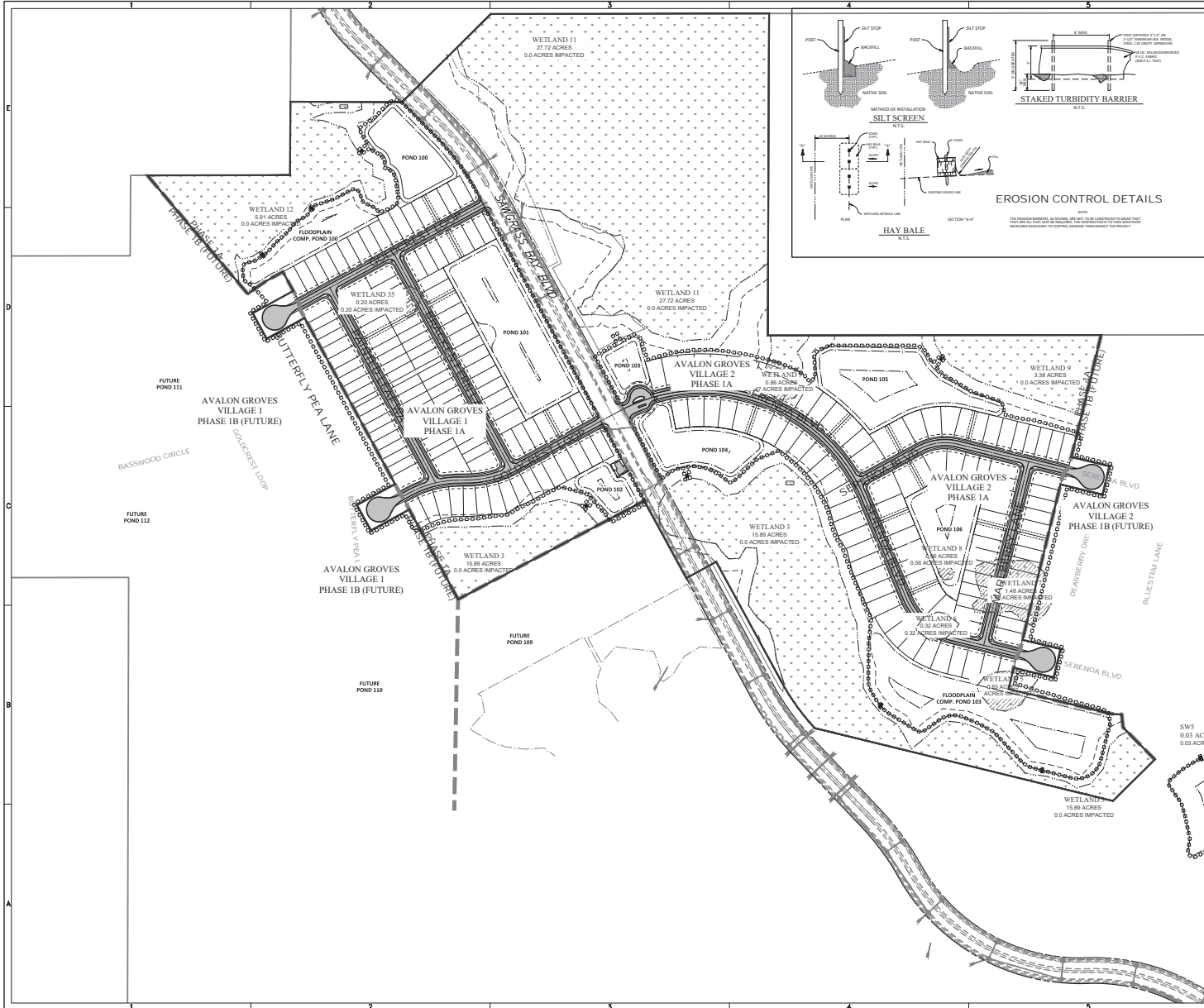


SERENOA (PKA AVALON GROVES) VILLAGES 1 & 2 - PHASE 1A
 ROADWAY PLAN & PROFILE
 PREPARED BY: GARY D. MILLER
 DATE: 12/11/2014
 PROJECT NO: KP-AG-1008
 FILE: 8P-02
 DESIGN BY: FRANCIS
 DRAWN BY: JONES
 FLORIDA PROFESSIONAL ENGINEER

DATE	DESCRIPTION

PROJECT NO: KP-AG-1008
 FILE: 8P-02
 DESIGN BY: FRANCIS
 DRAWN BY: JONES
 FLORIDA PROFESSIONAL ENGINEER
 GARY D. MILLER
 DATE: 12/11/2014
 REGISTRATION NO. 52717
C-509

THIS DOCUMENT IS THE PROPERTY OF HEIDT DESIGN. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREIN. IT IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF HEIDT DESIGN. © 2014 HEIDT DESIGN, INC.



N

0 200 400

GRAPHIC SCALE: 1" = 200'

ELEVATIONS BASED ON:
 NORTH AMERICAN VERTICAL DATUM 1988
 CONVERSION:
 NAVD 83 TO NGVD 29 = +0.82

PROJECT NO: KP-36-1000
FILE: CSWMP
DESIGN BY: FRANCIS
DRAWN BY: JONES
FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Gary D. Miller, P.E. using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.

GARY D. MILLER
DATE: _____
REGISTRATION NO.: 52717

C-900

HEIDT DESIGN
 Environmental Services & Landscape Architecture
 5806-B Brockmeade Pkwy
 Tampa, Florida 33630
 Office: 813.253.5111
 Fax: 813.646.7029
 www.HeidtDesign.com

**SIRENOA (PKA AVALON GROVES)
 VILLAGES 1 & 2 - PHASE 1A
 CONSTRUCTION SURFACE WATER
 MANAGEMENT PLAN**

PREPARED BY: VK AVALON GROVES, LLC
 DATE: _____
 DESCRIPTION: _____

REVIEW BY: SUBMITTAL
 DATE: _____
 DESCRIPTION: _____

PROJECT NO: KP-36-1000
 FILE: CSWMP
 DESIGN BY: FRANCIS
 DRAWN BY: JONES
 FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Gary D. Miller, P.E. using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.

GARY D. MILLER
DATE: _____
REGISTRATION NO.: 52717

C-900

AVALON GROVES VILLAGES 1 & 2 - PHASE 1A - CONSTRUCTION SURFACE WATER MANAGEMENT PLAN
 PREPARED BY: VK AVALON GROVES, LLC
 DATE: _____
 DESCRIPTION: _____
 REVIEW BY: SUBMITTAL
 DATE: _____
 DESCRIPTION: _____
 PROJECT NO: KP-36-1000
 FILE: CSWMP
 DESIGN BY: FRANCIS
 DRAWN BY: JONES
 FLORIDA PROFESSIONAL ENGINEER
 This item has been electronically signed and sealed by Gary D. Miller, P.E. using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.
GARY D. MILLER
DATE: _____
REGISTRATION NO.: 52717
C-900

STORM WATER POLLUTION PREVENTION PLAN

CONTAINED ON THESE PLANS AND WITHIN THE FOLLOWING NOTES IS A STORM WATER POLLUTION PREVENTION PLAN (SWPPP)...

THE FOLLOWING ENTITIES ARE IDENTIFIED AS TEAM MEMBERS OF "SWPPP": HEIDT DESIGN, LLC, THE DEVELOPER AS IDENTIFIED IN THE TITLE BLOCK OF THESE PLANS...

HEIDT DESIGN, LLC:

- A. DEVELOP SWPPP INCLUDING, BUT NOT LIMITED TO, RETENTION/VENTION PONDS, CONTROL STRUCTURES, EROSION CONTROL METHODS AND LOCATIONS AND STABILIZATION CRITERIA... B. SUBMIT AND OBTAIN THE NECESSARY DESIGN RELATED STORM WATER PERMITS FROM THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION...

GENERAL EROSION AND TURBIDITY CONTROL NOTES

- 1. THE SOIL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED PRIOR TO CONSTRUCTION... 2. ANY OFF SITE DISTURBANCE SHALL BE RESTORED TO THE PRE OR BETTER CONDITION... 3. THE SITE SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION AND UNTIL THE SITE IS PERMANENTLY STABILIZED...

PRE-DEVELOPED SITE INFORMATION:

PROJECT SITE ACRAGE: 334.2 AC ± LAND USE: UNDEVELOPED - AGRICULTURAL VEGETATION: RANGE LAND, BAHIA GRASS PASTURE RECEIVING WATERS OR MUNICIPAL SEWER STORM WATER SYSTEM:

- A. SIGN AND RETURN TO HEIDT A CONTRACTORS CERTIFICATION FORM CERTIFYING YOUR UNDERSTANDING OF AND WILINGNESS TO COMPLY WITH THE STORM WATER POLLUTION PREVENTION PLAN NO LATER THAN 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION... B. DURING CONSTRUCTION, ASSURE COMPLIANCE WITH THE DESIGNED STORM WATER POLLUTION PREVENTION PLANS PREPARED BY HEIDT DESIGN, LLC...

GENERAL EROSION AND TURBIDITY CONTROL NOTES (continued)

- 12. WHERE PUMPS ARE TO BE USED TO REMOVE TURBID WATERS FROM CONSTRUCTION AREAS... 13. THE PERMITS SHALL SCHEDULE HIS OPERATIONS SUCH THAT THE AREA OF UNPROTECTED ERODIBLE EARTH EXPOSED AT ANY ONE TIME IS NOT LARGER THAN THE MINIMUM AREA NECESSARY FOR EFFICIENT CONSTRUCTION OPERATION... 14. WATER DERIVED FROM VARIOUS DEWATERING METHODS SHOULD BE PASSED THROUGH SUFFICIENTLY WIDE AREAS OF EXISTING UPLAND VEGETATION TO FILTER OUT EXCESS TURBIDITY...

TEMPORARY OR PERMANENT SEEDING, MULCHING, GEOTEXTILES, SODDING, VEGETATIVE BUFFER STRIPS, PROTECTION OF THESE AREAS FROM SEDIMENT CONTROL DEVICES... B. MAINTAIN A COPY OF THE CONSTRUCTION PLANS, WHICH INCLUDE THE STORM WATER POLLUTION PREVENTION PLAN, THE NFO, AND ALL INSPECTION REPORTS AND CERTIFICATIONS ON SITE...

SIDEWALK NOTE:

- 1. SIDEWALKS SHALL BE CONSTRUCTED OF NATURAL OR COLORED CONCRETE AT LEAST 3,000 PSI IN STRENGTH, FIBER REINFORCED ON A COMPACTED AND NON-WELDING SUBGRADE WITH A MINIMUM FOUR INCHES IN THICKNESS... 2. MAINTENANCE PROCEDURES... 3. THE PROCEDURE TO FOLLOW IF ADDITIONAL WORK IS REQUIRED OR WHOM TO CALL...

POND/LAKE EXCAVATION NOTE:

NO EXCAVATION SHALL EXTEND BEYOND THE PERMITTED DESIGN DEPTHS/ELEVATIONS SHOWN ON THE DRAWINGS, UNLESS ADDITIONAL SUPPORTS OTHERWISE AND THE ENGINEER OF RECORD HAS RECEIVED VERBAL AND/OR WRITTEN PERMISSION FROM THE VOLUME DISTURBANCE CONTROL ENGINEER...

- D. NOTIFY HEIDT DESIGN, LLC AND THE DEVELOPER IN WRITING OF ANY NON-STORM WATER POLLUTION SOURCES WHICH ARE BEING STORED, OR OTHERWISE USED DURING THE CONSTRUCTION OF THE PROJECT... F. DEVELOP A MAINTENANCE AND INSPECTION PLAN WHICH INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING:

THE SPECIFIC AREAS TO BE INSPECTED AND MAINTAINED THAT INCLUDES ALL THE DISTURBED AREAS AND MATERIAL STORAGE AREAS OF THE SITE.

- 1. THE EROSION AND SEDIMENT CONTROLS IDENTIFIED IN THE SWPPP TO BE MAINTAINED AND INSPECTED AND THOSE ADDITIONAL CONTROLS THAT THE CONTRACTOR DEEMS NECESSARY... 2. MAINTENANCE PROCEDURES... 3. THE PROCEDURE TO FOLLOW IF ADDITIONAL WORK IS REQUIRED OR WHOM TO CALL...

THE FOLLOWING SHALL BE INSPECTED A MINIMUM OF ONCE A WEEK OR WITHIN 24 HOURS AFTER 0.50 INCHES OF RAINFALL:

- STABILIZATION MEASURES (ONCE A MONTH IF FULLY STABILIZED)... • STRUCTURAL CONTROLS... • DISCHARGE POINTS... • CONSTRUCTION ENTRANCES AND EXITS... • AREAS USED FOR STORAGE OF EXPOSED MATERIALS...

AN INSPECTION FORM SHALL BE COMPLETED FOR EACH INSPECTION. ANY PERMIT VIOLATIONS SHOULD BE NOTED AND CORRECTIVE MEASURES SHALL BE TAKEN NO LATER THAN 7 DAYS AFTER THE VIOLATION IS OBSERVED... IF REVISIONS TO THE SWPPP ARE NEEDED, A REPORT FORM FOR CHANGES IN THE SWPPP SHALL BE COMPLETED AND A COPY SENT TO HEIDT DESIGN, LLC...

- H. SITE STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICAL BUT IN NO CASE MORE THAN 7 DAYS, IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED...

OWNER'S INSTRUCTIONS FOR MAINTENANCE AND INSPECTION OF STORMWATER FACILITIES

IT IS THE OWNER'S RESPONSIBILITY TO INSPECT AND MAINTAIN THE WATER DRAINAGE SYSTEMS ON A ROUTINE BASIS TO ENSURE THAT THEY ARE FUNCTIONING PROPERLY... SYSTEMS THAT INCORPORATE INFILTRATION ARE MOST CRITICAL SINCE POOR MAINTENANCE PRACTICES CAN SOON RENDER THEM INEFFECTIVE...

SAND FILTER SURFACES ARE SOMETIMES SCRAPPED OR BREAK UP SILT DEPOSITS AND RESTORE POROSITY. THIS SHOULD BE ACCOMPLISHED AFTER ALL SEDIMENT HAS BEEN REMOVED FROM THE SURFACE... SAND FILTER SURFACES ARE SOMETIMES SCRAPPED OR BREAK UP SILT DEPOSITS AND RESTORE POROSITY...

THE FILTER SYSTEM IS DESIGNED TO HAVE A WET-DRY CYCLE TO INHIBIT ALGAL OR BACTERIAL GROWTH... CLEANOUT FREQUENCY OF FILTER BEDS WILL DEPEND ON WHETHER THEY ARE VEGETATED OR NON-VEGETATED AND WILL BE A FUNCTION OF THEIR STORAGE CAPACITY, INFILTRATION CHARACTERISTICS...

PERFORATED UNDERDRAIN PIPES ARE LOCATED 2' BELOW THE SAND AND CLEANOUTS ARE LOCATED AT THE END OF THE SYSTEM... METHODS AND EQUIPMENT FOR CLEANOUT OF SYSTEMS VARIOUS TYPES OF EQUIPMENT ARE AVAILABLE COMMERCIAL FOR MAINTENANCE OF DRAINAGE SYSTEMS...

- 1. VACUUM PUMP: THIS DEVICE IS NORMALLY USED TO REMOVE SEDIMENT FROM TRENCHES AND PIPES... 2. WATER JET SPRAY: THIS EQUIPMENT IS GENERALLY MOUNTED ON A SELF-CONTAINED VEHICLE WITH A HIGH PRESSURE PUMP AND A 200 - 300 GALLONS (0.760 TO 1.140M)...

GENERAL EROSION AND TURBIDITY CONTROL NOTES (continued)

- 15. WATER SHALL BE TREATED PRIOR TO DISCHARGE TO THE WETLANDS... 16. THE PERMITS SHALL SCHEDULE HIS OPERATIONS SUCH THAT THE AREA OF UNPROTECTED ERODIBLE EARTH EXPOSED AT ANY ONE TIME IS NOT LARGER THAN THE MINIMUM AREA NECESSARY FOR EFFICIENT CONSTRUCTION OPERATION... 17. THE PERMITS SHALL SCHEDULE HIS OPERATIONS SUCH THAT THE AREA OF UNPROTECTED ERODIBLE EARTH EXPOSED AT ANY ONE TIME IS NOT LARGER THAN THE MINIMUM AREA NECESSARY FOR EFFICIENT CONSTRUCTION OPERATION...

GENERAL EROSION AND TURBIDITY CONTROL NOTES (continued)

- 17. THE PERMITS SHALL SCHEDULE HIS OPERATIONS SUCH THAT THE AREA OF UNPROTECTED ERODIBLE EARTH EXPOSED AT ANY ONE TIME IS NOT LARGER THAN THE MINIMUM AREA NECESSARY FOR EFFICIENT CONSTRUCTION OPERATION... 18. EXPOSED SOILS SHALL BE STABILIZED AS SOON AS POSSIBLE, ESPECIALLY SLOPES LEADING TO WETLANDS... 19. EXPOSED SOILS SHALL BE STABILIZED AS SOON AS POSSIBLE, ESPECIALLY SLOPES LEADING TO WETLANDS...

HEIDT DESIGN logo and contact information: 580-B Hickman Rd., Pompano Beach, FL 33062, Office: (954) 323-5111, Fax: (954) 344-7607, www.HeidtDesign.com

SIRENOA (PKA AV ALON GROVES) VILLAGES 1 & 2 - PHASE 1A CONSTRUCTION SURFACE WATER MANAGEMENT PLAN NOTES

Table with columns: DATE, DESCRIPTION, and rows for 1 through 12.

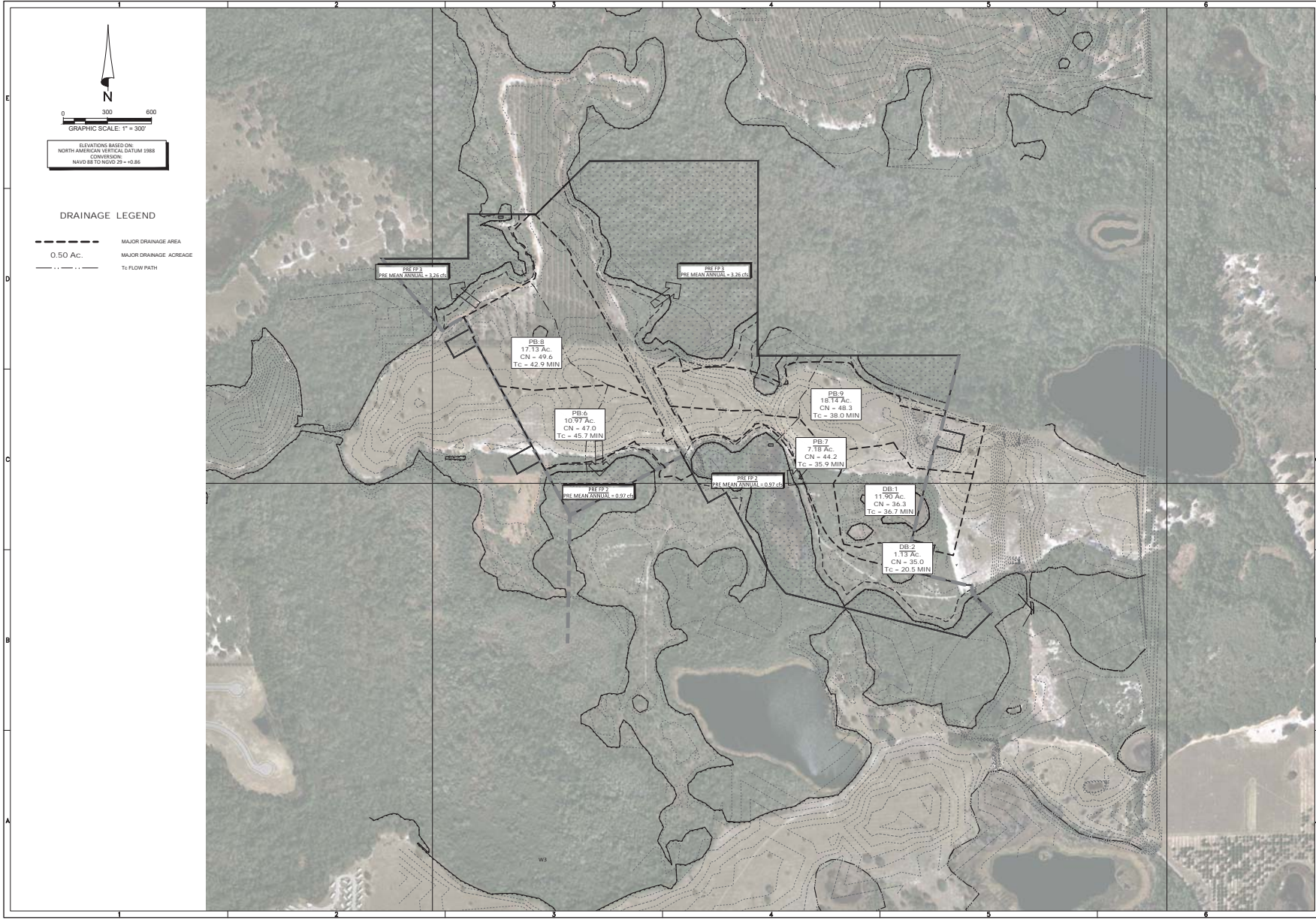
Table with columns: PROJECT NO., FILED, DESIGN BY, DRAWN BY, and rows for KSP-36-1009, FRANCIS, JONES.

This form has been electronically signed and sealed by Gary D. Miller, PE, using a Digital Signature. Printed copies of this document are not considered legal. This document must be used on only one electronic copy.

GARY D. MILLER DATE: REGISTRATION NO. 52717

C-901

VERTICAL SCALE: 1"=10' HORIZONTAL SCALE: 1"=40' DATE: 11/11/2014 TIME: 10:47:48 AM



HEIDT DESIGN
Civil • Mechanical • Electrical • Plumbing • Fire Protection • Landscape Architecture

586-B Rockledge Plaza
Ft. Myers, Florida 33908
Office: 813.253.5111
Fax: 813.484.2029
www.HeidtDesign.com

Engineering Review Certificate of Authorization No. 2072
Landscape Architecture Certificate of Authorization No. LC20000001

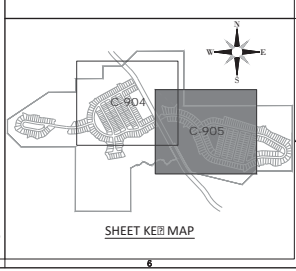
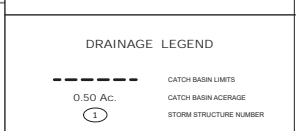
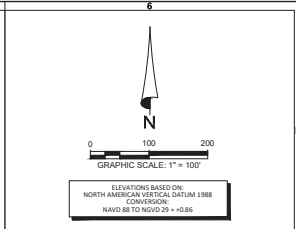
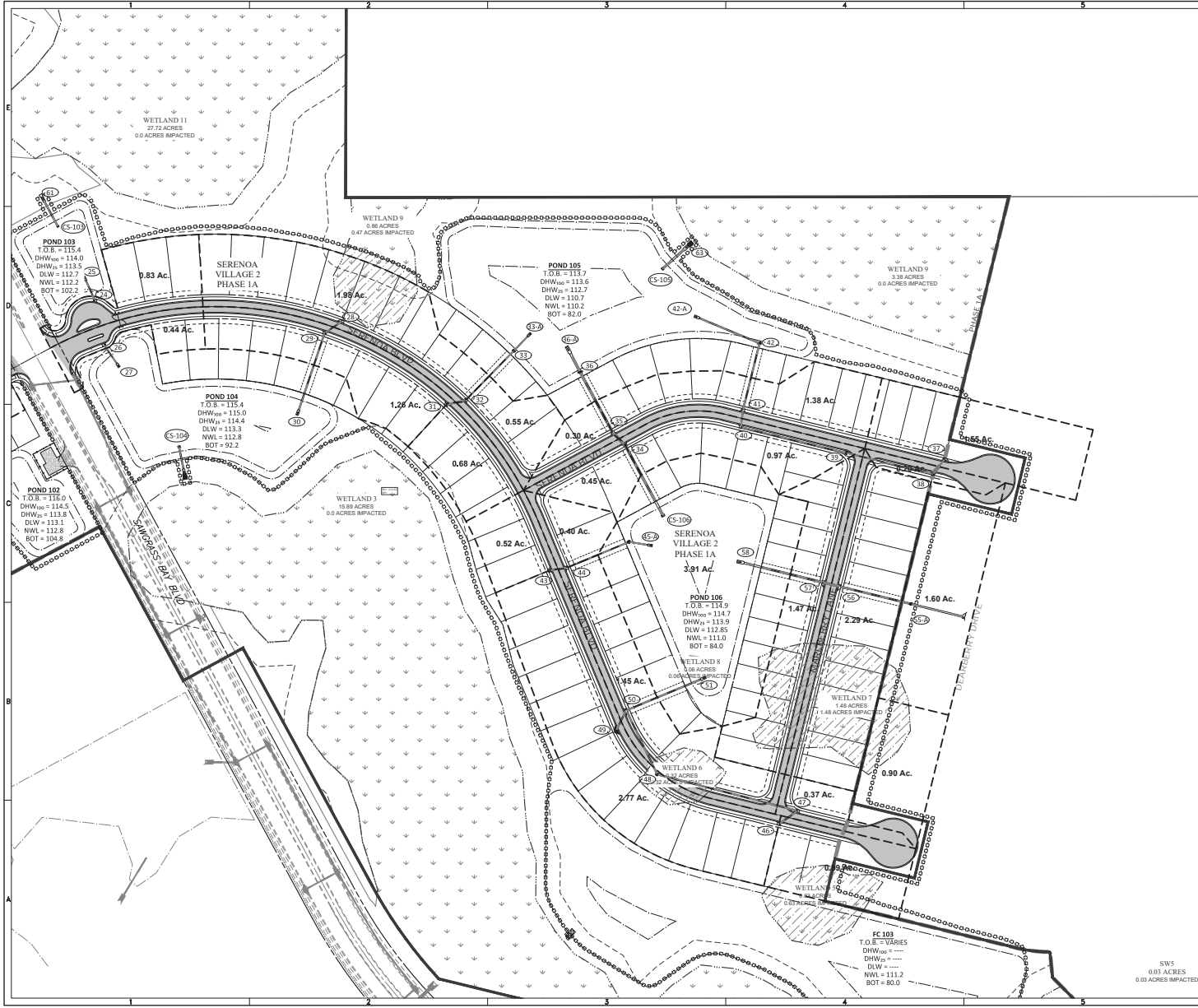
**SIRENOA (fka AVALON GROVES)
VILLAGES 1 & 2 - PHASE 1A
PRE-DEVELOPMENT DRAINAGE
AREA MAP**

PREPARED BY: VK AVALON GROVES, LLC

DATE	DESCRIPTION

DATE	DESCRIPTION
7/22/2017	ISSUE COMMENTS
1/27/2018	REVIEW SUBMITTAL

PROJECT NO:	KIP-AG-1000
FILE:	DA-PRE
DESIGN BY:	FRANCIS
DRAWN BY:	JONES
FLORIDA PROFESSIONAL ENGINEER	
This item has been electronically signed and sealed by Gary D. Miller, P.E. using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.	
GARY D. MILLER	
DATE:	
REGISTRATION NO.:	52717
C-902	



SERENOA (PKA AVALON GROVES) VILLAGES 1 & 2 - PHASE 1A DRAINAGE SUB-BASIN AREA MAP

PREPARED BY: **VK AVALON GROVES, LLC**

NO.	DATE	DESCRIPTION

PROJECT NO: KP-AC-1009
 FILE: DA-SUB
 DESIGN BY: FRANCIS
 DRAWN BY: JONES
 FLORIDA PROFESSIONAL ENGINEERS

This item has been electronically signed and sealed by Gary D. Miller, PE, using a Digital Signature. Printed copies of this document are not considered signed and sealed and must be verified on any electronic copies.

GARY D. MILLER
 DATE: _____
 REGISTRATION NO. 52717

C-905

5806-B Brockmeagle Place, Tampa, Florida 33634, Office: 813.253.5111, Fax: 813.484.7029, www.HeidtDesign.com
 HEIDT DESIGN, INC. is an Equal Opportunity Employer
 Engineering Review Certificate of Administration No. 20732
 Landmarks Engineering Certificate of Administration No. LC00000011
 10/27/2014
 DATE: 10/27/2014
 REVIEW BY: SUBMITTAL
 DATE: 10/27/2014
 DESCRIPTION: DRAINAGE SUB-BASIN AREA MAP
 SHEET: C-905

