



**AGENDA
TECHNICAL REVIEW COMMITTEE
REGULAR MEETING
SEPTEMBER 12, 2019
9:00 AM
CITY HALL COMMISSION CHAMBERS
204 ASH STREET
FERNANDINA BEACH, FL 32034**

- 1. CALL TO ORDER**
- 2. ROLL CALL**
- 3. APPROVAL OF MINUTES**
 - 3.1 **August 8, 2019 Regular Meeting**
- 4. DISCUSSION ITEMS**
 - 4.1 **Change of Use Discussion:** 508 Ash Street - Jose Miranda, Miranda Architects, Single family residential to bed and breakfast inn.C-3 zoning.
 - 4.2 **Change of Use Discussion:** 1002 S. 8th Street - Willys Assis, Owner of LaMancha Painting and Home Repair, automobile repair to office/showroom. MU-8 zoning.
 - 4.3 **Pre-Application Discussion:** 2149 Sadler Road - John Cotner, Cotner & Associates, 4,200 square foot multi tenant commercial building.This is the commercial out parcel associated with the Cape Sound PUD.
 - 4.4 **Pre-Application Discussion:** Airport Road - Christopher Nardone AIA, Passero Associates, three bulk hangar on airport property. I-A zoning.
- 5. NEW BUSINESS**
 - 5.1 SPR 2019-03 - Simmons Road Park
- 6. OLD BUSINESS**
 - 6.1 SPR 2019-01 - RaynorStarr
- 7. DEVELOPMENT INQUIRIES FROM APPLICANTS NOT ON THE AGENDA - DISCUSSION ONLY, NO ACTION TO BE TAKEN.**
- 8. COMMITTEE BUSINESS**
- 9. ADJOURNMENT**

NEXT REGULAR TRC MEETING IS SCHEDULED FOR SEPTEMBER 26, 2019.

Persons with disabilities requiring accommodations in order to participate in this program or activity should contact 310-3115, TTY 711, or through the Florida Relay Services at 1-800-955-8771 (TTY number for all City offices) at least 24 hours in advance to request such accommodations.



**MINUTES
TECHNICAL REVIEW COMMITTEE
REGULAR MEETING
AUGUST 8, 2019**

1. CALL TO ORDER – 9:03am

2. ROLL CALL

MEMBERS PRESENT:

Jacob Platt, Planning
John Mandrick, Utilities
Jason Higginbotham, Fire

Rex Lester, Streets
Don Kukla, Building

3. APPROVAL OF MINUTES

3.1 July 11, 2019 Regular Meeting

ACTION TAKEN: A motion was made by Member Kukla, seconded by Member Mandrick, to approve the minutes as presented.

Motion passed by unanimous voice vote.

4. DISCUSSION ITEMS

4.1 Change of Use Discussion: Willys Assis, Owner of LaMancha Painting and Home Repair, 1002 S 8th Street, MU-8 Zoning.
Applicants were not present.

4.2 Change of Use Discussion: Ray Bailey, Century Ambulance – 1880 S 14th Street, this parcel is part of the Amelia Park PUD
Ray Bailey provided a brief history of the company. The proposed location will be a change of use from retail to office/bunk house space with shower and laundry. Mr. Mandrick requested the square footage of the structure in order to calculate impact credits or fees. Mr. Kukla recommended working with a design professional to ensure building code and ADA compliance. Mr. Higginbotham spoke to fire sprinklers. Mr. Platt pointed out that this parcel is part of the Amelia Park PUD which limits commercial usage to retail and professional office space and this proposed use likely falls outside of that realm.

5. DEVELOPMENT INQUIRIES FROM APPLICANTS NOT ON THE AGENDA- DISCUSSION ONLY, NO ACTION TO BE TAKEN.

5.1 Roger Morenc of Marlin & Barrel was present to discuss the relocation of the distillery to 232 S 8th Street. Mr. Morenc described opening the side of the structure into the courtyard to create a bar area. Impact fee calculation, parking, and landscape and buffer requirements were discussed. Mr. Platt advised that the project will need to return for a full site plan review and offered to meet with the

DRAFT

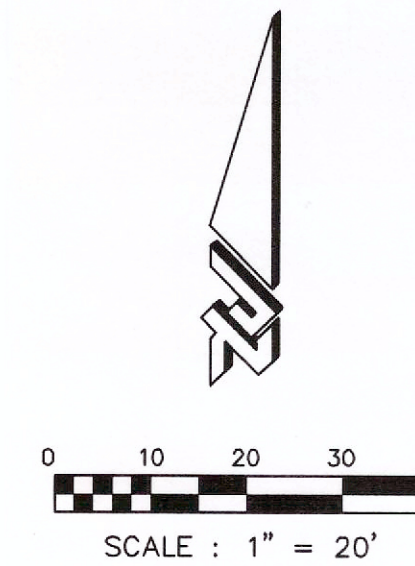
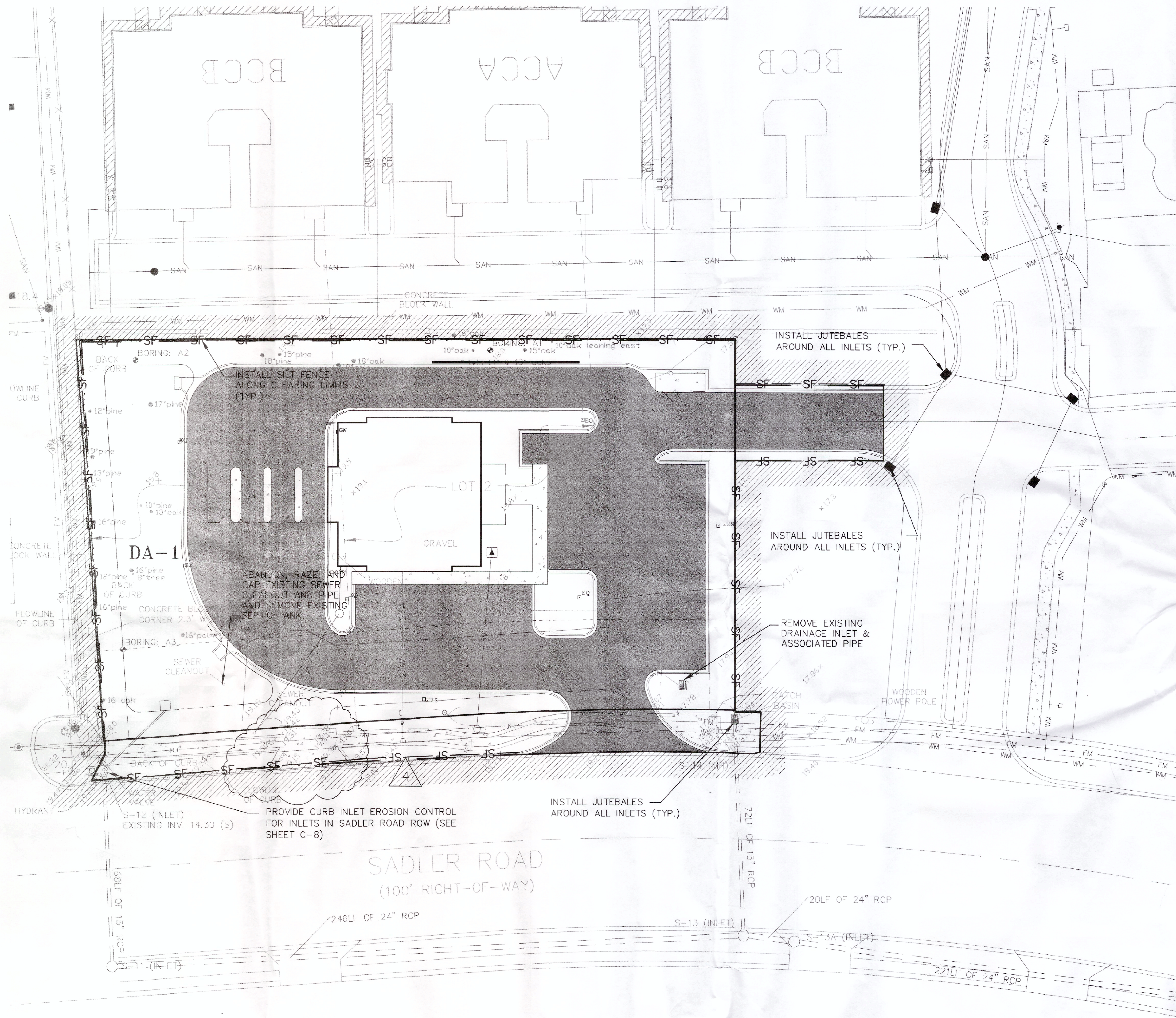
applicant to discuss the potential need for variances.

6. COMMITTEE BUSINESS

Mr. Platt announced that the next regular TRC meeting may be cancelled to allow for a recording equipment upgrade.

7. ADJOURNMENT – 10:12am

Jacob Platt



LEGEND:

- 6" M.P.L. EXISTING TREES
- EXISTING SPOT GRADE
- EXISTING CONTOUR LINE W/ELEVATION
- PROPOSED SILT FENCE
- PROPOSED CLEARING LIMITS
- PROPOSED ASPHALT PAVEMENT
- PROPOSED CONCRETE SIDEWALK

NOTE:

- 1) SILT FENCE TO BE INSTALLED ALONG CLEARING LIMITS; GRAPHICAL REPRESENTATION OF CLEARING LIMITS AND SILT FENCE IS EXAGGERATED FOR PICTORIAL PURPOSES ONLY.
- 2) THE REPRESENTATIVE OF UNIVERSAL ENGINEERING SHOULD ALSO BE PRESENT AND APPROVE THE LIMITS OF EXCAVATION FOR THE EXISTING DITCH. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND LEGAL DISPOSAL OF ALL UNSUITABLE MATERIALS.

SEE LANDSCAPE PLANS
FOR TREE PROTECTION
INFORMATION

City of Fernandina Beach Site Plan Review		
Approval	Yes	No
Facility Mntnc. (ADA)	☒	☐
Streets / Storm Water	☒	☐
Water	☒	☐
Waste Water	☒	☐
Fire Department	☒	☐
Police Department	☒	☐
Parks and Recreation	☒	☐
Engineering	☒	☐
Planning	☒	☐
Building	☒	☐

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CIVIL ENGINEERS - LANDSCAPE ARCHITECTS
PLANNERS - TRANSPORTATION - ENVIRONMENTAL
WWW.ZEVCOHEN.COM

ORLANDO BEACH
55 SETON TRAIL ORLANDO BEACH, FL 32178
(386) 677-2482 FAX (386) 677-2505

ST. AUGUSTINE
4475 U.S. 1 S. STE #801 ST. AUGUSTINE, FL 32096
(904) 797-1610 FAX (904) 797-4199

AMELIA ISLAND
402 CENTRE ST STE ONE FERNANDINA BEACH, FL 32034
(904) 491-5436 FAX (904) 491-5479

PROJECT NO: 57010
ISSUE DATE: 10/15/07
DESIGNED BY: RJM

DRAFTED BY: RTC
CHECKED BY: CRB
DRAWING FILE: ST0018
XREF: 3.57010rev 1 570107B

CITIZENS STATE BANK

FINAL ENGINEERING PLANS

CLEARING AND EROSION CONTROL PLAN

CITY OF FERNANDINA BEACH FLORIDA

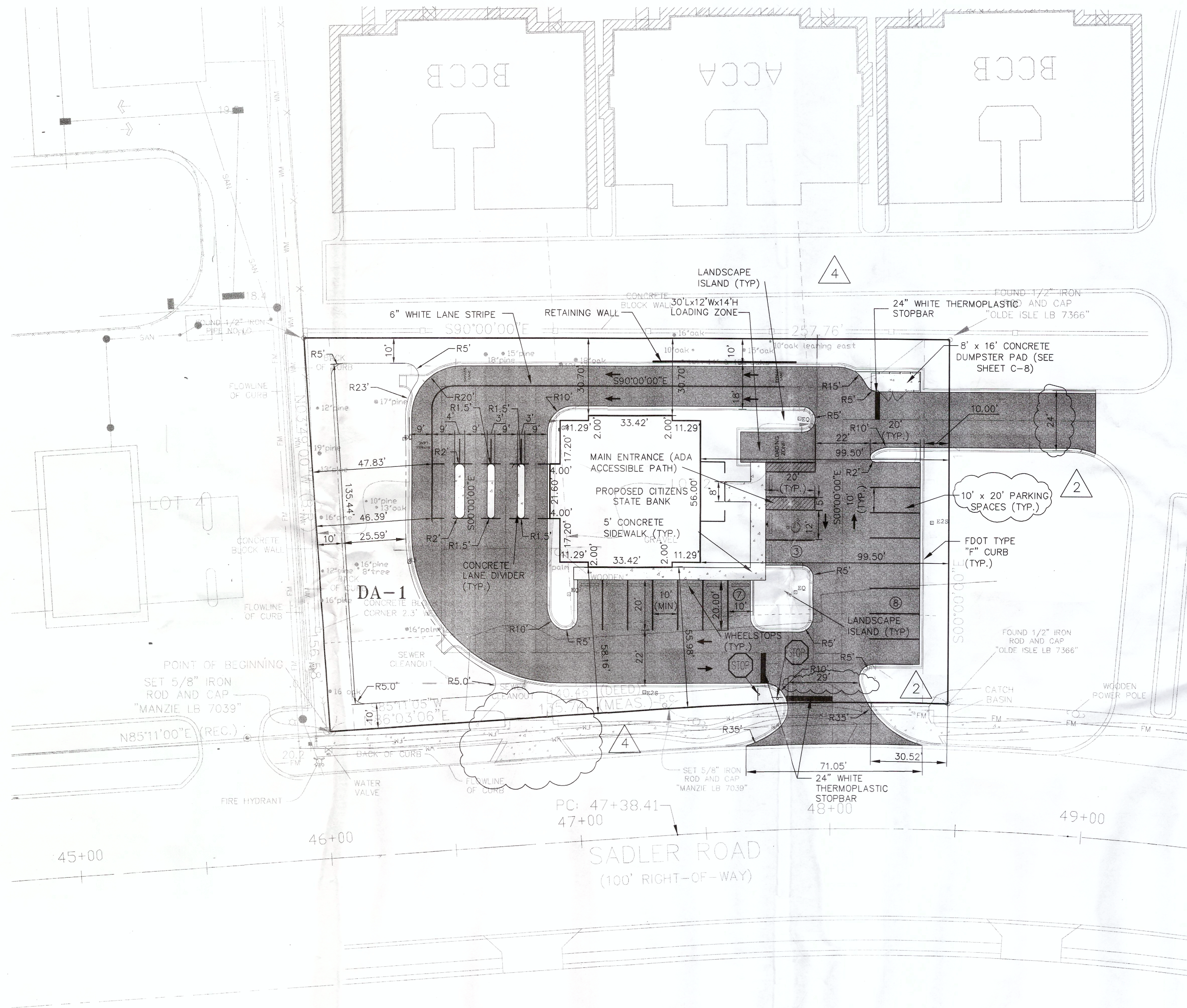
FILE LOCATION: S1-5

MAR 31 2008

SCALE: 1"= 20'

SHEET: C-4 OF 16

NOT VALID WITHOUT EMBOSSED SEAL



NOTES:

- 1.) UNLESS OTHERWISE INDICATED, DIMENSIONS SHOWN ARE TO FACE OF CURB.
- 2.) ALL PAVEMENT MARKINGS AND STRIPING WILL BE THERMOPLASTIC AND WILL BE INSTALLED IN ACCORDANCE WITH F.D.O.T. STANDARD INDEX #17348.
- 3.) HORIZONTAL CONTROL FOR BUILDING LAYOUT TO BE PERFORMED AND VERIFIED USING BUILDING FOOTPRINT FROM ARCHITECTURAL PLANS. BUILDING FOOTPRINT ON CIVIL PLANS IS SHOWN FOR REFERENCE PURPOSES ONLY. ANY HORIZONTAL CONTROL DISCREPANCIES BETWEEN CIVIL AND ARCHITECTURAL PLANS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO PROCEEDING WITH CONSTRUCTION.
- 4.) ALL CONSTRUCTION IN THE FDOT RIGHT OF WAY SHALL CONFORM TO THE LATEST EDITION OF THE FDOT STANDARD INDICES.

SITE DATA:

- 1.) PARCEL NUMBER: 00-00-31-117C-00CM-0000
- 2.) CURRENT ZONING: PUD (CAPE SOUND PUD)
- 3.) FLOOD ZONE:
THE SITE IS CURRENTLY CLASSIFIED BY
FEMA AS FLOOD ZONE X
PANEL # 120172-0006 D, DATED SEPTEMBER 30, 1988
- 4.) REQUIRED BUILDING SETBACK = 35 FT.
SIDE = 10 FT.

SITE AREA DATA:

TOTAL SITE AREA:	37,543 S.F. =	±0.86 AC.
PROPOSED IMPROVED AREA:	37,543 S.F. =	±0.86 AC.
TOTAL IMPERVIOUS AREA:	23,719 S.F. =	±0.63%
TOTAL PERVIOUS AREA:	13,824 S.F. =	±0.37%

LEGEND:

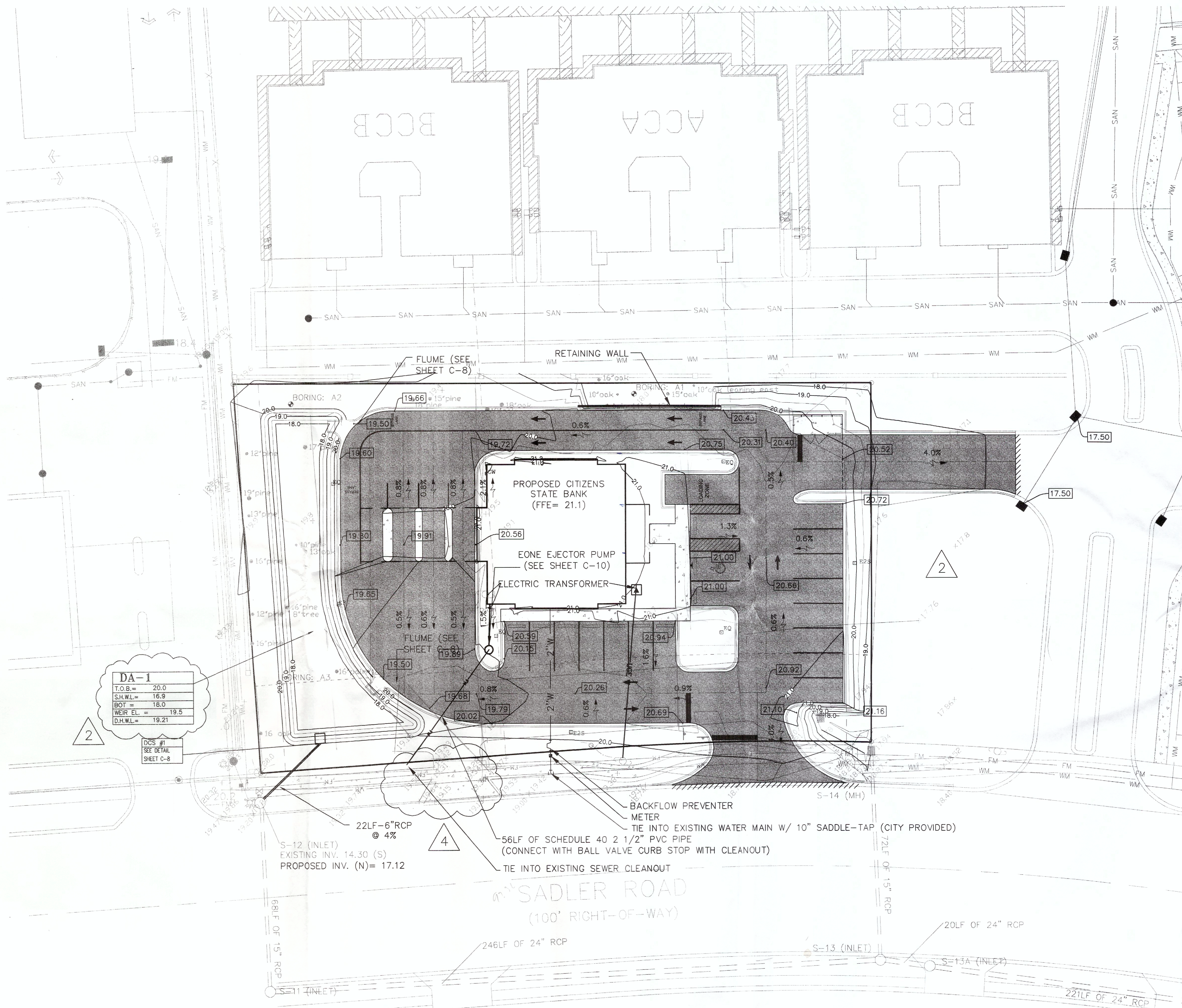
6" MPL	EXISTING TREES
10' OAK	EXISTING TREE W/ DESCRIPTION
25	EXISTING CONTOUR LINE W/ELEVATION
10.8	EXISTING SPOT GRADE
	PROPOSED ASPHALT PAVEMENT
	PROPOSED CONCRETE SIDEWALK

City of Fernandina Beach Site Plan Review	
Approval	Signature
Facility Mntnc. (ADA)	
Streets / Storm Water	
Water	
Waste Water	
Fire Department	
Police Department	
Parks and Recreation	
Engineering	
Planning	
Building	

CITIZENS STATE BANK FINAL ENGINEERING PLANS SITE LAYOUT PLAN

PROJECT NO. 57010	DRAFTED BY: RTC
ISSUE DATE: 10/15/07	CHECKED BY: CRB
DESIGNED BY: R.M.	DRAWING FILE: 07010050
	FILE LOCATION: S1-5

FILE LOCATION: S1-5	SCALE: 1"=20'
SHEET C-5 OF 16	



DA-1

T.O.B. =	20.0
S.H.W.L. =	16.9
BOT. =	18.0
WEIR EL. =	19.5
D.H.W.L. =	19.21

DOS #1
SEE DETAIL
SHEET C-8

LEGEND:

- EXISTING CONTOUR W/ ELEVATION
- EXISTING SPOT GRADE
- EXISTING TREE W/ DESCRIPTION
- PROPOSED CONTOUR W/ ELEV.
- MATCH EXISTING GRADE
- PROPOSED SPOT GRADE
- DIRECTION OF OVERLAND FLOW
- PROPOSED FINISHED FLOOR ELEVATION
- PROPOSED ASPHALT PAVEMENT
- PROPOSED CONCRETE SIDEWALK
- PROPOSED 4" PVC SANITARY SEWER SERVICE
- PROPOSED 4" PVC SANITARY FORCE MAIN
- PROPOSED 2" PVC WATER SERVICE
- PROPOSED UNDERGROUND ELECTRIC SERVICE

NOTES:

- PIPE LENGTHS SHOWN REPRESENT SCALED DISTANCES BETWEEN CENTERLINE OF DRAINAGE STRUCTURES AND TO END OF MITERED END SECTIONS.
- ALL IMPERVIOUS AREAS ARE TO BE COLLECTED INTO THE STORM DRAINAGE SYSTEM.
- UNDISTURBED AREAS TO REMAIN NATURAL
- PIPING FOR ROOF DRAINAGE SYSTEM TO BE TIED INTO STORM SYSTEM.
- THE REPRESENTATIVE OF UNIVERSAL ENGINEERING SHOULD ALSO BE PRESENT AND APPROVE THE LIMITS OF EXCAVATION FOR THE EXISTING DITCH. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND LEGAL DISPOSAL OF ALL UNSUITABLE MATERIALS.

City of Fernandina Beach Site Plan Review

Facility	Review	Signature
Facility Intake (ADA)		
Streets / Storm Water		
Water		
Waste Water		
Fire Department		
Police Department		
Parks and Recreation		
Engineering		
Planning		
Building		

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PROJECT NO. 57010
ISSUE DATE: 10/15/07
DESIGNED BY: R.M.

CITIZENS STATE BANK
FINAL ENGINEERING PLANS
PAVING, GRADING, DRAINAGE, & UTILITIES PLAN

FILE LOCATION: S1-5

MAR 31 2008
NOT VALID WITHOUT EMBOSSED SEAL
SHEET C-6 OF 16

DRMOND BEACH, FL 32178
56 SETON DRIVE
(904) 677-2482 FAX (904) 677-2585

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4475 U.S. 1 S. SITE # 601 ST. AUGUSTINE, FL 32086
(904) 797-1810 FAX (904) 797-4159

AMELIA ISLAND, FL 32034
482 CENTRE ST.
(904) 491-5488 FAX (904) 491-5479

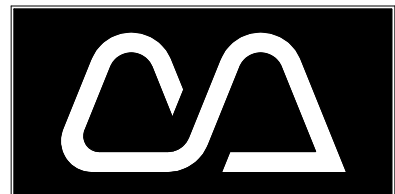
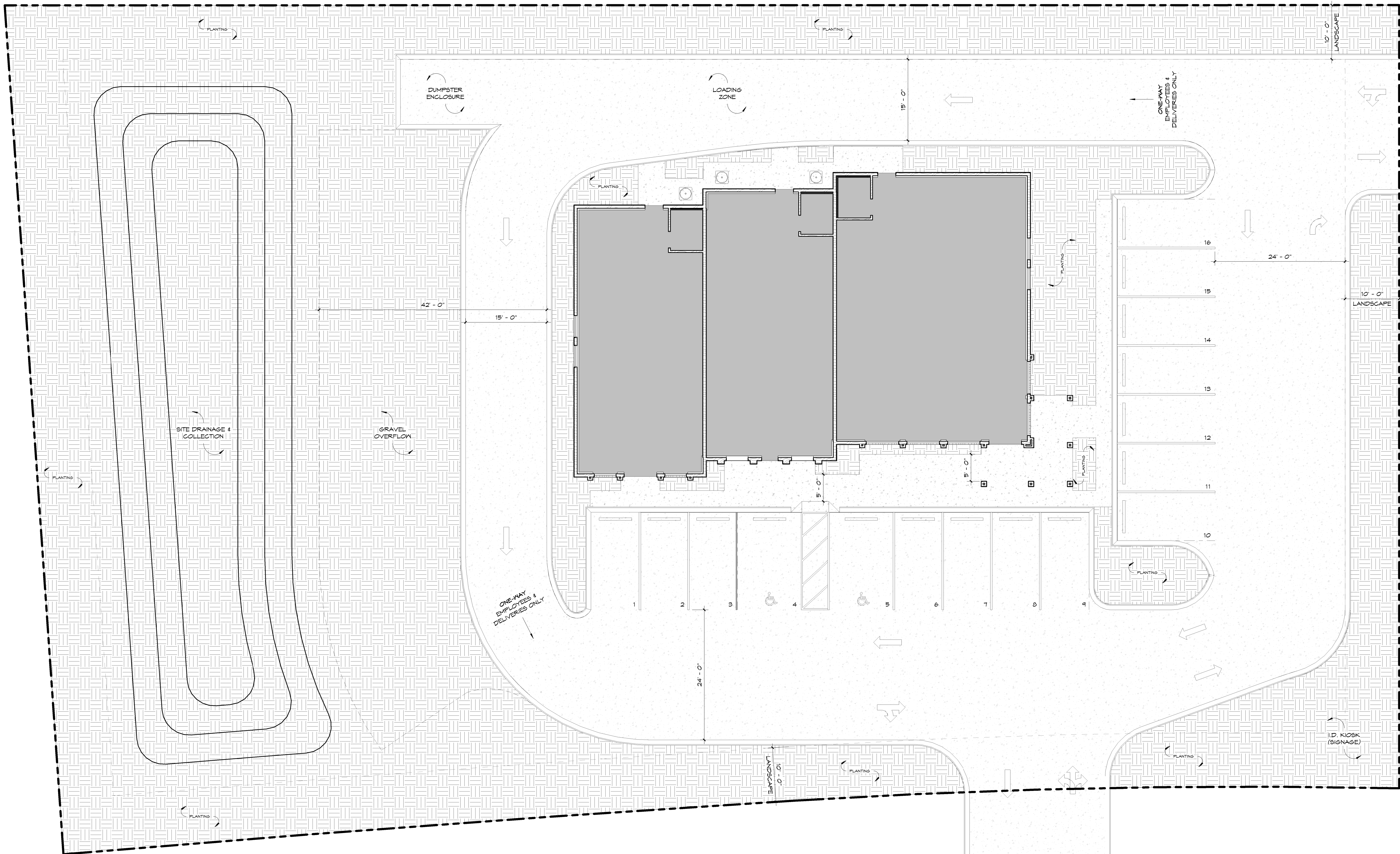
DRAWING INDEX

C-102 PROPOSED SITE PLAN
A-101 LEVEL ONE
A-201 EXTERIOR ELEVATIONS
A-202 EXTERIOR ELEVATIONS



CRAWFORD CENTER

2149 SADLER ROAD
FERNANDINA BEACH
NASSAU COUNTY, FLORIDA



Cotner Associates, Inc.
Architects
9 South Third Street
Fernandina Beach, Florida 32034
PH (904)277-4593 FAX (904)277-6734

Revisions

No. Date

Progress Prints

Issued To/For Date

REVIEW 08-26-19

Not Published
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NOTE: DRAWING SCALE IS 1/2 OF SCALE LISTED IF PRINTED ON 11X17 MEDIA

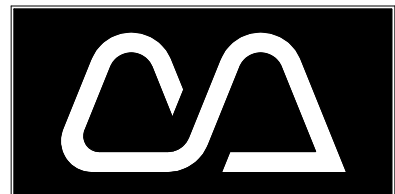
CRANFORD CENTER
2149 SADLER ROAD
FERNANDINA BEACH
NASSAU COUNTY, FLORIDA

Project: 181489

Released:

POST-DEVELOPED SITE

Sheet Number
C-102
Page of



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LDC REQUIREMENTS

LOT AREA: 37,897 sq. ft.
PERVIOUS AREA: 18,231 sq. ft.
IMPERVIOUS AREA: 19,666 sq. ft.

$19,666 / 37,897 = 0.5198 \times 100 = 52\%$ IMPERVIOUS
52% = 60% MAXIMUM ALLOWED

GROSS BUILDING AREA: 4,232 sq. ft.
4,232 sq. ft. / 300 sq. ft. = 14 x 10% = 15.5

ALLOWABLE PARKING SPACES = 16 SPACES

WIND DESIGN / OTHER PER FBC 2017

WIND ZONE: 128 mph

EXPOSURE: C

IMPORTANCE FACTOR: 1

RISK CATEGORY: II

METHOD OF OPENING PROTECTION: NA

DESIGN PRESSURE: 40 PSF OR GREATER

TYPE OF CONSTRUCTION: V

FLOOD ZONE DESIGNATION & BASE FLOOD ELEVATION: "X"

PROPOSED ELEVATION OF 1ST HABITABLE FLOOR: ELEV. 21.0' +/-

PROPOSED ELEVATION OF GROUND SLAB (IF UTILIZED): ELEV. 21.0' +/-

PROPOSED ELEVATION OF GRADE IMMEDIATELY ADJACENT TO STRUCTURE: ELEV. 20.0' +/-

MAXIMUM ROOF HEIGHT: 21'-0" +/-

NUMBER OF STORIES: ONE

ZONING DESIGNATION: COMMERCIAL

SETBACKS PER ZONING: Front: 10'-0" / Side: 10'-0" / Rear: 10'-0"

TOTAL NEW CONDITIONED AREA: 4,232 sq. ft.

TOTAL NEW UNCONDITIONED AREA: N/A

TOTAL NEW COVERED PORCH AREA: 353 sq. ft.

LOT AREA: 37,897 sq. ft. +/-

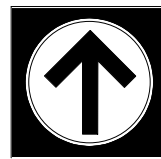
LOT COVERAGE: 52% +/- (TOTAL IMPERVIOUS)

CRANFORD CENTER
2149 SADLER ROAD
FERNANDINA BEACH
NASSAU COUNTY, FLORIDA

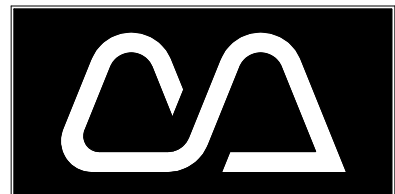
Project: 181489

Released:

LEVEL ONE



Sheet Number
A-101
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9 South Third Street
Fernandina Beach, Florida 32034
PH (904)277-4593 FAX (904)277-6734

Revisions	
No.	Date

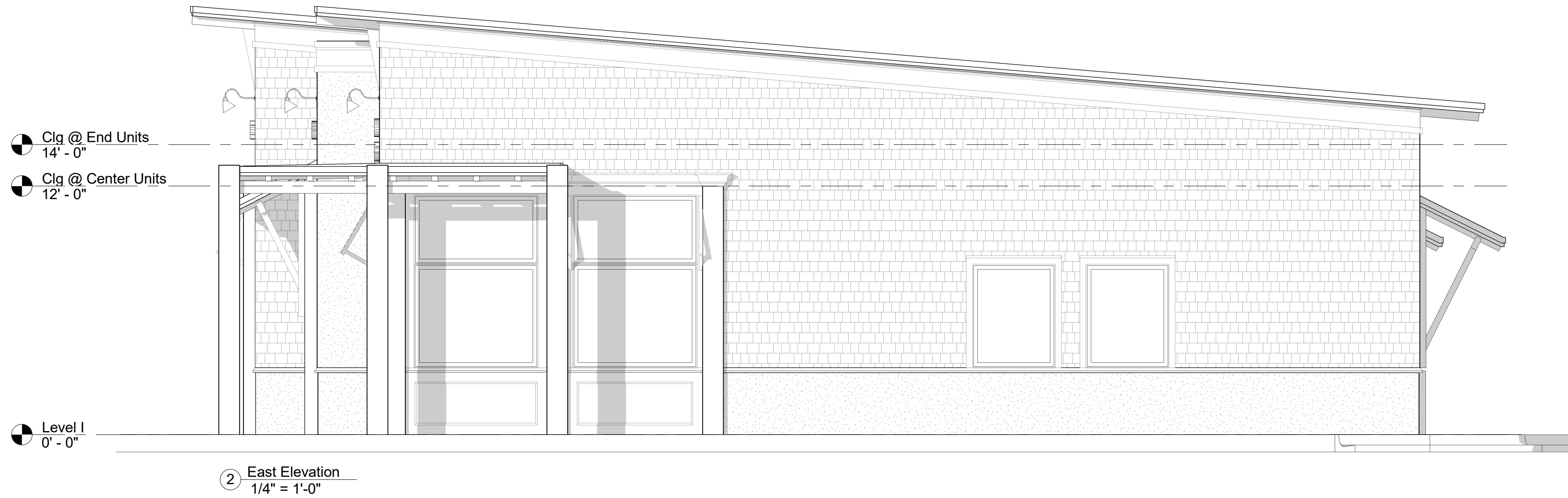
Progress Prints	
Issued To/For	Date

REVIEW 08-26-19

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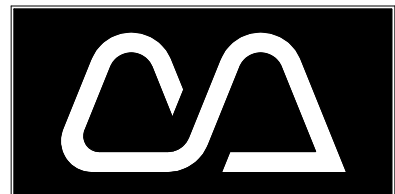
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CRAWFORD CENTER
2149 SADLER ROAD
FERNANDINA BEACH
NASSAU COUNTY, FLORIDA

Project: 181489
Released:

EXT. ELEVATIONS
Sheet Number
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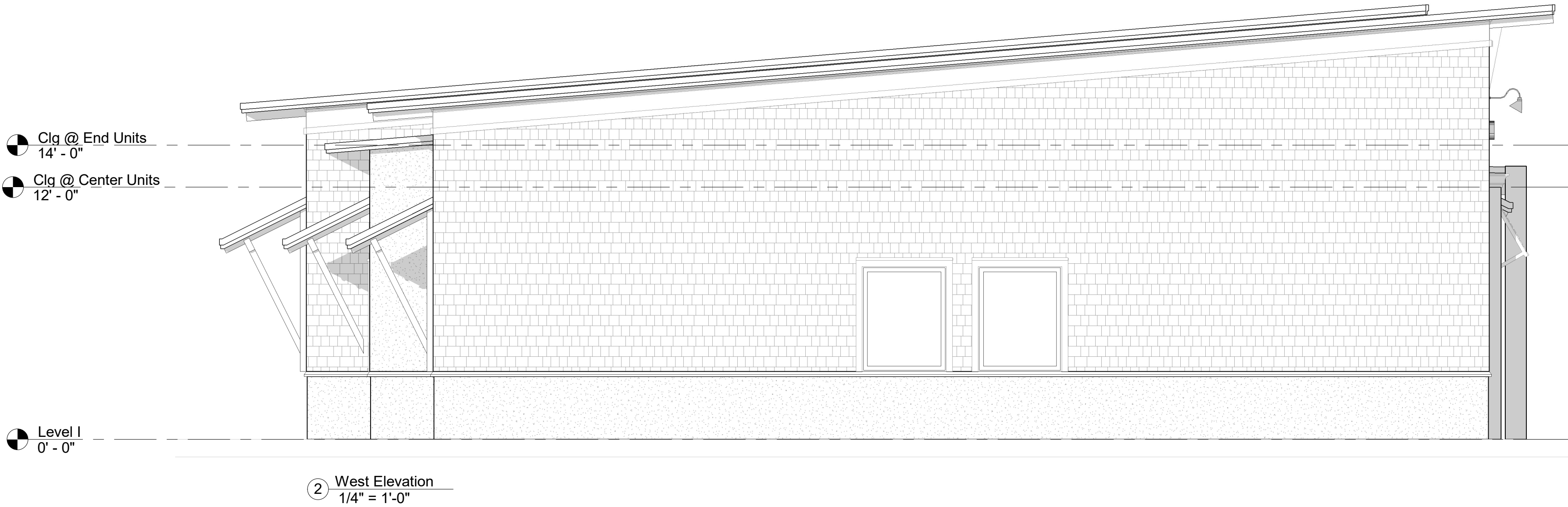
Revisions	
No.	Date

Progress Prints	
Issued To/For	Date
REVIEW	08-26-19

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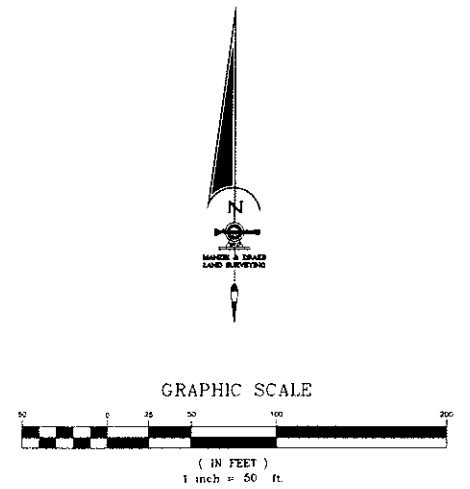


CRANFORD CENTER
2149 SADLER ROAD
FERNANDINA BEACH
NASSAU COUNTY, FLORIDA

Project: 181489
Released:

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Sheet Number
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AS RECORDED IN PLAT BOOK 1 , PAGE 10 OF THE
PUBLIC RECORDS OF NASSAU COUNTY, FLORIDA.
TOGETHER WITH ABANDONED RIGHT-OF-WAY
DESCRIBED IN OFFICIAL RECORDS BOOK 790,
PAGES 1658 THROUGH 1660, OF THE OFFICIAL
RECORDS OF NASSAU COUNTY, FLORIDA.



CERTIFIED TO:
CITY OF FERNANDINA BEACH
PARKS & RECREATION DEPARTMENT

P.I.N. = 00-00-30-044A-0019-0000
LANDS OF THE CITY OF
FERNANDINA BEACH

LOT 21
P.L.N. = 00-00-30-044A-0021-0000
DTE OF FERNANDINA BEACH

SURVEY NOTES:

- 1) The "Legal Description" hereon is in accord with the description provided by the client
- 2) Underground improvements were not located or shown.
- 3) Lands shown hereon were not abstracted by this office for easements, rights-of-way, ownership or other instruments of record.
- 4) Bearings shown hereon are based on 89°34'30" for the Southern right-of-way line of the 1st and 2nd Right of Way. The bearing reference line is indicated as thus (89°).
- 5) "Unless it bears the signature and the original raised seal of a Florida licensed surveyor and mapmaker, this map/report is for informational purposes only and is not valid."
- 6) The property shown hereon lies within Flood Zone "X" as per F.E.M.A. Flood Insurance Rate Map, Panel 160498-01776, dated 08/07/2017. Flood Zone information listed above and shown on this Survey is provided as a courtesy and is approximate at best. The Surveyor should not be held responsible for the accuracy of the flood zone information. The Surveyor assumes no liability for its accuracy. Flood Zone information is not covered by the certification hereon and is not required to be shown per Chapter 55-17, Florida Administrative Code, pursuant to s. 472.007, Florida Statutes.
- 7) This survey is protected by copyright and is certified only to the entities listed and only for this particular transaction. Any use or reproduction of this survey without the express written permission of the surveyor is prohibited. Use of this survey in any subsequent transactions is prohibited. The surveyor warrants that the information on this survey is accurate as of the date of this survey. No warranty is made for the use of this survey in any subsequent transactions or for any parties in future transactions. No entity other than those listed should rely upon this survey.

THE INFORMATION SHOWN HEREON MEETS THE STANDARDS OF PRACTICE SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS CHAPTER 17, F.A.C. ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES. <i>Michael A. Manzie</i> MICHAEL A. MANZIE, P.L.S. 4069		MANZIE & DRAKE LAND SURVEYING 117 South Ninth Street, Ft. Manizales Beach, FL 32034 (904) 491-5700 www.ManzieAndDrake.com Certificate of Authorization Number "LB 7039" "OUR SIGHTS ARE ON THE FUTURE. SET YOUR SITES ON US."	
SCALE: 1"=50'	JOB NO: 20314	DATE: 05/15/2018	CADD: BH
F.B. NO: S-322	PAGE NO: 3	FIELD CREW: GS	FILE NO: C-873

Engineering Plans

For

Simmon's Road Park

for

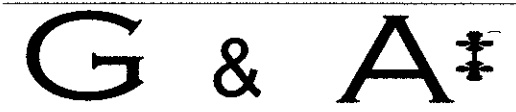
City of Fernandina Beach
Parks and Recreation Department

Main Beach Park
Fernandina Beach, FL

Gillette & Associates, Inc.

Civil & Environmental Engineering
Mechanical & Structural Engineering
Permitting & Construction Management

20 South 4th Street Amelia Island, Florida 32034
Phone: (904) 261-8819



Issue Date:
August 21, 2019

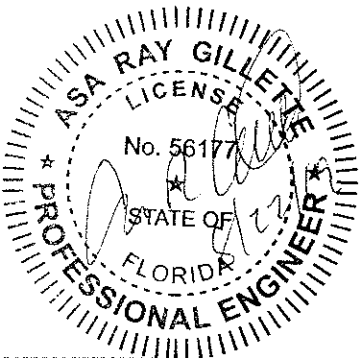
Simmon's Road Park

FOR

City of Fernandina Beach
Parks and Recreation Department

BY

RELEASED FOR CONSTRUCTION



G&A Project
No.:19-10-08

GENERAL NOTES

INDEX

SITE / GEOMETRY

WATER NOTES

SHEET

DESCRIPTION

1. ALL WORK SHALL BE PERFORMED IN A SAFE MANNER. ALL SAFETY RULES AND GUIDELINES OF OSHA SHALL BE FOLLOWED. THE CONTRACTOR SHALL BE WHOLLY RESPONSIBLE FOR ANY INJURIES OF HIS EMPLOYEES, AND ANY DAMAGE TO PRIVATE PROPERTY OF PERSONS DURING THE COURSE OF THIS PROJECT. ALL COSTS ASSOCIATED WITH COMPLYING WITH OSHA REGULATIONS AND THE FLORIDA TRENCH SAFETY ACT MUST BE INCLUDED IN THE CONTRACTOR'S PRICE FOR PERFORMING THE WORK.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VISITING THE JOB SITE PRIOR TO PREPARING THE BID FOR THE PURPOSE OF FAMILIARIZING HIMSELF WITH THE NATURE AND THE EXTENT OF THE WORK AND LOCAL CONDITIONS, EITHER SURFACE OR SUBSURFACE, WHICH MAY AFFECT THE WORK TO BE PERFORMED, AND THE EQUIPMENT, LABOR AND MATERIALS REQUIRED. FAILURE TO DO SO WILL NOT RELIEVE THE CONTRACTOR OF COMPLETE PERFORMANCE UNDER THIS CONTRACT. THE CONTRACTOR IS URGED TO TAKE COLOR PHOTOGRAPHS ALONG THE ROUTE OF THIS PROJECT TO RECORD EXISTING CONDITIONS PRIOR TO CONSTRUCTION, AND TO AID IN RESOLVING POSSIBLE FUTURE COMPLAINTS THAT MAY OCCUR DUE TO CONSTRUCTION OF THE PROJECT. ALL COSTS ASSOCIATED WITH PRELIMINARY INVESTIGATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

3. ALL IMPROVEMENTS SHOWN ARE TO BE WARRANTED BY THE CONTRACTOR TO THE DEVELOPER.

4. ELEVATIONS ARE BASED ON NAD DATUM OF 1988.

5. TOPOGRAPHIC AND BOUNDARY INFORMATION WAS PROVIDED BY MANZIE & DRAKE LAND SURVEYING (904-491-5700).

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY BUILDING, RIGHT-OF-WAY PERMITS NOT PROVIDED AND INSURANCE REQUIRED FOR THE PROJECT.

7. THE CONTRACTOR SHALL COORDINATE THE WORK WITHIN CITY, COUNTY OR STATE RIGHT-OF-WAY WITH THE PROPER AGENCIES FOR MAINTENANCE OF TRAFFIC AND METHOD OF CONSTRUCTION & REPAIR.

8. THE CONTRACTOR SHALL ADVISE THE OWNER'S AUTHORIZED REPRESENTATIVE OF PLANNED WORK SCHEDULE. THE CONTRACTOR SHALL COORDINATE THEIR CONSTRUCTION WITH ALL OTHER CONTRACTORS IN THE EVENT OF ANY CONFLICT. WHATSOEVER, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD AND THE OWNER PRIOR TO PROCEEDING WITH CONSTRUCTION.

9. AS-BUILT DRAWINGS - AS-BUILTS ARE REQUIRED TO BE SIGNED AND SEALED BY A FLORIDA REGISTERED LAND SURVEYOR. THEREFORE, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTRACT WITH A LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA FOR THE PREPARATION, FIELD LOCATIONS, CERTIFICATION, AND SUBMITTAL OF AS-BUILT DRAWINGS.

10. AS-BUILT RECORD DATA AND INFORMATION SHALL BE MAINTAINED BY THE CONTRACTOR. RECORD DRAWINGS SHALL BE SUPPLIED TO THE ENGINEER.

11. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTION OF ALL SURVEY AND PROPERTY MONUMENTS. IF A MONUMENT IS DISTURBED, THE CONTRACTOR SHALL CONTRACT WITH THE SURVEYOR OF RECORD FOR REINSTALLATION OF THE MONUMENT.

12. ALL DEBRIS RESULTING FROM ALL ACTIVITIES SHALL BE DISPOSED OF OFF-SITE BY CONTRACTOR ON A DAILY BASIS.

13. ALL EXCESS SUITABLE AND UNSUITABLE MATERIALS SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR UNLESS DIRECTED OTHERWISE BY THE ENGINEER.

14. ALL EXISTING TREES LISTED TO REMAIN SHALL BE PRESERVED AND PROTECTED.

15. THE LOCATION OF ALL EXISTING UTILITIES, STRUCTURES, AND IMPROVEMENTS ON THE DRAWINGS ARE BASED ON LIMITED INFORMATION AND MAY NOT HAVE BEEN FIELD VERIFIED. THE LOCATIONS ARE APPROXIMATE. THE CONTRACTOR SHALL NOTIFY RESPECTIVE UTILITY OWNERS AND FIELD VERIFY LOCATIONS OF EXISTING UTILITIES AND OTHER IMPROVEMENTS PRIOR TO COMMENCING ANY CONSTRUCTION. IF THE LOCATIONS SHOWN ARE CONTRARY TO ACTUAL FIELD LOCATIONS, THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER OF THE DISCREPANCY. THE DISCREPANCY SHALL BE RESOLVED PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING IN AREAS NEAR EXISTING UTILITY IMPROVEMENTS AND SHALL BE RESPONSIBLE FOR REPAIRS OR PAYMENTS FOR ALL DAMAGE MADE TO EXISTING UTILITIES OR OTHER IMPROVEMENTS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. THE CONTRACTOR SHALL VERIFY ALL GRADES, INVERTS, AND TYPE OF MATERIAL OF EXISTING UTILITIES TO WHICH THEY SHALL CONNECT.

16. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER ON ALL MATERIALS, FOR REVIEW AND APPROVAL PRIOR TO PURCHASE OR CONSTRUCTION OF ANY UTILITY OR STRUCTURE.

17. UNSUITABLE MATERIALS UNDER WATER, SEWER, OR STORM PIPE AND/OR STRUCTURES SHALL BE REMOVED AND REPLACED WITH SELECTED BACKFILL COMPACTED TO 98% OF ITS MAXIMUM DENSITY AS DETERMINED BY THE MODIFIED PROCTOR TEST (ASTM D1557).

17B. ALL FINISH FLOORS SHOWN ON THE PLANS ARE MINIMUM ELEVATIONS.

18. ALL WATER & SEWER CONSTRUCTION SHALL BE ACCOMPLISHED BY AN UNDERGROUND UTILITY CONTRACTOR LICENSED UNDER THE PROVISIONS OF CHAPTER 489, FLORIDA STATUTES.

19. WHEN DEWATERING CAPACITY REQUIRES A PERMIT (DUPIT), IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THE PERMIT THROUGH THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT.

20. WATER MAINS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED SANITARY HAZARD. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE WHERE PARALLEL WATER AND SEWER MAINS HAVE LESS THAN 10 FOOT HORIZONTAL SEPARATION. 20 FOOT LENGTHS OF C900 (DR18) WATER QUALITY PIPE SHALL BE USED WITH THE JOINTS STAGGERED AT 10 FOOT INTERVALS. THE PIPES SHALL BE PLACED IN SEPARATE TRENCHES WITH THE WATER MAIN AT LEAST 18 INCHES ABOVE THE SEWER.

21. WATER MAINS CROSSING SANITARY HAZARDS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF THE SEWER MAIN WHERE WATER AND SEWER MAINS CROSS WITH BETWEEN 18 INCHES AND 6 INCHES OF VERTICAL CLEARANCE. A 20 FOOT SECTION OF C900 (DR18) WATER QUALITY PIPE SHALL BE CENTERED ON THE POINT OF THE CROSSING. THE CONTRACTOR SHALL FIELD VERIFY THE VERTICAL SEPARATION. THE MINIMUM SEPARATION BETWEEN WATER AND SEWER PIPES IS TO BE 6 INCHES OUTSIDE DIAMETER TO OUTSIDE DIAMETER.

22. NO WATER MAIN PIPE SHALL PASS THROUGH OR COME IN CONTACT WITH ANY PART OF A SEWER MANHOLE.

23. BLANK

24. TRACER WIRE SHALL BE PROVIDED ON ALL WATER MAINS AND FORCE MAINS. TRACER WIRE SHALL BE #10 UF SOLID COPPER WIRE, COATED, AND SUITABLE FOR BURIAL. COATING SHALL BE BLUE FOR WATER AND GREEN FOR SEWER MAIN CONNECTIONS. WIRE SHALL BE ATTACHED DIRECTLY TO TOP OF PIPE AND BROUGHT INTO EACH VALVE BOX AND COILED TO ALLOW FOR EASY ACCESS AND EXTENSION ABOVE FINISHED GRADE FOR ATTACHMENT OF LOCATING EQUIPMENT.

25. ALL PIPE LENGTHS ARE APPROXIMATE DIMENSIONS. ALL DRAINAGE STRUCTURES SHALL BE CONSTRUCTED TO CONFORM WITH TYPICAL SECTIONS AND DETAILS AS SHOWN ON THE MISCELLANEOUS DETAILS SHEET AND IN ACCORDANCE WITH THE SPECIFICATIONS.

26. ALL UNDERGROUND UTILITIES MUST BE INSTALLED PRIOR TO PREPARATION OF SUBGRADE FOR PAVEMENT.

27. GRADES SHOWN ON PLANS ARE EDGE OF PAVEMENT FINISHED GRADES UNLESS OTHERWISE NOTED.

28. SHOULD THE SURFACE OR SUBSURFACE CONDITIONS VARY FROM WHAT IS SHOWN ON THE PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER.

29. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE SEEDED AND MULCHED UNLESS OTHERWISE SPECIFICALLY STATED.

30. THE CONTRACTOR IS RESPONSIBLE FOR THE CONTROL OF SEDIMENT-LADEN RUNOFF RESULTING FROM STORM EVENTS DURING THE CONSTRUCTION PHASE. EROSION CONTROL FACILITIES SHOULD BE INSTALLED EARLY DURING THE CONSTRUCTION PERIOD SO AS TO PREVENT THE TRANSPORT OF SEDIMENT INTO SURFACE WATERS. REVEGETATION AND STABILIZATION OF DISTURBED AREAS SHOULD BE ACCOMPLISHED IMMEDIATELY TO REDUCE THE POTENTIAL FOR FURTHER SOIL EROSION.

31. ANY DISCREPANCIES ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND COUNTY/CITY BEFORE COMMENCING WORK.

32. MINIMUM COVER OVER PIPES SHALL BE 36" UNLESS OTHERWISE INDICATED.

33. ALL UNDERGROUND UTILITY COMPANIES SHALL BE CONTACTED AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.

34. IN ADDITION TO THE SPECIFICATIONS AND DETAILS PROVIDED FOR THIS CONTRACT, THE FLORIDA COUNTY STANDARD DETAILS AND SPECIFICATIONS (LATEST REVISION) SHALL ALSO BE USED FOR ANY ITEMS NOT COVERED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN A SET OF STANDARD DETAILS AND SPECIFICATIONS FROM FLORIDA COUNTY.

35. BACKFILL MATERIAL SHALL BE COMPACTED TO 100% (12) PER CITY OF FB REQUIREMENTS UNDER EXISTING AND PROPOSED ROADWAYS.

36. NO FIELD CHANGES OR DEVIATIONS FROM DESIGN TO BE MADE WITHOUT PRIOR APPROVAL OF THE ENGINEER.

37. STATIONING REFERS TO THE CENTERLINE OF THE ROADWAY EXCEPT AS NOTED ON PLANS WHERE PAVEMENT SPLITS. THE STATIONING FOLLOWS THE INSIDE EDGE OF PAVEMENT UNTIL ROADWAY TRANSITIONS BACK TO THE TYPICAL ROADWAY SECTION.

38. ALL CONSTRUCTION, MATERIAL AND WORKMANSHIP ARE TO BE IN ACCORDANCE WITH CITY OF FB AND COUNTY STANDARDS.

1. WATER MAINS SHALL HAVE A MINIMUM OF 36" COVER UNDER PAVEMENT OR 30" COVER FROM FINISHED GRADE UNLESS OTHERWISE SHOWN. ALL WATER MAINS SHALL BE FLUSHED IN ACCORDANCE WITH, AND UNDER THE DIRECTION OF THE UTILITY COMPANY.

2. THRUST RESTRAINTS ARE REQUIRED IN ACCORDANCE WITH THE UTILITY COMPANY STANDARDS WHERE WATER MAINS ARE TERMINATED AND AT ALL BENDS AND TEES.

3. THE RODS SHALL BE INSTALLED ON ALL VALVES LOCATED AT FITTINGS, ALL 10" AND LARGER VALVES AND LARGER SHALL REQUIRE 14" THE RODS. MEGA LUG JOINT RESTRAINTS MAY BE USED IN LIEU OF THRUST BLOCKS OR THE RODS.

4. UNLESS OTHERWISE NOTED, WATER MAINS ARE TO BE PVC DR18, DR 25, C-900 (BLUE), CLASS 150.

5. ALL WATER MAINS SHALL BE BACTERIOLOGICAL AND PRESSURE TESTED IN ACCORDANCE WITH AWWA C-600. NO CONNECTION TO EXISTING POTABLE WATER SYSTEM SHALL BE ALLOWED UNTIL ALL PROPOSED WATER MAINS HAVE BEEN PRESSURE TESTED, DISINFECTED, AND CLEARED FOR SERVICE. THE UTILITY COMPANY'S AUTHORIZED REPRESENTATIVE MUST BE NOTIFIED 48 HOURS PRIOR TO PERFORMING THE PRESSURE TEST AND MUST BE PRESENT.

6. THE CONTRACTOR SHALL AVOID SERVICE INTERRUPTIONS AND MAINTAIN ANY EXISTING WATER SERVICE TO MEET THE SYSTEM DEMANDS AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFICATION OF AFFECTED CUSTOMERS OF THE UTILITY. A MINIMUM OF 48 HOURS IN ADVANCE OF ANY INTERRUPTION OF SERVICE, BOIL WATER NOTICES SHALL BE DELIVERED IN ACCORDANCE WITH THE UTILITY COMPANY BOIL WATER NOTICE REQUIREMENTS.

7. ALL MAIN FLUSHING POINTS SHALL BE SAME SIZE AS MAIN UP TO 8 INCH WATER MAINS. FLUSHING POINTS FOR MAINS LARGER THAN 8 INCH SHALL BE REDUCED TO 8 INCH.

8. ALL WATER MAINS SHALL BE DISINFECTED USING LIQUID CHLORINE OR HYPOCHLORITES IN ACCORDANCE TO AWWA C-651-86. WATER IN MAIN SHALL MAINTAIN A CHLORINE RESIDUAL OF 50 MG/L FOR A MINIMUM OF 24 HOURS. WATER MAIN SHALL NOT BE PLACED IN SERVICE UNTIL CLEARANCE HAS BEEN PROVIDED BY THE APPROPRIATE REGULATING AGENCY AND CITY OF FERNANDINA BEACH UTILITIES DEPARTMENT.

9. IF SOLVENT CONTAMINATION IS FOUND IN THE PIPE TRENCH, WORK SHALL BE STOPPED AND THE PROPER AUTHORITIES NOTIFIED. BASED ON APPROVAL OF THE PERMITTING AGENCY, DUCTILE IRON PIPE, FITTINGS, AND SOLVENT RESISTANT GASKET MATERIAL SUCH AS FLUOROCARBON SHALL BE USED IN THE CONTAMINATED AREA. THE DUCTILE IRON PIPE SHALL EXTEND AT LEAST 100 FEET BEYOND ANY SOLVENT NOTED. ANY CONTAMINATED SOIL THAT IS EXCAVATED SHALL BE PLACED ON AN IMPERMEABLE MAT AND COVERED WITH A WATER PROOF COVERING. THE PROPER AUTHORITIES WILL BE NOTIFIED AND THE CONTAMINATED SOIL HELD FOR PROPER DISPOSAL.

10. 2" FLUSHING HYDRANTS SHALL BE INSTALLED AT ALL DEAD END LINES AND MAIN LINE STUB-OUTS.

11. A SEPARATE WATER SERVICE SHALL BE REQUIRED FOR EACH UNIT SERVED AND SHALL BE INSTALLED 3 FEET EITHER SIDE OF PROPERTY LINE. ALL WATER SERVICES SHALL BE MARKED WITH A "W" ETCHED ON THE CURB. ALL VALVES SHALL BE MARKED WITH A "V" ETCHED ON THE CURB.

12. ALL BACKFLOW PREVENTION ASSEMBLIES SHALL BE INSTALLED IN ACCORDANCE WITH THE UTILITY COMPANY'S STANDARDS.

13. ALL BACKFLOW PREVENTION ASSEMBLIES SHALL BE INSTALLED AT THE CONSUMER'S METER OR AT THE PROPERTY LINE WHEN A METER IS NOT USED.

14. BACKFLOW PREVENTION ASSEMBLIES SHALL BE TESTED BY A CERTIFIED BACKFLOW TECHNICIAN. TEST RESULTS SHALL BE SUBMITTED TO AND APPROVED BY THE UTILITY COMPANY PRIOR TO ACCEPTANCE OF INSTALLATION.

15. MAXIMUM DEPTH ON WATER SERVICES TO METER TO BE 36".

FIRE NOTES

1. WHERE UNDERGROUND WATER MAINS AND HYDRANTS ARE TO BE PROVIDED, THEY SHALL BE INSTALLED, COMPLETED, AND IN SERVICE PRIOR TO COMMENCING CONSTRUCTION WORK ON ANY STRUCTURE. (NFPA 1, 16.4.3.1, 2009 EDITION).

2. CLEARANCES OF SEVEN AND ONE HALF FEET (7 FT 6 IN) IN FRONT OF, AND TO THE SIDES OF THE FIRE HYDRANT, WITH A FOUR FOOT CLEARANCE TO THE REAR OF THE HYDRANT. (NFPA 1, 18.3.4.1, 2009).

3. NEW FIRE HYDRANT(S) SHALL BE INSTALLED SO THAT POSITIONED NOT MORE THAN 7 FEET 6 INCHES AWAY FROM CURB OR BEAM OF THE ROADWAY.

LEGEND

SEWER NOTES

EXISTING VALVE

WM EXISTING WATER LINE

SAN EXISTING SANITARY SEWER

EXISTING FIRE HYDRANT

SAN PROPOSED SANITARY SEWER

WM PROPOSED WATER LINE

PROPOSED FIRE HYDRANT

EXISTING EDGE OF PAVEMENT

EXISTING PROPERTY LINE

PROPOSED SPOT ELEVATION

DRAINAGE STRUCTURE

PIPE

PROPOSED CONTOUR

PROPOSED EDGE OF PAVEMENT

PROPOSED PROPERTY LINE

PROPOSED R.O.W. LINE

EXISTING CONTOUR

1. THE CONTRACTOR SHALL PROVIDE TO THE ENGINEER OF RECORD A SCHEDULE OF INVERT ELEVATIONS OF ALL SANITARY MANHOLES PRIOR TO THE PLACEMENT OF THE LINE ROCK BASE COURSE. THIS SCHEDULE TO BE PROVIDED BY THE REGISTERED LAND SURVEYOR SUBMITTING THE AS-BUILT DRAWINGS FOR THIS PROJECT.

2. SANITARY SEWER SERVICES SHALL BE 6" PVC WITH A MINIMUM SLOPE OF 0.006 FEET PER FOOT AND SHALL BE TERMINATED AT THE RIGHT-OF-WAY LINE WITH A DEPTH OF 24" TO 48" FROM THE FINAL FINISHED GRADE OF THE DEVELOPED LOTS. DEPTHS GREATER THAN 48" FROM FINAL FINISHED GRADE SHALL BE REQUESTED BY THE DEVELOPER AT HIS COST.

3. GRAVITY SEWER TO BE CLEANED & TV TESTED BY DEVELOPER AT DEVELOPER'S EXPENSE

4. ALL MANHOLE FRAMES AND COVERS TO BE ADJUSTED TO FINAL FINISHED GRADE.

5. A SEPARATE SEWER SERVICE (S.M.S.) SHALL BE PROVIDED TO THE RIGHT-OF-WAY FOR EACH LOT BEING SERVED. AN "S" SHALL BE ETCHED INTO THE CURB DIRECTLY OVER EACH SERVICE LINE OR IN THE STREET SIDE OF A SIDEWALK IN LINE WITH THE CLEANOUT.

6. GRAVITY SEWER TO BE GREEN IN COLOR

7. NEW GRAVITY SEWER SYSTEM SHALL BE PLUGGED AT NEAREST EXISTING DOWNSTREAM MANHOLE AND SHALL NOT BE REMOVED WITHOUT AUTHORIZATION FROM THE UTILITY COMPANY. EXISTING MANHOLES TO BE COREBORED AND ARRANGEMENTS MADE TO BE REFURBISHED WITH COMPATIBLE MATERIALS IF THE EXISTING MANHOLE IS ALLOWED TO BE USED.

8. FINISHED FLOOR ELEVATIONS SHALL BE GREATER (HIGHER) THAN THE ELEVATION OF THE MANHOLE NEAREST THE SERVICE LATERAL IN ORDER TO AVOID A POTENTIAL BACKUP OF SEWERAGE IN THE HOUSE OR BUILDING.

9. ALL GRAVITY SEWER PIPE TO A 10 FOOT DEPTH OF COVER SHALL BE SDR-26 PVC PIPE (MINIMUM GRAVITY) SEWER PIPE WITH COVER OF 15 FEET (AND IN EASEMENTS) AND GREATER SHALL BE C900 - DR18 JOINT SHALL BE OF THE BELL AND SPIGOT TYPE AND MEET THE REQUIREMENTS OF THE PIPE REFERRED BEING USED.

10. WHEN A PROPERTY LINE CAN NOT BE DEFINED, THE SEWER CLEANOUT SHALL BE PLACED IN AN UNPAVED AREA AT A DISTANCE NO GREATER THAN 30 FEET FROM THE SEWER MAIN.

11. NOTE: DR18 TO BE USED ON SEWER LINE CROSSING WHERE STORM DRAIN IS WITHIN 24 INCHES AROUND GRAVITY ALSO JOINT TO BE CENTERED AT CROSSING

12. ALL MANHOLES TO HAVE MINIMUM 24" HINGED RING AND COVER EAST JORDAN OR APPROVED EQUIVALENT

13. SEWER PLUGS USED DURING THE CONSTRUCTION OR CONNECTION TO A SYSTEM SHALL HAVE THE CONTRACTOR'S NAME PERMANENTLY STAMPED.

14. THE MANHOLE LINER SHALL BE SPECTRA SHIELD OR APPROVED EQUIVALENT.

15. IN ACCORDANCE WITH THE DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) REQUIREMENTS, LEAK TESTING SHALL BE PERFORMED ON ALL SEGMENTS OF THE SEWER SYSTEM. TESTING MAY INCLUDE APPROPRIATE WATER TIGHTNESS TESTING. TEST METHODS SHALL TAKE INTO CONSIDERATION THE RANGE IN GROUNDWATER ELEVATIONS DURING THE ANTICIPATED DURING THE DESIGNED LIFE OF THE SEWER. NO LEAKAGE ALLOWED IN SYSTEM.

16. ALL FORCE MAIN PIPING TO BE DR18 GREEN OR BROWN.

17. CONTACT JOHN MANDRICK, COFB UTILITY DIRECTOR AT (904) 310-3420 FOR PRE-CONSTRUCTION COORDINATION MEETING PRIOR TO WORK COMMENCING.

Scale: NONE

Project Mgr: AG

Designed by: AG

Drawn by: LA

QA/QC: AG/LA

GILLETTE & ASSOCIATES, INC.
20 SOUTH 4TH STREET
FERNANDINA BEACH, FL 32034
CERTIFICATE OF AUTHORIZATION NO. 9332

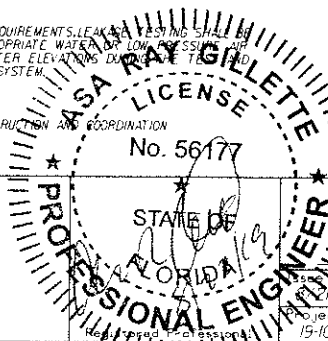
ASA R GILLETTE, PE
FL PE NO. 56177

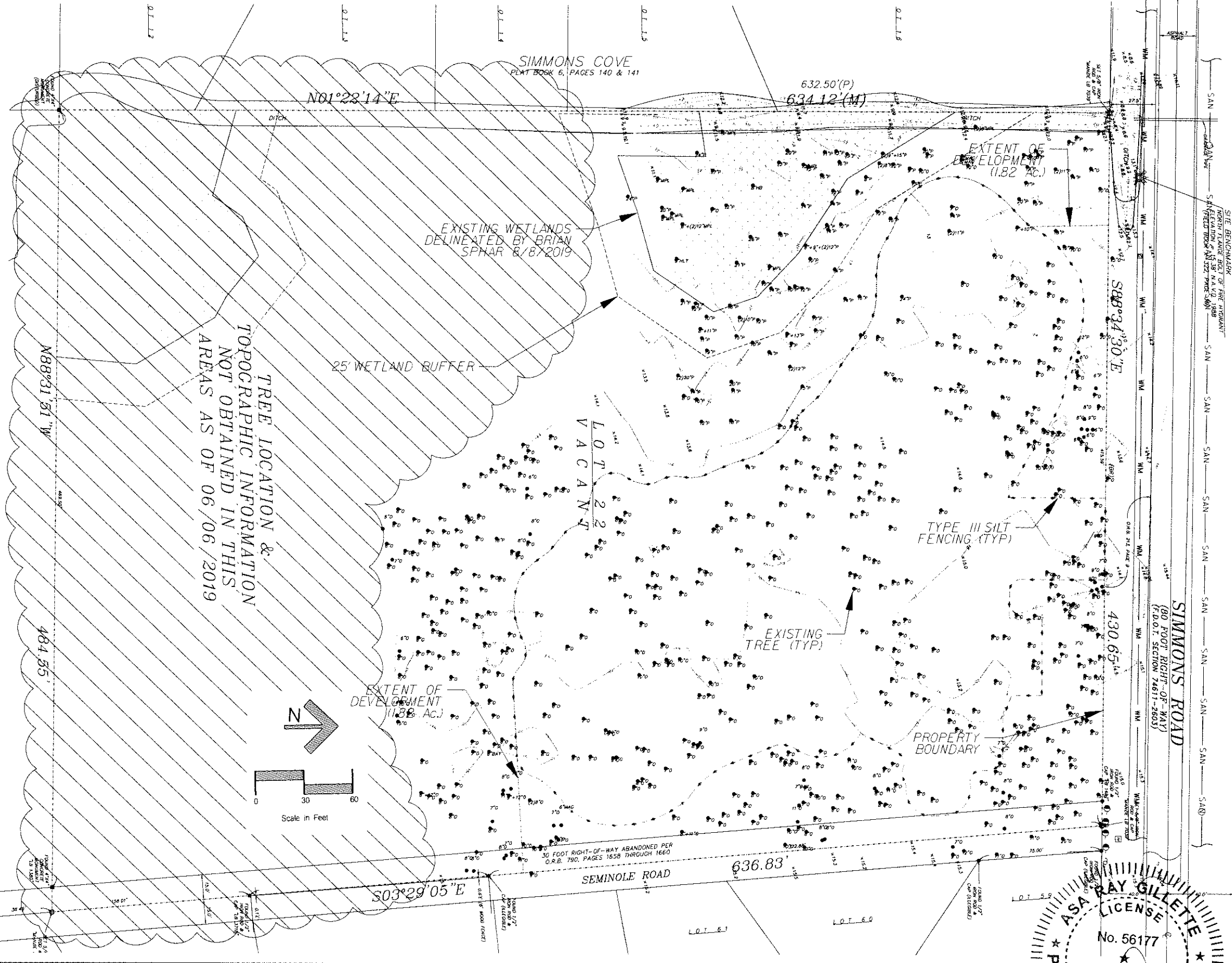
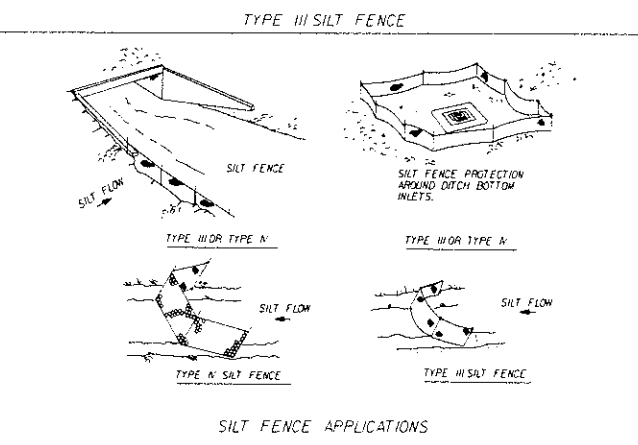
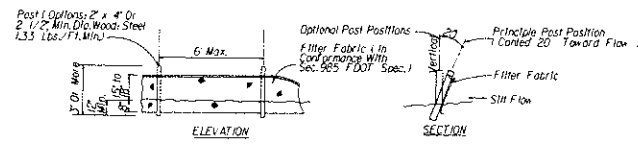
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CITY OF FERNANDINA
BEACH

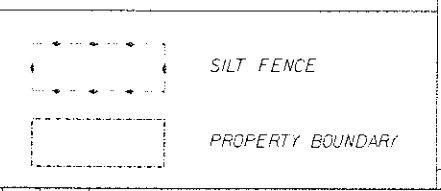
SIMMONS ROAD PARK

INDEX SHEET





LEGEND:



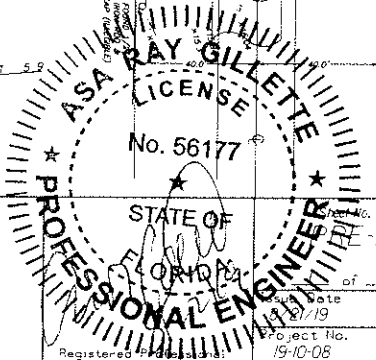
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Project Mgr:	AG
Designed by:	AG
Drawn by:	LA
QA/QC:	AG/LA
GILLETTE & ASSOCIATES, INC. 20 SOUTH 4TH STREET FERNANDINA BEACH, FL 32034 CERTIFICATE OF AUTHORIZATION NO.9332 ASA R GILLETTE, PE FL PE NO. 56177 DO NOT SCALE THIS DRAWING - DIMENSIONS AND NOTES TAKE PREFERENCE. DRAWING IS REDUCED IF LESS THAN 22" x 34"	



CITY OF FERNANDINA
BEACH

SIMMONS ROAD PARK

PREDEVELOPMENT PLAN



GENERAL NOTES:

PIN: 00-00-30-044A-0022-0000

LOT AREA: 6.67 ACRES

ZONING: RECREATION

FLUM: RECREATION

MAX BUILDING HEIGHT: 25'

MAX IMPERVIOUS AREA: 25% LOT AREA

6.67 ACRES X 0.25 = 1.67 ACRES

0.31 ACRES IMPERVIOUS AREA SHOWN
(INCLUDES 1/4 MILE SIDEWALK)

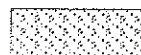
SETBACKS: NO REQUIRED SETBACKS

BUFFERS: NO REQUIRED BUFFERS

PARKING REQUIREMENTS:

1 SPACE PER 1,000 SF ACTIVE USE AREA
8,910 SF ACTIVE USE / 1,000 = 9 SPACES

LEGEND:



CONCRETE



PERVIOUS CONCRETE

Scale: 1" = 30'

Project Mgr: AG

Designed by: AG

Drawn by: LA

QA/QC: AG/LA

GILLETTE & ASSOCIATES, INC.
20 SOUTH 4TH STREET
FERNANDINA BEACH, FL 32034
CERTIFICATE OF AUTHORIZATION NO. 9332

ASA R GILLETTE, PE
FL PE NO. 56177

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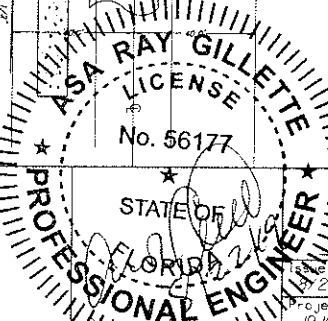


Gillette & Associates, Inc.

CITY OF FERNANDINA
BEACH

SIMMONS ROAD PARK

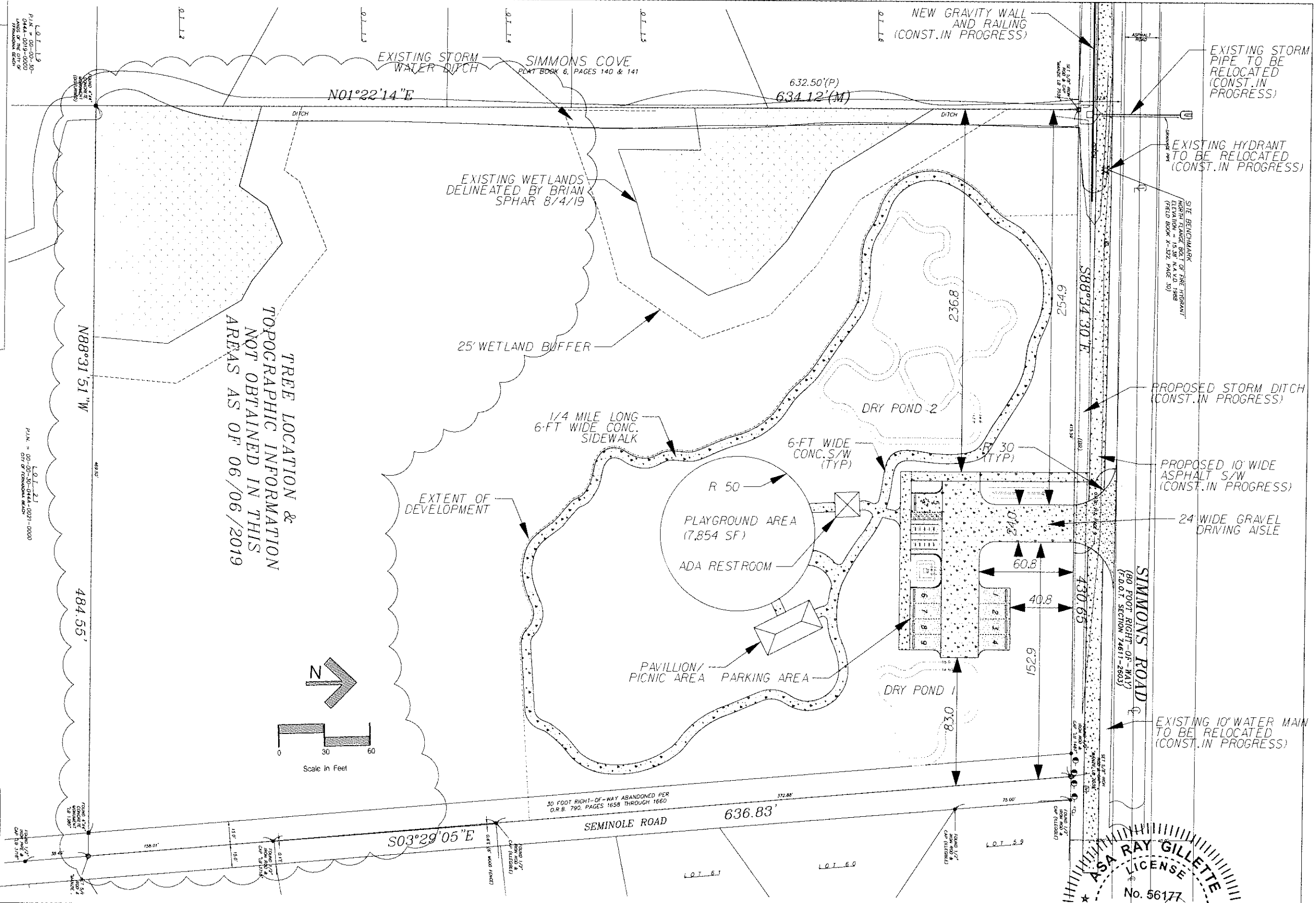
OVERALL GEOMETRY
PLAN



Sheet No. GE-1

Date 2/21/19

Project No. 19-10-06



GENERAL NOTES:

PIN: 00-00-30-044A-0022-0000

LOT AREA: 6.67 ACRES

ZONING: RECREATION

FLUM: RECREATION

MAX BUILDING HEIGHT: 25'

MAX IMPERVIOUS AREA: 25% LOT AREA

6.67 ACRES X 0.25 = 1.67 ACRES

0.31 ACRES IMPERVIOUS AREA SHOWN

SETBACKS: NO REQUIRED SETBACKS

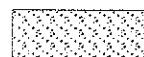
BUFFERS: NO REQUIRED BUFFERS

PARKING REQUIREMENTS:

1 SPACE PER 1,000 SF ACTIVE USE AREA

8,910 SF ACTIVE USE / 1,000 = 9 SPACES

LEGEND:



CONCRETE



PERVIOUS CONCRETE

Scale: 1" = 20'

Project Mgr: AG

Designated by: AG

Drawn by: LA

QA/QC: AGLA

GILLETTE & ASSOCIATES, INC.
20 SOUTH 4TH STREET
FERNANDINA BEACH, FL 32034
CERTIFICATE OF AUTHORIZATION NO. 9332

ASA R. GILLETTE, PE
FL PE NO. 56177

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PREFERENCE. DRAWING IS REDUCED IF LESS THAN 22" x 34"

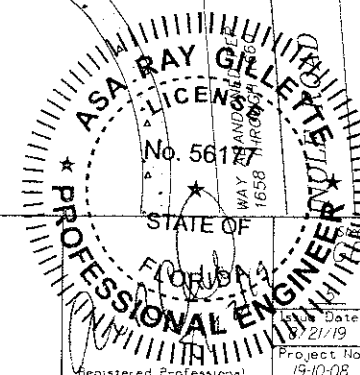


Gillette & Associates, Inc.

CITY OF FERNANDINA
BEACH

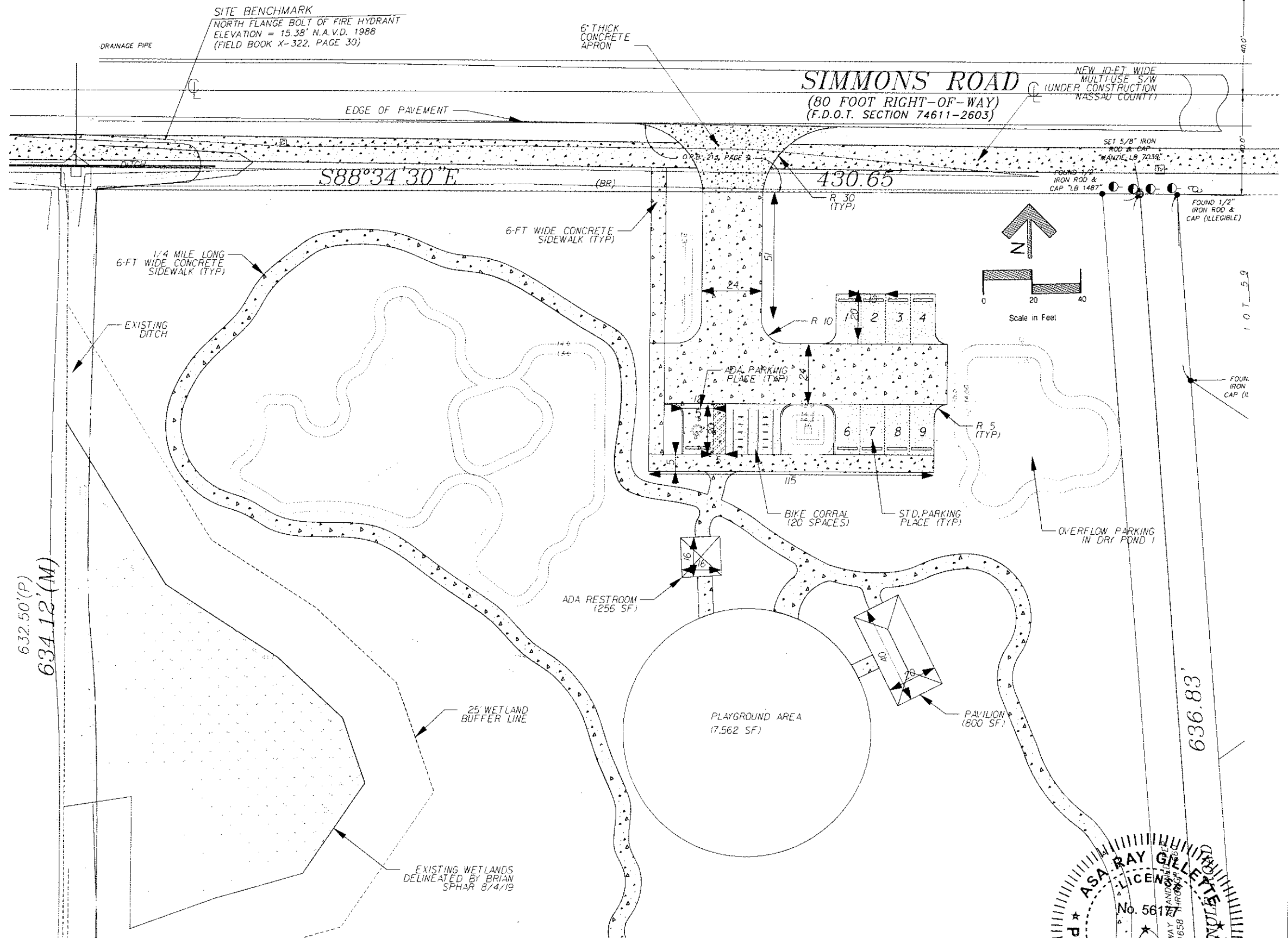
SIMMONS ROAD PARK

ENLARGED GEOMETRY
PLAN



632.50'(P)
634.12'(M)

636.83'



GENERAL NOTES:

PIN:00-00-30-044A-0022-0000

LOT AREA: 6.67 ACRES

MAX IMPERVIOUS AREA: 25% LOT AREA

6.67 ACRES X 0.25 = 1.67 ACRES

0.31 ACRES IMPERVIOUS AREA SHOWN

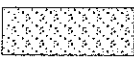
PIPE TABLE

NAME	FROM	TO	SIZE (in)	LENGTH (FT)	MATERIAL
P-1	S-1	S-2	12	59	HDPE
P-2	S-2	S-3	12	83	HDPE
P-10	S-10	S-11	15	58	RCP

STRUCTURE TABLE

NAME	TYPE	TOP/INLET ELEV.	INVERT ELEVATION			
			N	S	E	W
S-1	2' x 2' YARD DRAIN	15.50	-	-	-	13.70
S-2	2' x 2' YARD DRAIN	15.00	-	-	13.50	13.50
S-3	M.E.S.	-	-	-	13.50	-
S-10	M.E.S.	-	-	-	14.40	-
S-11	M.E.S.	-	-	-	13.80	-

LEGEND:



CONCRETE



PERVIOUS CONCRETE

Scale: 1" = 20'

Project Mgr: AG

Designed by: AG

Drawn by: LA

QA/QC: AG/EA

GILLETTE & ASSOCIATES, INC.
20 SOUTH 4TH STREET
FERNANDINA BEACH, FL 32034
CERTIFICATE OF AUTHORIZATION NO. 9332

ASA R. GILLETTE, PE
FL PE NO. 56177

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PLANNING & DEVELOPMENT DEPT.

CITY OF FERNANDINA
BEACH

SIMMONS ROAD PARK

DRAINAGE PLAN

ASA RAY GILLETTE
LICENSE
No. 56177

STATE OF
FLORIDA

PROFESSIONAL ENGINEER
Date: 8/21/19
Project No. 19-10-06

GENERAL NOTES:

PIN: 00-00-30-044A-0022-0000

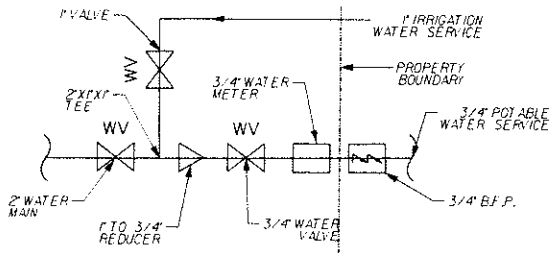
LOT AREA: 6.67 ACRES

ZONING: RECREATION

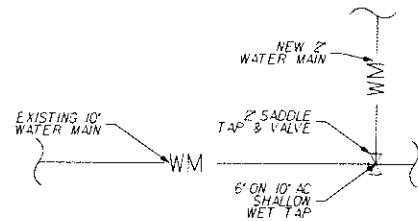
FLUM: RECREATION

NOTE: ALL UTILITY WORK IN SIMMONS ROAD ROW WILL REQUIRE PERMITTING WITH NASSAU COUNTY

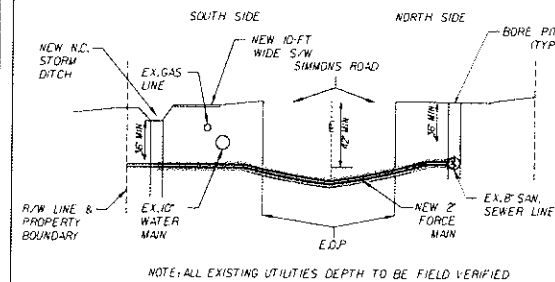
NOTE: DUE TO ONGOING REDEVELOPMENT IN NASSAU COUNTY ROW, LOCATIONS AND DEPTHS OF UTILITIES DEPICTED MAY NOT BE ACCURATE. ALL UTILITIES WITHIN NASSAU COUNTY ROW TO BE FIELD VERIFIED



WATER CONNECTION AT LOT

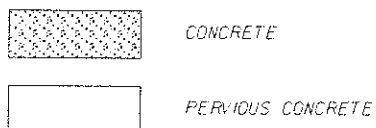


WATER CONNECTION AT MAIN



DIRECTIONAL DRILL DETAIL

LEGEND:



Scale: 1" = 10'

Project Mgr: AG

Designed by: AG

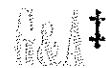
Drawn by: LA

QA/QC: AG/LA

GILLETTE & ASSOCIATES, INC.
20 SOUTH 4TH STREET
FERNANDINA BEACH, FL 32034
CERTIFICATE OF AUTHORIZATION NO. 9332

ASA R GILLETTE, PE
FL PE NO. 56177

DO NOT SCALE THIS DRAWING - DIMENSIONS AND NOTES TAKE PREFERENCE. DRAWING IS REDUCED IF LESS THAN 22" x 34"

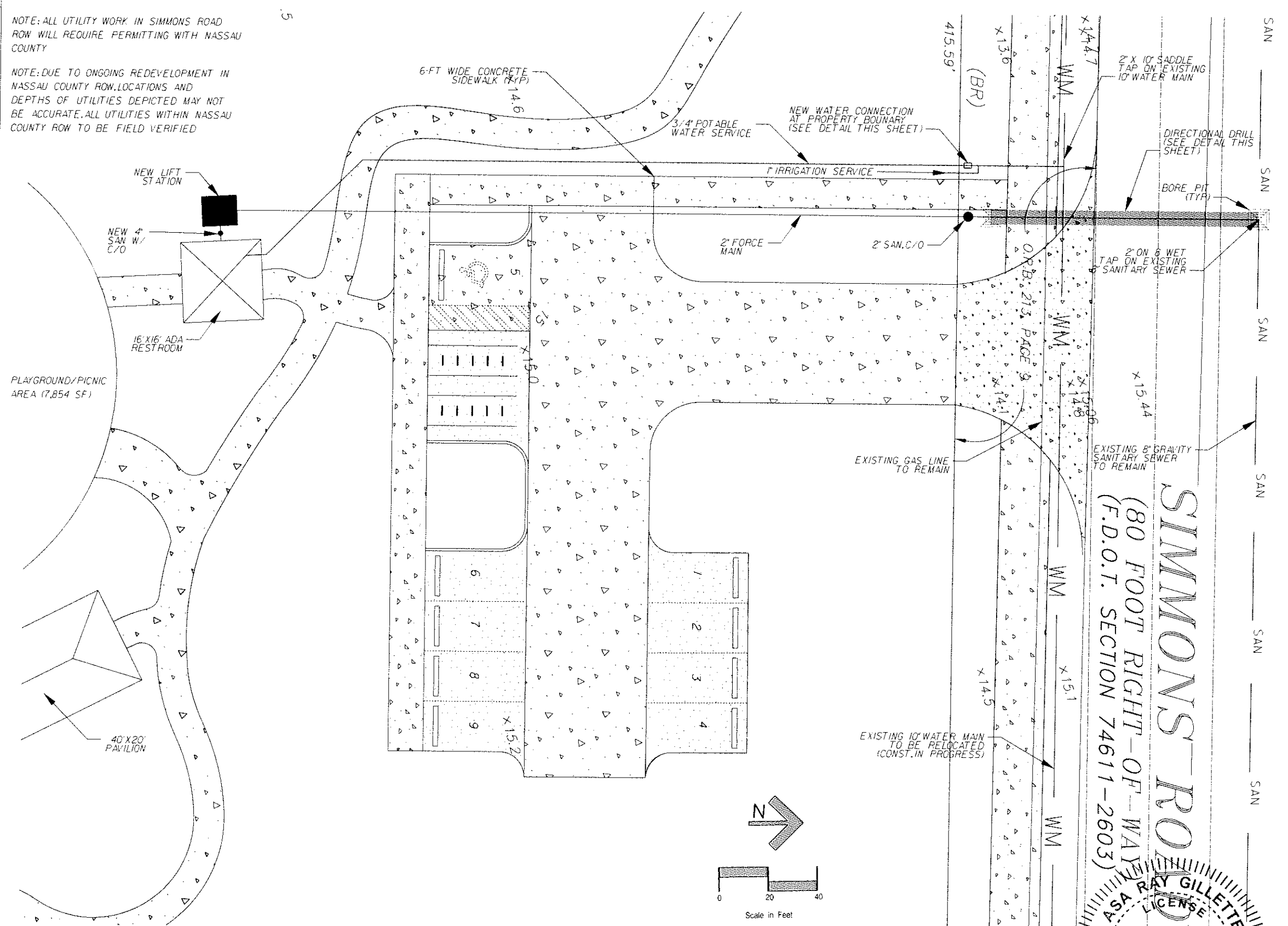
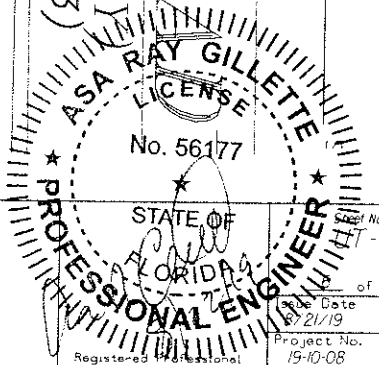


CITY OF FERNANDINA BEACH

SIMMONS ROAD PARK

UTILITY PLAN

SIMMONS ROAD
(80 FOOT RIGHT-OF-WAY)
(F.D.O.T. SECTION 74611-2603)



TREE PROTECTION DETAIL

BARRIER TO BE PLACED AROUND TREE SHALL BE PLACED AROUND TREE PROTECTION ZONE AND BE CONSISTENT WITH SPECIFICATIONS SET FORTH IN CHAPTER 4.05.14 OF THE FERNANDINA BEACH LAND DEVELOPMENT CODE.

TREE PROTECTION ZONE IS AT MINIMUM A CIRCULAR ZONE AROUND THE TREE TRUNK OF A RADIUS:

- 1) 8 FEET, IF THE DROP LINE OF THE TREE IS LESS THAN 8 FEET FROM THE TRUNK OF THE TREE.
- 2) 6-20 FEET ENCOMPASSING THE FULL DROP LINE OF THE TREE, IF THE DROP LINE OF THE TREE IS BETWEEN 8 AND 20 FEET FROM THE TRUNK OF THE TREE.
- 3) 20 FEET, IF THE DROP LINE OF THE TREE IS GREATER THAN 20 FEET FROM THE TRUNK OF THE TREE. 2" MULCH LAYER SHALL APPLIED TO THE REMAINING AREA BETWEEN THE TREE PROTECTION ZONE AND DROP LINE.

2" x 2" x 4" WOODEN POSTS - 8' O.C. WITH A 2" x 4" TOP RAILING AND 3" WIDE TEMPORARY WOOD WHEEL CHAIN-LINK OR SIMILAR BARRIER ATTACHED TO POSTS.



NOT TO SCALE

NO PARKING OF HEAVY EQUIPMENT OR VEHICLES, STOCKPILING OF MATERIALS, DEPOSITION OF SOIL, SEDIMENT, OR MULCH, GRADING OR GRUBBING, EXCAVATION OR TRENCHING, CONSTRUCTION MATERIALS, DUMPING, BURIAL, OR BURNING OF DEBRIS WITHIN THE ENTIRE CONSTRUCTION SITE, DUMPING PETROCHEMICALS, CHEMICALS, WASTEWATER, OR OTHER CONSTRUCTION WASTE, ALL HAZARDOUS MATERIALS TO BE STORED AT A MAXIMUM DISTANCES FROM ANY TREE PROTECTION ZONE.

NOTE TO CONTRACTOR:

REQUIRED TREE PROTECTION BARRICADES MUST BE INSPECTED BY THE CERTIFYING ARBORIST PRIOR TO ANY CONSTRUCTION ACTIVITIES, AND REMAIN INTACT THROUGHOUT CONSTRUCTION. ENFORCEMENT NOTE OR FAILURE TO MAINTAIN TREE BARRICADES WILL RESULT IN ENFORCEMENT ACTION WHICH MAY INCLUDE CITATIONS AND/OR BUILDING/CLEARING PERMIT REVOCATION AS PROVIDED BY COUNTY ORDINANCE.

NOTE: ALL TREES TO BE RETAINED UNLESS OTHERWISE INDICATED

NOTE: CRITICAL ROOT ZONE IS SHOWN FOR ALL TREES IN THE IMMEDIATE VICINITY OF DEVELOPMENT.

NOTE: ALL TREES ASSUMED TO BE IN GOOD HEALTH.

HEALTH ASSESSMENT TO BE CONDUCTED BY C.D.F.B. ARBORIST

Simmons Road Park

Total Tree Inventory

Total Tree Count and Cumulative DBH

Code	Species	Stem Count	Dbh (in)
O	Oak	528	3,855
P	Pine	90	1,276
BAY	Red Bay	2	13
MPL	Red Maple	9	80
MAG	Magnolia	3	20
HLV	Holly	1	9
HB	Hackberry	1	8
		634	5,131

TREE MITIGATION LEGEND

× TREE TO BE REMOVED

— TREE PROTECTION BARRIER

○ CRITICAL ROOT ZONE

Simmons Road Park

Tree Removal Inventory

Tree ID	Species	DBH	Removed (Y/N)	DBH Removed
387 A	P	7	Y	7
387 B	P	10	Y	10
433 A	P	11	Y	11
433 B	P	11	Y	11
493	O	6	Y	6
496	O	6	Y	6
498	O	6	Y	6
503	O	7	Y	7
504	O	6	Y	6
505	O	6	Y	6
506	O	6	Y	6
507	O	6	Y	6
508	O	8	Y	8
509	O	7	Y	7
510	O	8	Y	8
511	O	6	Y	6
512	O	7	Y	7
519	O	6	Y	6
520	O	9	Y	9
521	O	7	Y	7
522	O	6	Y	6
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609	O	8	Y	8
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611	O	6	Y	6
612	O	6	Y	6
613	O	6	Y	6
624	O	6	Y	6
625	O	6	Y	6
626	P	24	Y	24
628	O	6	Y	6
629	O	6	Y	6
630	O	6	Y	6
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690	O	9	Y	9
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711	O	6	Y	6
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791	O	6	Y	6
796	O	7	Y	7
857	O	6	Y	6
858	O	7	Y	7
859	O	8	Y	8
859	O	7	Y	7
712	O	6	Y	6
775	O	8	Y	8
777	O	8	Y	8
778	O	8	Y	8
501	O	7	Y	7
502	O	6	Y	6

Total DBH Removed (in)

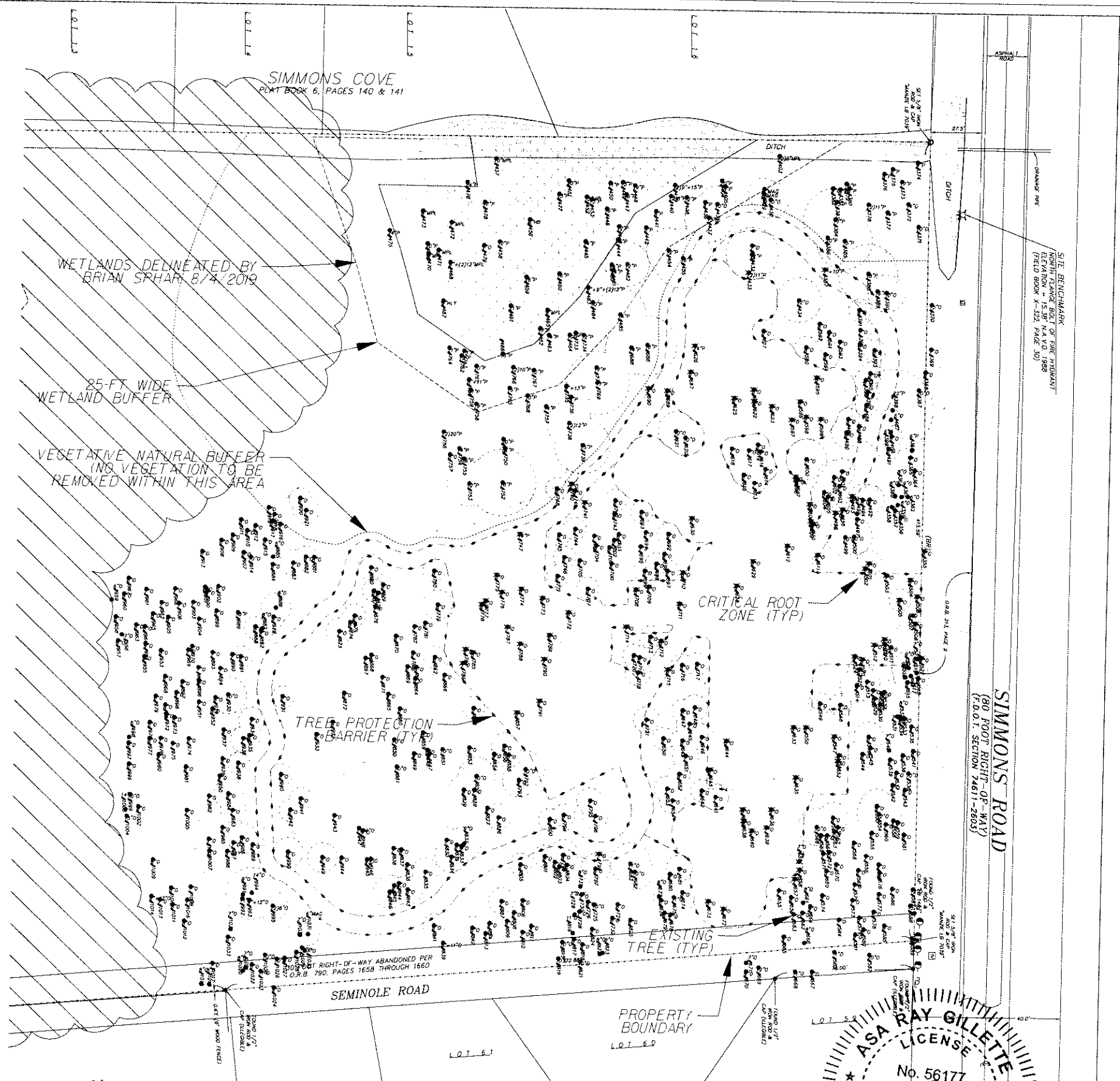
639

	DBH (in)	DBH (in)
Total	639	5,131
Removed	639	4,492
Preserved (Credits)		1,283
Required DBH Replacement (25% Total)		3,209
Difference (Replacement - Preserved)		1,926
New planted trees (1.5")		4,492
Total on site		4,492
Total on site w/ New Plantings		4,492

GILLETTE & ASSOCIATES, INC.
20 SOUTH 4TH STREET
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CERTIFICATE OF AUTHORIZATION NO. 9332

ASA R. GILLETTE, PE
FL PE NO. 56177

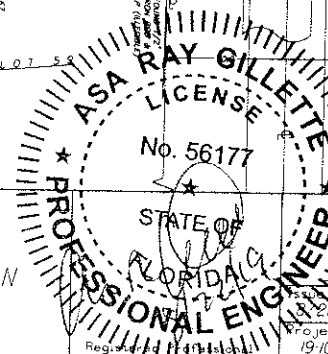
DO NOT SCALE THIS DRAWING. DIMENSIONS AND NOTES TAKE PRECEDENCE. DRAWING IS REDUCED IF LESS THAN 22" x 34"



CITY OF FERNANDINA BEACH

SIMMONS ROAD PARK

TREE PROTECTION PLAN



SIMMONS ROAD
(60 FOOT RIGHT-OF-WAY)
(F.D.O.T. SECTION 14611-2603)

Project No. 19-10-08
Date 12/15/19

GENERAL NOTES:

PIN: 00-00-30-044A-0022-0000

ZONING: RECREATION

DEVELOPMENT SIZE: 1.82 ACRES

MINIMUM LANDSCAPED AREA: 20% DEVELOPMENT AREA
0.20 X 1.82 ACRES = 0.36 ACRES = 15,856 SF

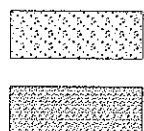
MINIMUM SHADE TREE REQUIREMENTS: 1ST / 1,500 SF
15,856 SF X (1ST / 1,500 SF) = 11ST

ALL SHADE TREE PLANTING REQUIREMENTS SATISFIED
THROUGH TREE PRESERVATION:
3,274 PRESERVED DBH
2.5' / NEW TREE PLANTING
3,274 / 2.5 = 1310 TREE CREDITS

INTERIOR PARKING AREA LANDSCAPE REQUIREMENTS:
10% VEHICULAR USE AREA
0.10 X 6,708 SF = 671 SF (1,447 SF SHOWN)

QUANTITY	KEY	SPECIES	SIZE/REMARKS
100	TD	TRIPSACUM DACTYLOIDES	1 GAL
100	ML	DWARF FANPARCHIE GRASS	24" X 24" SPACING
100	ML	RUDBECKIA LACINIATA	12" X 12" SPACING
38	EY	ERINGIUM YUCCAFOUQUII	12" X 12" SPACING
7	VO	VIORNIUM OBOVATUM	MIN 18" HT., 15" WD.
27	CA	CALIPARPA AMERICANA	MIN 18" HT., 15" WD.
3	AR	AMERICAN BEAUTYBERRY	MIN 18" HT., 15" WD.
4	CC	RED MAPLE 'SUMMER RED'	8" MIN HT., 6" COMBINED CAL.
5	OK	QUERCUS VIRGINIANA	8" MIN HT., 2.5" CAL.
2,990 SF	PH	PASPALUM NOTATUM PENSACOLA	SEEDING 1/2" DEEP
		BANAGRASS PENSACOLA	PAVE 1/2" DEEP

LEGEND:



CONCRETE

PERVIOUS CONCRETE

Scale: 1" = 20'

Project Mgr: AG

Designed by: AG

Drawn by: LA

QA/QC: AG/LA

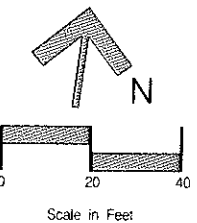
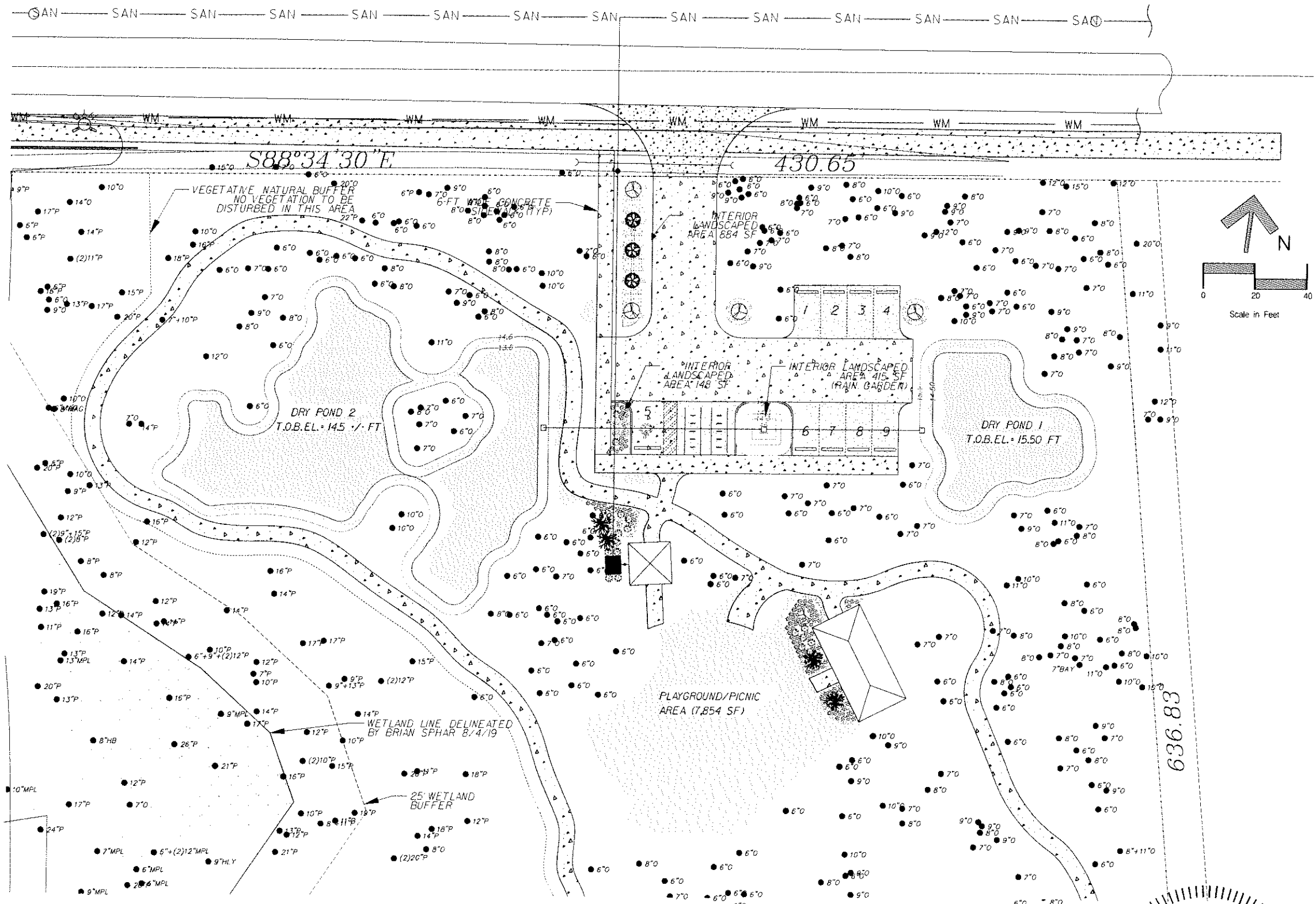
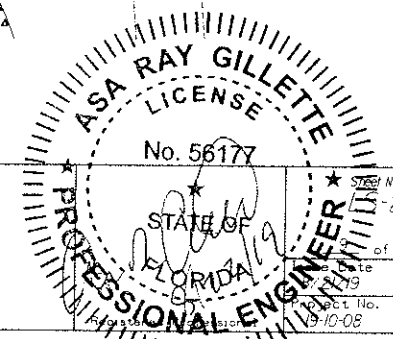
GILLETTE & ASSOCIATES, INC.
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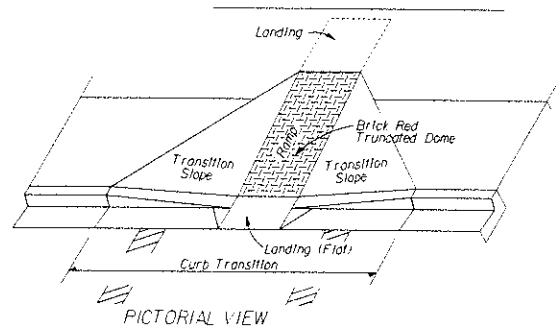
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CITY OF FERNANDINA
BEACH

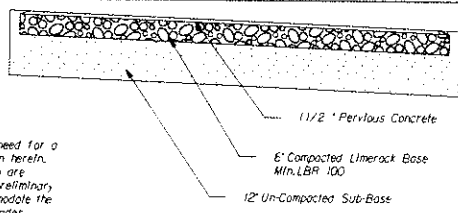
SIMMONS ROAD PARK

DRAINAGE PLAN



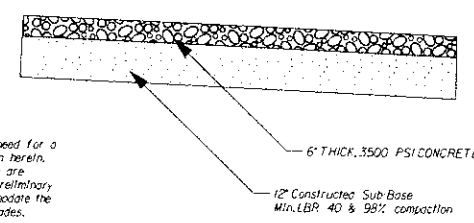


CURB RAMP DETAIL



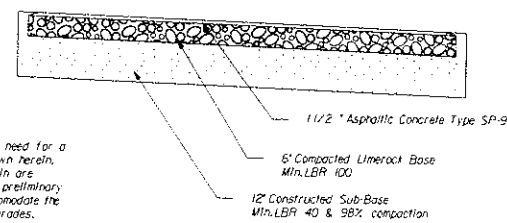
Note: Soil analysis may indicate the need for a thicker base course than those shown herein. The pavement thickness shown herein are not intended to be absolute, but are preliminary criteria & may be modified to accommodate the bearing capacities of various subgrades.

PERVIOUS CONCRETE DETAILS



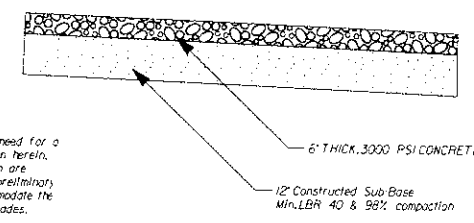
Note: Soil analysis may indicate the need for a thicker base course than those shown herein. The pavement thickness shown herein are not intended to be absolute, but are preliminary criteria & may be modified to accommodate the bearing capacities of various subgrades.

SIDEWALK CONCRETE DETAIL



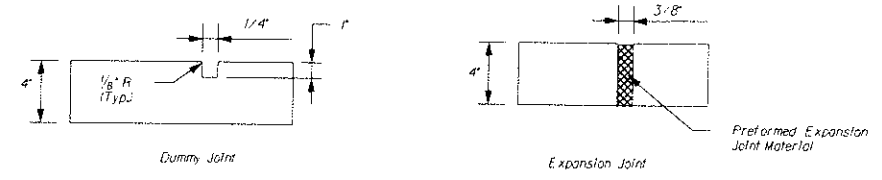
Note: Soil analysis may indicate the need for a thicker base course than those shown herein. The pavement thickness shown herein are not intended to be absolute, but are preliminary criteria & may be modified to accommodate the bearing capacities of various subgrades.

TYPICAL PAVEMENT DETAILS

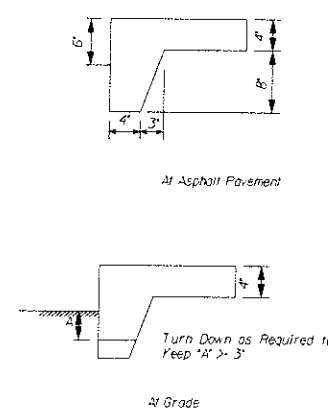


Note: Soil analysis may indicate the need for a thicker base course than those shown herein. The pavement thickness shown herein are not intended to be absolute, but are preliminary criteria & may be modified to accommodate the bearing capacities of various subgrades.

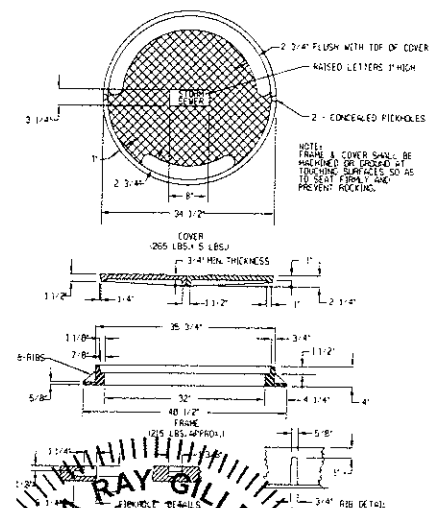
DRIVEWAY CONNECTION DETAIL



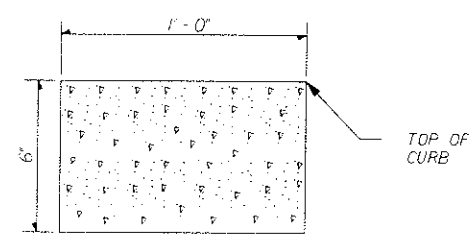
SIDEWALK JOINT DETAILS



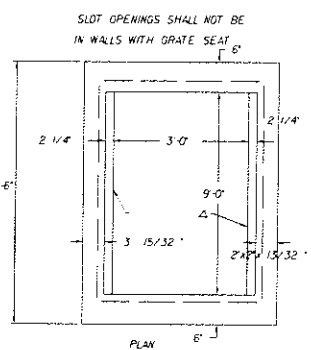
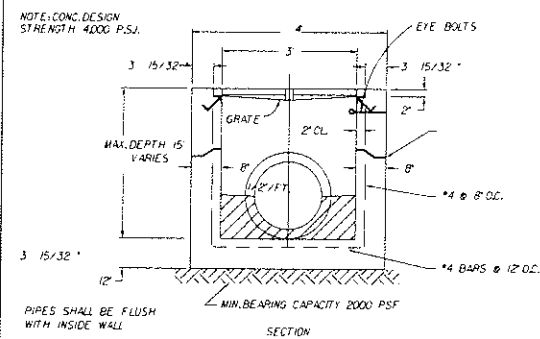
SIDEWALK TURNDOWN DETAILS



MANHOLE FRAME AND COVER

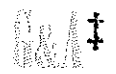


RIBBON CURB DETAIL



TYPE C INLET DETAIL

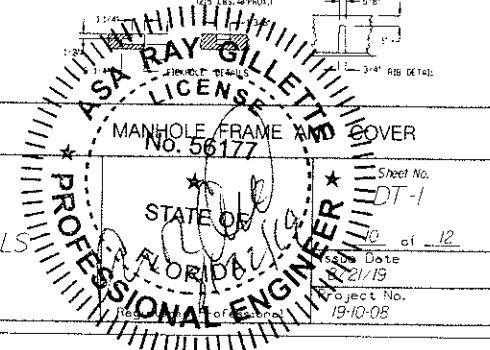
Scale: NONE			GILLETTE & ASSOCIATES, INC.		
Project Mgr: AG			20 SOUTH 4TH STREET		
Designed by: AG			FERNANDINA BEACH, FL 32034		
Drawn by: LA			CERTIFICATE OF AUTHORIZATION NO.9332		
QA/QC: AGLA			ASA R GILLETTE, PE		
			FL PE NO.56177		
DO NOT SCALE THIS DRAWING - DIMENSIONS AND NOTES TAKE PREFERENCE. DRAWING IS REDUCED IF LESS THAN 22" X 34"					

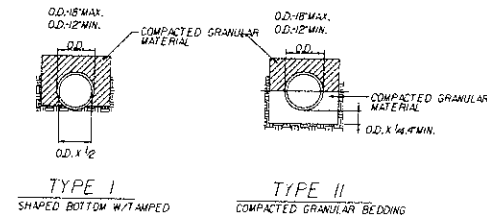
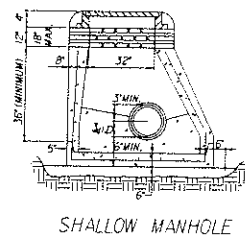


CITY OF FERNANDINA BEACH

SIMMONS ROAD PARK

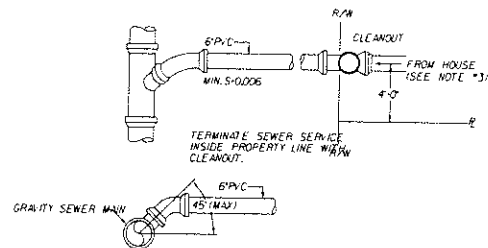
MISCELLANEOUS DETAILS





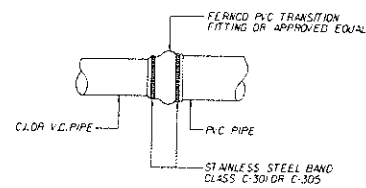
CLASS "B"

CLEANOUT

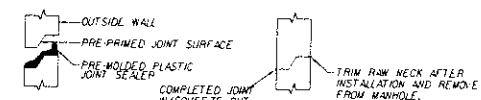


- NOTE:
1. SEWER SERVICE SHALL BE INSTALLED 4'-0" INSIDE PROPERTY LINES.
 2. TEMPORARY 4"x4" POST, PAINTED RED AT TOP, TO BE INSTALLED FOR AIDING IN THE PROTECTION OF SEWER CLEAN OUTS. THE POST SHALL EXTEND 4' ABOVE GRADE.
 3. CONNECTION FROM HOUSE TO UMF SYSTEMS SHALL BE A HARD CONNECTION. FLEXIBLE CONNECTIONS SHALL NOT BE USED.

TYPE "C" MANHOLE

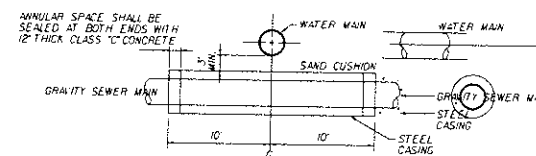


CJ.T0 PVC COUPLING ADAPTER



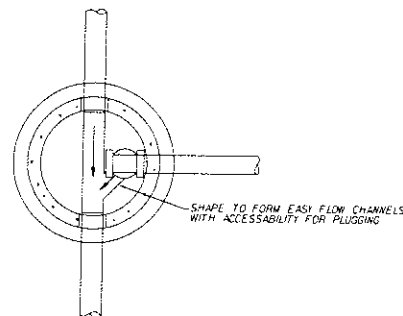
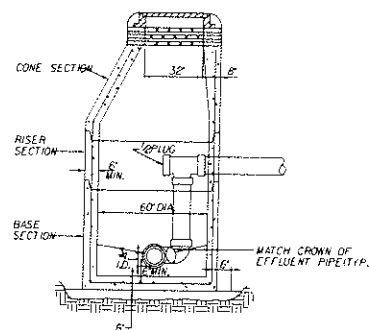
BEDDING DETAILS

GRAVITY SEWER STANDARD SPECIFICATIONS

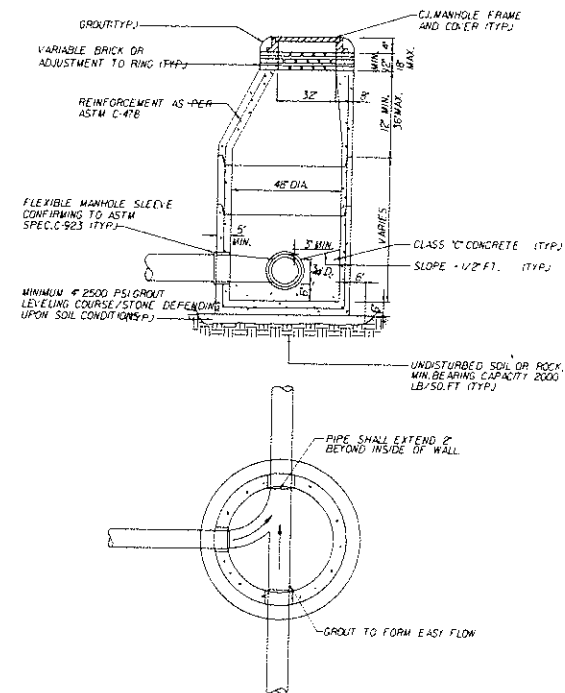


- NOTE:
1. SEWER MAIN SHALL BE ENCASED AS SHOWN ON THE ABOVE DETAIL WHERE LESS THAN 18 INCHES OF VERTICAL CLEARANCE IS MAINTAINED BETWEEN WATER MAIN AND SEWER MAIN.
 2. CLASS 5 STEEL CASING SHALL BE SIZED FOR 2 INCHES PLUS THE OUTSIDE DIAMETER OF THE CARRIER PIPE JOINT.
 3. THE ABOVE DETAIL APPLIES TO WATER MAIN 1 INCH DIAMETER AND LARGER

TYPICAL SEWER SERVICE

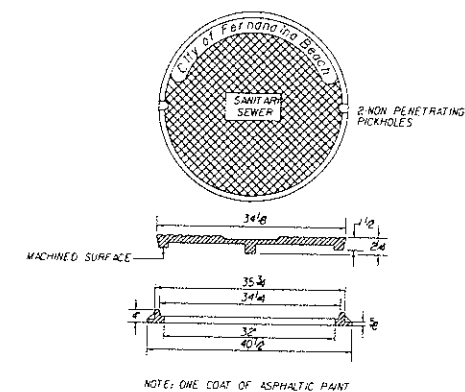


INSIDE PVC DROP CONNECTION TO MANHOLE



STANDARD PRECAST SANITARY MANHOLE

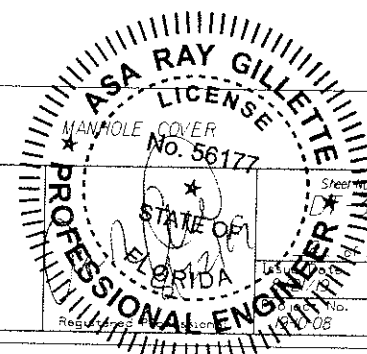
ENCASEMENT AT WATER LINE

[illegible]
$$Z = \{1, \dots, n\} \quad \text{and} \quad \mathcal{A} = \{A_1, \dots, A_n\} \quad \text{with} \quad A_i = \{i, i+1, \dots, n\} \quad \text{for} \quad i = 1, \dots, n.$$

CITY OF FERNANDINA
BEACH

SIMMONS ROAD PARK

SEWER DETAILS





Civil & Environmental Engineering • Mechanical & Structural Engineering • Construction Management

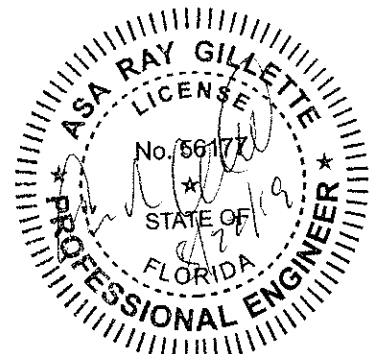
STORMWATER MANAGEMENT EVALUATION

**Simmon's Road Park
City of Fernandina Beach
Department of Parks and Recreation
FERNANDINA BEACH, FLORIDA**

BY

**Gillette & Associates, Inc.
20 South 4th Street
Fernandina Beach, FL**

Issue Date: August 21, 2019



PROJECT DESCRIPTION

The proposed project consists of a recreational park, being constructed on a 6.67 acre lot along Simmons Road, in the city of Fernandina Beach. 1.82 acres of the total 6.67 acres are to be improved. The site will be served by a combination of vegetative natural buffers and dry stormwater retention ponds. The system is designed to provide stormwater treatment and meet pre vs post discharge requirements for a 10-year storm event, as required by the City of Fernandina Beach Land Development Code, and a 25-year storm event as required by the St. Johns River Water Management District.

EXISTING CONDITIONS

The project site is currently undeveloped and in a natural state with no visible surface water. There are two areas of designated wetlands less than one half acre on the site. In its pre-developed state, the site has a single drainage basin, DA-PRE. DA-PRE, is mostly flat and ranges in elevation from 15.0' +/- to 12' +/- . Storm water is currently not contained on the site, and flows from north and east to south and west across the lot, drains into the wetlands, which then drain into an existing drainage ditch along the western property boundary. This basin, which is the area of study for this report, encompasses the entirety of the 10,000 ft² lot. There are no wetlands on site.

DRAINAGE ANALYSIS

The analysis was conducted over the 1.82 acres of improved area in the development. This area was divided into two drainage basins. DA-1 encompasses the 0.62 acres and contains 14,765 square feet of impervious and semi-impervious areas (vehicular use area and associated sidewalks) and 13,871 square feet of dry ponds. DA-2 encompasses the remaining 1.20 acres of the improved/developed area, with 9,575 square feet of impervious area (buildings and ¼ mile concrete sidewalk).

For DA-1, a composite curve number of 80.8 was used in the simulation based on the ratio of impervious area to remaining pervious area. The dry ponds are 1 foot deep and provide a total of 4,905 ft³ of storm water treatment volume. The two dry ponds are hydraulically connected, but at different top of bank elevations (15.5' and 14.5'). Accordingly, the average between the two ponds were used in simulations. Stormwater simulations were conducted using MODRET for DA-1 and associated dry pond system. Since the site is undeveloped and soils previously have not been disturbed for development, data from Natural Resources Conservation Services Soil Survey was used in MODRET simulations.

For DA-2, a composite curve number of 64.7 was used in the simulation based on the ratio of impervious area to remaining pervious area. The vegetative natural buffers have a minimum width of 25 feet and average 49.4 feet in width, across a total length of 708 feet. The VNB includes the 25 foot wetland buffer area. Analysis was conducted for the area of DA-2 and the VNB area (1.76 acres).

<u>Summary of Design DA-1:</u>	<u>Pre-Development</u>	<u>Post-Development</u>
Total Drainage Area	0.62 Acres	0.62 Acres
Top of Bank Elevation	N/A	15.0'
Bottom Elevation	N/A	14.0'
Treatment Required	N/A	2,663 ft ³
Treatment Provided	N/A	4,905 ft ³

Summary of Design - 10 year Storm Event

Predevelopment Discharge (Total):	6,834 ft ³
Post Development Discharge (Total):	5,376 ft ³
Max Stage Elevation Pond:	14.19 ft
Top of Bank Elevation Pond:	15.00 ft
Pond Recovery Time:	70.7 hrs

Summary of Design - 25 year Storm Event

Predevelopment Discharge (Total):	8,809 ft ³
Post Development Discharge (Total):	7,787 ft ³
Max Stage Elevation Pond:	14.21 ft
Top of Bank Elevation Pond:	15.00 ft
Pond Recovery Time:	70.7 hrs

<u>Summary of Design DA-2:</u>	<u>Pre-Development</u>	<u>Post-Development</u>
Total Drainage Area	1.76 Acres	1.76 Acres
VNB Width	N/A	49.3'
VNB Length	N/A	19.4'
Treatment Required	N/A	4,562 ft ³
Treatment Provided	N/A	34,951 ft ³

DRY POND CALCULATIONS

Simmons Road Post Developed - Total Area

Basin Calculations

Basin 1

Composite Cn

Total Drainage Area = 27007 ft²
 Impervious Area = 14765 ft²
 Pond Area = 13871 ft²

Impervious Cn = 98.0
 Pond Cn = 60.0
 Pervious Cn = 60.0

Composite Cn = 80.8

Time of Concentration, Tc

Minimum Time of Concentration = 10 min.
 Length of Overland Flow @ 1ft/sec. = 200 ft.
 Length of Pipe Flow @ 2.5 ft/sec. = 0 ft.
 Tc = 14 min.

Pond Information (Dry Ponds 1 & 2)

El. (ft.)		Area ft ²	Volume ft ³
15.50	TOB/weir	3270	2999.75
15.25		2943	1858.63
15.00		2638	1161.00
14.50	Bottom	2006	0.00

Pond Information (Dry Ponds 3 & 4)

El. (ft.)		Area ft ²	Volume ft ³
14.50	TOB/weir	10470	10870.94
13.75		9423	3046.56
13.50		9118	364.50
13.50	Bottom	7765	0.00

Treatment Volume Required, TVR (on-line retention)

TVR = 1" * (1/12") * Total Drainage Area = 2251 ft³
 or

TVR = 1.25" * (1/12") * Total Impervious Drainage Area + 0.5" * (1/12") * Total Drainage Area = 2663 ft³

TVR = 2663 ft³

Treatment Volume Provided, TVP

TVP = Vol @ Weir = 4905 ft³ OK

Vegetative Natural Buffer Calculations

Simmon's Road Park **Post Developed- Vegetated Natural Buffer**

Basin Calculations

Basin VG-1

Composite Cn

Total Drainage Area = 76666 ft²

Impervious Area = 9575 ft²

Pervious Area = 67091 ft²

Impervious Cn = 98.0

Pervious Cn = 60.0

Composite Cn = 64.7

Time of Concentration, Tc

Minimum Time of Concentration = 10 min.

Length of Overland Flow @ 1.25 ft/sec. = 211 ft.

Length of Pipe Flow @ 2.5 ft/sec. = 0 ft.

Tc = 13 min.

Step 1 - Determine the peak runoff rate (Qp) and the Volume of Runoff (Vr)

From FDOT IDF Curves (Zone4), I= 2.4 in/hr

From SJRWMD Table 24-1 c= 0.3

Basin Area (A) = 1.76 Acres

Qp=cIA = 1.27 cfs

Rainfall Duration (D)(1 hour) = 3600 sec

Vr=Qp * D = 4562 ft³

Step 2 - Select Buffer Dimensions & check infiltration

Assumed buffer width = 49.36582 ft.

Buffer length = 708 ft.

Minimum 25-foot provided

Ab = 34951 ft²

Step 3 - Check for lateral saturated infiltration

f = 0.3

Height of basin above groundwater table, h_p = 1

Vu = Ab * f * h_p = 10485.3

If Vu > Vr, infiltration will occur entirely under vertical unsaturated flow.

ok

MODRET ANALYSIS

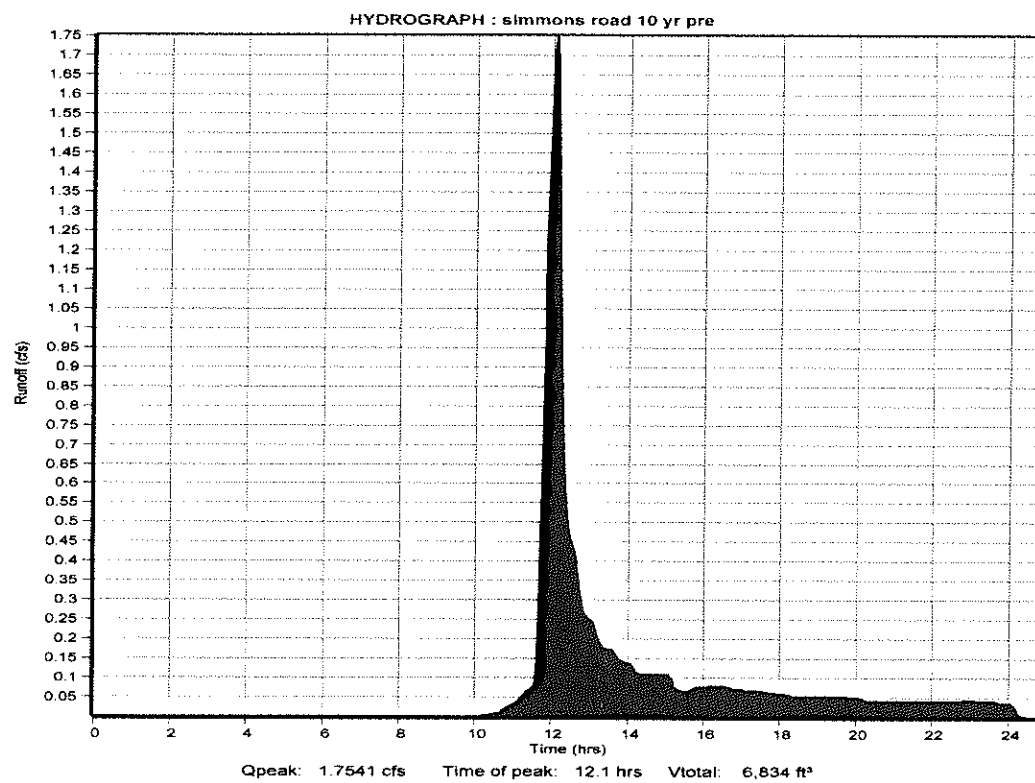
10-Year Storm Event

MODRET

HYDROGRAPH DATA INPUT - SCS UNIT METHOD

Project Name : simmons road 10 yr pre
Rainfall Distribution : SCS Type II (24 hrs)

Contributing Basin Area	0.62 ac.
SCS Curve Number	60.00
Time of Concentration	14.00 min.
Rainfall Depth	7.60 in.
Shape Factor	484
Percent DCIA	0.00 %

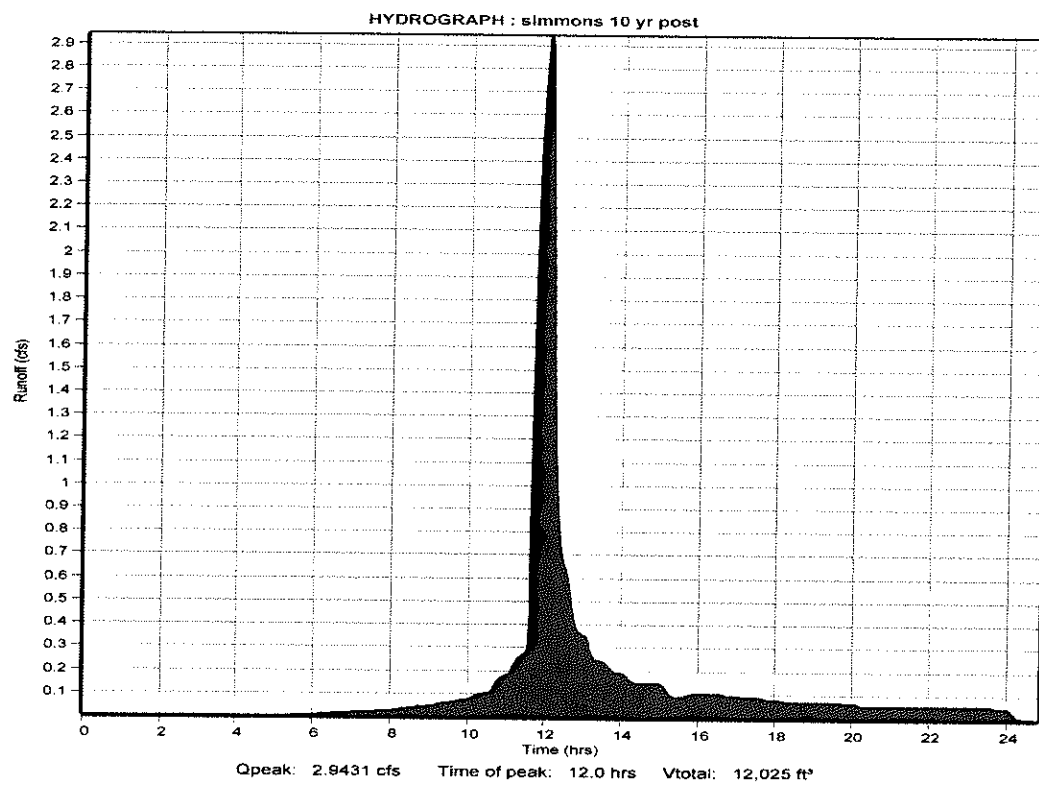


MODRET

HYDROGRAPH DATA INPUT - SCS UNIT METHOD

Project Name : simmons 10 yr post
Rainfall Distribution : SCS Type II (24 hrs)

Contributing Basin Area	0.62 ac.
SCS Curve Number	80.80
Time of Concentration	14.00 min.
Rainfall Depth	7.60 in.
Shape Factor	484
Percent DCIA	0.00 %



MODRET

SUMMARY OF UNSATURATED & SATURATED INPUT PARAMETERS

**PROJECT NAME : Simmons 10 yr post infil
HYDROGRAPH RUNOFF DATA USED
UNSATURATED ANALYSIS INCLUDED**

Pond Bottom Area	13,740.00 ft ²
Pond Volume between Bottom & DHWL	13,871.00 ft ³
Pond Length to Width Ratio (L/W)	1.10
Elevation of Effective Aquifer Base	8.00 ft
Elevation of Seasonal High Groundwater Table	11.50 ft
Elevation of Starting Water Level	14.00 ft
Elevation of Pond Bottom	14.00 ft
Is there overflow ?	Y
Avg. Effective Storage Coefficient of Soil for Unsaturated Analysis	0.11
Unsaturated Vertical Hydraulic Conductivity	21.00 ft/d
Factor of Safety	2.00
Saturated Horizontal Hydraulic Conductivity	5.00 ft/d
Avg. Effective Storage Coefficient of Soil for Saturated Analysis	0.09
Avg. Effective Storage Coefficient of Pond/Exfiltration Trench	1.00
Time Increment During Storm Event	2.00 hrs
Time Increment After Storm Event	12.00 hrs
Total Number of Increments After Storm Event	6.00

Runoff Hydrograph File Name: SCS3.SCS

Time of Peak Runoff: 12.04 hrs

Rate of Peak Runoff: 2.94 cfs

Hydraulic Control Features:

Groundwater Control Features - Y/N

Distance to Edge of Pond

Elevation of Water Level

Impervious Barrier - Y/N

Elevation of Barrier Bottom

Top	Bottom	Left	Right
N	N	N	N
0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00

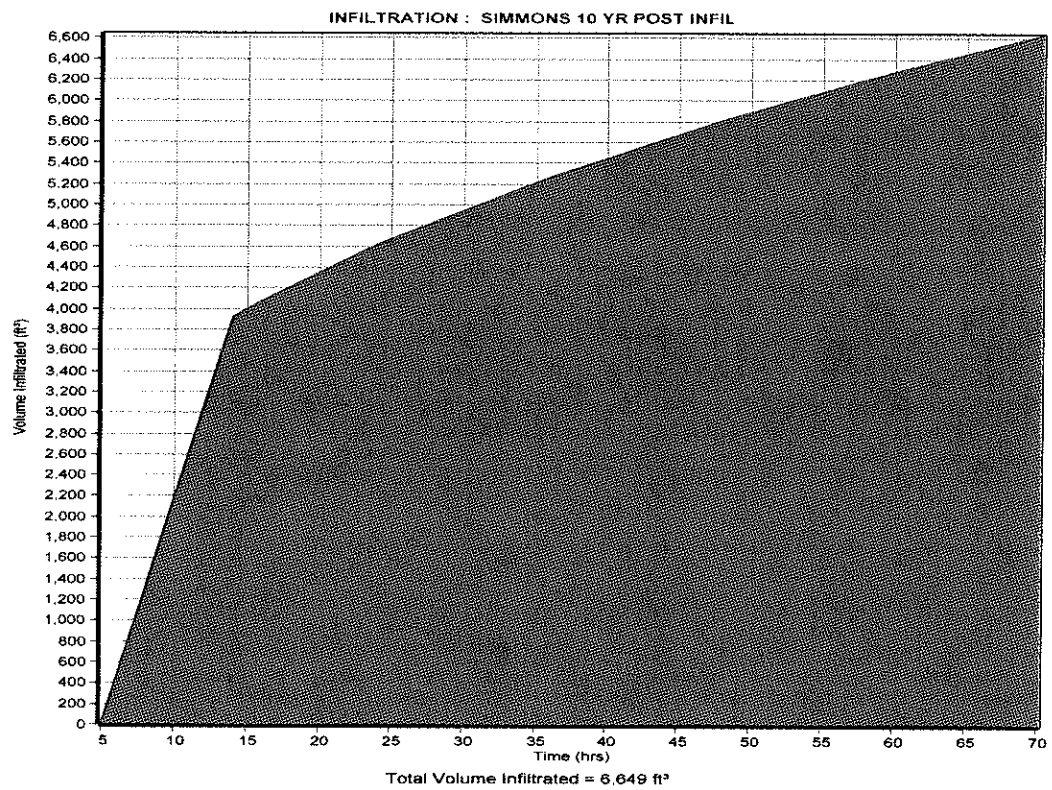
N	N	N	N
0.00	0.00	0.00	0.00

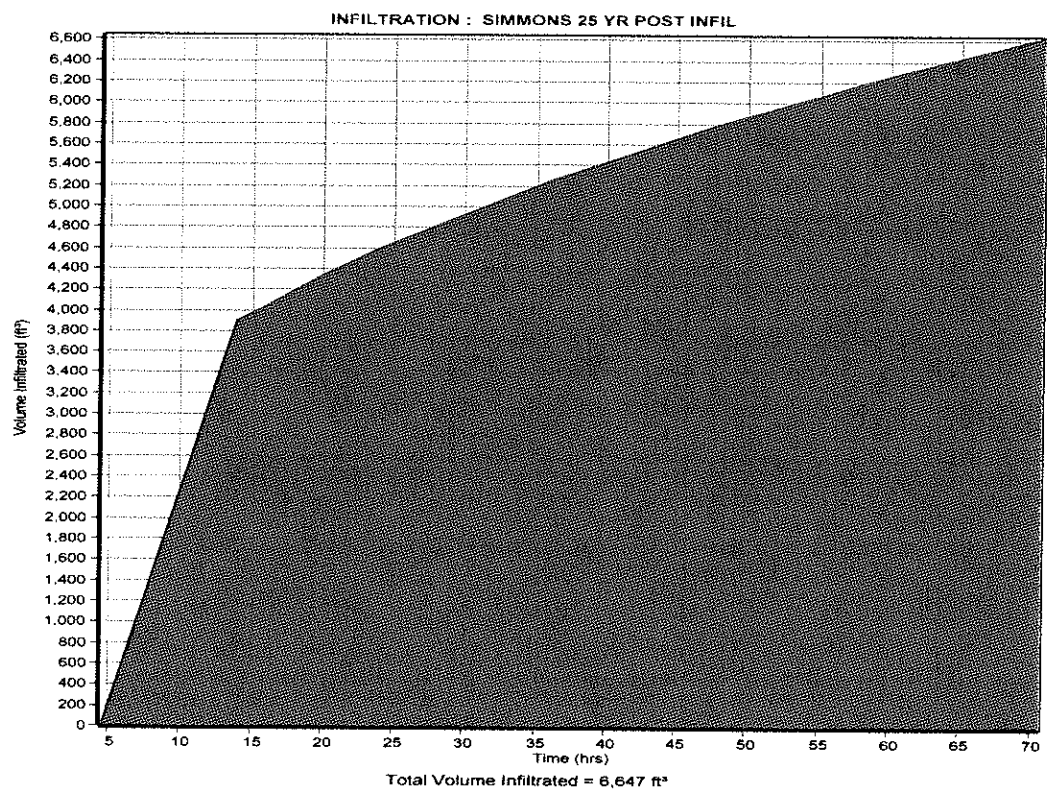
MODRET

ELEVATION VS OVERFLOW RELATIONSHIP

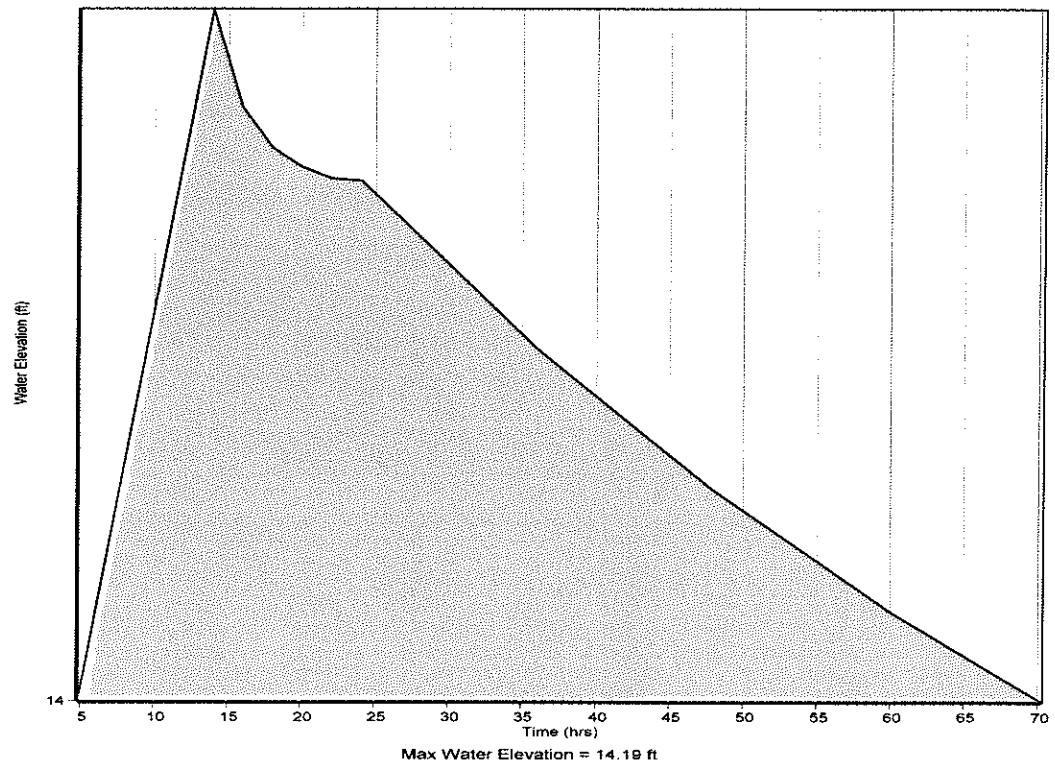
PROJECT NAME : Simmons 10 yr post infil
Structure Type: BROAD CRESTED

Crest Elevation	14.14 ft
Crest Length	8.00 ft
Coefficient of Discharge	3.31
Weir Flow Exponent	1.50
Number of Contractions	0.00
Design High Water Level Elevation	15.00 ft





INFILTRATION : SIMMONS 10 YR POST INFIL



MODRET ANALYSIS

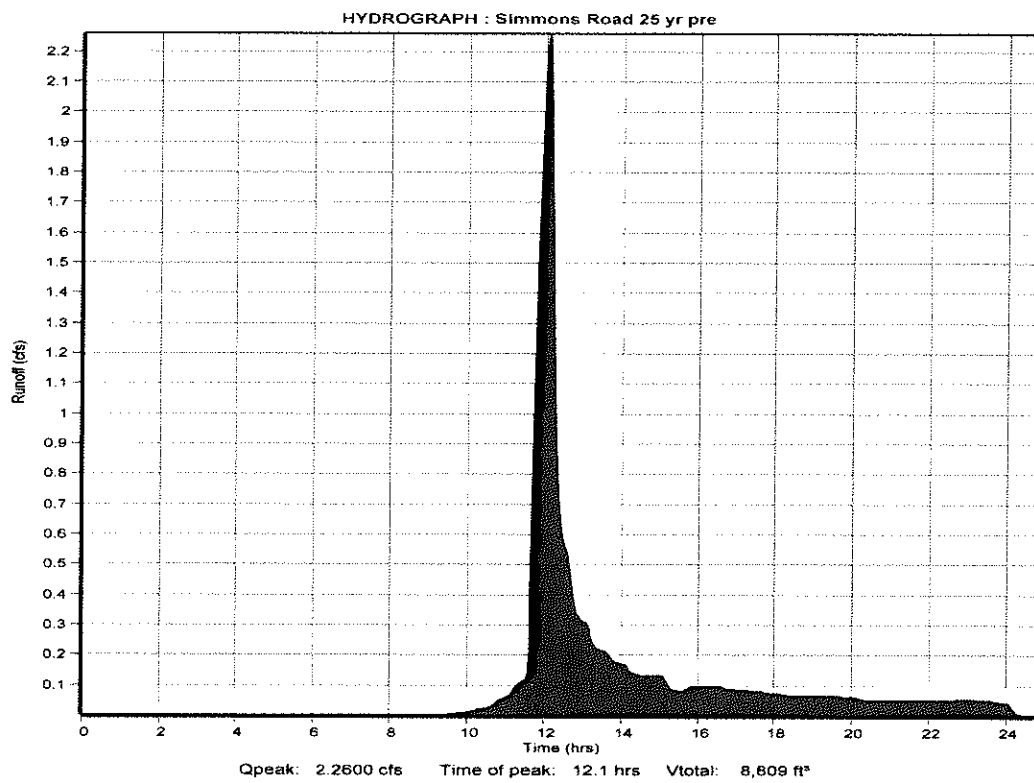
25-Year Storm Event

MODRET

HYDROGRAPH DATA INPUT - SCS UNIT METHOD

**Project Name : Simmons Road 25 yr pre
Rainfall Distribution : SCS Type II (24 hrs)**

Contributing Basin Area	0.62 ac.
SCS Curve Number	60.00
Time of Concentration	14.00 min.
Rainfall Depth	8.76 in.
Shape Factor	484
Percent DCIA	0.00 %



MODRET

HYDROGRAPH DATA INPUT - SCS UNIT METHOD

Project Name : Simmons 25 yr post
Rainfall Distribution : SCS Type II (24 hrs)

Contributing Basin Area

0.62 ac.

SCS Curve Number

80.80

Time of Concentration

14.00 min.

Rainfall Depth

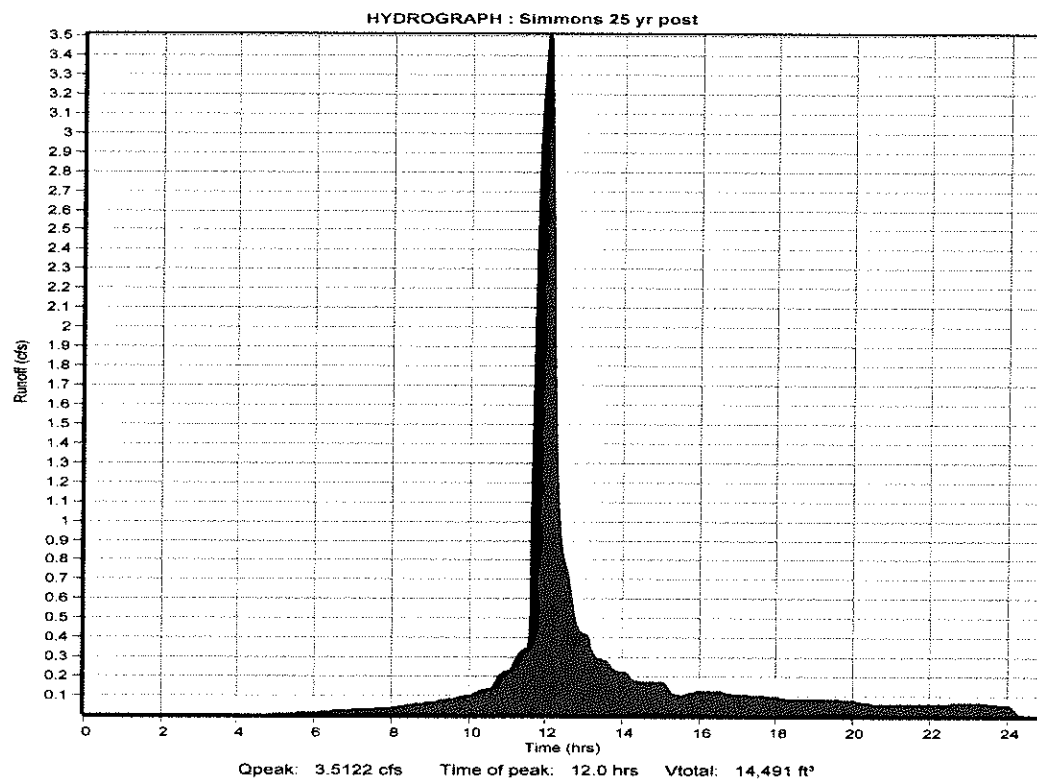
8.76 in.

Shape Factor

484

Percent DCIA

0.00 %



MODRET

SUMMARY OF UNSATURATED & SATURATED INPUT PARAMETERS

PROJECT NAME : Simmons 25 yr post infil
HYDROGRAPH RUNOFF DATA USED
UNSATURATED ANALYSIS INCLUDED

Pond Bottom Area	13,740.00 ft ²
Pond Volume between Bottom & DHWL	13,871.00 ft ³
Pond Length to Width Ratio (L/W)	1.10
Elevation of Effective Aquifer Base	8.00 ft
Elevation of Seasonal High Groundwater Table	11.50 ft
Elevation of Starting Water Level	14.00 ft
Elevation of Pond Bottom	14.00 ft
Is there overflow ?	Y
Avg. Effective Storage Coefficient of Soil for Unsaturated Analysis	0.11
Unsaturated Vertical Hydraulic Conductivity	21.00 ft/d
Factor of Safety	2.00
Saturated Horizontal Hydraulic Conductivity	5.00 ft/d
Avg. Effective Storage Coefficient of Soil for Saturated Analysis	0.09
Avg. Effective Storage Coefficient of Pond/Exfiltration Trench	1.00
Time Increment During Storm Event	2.00 hrs
Time Increment After Storm Event	12.00 hrs
Total Number of Increments After Storm Event	6.00

Runoff Hydrograph File Name: SCS2.SCS

Time of Peak Runoff: 12.04 hrs

Rate of Peak Runoff: 3.51 cfs

Hydraulic Control Features:

Groundwater Control Features - Y/N

Distance to Edge of Pond

Elevation of Water Level

Top

Bottom

Left

Right

N

0.00

N

0.00

N

0.00

N

0.00

0.00

0.00

0.00

0.00

Impervious Barrier - Y/N

Elevation of Barrier Bottom

N

0.00

N

0.00

N

0.00

N

0.00

MODRET

ELEVATION VS OVERFLOW RELATIONSHIP

PROJECT NAME : Simmons 25 yr post infil
Structure Type: BROAD CRESTED

Crest Elevation	14.14 ft
Crest Length	8.00 ft
Coefficient of Discharge	3.31
Weir Flow Exponent	1.50
Number of Contractions	0.00
Design High Water Level Elevation	15.00 ft

MODRET

SUMMARY OF RESULTS

PROJECT NAME : Simmons 25 yr post infil

CUMULATIVE TIME (hrs)	WATER ELEVATION (feet)	INSTANTANEOUS INFILTRATION RATE (cfs)	AVERAGE INFILTRATION RATE (cfs)	CUMULATIVE OVERFLOW (ft ³)
00.00 - 4.44	11.500	0.000 *		
			0.00000	
4.44	11.500	0.19299		
			0.11497	
13.88	14.214	0.03696		4,085.70
			0.02043	
15.88	14.174	0.02015		5,643.70
			0.01986	
17.92	14.159	0.01956		6,525.20
			0.01927	
19.92	14.152	0.01898		7,079.60
			0.01869	
21.92	14.148	0.01841		7,458.50
			0.01814	
23.92	14.147	0.01770		7,786.80
			0.01509	
35.92	14.100	0.01389		7,786.80
			0.01268	
47.92	14.061	0.01179		7,786.80
			0.01090	
59.92	14.027	0.01023		7,786.80
			0.00957	
70.71	14.000	0.00908		7,786.80
			0.00859	
83.92	13.970	0.00821		7,786.80
			0.00782	
95.92	13.946			7,786.80

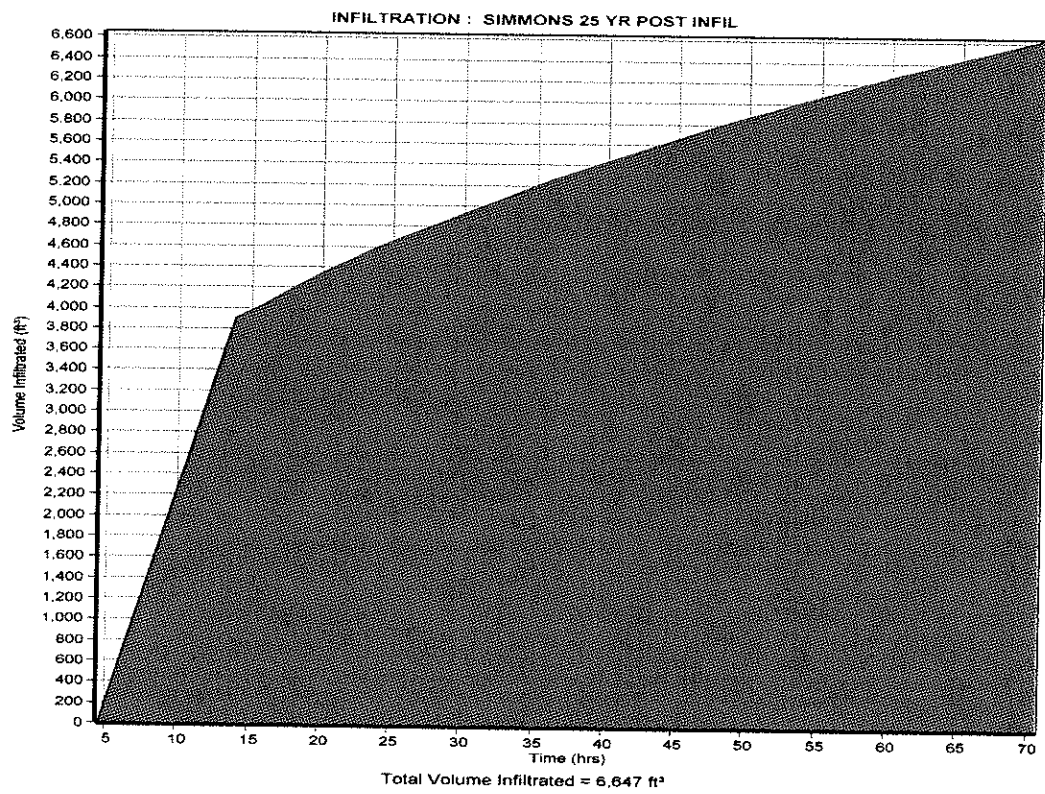
Maximum Water Elevation: 14.214 feet @ 13.88 hours

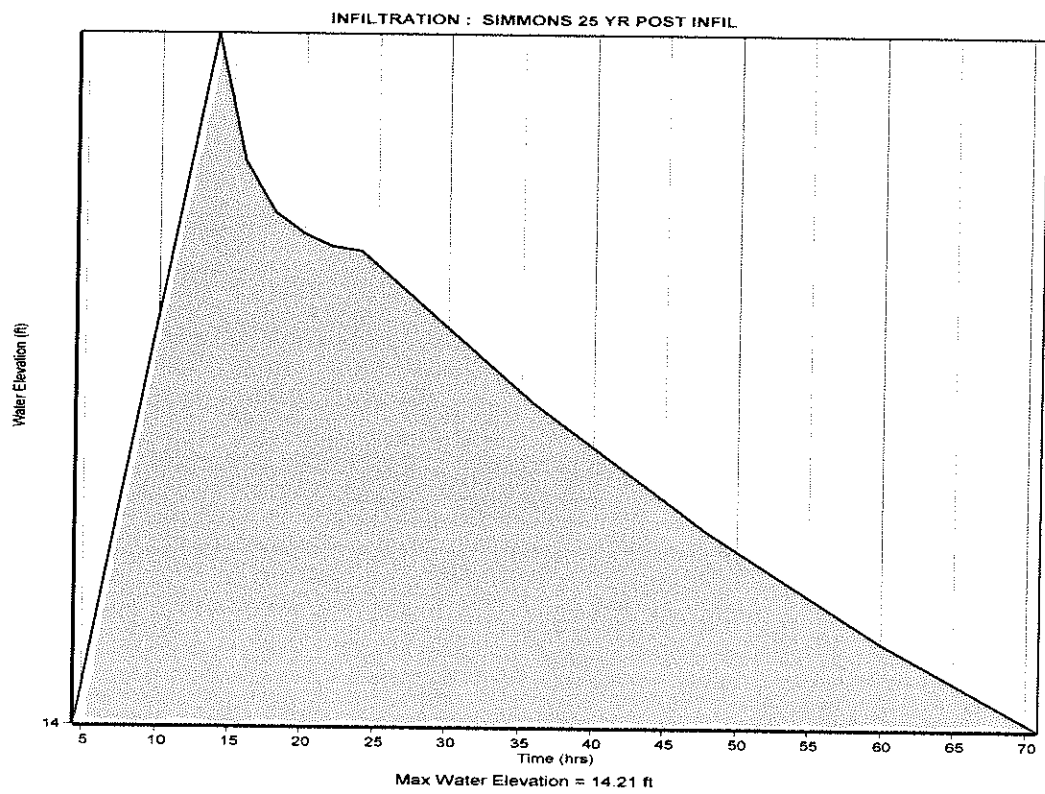
Recovery @ 70.713 hours

* Time increment when there is no runoff

Maximum Infiltration Rate: 0.716 ft/day

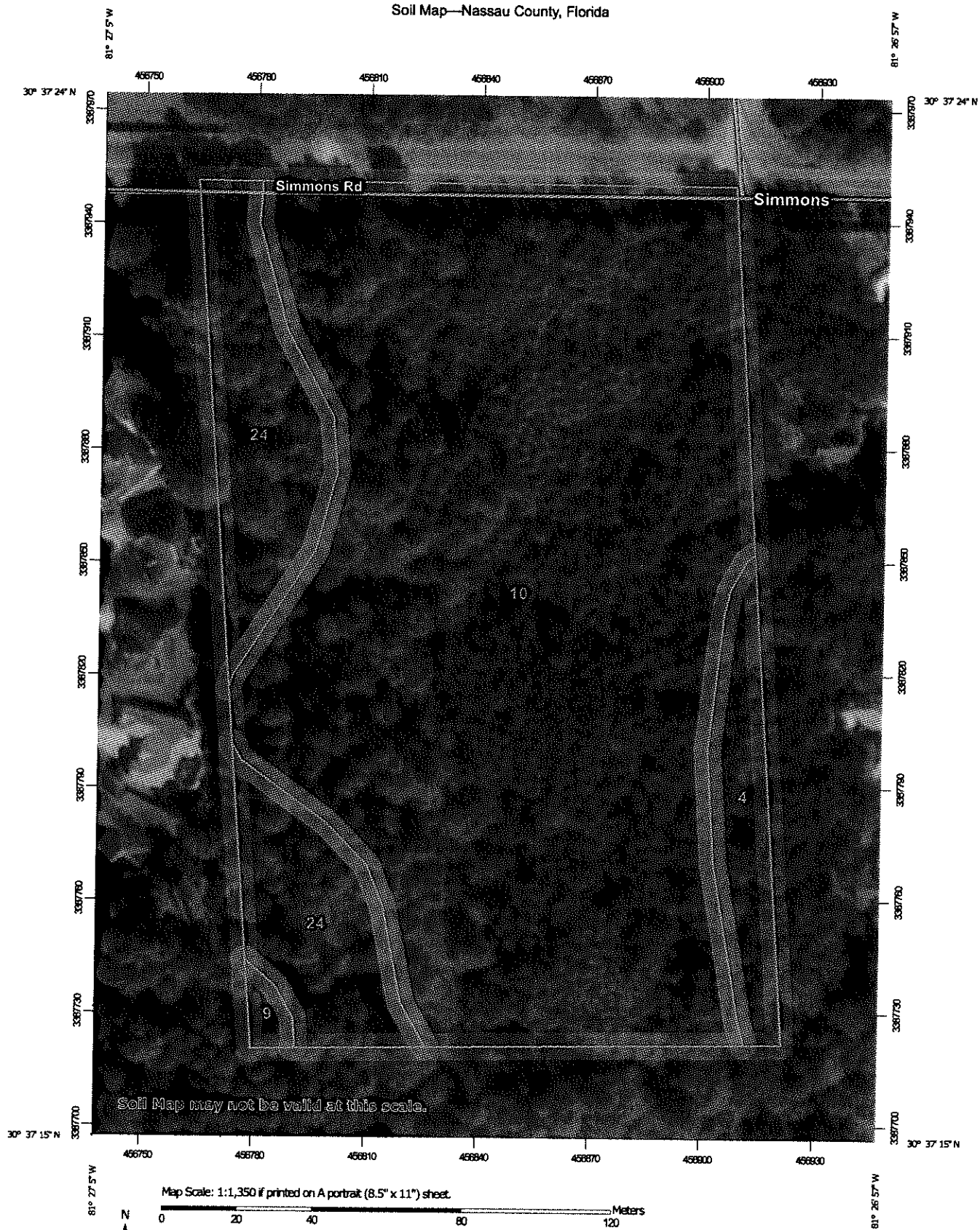
Analysis Date: 8/16/2019





NRCS Soil Survey Data

Soil Map—Nassau County, Florida



**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

8/16/2019
Page 1 of 3

Soil Map—Nassau County, Florida

MAP LEGEND

Area of Interest (AOI)	 Area of Interest (AOI)	 Spoil Area
Soils	 Soil Map Unit Polygons	 Stony Spot
 Soil Map Unit Lines	 Soil Map Unit Points	 Very Stony Spot
Special Point Features	 Blowout	 Wet Spot
 Borrow Pit	 Clay Spot	 Other
 Closed Depression	 Gravel Pit	 Special Line Features
 Gravelly Spot	 Landfill	Water Features
 Lava Flow	 Marsh or swamp	 Streams and Canals
 Mine or Quarry	 Miscellaneous Water	Transportation
 Perennial Water	 Rock Outcrop	 Rails
 Saline Spot	 Sandy Spot	 Interstate Highways
 Severely Eroded Spot	 Sinkhole	 US Routes
 Slide or Slip	 Sodic Spot	 Major Roads
		 Local Roads
		Background
		 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Nassau County, Florida
Survey Area Date: Version 18, Sep 10, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Sep 13, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
4	Echaw fine sand	0.4	4.9%
9	Leon fine sand, 0 to 2 percent slopes	0.1	0.6%
10	Mandarin fine sand, 0 to 2 percent slopes	6.4	78.9%
24	Kingsferry fine sand	1.3	15.6%
Totals for Area of Interest		8.1	100.0%

Nassau County, Florida

24—Kingsferry fine sand

Map Unit Setting

National map unit symbol: 4g9g
Elevation: 0 to 150 feet
Mean annual precipitation: 47 to 55 inches
Mean annual air temperature: 64 to 72 degrees F
Frost-free period: 305 to 335 days
Farmland classification: Not prime farmland

Map Unit Composition

Kingsferry and similar soils: 89 percent
Minor components: 11 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kingsferry

Setting

Landform: Flats on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy marine deposits

Typical profile

A - 0 to 34 inches: fine sand
Bh1 - 34 to 67 inches: fine sand
Bh2 - 67 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat):
Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: B/D

Forage suitability group: Sandy soils on flats of mesic or hydric lowlands (G153AA141FL)

Other vegetative classification: North Florida Flatwoods (R153AY004FL)

Hydric soil rating: Yes

Minor Components

Lynn haven

Percent of map unit: 4 percent

Landform: Depressions on marine terraces

Landform position (three-dimensional): Dip

Down-slope shape: Concave

Across-slope shape: Concave

Hydric soil rating: Yes

Leon, non-hydric

Percent of map unit: 4 percent

Landform: Flatwoods on marine terraces

Landform position (three-dimensional): Talf

Down-slope shape: Convex

Across-slope shape: Linear

Hydric soil rating: No

Rutlege

Percent of map unit: 3 percent

Landform: Drainageways on marine terraces

Landform position (three-dimensional): Talf

Down-slope shape: Concave, linear

Across-slope shape: Concave, linear

Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Nassau County, Florida

Survey Area Data: Version 18, Sep 10, 2018

Nassau County, Florida

10—Mandarin fine sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2sxql
Elevation: 0 to 250 feet
Mean annual precipitation: 39 to 62 inches
Mean annual air temperature: 53 to 81 degrees F
Frost-free period: 209 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Mandarin and similar soils: 92 percent
Minor components: 8 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mandarin

Setting

Landform: Rises
Landform position (three-dimensional): Talf, rise
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Sandy marine deposits

Typical profile

A - 0 to 7 inches: fine sand
E - 7 to 13 inches: fine sand
Bh - 13 to 18 inches: fine sand
E' - 18 to 62 inches: fine sand
B'h - 62 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat):
Moderately high to very high (1.28 to 19.98 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A

Forage suitability group: Sandy soils on rises and knolls of mesic uplands (G153AA131FL)

Hydric soil rating: No

Minor Components

Leon

Percent of map unit: 5 percent

Landform: Flatwoods

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: Yes

Centenary

Percent of map unit: 1 percent

Landform: Rises

Landform position (three-dimensional): Talf, rise

Down-slope shape: Linear, convex

Across-slope shape: Linear

Hydric soil rating: No

Rutlege

Percent of map unit: 1 percent

Landform: Drainageways, depressions

Down-slope shape: Linear, concave

Across-slope shape: Concave

Hydric soil rating: Yes

Ortega

Percent of map unit: 1 percent

Landform: Ridges, marine terraces

Landform position (three-dimensional): Interfluve

Down-slope shape: Convex

Across-slope shape: Linear

Hydric soil rating: No

Data Source Information

Soil Survey Area: Nassau County, Florida

Survey Area Data: Version 18, Sep 10, 2018

Brian L Spahr
424 Peregrine Ct., Jacksonville, Florida 32225
(904) 626-1377

September 1, 2019

Asa R. Gillette, P.E.
Gillette and Associates, Inc.
20 South 4th Street
Fernandina Beach, FL 32034

RE: **COFB Simmons Rd.**
Fernandina Beach, Florida
Parcel No. 00-00-30-044A-0022-0000

Dear Asa,

Pursuant to your request, I have inspected the above referenced property for the presence and extent of sensitive species of wildlife and jurisdictional wetlands. Sensitive wildlife species include fauna listed as endangered, threatened, or species of special concern (SSC) by federal and/or state regulatory agencies. The on-site inspection occurred on August 9, 2019.

Wetlands

Two (2) jurisdictional wetlands were identified on-site (+/-0.64 acres) along with a jurisdictional ditch on the western boundary (Figure 3). The on-site wetlands are mixed forested depressions dominated by red maple (*Acer rubrum*), pond pine (*Pinus serotina*), swamp bay (*Persea palustris*), Virginia chainfern (*Woodwardia virginicus*), and royal fern (*Osmunda regalis*)

Uplands

Two (2) different upland communities were found on-site; Pine-Mesic Oak (FLUCFCS 414) and Live Oak (FLUCFCS 427). The pine-mesic oak community is located in the western portion of the property adjacent to the on-site wetlands. This community is dominated by loblolly pine (*Pinus taeda*), water oak (*Quercus nigra*), saw palmetto (*Serenoa repens*), and bracken fern (*Pteridium aquilinum*). The live oak community is located in the eastern portion of the property. This community is dominated by a dense stand of live oak (*Quercus virginiana*) with an understory of rusty lyonia (*Lyonia ferruginea*) and saw palmetto.

Due to the location of the property, special attention was given to habitat types and soil characteristics that are associated with gopher tortoise (*Gopherus polyphemus*) utilization. The gopher tortoise is listed as Threatened by Florida Fish & Wildlife Conservation Commission (FWC) and Conservation Permits for the relocation of the gopher tortoises must be obtained for any onsite burrow(s) prior to clearing and/or grading the property. Additional attention was given to potential foraging habitat for the wood stork (*Mycteria americana*). Wood storks are a Federally Threatened species and

are listed by the State of Florida as Federally-designated Threatened. They prefer to forage in both open and forested wetlands. Suitable foraging habitat (SFH) for wood storks includes freshwater marshes, cypress depressions, swamp sloughs and tidal creeks and pools. For counties in North Florida, US Fish & Wildlife Service (USFWS) designated buffers around active nesting wood storks colonies to protect SFH. The core foraging areas, or CFAs, consist of a 13-mile buffer around known wood stork nesting colonies.

The eastern side of the property was found to contain suitable soil conditions to support gopher tortoises; however, the on-site habitat was found to be unsuitable. The property is densely vegetated with a canopy of live oak and a thick understory of saw palmetto and rusty lyonia. The property completely lacks open areas with the herbaceous vegetation needed by gopher tortoise as a primary food source. No gopher tortoise or their burrows were observed on-site. If any gopher tortoise or burrows are observed on-site prior to or during construction, a formal survey will need to be conducted and a relocation permit will need to be obtained from FWC.

No wood storks were observed on-site; however, on-site wetlands and ditch could be considered SFH for wood storks. As long as the wetlands and ditch remain undisturbed, the proposed project will have no impact on wood stork SFH.

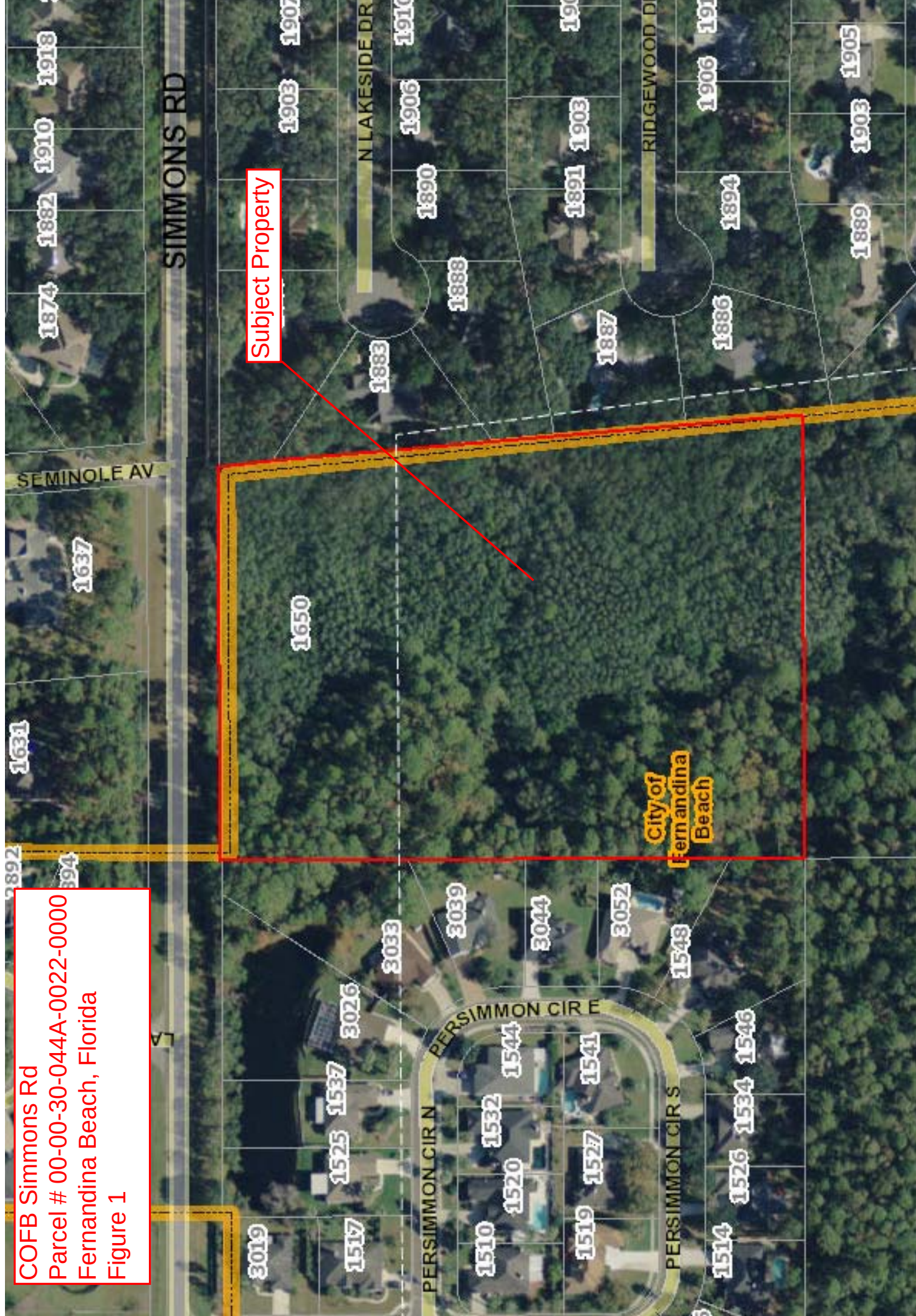
Should you have any questions or if you require any additional information, please contact me anytime at (904) 626-1377.

Sincerely,

A handwritten signature in black ink, appearing to read 'B. Spahr', with a horizontal line extending to the right.

Brian L. Spahr

COFB Simmons Rd
Parcel # 00-00-30-044A-0022-0000
Fernandina Beach, Florida
Figure 1



Soil Map—Nassau County, Florida
(COFB Simmons Rd. Figure 2)



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Nassau County, Florida

Survey Area Data: Version 18, Sep 10, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Sep 13, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
4	Echaw fine sand	0.3	5.2%
10	Mandarin fine sand, 0 to 2 percent slopes	5.5	83.5%
24	Kingsferry fine sand	0.7	11.3%
Totals for Area of Interest		6.6	100.0%

Simmons Rd.



COFB Simmons Rd.

Parcel # 00-00-30-044A-0022-0000



Fernandina Beach, FL 32034

Existing Site Conditions

Figure 3



On-Site Jurisdictional Wetlands +/-0.64 Acres

FLUCFCS Code

414.....Pine-Mesic Oak

427.....Live Oak

510.....Ditch

630.....Wetland Forested Mixed

Engineering Plans

For

RAYNORSTARR

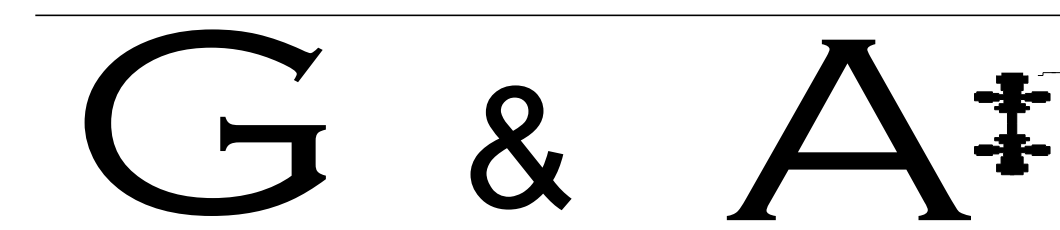
for

RAYNORSTARR, LLC.
9th Street
Fernandina Beach, Florida

Gillette & Associates, Inc.

Civil & Environmental Engineering
Mechanical & Structural Engineering
Permitting & Construction Management

20 South 4th Street Amelia Island, Florida 32034
Phone: (904) 261-8819



Issue Date:
June 10, 2019
Revised:
August 19, 2019

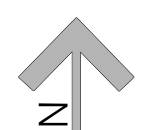
G&A Project
No.: 19-10.11

RAYNORSTARR

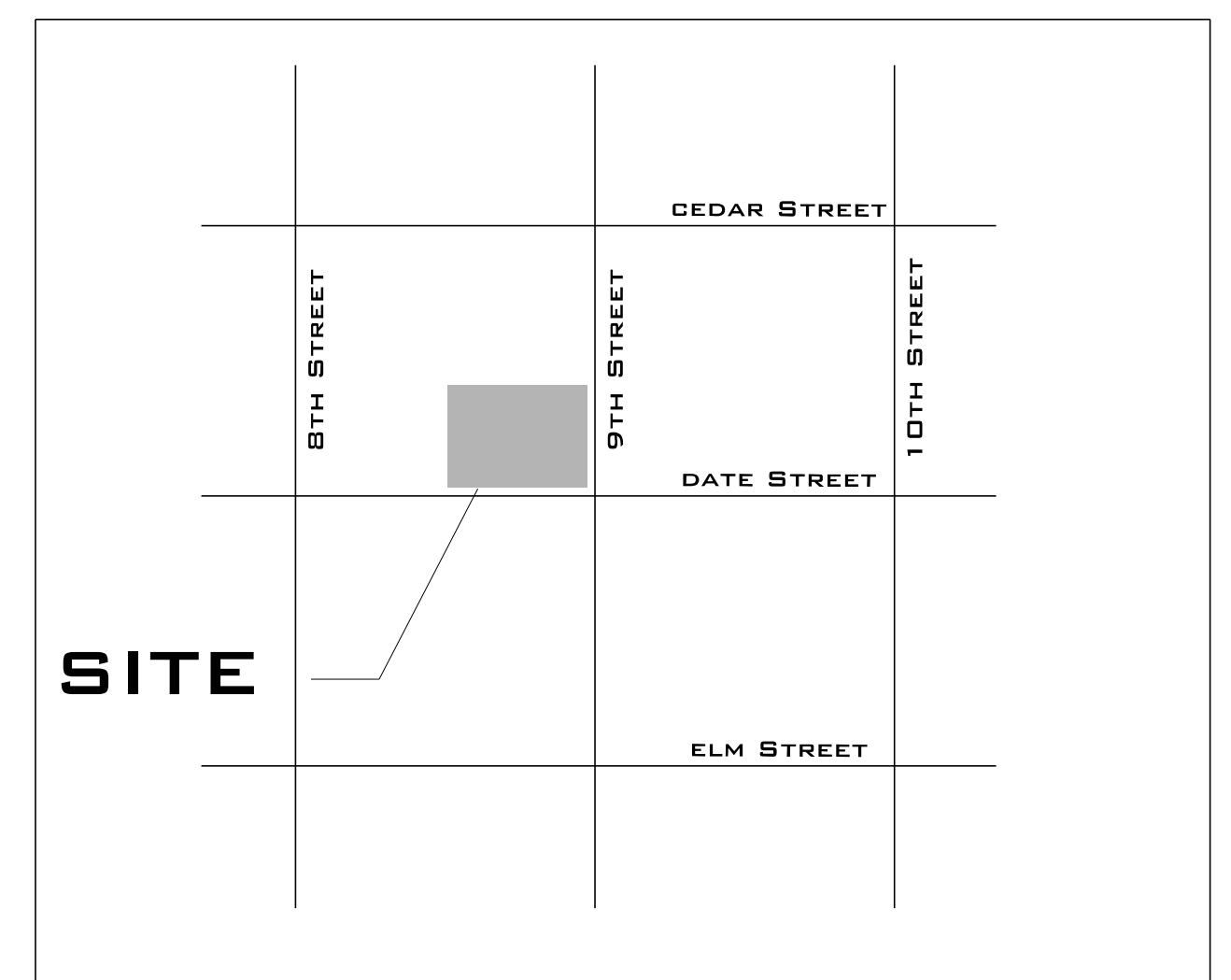
FOR

RAYNORSTARR, LLC.

RELEASED FOR CONSTRUCTION BY _____



SITE LOCATION MAP



GENERAL NOTES

P.I.N.-00-00-31-1800-0129-0050

ZONING- MU-8

FLUM- 8TH STREET MIXED USE

LOT SIZE- 10,000 SF = 0.23 ACRES

MAX BLDG.HEIGHT- 45'

MAX IMP.SURFACE RATIO- 0.60 (0.56 SHOWN)

MAX FLOOR AREA RATIO- 2.0 (0.58 SHOWN)

SETBACKS:
FRONT- 6'
SIDES- N/A
REAR- N/A

LIGHTING TO BE BUILDING MOUNTED

TRASH TO BE COLLECTED IN 6' WIDE DUMPSTER

PERVIOUS PAVERS TO BE CLEANED OR VACCUMED AT MINIMUM EVERY 6 MONTHS, AND INSPECTED ANNUALLY FOR INFILTRATION RATES

PARKING NOTES

BUSINESS/COMMERCIAL- 1 SPACE / 300 SF GROSS FLOOR AREA
UNIT 1- 2,160 SF X (1 SPACE / 300 SF) = 6 SPACES
UNIT 2- 300 SF X (1 SPACE / 300 SF) = 1 SPACE

RESIDENTIAL- 2 SPACES PER DWELLING UNIT
1 DWELLING UNIT = 2 SPACES

STORAGE- 1 SPACE / 2 EMPLOYEES & 1 PER COMPANY VEHICLE
UNIT 2- 420 SF STORAGE, 1 EMPLOYEE, 0 VEHICLES = 1 SPACE

TOTAL PARKING REQUIRED = 10 TOTAL SPACES

ADA PARKING- 1 SPACE PER 25 SPACES = 1 SPACE

SPACES SHOWN: 1 ADA & 9 STANDARD SPACES

LEGEND

LANDSCAPED AREA

BUILDING FOOTPRINT

CONCRETE

PERVIOUS PAVERS

K					
J					
I					
H					
G					
F					
E					
D					
C					
B	LA	08/19/19	Revised per TRC Comments		
A	LA	06/10/19	TRC Submittal		
No.	By	Date	Revision		

Scale: 1" = 10'	
Project Mgr: AG	Gillette & Associates, Inc. 20 South 4th Street Fernandina Beach, FL 32034
Designed by: AG	
Drawn by: LA	Certificate of Authorization No.9332
QA/QC: NG	DO NOT SCALE THIS DRAWING - DIMENSIONS AND NOTES TAKE PREFERENCE. DRAWING IS REDUCED IF LESS THAN 22" x 34"

G & A

GILLETTE & ASSOCIATES, INC.

20 SOUTH 4TH STREET
FERNANDINA BEACH, FL 32034

PHONE: (904) 261-8819

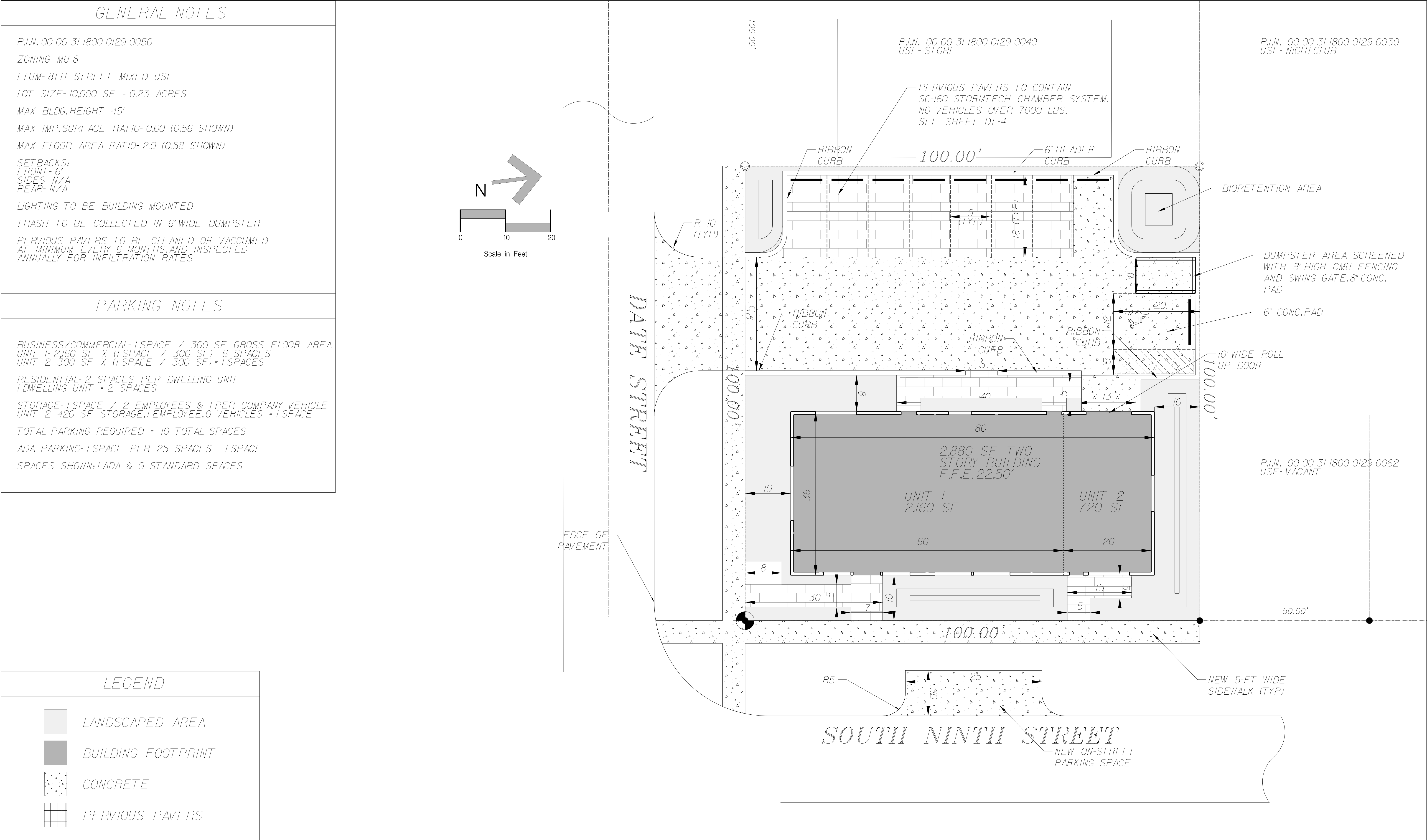
Raynorstarr, LLC.

Raynorstarr

GEOMETRY PLAN

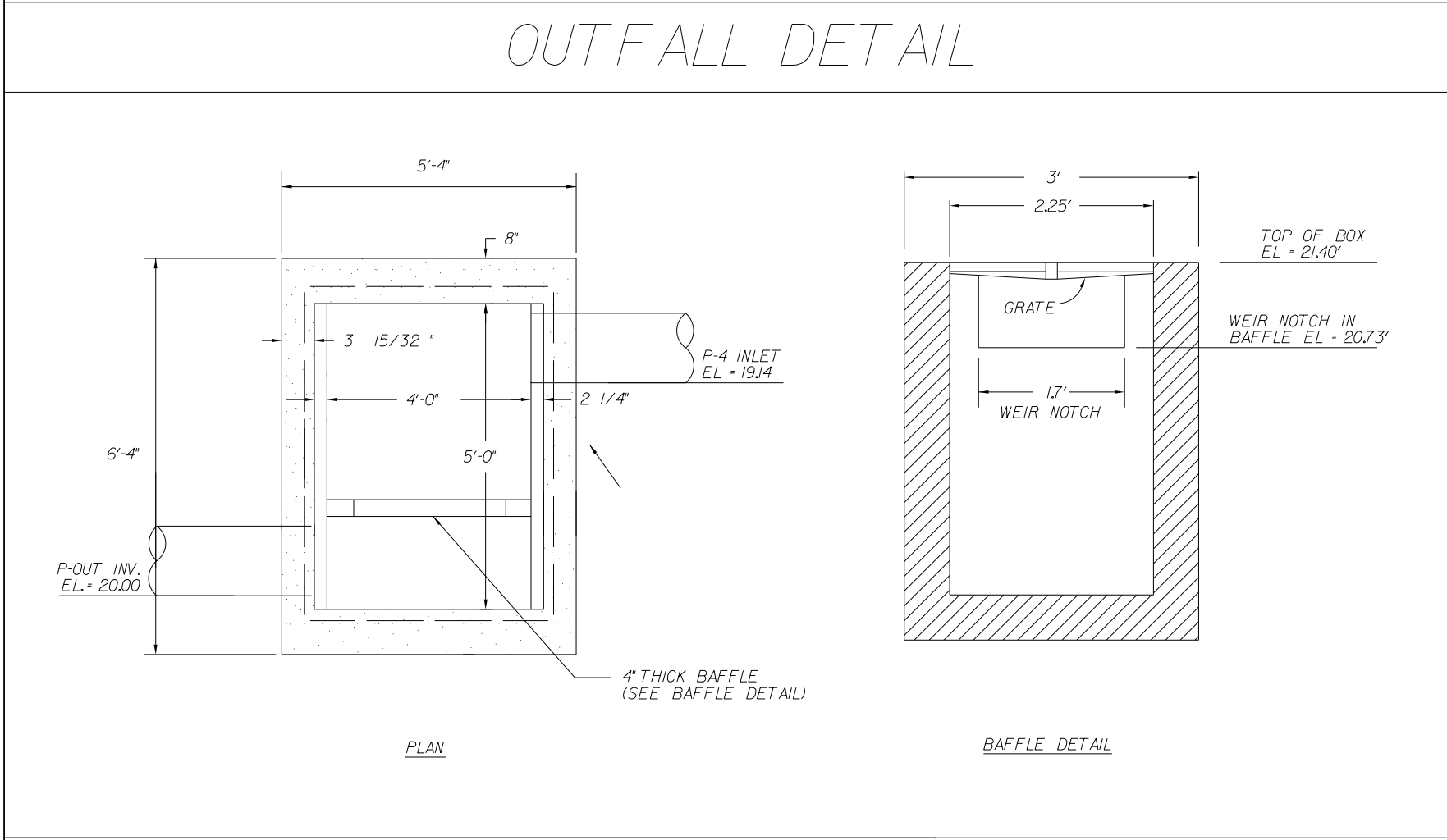
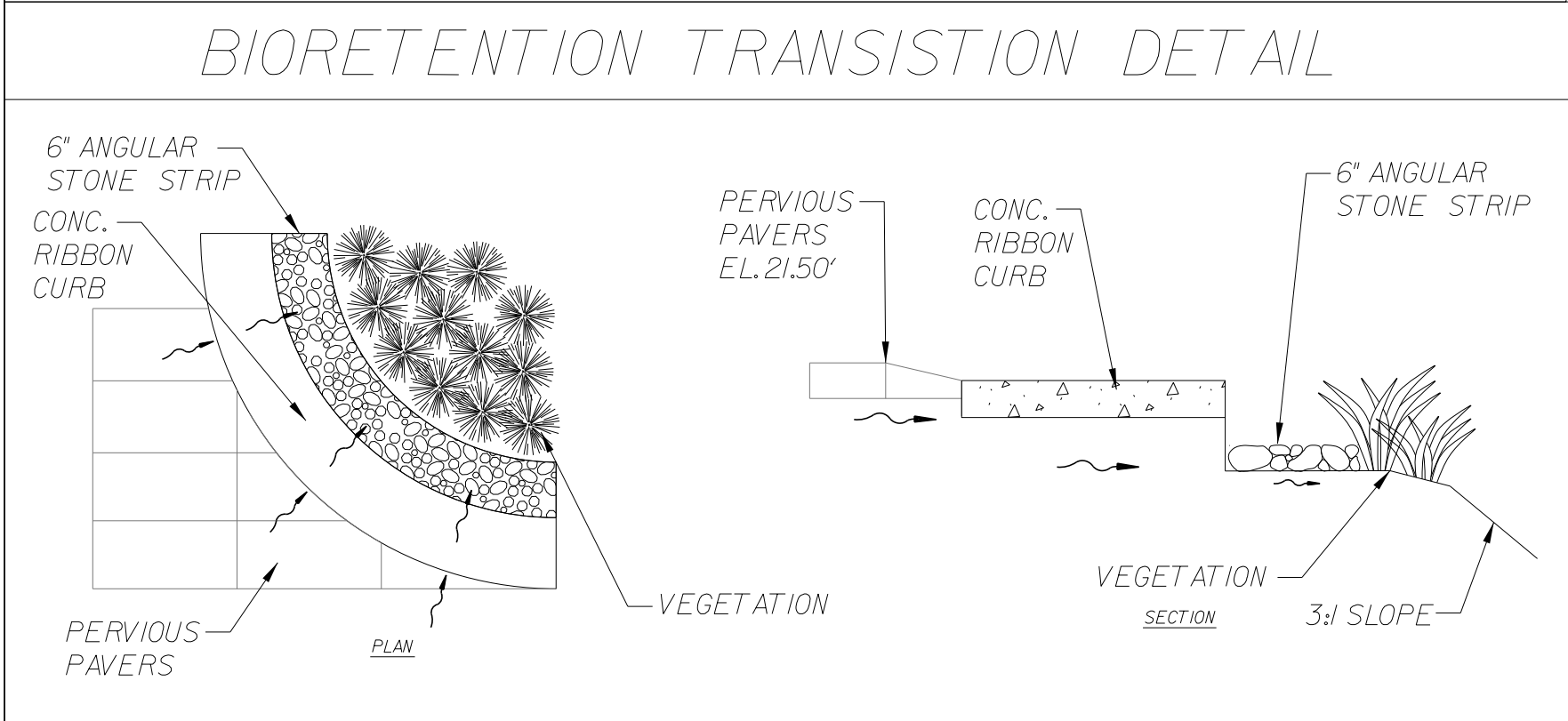
Registered Professional

Sheet No.
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Project No.
19-1011



PIPE TABLE					
NAME	FROM	TO	SIZE	LENGTH	MATERIAL
P-1	S-1	S-2	8"	25.2'	PVC
P-3	S-3	S-4	8"	41.0'	PVC
P-4	S-4	S-5	12"	19.3'	PVC
P-5	S-5	S-OUT	12"	5.0'	PVC
P-OUT	S-OUT	S-OFF	15"	12.2'	RCP

STRUCTURE TABLE						
NAME	TYPE	TOP/ INLET ELEV.	INVERT ELEVATION			
			N	S	E	W
S-1	12" X 12" YARD DRAIN	20.33	19.15	-	-	-
S-2	12" X 12" YARD DRAIN	20.33	-	19.15	-	-
S-3	12" X 12" YARD DRAIN	21.00	-	-	20.33	-
S-4	18" X 18" YARD DRAIN	21.00	-	19.14	19.14	-
S-5	STORMTECH SC-160LP	-	19.14	19.14	-	-
S-OUT	3'x3' OUTFALL BOX	21.35	19.14	20.00	-	-
S-OFF	TYPE C INLET	20.68 +/-	-	19.85	-	-



LEGEND	
	GRAVEL
	BUILDING FOOTPRINT
	IMPERVIOUS CONCRETE
	PERVIOUS PAVERS

K			
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D			
C			
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Raynorstarr, LLC.

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DRAINAGE PLAN

Sheet No. DR-1
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Issue Date May 15, 2019
Project No. 19-1011

Registered Professional

GENERAL NOTES

P.J.N.-00-00-31-1800-0129-0050

ZONING- MU-8

FLUM- 8TH STREET MIXED USE

LOT SIZE- 10,000 SF = 0.23 ACRES

MAX BLDG.HEIGHT- 45'

MAX IMP.SURFACE RATIO- 0.60 (0.56 SHOWN)

MAX FLOOR AREA RATIO- 2.0 (0.58 SHOWN)

SETBACKS:

FRONT- 6'

SIDES- N/A

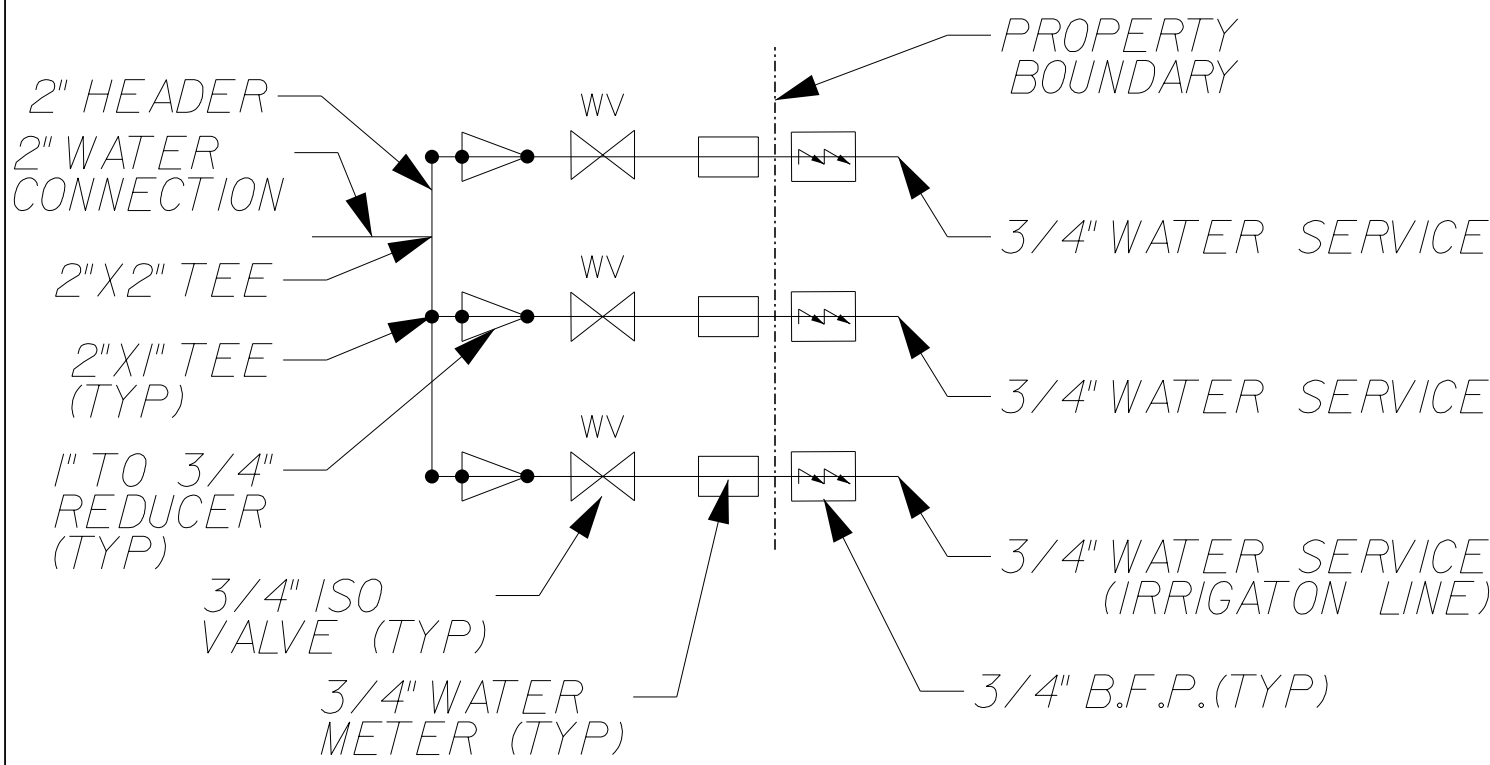
REAR- N/A

LIGHTING TO BE BUILDING MOUNTED

TRASH TO BE COLLECTED IN 6'WIDE DUMPSTER

PERVIOUS PAVERS TO BE CLEANED OR VACCUMED AT MINIMUM EVERY 6 MONTHS,AND INSPECTED ANNUALLY FOR INFILTRATION RATES

WATER CONNECTION DETAIL



LEGEND

- GRAVEL
- BUILDING FOOTPRINT
- CONCRETE
- PERVIOUS PAVERS

K			
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QAQC: NG

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Raynorstarr

UTILITY PLAN

Registered Professional

Sheet No.
UT-1
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Issue Date
May 15, 2019
Project No.
19-1011

GENERAL NOTES				
P.J.N-00-00-31-1800-0129-0050				
ZONING- MU-8				
FLUM- 8TH STREET MIXED USE				
LOT SIZE- 10,000 SF = 0.23 ACRES				
MINIMUM LANDSCAPED AREA- 10% LOT SIZE 0.23 ACRES X 0.10 = 0.023 ACRES 0.23 ACRES X 43560 SF/ACRE = 1,002 SF REQUIRED, 1,605 SF SHOWN (NOT INCLUDING PARKING LOT LANDSCAPING)				
PARKING LOT LANDSCAPING- 10% GROSS AREA DEVOTED TO VEHICULAR USE 3,990 SF X 0.10 = 399 SF REQUIRED,496 SF SHOWN				
MINIMUM SHADE TREE (ST) REQUIREMENTS- 1 ST / 1,500 SF LOT SIZE 10,019 SF X 1/1,500 (ST/SF) = 7 ST				
INTERNAL PLANTING PLANT/MATERIAL SCHEDULE				
	QUANTITY	KEY	SPECIES	SIZE/REMARKS
	147	SL	STOKESIA LAEVIS	QUART OR LP50
	128 SF		STOKE'S ASTER	12" X 12" SPACING
	362	CV	PENNISETUM ALOPECUROIDES	QUART OR LP50
	314 SF		FOUNTAIN GRASS 'LITTLE BUNNY'	12" X 12" SPACING
	228	DI	DIETES IRIDIOIDES	*1 GAL,
			FORTNIGHT LILY	2' SPACING
	8	IV	IRIS VIRGINICA	1 GAL'
			SOUTHERN BLUE FLAG IRIS	12" SPACING
	52	EC	ECHINACEA PURPUREA 'AVALANCHE'	QT. OR LP50
			CONEFLOWER	2' SPACING
	21	ED	EUTROCHIUM DUBIUM 'LITTLE JOE'	QT. OR LP32
			JOE PYE WEED	2' SPACING
	17	VO	VIBURNUM OBOVATUM	MIN 18" HT.,15' WD.
			WALTER'S VIBURNUM	
	7	VSP	ITEA VIRGINICA	MIN 18" HT.,15' WD.
			VIRGINIA SWEETSPIRE	
	21	MC	MYRICA CERIFERA	MIN 18" HT.,15' WD.
			SOUTHERN WAX MYRTLE	
	5	BN	BETULA NIGRA	8' MIN HT.
			RIVER BIRCH (MULTI)	6' COMBINED CAL.
	2	QV	QUERCUS VIRGINIANA	8' MIN HT,2.5' CAL.
			LIVE OAK	
	162 SF	SOD	STENOTAPHRUM SECUNDATUM	LAYERED EVENLY
			ST. AUGUSTINE SOD	WITHOUT GAPS
	113 SF	GR	GRAVEL	SEE PLAN

ROOT BARRIER DETAIL

PROPERTY LINE (TYP)

MIN 3'

MIN 2'

Top of root barrier 1" above finished grade

NOTES:
1.Root barriers shall be installed per manufacturer's specifications
2.Root barriers shall be installed when root ball is located within 8' of pavement, on all street trees, and all trees within 10' of underground utilities.

LEGEND

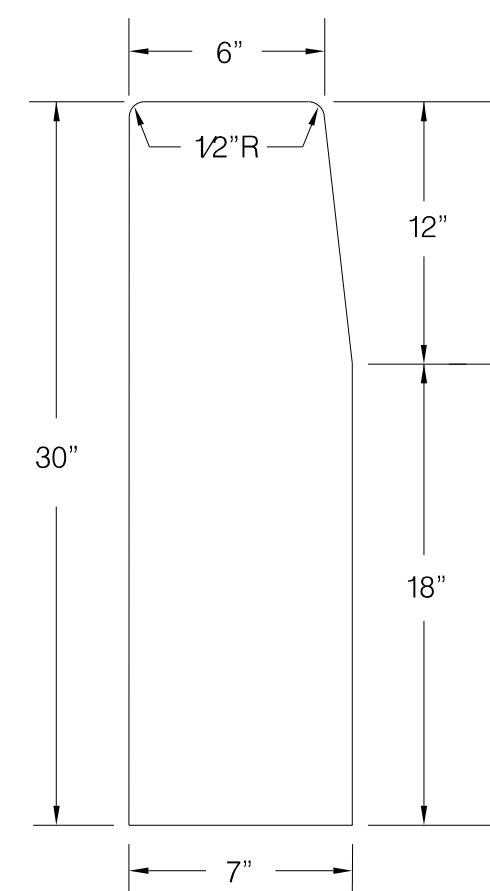
GRAVEL

BUILDING FOOTPRINT

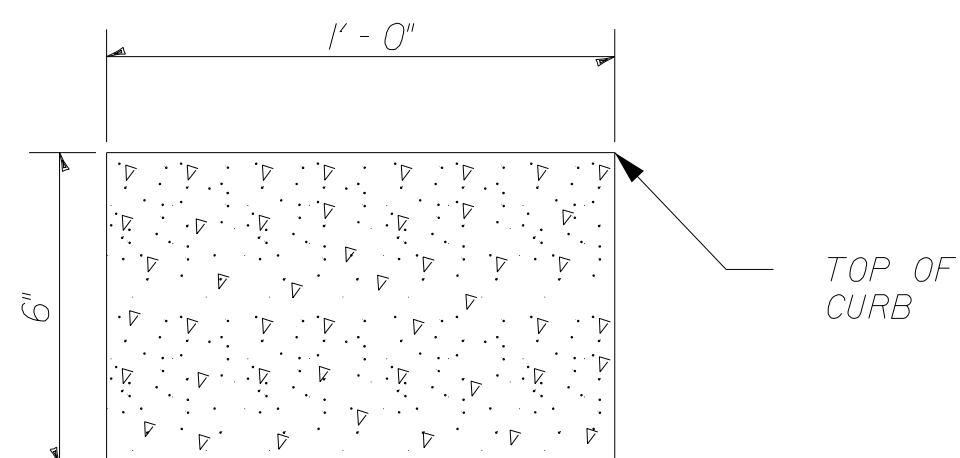
CONCRETE

PERVIOUS PAVERS

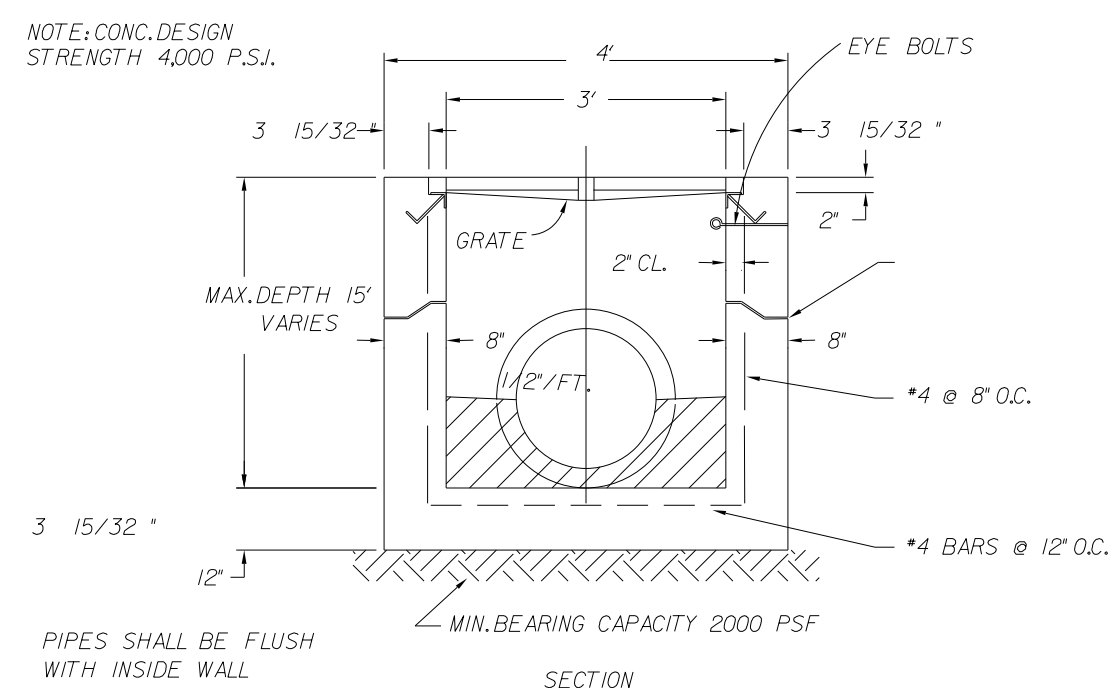
<table><tr><td>K</td><td></td><td></td></tr><tr><td>J</td><td></td><td></td></tr><tr><td>I</td><td></td><td></td></tr><tr><td>H</td><td></td><td></td></tr><tr><td>G</td><td></td><td></td></tr><tr><td>F</td><td></td><td></td></tr><tr><td>E</td><td></td><td></td></tr><tr><td>D</td><td></td><td></td></tr><tr><td>C</td><td></td><td></td></tr><tr><td>B</td><td>LA</td><td>08/19/19</td></tr><tr><td>A</td><td>LA</td><td>06/10/19</td></tr><tr><td>No.</td><td>By</td><td>Date</td></tr></table>	K			J			I			H			G			F			E			D			C			B	LA	08/19/19	A	LA	06/10/19	No.	By	Date	<table><tr><td>Scale: 1" = 10'</td></tr><tr><td>Project Mgr: AG</td></tr><tr><td>Designed by: AG</td></tr><tr><td>Drawn by: LA</td></tr><tr><td>QA/QC: NG</td></tr></table>	Scale: 1" = 10'	Project Mgr: AG	Designed by: AG	Drawn by: LA	QA/QC: NG	<table><tr><td>Gillette & Associates, Inc. 20 South 4th Street Fernandina Beach, FL 32034</td></tr><tr><td>Certificate of Authorization No.9332</td></tr><tr><td>DO NOT SCALE THIS DRAWING - DIMENSIONS AND NOTES TAKE PREFERENCE. DRAWING IS REDUCED IF LESS THAN 22" x 34"</td></tr></table>	Gillette & Associates, Inc. 20 South 4th Street Fernandina Beach, FL 32034	Certificate of Authorization No.9332	DO NOT SCALE THIS DRAWING - DIMENSIONS AND NOTES TAKE PREFERENCE. DRAWING IS REDUCED IF LESS THAN 22" x 34"	G & A⁺ GILLETTE & ASSOCIATES, INC. 20 SOUTH 4TH STREET FERNANDINA BEACH, FL 32034 PHONE: (904) 261-8819	Raynorstarr, LLC.	Raynorstarr	LANDSCAPE PLAN	<table><tr><td colspan="3">Sheet No. LS-1</td></tr><tr><td colspan="3">7 of 11</td></tr><tr><td colspan="3">Issue Date May 15, 2019</td></tr><tr><td colspan="3">Project No. 19-1011</td></tr></table>	Sheet No. LS-1			7 of 11			Issue Date May 15, 2019			Project No. 19-1011			Registered Professional		
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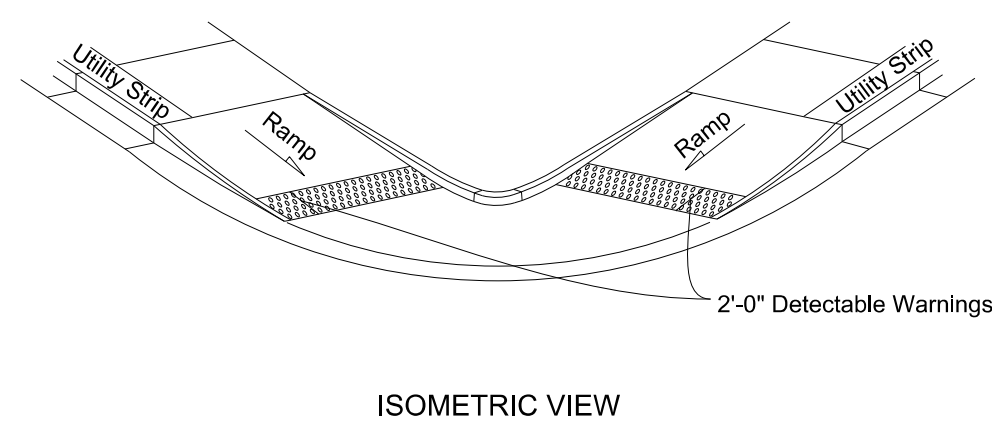
12" HEADER CURB DETAIL



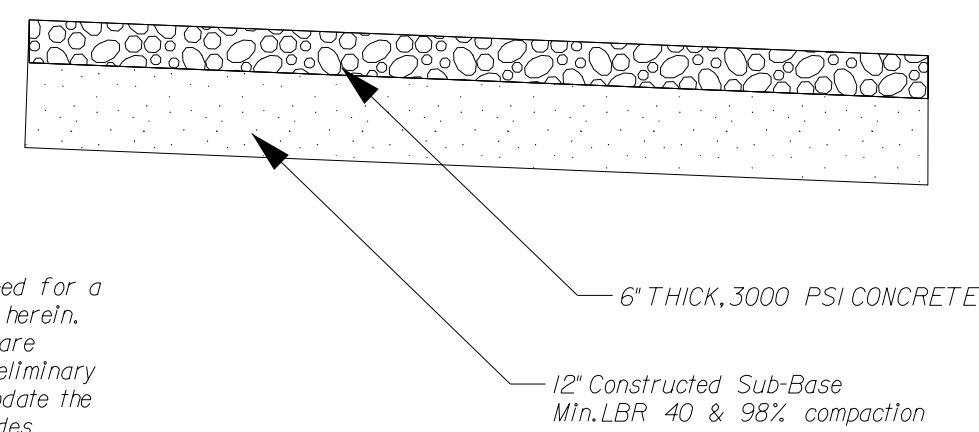
RIBBON CURB DETAIL



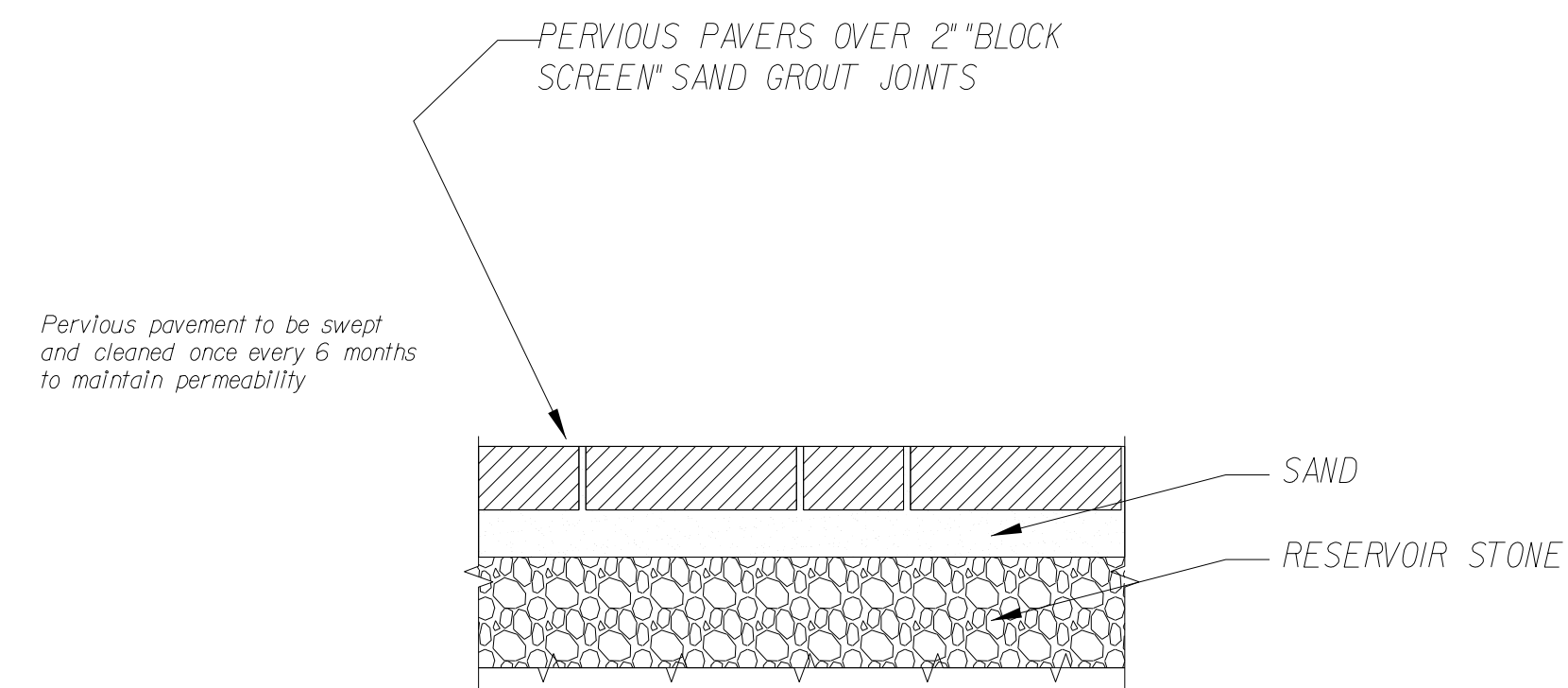
TYPE C INLET DETAIL



CURB RAMP DETAIL

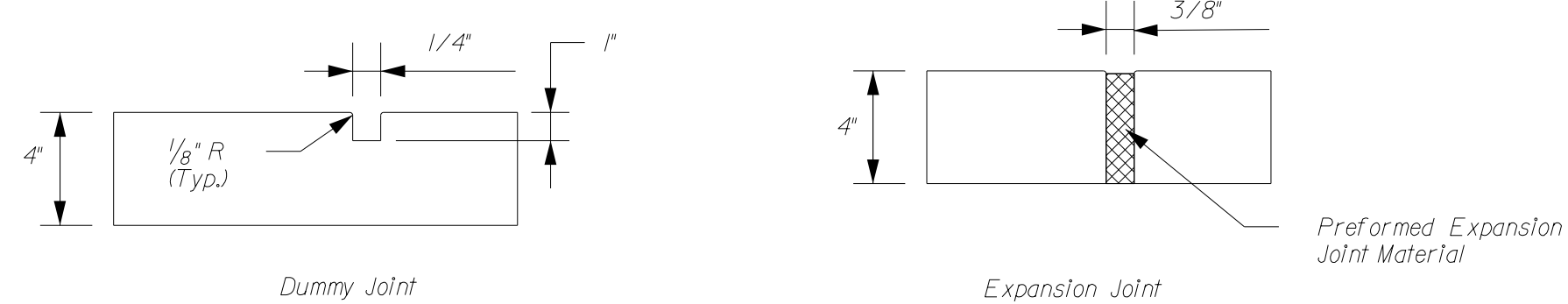


DRIVEWAY CONNECTION DETAIL

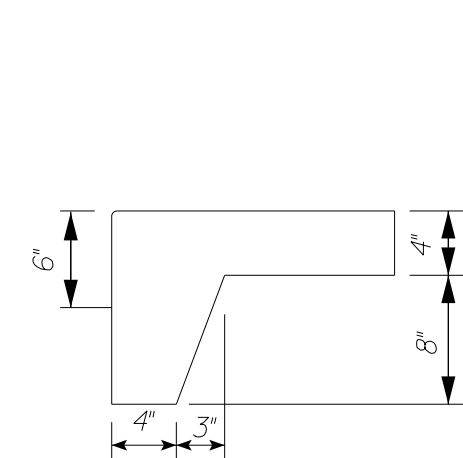


SAND SETTING BED:

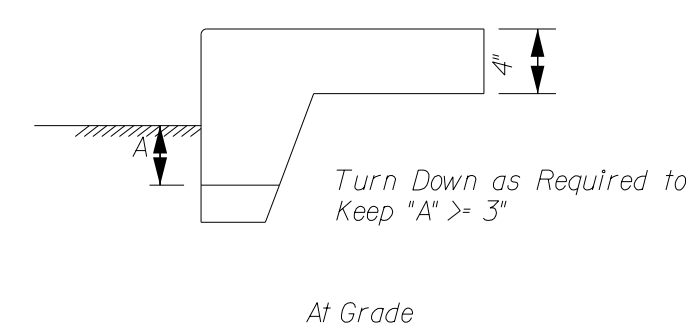
- 1.SPREAD SAND EVENLY OVER PREPARED SUBSTRATE SURFACE TO A NOMINAL THICKNESS OF 2"
- 2.DAMPEN AND ROLLER COMPACT SAND TO LEVEL SURFACE
- 3.SCREED AND SCARIFY TOP 1/2" OF SAND
- 4.PLACE PAVER UNITS IN BOND PATTERN, FROM STRAIGHT PAVER LINE
- 5.PLACE HALF-UNITS OR SPECIAL SHAPED UNITS AT EDGES AND INTERRUPTIONS.MAINTAIN TIGHT JOINTS.MACHINE SAW ALL PARTIAL UNITS.
- 6.SPRINKLE SAND OVER SURFACE AND SWEEP INTO JOINTS.MOISTEN JOINTS AND RECOVER W/ ADDITIONAL SAND UNTIL FIRM JOINTS ARE ACHIEVED.REMOVE EXCESS SAND.
- 7.TAMP AND LEVEL PAVER UNITS WITH MECHANICAL PLATE VIBRATOR UNTIL UNITS ARE FIRMLY BEDDED,LEVEL,AND TO CORRECT ELEVATION AND SLOPE GRADIENT.



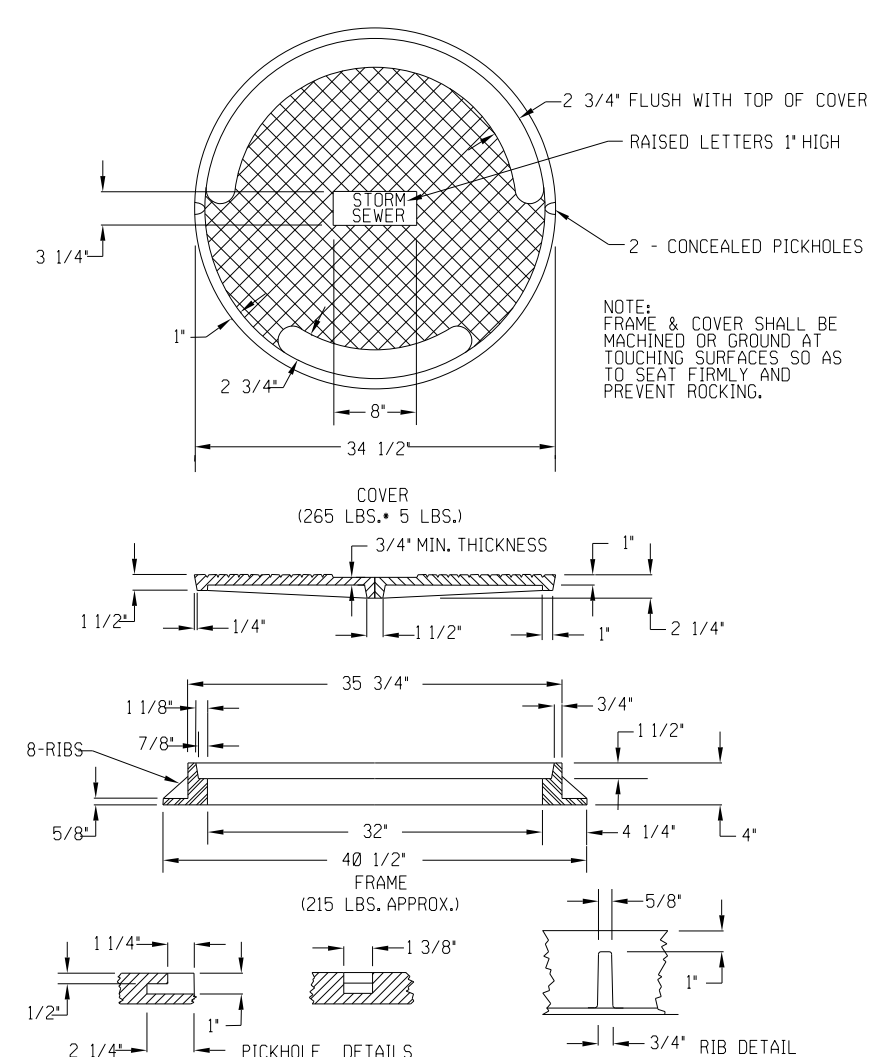
SIDEWALK JOINT DETAILS



At Asphalt Pavement



TURNDOWN DETAILS



MANHOLE FRAME AND COVER

K					Scale: NONE	
J						
I					Project Mgr: AG	Gillette & Associates, Inc.
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FERNANDINA BEACH, FL 32034
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Raynorstarr

MISCELLANEOUS DETAILS

Registered Professional

Sheet No.
DT-1

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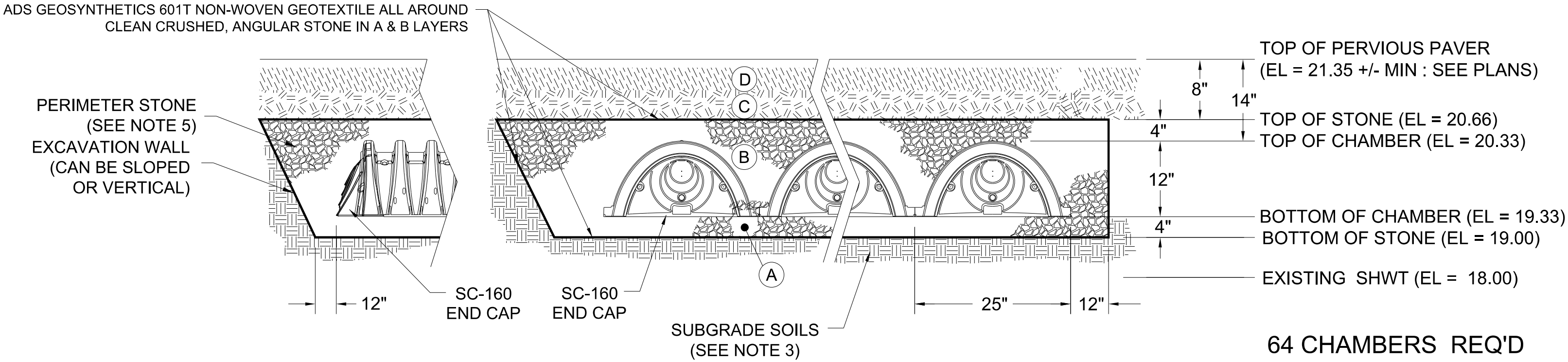
CLEANOUT	SHALLOW MANHOLE	CLASS "B"	1. ALL MANHOLES SHALL BE PRECAST CONCRETE AND CONFORM TO ASTM C-478 STANDARDS. MANHOLE CONES AND RISERS SHALL BE CONSTRUCTED OF 400 PSI TYPE II CEMENT WITH RIVER ROCK OR GRANITE AGGREGATE. 2. ALL PIPES SHALL BE CONNECTED TO THE MANHOLE USING A LOCK JOINT FLEXIBLE MANHOLE SLEEVE (ASTM C-923) OR APPROVED EQUAL. 3. THE EXTERIOR AND INTERIOR OF THE MANHOLE SHALL BE COATED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS WITH FABERITE AS MANUFACTURED BY BRIGGS BITUMINOUS COMPOSITION COMPANY. 4. AN INSIDE PVC DROP MANHOLE (TYPE "B") SHALL BE REQUIRED FOR MANHOLES WHICH HAVE A DISTANCE OF 18 INCHES OR GREATER BETWEEN INFLUENT PIPE INVERT AND EFFLUENT PIPE INVERT. ALL OTHER DROPS SHALL HAVE A SLIDE CONSTRUCTED TO DIRECT THE FLOW INTO THE INVERT CHANNEL. 5. SEWER SERVICES SHALL BE CAST IRON IF 2 1/2 FEET OF GROUND COVER CAN NOT BE MAINTAINED OVER THE SERVICE LINE. 6. ALL DUCTILE IRON SEWER PIPE, WHERE SPECIFIED, SHALL BE CLASS 51 AND COMPLY WITH ANSI/AWWA C150/A21.50 AND ANSI/AWWA C151/A21.51. DUCTILE IRON PIPE SHALL BE PROVIDED WITH A FACTORY APPLIED INTERIOR POLYETHYLENE LINING IN ACCORDANCE WITH ANSI/ASTM D1248. 7. THE MAXIMUM NUMBER OF DIPS IS ONE INCH DIP PER 135 LF OF PIPE; NO MORE THAN ONE DIP PER 135 LF OF PIPE. A DIP IS DEFINED AS A CHANGE IN ELEVATION OF 0.5' OR GREATER.
TYPICAL SEWER SERVICE	C.I. TO PVC COUPLING ADAPTER	MANHOLE JOINT	ENCASEMENT AT WATER LINE
	INSIDE PVC DROP CONNECTION TO MANHOLE	STANDARD PRECAST SANITARY MANHOLE	
	TYPE "B" MANHOLE	TYPE "A" MANHOLE	MANHOLE COVER

				Scale: 1" = 10'								Sheet No. DT-3			
				Project Mgr: AG		Gillette & Associates, Inc. 20 South 4th Street Fernandina Beach, FL 32034		G & A		Raynorstarr, LLC.		Raynorstarr		10 of 11	
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ACCEPTABLE FILL MATERIALS: STORMTECH SC-160LP CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	AASHTO M145 ¹ A-1, A-2.4, A-3 OR AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2, 3}

- PLEASE NOTE:
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
 - STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
 - WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



NOTES:

1.SC-160LP CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS", OR ASTM F2922 "STANDARD SPECIFICATION FOR POLYETHYLENE (PE) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".

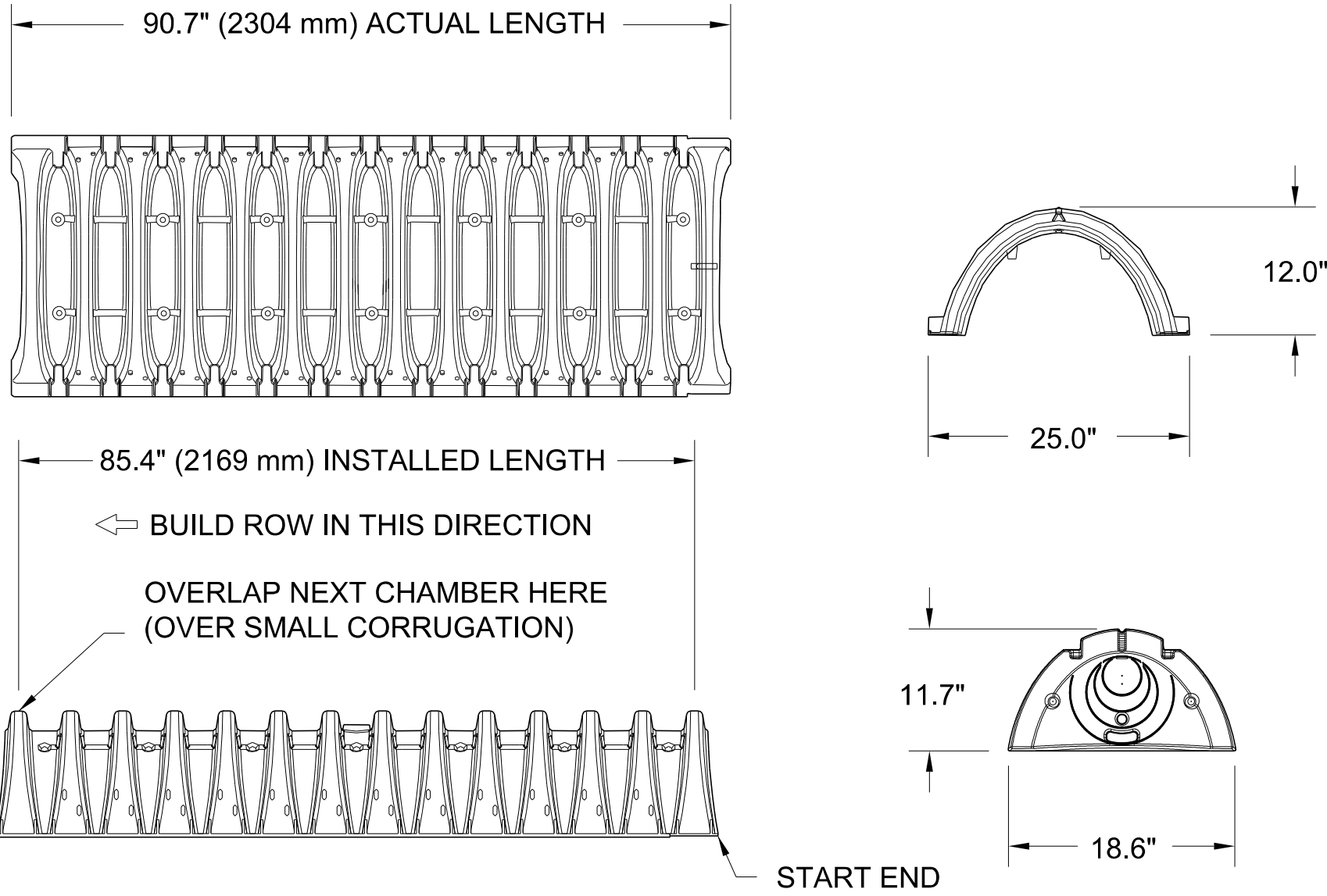
2.SC-160LP CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".

3."ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.

4.THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.

5.PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.

6.ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W x H x INSTALLED LENGTH) : 25.0" x 12.0" x 85.4"
CHAMBER STORAGE: 6.85 CUBIC FEET
MINIMUM INSTALLED STORAGE: 16.0 CUBIC FEET
WEIGHT: 24.0 LBS.

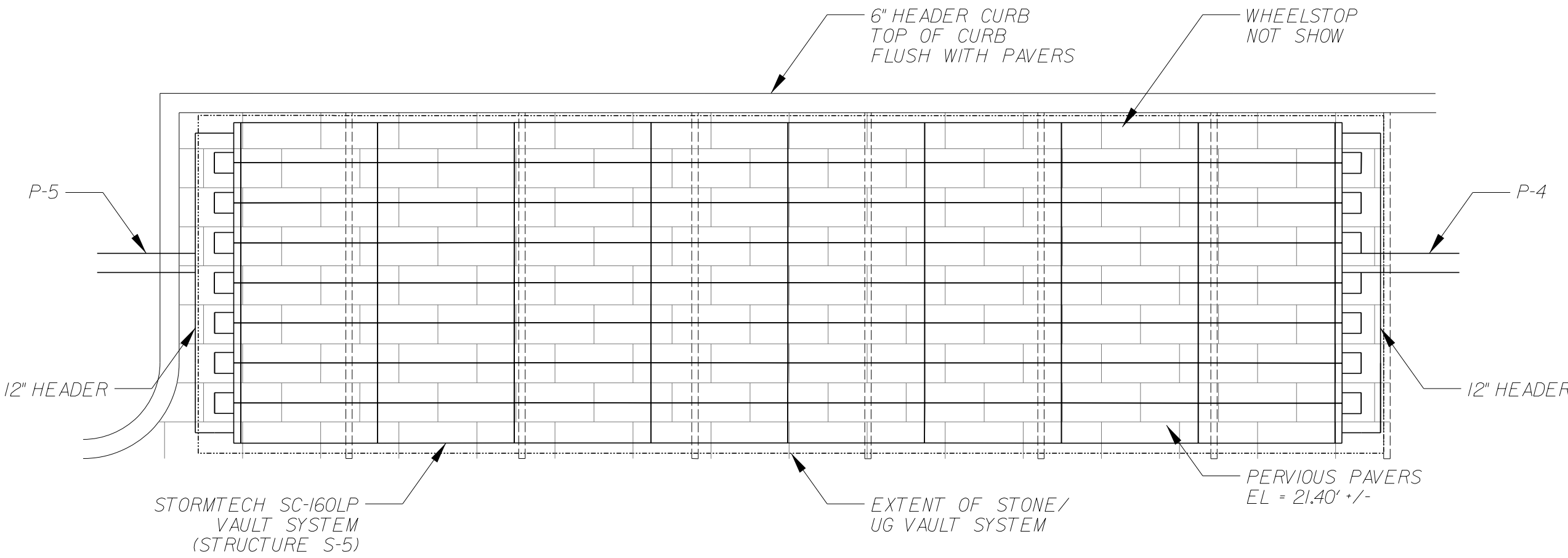
PART #	STUB	A
SC160IEPP08	8"	0.96"

ALL STUBS ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

NOTE: ALL DIMENSIONS ARE NOMINAL

INFILTRATION GALLERY CROSS SECTION

STORMTECH SC-160LP CHAMBER (64 REQ'D)



SC-160 SYSTEM DETAIL

\$\$\$\$\$FileNames\$\$\$\$\$

K				Scale: NONE		G & A GILLETTE & ASSOCIATES, INC. 20 SOUTH 4TH STREET FERNANDINA BEACH, FL 32034 PHONE: (904) 261-8819	Raynorstarr, LLC.	Raynorstarr	DRAINAGE GALLERY SHEET	Registered Professional	Sheet No. DT-4
J				Project Mgr: AG	Gillette & Associates, Inc. 20 South 4th Street Fernandina Beach, FL 32034						11 of 11
I				Designed by: AG	Certificate of Authorization No.9332						Issue Date May 15, 2019
H				Drawn by: LA	DO NOT SCALE THIS DRAWING - DIMENSIONS AND NOTES TAKE PREFERENCE. DRAWING IS REDUCED IF LESS THAN 22" x 34"						Project No. 19-1011
G				QA/QC: NG							
F											
E											
D											
C											
B	LA	08/19/19		Revised per TRC Comments							
A	LA	06/10/19		TRC Submittal							
No.	By	Date		Revision							



Civil & Environmental Engineering • Mechanical & Structural Engineering • Construction Management

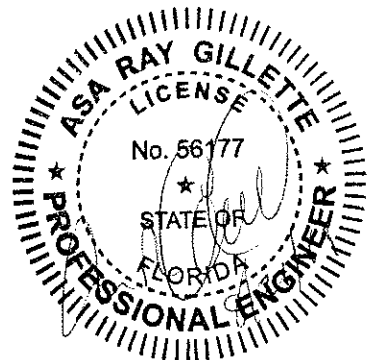
SITE DRAINAGE EVALUATION

**Raynorstarr, LLC.
FERNANDINA BEACH, FLORIDA**

BY

**Gillette & Associates, Inc.
20 South 4th Street
Fernandina Beach, FL**

Issue Date: August 21, 2019



PROJECT DESCRIPTION

The proposed project consists of a mixed-use building, being constructed on a 10,000 ft² lot, at the corner of Date and South 9th Street, in the city of Fernandina Beach. The site will be served by a combination of a drainage swale and bio-retention pond, as well as an underground storm water reservoir, designed to provide storm water treatment and meet pre vs post discharge requirements for a 10-year storm event, as required by the City of Fernandina Beach Land Development Code.

EXISTING CONDITIONS

The project site is currently vacant with 391 ft² impervious areas, and no visible surface water. In its pre-developed state, the site has a single drainage basin, DA-1. DA-1, is mostly flat and ranges in elevation from 20.8' to 21.5'. Storm water is currently not contained on the site. This basin, which is the area of study for this report, encompasses the entirety of the 10,000 ft² lot. There are no wetlands on site.

DRAINAGE ANALYSIS

The analysis was conducted over the drainage basin, DA-1, which encompasses the 10,000 ft² lot and all of the improved/developed area. The 10,000 ft² lot, consisting of 5615 ft² total of impervious area. A composite curve number of 87.5 was used in the simulation based on the ratio of impervious area to remaining pervious area. The swale and bio-retention areas provide 631 cubic feet of storage. The underground reservoir provides 991 cubic feet beneath the pervious paver parking spaces, in a 1.67' deep reservoir containing a StormTech SC-160 storm water chamber system.

Stormwater simulations were conducted using MODRET, utilizing geotechnical data conducted on a site a couple blocks from the current site, with similar existing elevations and soil type. The swales and bio-retention area are hydraulically connected to the StormTech system, and overflow to the Storm-tech system at elevation of 21.00'. This is overflow elevation is above the StormTech vault's outfall elevation of 20.70'. Simulations were conducted using only the StormTech system's outfall of 20.70' and associated treatment volumes. Averages of StormTech system, swales, and bio-retention area, total pond bottom area, and pond bottom elevations were used

<u>Summary of Design:</u>	<u>Pre-Development</u>	<u>Post-Development</u>
Total Drainage Area	10,000 ft ²	10,000 ft ²
Top of Bank Elevation	N/A	21.4'
Bottom Elevation	N/A	19.4'
Treatment Required	N/A	1,002 ft ³
Treatment Provided	N/A	1,163 ft ³
10-yr Discharge Volume	3,815 ft ³	3,226 ft ³

DRY POND CALCULATIONS

Raynostarr 9TH STREET Post Developed - Total Area

Basin Calculations

Basin 1

Composite Cn

Total Drainage Area = 10000 ft²
Impervious Area = 5615 ft²
Pond Area = 0 ft²

Impervious Cn = 98.0
Pond Cn = 100.0
Pervious Cn = 74.0

Composite Cn = 87.5

Time of Concentration, Tc

Minimum Time of Concentration = 10 min.
Length of Overland Flow @ 1ft/sec. = 40 ft.
Length of Pipe Flow @ 2.5 ft/sec. = 0 ft.

Tc = 11 min.

Pond Information (Swales)

El. (ft.)		Area ft ²	Volume ft ³
21.40	TOB	784	350.81
21.00	weir	326	128.82
20.70	OUTFALL	197	50.37
20.33		70	1.04
20.30	Bottom	0	0.00

Pond Information (Bioretention Area)

El. (ft.)		Area ft ²	Volume ft ³
21.40	TOB/weir	310	279.47
21.00	weir	211	175.19
20.70	OUTFALL	148	121.28
19.43		42	0.63
19.40	Bottom	0	0.00

Pond Information (U/G Reservoir/Chambers)

El. (ft.)		Area ft ²	Volume ft ³
20.73	TOB/weir	1092	991
20.40		1092	846
20.00		1092	427
19.50		1092	36
19.00	Bottom	1092	0

Treatment Volume Required, TVR

(on-line retention)

TVR = 1" * (1/12") * Total Drainage Area = 833 ft³
or

TVR = 1.25" * (1/12") * Total Impervious Drainage Area + 0.5" * (1/12") * Total Drainage Area = 1002 ft³

TVR = 1002 ft³

Treatment Volume Provided, TVP

TVP = Vol @ Weir = 1163 ft³ OK

StormTech SC-160 Vault Calculations

Project: _____

Chamber Model -
Units -

SC-160	Click Here for Metric
Imperial	
100	



Number of chambers -
Voids in the stone (porosity) -
Base of STONE Elevation -
Amount of Stone Above Chambers -
Amount of Stone Below Chambers -
Area of system -

64	
40	%
19.06	ft
4	in
4	in
1092	sf Min. Area - 949 sf min. area

☒ Include Perimeter Stone in Calculations

StormTech requires a minimum of 6 inches of stone above the chambers. This table is for modeling purposes only. Please see the engineer's drawings for the actual amount of stone under the chambers

Height of System (inches)	Incremental Single Chamber (cubic feet)	Incremental Total Chamber (cubic feet)	Incremental Stone (cubic feet)	Incremental Ch & St (cubic feet)	Cumulative Chamber (cubic feet)	Elevation (feet)
20	0.00	0.00	36.40	36.40	991.18	20.73
19	0.00	0.00	36.40	36.40	954.78	20.64
18	0.00	0.00	36.40	36.40	918.38	20.56
17	0.00	0.00	36.40	36.40	881.98	20.48
16	0.05	3.28	35.09	38.37	845.58	20.39
15	0.13	8.60	32.96	41.56	807.21	20.31
14	0.29	18.60	28.96	47.56	765.65	20.23
13	0.44	28.28	25.09	53.37	718.09	20.14
12	0.54	34.51	22.60	57.10	664.72	20.06
11	0.62	39.45	20.62	60.07	607.62	19.98
10	0.68	43.57	18.97	62.54	547.55	19.89
9	0.74	47.10	17.56	64.66	485.01	19.81
8	0.78	50.14	16.34	66.48	420.35	19.73
7	0.82	52.79	15.28	68.08	353.87	19.64
6	0.86	55.06	14.37	69.44	285.79	19.56
5	0.89	57.26	13.50	70.75	216.35	19.48
4	0.00	0.00	36.40	36.40	145.60	19.39
3	0.00	0.00	36.40	36.40	109.20	19.31
2	0.00	0.00	36.40	36.40	72.80	19.23
1	0.00	0.00	36.40	36.40	36.40	19.14

MODRET ANALYSIS

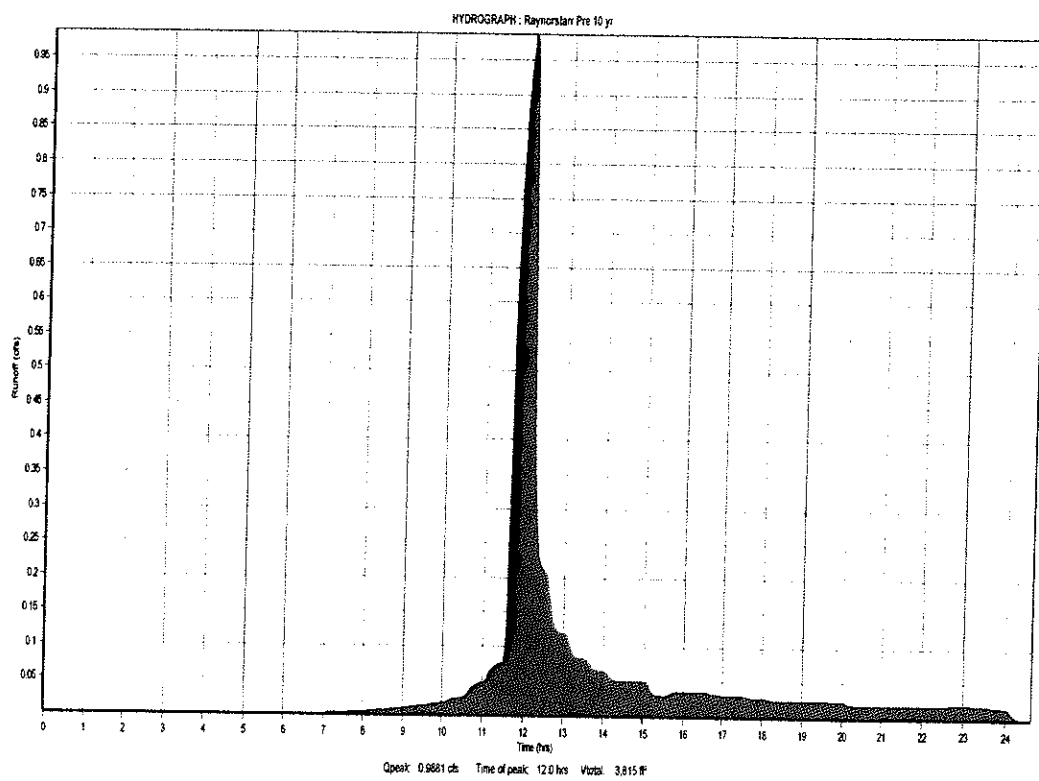
10-Year Storm Event

MODRET

HYDROGRAPH DATA INPUT - SCS UNIT METHOD

Project Name : Raynorstarr Pre 10 yr
Rainfall Distribution : SCS Type II (24 hrs)

Contributing Basin Area	0.23 ac.
SCS Curve Number	74.00
Time of Concentration	11.00 min.
Rainfall Depth	7.60 in.
Shape Factor	484
Percent DCIA	0.00 %

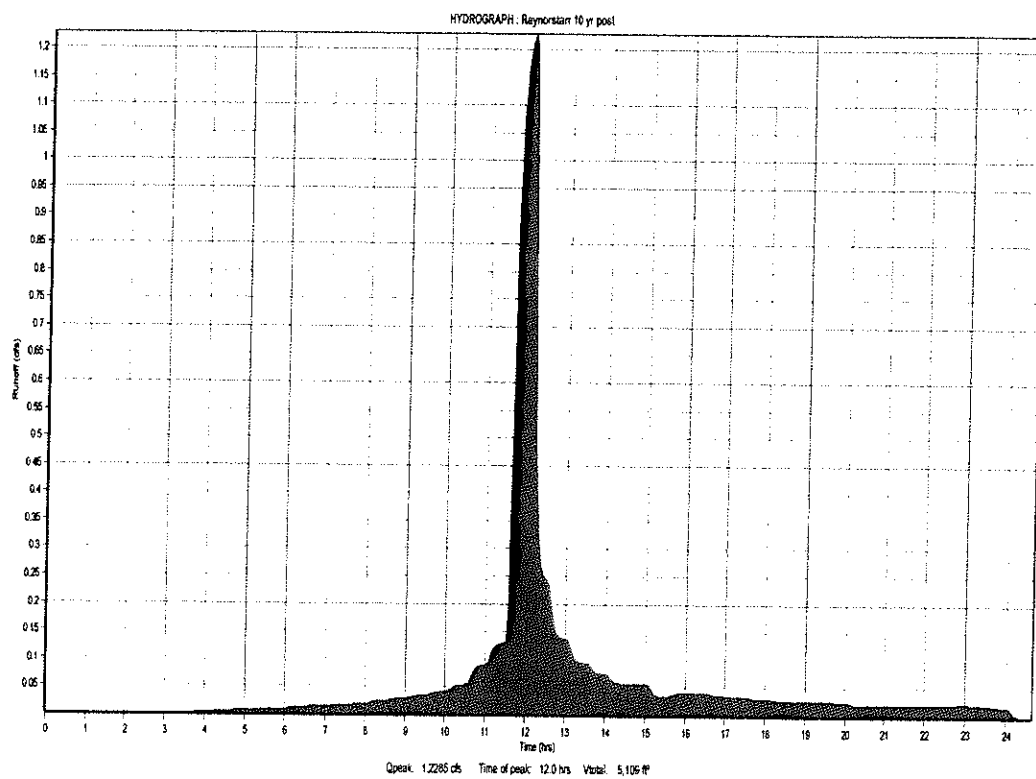


MODRET

HYDROGRAPH DATA INPUT - SCS UNIT METHOD

Project Name : Raynorstarr 10 yr post
Rainfall Distribution : SCS Type II (24 hrs)

Contributing Basin Area	0.23 ac.
SCS Curve Number	87.50
Time of Concentration	11.00 min.
Rainfall Depth	7.60 in.
Shape Factor	484
Percent DCIA	0.00 %



MODRET

SUMMARY OF UNSATURATED & SATURATED INPUT PARAMETERS

**PROJECT NAME : Raynorstarr 10 yr post
HYDROGRAPH RUNOFF DATA USED
UNSATURATED ANALYSIS INCLUDED**

Pond Bottom Area	1,547.00 ft ²
Pond Volume between Bottom & DHWL	1,163.00 ft ³
Pond Length to Width Ratio (L/W)	3.50
Elevation of Effective Aquifer Base	6.57 ft
Elevation of Seasonal High Groundwater Table	18.00 ft
Elevation of Starting Water Level	19.56 ft
Elevation of Pond Bottom	19.56 ft
Is there overflow ?	Y
Avg. Effective Storage Coefficient of Soil for Unsaturated Analysis	0.04
Unsaturated Vertical Hydraulic Conductivity	54.00 ft/d
Factor of Safety	2.00
Saturated Horizontal Hydraulic Conductivity	6.00 ft/d
Avg. Effective Storage Coefficient of Soil for Saturated Analysis	0.09
Avg. Effective Storage Coefficient of Pond/Exfiltration Trench	1.00
Time Increment During Storm Event	2.00 hrs
Time Increment After Storm Event	12.00 hrs
Total Number of Increments After Storm Event	6.00

Runoff Hydrograph File Name: SCS2.SCS

Time of Peak Runoff: 12.03 hrs

Rate of Peak Runoff: 1.23 cfs

Hydraulic Control Features:

Groundwater Control Features - Y/N

Distance to Edge of Pond
Elevation of Water Level

Top	Bottom	Left	Right
N	N	N	N
0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00

Impervious Barrier - Y/N

Elevation of Barrier Bottom

Top	Bottom	Left	Right
N	N	N	N
0.00	0.00	0.00	0.00

MODRET

ELEVATION VS OVERFLOW RELATIONSHIP

PROJECT NAME : Raynorstarr 10 yr post
Structure Type: V_NOTCH

Crest Elevation	20.70 ft
Vertex Angle of "V"	90.00
Coefficient of Discharge	3.31
Weir Flow Exponent	2.50
Number of Contractions	0.00
Design High Water Level Elevation	21.40 ft

MODRET

SUMMARY OF RESULTS

PROJECT NAME : Raynorstarr 10 yr post

CUMULATIVE TIME (hrs)	WATER ELEVATION (feet)	INSTANTANEOUS INFILTRATION RATE (cfs)	AVERAGE INFILTRATION RATE (cfs)	CUMULATIVE OVERFLOW (ft³)
00.00 - 3.24	18.000	0.000 *		
			0.00000	
3.24	18.000	0.00616		
			0.01064	
9.15	19.602	0.01513		0.00
			0.01665	
11.16	20.035	0.02090		0.00
			0.02516	
13.17	21.086	0.02112		2,230.40
			0.01708	
15.18	20.911	0.01575		2,732.70
			0.01441	
17.19	20.848	0.01405		2,942.70
			0.01369	
19.20	20.822	0.01336		3,074.60
			0.01303	
21.21	20.802	0.01267		3,160.30
			0.01232	
23.22	20.793	0.01158		3,226.00
			0.00716	
35.22	20.304	0.00610		3,226.00
			0.00503	
47.22	19.960	0.00441		3,226.00
			0.00378	
59.22	19.701	0.00338		3,226.00
			0.00297	
67.57	19.560	0.00268		3,226.00
			0.00239	
83.22	19.335	0.00218		3,226.00

SUMMARY OF RESULTS

[illegible]

Maximum Infiltration Rate: 3.439 ft/day

Analysis Date: 8/9/2019

