Guerra Development Corporation
Civil & Structural Engineering
2817 NE 3rd Street Ocala, Florida 34470
(352) 629-8060 GDC@guerracorp.net

October 1, 2019

JN 17-04
17-04 MRF Cover Letter 10-1-19

Ms. El Kromhout, P.G.
Elizabeth.Kromhout@floridadep.gov
2600 Blair stone Road
Tallahassee, FL 32399-2400

RE: Transmittal of Permit Application for a New Materials Recycling Facility

Dear Ms. Kromhout:

Enclosed is the permit package for City Wide Recycling, a new materials recovery facility. The facility will be located on property owned by Friends Recycling, L.L.C. The company already operates the Friends Recycling, LLC – C&D Disposal and Recycling Facility, WACS 21012, at the property. The current permit for that operation is 0019600-012-SO. We assumed the facility number (WACS 21012) would be the same for this new facility.

Normally, a materials recovery facility receives a construction permit prior to the start of construction. The City Wide Recycling facility was designed, and construction has started because originally it was to be a recovered materials facility, which does not require a solid waste permit. Friends Recycling, L.L.C., has decided that they want it to be a materials recovery facility, necessitating this "late" application.

We have had discussions with you about the design to make sure all requirements for a materials recovery facility have been met. We would be glad to discuss whether additional design requirements must be included. Construction of the building is not yet complete. Of course, operations will not begin until the permit has been issued, as well as, the certification of construction and financial assurance mechanism have been approved by the Department.

The most notable design change was for the aboveground leachate storage tank. The double walled 2,500-gallon tank meets the requirements of Rule 62-701.400(6), F.A.C., including having a level sensor alarm to ensure overfill protection. The tank will be used until the City of Ocala allows direct discharge of the leachate to their sewer system. We expect that to be within a year. During a rainstorm that occurred after the leachate collection system was installed but before the building walls or roof were constructed, the rain landing on the tipping floor slab flowed to the leachate collection trench.

Friends Recycling, L.L.C., has never had a formal enforcement action taken against it. There have been odor issues at the construction and demolition debris disposal and recycling operations. The last issue regarding odor was in late 2014; it has been resolved. Because there had not been complaints, in December 2017 the "Odor Remediation Plan" section was removed from the facility's permit (FDEP Permit # 0019600-012-SO).

This package contains the following documents required by Rule 62-701.710(2), F.A.C., and Section B of the application form.

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2817 NE 3rd Street Ocala, Florida 34470
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1. Enclosure 1 is Form 62-701.900(4), Application to Construct, Operate, or Modify a Waste Processing Facility
2. Enclosure 2 is the Operation Plan. It has the information about the facility as required in Rule 62-701.710(2)(a), F.A.C.
3. Enclosure 3 has several drawings. It has a site plan sheet meeting the requirements of Rule 62-701.710(2)b), F.A.C. Since this is an indoor waste processing facility with a leachate collection system, water bodies or wetlands on or within 200 feet of the site and potable water wells on or within 500 feet of the site are not relevant features. However, a copy of the site plan sheet, wetland exhibit, and wells map are provided. For additional information please reference permit 0019600-008-SO-24 and ERP_019600-014-EM.
4. Enclosure 4 is a boundary survey and legal description of the property.
5. Enclosure 5 has the construction plans, including engineering calculations, that describe how the facility complies with the design requirements of subsection 62-701.710(3), F.A.C.
6. Enclosure 2 is the operation plan. It describes how the applicant will comply with subsections 62-701.710(3), (4), (6), and (8), F.A.C.
7. Section 13 of the Operation Plan (Enclosure 2) includes the closure plan that describes how the applicant will comply with subsection 62-701.710(6), F.A.C.
8. Section 18 of the Operation Plan (Enclosure 2) includes the contingency plan that describes how the applicant will comply with subsection 62-701.320(16), F.A.C.
9. Enclosure 6 is the financial assurance cost estimate required by subsection 62-701.710(7), F.A.C. The financial assurance detailed cost estimate is $36,399.58. This exceeds $10,000, therefore a financial assurance mechanism is required. The mechanism will be funded after FDEP approves the cost estimate. It will be funded before operations begin at the facility.
10. Enclosure 7 has documentation that proves Friends Recycling, L.L.C. (aka Friends Recycling, LLC), owns the property.
11. Enclosure 8 is the check for $2,000 for a waste processing facility construction / operation permit.

Please contact me if you have any questions about this permit application.

Sincerely,

Juan Guerra, P.E.
President, Guerra Development Corp.
2817 NE 3rd Street
Ocala, Florida 34470
(352) 629-8060 (office)
E-mail: JCG@Guerracorp.net

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List of Enclosures:

1. Enclosure 1 is Form 62-701.900(4), Application to Construct, Operate, or Modify a Waste Processing Facility
2. Enclosure 2 is the Operation Plan.
3. Enclosure 3 has several drawings.
    a. Site Plan Sheet
    b. Wetland Exhibit
    c. Wells Map
4. Enclosure 4 is a boundary survey and legal description of the property.
5. Enclosure 5 has the construction plans and tipping floor washdown estimate
6. Enclosure 6 is the detailed closure cost estimate
    a. DEP Form 62-701.900(28)
    b. Detailed Cost Estimate
    c. EPA April 2016 conversion factor list
7. Enclosure 7 is proof that Friends Recycling, L.L.C., owns the property
8. Enclosure 8 is the $2,000 check for the permit fee

Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

DEP Form #: 62-701.900(4), F.A.C.
Form Title: Application to Construct, Operate, or Modify a Waste Processing Facility
Effective Date: February 15, 2015
Incorporated in Rule: 62-701.710(2), F.A.C.

APPLICATION TO CONSTRUCT, OPERATE, OR MODIFY A WASTE PROCESSING FACILITY

GENERAL REQUIREMENT: Solid Waste Management Facilities shall be permitted pursuant to Section 403.707, Florida Statutes (F.S.) and in accordance with Florida Administrative Code (F.A.C.) Chapter 62-701. A minimum of four copies of the application shall be submitted to the Department District Office having jurisdiction over the facility. The appropriate fee in accordance with subsection 62-701.315(4), F.A.C., shall be submitted with the application by check made payable to the Department of Environmental Protection (DEP). Complete appropriate sections for the type of facility for which application is made and include all additional information, drawings, and reports necessary to evaluate the facility.

Please Type or Print in Ink

A. GENERAL INFORMATION

1. Type of facility (check all that apply):

☐ Transfer Station:

☐ C&D ☐ Class III ☐ Class I

☐ Other Describe: _____

■ Materials Recovery Facility:

■ C&D Recycling ■ Class III MRF ■ Class I MRF

☐ Other Describe: _____

☐ Other Facility That Processes But Does Not Dispose Of Solid Waste On-Site:

☐ Storage, Processing or Disposal for Combustion Facilities (not addressed in another permit)

☐ Other Describe: _____

NOTE: C&D Disposal facilities that also recycle C&D, shall apply on DEP FORM 62-701.900(6), F.A.C.

2. Type of application:

■ Construction/Operation

☐ Operation without Additional Construction

3. Classification of application:

■ New ☐ Substantial Modification

☐ Renewal ☐ Intermediate Modification

☐ Minor Modification

4. Facility name: City Wide Recycling

5. DEP ID number: 21012 County: Marion

6. Facility location (main entrance): 2350 NW 27th Avenue, Ocala, FL 34475

7. Location coordinates:

Section: 02 Township: 15S Range: 21E

Latitude: N29 ° 12 ' 39.68 " Longitude: W82 ° 10 ' 10.36 "

Datum: NAVD-88 Coordinate Method: _____

Collected by: Rodney K. Rogers, PSM Company/Affiliation: Rogers Engineering, LLC

8. Applicant name (operating authority): Friends Recycling, LLC

Mailing address: 2350 NW 27th Avenue, Ocala, FL 34475
Street or P.O. Box City State Zip

Contact person: Gerald Lourenco Telephone: (352) 266-4853

Title: Owner aws97@aol.com
E-Mail address (if available)

9. Authorized agent/Consultant: Guerra Development Corp

Mailing address: 2817 NE 3rd Street, Ocala, FL 34470
Street or P.O. Box City State Zip

Contact person: Andrew Malleck Telephone: (352) 629-8060

Title: Project Manager am@guerracorp.net
E-Mail address (if available)

10. Landowner (if different than applicant): _____

Mailing address: _____
Street or P.O. Box City State Zip

Contact person: _____ Telephone: (____) _____

_____
E-Mail address (if available)

11. Cities, towns and areas to be served: Ocala, surrounding municipalities, Marion County

12. Date site will be ready to be inspected for completion: January 2020

13. Estimated costs:

Total Construction: $ 1,300,000 Closing Costs: $ 36,400

14. Anticipated construction starting and completion dates:

From: October 2018 To: January 2020

15. Expected volume of waste to be received: 2000 (Class I & III); 2000 C&D yds^3/day _____ tons/day

16. Provide a brief description of the operations planned for this facility:

The facility will operate as a materials recovery facility separating recyclable materials from Class I, III, and C&D waste. It will also accept dedicated loads of recovered materials. (for example cardboard and metal)

B. ADDITIONAL INFORMATION

Please attach the following reports or documentation as required.

1. Provide a description of the operation of the facility that shall include (62-701.710(2)(a), F.A.C.):
   a. The types of materials, i.e., wastes, recyclable materials or recovered materials, to be managed or processed;
   b. The expected daily average and maximum weights or volumes of materials to be managed or processed;
   c. How the materials will be managed or processed;
   d. How the materials will flow through the facility including locations of the loading, unloading, sorting, processing and storage areas;
   e. The types of equipment that will be used;
   f. The maximum time materials will be stored at the facility;
   g. The maximum amounts of wastes, recyclable materials, and recovered materials that will be stored at the facility at any one time; and
   h. The expected disposition of materials after leaving the facility.

2. Attach a site plan, signed and sealed by a professional engineer registered under Chapter 471, F.S., with a scale not greater than 200 feet to the inch, which shows the facility location, total acreage of the site, and any other relevant features such as water bodies or wetlands on or within 200 feet of the site, potable water wells on or within 500 feet of the site (62-701.710(2)(b), F.A.C.).

3. Provide a boundary survey and legal description of the property (62-701.710(2)(c), F.A.C.).

4. Provide a construction plan, including engineering calculations, that describes how the applicant will comply with the design requirements of subsection 62-701.710(3), F.A.C. (62-701.710(2)(d), F.A.C.).

5. Provide an operation plan that describes how the applicant will comply with subsection 62-701.710(4), F.A.C. and the recordkeeping requirements of subsection 62-701.710(8), F.A.C. (62-701.710(2)(e), F.A.C.).

6. Provide a closure plan that describes how the applicant will comply with subsection 62-701.710(6), F.A.C. (62-701.710(2)(f), F.A.C.).

7. Provide a contingency plan that describes how the applicant will comply with subsection 62-701.320(16), F.A.C. (62-701.710(2)(g), F.A.C.).

8. Unless exempted by subparagraph 62-701.710(1)(d)1., F.A.C., provide the financial assurance documentation required by subsection 62-701.710(7), F.A.C. (62-701.710(2)(h), F.A.C.).

9. Provide a history and description of any enforcement actions by the applicant described in subsection 62-701.320(3), F.A.C. relating to solid waste management facilities in Florida. (62-701.710(2), F.A.C. and 62-701.320(7)(i), F.A.C.)

10. Provide documentation that the applicant either owns the property or has legal authorization from the property owner to use the site for a waste processing facility (62-701.710(2), F.A.C. and 62-701.320(7)(g), F.A.C.)

C. CERTIFICATION BY APPLICANT AND ENGINEER OR PUBLIC OFFICER

1. Applicant:

The undersigned applicant or authorized representative of Friends Recycling, LLC is aware that statements made in this form and attached information are an application for a Materials Recovery Facility Permit from the Florida Department of Environmental Protection and certifies that the information in this application is true, correct and complete to the best of his/her knowledge and belief. Further, the undersigned agrees to comply with the provisions of Chapter 403, Florida Statutes, and all rules and regulations of the Department. It is understood that the Permit is not transferable, and the Department will be notified prior to the sale or legal transfer of the permitted facility.

Signature of Applicant or Agent

Gerald Lourenco, Owner
Name and Title (please type)

aws97@yahoo.com
E-Mail address (if available)

2350 NW 27th Avenue
Mailing Address

Ocala, FL 34475
City, State, Zip Code

(352) 266-4853
Telephone Number

10-1-2019
Date

Attach letter of authorization if agent is not a governmental official, owner, or corporate officer.

2. Professional Engineer registered in Florida (or Public Officer if authorized under Sections 403.707 and 403.7075, Florida Statutes):

This is to certify that the engineering features of this waste processing facility have been designed/examined by me and found to conform to engineering principles applicable to such facilities. In my professional judgment, this facility, when properly maintained and operated, will comply with all applicable statutes of the State of Florida and rules of the Department. It is agreed that the undersigned will provide the applicant with a set of instructions of proper maintenance and operation of the facility.

Signature

Juan C. Guerra, P.E.
Name and Title (please type)

0041000
Florida Registration Number
(please affix seal)

JUAN C. GUERRA LICENSE No. 41000 STATE OF FLORIDA PROFESSIONAL ENGINEER

2817 NE 3rd Street
Mailing Address

Ocala, FL 34470
City, State, Zip Code

jcg@guerracorp.net
E-Mail address (if available)

(352) 629-8060
Telephone Number

10/1/19
Date

OPERATIONS PLAN

CITY WIDE RECYCLING

Ocala, Marion County, Florida

September 22, 2019

GDC JN 17-04

Prepared For:

Friends Recycling, L.L.C.

2350 NW 27th Avenue

Ocala, Florida 34475

Guerra Development Corporation

Civil and Structural Engineering

2817 N.E. 3rd Street

Ocala, Florida 34470

Ph: (352) 629-8060

email: gdc@guerracorp.net

Juan C. Guerra, P.E.

Florida Reg. No. 0041000

TABLE OF CONTENTS

1 DEFINITIONS

Project:	City Wide Recycling Facility
Owner/Operator:	Friends Recycling, L.L.C.
WPB:	Waste Processing Building refers to everything inside the building, including the Tipping Slab, Push Walls, Leachate Collection System, Truck Tunnel.
WPF:	Waste Processing Facility refers to everything within the property dedicated to the waste processing facility, including the scale house, roadways and drives, leachate storage tank, stormwater facilities, utilities.
Tipping Slab:	That portion of the concrete slab contained within the WPB dedicated to receiving and sorting of the waste stream. It is also known as the tipping floor.

2 GENERAL DESCRIPTIONS

2.1 Introduction

Friends Recycling, L.L.C. has constructed a Materials Recovery Facility to remove recyclable materials from solid waste. The facility was designed to handle Class I, Class III, and Construction and Demolition (C&D) Debris waste. The specific types of waste that will be processed will be determined by the marketplace.

It will be referred to as City Wide Recycling to distinguish it from the C&D debris recycling and disposal operations governed by FDEP Permit # 0019600-012-SO.

Both City Wide Recycling and the C&D debris recycling and disposal operations are on the property owned by Friends Recycling, L.L.C. (aka Friends Recycling, LLC).

This Operation Plan has been prepared to meet requirements set forth by Rule 62-701.710(4) and (8), F.A.C. A copy of this document shall be kept at the facility at all times and shall be made available to all employees and for inspection by agencies having jurisdiction over this facility.

All operations shall be conducted in accordance with this Operation Plan. FDEP Central District shall be notified before any substantial changes or revisions to the approved Operation Plan are implemented in order to determine whether a permit modification is required.

2.2 Site Description

The proposed Project will operate in a 14.69-acre property located along the west side of NW 27th Avenue in Ocala, Marion County, Florida. The site is bounded on the north and west sides by the existing Friends Recycling construction and demolition (C&D) debris disposal and recycling facility; to the east by NW 27th Avenue; to the south by NW 21st Street. Both Friends Recycling and City Wide Recycling are on property owned by Friends Recycling, L.L.C.

As required by the City of Ocala, access to City Wide Recycling is made through a driveway shared with the existing Friends Recycling facility, which allows utilization of the existing scale house and provides a single-point access on NW 27th Avenue.

The Site Plan for the infrastructure to support the WPF has been reviewed by the City of Ocala, FDEP Central District Environmental Resource Permitting, and the Army Corps of Engineers. As of this application, the site facilities, including the WPB, are under construction.

2.3 Waste Processing Facility (WPF)

The WPF consists of a 4.12-acre project area within a 14.69-acre property, a 21,875 square foot building (WPB) and all supporting infrastructure including driveways,

access roadways, scale house, stormwater management facilities, leachate storage tank, water and sanitary sewer systems, electrical power, access control features (such as fences and gates). The Site Plan is attached as Appendix A.

The WPB contains a tipping slab of approximately 16,000 square feet to receive the waste stream, to sort the waste and ultimately recover it in recycling bins or load it into trucks at the truck tunnel (loading bay). The WPB also includes reinforced concrete push and bump walls to aid in the sorting and loading of the waste stream, as well as, the truck tunnel.

The WPB also contains a leachate system consisting of a collection trench (with screens) strategically located in the tipping slab, a leachate conveyance pipe delivering the leachate to a collection wet well with a pump system suitable for leachate, to ultimately deliver it to the storage tank equipped with the required monitoring systems. City Wide Recycling expects to be able to connect the leachate system directly to the City of Ocala sanitary sewer system, but initially the leachate storage tank will be used.

The WPF will receive Class I, Class III, and Construction and Demolition debris. It may receive dedicated loads of recovered materials (such as, cardboard or metal). Prohibited waste (for example, lead acid batteries) will be removed from incoming waste and shipped to facilities approved for their recycling or disposal.

3 PROCESS DESCRIPTION

3.1 Receiving

Incoming waste will approach the WPF from NW 27th Avenue, enter the property through a single-access point containing a gated driveway and continue to the scale house for weighing and physical observation of the load.

If the load is observed to contain unacceptable waste, it will be rejected and directed to a facility permitted to accept such waste.

If the load is accepted, it will be weighed and then directed to the WPB where the waste will be offloaded on to the tipping slab inside the building for further processing. Typically, Class I and Class III waste will be unloaded on the left side (east side) of the tipping floor; C&D waste will be unloaded on the right side.

If the vehicle is a dedicated load of C&D debris, the scale house person can decide whether it should go the disposal mound for processing (recycling and disposal) or to the WPB.

The traffic pattern will be clearly identified by signs. Spotters will enforce traffic patterns on the facility.

3.2 Observation, Spotting and Sorting

A trained spotter will direct the truck to the spot on the tipping floor where the waste will be dumped and, if necessary, sorted. (Dedicated loads will not require sorting, for example, a dedicated load of cardboard. The waste is simply moved to appropriate storage area.)

As it is dumped on the tipping floor, each load of waste must be visually inspected by a trained spotter. Any unauthorized waste shall be removed from the waste stream prior to being loaded into a waste transfer vehicle.

If the dumped waste has many types of materials, it will be spread so items that can be recycled can be pulled from the waste. Segregation of the recyclable material is done either by hand or using available equipment (such as, a front end loader).

When unauthorized waste is discovered, the heavy equipment operator must either move the unauthorized waste away from the active area for later removal and proper management, or must stop his/her operation and notify another person on the ground or on other equipment who will come to the area and remove the unauthorized waste before tipping floor operations are resumed.

Class I and Class III Solid Waste: All Class I solid waste shall be placed on the designated area of the tipping floor for observation, spotting and sorting. Unauthorized materials removed from the incoming waste during this process, shall be placed in the appropriate dedicated container for offsite disposal. All Class I and III waste will be managed on a first-in, first-out basis for transfer to a permitted Class I landfill. Residency time for Class I and III waste shall not exceed 48 hours. Recyclable/recoverable material, such as, paper, metals and cardboard, shall be collected by the Spotter or Equipment Operator and placed in the appropriate container or storage area.

C&D Debris: All C&D Debris waste shall be tipped, observed, spotted and sorted in the same manner as Class I and III waste, except that C&D Debris waste may remain up to seven (7) days within the WPB.

Spotters may be stationed either on the tipping floor or on the heavy equipment. The spotter who sees unauthorized waste is responsible for making sure it is removed from the waste stream. Anyone doing spotting will be a trained spotter.

3.3 Storage of Segregated, Recyclable Materials:

Recyclables shall be placed inside bins located within the building or in a designated storage area.

3.4 Loading & Shipping

After all unauthorized, recoverable or recyclable waste is removed from the solid waste on the tipping floor, the waste shall be pushed for temporary storage to separate sides of the tipping slab. The waste shall then be loaded on to trucks for shipping off-site, within 48 hours of receipt of Class I and III waste and within 7 days for C&D debris. No over-the-weekend storage for Class I waste, especially putrescible waste, is permitted.

Using the rubber-tire front end loader, outgoing waste will be dumped over the "bump wall," dropping it into the waiting waste transfer truck in the vehicle tunnel. Care should

be exercised to minimize the amount of waste which falls off the truck. (Litter patrols will be used to make sure the vehicle tunnel stays clean.)

The waste transfer trucks will deliver the material to facilities approved for the disposal of the type of waste being transported.

Construction and Demolition Debris (C&D) that cannot be recycled shall be delivered to the adjacent Friends Recycling C&D disposal facility.

If the waste was received as Class III waste and it does not contact any Class I waste, it may be transported to a permitted Class III landfill for disposal.

If the waste was received as Class I waste or the waste came into contact with Class I waste, it will be transported to a permitted Class I landfill for disposal.

3.5 Clean-Up

The Operator shall maintain the WPB clean of putrescible waste on areas of the slab not used for temporary storage or staging. When the tipping floor is clear of waste, the slab shall be swept clean of dust and debris. On Fridays, if waste removal and sweeping does not remove noxious odors, the Operator may rinse the floor within the WPB.

Housekeeping (Clean-up) of Facility
As necessary, but at least once each day, a litter patrol will be used to pick up waste from around the facility, especially in the truck tunnel and outside the building.

At the end of each workday, the tipping floor will be free of any unprocessed waste.

This shall be accomplished by loading all waste onto outgoing waste transfer trucks, placing the recyclable material into the proper bins or storage areas, and sweeping the tipping floor.

If a waste transfer truck with waste remains at the Facility overnight, it will either be

stored in the truck tunnel or the waste will be covered with a tarp.

The supervisor will decide if any area on the tipping floor requires more cleaning than just sweeping. The additional cleaning might include mopping, rinsing, or pressure cleaning.

If odors in the building become a problem, the area causing the odor problem will be rinsed or pressure washed to remove rotting waste that might be the reason for the odor.

Rinsing or Pressure Washing: Any water used for rinsing or pressure washing an area that had previously had waste is considered to be leachate. This wastewater will be collected by the leachate collection system.

DO NOT rinse any area if there is waste on it. Move the waste to an appropriate storage location before beginning the cleaning. This ensures waste does not go into the floor drains or clog the leachate collection system.

Prior to rinsing the slab, visually verify that the leachate tank has capacity to receive the runoff from the cleaning operation. If only rinsing a small area, the tank should be no more than 75% full; if cleaning the entire tipping floor, the tank should be no more than 10% full.

4 WASTE QUANTITY PROJECTION

During initial operations, this facility is estimated to receive 2,500 cubic yards (CY) of solid waste per day, distributed as 1,500 CY for C&D debris and 1,000 CY for Class I Solid Waste.

Future volumes within the first 4 years are estimated to increase to 2,000 CY/day for C&D Debris and 2,000 CY/day for Class I and III waste.

5 OPERATION PERSONNEL

A trained waste processing facility operator (as defined in Rule 62-701.320(15), F.A.C.) will be at the WPF during all operating hours. The trained operator may also do spotting of waste.

All equipment operators and spotters will be trained spotters as defined in Rule 62-701.320(15), F.A.C. There will be at least one trained spotter at the tipping floor when waste is received.

Besides spotting the waste, the duties of the equipment operator shall include assisting in waste sorting and handling, as well as, operation of the front end loader to load waste into containers or trucks for hauling the waste and recovered materials.

One additional employee will be required to operate the scale and manage the scale house, provide record keeping of incoming waste loads, identification of the hauler, documenting unacceptable materials and general management.

6 WASTE MANAGEMENT, CONTROL & MEASUREMENT

6.1 Waste Management & Control

To the maximum practical extent, the following procedures shall be followed to ensure compliance with requirements set forth by the permit conditions.

6.1.1 Signs will be displayed at the WPF entrance to indicate what type of waste is allowed at the facility.

6.1.2 Each load will be visually screened by the scale house personnel. Loads deemed to contain unauthorized waste shall be turned away from the WPF and directed to an approved facility.

6.1.3 Upon acceptance of the load and tipping on the WPB, trained spotters shall sort out recoverable/recyclable or unauthorized material and place it in appropriately marked containers for later disposal or recycling at approved facilities.

6.1.4 The following containers will be provided within the WPB for use by the spotters and equipment operators:

One (1) - 20 CY container for metal
One (1) - 40 CY container for cardboard and paper
One (1) - 20 CY container for plastic
One (1) - 20 CY container for waste tires

6.1.5 CCA treated wood will be accepted at the WPB. All CCA treated wood recovered from the waste stream shall be placed with the Class I waste for offsite disposal. Refer to Appendix B for guidance on how to identify CCA treated lumber.

6.2 Waste Weighing & Measurement

All Class I and III waste incoming or outgoing from the WPF shall be weighed at the scale house on a calibrated scale. C&D waste and recovered materials may go to the WPB after the volume has been recorded.

It shall be the responsibility of the scale house person to maintain records of all waste routed through the scale and make these records available for review by regulatory agencies upon request.

If the facility has reached its permitted capacity for storage of wastes or recyclable materials, it shall not accept additional waste for processing until sufficient capacity has been restored.

6.3 Traffic Management

All traffic shall utilize the sole access point for the WPF at NW 27th Avenue. Incoming traffic shall be routed through the scale house where it shall be directed to the WPB.

Signs shall be installed past the scale house to clearly route traffic to the WPB.

The scale house person will decide whether an incoming load should be directed to the WPB (City Wide Recycling) or to the C&D debris mound (where C&D recycling can also occur). For example, dedicated loads of waste concrete would be directed the C&D debris mound, but a load of C&D waste that contains mainly cardboard would be directed to the WPB.

7 NUISANCE MANAGEMENT & CONTROL

7.1 Noise

Operations shall be limited to regular working hours from seven (7) a.m. to six (6) p.m., Monday through Saturday.

7.2 Odor Control

The Operator is required as part of this Operations Plan to take pro-active steps to prevent the formation of nuisance odors from leaving the WPB. Steps include:

7.2.1 Removal of Class I and III waste within 24 hours of delivery (not later than 48 hours).

7.2.2 Clean the WPB slab used for tipping and sorting on a daily basis by removal of waste, sweeping, and/or rinsing if necessary.

7.2.3 If considered necessary, use nuisance odor masking agents and deodorizers.

If odor is detected, the waste causing the odor will be placed in a waste transfer truck as soon as possible. At the end of the day the area where that waste had been will be checked for odors. If odors are still present, that area will be cleaned.

7.3 Dust Control

In the event that the waste stream generates dust, the Operator shall take action to prevent dust pollution beyond the WPF. These actions may include sweeping as needed and application of moisture to keep dust down.

The operator shall also inspect the WPB on a regular basis to ensure that dust within the building does not create a hazardous working condition for slipping and / or breathing. When necessary, the building will be swept and rinsed with the provided water connections.

7.4 Litter Control

The Operator is required to maintain a clean project site, that is, free of litter. Daily inspections for litter within and around the WPB will be accomplished. Periodic clean up runs (at least one per week or sooner if needed) will be done. The cleanup run will encompass the entire WPF site.

Litter collected during cleanup shall be placed in the appropriate waste container or storage pile for disposal at a later time.

Since the building has been permitted as an open building, high winds during operations may carry waste outside. It is the Operator's responsibility to control waste and trash from exiting the building or picking it up. Extreme wind may require the Operator to load the waste and cease operations.

7.5 Vector Control

The Operator shall be responsible for the following practices:

7.5.1 The use of industry-standard pest control measures, including the use of approved pesticides.

7.5.2 Class I and III waste shall be removed from the WPB every 24 hours (not to exceed 48 hours).

7.5.3 Unacceptable waste shall be rejected or removed by the equipment operator or tipping floor spotter.

7.5.4 Rejected waste shall be removed to an offsite approved facility within one week of arrival at the WPF.

8 SITE ACCESS CONTROL

The property shall be surrounded by an access barrier, as indicated on the drawings, made up of earth berm on the west side of the Friends Recycling, L.L.C. property and/or chain link fence. The entrance to the property shall be gated, and the gate shall be locked when the facility is not open for business or unsupervised. (The property perimeter surrounds the waste processing facility, the C&D disposal area, and other operations at the facility.)

The entrance gate shall have a sign showing the name of the facility and a telephone number for normal and emergencies (that is, non-business hours).

The drainage retention area (DRA) shall be enclosed with chain link fence in its entirety. Upon facility closure, install an uninterrupted 6-foot high chain link fence along the entire perimeter of the facility. This requirement is not applicable if the DRA is maintained with side slopes of 4:1 (horizontal:vertical) or flatter.

9 HOURS OF OPERATION

The WPF shall operate in accordance with the following schedule:

Monday through Saturday	7 AM to 6 PM
Sunday	No Operation

10 STORMWATER MANAGEMENT

The WPF has an approved stormwater management system. It was reviewed by the City of Ocala, FDEP Central District, and the Army Corps of Engineers. FDEP CD issued ERP permit number is 019600-014-EM. The stormwater management system will be operated and maintained as required by that permit.

The stormwater management system consists of swales, storm inlets, spillways, storm pipes and interconnected drainage retention areas (DRAs).

As part of this operations plan, the Operator is required to comply with the requirements of the stormwater management permit. Additionally, the following procedures are required:

1. Maintain the adjacent areas and the side slopes of swales and the DRA. Typically, this is mowing on a regular basis.
2. Avoid equipment travel along the bottom of the DRA and swales to preserve the permeability characteristics of the soil.
3. Remove waste and debris from storm inlet on a regular basis.
4. Repair washouts and erosion as soon as noted.
5. Notify the Engineer of Record and FDEP Central District of the formation of a sinkhole.

11 LEACHATE COLLECTION AND DISPOSAL

11.1 System Description

The leachate system consists of a trench drain strategically located across the tipping floor of the WPB. The trench drain has been designed with a grate to prevent larger particles from entering the system.

A leachate pipe conveys the fluid from the trench drain to a sump located outside of the loading bay on the south of the WPB. An inlet located inside the vehicle tunnel is also part of the leachate collection system, connecting to the leachate pipe between the trench drain and the sump. The sump contains a submersible pump suitable for the leachate, which pumps the effluent to a leachate storage tank (2,500 Gallons) equipped with high-level alarms and outflowing valves.

All drains and leachate conveyances shall be maintained so that leachate flow is not impeded. At least weekly, the leachate drain will be inspected to ensure no materials are blocking any portion or piping. If leachate is puddling on the tipping floor, it will be cleaned up as soon as possible because this is also a slipping hazard.

11.2 Inspections of the Leachate Collection System

The overfill control equipment shall be inspected weekly to ensure it is in good working order.

The exposed exterior of all aboveground tanks shall be inspected weekly.

Interior inspection of tanks shall be performed whenever the tank is drained or at a minimum of every three years.

If an inspection reveals a tank or equipment deficiency, leak, or any other deficiency which could result in failure of the tank to contain the leachate, remedial measures shall be taken immediately to eliminate the leak or correct the deficiency.

Inspection reports shall be maintained and made available to the Department upon request for the lifetime of the leachate storage system.

11.3 Utilization

As part of the Operations Plan, the WPB floor slab (tipping slab) may have to cleaned.

The wash water (which is considered to be leachate) will be contained by the Leachate Collection System and not be allowed to exit the building to mix with stormwater runoff.

It is estimated that washing the entire floor will generate less than 2,200 gallons of leachate. Usually the floor cleaning will be for specific areas, so less than 1,000 gallons of leachate will be generated. The 2,500 gallon storage tank will be sufficient to accommodate several clean up sessions before the tank must be emptied.

Prior to rinsing the slab, the operator must visually verify that the leachate tank has capacity to receive the runoff from the slab rinsing operation.

11.4 Disposal of Leachate

At least once per week, the leachate storage tank will be inspected. The level of the liquid will be recorded. Also, the inspection will determine whether there are any leaks or parts (especially the level sensor) that may fail soon. If so, repairs will be made as soon as possible.

The storage tank is a translucent tank which allows its level to be visually determined. Additionally, it is equipped with a level-alarm.

The storage tank shall be emptied whenever its level reaches 3/4 full. Disposal of the leachate tank's contents shall be disposed of at an approved facility.

In the future the facility expects to be able to discharge the leachate directly to the City of Ocala sewer system.

12 RECORD KEEPING AND REPORTING

12.1 The Operator or the delegated personnel shall maintain the following daily records. The records may be kept electronically.

1. Quantity and type of material accepted at the WPF (Class I and III waste, C&D debris, or recovered materials). This includes information about the origin of waste, county, and hauler
2. Quantity of solid waste processed at the WPF.
3. Quantity of solid waste removed from the facility for Recycling and for Disposal.
4. Any additional records which may be required by regulatory agencies having jurisdiction over this facility

12.2 Record logs shall be totaled monthly and shall be available at the facility for inspection upon request. These logs may be kept electronically.

12.3 Because the facility accepts dedicated loads of C&D waste and will recycle construction and demolition debris, it will submit an annual report to the Department on Form 62-701.900(7), Annual Report for a Construction and Demolition Debris Facility, either online through the Business Portal or by email. (Rule 62-701.730(8)(b), F.A.C.)

12.3.1 This report will be consolidated with the report for the C&D disposal operations at the property.

12.3.2 This report shall include a summary of the amounts and types of wastes disposed of or recycled. The county of origin of materials which are recycled, or a statement that the county of origin is unknown, shall be included in the report.

12.3.3 The report shall be submitted no later than February 1 of each year and shall cover the preceding calendar year.

13 CLOSURE REQUIREMENTS

Closure shall be in accordance with Chapter 701.710(6), F.A.C., reproduced as follows:

"(6) Closure Requirements

(a) The owner or operator shall notify the Department in writing prior to ceasing operations, and shall specify a closing date. No waste shall be received by the facility after the closing date.

(b) Within 30 days after receiving the final solid waste shipment, the owner or operator shall remove or otherwise dispose of all solid waste or residue in accordance with the approved closure plan. Stored putrescible wastes shall continue to be managed in accordance with paragraph 62-701.710(4)(b), F.A.C.

(c) Closure must be completed within 180 days after receiving the final solid waste shipment. Closure will include removal of all recovered materials from the site, as well as performing any contamination evaluation required by subparagraph 62-701.710(1)(d)2., F.A.C. The owner or operator shall certify in writing to the Department when closure has been completed ..."

The Closure Plan is to remove all waste and recovered materials from the WPF within 30 days after receiving the final solid waste shipment. The waste and recovered materials will be taken to appropriate facilities for disposal or recycling. A contamination evaluation is not required because this is an enclosed facility with a leachate collection system. Within 180 days after receiving the final solid waste shipment, the owner will certify the facility has been properly closed in a letter to FDEP Central District.

14 FINANCIAL ASSURANCE

Annually the cost estimate must be updated. If the amount increases the new amount must be funded not later than March 1.

15 AUTHORIZED SOLID WASTE

15.1 The following types of waste may be accepted at the WPF:

1. Class I Waste
2. Class III waste

3. Commercial Solid Waste
4. Recovered Materials (such as, cardboard, plastic, metal, clean wood)
5. Construction and Demolition (C&D) Debris

15.2 Class I Waste: Includes solid waste that is not hazardous, and that is not prohibited from disposal in a lined landfill under Rule 62-701.300, F.A.C.

15.3 Class III Waste: The definition includes yard trash, construction and demolition debris, processed tires, asbestos, carpet, cardboard, paper, glass, plastic, furniture other than appliances, or other materials approved by the Department, that are not expected to produce leachate that poses a threat to public health or the environment. However, this facility will not accept regulated asbestos containing materials.

15.4 Commercial Solid Waste: Includes all types of solid waste generated by stores, offices, restaurants, warehouses, and other non-manufacturing activities, excluding household and industrial waste.

15.5 Recovered Material: Includes metal, paper, glass, plastic, textile, or rubber materials that have known recycling potential, can be feasibly recycled, and have been diverted and source separated or have been removed from the solid waste stream for sale, use, or reuse as raw materials, whether or not the materials require subsequent processing or separation from each other, but does not include materials destined for any use that constitutes disposal. Recovered materials as described above are not solid waste.

15.6 Clean Wood: Refers to wood, lumber, tree and shrub trunks, branches and limbs, which is free of paint, glue, filler, pentachlorophenol, creosote, tar, asphalt, chromated copper arsenate (CCA), and other wood preservatives or treatments. However, tree and shrub trunks, branches and limbs will be transported directly to the C&D debris disposal mound for processing.

15.7 Construction and Demolition (C&D) Debris: This waste is defined in Rule 62-701.200(24) as discarded materials generally considered to be not water soluble and non-hazardous in nature, including but not limited to steel, glass, brick, concrete, asphalt material, pipe,

gypsum, wallboard, and lumber from the construction or destruction of a structure as part of a construction or demolition project. The term also includes rocks, soils, tree remains, trees, and other vegetative matter that normally results from land clearing or land development operations for a construction project; clean cardboard, paper, plastic, wood, and metal scraps from a construction project; yard trash and unpainted, non-treated wood scraps from sources other than construction or demolition projects; scrap from manufacturing facilities that is the type of material generally used in construction projects and that would meet the definition of construction and demolition debris if it were generated as part of a construction or demolition project, including debris from the construction of manufactured homes and scrap shingles, wallboard, siding concrete, and similar materials from industrial or commercial facilities and de minimis amounts of other non-hazardous wastes that are generated at construction or demolition projects, provided such amounts are consistent with best management practices of the construction and demolition industries. However, vegetative waste and dedicated loads of some materials (for example, concrete, asphalt, wallboard) will be transported directly to the C&D debris disposal mound for processing.

16 UNAUTHORIZED SOLID WASTE

The following waste products are not approved for processing at the WPF.

- Hazardous wastes
- Chemicals / Solvents
- Paint or containers of paint
- Biomedical wastes, treated or untreated
- Lead-acid batteries
- Mercury containing devices and lamps, for example, fluorescent lamps
- PCBs
- Used oil
- White goods
- Electronic waste
- Non-containerized liquids

- Containers or tanks with liquids
- Sludges, including Wastewater Treatment Plant sludges or waste solids
- Unprocessed waste tires (Unprocessed waste tires may be accepted by Friends Recycling, L.L.C., FDEP Permit # 0019600-012-SO, but not at the WPB.)
- Septage
- Materials containing regulated asbestos
- Waste with free liquids
- Contaminated soil
- Ash residue
- Dedicated loads of yard trash (Dedicated loads of yard trash will be taken to the disposal area for processing or disposal.)

16.1 Handling of prohibited waste if it does get to the tipping floor

16.1.1 Whenever possible, the hauler will be required to take the prohibited waste from the facility.

16.1.2 If necessary, the waste will be stored in a separate area at the facility until it can be transported to an appropriate treater or disposal facility.

16.1.3 Whole waste tires may be processed at the Friends Recycling facility (FDEP Permit # 0019600-012-SO) and then properly disposed or recycled.

16.2 Handling of Special Wastes. Special waste is defined as white goods, waste tires, used oil, lead-acid batteries, construction and demolition debris, ash residue, yard trash, biological wastes, and mercury-containing devices and lamps." Except for C&D and yard trash, the special wastes named in rule 62-701.200(113), F.A.C., are prohibited from the WPB.

16.2.1 Whenever possible, the hauler will be required to take the special waste from the facility.

16.2.2 If necessary, the waste will be stored in a separate area at the facility until it can be transported to an appropriate treater or disposal facility.

17 MANAGEMENT OF CCA AND OTHER TREATED WOOD

17.1 The WPF may accept waste loads that contain wood treated with chromated copper arsenate (CCA), Creosote or Pressure Treated wood ("Treated Wood"). However, treated wood will not be recycled; it will be sent to a permitted Class I landfill.

17.2 The C&D Debris Disposal mound is not allowed to accept treated wood for disposal. It has a CCA treated wood management plan.

17.3 Personnel shall be instructed by the operator about methods to help identify and handle CCA treated wood, by making available to them the "Guidance for the Management and Disposal of CCA-Treated Wood" (Appendix B). This guidance document is required reading by new personnel.

17.4 Incoming trucks should be visually inspected to look for dedicated loads of treated wood, especially from contractors specializing in the demolition of fences, decks and docks. The name of the company may help identify contractors who would be likely to have a dedicated load. For additional information, the scale operator shall ask the driver what they are hauling. All dedicated loads shall be diverted at the scale house to the WPB; the load must not be taken to the C&D debris disposal mound..

17.5 A trained operator or spotter must inspect each load on the tipping floor and pull out wood that is suspected to be treated wood. Separated wood will be stored with Class I waste for disposal at a lined disposal facility.

17.6 When handling Treated Wood, personnel shall wear sufficient clothing to prevent skin contact. In case of skin contact, the area coming in contact shall be washed thoroughly with soap and water.

18 EMERGENCY AND CONTINGENCY PLAN

18.1 Communications and Emergency Contacts

18.1.1 The occurrence of an emergency condition does not preclude the WPF from receiving or shipping waste unless these operations are impacted by the emergency or present a risk to the health, safety and welfare of the personnel or those using the WPF.

18.1.2 Personnel shall be trained to operate in contingency mode and shall be fully capable of operating existing communication equipment as well as telephones available at the site and office.

18.1.3 The Operator shall post in a conspicuous place within the facility office a list of emergency contacts, which shall be updated on a monthly basis, containing as a minimum, the following contacts:

- FDEP Receptionist - Central District: (407) 897-4100
- City of Ocala Fire Department: 911 Emergency or 629-8513 Non-emergency
- City of Ocala Police Department: 911 Emergency or 369-7070 Non-emergency
- Guerra Development Corp.: (352) 629-8060
- St. Johns River WMD: (386) 329-4500
- Gerald Lourenco, Operator: (352) 266-9497

18.2 Fire

In the case of a fire at the waste processing facility, all reasonable efforts shall be made

to immediately extinguish or control the fire. If there is any doubt whether the workers can extinguish the fire, CALL THE FIRE DEPARTMENT AT 911.

Accidental fires, although unlikely, are possible. The most likely type of fire is one which is deliberately set; ensuring that access to the facility is controlled by the end of the workday will help minimize this risk. The following guidelines have been developed to minimize the potential for fires, limit their spread, and control them.

18.2.1 To the extent possible, ensure that all or most of the waste has been cleared from the facility at the end of the workday or has been properly segregated and hazardous material removed from the facility.

18.2.2 Fire extinguishers shall be maintained throughout the WPB. Quarterly it will be verified that they in perfect working condition. A fire hydrant is located near the WPB. Its location shall be known to the personnel to either tap or assist fire department personnel responding to a fire.

18.2.3 Equipment capable of moving large amounts of dirt shall be maintained on-site and in working condition for use in putting fires out or creating new fire break lanes. The same front-end loader used for sorting and loading waste within the WPB may be used for this purpose. Personnel should be aware of the potential use of this equipment for fire-fighting.

18.2.4 Personnel shall be made aware of the water hookups available at the WPB which may be used to put out small fires within the WPB.

18.2.5 No smoking, burning, or open flames inside the WBP is allowed.

18.2.6 A chain link fence shall be provided to secure the WPF property perimeter. The gates to the site shall be kept locked at all times when the facility is not being operated.

18.2.7 The owner / operator shall post outside the portable office and inside by the

telephone, the telephone numbers for applicable emergency agencies having jurisdiction over the facility, such as 911, police, fire department.

18.2.8 A working telephone (landline or cellular) shall be available in the office at all times during operation of the facility. Additionally, at least one working cellular telephone shall be available outside the office building, to be used by the trained operators or trained spotters in the event line telephone service at the office is down.

18.2.9 Within 24 hours of a fire affecting the facility, the Operator shall contact FDEP by phone call, e-mail, or facsimile. Additionally, a letter must be submitted within five days to the Department describing how the fire began, what was done to extinguish it, and what will be done to prevent future fires.

18.3 Hot Load and Smoldering Waste

18.3.1 If a fire is discovered in an incoming load of waste, the load shall be dumped away from the WPB (preferably, at the C&D debris disposal mound next door) where equipment can cover it with dirt to smother the fire.

18.3.2 If the fire is discovered after the load has been dumped on the tipping floor, using the front end loader at the WPB the load shall be immediately separated, picked up, and delivered to the adjacent C&D facility to be covered with dirt and smothered.

18.3.3 If the operator believes the fire is beyond the capability of the workers, he will call 911 for assistance.

18.4 Hazardous Waste and Spills

18.4.1 All personnel shall be fully aware that hazardous materials and regulated hazardous waste are not to be accepted at the WPF.

18.4.2 Should a hazardous material be discovered within the WPF the hazardous material shall be isolated and placed in a designated container for prompt and proper disposal offsite at a permitted facility.

18.4.3 Should liquid hazardous material be spilled, personnel shall promptly utilize the spills kit available at the WPB to recover and clean up as much of the liquid as possible and prevent it from running outside the building or inside the leachate system. Absorbent material used in the cleanup shall be treated as hazardous material and stored in the appropriate container for disposal at a Class I landfill (if the material is not a regulated hazardous waste).

18.4.4 The Operator shall maintain within the WPB the following material:

1. Spills response kit containing absorbent pads, sock and brooms.
2. Personal protective equipment, gloves, boots and aprons.
3. First aid kit and eye wash.
4. Fire extinguishers.

18.4.5 If the hazardous material is a regulated hazardous waste, the facility operator shall:

1. Promptly notify the FDEP Central District, the person responsible for shipping the wastes to the facility, and the generator of the wastes, if known.
2. The area where the wastes are deposited shall immediately be cordoned off from public access.
3. If the generator or hauler cannot be identified, the facility operator shall assure the cleanup, transportation, and disposal of the waste at a permitted hazardous waste management facility. (Call 911 for the HazMat team and / or ask FDEP Central District for guidance.)
4. Inform the FDEP Central District when the cleanup and disposal operations have been completed.

18.5 Health and Injury

The operator shall be responsible for conducting the operation of this site at all times in accordance with OSHA and other applicable safety best management practices.

The following minimum safety measures shall be taken:

18.5.1 Persons working in the WPB (spotter, driver and or front end loader operator) shall have access within the site to two-way communication with the main office. Cellular telephones or radios would be acceptable.

18.5.2 A First Aid Kit shall be available at the site during operations. The first aid kit can be placed in the front end loader. A First Aid Kit shall also be located inside the project office.

18.5.3 A written notification shall be sent by the Owner and/or Operator of the facility to emergency management entities, such as Police, and Fire Department. The notification shall include as a minimum, the telephone number, address, name of business, contact person, directions for access to the site and the type of work conducted within the site. The written notification should mention both the WPB and the C&D debris disposal mound.

18.6 Sinkhole Formation

Upon the discovery of a sinkhole, the owner of the facility shall notify the following entities:

- Engineer of Record: Guerra Development Corp.: (352) 629-8060
- St. Johns River Water Management District: (386) 329-4500
- Department of Environmental Protection – Central District: (407) 897-4100

18.7 Severe Weather

This section applies to approaching weather such as hurricanes and tropical storms, or the aftermath of tornados and design-level rainfall events (100-year, 24-hour storms).

18.7.1 Severe Weather (Tornados, Lightning): Gerry Lourenco or the manager on duty will decide which precautions will be taken and whether operations will be suspended when a lightning storm or tornado is in the area.

18.7.2 Within 72-hours of an expected hit by a hurricane:

18.7.2.1 Emergency numbers shall be verified.

18.7.2.2 Communication tools such as land lines and cellular phones shall be checked.

18.7.2.3 Essential supplies (equipment fuel, spares, bottled water) shall be topped off.

18.7.2.4 Leachate tank shall be emptied in the approved manner.

18.7.2.5 The Facility Operator/Manager shall hold a meeting with facility personnel to discuss actions to be taken.

18.7.3 Within 48 hours of an expected hit by a hurricane:

18.7.3.1 Contact the facilities that receive waste and recyclable materials to find out how long they will remain open.

18.7.3.2 Dumpsters and Bins for recyclable material shall be lawfully emptied at approved facilities. C & D debris material shall be disposed of at an approved facility. Plastic bins shall be secured or moved to enclosed locations.

18.7.3.3 Since the WPB is an open building, all equipment, parts, tools, etc. which may become airborne shall be properly secured or removed.

18.7.3.4 All components for the leachate collection and stormwater systems

(ditches, swales, pipes, inlets, etc.) shall be verified to be in proper working conditions to prevent flooding, erosion, or contamination.

18.7.4 Within 24 hours of an expected hit by a hurricane:

18.7.4.1 The WPF Operator/Manager shall make the determination regarding shutting down.

18.7.4.2 Upon shutting down, no additional waste shall be received. Advise solid waste collectors and haulers that facility will be closed.

18.7.4.3 As much as possible, waste materials will be removed from the site. If the disposal facilities have closed, the waste will be pushed as close to the bump wall as possible.

18.7.4.4 As much of the recyclable material as possible will be moved inside the covered portion of the building. All will be secured to keep it from becoming airborne.

18.7.4.5 Leachate Tank shall be filled at least 50% full of water

18.7.4.6 Fuel tank shall be secured, shed access shall be locked and power to the fuel pump disconnected.

18.7.4.7 All gates to the facility shall be locked.

18.7.4.8 Emergency contact information, visible from outside of the facility shall be verified.

18.7.4.9 The Owner/Operator/manager shall make a visual inspection of the WPF prior to leaving.

18.7.5 After severe weather has passed:

18.7.5.1 The WPF Operator/Manager shall make the determination for re-opening the facility after an inspection of the facility has been made.

18.7.5.2 If any significant damage is observed the owner/operator shall retain a licensed professional engineer to assess if the damage may affect permit conditions, and to take appropriate action.

18.7.5.3 In the event of damage which may affect permit conditions, the

Owner/Operator/Manager or the retained licensed professional engineer shall notify FDEP of the damage and remedial actions to be taken. This notification to FDEP shall be made within 72 hours (or as soon as practical) of the event.

18.7.5.4 Coordinate with FDEP and local authorities if special operations are required to assist federal, state and local authorities in the cleanup effort.

19 SITE RESOURCES LIST

19.1 Personnel

Friends Recycling, L.L.C. will use its employees for both the C&D disposal operations and the materials recovery facility.

1. At least one person at the portable office who may also operate the scale house.
2. At least one trained operator who may over see both the C&D disposal operations and the materials recovery facility.
3. At least one trained spotter. This person may either be on the tipping floor or operating the heavy equipment at the WPB.
4. The heavy equipment operator may act as a trained spotter.

19.2 Operators and spotters shall be trained as described in Rule 62-701.320(15), F.A.C.

19.2.1 At least one trained operator shall be on duty whenever the facility is operating. An operator is any person, including the owner, who is principally engaged in, and is in charge of, the actual operation, supervision, and maintenance of a solid waste management facility and includes the on-site person in charge of a shift or period of operation during any part of the day, such as facility managers, supervisors and equipment operators. The trained operator may also act as a trained spotter.

19.2.2 At least one trained spotter shall be on duty at all times that waste is received at the facility to inspect the incoming waste. A spotter is any person employed at a solid waste management facility whose job is to inspect incoming waste and to identify and properly manage any hazardous or prohibited materials which are received at the facility. "Spotters" shall be stationed where they can thoroughly inspect each shipment of waste for prohibited materials. The spotter can be on heavy equipment or on the tipping floor.

19.2.3 Interim Operators and interim Spotters may be used at the facility in accordance with the requirements of subsection 62-701.320(15), F.A.C.

19.2.3.1 An "interim operator" means a person who has, in the opinion of the facility manager, shown competency in his chosen occupation through a combination of work experience, education and training and who has at least one year of experience at that facility or a similar facility. An interim operator must become a trained operator within one year of employment as an interim operator.

19.2.3.2 An "interim spotter" means a person who has, in the opinion of the facility manager, shown competency in his chosen occupation through a combination of work experience, education and training. An interim spotter must become a trained spotter or trained operator within three months of employment as an interim spotter.

19.3 Equipment

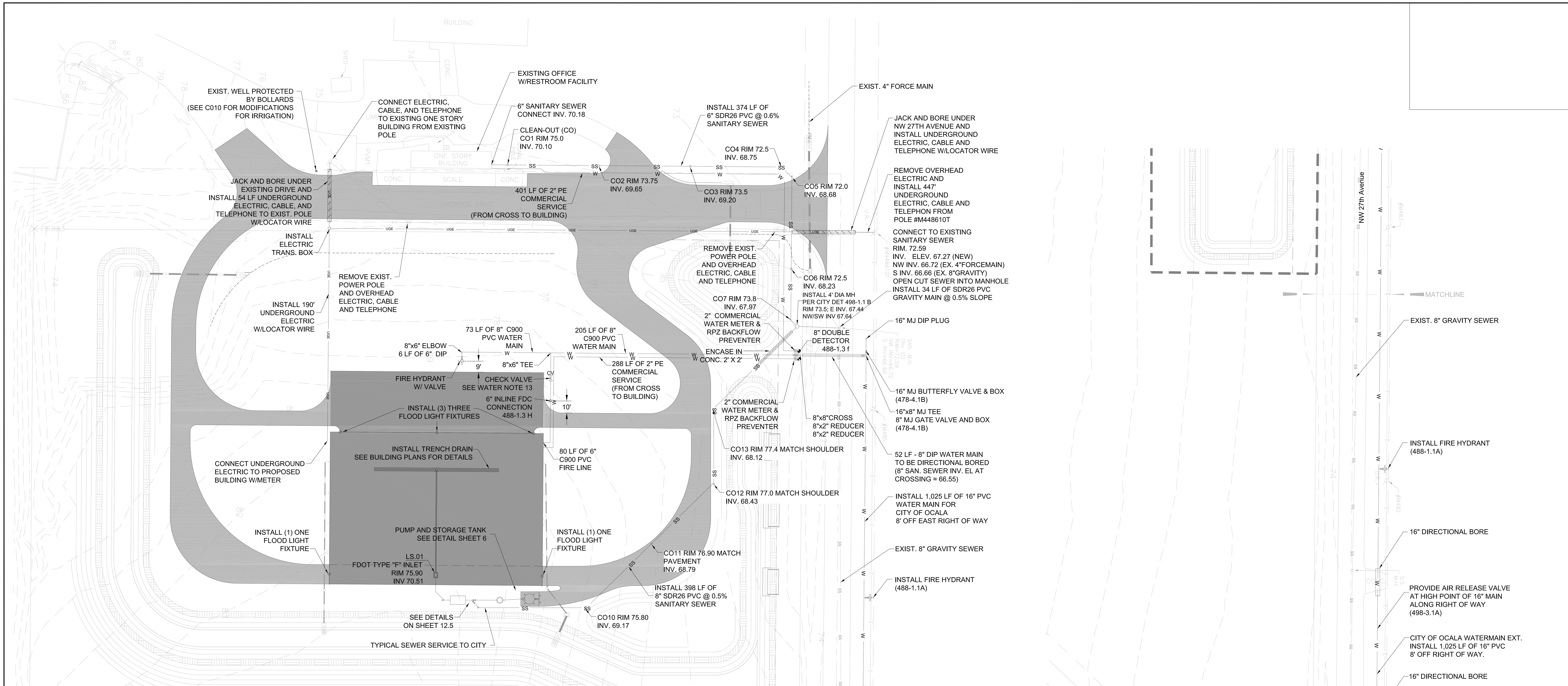
City Wide Recycling and the C&D debris recycling and disposal mound will share equipment resources, such as, the 4,000-gallon water truck. The rubber tired front-end loader with rubber insert in the bucket to prevent damage to the slab will be for WPB use.

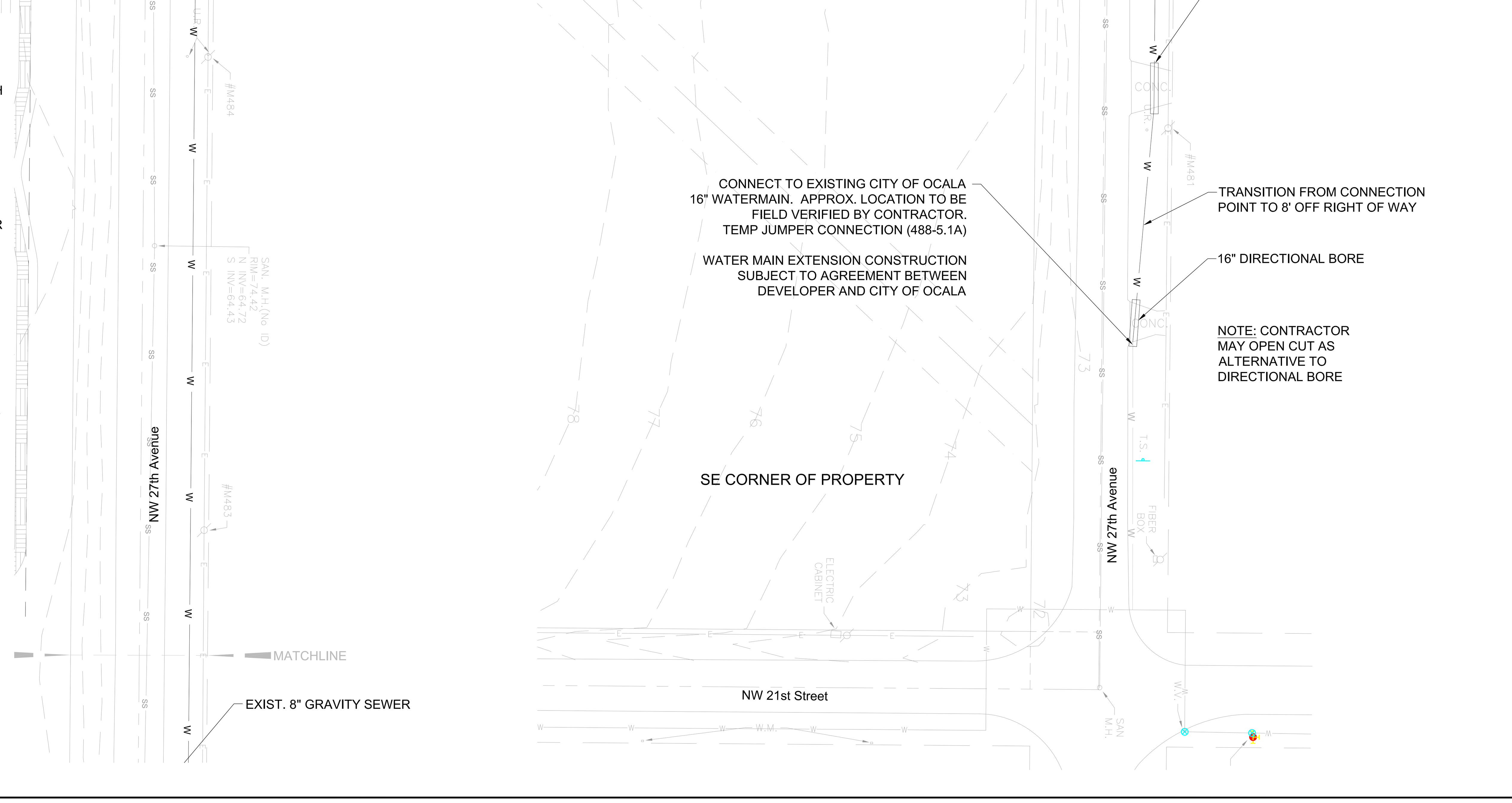
20 STORAGE OF PETROLEUM

No storage of fuel, diesel, gasoline shall take place within the WPB. Equipment may refuel on the Friends Recycling, L.L.C., property, but not inside the WPB.

APPENDIX A

SITE PLAN





WATER NOTES

1. THE WATER SERVICE PIPE, FROM THE MAIN TO THE METERED LOCATION, SHALL BE TWO INCHES (2") MINIMUM.
2. WATER CLEARANCE FROM FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) MUST BE OBTAINED BEFORE PLACING THE WATER SYSTEM IN OPERATION AND BEFORE ISSUANCE OF PARTIAL OR FINAL CERTIFICATE OF OCCUPANCY (CO).
3. WATER SYSTEM ASBUILT MUST BE SUBMITTED TO CITY PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY IN ACCORDANCE WITH SECTION 486 OF THIS MANUAL. ALL INSTALLED INFRASTRUCTURE SHALL BE REFERENCED TO STATE PLANE COORDINATES ON THE ASBUILTS.
4. CITY WILL MAINTAIN ALL WATER MAINS TWO INCH (2") IN DIAMETER AND ABOVE TO THE POINT OF METERING AND DOUBLE DETECTOR CHECK ASSEMBLY (DDC) LOCATION.
5. ALL BACKFLOW PREVENTERS ARE TO BE INSTALLED "BY CONTRACTOR" AND MAINTAINED "BY OWNER".
6. METER SERVICE IS TO BE INSTALLED BY CITY OF OCALA.
7. A GATE VALVE SHALL BE PROVIDED AT THE MAIN FOR ALL NEW SERVICE LINES WITH 2" PIPING.
8. ALL EXISTING METER BOXES AND BACKFLOW PREVENTERS THAT FALL IN AREAS OF NEW CONSTRUCTION ARE TO BE ADJUSTED TO THE NEW SURROUNDING GRADE.
9. CONTRACTOR SHALL CLEARLY MARK EACH METER BOX WITH THE UNIT IT SERVES.
10. ALL NEW BACKFLOW PREVENTION DEVICES SHALL BE TESTED BY CERTIFIED TESTERS AND COPIES OF SUCH TESTS SHALL BE PROVIDED TO THE CITY PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO) FOR THE UNIT TO WHICH THE DEVICE HAS BEEN INSTALLED FOR TESTING AND CERTIFICATION SHALL BE IN ACCORDANCE WITH 6.1, TESTING, MAINTENANCE, AND CERTIFICATION OF REQUIRED BACKFLOW PREVENTERS OF THE CITY'S MANUAL OF CROSS CONNECTION CONTROL.
11. ALL FIRE FIGHTING EQUIPMENT AND APPARATUS TO COMPLY WITH PRESENT STATE CODE/REQUIREMENTS.
12. ALL FIRE HYDRANTS SHALL BE FACTORY PAINTED RED WITH APPROPRIATELY COLORED CAPS / BONNETS.
13. FIRE PROTECTION SYSTEM DESIGN TO BE CONFIRMED WITH BUILDING DESIGNERS FOR APPROPRIATE PRESSURES. SHOULD ANY MODIFICATIONS BE REQUIRED THEY SHALL BE APPROVED BY THE CITY.

SEWER NOTES

1. CITY WILL MAINTAIN ALL SEWER MAINS UP TO THE PROPERTY LINE, THAT INCLUDE MANHOLES BOTH ONSITE AND OFFSITE. SEWER SERVICES AND CLEANOUTS WILL BE PRIVATE.
2. SEWER SYSTEM ASBUILT TO BE SUBMITTED TO WATER AND SEWER ENGINEER PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY (CO). ASBUILT TO BE IN ACCORDANCE WITH SECTION 496.
3. ALL MANHOLE COVERS ARE TO BE HINGED WITH LOCKS.
4. MANHOLE FLOW CHANNELS ARE TO BE RECONSTRUCTED AS REQUIRED BY THE WATER AND SEWER ENGINEER.
5. ALL EXISTING SANITARY SEWER MANHOLE COVERS THAT FALL IN AREAS OF NEW CONSTRUCTION ARE TO BE ADJUSTED TO THE NEW SURROUNDING GRADE.
6. ALL SEWER MAINS THAT ARE TO BE CITY MAINTAINED WILL REQUIRE AN ASBUILT DRAWING. THE DRAWING SHALL SHOW THE LOCATION OF ALL SEWER MAINS, MANHOLES AND SERVICES. ASBUILT DRAWING SHALL BE IN ACCORDANCE WITH SECTION 496, VOLUME III, CITY OF OCALA STANDARD SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION.
7. NO OAKS, LARGE OR AGGRESSIVELY ROOTED TREES CAN BE INSTALLED WITHIN 30 FEET OF SEWER MAINS.
8. DIP PIPE SHALL BE CLASS 350 AND CONFORM TO THE LATEST REQUIREMENTS OF ANSI/AWWA C150/A21.50 AND ANSI/AWWA C151/A21.51.
9. ALL SANITARY SEWER CLEAN-OUTS SHALL BE MAINTAINED BY THE OWNER AND THOSE WITHIN THE PAVEMENT SHALL BE TRAFFIC BEARING .
10. ALL RIMS ARE TO BE FLUSH WITH THE FINAL GRADES TO CREATE A SMOOTH FINISH.
11. DEFLECTION OF FLEXIBLE PIPE SHALL NOT EXCEED 5% AND SHALL BE TESTED PER FDEP METHODS AT LEAST 30 DAYS AFTER FINAL BACKFILL HAS BEEN PLACED. LEAKAGE EXFILTRATION OR INFILTRATION SHALL NOT EXCEED 200 GAL PER INCH OF PIPE DIAMETER PER MILE PER DAY AND BE PERFORMED WITH A MIN POSITIVE HEAD OF 2 FEET. AIR TESTS CONFORMING TO ASTM F-147 FOR PLASTIC PIPE SHALL ALSO BE REQUIRED.

SHEET TITLE:	UTILITY LAYOUT
JOB NO:	17-04
PROJECT:	CITY WIDE RECYCLING
DESIGNED BY:	AMM
DRAWN BY:	AMM
GDC DWG NAME:	17-04_UTIL
CHECKED BY:	PRW / JCG
APPROVED BY:	JCG
CLIENT:	NICK GIUMARELLI
DATE:	MAR. 16, 2018
SHEET NO:	C006 of C012

REVISIONS

DATE	BY	DESCRIPTION
9-6-18	PRW	ADDED SEWER LATERAL FROM RECYCLE CENTER AND NOTES
9-28-18	PRW	MINOR INVERT ADJUSTMENTS- SEWER
10-03-18	PRW	MINOR INVERT ADJUSTMENTS- SEWER

24x36 SCALE: 1" = 40'
11x17 SCALE: 1" = 80'
0 20' 40'

SEAL:

Juan C. Guerra, P.E.
Fla. Reg. # 0041000
Date:

ENGINEER OF RECORD:
GDC
Consulting Engineering
2817 NE 3rd St. Ocala, Florida 34470
(352) 629-8060 Phone
GDC@GuerraCorp.net
State of Florida Certificate of Authorization #4954

APPENDIX B

GUIDANCE FOR THE MANAGEMENT OF CCA TREATED WOOD

GUIDANCE FOR THE MANAGEMENT AND DISPOSAL OF CCA-TREATED WOOD 2017 (Final)

Prepared for:
The Hinkley Center for Solid and Hazardous Waste Management and Florida Department of Environmental Protection

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TABLE OF CONTENTS

1. Introduction

The purpose of this document is to develop guidance for the regulated community and the Department in Florida on the management and disposal of wood treated with chromated copper arsenate (CCA). It contains recommendations, which are of an advisory nature, for the collecting and recycling of treated wood. It also contains specific Best Management Practices (BMPs) that are designed to reduce the amount of treated wood disposed of at unlined facilities and to minimize the processing of treated wood into mulch at processing facilities. If the owner/operator of a facility employs and properly implements the BMPs contained in this document the Department will presume that the owner/operator is making a reasonable effort to prevent significant quantities of CCA-treated wood from being disposed of or processed at the facility and will not take enforcement action should disposal or processing of some CCA-treated wood at the facility actually occur.

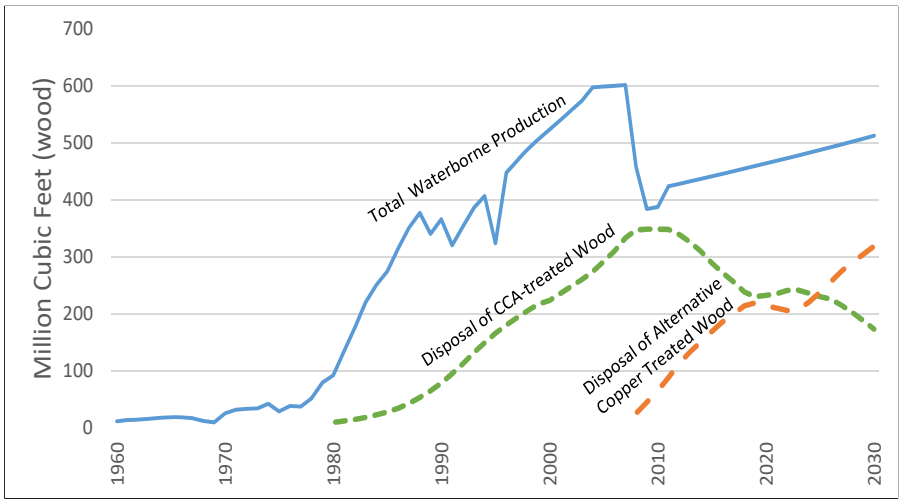
2. Background

CCA is a wood preservative containing chromium, copper and arsenic. These chemicals protect the wood from rotting due to insects and microbial agents. As a result, the use of CCA to pressure treat wood can prolong the service life of the wood 20 to 40 years beyond that without the preservative.

CCA has been used to treat wood since the 1940s, and since the 1970s CCA-treated wood has been used extensively in residential applications. Wood treated with CCA produces no odors or vapors, and you can paint or seal its surface easily. Wood products treated with CCA include lumber, timber, utility poles, posts and plywood. Because of its ease of use and the effectiveness of its treatment, CCA-treated wood was the most widely used type of treated wood in the country and represented about 80 percent of the wood preservation market through 2004. As of 2004, CCA-treated wood has been phased out from residential treated wood uses in lieu of wood treated with copper based alternative chemicals. The alternatives do not contain arsenic, the chemical in CCA that has the highest human health risks.

Although the amount of CCA-treated wood in the disposal sector has been estimated to be decreasing since 2010, it is still important for wood waste recyclers to implement best management practices (BMPs) to avoid the inclusion of CCA from marine, farm, and utility applications plus remnant wood waste from residential structures constructed prior to the voluntary industry CCA phase-out effective January 1, 2004.

2. Background (continued)



Projected Amounts of CCA- and Copper-Treated Wood in the U.S. Disposal Sector

In the late 1990s the Florida Department of Environmental Protection became concerned about the large quantity of arsenic that was being imported into the state in the CCA chemicals and the CCA-treated wood. Due to population growth, this wood was needed to supply the high demand for residential housing in Florida. The Department was also concerned about how this CCA-treated wood might be managed when it was to be removed from service. Research conducted by a team of researchers at the University of Miami and the University of Florida (Dr. Helena Solo-Gabriele, and Dr. TimothyTownsend, Principal Investigators), showed that the amount of this wood being disposed of after it reached the end of its service life was significant (Solo-Gabriele et al. 2003). The disposal forecast above shows that the amounts of CCA-treated wood disposed are expected to decrease from their peak in 2013. This decrease will be offset by an increase in the amount of alternative copper-treated wood disposed. Although projections indicate that the amount of CCA-treated wood in the disposal sector is declining, the amounts will remain significant through 2030.

In addition, while not clearly confirmed by ground water data from Florida's unlined disposal facilities, research also indicated that CCA-treated wood and ash from burning this wood could pose a significant leaching threat to ground water if disposed of in unlined disposal facilities in Florida (Townsend et al. 2001, 2004). The research also showed that the ash from burning wood waste containing as little as five percent– treated wood could be considered a characteristic hazardous waste due to the high CCA arsenic concentrations in the ash. These concerns led to communications by the Department with regulatory agencies in other states, with members of the wood treating industry in Florida, and with the US Environmental Protection Agency (EPA). On March 17, 2003, the EPA signed an order in response to a voluntary request by wood preservative pesticide producers for cancellation of registration and termination of uses of certain CCA-treated wood products. This agreement required that production of CCA-treated wood for most identified residential uses cease by December 31, 2003. EPA published this notice of cancellation order on April 9, 2003 (EPA 2003).

The Department is still faced with the problem that the amount of CCA -treated wood being disposed of will continue at significant levels in the years to come, and may pose an environmental risk if disposed of in unlined facilities. If treated wood is made into mulch and then used in a residential setting, it may also pose unacceptable human health or environmental risks.

Consequently, in 2003 the Department convened two Technical Advisory Groups (TAGs) to help study these issues. One TAG focused on potential ground water impacts and, the other focused on operational issues. The TAGs consisted of voluntary members from the scientific, engineering and regulated communities who were familiar with the management problems associated with CCA-treated wood in Florida.

One of the recommendations of the Operation TAG was for the Department to develop a guidance document on the management and disposal of CCA-treated wood.

The first guidance document was published in 2006. This current document, published in 2017, is an update that incorporates the changes in the wood treatment industry and subsequently in the wood waste sector since 2006.

3. Overview and Applicability

Solid waste disposal facilities in Florida are regulated by the Solid Waste Management Facilities rule, Chapter 62-701, Florida Administrative Code (F.A.C.). This rule establishes standards for the operation of solid waste management facilities. Given the studies cited above as well as advice from the EPA (EPA 2004a), Chapter 62-701 was amended effective January 6, 2010 along with the development of the original guidance document of 2006. The amendment required that operators of unlined facilities implement a program to remove CCA-treated wood from the waste stream prior to final disposal or use. Historically Florida's unlined disposal facilities would include most of the Class III landfills and C&D debris disposal sites in the state. Use of the guidance as part of such a program has helped owners and operators comply with Department rules as well as minimize future liability for environmental impacts or injury.

In addition, both the Department (DEP, 2002) and the EPA (EPA, 2004b) have determined that CCA-treated wood should not be recycled as mulch or used as fuel in a wood- fired boiler unless that wood -fired facility is specifically authorized by the Department to accept CCA-treated wood. The amendment of January 6, 2010 also prohibits the use of CCA- treated wood as mulch, compost, or a soil amendment. Owner/operators of facilities that process wood wastes for disposal or use should follow this guidance to reduce any future liability for injury to people or the environment, as well as to comply with Department rules regarding CCA.

Finally, as is explained in the following section of this guidance, the Department recognizes the difficulty of identifying CCA-treated wood separately from other forms of wood treated with copper-containing preservatives. At this time there is no cost effective and efficient method to specifically identify arsenic in treated wood. The only practical solution to this dilemma at this time is to require the separation of wood waste which can be reasonably assumed to be treated with preservatives which might contain arsenic. Consequently, the advisory recommendations and the BMPs in this document will focus on managing all those forms of treated wood.[1]

[1] *Wood treated with other chemicals such as pentachlorophenol and creosote, while perhaps posing different environmental concerns, is not addressed by this guidance document.*

4. How To Identify Treated Wood

There are several types of wood preservative chemicals. Waterborne preservatives are dry to the touch and thus used almost exclusively for residential applications. Right after the 2004 phase-out the most common alternative for residential applicatons was alkaline copper quat (ACQ) and copper boron azole (CBA). Both of the early phase copper formulations leached copper at a greater rate. Later generation “micronized” preservatives have since been developed which leach at slower rates. The most common alternatives used today in residential applications are micronized copper quat (MCQ) and micronized copper azole (MCA).

Some wood in residential applications is also treated with borate alone. Other chemicals have also been used to treat wood for industrial applications. For example, pentachlorophenol (PCP) has been used in the past for telephone poles, but is becoming less popular today. Creosote is used to treat railroad ties and some construction pilings. Treated industrial wood products can typically be identified based upon their large dimensions (e.g., railroad ties and utility poles). Thus, they are easier to visually identify and then remove from the waste stream. Treated wood used in residential applications, however, is largely composed of lumber, timbers and plywood in varying sizes and can be found in both treated and untreated forms. So how does one determine if these materials are treated?

The most common method for identifying treated wood among lumber, timber and plywood is to look at the color of the wood. Untreated wood and borate-treated wood typically have a light yellow color. The yellow color is the natural color of Southern Yellow Pine (SYP), the most common wood species used for building construction in Florida.

4. How To Identify Treated Wood (continued)

Wood treated with copper, which includes CCA-, MCQ- and MCA-treated wood, varies in color from a very light green to an intense green color depending upon the amount of chemical impregnated into the wood. The figure to the right shows the color variations in wood resulting from different chemical treatment levels using CCA.

Color of CCA-Treated Wood at Different Retention Levels

For CCA-, MCQ- and MCA- treated wood, a lower amount of chemical is added to wood intended for above ground and ground contact applications. Higher concentrations of CCA are added to wood intended for marine applications or serving as a load-bearing support for structures. MCQ and MCA have not yet been approved for harsher marine and load bearing environments. The majority of the dimensional wood produced is treated using the lower amounts of chemical which imparts a light green color to the wood. Once wood treated with copper has been in-service and has weathered, the green color is generally converted to a silver color. Unfortunately, untreated wood generally weathers to nearly the same silver color as observed in the second image to the right. This change in color for treated wood occurs for wood containing the lower concentrations of chemical after only a year or two of weathering. As a result, sorting out CCA-treated and other copper treated wood from the waste stream based on the green color alone cannot ensure that all the treated wood is identified and removed.

Color of New and Weathered CCA-Treated Wood

To further complicate sorting, in some cases wood from the construction and demolition (C&D) waste stream can be covered in dust. Clean dimensional wood is common of construction projects. Demolition wood waste on the other hand is typically covered in dust which makes it very difficult to identify the green hue associated with treated wood as can be seen in the images to the right.

Clean construction wood (top) and dusty demolition wood (bottom)

Because of the difficulty in identifying treated wood based on its color alone, researchers have developed methods to assist with this identification. Some of these methods may be useful to owner/ operators who seek to improve their separation processes for treated wood. The rest of this Section will describe four of these methods.

4. How To Identify Treated Wood (continued)

Chemical Stains

Chemical stains refer to specially designed chemicals that can be applied directly to treated wood and show the appearance of a particular chemical in the wood by changing color, i.e., "staining" the wood. These stains can be easily used in the field to sort treated wood but are labor intensive since stain has to be applied to each piece of wood to be identified. The color change will usually occur within a few seconds and the costs of individual tests are low, on the order of a few cents per sample.

There are several stains that can be used to identify copper-treated wood. They were developed by the wood treatment industry to check the depth of penetration of the CCA preservative into wood. These stains include chrome azurol, PAN indicator, and rubeanic acid. They result in a distinctive color change if copper is present in wood. PAN indicator is the preferred stain for sorting wood within the waste stream due to its short reaction time of about 12 seconds. When it reacts, it produces a color ranging from magenta to red. Untreated wood turns orange in color.

Stain effects on untreated wood (left) and treated wood. (right). Wood with PAN indicator stain is circled

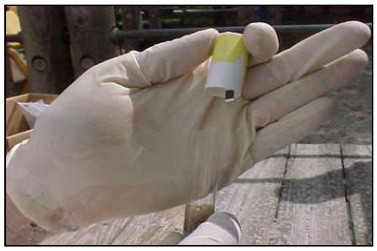
It is important to note that these stains will also test positive if the wood is treated with the new copper-based alternatives, such as MCQ and MCA. Thus a positive result using PAN indicator will indicate that the wood is copper-treated but not necessarily arsenic-treated.

While the PAN indicator is copper specific rather than arsenic specific, because of its low cost and ease of use it is currently the method of choice for assisting owner/operators to sort out treated wood. More information about the PAN stain indicator can be found on page 12.

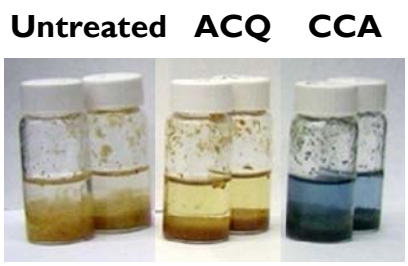
Arsenic Test Kits

These tests correspond to kits developed for the analysis of arsenic in drinking water which can be also used for the analysis of arsenic in wood. The method requires the collection of a sawdust sample of the wood which is immersed in water. A series of chemicals are added to the wood/water mixture which convert arsenic dissolved in the water to arsine gas. This gas then reacts with a test strip to produce a distinctive color change on the strip. The method requires 45 minutes per sample for processing. Because the use of strong reagents and the formation of arsine gas (a highly poisonous form of arsenic that is dangerous to inhale), this test is not recommended for use by those who are inexperienced with the handling of chemicals.

Additional arsenic specific tests (Omae et al. 2007) have been developed specifically to identify arsenic in CCA but they require the immersion of CCA-treated wood sawdust in water. The process takes time and is more suitable for analyses in the laboratory.



Positive arsenic test kit result shown by the dark brown spot on the test strip



Arsenic-specific stains shown by blue color

X-Ray Technologies

The use of X-ray technologies for sorting wood waste has been evaluated at the pilot scale showing very promising results. The hand-held XRF units were found to identify the presence of arsenic in treated wood within seconds. Moisture and coatings on the wood did not interfere with the ability of the XRF units to identify arsenic.

XRF unit for analyzing wood in the field

4. How To Identify Treated Wood (continued)

The widespread use of XRF technologies is limited because of the high capital costs of the equipment. For example, hand-held units as of 2017 sell for about $30,000, but they can also be rented.

XRF has been investigated for potential on-line applications (Hasan et al. 2011a,b). On-line systems are characterized by high capital costs (about $250,000 as of 2017) and may be suitable for very large facilities that process C&D wood waste. Further research and development is needed before on-line sorting can be implemented at operating facilities.

On-line sorting system for separating treated from untreated wood

Laser Technologies

Similar to X-ray technologies, laser induced breakdown spectroscopy (LIBS) has been evaluated at the pilot scale for on-line sorting. An experimental LIBS system has been tested for sorting wood waste by determining how well it can detect chromium in CCA-treated wood. However, the effectiveness of the system to identify treated wood was hampered by wood with high moisture content and the presence of coatings on the wood. Because LIBS can detect coatings, it may be helpful if painted wood is to be separated from a waste stream.

5. Recommendations for Generating, Collecting and Recycling Treated Wood Waste

The Department recognizes that it may be difficult to remove CCA-treated wood from other forms of treated wood. Consequently, the following recommendations are designed to address all treated wood, as much as is practical. These recommendations are also advisory in nature and are separate from the BMPs described in the next section.

Generation and Collection

The best location to separate treated wood waste for proper management is at the generating source. Generators will be more knowledgeable of the type of wood that is being handled, and separation at the source is much more effective than trying to separate treated wood later at a disposal or processing facility.

Dedicated roll-offs: Dedicated, separate roll-offs should be used at job sites involving the construction or demolition of wooden decks, stairs, fences, play ground equipment, landscaping materials, docks and for any other large-scale uses of treated wood. Generators should place all treated wood scraps in these roll-offs for later disposal at permitted lined landfills or other facilities permitted to receive treated wood. As much as is practical, sawdust generated from cutting the treated wood should also be bagged and disposed of at a lined landfill. Bags of sawdust can be placed in the dedicated roll-offs for treated wood.

No on-site burning of treated wood: Treated wood should not be burned as part of the site cleanup efforts. The burning of CCA-treated wood releases toxic fumes and produces a residual ash which is toxic.

No on-site mulching of treated wood: Treated wood, especially CCA-treated wood, should not be ground up on-site and used as landscaping mulch or soil amendment.

Curbside collection: When feasible, local governments should ensure that treated wood from renovation of fences and decks by homeowners that is collected through a curbside pickup program is not mixed with vegetative wastes, but is instead taken to a lined landfill for disposal.

Recycling

At this time, there are no acceptable recycling alternatives for CCA-treated wood, other than reuse of discarded lumber, timbers and poles through reuse and salvage centers.

Recycling at Materials Recovery Facility emphasizing the process for wood sorting

6. Best Management Practice (BMP) For Treated Wood

Yard trash processing facilities that receive and process only yard trash as defined in Rule 62-701.200(135), F.A.C. need not follow this Guide for their operations.

As is described in the section, "How to Identify Treated Wood," the Department recognizes that it may be difficult to separate CCA-treated wood from other forms of treated wood. Consequently, this BMP is designed to maximize the removal of all treated wood from the waste stream. By following this guidance document, the Department will assume that all reasonable measures are being taken by the owner/operator to prevent the disposal or processing of CCA-treated wood at the facility. The following applies to all facility types listed in this section.

A **minimal amount of recordkeeping** is required for all facilities that received treated wood. The owner/operator must maintain records of the volumes or weights of treated wood removed and disposed of and the name of the landfill used for disposal. These records must be kept with the other operational records of the facility and maintained as required by the facility's permit or applicable rules.

Treated wood which is separated from yard trash or other clean wood[2] should be stored in a separate container and taken for disposal to a lined disposal facility. Treated wood must not be burned in open piles, air curtain incinerators or other uncontrolled conditions.

Authorized Mulching Operations

The Department recommends that facilities that mulch or compost any clean wood as defined in Rule 62-701.200(16), F.A.C., including yard trash processing facilities and mulching facilities at landfills, implement the procedures listed above plus the following.

No mulching of treated wood: The owner/operator (or spotter in the case of a landfill mulching operation) must make reasonable efforts to remove any treated wood listed in the table below from the wood waste stream prior to processing. Because of the difficulty of identifying it after-the-fact, extra care should be taken to assure that decorative wood mulches are free of treated wood.

Materials Recovery Facilities (MRFs)

This Section applies to MRFs regulat-ed under Rule 62-701.710, F.A.C. and C&D MRFs regulated under Rule 62-701.730(13), F.A.C. Typically, wood is separated from the waste stream at these facilities, size reduced, and used as landscaping mulch, boiler fuel or, when mixed with soil, initial cover at Class I landfills. In other cases the wood is disposed of in either Class III landfills or C&D debris disposal facilities. To ensure that significant quantities of treated wood are not managed in these ways at MRFs, the Department recommends that the following procedures be implemented by the owner/operator of the facility in addition to those listed earlier in this section.

Types of Wood That Are Typically Treated with CCA
Lumber, timber and plywood with a green color
Wood and wood posts from fences
Wood and wood posts from docks
Wood and wood posts from decks and outdoor stairs
Wood 4 inches by 4 inches or larger in dimension
Dimensional lumber labeled (with end tags) as treated wood
Wood from playground equipment
Lumber used in landscaping flower beds, gardens, etc.

[2] *Clean wood means wood, including lumber, tree and shrub trunks, branches, and limbs, which is free of paint, glue, filler, pentachlorophenol, creosote, tar asphalt, CCA and other wood preservatives or treatments. While this definition specifically excludes treated wood, the Department expects that a facility that accepts clean wood will inadvertently accept some treated wood that will need to be properly managed.*

6. Best Management Practice (BMP) For Treated Wood (continued)

Initial scale house inspection/driver interview: Incoming trucks should be inspected visually to look for dedicated loads[3] of treated wood, especially from contractors specializing in the demolition and construction of fences, decks and docks. The name of the company may help identify contractors who would be likely to have a dedicated load. The scale house operator may also ask the drivers what they are hauling. All dedicated loads should be diverted at the scale house for disposal at a lined disposal facility or properly managed at the MRF before disposal at a lined disposal facility.

Floor spotters and picking line workers: A trained operator or spotter must inspect the load and pull out larger pieces of treated wood that are listed in the table on page 7. By rule, the MRF must have at least one trained spotter on duty whenever waste is being received. It is recommended that the MRF employ at least one floor spotter per sorting train at the facility. The floor spotter should observe loads as they are tipped onto the tipping floor and pull out larger pieces of treated wood that are listed in the table on the prior page. The picking line workers should pull out the smaller pieces of treated wood not removed by the floor spotters. Separated treated wood should be placed in a roll-off container for disposal at a lined disposal facility.

Training requirements: The owner/operator should implement a training plan designed to help operators, floor spotters and picking line workers identify treated wood. This training plan is in addition to the trained spotter requirements contained in Rule 62-701.710(4)(c), F.A.C. A teaching tool "example board" like that shown on page 11 should be posted near the picking line. Teaching aids like those shown in the photos of typical waste loads (page 11) may be also used.

Spot-checking program: If wood is mulched at the facility, the owner/operator must implement a monthly spot-checking program to evaluate how effectively treated wood is being removed from the recovered wood waste stream. This program can include the PAN indicator test (page 12) to identify the presence of copper-treated wood. The program can also include more sophisticated testing procedures to look for arsenic-treated wood. The details of any spot-checking program will have to be developed case-by-case, with the purpose of helping the owner/operator improve operations. The results of the spot-checking program need not be reviewed by Department staff for compliance purposes, and detections of treated wood in the mulch will not in themselves be indicative of a violation of Department standards.

More extensive recordkeeping: The owner/operator should maintain records of the following: (1) volumes or weights of treated wood removed and disposed of in a lined disposal facility; (2) the name of the facility used for disposal; (3) treated wood training records for the floor spotter and picking line workers; and (4) results of the monthly spot-checking program, if required. These records must be kept with the other operational records of the facility and maintained as required by Rule 62-701.710(8), F.A.C.

[3] *Dedicated loads are defined as loads of predominantly or exclusively treated wood that would typically be generated by deck, dock and fence contractors.*

6. Best Management Practice (BMP) For Treated Wood (continued)

Class I Landfills, Lined Class III Landfills, and Lined C&D Facilities

If mulching occurs at these facilities, the operator should take adequate steps to ensure that treated wood is not being processed into mulch for off-site uses or for on-site uses outside of the lined disposal area. Because of the potential to increase leaching rates, the Department does not recommend size reduction of treated wood. However, treated wood may be processed and used as initial cover at the disposal area provided it is only used on interior slopes and meets the other requirements for initial cover contained in Chapter 62-701, F.A.C.

If the lined disposal facility is co-located with other unlined facilities, the owner/operator should include specific conditions in its operation plan to assure that the treated wood is disposed of only in lined areas.

Unlined Class III Landfills and C&D Debris Disposal Facilities

To ensure that significant quantities of treated wood are not improperly managed at unlined Class III landfills and C&D debris disposal facilities, the Department recommends that it be managed in a similar fashion as a MRF with an initial scale house inspection, spotters, training requirements, spot-checking program, and more extensive recordkeeping. In addition signage is required.

Signage: Facilities must install signs in the area of incoming traffic flow notifying customers that treated wood will not be accepted for disposal at the facilities, and that the only approved method of disposal is at a lined disposal facility.

Waste-to-Energy (WTE) Facilities

Effective March 2016, the EPA issued a rule which is part of the amendments to the Non-Hazardous Secondary Materials (NHSM) regulations. The rule lists "construction and demolition (C&D) wood processed from C&D debris according to best management practices (C&D-BMP)" as a categorical non-waste when used as a fuel in combustion units (EPA 2016). The BMPs described by the EPA include visual sorting, trained operators, and record-keeping, in a fashion similar to that outlined in this document for the disposal of C&D wood in Class III landfills.

The listing is important because it determines which Clean Air Act (CAA) standards are applicable, either CAA section 112 standards which corresponds to a non-waste determination (fuel) or CAA section 129 standards which corresponds to a waste determination. These standards are different with respect to which pollutants are regulated, the level of monitoring and operator training, as well as which combustion sources are required to have a Title V CAA operating permit.

For WTE facilities that handle refuse derived fuel, it is believed that the proportion of treated wood in the fuel is small. The emissions from the de minimis amounts in the waste-stream are believed to be adequately handled by each facility's air pollution control equipment. However, the impacts from large-scale burning of treated wood in WTE facilities have not been tested, and it is not known how much treated wood can be safely burned. Therefore, the use of WTE facilities for large-scale bulk disposal of treated wood is not recommended.

Wood Cogeneration

Wood cogeneration has the potential for having a larger proportion of treated wood given the predominance of vegetative waste in the fuel source. These facilities can receive wood waste from MRFs and implementation of BMPs at the MRFs can reduce the inclusion of treated wood in the fuel stream. In order to check the quality, spot checking of the incoming fuel stream is recommended if the facility accepts recycled C&D wood waste. Spot checking can be done through traditional laboratory analyses which takes several days to obtain results, through the use of PAN stain, or through hand-held XRFs which provide results in near real-time.

7. Frequently Asked Questions

Q1. What do those labels/end tags mean? Can I use them when I sort?

A1. Yes. There is a lot of useful information on the labels attached to the end of dimensional wood. Labels identify the type of chemical that was used to treat the wood (CCA, MCQ, MCA, etc.), the level of treatment (pounds of chemical per cubic foot of wood, for example 0.25, 0.40, 0.80, 2.5, etc.) and the location of the treating plant. If the wood has a label then it is probably treated and according to this guidance should be separated out for disposal at a lined disposal facility.

Q2. Are pallets ever made from treated wood?

A2. Pallets are very rarely made from treated wood. For the most part, pallets can be safely ground up into wood chips for use as mulch or as fuel in a wood- fired boiler. As with other types of wood, inspection of pallets should follow the recommended guidelines.

Q3. Do I need to remove the arsenic-free treated wood products? Is there any harm from them?

A3. Compared with CCA, these other products pose lower risk to the environment or to human health. However, because of the difficulty in differentiating CCA-treated wood from other types of treated wood, this guidance recommends you remove all treated wood from the waste stream.

Q4. What precautions do I need to take when handling treated wood? Should my pickers who handle this type of material take more precautions than others?

A4. All pickers should wear eye protection, dust masks and gloves to prevent splinters. CCA-treated wood splinters in the hands and fingers of workers can get infected and should be removed as soon as possible. It is important to make sure that the entire splinter is removed. Removal may require medical attention. Workers handling wood preserved with CCA should be sure to wash their hands before eating or smoking.

Q5. How do I store this material?

A5. Treated wood, including CCA-treated wood, should be placed directly into a separate container for storage prior to disposal in a lined disposal facility. Simply storing the treated wood in a pile outdoors could continue to pose an environmental threat.

Q6. How do I find lined disposal facilities?

A6. The waste program staff at your District office of the Florida Department of Environmental Protection will know where the lined disposal facilities are located in your part of the state. See the contact information on page 14.

Q7. Can I refuse to accept loads of CCA-treated wood or any other treated wood?

A7. There is nothing in Florida state laws or rules that would require you to accept any particular kind of waste. Unless you are contractually obligated to accept this waste stream by your haulers or local government, you can refuse to accept loads of treated wood.

8. Teaching Tools For Sorting Without Chemical Testing

Materials Recycling Facilities (MRFs) and other facilities that will sort their waste wood can use signs like the two below to help sorters distinguish between wood that can be recycled and wood that should be sent to a lined disposal facility. Signs include text in English and Spanish. The bottom four images can also be used for training.

Explains how to sort wood based on the structure in which it was used.

Explains how to sort wood based on its treatment.

Loads from the demolition of outdoor structures will typically contain CCA-treated wood. Pole at the upper left is treated.

The green colored pole in the front of this pile is treated. Complete recovery of untreated wood from this pile will likely require testing in addition to visual separation.

This load is almost solely CCA-treated wood. It came from a marine construction contractor.

This load is from a construction company that builds trusses and floor joists. It contains treated wood. Green colored boards are treated. Other boards may be un-treated.

9. Pan Stain Indicator

Principle: PAN stands for the chemical name of 1-(2-pyridylazo) -2-naphthol, an orange-red solid with a molecular formula $C_{15}H_{11}N_3O$. It is used to determine the presence of almost all metals excluding alkali metals. The reaction with the metals in CCA-treated wood produces a magenta to red color. Untreated wood turns orange in color. It is important to note that the stain is not specific to arsenic within CCA. It reacts with the copper, so that wood treated with any copper-based preservative (such as MCQ and MCQ) will also test positive using this stain.

Safety: Gloves and safety goggles should be used during the application of the stain. The stain should be applied in an environment that would prevent inhalation. The stain should not be ingested and should be kept in a safe place that would prevent children or animals from ingesting the solution. A safety data sheet (SDS) is also available on this product that supplies additional safety information. You may also want to contact the chemical supplier of the stain for additional safety instructions.

Reagents: The PAN Indicator solution (a.k.a.,"stain") can be purchased as a pre- mixed solution or a basic chemical ingredients. The pre-mixed solution is more convenient but usually more expensive, in particular if large quantities of the stain are needed. If large quantities of stain are needed, a more economical option would involve purchasing the basic chemical ingredients and mixing these ingredients in a laboratory. The pre-mixed solution can be purchased from Spectrum Chemicals. More information is provided below.

Procedure for Use:

1. Using a dropper bottle, apply the stain to the wood. If the wood is relatively clean, the stain can be added directly to the wood. If the wood is soiled we recommend that a small area of the wood be carefully cut away to expose a clean area (approx 1 square centimeter). The stain works best If the wood is dry.

2. If testing mulch, it may be easiest to use a spray bottle. When using a spray bottle, be careful to spray the solution downwind to avoid inhalation.

3. Wait for color development (about 15 seconds). Color development is fastest if applied to the transverse direction of the wood instead of the radial direction.

4. Note the color. If the sample turns a magenta color, then the wood is positive for copper. If the wood turns orange in color, then the wood is negative for most metals and is considered untreated.

Interferences

1. Stain will not work properly on colored mulches or mulches that are very soiled.

2. Stain will sometimes react as positive with paint and nails on wood, even though the wood maybe untreated.

Company	Phone Number	Cat. # for PAN	Cat. # for Methanol	Pre-mixed Solution
Spectrum	*800-772-8786*	*P1000-04 (25g)*	*M1240 (20L)*	*P-358-100mL*
Sigma	***800-325-3010***	***82960-5G (5g)***	***34860***	
Fisher	*800-766-7000*	*AC14631- 0100 (10g)*	*A411-20*	***5487-34***

10. References

DEP (Department of Environmental Protection), 2002, Tedder, R. B. and McGuire, C., "Management of Components of Yard Trash: Dirt, Ash and Mulch," Florida Department of Environmental Protection Memorandum SWM-05.6, Solid Waste Section, Tallahassee, Florida, April 4.

EPA (U.S. Environmental Protection Agency), 2003, "Response to Requests to Cancel Certain Chromated Copper Arsenate (CCA) Wood Preservative Products and Amendments to Terminate Certain Uses of other CCA Products," Notice of a Cancellation Order, 68 FR 17366, April 9.

EPA (U.S. Environmental Protection Agency), 2004a, Springer, R., "Recommendation on the Disposal of Waste Lumber Preserved with Chromated Copper Arsenate (CCA)," EPA Memorandum, Office of Solid Waste, Washington, D.C., April 12.

EPA (U.S. Environmental Protection Agency), 2004b, Springer, R. and Jones, J., "Wood Mulch Derived from Waste Lumber Preserved with Chromated Copper Arsenate (CCA)," EPA Memorandum, Office of Solid Waste, Washington, D.C., January 6.

EPA (U.S. Environmental Protection Agency), 2016, "Additions to List of Categorical Non-Waste Fuels," 81 FR 6687, February 8.

Hasan, A. R., Schindler, J., Solo-Gabriele, H.M., Townsend, T.G., 2011a. Online sorting of recovered wood waste by automated XRF-technology. Part I: Detection of preservative-treated wood waste. Waste Manag., 31: 688-694.

Hasan, A.R., Solo-Gabriele, H., Townsend, T., 2011b. Online sorting of recovered wood waste by automated XRF-technology: Part II. Sorting efficiencies.Waste Manag., 31: 695-704.

Omae, A., Solo-Gabriele, H., and Townsend, T., 2007. A Chemical Stain for Identifying Arsenic-Treated Wood Products. Journal of Wood Chemistry and Technology, 27(3-4): 201-217.

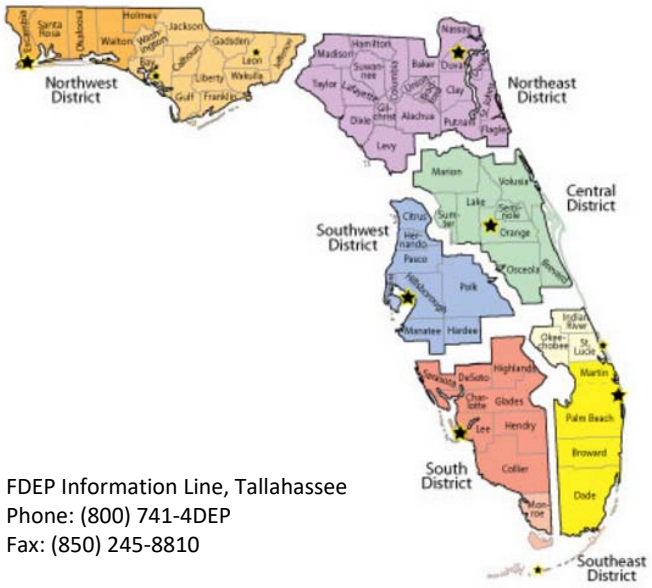
Solo-Gabriele, H., Sakura-Lemessy, D., Townsend, T., Dubey, B., and Jambeck, J., 2003, "Quantities of Arsenic Within the State of Florida," Florida Center for Solid and Hazardous Waste Management Report #03-06, Gainesville, Florida.

Townsend, T., Stook, K., Tolaymat, T., Song, J. K., Solo-Gabriele, H., Hosein, N. and Khan, B., 2001, "New Lines of CCA-Treated Wood Research: In-Service and Disposal Issues," Florida Center for Solid and Hazardous Waste Management Report #00-12, Gainesville, Florida.

Townsend, T. G., Dubey, B., and Solo-Gabriele, H., 2004, "Assessing Potential Waste Disposal Impact From Preservative Treated Wood Products," Environmental Impacts of Preservative Treated Wood, Florida Center For Environmental Solutions, Orlando, Florida, February 8-9, pp. 169-188.

Solo-Gabriele, H.M., Jones, A.S., Marini, J., Townsend, T.G., and Robey, N., 2017, “Impacts of Treated Wood in the Florida Disposal Sector.” Hinkley Center for Solid and Hazardous Waste Management Report #10916, Gainesville, Florida.

11. Florida Department of Environmental Protection Districts



The waste program staff at your District office of the Florida Department of Environmental Protection can provide additional information including a list of lined disposal facilities that are located in your area of the state. The appropriate contacts and District boundaries are shown below.

FDEP Information Line, Tallahassee
Phone: (800) 741-4DEP
Fax: (850) 245-8810

FDEP Headquarters
2600 Blair Stone Road Tallahassee,
FL 32399-2400
http://www.dep.state.fl.us/waste/

FDEP District Offices

Northwest District Office
160 W. Government Street
Suite 308
Pensacola, FL 32502
(850) 595-8300

South District Office
P.O. Box 2549
Fort Myers, FL 33902
(239) 344-5600

Northeast District Office
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
(904) 256-1700

Central District Office
3319 Maguire Boulevard,
Suite 232
Orlando, FL 32803
(407) 897-4100

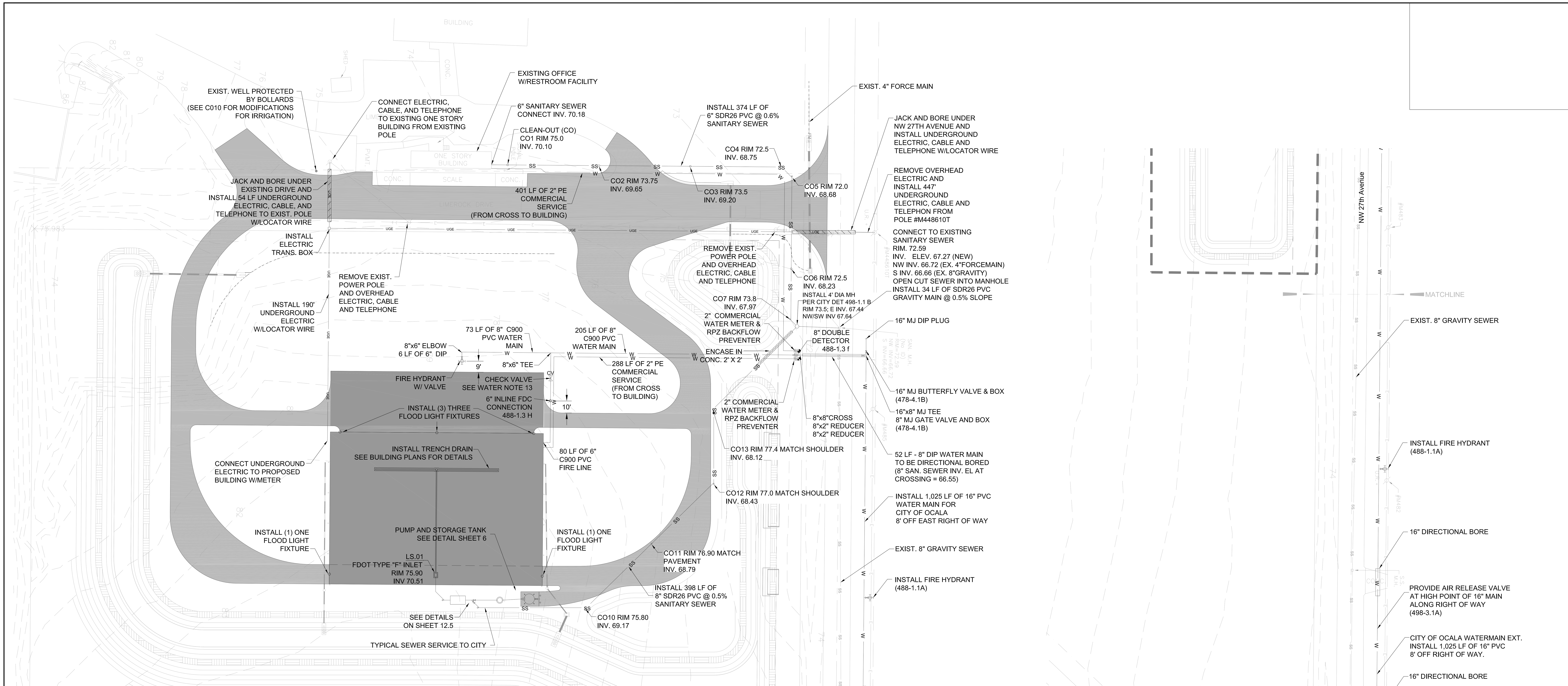
Southeast District Office
3301 Gun Club Road,
MSC7210-1
West Palm Beach, FL 33406
(561) 681-6600

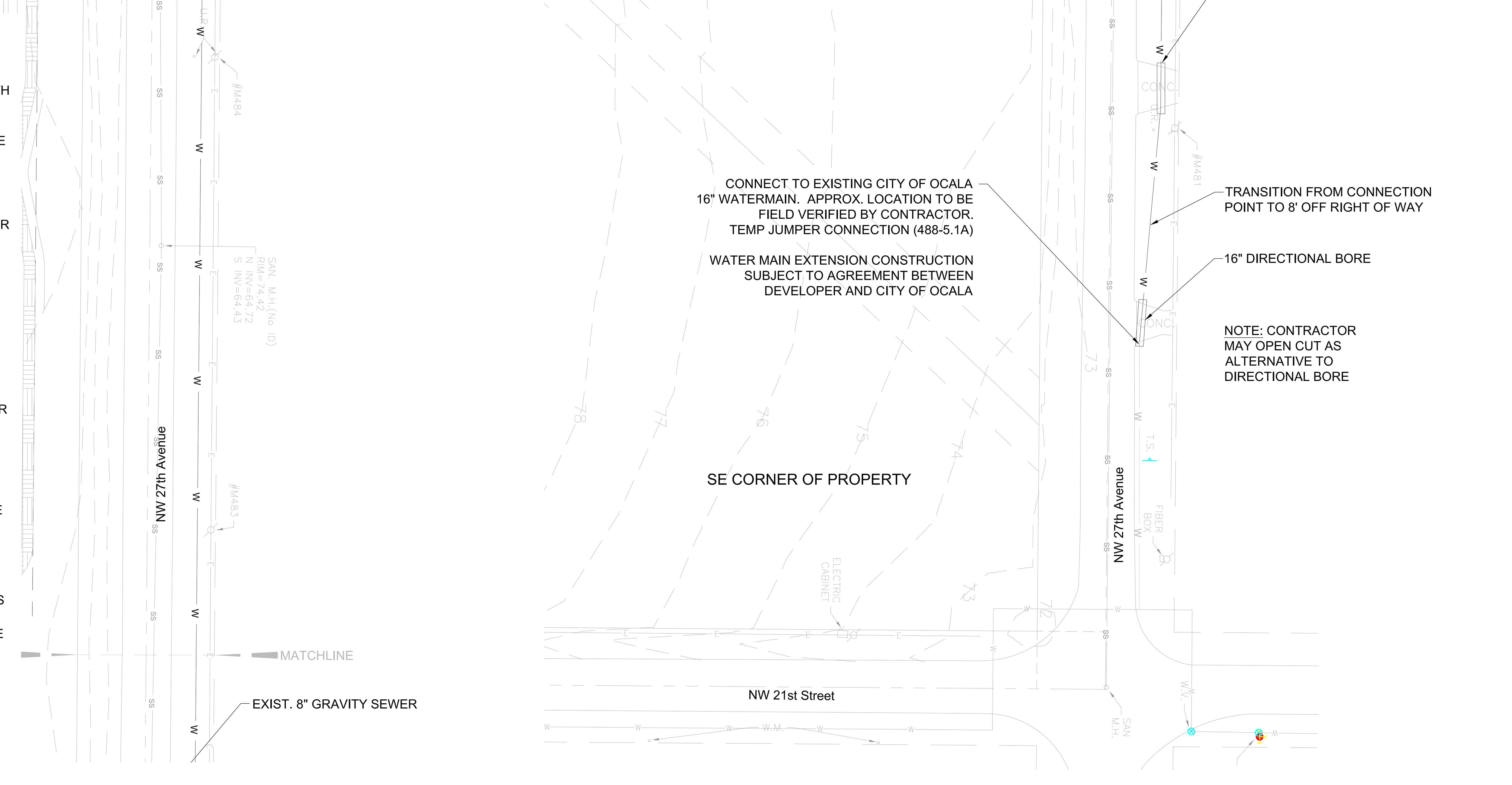
Southwest District Office
13051 N Telecom Parkway
Temple Terrace, FL 33637
(813) 470-5700

Additional information on CCA-treated wood can be found at the Hinkley Center for Solid and Hazardous Waste Management's website for CCA research: www.ccaresearch.org.

This book is dedicated to the memory of William W. (Bill) Hinkley 1945-2005

DISCLAIMER. The information contained in this document is intended for guidance only. It is not a rule and does not create any standards or criteria which must be followed by the regulated community. While the management of treated wood in accordance with this guidance is not expected to result in contamination of ground water or surface water or to pose a significant threat to human health, compliance with this document does not relieve the owner or operator from the responsibility for complying with the Department's rules nor from any liability for environmental damages caused by the management of these materials.





WATER NOTES

1. THE WATER SERVICE PIPE, FROM THE MAIN TO THE METERED LOCATION, SHALL BE TWO INCHES (2") MINIMUM.
2. WATER CLEARANCE FROM FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) MUST BE OBTAINED BEFORE PLACING THE WATER SYSTEM IN OPERATION AND BEFORE ISSUANCE OF PARTIAL OR FINAL CERTIFICATE OF OCCUPANCY (CO).
3. WATER SYSTEM ASBUILT MUST BE SUBMITTED TO CITY PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY IN ACCORDANCE WITH SECTION 486 OF THIS MANUAL. ALL INSTALLED INFRASTRUCTURE SHALL BE REFERENCED TO STATE PLANE COORDINATES ON THE ASBUILTS.
4. CITY WILL MAINTAIN ALL WATER MAINS TWO INCH (2") IN DIAMETER AND ABOVE TO THE POINT OF METERING AND DOUBLE DETECTOR CHECK ASSEMBLY (DDC) LOCATION.
5. ALL BACKFLOW PREVENTERS ARE TO BE INSTALLED "BY CONTRACTOR" AND MAINTAINED "BY OWNER".
6. METER SERVICE IS TO BE INSTALLED BY CITY OF OCALA.
7. A GATE VALVE SHALL BE PROVIDED AT THE MAIN FOR ALL NEW SERVICE LINES WITH 2" PIPING.
8. ALL EXISTING METER BOXES AND BACKFLOW PREVENTERS THAT FALL IN AREAS OF NEW CONSTRUCTION ARE TO BE ADJUSTED TO THE NEW SURROUNDING GRADE.
9. CONTRACTOR SHALL CLEARLY MARK EACH METER BOX WITH THE UNIT IT SERVES.
10. ALL NEW BACKFLOW PREVENTION DEVICES SHALL BE TESTED BY CERTIFIED TESTERS AND COPIES OF SUCH TESTS SHALL BE PROVIDED TO THE CITY PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO) FOR THE UNIT TO WHICH THE DEVICE HAS BEEN INSTALLED FOR TESTING AND CERTIFICATION SHALL BE IN ACCORDANCE WITH 6.1, TESTING, MAINTENANCE, AND CERTIFICATION OF REQUIRED BACKFLOW PREVENTERS OF THE CITY'S MANUAL OF CROSS CONNECTION CONTROL.
11. ALL FIRE FIGHTING EQUIPMENT AND APPARATUS TO COMPLY WITH PRESENT STATE CODE/REQUIREMENTS.
12. ALL FIRE HYDRANTS SHALL BE FACTORY PAINTED RED WITH APPROPRIATELY COLORED CAPS / BONNETS.
13. FIRE PROTECTION SYSTEM DESIGN TO BE CONFIRMED WITH BUILDING DESIGNERS FOR APPROPRIATE PRESSURES. SHOULD ANY MODIFICATIONS BE REQUIRED THEY SHALL BE APPROVED BY THE CITY.

SEWER NOTES

1. CITY WILL MAINTAIN ALL SEWER MAINS UP TO THE PROPERTY LINE, THAT INCLUDE MANHOLES BOTH ONSITE AND OFFSITE. SEWER SERVICES AND CLEANOUTS WILL BE PRIVATE.
2. SEWER SYSTEM ASBUILT TO BE SUBMITTED TO WATER AND SEWER ENGINEER PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY (CO). ASBUILT TO BE IN ACCORDANCE WITH SECTION 496.
3. ALL MANHOLE COVERS ARE TO BE HINGED WITH LOCKS.
4. MANHOLE FLOW CHANNELS ARE TO BE RECONSTRUCTED AS REQUIRED BY THE WATER AND SEWER ENGINEER.
5. ALL EXISTING SANITARY SEWER MANHOLE COVERS THAT FALL IN AREAS OF NEW CONSTRUCTION ARE TO BE ADJUSTED TO THE NEW SURROUNDING GRADE.
6. ALL SEWER MAINS THAT ARE TO BE CITY MAINTAINED WILL REQUIRE AN ASBUILT DRAWING. THE DRAWING SHALL SHOW THE LOCATION OF ALL SEWER MAINS, MANHOLES AND SERVICES. ASBUILT DRAWING SHALL BE IN ACCORDANCE WITH SECTION 496, VOLUME III, CITY OF OCALA STANDARD SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION.
7. NO OAKS, LARGE OR AGGRESSIVELY ROOTED TREES CAN BE INSTALLED WITHIN 30 FEET OF SEWER MAINS.
8. DIP PIPE SHALL BE CLASS 350 AND CONFORM TO THE LATEST REQUIREMENTS OF ANSI/AWWA C150/A21.50 AND ANSI/AWWA C151/A21.51.
9. ALL SANITARY SEWER CLEAN-OUTS SHALL BE MAINTAINED BY THE OWNER AND THOSE WITHIN THE PAVEMENT SHALL BE TRAFFIC BEARING .
10. ALL RIMS ARE TO BE FLUSH WITH THE FINAL GRADES TO CREATE A SMOOTH FINISH.
11. DEFLECTION OF FLEXIBLE PIPE SHALL NOT EXCEED 5% AND SHALL BE TESTED PER FDEP METHODS AT LEAST 30 DAYS AFTER FINAL BACKFILL HAS BEEN PLACED. LEAKAGE EXFILTRATION OR INFILTRATION SHALL NOT EXCEED 200 GAL PER INCH OF PIPE DIAMETER PER MILE PER DAY AND BE PERFORMED WITH A MIN POSITIVE HEAD OF 2 FEET. AIR TESTS CONFORMING TO ASTM F-147 FOR PLASTIC PIPE SHALL ALSO BE REQUIRED.

JOB NO:	17-04
SHEET TITLE:	UTILITY LAYOUT
PROJECT:	CITY WIDE RECYCLING
DESIGNED BY: AMM	DRAWN BY: AMM
CHECKED BY: PRW / JCG	APPROVED BY: JCG
DATE:	MAR. 16, 2018
GDC DWG NAME:	17-04_UTIL
CLIENT:	NICK GIUMARELLI
SHEET NO:	C006 of C012

REVISIONS

DATE	BY	DESCRIPTION
9-6-18	PRW	ADDED SEWER LATERAL FROM RECYCLE CENTER AND NOTES
9-28-18	PRW	MINOR INVERT ADJUSTMENTS- SEWER
10-03-18	PRW	MINOR INVERT ADJUSTMENTS- SEWER

24x36 SCALE: 1" = 40'
11x17 SCALE: 1" = 80'
0 20' 40'

SEAL:

Juan C. Guerra, P.E.
Fla. Reg. # 0041000
Date:

ENGINEER OF RECORD:
GDC
Consulting Engineering
2817 NE 3rd St. Ocala, Florida 34470
(352) 629-8060 Phone
GDC@GuerraCorp.net
State of Florida Certificate of Authorization #4954

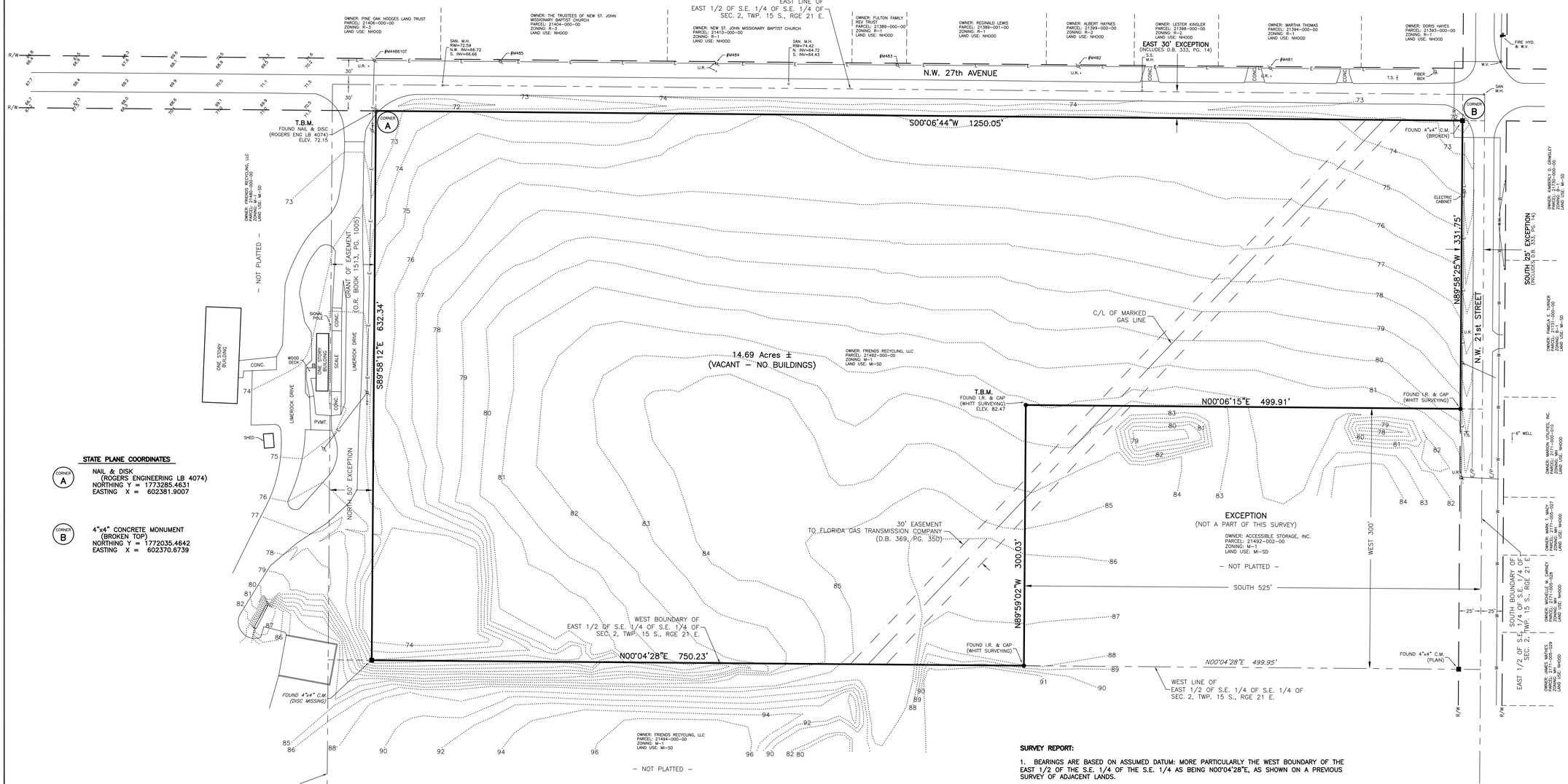

LIMITS OF WELL
SETBACK ENVELOPE
(SHADE)
LIMITS OF WELL
SETBACK ENVELOPE
PROPERTY BOUNDARY
W1
R500'
W2
R500'
W3
R500'
LIMITS OF PROJECT
PROPERTY BOUNDARY
30' EASEMENT
TO FLORIDA GAS TRANSMISSION COMPANY
(O.B. 369, PG. 350)
SHEET TITLE: WELLS MAP
JOB NO: 17-04
PROJECT: CITY WIDE RECYCLING
DESIGNED BY: AMM
DRAWN BY: AMM
GDC DWG NAME: 17-04_SITE
CHECKED BY: PRW / JCG
APPROVED BY: JCG
CLIENT: NICK GIUMARELLI
DATE: SEP. 27, 2019
SHEET NO: WM1 of WM1
REVISIONS
DATE
BY
DESCRIPTION
SCALE: 1" = 40'
0
25'
50'
SEAL:
Juan C. Guerra, P.E.
Fla. Reg. # 0041000
Date:
ENGINEER OF RECORD:
GDC
Consulting Engineering
2817 NE 3rd St. Ocala, Florida 34470
(352) 629-8060 Phone
GDC@GuerraCorp.net
State of Florida Certificate of Authorization #4954


NOT PLATTED
OWNER: FRIENDS RECYCLING, LLC
PARCEL: 2148D-000-00
ZONING: M-1
LAND USE: MI-SD
LIMEROCK DRIVE
ONE STORY BUILDING
SCALE
CONC.
RB-1
NORTH 50' EXCEPTION
GRANT OF EASEMENT
(O.R. BOOK 1513, PG. 1005)
S89°58'12"E 632.34'
74 (0.35 AC)
DB1-1
DB2-1
DB2-2
RB-3
BB-1
BB-2
BB-3
RB-2
BB-4
BB-5
BB-6
DB1-2
DB1-3
DB1-4
DB1-5
DB2-3
DB2-4
T.B.M.
FOUND NAIL & DISC
(ROGERS ENG LB 4074)
ELEV. 72.13
FOUND 4"x4" C.M.
(DISC MISSING)
OWNER: PINE OAK HODGES LAND TRUST
PARCEL: 2140G-000-00
ZONING: R-3
LAND USE: N-HOOD
OWNER: NEW ST. JOHN MISSIONARY BAPTIST CHURCH
PARCEL: 2140-000-00
ZONING: R-3
LAND USE: N-HOOD
OWNER: THE TRUSTEES OF NEW ST. JOHN MISSIONARY BAPTIST CHURCH
PARCEL: 2140A-000-00
ZONING: R-3
LAND USE: N-HOOD
SAN. M.H. (No ID)
RIM=72.59
N INV=66.72
S INV=66.66
SAN. M.H. (No ID)
RIM=74.42
N INV=64.72
S INV=64.43
EAST LINE OF
EAST 1/2 OF S.E. 1/4 OF S.E. 1/4 OF
SEC. 2, TWP. 15 S., RGE 21 E.
WEST BOUNDARY OF
EAST 1/2 OF S.E. 1/4 OF S.E. 1/4 OF
SEC. 2, TWP. 15 S., RGE 21 E.
N00°04'28"E 799.23'
14.69 Acres ±
(VACANT - NO BUILDINGS)
TO FLORIDA GAS
OWNER: FRIENDS RECYCLING, LLC
PARCEL: 2149A-000-00
ZONING: M-1
LAND USE: MI-SD
NOT PLATTED

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.



STATE PLANE COORDINATES

CORNER A
NAIL & DISK
(ROGERS ENGINEERING LB 4074)
NORTHING Y = 1773285.4631
EASTING X = 602381.9007

CORNER B
4"x4" CONCRETE MONUMENT
(BROKEN TOP)
NORTHING Y = 1772035.4642
EASTING X = 602370.6739

LEGEND

C.M.	CONCRETE MONUMENT
I.R.	IRON ROD
R/W	RIGHT OF WAY
E/P	EDGE OF PAVEMENT
C/L	CENTERLINE
HYD.	HYDRANT
W.V.	WATER VALVE
W.M.	WATER METER
U.R.	UTILITY RISER
T.S.	TRAFFIC SIGN
SEC.	SECTION
TWP.	TOWNSHIP
RGE.	RANGE
SAN. M.H.	SANITARY MANHOLE
ELEV.	ELEVATION
INV.	INVERT
	UTILITY POLE AND GUY ANCHOR
	OVERHEAD WIRES
	FENCE
CONC.	CONCRETE
	TREE (SEE TREE SCHEDULE)
	GROUND CONTOUR
T.B.M.	TEMPORARY BENCHMARK
PVMT.	PAVEMENT

LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE COUNTY OF MARION, STATE OF FLORIDA, AND IS DESCRIBED AS FOLLOWS:

THE EAST 1/2 OF THE S.E. 1/4 OF THE S.E. 1/4 IN SECTION 2, TOWNSHIP 15 SOUTH, RANGE 21 EAST, MARION COUNTY, FLORIDA; EXCEPT THE SOUTH 25 FEET, THE EAST 30 FEET AND THE NORTH 50 FEET THEREOF AND EXCEPT ROAD RIGHT OF WAY DEEDED TO MARION COUNTY BY DEED DATED JUNE 13, 1955 AND RECORDED IN DEED BOOK 333, PAGE 14, PUBLIC RECORDS OF MARION COUNTY, FLORIDA; TOGETHER WITH THAT CERTAIN GRANT OF EASEMENT DATED JULY 6, 1988, AND RECORDED IN OFFICIAL RECORDS BOOK 1513, PAGE 1005, PUBLIC RECORDS OF MARION COUNTY, FLORIDA.

LESS AND EXCEPT THE FOLLOWING DESCRIBED PARCEL: THE WEST 300 FEET OF THE SOUTH 525 FEET OF THE EAST 1/2 OF THE S.E. 1/4 OF THE S.E. 1/4 IN SECTION 2, TOWNSHIP 15 SOUTH, RANGE 21 EAST, MARION COUNTY, FLORIDA, LESS AND EXCEPT THE SOUTH 25 FEET THEREOF FOR ROAD RIGHT OF WAY.

SURVEY REPORT:

1. BEARINGS ARE BASED ON ASSUMED DATUM: MORE PARTICULARLY THE WEST BOUNDARY OF THE EAST 1/2 OF THE S.E. 1/4 OF THE S.E. 1/4 AS BEING N00°04'28"E, AS SHOWN ON A PREVIOUS SURVEY OF ADJACENT LANDS.

2. FIELD SURVEY DATE : 7-20-2017.

3. THE LEGAL DESCRIPTION AND TITLE INFORMATION REFLECTING RIGHTS-OF-WAY, OR EASEMENTS OF RECORD, WERE TAKEN FROM FIRST AMERICAN TITLE INSURANCE COMPANY, FILE NO.: 2090-2105054, DATED: 8-18-2014.

4. UNDERGROUND IMPROVEMENTS, OR UTILITIES, WERE NOT LOCATED.

5. ELEVATIONS AND CONTOURS SHOWN HEREON ARE BASED ON N.G.V.D. DATUM; CITY OF OCALA BM @ N.W. 27TH AVENUE AND N.W. 18TH STREET; ELEVATION 69.47 (NAVD-88).

6. THIS PROPERTY APPEARS TO BE IN A ZONE "X" (AREA OF MINIMAL FLOOD HAZARD) ACCORDING TO THE FEMA FLOOD INSURANCE RATE MAP COMMUNITY NUMBER 120330, PANEL 0508, SUFFIX E, EFFECTIVE DATE: APRIL 19, 2017.

7. SURVEY MEETS THE STANDARDS OF PRACTICE CONTAINED IN CHAPTER 5J-17.050 THROUGH .052, FLORIDA ADMINISTRATIVE CODE AND THE ACCURACY OBTAINED BY MEASUREMENT AND CALCULATION OF A CLOSED GEOMETRIC FIGURE WAS FOUND TO EXCEED THE MINIMUM RELATIVE DISTANCE ACCURACY FOR SUBURBAN LAND USE.

8. UNLESS IT BEARS THE SIGNATURE AND SEAL OF THE LICENSED SURVEYOR AND MAPPER, THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT VALID.

RODNEY K. ROGERS DATE
PROFESSIONAL SURVEYOR & MAPPER
REGISTRATION NO. 5274
STATE OF FLORIDA

DATE	REVISION

Robert L. Rogers, PE
Fl. Reg. No. 19227
rlrogers@rogerseng.com

Rodney K. Rogers, PSM
Fl. Reg. No. 5274
rkrogers@rogerseng.com

ROGERS ENGINEERING, LLC
Civil Engineering & Land Surveying
1105 S.E. 3rd Avenue • Ocala, Florida 34471 • Ph. (352) 622-9214 • Lic. Bus. #4074

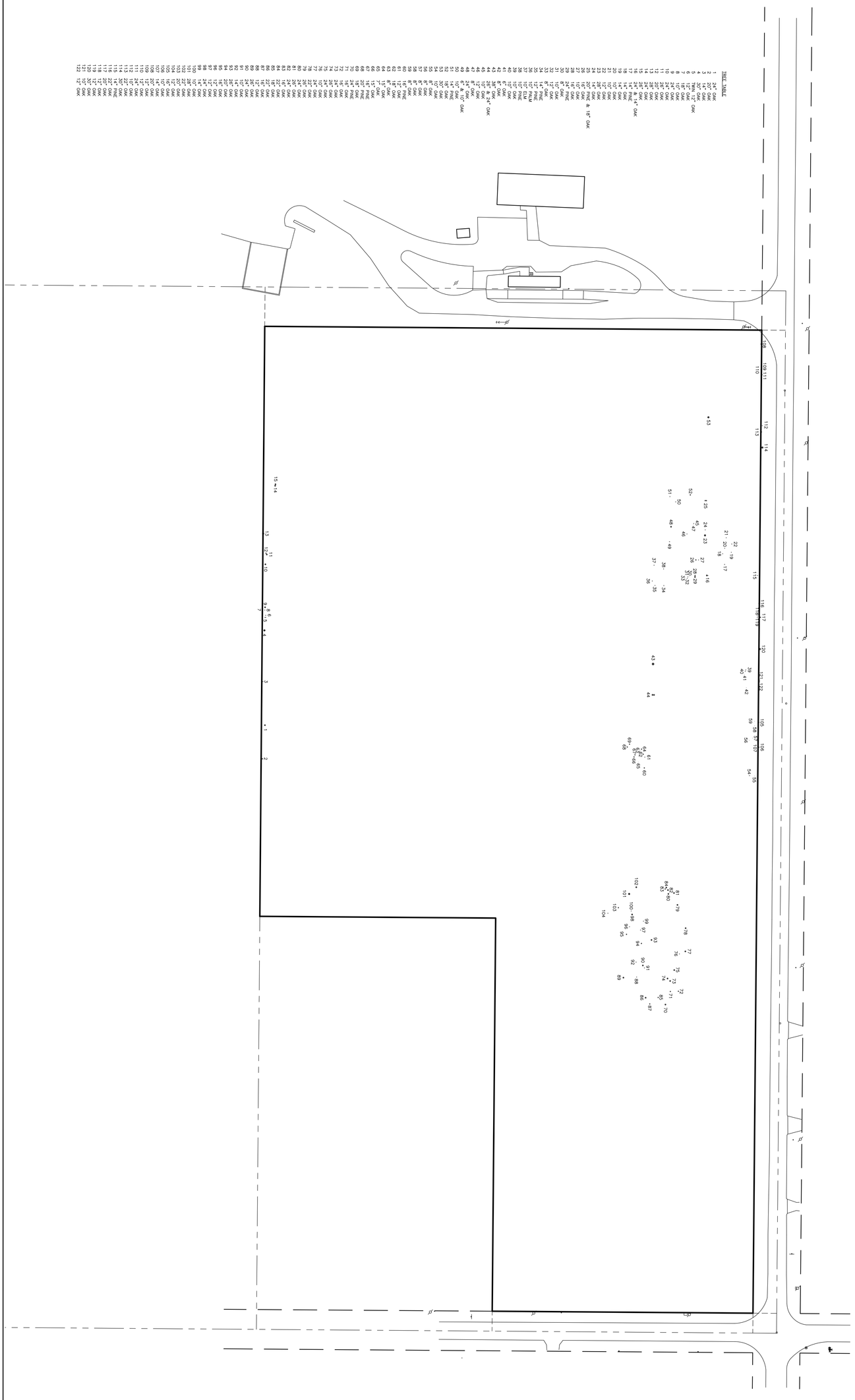
A BOUNDARY & TOPOGRAPHIC SURVEY
FOR
FRIENDS RECYCLING, LLC

JOB No.
17_21492-000-00

DATE
8-17-2017

SCALE
1"=60'

SHEET
1 OF 2



SHEET 2 OF 2	JOB No. 17_21492-000-00
SCALE 1"=60'	DATE 8-17-2017

A TREE LOCATION SURVEY
FOR
FRIENDS RECYCLING, LLC

ROGERS ENGINEERING, LLC
Civil Engineering & Land Surveying
1105 S.E. 3rd Avenue • Ocala, Florida 34471 • Ph. (352) 622-9214 • Lic. Bus. #4074

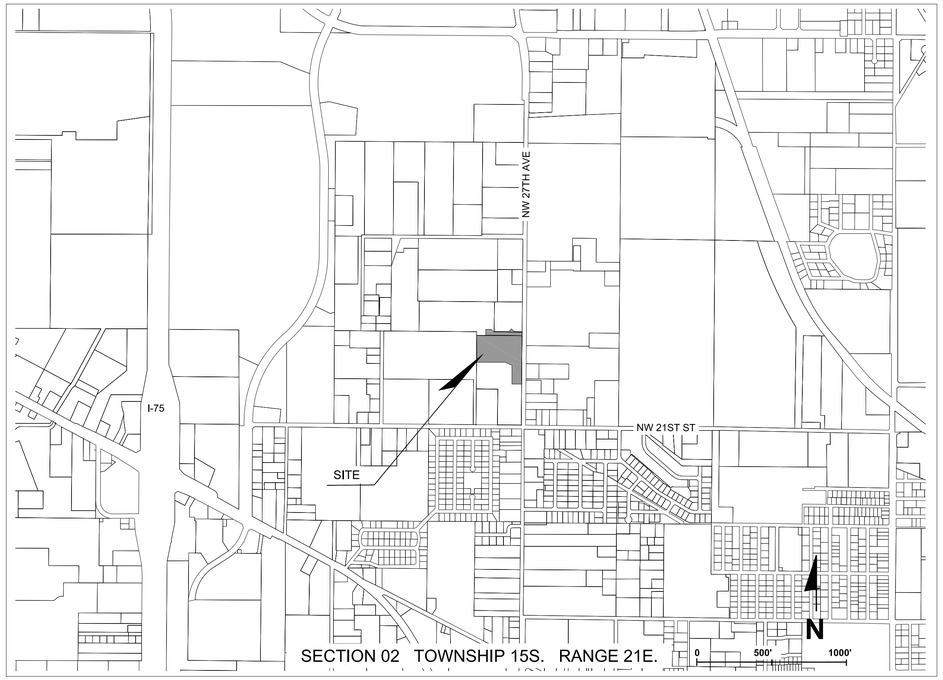
Robert L. Rogers, PE
Fl. Reg. No. 10027
rlrogers@rogerseng.com

Rodney K. Rogers, PSM
Fl. Reg. No. 5274
rkrogers@rogerseng.com

DATE	REVISION

MAJOR SITE PLAN
CITY WIDE RECYCLING CENTER & MATERIAL RECOVERY FACILITY

GDC PROJECT NUMBER 17-04
CITY OF OCALA, FLORIDA
SEPTEMBER 2019



SECTION 02 TOWNSHIP 15S. RANGE 21E.

LOCATION MAP

PROJECT INFORMATION

OWNER: FRIENDS RECYCLING, LLC
GERALD LOURENCO
2350 NW 27TH AVE
OCALA FL 34475
(352) 266-4853

CIVIL ENGINEER: GUERRA DEVELOPMENT CORP.
2817 NE 3RD STREET
OCALA, FL 34470
(352) 629-8060

CONTRACTOR: WILCOX CONSTRUCTION

GENERAL CHARACTER: THE PROPOSED PROJECT WILL SERVE AS A RECYCLE CENTER AND MATERIAL RECOVERY FACILITY

ZONING: M1

LAND USE: EXISTING: VACANT INDUSTRIAL
PROPOSED: RECYCLE CENTER

PARCEL ACCOUNT #: 21492-000-00

MAX BUILDING HEIGHT: 60 FEET

WATER CONNECTION: CENTRAL WATER

SANITARY CONNECTION: CENTRAL SEWER

DRAINAGE SUMMARY: THE STORM WATER GENERATED FROM THIS SITE WILL BE DIRECTED TO THE ON-SITE RETENTION AREAS WHICH HAVE BEEN SIZED FOR THE 100 YEAR 24 HOUR STORM. THE SYSTEM RECOVERS THE TREATMENT VOLUME IN LESS THAN 72 HOURS AND RECOVERS THE TOTAL VOLUME IN LESS THAN 14 DAYS.

ALL STORM WATER MANAGEMENT SYSTEMS SHALL BE COMPLETED PRIOR TO THE CONSTRUCTION OF IMPERVIOUS AREAS.

ELECTRIC SERVICE: CITY OF OCALA

TRAFFIC ACCESS: CONNECT TO NW 27TH AVE THROUGH A SHARED ACCESS EASEMENT AND EXISTING DRIVEWAY ON PARCEL 21480-000-00. OR BOOK 1513 PAGE 1006.

GARBAGE COLLECTION: OWNER IS AUTHORIZED HAULER AND WILL DISPOSE OF GARBAGE AT APPROVED FACILITY

FLOOD DATA: SITE IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD PER FIRM MAP# 12083C0508E APRIL 19, 2017.

ON-SITE AREAS DATA :

PROPERTY SIZE:	14.69 ACRES (639,896 SF)	
PROJECT AREA:	3.34 ACRES (145,640 SF)	
REGIONAL SHARED AREA:	4.12 ACRES (179,753 SF)	
PROJECT AREA		
OPEN SPACE:	1.91 ACRES (83,442 SF)	57%
PROP. BUILDING:	0.50 ACRES (21,875 SF)	
PROP.IMP AREA:	0.76 ACRES (33,025 SF)	
POND:	0.11 ACRES (4,798 SF)	
FUTURE IMP AREA:	0.06 ACRES (2,500 SF)	
	3.34 ACRES TOTAL	

FAR :21,875 SF / 145,640 SF = 0.150

REGIONAL SHARED AREA		
OPEN SPACE:	1.12 ACRES (48,953 SF)	27%
PROP. IMP AREA:	1.03 ACRES (45,083 SF)	
POND:	1.97 ACRES(85,787 SF)	
	4.12 ACRES TOTAL	

BUILDING SETBACKS : EAST = 70'; NORTH = 0'; WEST = 0'; SOUTH = N/A (REQUIRED)
EAST = 212'; NORTH = 165' ; WEST = 245' ; SOUTH = N/A(PROPOSED)

BUFFERS: EAST= 20'; NORTH = N/A; WEST = N/A; SOUTH = N/A (REQUIRED)
EAST= 20' NATURAL+ INTERIOR LANDSCAPING

PARKING : THE MINIMUM AMOUNT OF PARKING REQUIRED FOR THIS SITE IS 4 SPACES, AS APPROVED BY THE PLANNING & ZONING COMMISSION ON MARCH 12, 2018.
EXISTING PARKING ON-SITE = 0 SPACES
PROPOSED PARKING ON-SITE = 3 STANDARD SPACES & 1 HANDICAP SPACE

AVERAGE DAILY SEWER DEMAND:

RECYCLING FACILITY ASSUME 4 GPD PER PASSENGER + 15 GPD/ EMPLOYEE+ WASH WATER (AS NEEDED) + EXISTING OFFICE (15 GPD/100 SF)

15 PASSENGERS ESTIMATED DAILY = 60 GPD
2 EMPLOYEES = 30 GPD
950 SF OFFICE = 275 GPD (CONNECTION TO EXISTING @ MIN ERU)
365 GPD (NORMAL DAILY OPERATION)

WASH WATER (TIPPING FLOOR) = 2184 GAL/WASH (AS NEED BASIS)
= 2549 GAL/WASH (FLOOR WASH EVENT & NORMAL DAILY OPERATION)

AVERAGE DAILY WATER DEMAND:

365 / 80% = 456 GPD (NORMAL DAILY OPERATION)

WASH WATER (TIPPING FLOOR) = 2184 GAL/WASH (AS NEED BASIS)
2184 GPD / 80% = 2730 GALLONS PER WASH

IRRIGATION VIA WELL EXISTING WELL

A BATHROOM THAT MEETS ADA REQUIREMENTS WILL BE PROVIDED WITHIN 500 FEET OF THE PROPOSED BUILDING. THE PATH OF TRAVEL FROM THE SOUTH SIDE OF THE BUILDING TO THE BATHROOM FACILITY IS APPROXIMATELY 380 FEET.

OWNER'S CERTIFICATION

I HEREBY CERTIFY THAT I HAVE REVIEWED THESE PLANS WITH THE IMPROVEMENTS CALLED FOR AND FIND THEM ACCEPTABLE FOR THE PURPOSE OF THEIR INTENDED USE AND THAT I AND/OR MY SUCCESSORS AND ASSIGNS SHALL PERPETUALLY MAINTAIN THE IMPROVEMENTS AS SHOWN HEREON. ALL CONSTRUCTION COVERED BY THESE PLANS SHALL COMPLY WITH THE MATERIAL REQUIREMENTS AND QUALITY CONTROL STANDARDS AS SET FORTH IN THE CURRENT AND APPLICABLE REGULATIONS HAVING JURISDICTION OVER THIS PROJECT.

_____
AGENT SIGNATURE
DATE:_____

CITY NOTE:

NO SITE WORK SHALL BE CONDUCTED PRIOR TO OBTAINING A SITE PERMIT FROM THE CITY. CALL THE CITY GROWTH MANAGEMENT DEPARTMENT AT 352-629-8421 TO SCHEDULE A PRE-CONSTRUCTION MEETING WHICH MUST BE HELD PRIOR TO INSTALLING ANY REQUIRED EROSION CONTROL OR OBTAINING ANY SITE PERMITS.

INDEX OF SHEETS

GDC

Guerra Development Corporation
Consulting Engineering
Civil - Structural
2817 NE 3rd Street - Ocala, Florida 34470
Ph: (352) 629-8060
GDC@guerracorp.net
State of Florida Certificate of Authorization No. 4954

LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE COUNTY OF MARION, STATE OF FLORIDA, AND IS DESCRIBED AS FOLLOWS: THE EAST 1/2 OF THE S.E. 1/4 OF THE S.E. 1/4 IN SECTION 2, TOWNSHIP 15 SOUTH, RANGE 21 EAST, MARION COUNTY, FLORIDA; EXCEPT THE SOUTH 25 FEET, THE EAST 30 FEET AND THE NORTH 50 FEET THEREOF AND EXCEPT ROAD RIGHT OF WAY DEEDED TO MARION COUNTY BY DEED DATED JUNE 13, 1955 AND RECORDED IN DEED BOOK 333, PAGE 14, PUBLIC RECORDS OF MARION COUNTY, FLORIDA; TOGETHER WITH THAT CERTAIN GRANT OF EASEMENT DATED JULY 6, 1988, AND RECORDED IN OFFICIAL RECORDS BOOK 1513, PAGE 1005, PUBLIC RECORDS OF MARION COUNTY, FLORIDA. LESS AND EXCEPT THE FOLLOWING DESCRIBED PARCEL: THE WEST 300 FEET OF THE SOUTH 525 FEET OF THE EAST 1/2 OF THE S.E. 1/4 OF THE S.E. 1/4 IN SECTION 2, TOWNSHIP 15 SOUTH, RANGE 21 EAST, MARION COUNTY, FLORIDA, LESS AND EXCEPT THE SOUTH 25 FEET THEREOF FOR ROAD RIGHT OF WAY.

ENGINEER'S CERTIFICATION

I HEREBY CERTIFY THAT THE WORK PROPOSED BY THESE PLANS COMPLIES WITH THE APPLICABLE STANDARDS AND SPECIFICATIONS AS REQUIRED BY THE LAND DEVELOPMENT CODE OF THE CITY OF OCALA, FLORIDA, EXCEPT AS NOTED OR SHOWN.

_____
JUAN C. GUERRA, P.E.
FL. REG. NO. 0041000
DATE:_____

VALID ONLY WITH SEAL

GENERAL NOTES

1. THIS SET OF PLANS IS NOT TO BE USED FOR ANY PURPOSE UNLESS ALL SHEETS LISTED IN THE INDEX ARE INCLUDED IN THE SET, SECURELY BOUND AND EACH SHEET PROPERLY CERTIFIED.

2. ALL CONSTRUCTION COVERED BY THESE PLANS MUST CONFORM WITH THE LATEST MATERIAL AND PROCEDURE REQUIREMENTS AND QUALITY CONTROL STANDARDS CONTAINED IN THE LATEST CITY OF OCALA LAND DEVELOPMENT REGULATIONS.

3. ANY DEVIATION FROM THESE PLANS REQUIRES PRIOR WRITTEN APPROVAL FROM THE PROFESSIONAL ENGINEER OF RECORD AND, IF APPLICABLE, FROM THE CITY OF OCALA.

4. THE GENERAL CONTRACTOR FOR THE PROJECT IS HEREBY REQUIRED, AS PART OF THE CONTRACT, TO REVIEW EACH SHEET OF THE SET AND STUDY THEIR CORRELATION PRIOR TO BIDDING & CONSTRUCTION. THIS REVIEW ALSO INCLUDES ALL REPORTS (GEOTECHNICAL, STRUCTURAL, STORM WATER) AND PERMITS FOR SPECIAL CONDITIONS. CONTRACTOR MUST IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES FOUND ON THE PLANS, REPORTS, OR PERMITS.

5. THE GENERAL CONTRACTOR IS HEREBY REQUIRED TO IMPLEMENT JOB SAFETY AT ALL TIMES THROUGHOUT THE DURATION OF THE PROJECT. JOB SAFETY PRACTICES, MEASURES, ETC., SHALL BE IN ACCORDANCE WITH OSHA AND ANY OTHER APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

6. THE GENERAL CONTRACTOR IS HEREBY REQUIRED TO CONTACT ALL PERTINENT UTILITY COMPANIES, FIELD VERIFY THE LOCATION, BOTH HORIZONTAL AND VERTICAL, OF THE UTILITIES WITHIN THE PROJECT SHOWN ON THE PLANS PRIOR TO STARTING CONSTRUCTION. SHOWN UTILITIES ARE APPROXIMATE.

• OCALA ELECTRIC	352-351-6620	CHRIS HAGINS
• OCALA WATER & SEWER	352-351-6772	OSCAR TOVAR
• OCALA TRAFFIC	352-629-8521	OSCAR TOVAR
• CENTURY LINK	352-368-8861	ROY DOWLESS
• TECO	407-420-2678	BRUCE STOUT
• COX	352-873-5631	CRAIG SANDERS

8. ALL SIGN AND MARKING MATERIAL SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND SAFE PRACTICES FOR STREET AND HIGHWAYS AND UTILITY OPERATIONS.

9. THIS PROJECT FALLS WITHIN THE JURISDICTION OF THE FOLLOWING REGULATORY/MUNICIPAL AGENCIES. CONSTRUCTION MAY COMMENCE ONLY AFTER APPROVAL OF ALL APPLICABLE PERMITS.

- CITY OF OCALA
- FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

10. THE GENERAL CONTRACTOR IS HEREBY REQUIRED TO INSTALL AND MAINTAIN BEST MANAGEMENT PRACTICES PRIOR TO STARTING EARTHWORK AND DURING CONSTRUCTION AS PER THE FLORIDA STORMWATER EROSION CONTROL INSPECTOR'S MANUAL

11. THE GENERAL CONTRACTOR IS HEREBY REQUIRED TO NOTIFY PROPERTY OWNERS PRIOR TO WORKING IN THEIR PROPERTY. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATION OF WORK AND ASSOCIATED IMPACTS WITH PROPERTY OWNERS .

12. ALL AREAS DISTURBED BY THE CONSTRUCTION OF THIS PROJECT WHICH ARE NOT OTHERWISE PAVED SHALL BE IMMEDIATELY SODDED FOLLOWING FINAL GRADING. ALLOW FOR THICKNESS OF SOD WITH A 2-INCH UNDERCUT. SOD SHALL BE BAHIA, AND SHALL BE REGULARLY WATERED BY THE CONTRACTOR UNTIL ESTABLISHED.

13. DATUM:
- ELEVATIONS ARE BASED ON THE NAVD 1988 DATUM.
- HORIZONTAL CONTROL IS BASED ON THE NAD 1983 (1990 ADJUSTMENT) DATUM. BEARINGS ARE BASED ON GRID NORTH.

14. ALL WATER AND/OR SEWER CONSTRUCTION SHALL CONFORM TO THE CURRENT WATER AND SEWER CONSTRUCTION MANUAL, LATEST EDITION. (PER WSCM 485.2.5.2/495.2.8.1)

15. ALL CONDUIT INSTALLED UNDER PAVEMENT MUST BE ENCASED IN CONCRETE.

16. ALL NON-CONDUCTIVE UNDERGROUND LINES SHALL BE INSTALLED WITH LOCATOR WIRE.

17. PER SECTION 7-266, CODE OF ORDINANCES, FOR ANY WORK WITHIN PUBLIC ROW, WITH THE EXCEPTION OF DRIVEWAYS, A STREET OPENING PERMIT MUST BE OBTAINED FROM THE ENGINEERING DEPARTMENT PRIOR TO BUILDING PERMIT.

18. ALL OVERHEAD UTILITIES SHALL BE RELOCATED TO MEET A MINIMUM VERTICAL CLEARANCE OF 18 FEET. TREES TO REMAIN SHALL BE TRIMMED TO COMPLY WITH THE MINIMUM VERTICAL CLEARANCE.

19. CITY OF OCALA OR THE DESIGN CONSULTANT SHALL NOT BE HELD RESPONSIBLE FOR ANY DAMAGES OR DELAYS ATTRIBUTED TO THE LOCATION OR DISPOSITION OF ANY UTILITIES. ANY DAMAGE RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

25. THE GENERAL CONTRACTOR IS HEREBY MADE RESPONSIBLE AS PART OF THIS CONTRACT, FOR ALL CONSTRUCTION LAYOUT, BOTH VERTICAL AND HORIZONTAL. THE LAYOUT SHALL BE MADE BY A PROFESSIONAL LAND SURVEYOR, LICENSED FOR PRACTICE IN THE STATE OF FLORIDA.

26. OWNER SHALL ENTER INTO A CONTRACT WITH A TESTING LABORATORY FOR THE PURPOSE OF QUALITY CONTROL IF SELECTED TO DO SO. OWNER SHALL BEAR ALL COSTS ASSOCIATED WITH TESTING. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXPENSES INCURRED TO RE-TEST IMPROVEMENTS IN THE EVENT OF "FAILED" TESTS. THE GENERAL CONTRACTOR IS HEREBY MADE RESPONSIBLE TO COORDINATE WITH THE TESTING LABORATORY FOR SCHEDULING OF SAMPLING AND TESTING.

PAVING, GRADING, AND DRAINAGE GENERAL NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR EROSION/SEDIMENTATION CONTROL PRACTICES DURING CONSTRUCTION TO MINIMIZE ON-SITE REOSION/SEDIMENTATION AND TO PROTECT AGAINST DAMAGE TO OFF SITE PROPERTY. THE FOLLOWING PRACTICES SHALL BE EMPLOYED.

A. EROSION AND SEDIMENTATION CONTROL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. A SILT BARRIER SHALL SPECIFICALLY BE REQUIRED, CONSTRUCTED, AND MAINTAINED AS INDICATED. TEMPORARY SEED AND MULCH SHOULD BE USED TO CONTROL ON-SITE EROSION WHEN IT IS NOT PRACTICAL TO ESTABLISH PERMANENT VEGETATION. SOD SHALL BE PLACED AS EARLY AS POSSIBLE ON ALL SLOPES STEEPER THAN 5 (FT) HORIZONTAL TO 1 (FT) VERTICAL. SOD SHALL BE PINNED AS REQUIRED. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE MAINTAINED IN WORKING ORDER THROUGHOUT THE CONSTRUCTION PHASE. THE CONTRACTOR SHALL INSPECT AND REPAIR AS NECESSARY THE EROSION/SEDIMENTATION PROTECTION AT THE END OF EACH WORKING DAY.

B. ALL INLET STRUCTURES AND PIPE SHALL BE PROTECTED FROM SILTATION BY CONSTRUCTION INLET PROTECTION AS DEFINED BY THESE PLANS OR IN THE FDOT STANDARDS. IF SILTATION OCCURS, THE CONTRACTOR IS RESPONSIBLE TO REMOVE SILTATION AS PART OF THE BASE CONTRACT AT NO ADDITIONAL COST TO THE OWNER.

C. EXCAVATED STORMWATER FACILITIES SHALL BE CONSTRUCTED AS PART OF THE INITIAL CONSTRUCTION. THE FACILITIES SHALL BE ROUGH GRADED TO THE DESIGN ELEVATIONS. AFTER THE CONTRIBUTING DRAINAGE AREA IS STABILIZED. EXCESS AND UNSUITABLE SOILS SHALL BE REMOVED FROM THE BASIN (REMOVE ALL ACCUMULATED SILTS, CLAYS, ORGANIC, AND DEBRIS). FINALLY, SCARIFY AND RAKE BOTTOM AND VEGETATE.

D. PERMANENT VEGETATIVE STABILIZATION SHALL BE APPLIED ON FINE GRADED SITES AS SOON AS PRACTICAL. TEMPORARY SEEDING SHOULD BE EMPLOYED TO PREVENT EXPOSURE OF BARREN SOILS UNTIL PERMANENT VEGETATION CAN BE APPLIES.

E. ALL SLOPES 3:1 OR STEEPER REQUIRE LAPPED OR PEGGED SOD.

F. EROSION, SEDIMENT, AND TURBIDITY CONTROL ARE THE RESPONSIBILITY OF THE CONTRACTOR. THESE DELINEATED MEASURES ARE THE MINIMUM REQUIRED, WITH ADDITIONAL CONTROLS TO BE UTILIZED AS NEEDED, DEPENDENT UPON ACTUAL SITE CONDITIONS AND CONSTRUCTION OPERATION.

G. ALL SYNTHETIC BALES, SILT FENCE, AND OTHER EROSION CONTROL MEASURES SHALL BE REMOVED AT THE COMPLETION OF THE PROJECT.

2. THE CONTRACTOR SHALL MAINTAIN IN HIS POSSESSION A COPY OF THE WATER MANAGEMENT DISTRICT CONSTRUCTION PERMIT. HE SHALL BE RESPONSIBLE FOR ADHERENCE TO ALL CONDITIONS CONTAINED IN THE PERMIT.

3. PROPOSED SPOT ELEVATIONS REPRESENT FINISHED PAVEMENT OR GROUND SURFACE GRADE UNLESS OTHERWISE NOTED ON DRAWINGS.

4. CONTRACTOR SHALL SUBMIT FOR REVIEW TO THE ENGINEER OF RECORD SHOP DRAWINGS ON ALL PRECAST AND MANUFACTURED ITEMS TO BE USED ON THIS SITE. FAILURE TO OBTAIN APPROVAL BEFORE INSTALLATION MAY RESULT IN REMOVAL AND REPLACEMENT AT CONTRACTOR'S EXPENSE. ENGINEER'S APPROVAL OF A SHOP DRAWING DOES NOT RELIEVE THE CONTRACTOR'S RESPONSIBILITY FOR THE PERFORMANCE OF THE ITEM.

5. GENERAL CONTRACTOR SHALL CONTACT ENGINEER OF RECORD AND THE OWNER REPRESENTATIVE 48 HOURS IN ADVANCE PRIOR TO BACKFILLING TRENCHES FOR FIELD INSPECTION AND PRIOR TO LAYING ASPHALT FOR FIELD INSPECTIONS.

6. CONTRACTOR IS TO SUBMIT FDOT APPROVED ASPHALT DESIGN MIXES TO THE ENGINEER OF RECORD BEFORE ANY WORK IS TO COMMENCE ON PROJECT. THE MIXTURE AT THE PLANT OR ON THE ROAD SHALL NOT EXCEED 335 DEGREES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD AND PROVIDE TEMPERATURE READINGS PRIOR TO LAYING ASPHALT.

7. PROVIDE LEVEL PLATFORM IN FRONT OF ALL EGRESS DOORS. THE FLOOR SURFACE ON BOTH SIDES OF A DOOR SHALL BE AT THE SAME ELEVATION. THE FLOOR SURFACE OR LANDING ON EACH SIDE OF THE DOOR SHALL EXTEND FROM THE DOOR IN THE CLOSED POSITION A DISTANCE EQUAL TO THE DOOR WIDTH AND SHALL COMPLY WITH SECTION 4.13.6 MANEUVERING CLEARANCES AT DOORS OF THE FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION.

8. RAMPS SHALL HAVE LEVEL LANDINGS AT THE BOTTOM AND TOP OF EACH RAMP RUN, CURB RAMPS ARE NOT REQUIRED TO HAVE LANDINGS. LANDINGS SHALL HAVE THE FOLLOWING FEATURES.

A. THE LANDING SHALL BE AT LEAST AS WIDE AS THE RAMP RUN LEADING TO IT.

B. ALL LANDINGS ON RAMPS SHALL BE NOT LESS THAN 60" CLEAR, AND THE BOTTOM OF EACH RAMP SHALL HAVE NOT LESS THAN 72" OF STRAIGHT AND LEVEL CLEARANCE.

C. IF RAMPS CHANGE DIRECTION AT LANDINGS, THE MINIMUM LANDING SIZE SHALL BE 60"X60". IF A RAMP RUN HAS HANDRAILS ON BOTH SIDES. HANDRAILS ARE NOT REQUIRED ON CURB RAMPS. HANDRAILS SHALL BE SHOWN ON THE SITE PLAN.

9. THE CONTRACTOR SHALL STOCKPILE TOPSOIL AND CONSTRUCTION MATERIALS IN AREAS DESIGNATED BY ENGINEER OF RECORD AND PROPERTY OWNER.

10. ALL CONCRETE USED SHALL BE A MINIMUM OF 3,000 PSI.

11. ALL WELLS, CLEANOUTS, MANHOLE TOPS, PULL BOX COVERS AND OTHER UTILITY APPURTENANCES IN THE AREA OF REDEVELOPMENT SHALL BE PROTECTED AND TOPS ADJUSTED TO MATCH PROPOSED GRADES.

12. CONTRACTOR SHALL SAW CUT, TACK, AND MATCH EXISTING PAVEMENT AT LOCATIONS WHERE NEW PAVEMENT MEETS ANY EXISTING PAVEMENT.

13. SOD SHALL BE PLACED AROUND ALL STRUCTURES AS DIRECTED BY THE FDOT INDEX NO. 281. ALL OTHER DISTURBED AREAS SHALL BE SEEDED AND MULCHED UNLESS OTHERWISE SPECIFIED ON THE PLANS

14. ALL STORM SEWER, CURB, AND DITCH BOTTOM INLETS SHALL CONFORM TO THE APPLICABLE FDOT INDEX. ALL DRAINAGE STRUCTURES WITH GRATES THAT ARE LOCATED IN GRASSED AREAS SHALL HAVE THE GRATE CHAINED TO THE STRUCTURE USING AND EYE BOLT AND CHAIN.

15. ALL CONCRETE STRUCTURES SHALL HAVE ALL EXPOSED EDGES CHAMFERED $\frac{3}{4}$" AND CLASS I SURFACE FINISH.

ELECTRIC NOTES

1. CUSTOMER MUST SUBMIT THE CITY OF OCALA ELECTRIC UTILITY (OEU) COMMERCIAL LOAD DATA SHEET AND THE OEU GENERAL INFORMATION SHEET TO THE ZONING DEPARTMENT PRIOR TO ANY SITE PERMITS BEING ISSUED. DATA SHEETS MUST BE APPROVED BY OEU ENGINEERING PRIOR TO ANY SITE PERMITS BEING ISSUED. MATERIAL LEAD TIMES MAY CAUSE A DELAY IN OBTAINING SERVICE, IF LOAD DATA IS NOT SUBMITTED AS SOON AS POSSIBLE.

2. CUSTOMER MUST CONTACT OEU ENGINEERING DIVISION AT (352) 351-6620 AT LEAST SIX (6) WEEKS PRIOR TO THE START OF CONSTRUCTION TO DISCUSS PERMANENT SERVICE REQUIREMENTS, TEMPORARY CONSTRUCTION POWER, TRANSFORMER LOCATION, AND METER LOCATION.

3. TREES CANNOT BE PLANTED AROUND, OVER, OR UNDER ANY EXISTING OR PROPOSED POWER LINES. THIS INCLUDES ANY LINES DESIGNED AFTER FINAL SITE PLAN APPROVAL. NO NEW SHADE TREES WILL BE PERMITTED WITHIN 30 FEET OF OVERHEAD POWER LINES. ALL PLANS WILL REQUIRE A (20) FOOT WIDE UTILITY EASEMENT AND TREE TRIMMING EASEMENTS FOR EXISTING AND PROPOSED OVERHEAD ELECTRIC LINES.

4. FOR ALL UNDERGROUND ELECTRIC POWER LINES ON PRIVATE PROPERTY, A TEN (10) FOOT ELECTRIC DISTRIBUTION EASEMENT WILL BE REQUIRED. FOR OVERHEAD CONSTRUCTION, A TWENTY (20) FOOT EASEMENT WILL BE REQUIRED ALSO, FOR ANY OVERHEAD POWER LINES, BOTH EXISTING AND PROPOSED, A TEN (10) FOOT TREE TRIMMING EASEMENT WILL BE REQUIRED (SEC. 70-585 AND SEC. 70-602).

5. UNDERGROUND ELECTRICAL SERVICE WILL BE AT THE CUSTOMER'S EXPENSE (SEC 70-584 AND SEC 70-603).

6. METER LOCATION WILL BE DESIGNATED BY OEU (SEC. 70-587). HOWEVER, DESIRED LOCATION MAY BE NOTED ON SITE PLAN.

7. ALL ELECTRIC UTILITY FACILITIES SHALL BE INCLUDED ON SITE PLAN PRIOR TO SITE PLAN APPROVAL (INCLUDE YELLOW AND BLACK FACILITY ID. NUMBER).

8. THE REQUESTED SERVICE VOLTAGE IS TBD VOLT, TBD PHASE. REQUESTED SERVICE VOLTAGE IS NOT GUARANTEED TO BE SUPPLIED, HOWEVER, OEU WILL TRY TO ACCOMMODATE THE REQUEST WHEN POSSIBLE (SEC. 70-585 AND SEC. 70-587).

9. STREETLIGHTS, IF REQUIRED, WILL BE ADDED AT A ONE TIME CHARGE TO THE CUSTOMER. ESTIMATED COST WILL BE PROVIDED AS PART OF THE ACTUAL ELECTRICAL SERVICE DESIGN (SEC.70-621). STREETLIGHT DESIGN FOR ALL PRIVATE ROADS MUST BE SHOWN ON SITE PLANS AND APPROVED BY OEU.

10. CONSTRUCTION FOR TEMPORARY SERVICE LOCATION TO BE DETERMINED BY OEU.

11. ADDITIONAL REQUIREMENTS ARE CONTAINED IN CHAPTER 70, ARTICLE VI AND ARTICLE VII OF THE OCALA CODE OF ORDINANCES.

OWNERS OPERATION AND MAINTENANCE NOTES FOR STORMWATER

GENERAL

1. ALL DRAINAGE FACILITIES WITHIN THE SITE FOR THIS PROJECT SHALL BE MAINTAINED BY THE OWNER. THE STORM DRAINAGE SYSTEM SHALL BE MAINTAINED AS FOLLOWS.
2. DURING CONSTRUCTION, INSTALL EROSION CONTROL BARRIERS (SILTATION FENCES OR STRAW BALES) AS SPECIFIED BY THE PLANS, AS A MINIMUM, AND AT LOCATIONS NOT SPECIFIED WHICH SHOW SIGNS OF OVERFLOW AND EROSION.

SWALES AND DITCHES

3. MAINTAIN SOD OR GRASS IN ALL SWALES WITHIN THIS SITE AND IN THE RIGHT-OF-WAY DIRECTLY IN-FRONT OF THE SITE. MOWING SHALL BE PERFORMED REGULARLY TO PRESERVE THE QUALITY OF COVER. SWALES SHALL BE KEPT UNOBSTRUCTED IN ORDER FOR RUNOFF TO FLOW FREELY TO ITS INTENDED DESTINATION. OPERATION OF HEAVY EQUIPMENT OVER FINISHED SWALES SHALL BE AVOIDED TO PROTECT THE GRADES, VEGETATIVE COVER AND INFILTRATION POTENTIAL.

RETENTION PONDS (DRAS)

4. SIDE SLOPES SHALL BE KEPT COVERED WITH SOD OR GRASS AS SPECIFIED ON THE PLANS AND MOWED REGULARLY. YEARLY MAINTENANCE SHALL REPAIR ANY EROSION, ESPECIALLY IN THE AREAS AROUND HEADWALLS, SPILLWAYS AND SPLASH PADS, IF APPLICABLE. REMOVE ACCUMULATED OILS, GREASE AND SILTS, IF ANY.
5. VERIFY THAT THE SPILLWAYS, SPLASH PADS, PIPES AND OUTLETS REMAIN UNOBSTRUCTED TO PREVENT OVERTOPPING AND SUBSEQUENT EROSION.
6. DURING CONSTRUCTION, ESPECIALLY IN AREAS WHERE EROSION HAS A POTENTIALLY DAMAGING EFFECT SUCH AS SWALES, WHICH ARE NOT STABLIZIED, WITH SLOPES GREATER THAN 1%, DITCH BLOCKS SHALL BE INSTALLED (I.E. HAY BALES) TO PREVENT SOIL MIGRATION UNTIL SODDING AND OTHER IMPROVEMENTS HAVE BEEN PLACED.
7. DOWNSTREAM PORTIONS OF THE SYSTEM SHALL BE CONSTRUCTED FIRST, IN ORDER TO ACCOMMODATE THE INCREASING FLOW AS THE PROJECT DEVELOPS.

INLETS, PIPES, AND CONTROL STRUCTURES

8. VERIFY BI-ANNUALLY THAT PIPES, INLETS, GRATES AND SLOTS ARE NOT CLOGGED. CLEAN AS NECESSARY.

WATER AND WASTEWATER GENERAL NOTES

1. MATERIALS AND CONSTRUCTION METHODS FOR WATER AND SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF OCALA WATER AND SEWER CONSTRUCTION MANUAL, LATEST EDITION, APPROVAL AND CONSTRUCTION OF ALL UTILITY EXTENSIONS AND CONNECTIONS MUST BE COORDINATED THROUGH THE CITY OF OCALA UTILITIES.

2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY ALL UTILITY COMPANIES TO DISCONNECT OR REMOVE THEIR FACILITIES PRIOR TO REMOVING OR DEMOLISHING ANY EXISTING STRUCTURES FROM THE SITE.

3. THE CONTRACTOR IS RESPONSIBLE FOR ANY NECESSARY UTILITY FIELD LOCATION AND RELOCATION AS REQUIRED.

4. CONTRACTOR SHALL SUBMIT FOR REVIEW TO THE OWNER AND OWNER'S ENGINEER SHOP DRAWINGS ON ALL PRECAST AND MANUFACTURED ITEMS TO BE USED ON THIS SITE. FAILURE TO OBTAIN APPROVAL BEFORE INSTALLATION MAY RESULT IN REMOVAL AND REPLACEMENT AT CONTRACTOR'S EXPENSE. ENGINEER'S APPROVAL OF A SHOP DRAWING DOES NOT RELIEVE THE CONTRACTOR'S RESPONSIBILITY FOR THE PERFORMANCE OF THE ITEM.

5. THE COST OF ALL TESTING OF COMPACTION AND OTHER REQUIRED TESTS SHALL BE PAID BY THE CONTRACTOR AND MADE AVAILABLE TO THE ENGINEER OF RECORD DURING SITE INSPECTIONS.

6. A HORIZONTAL SEPARATION OF TEN (10) FEET PREFERRED, BUT NO LESS THAN SIX (6) FEET, SHALL BE MAINTAINED BETWEEN POTABLE WATER MAINS AND GRAVITY OR PRESSURE WASTEWATER MAINS, WASTEWATER FORCE MAINS, AND RECLAIMED WATER MAINS NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. A HORIZONTAL SEPARATION OF TEN (10) FEET PREFERRED, BUT NO LESS THAN THREE (3) FEET, SHALL ME MAINTAINED BETWEEN POTABLE WATER MAINS AND VACUUM WASTEWATER MAINS. A HORIZONTAL SEPARATION OF THREE (3) FEET SHALL BE MAINTAINED BETWEEN POTABLE WATER MAINS AND STORM SEWERS, STORMWATER FORCE MAINS, AND RECLAIMED WATER MAINS REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

7. WHEN POTABLE WATER MAINS CROSS OTHER PIPES, THE TWO PIPES SHALL HAVE JOINTS A MINIMUM OF SIX (6) FEET FROM THE CROSSING. WHEN POTABLE WATER MAINS CROSS UNDERNEATH OTHER PIPES, THE MINIMUM VERTICAL SEPARATION IS TWELVE (12) INCHES. WHEN POTABLE WATER MAINS CROSS ABOVE PRESSURE WASTEWATER MAINS, WASTEWATER FORCE MAINS, AND RECLAIMED WATER MAINS, THE MINIMUM VERTICAL SEPARATION IS TWELVE (12) INCHES. WHEN POTABLE WATER MAINS CROSS ABOVE GRAVITY AND VACUUM WASTEWATER MAINS, STORM SEWERS, AND STORMWATER FORCE MAINS, THE PREFERRED VERTICAL SEPARATION IS TWELVE (12) INCHES AND THE MINIMUM VERTICAL SEPARATION IS SIX (6) INCHES.

8. ALL WATER MAINS SHALL HAVE A MINIMUM OF 48 INCHES OF COVER.

9. ALL, PIPE, PIPE FITTINGS, PIPE JOINTS PACKING AND JOINTING MATERIALS, VALVES, HYDRANTS, AND METERS WILL CONFORM TO AWWA STANDARDS AND RESTRAINED JOINTS SHALL BE PROVIDED AT ALL FITTINGS AND HYDRANTS IN ACCORDANCE WITH AWWA STANDARDS.

10. ALL PVC WATER SERVICE LINES SHALL BE PE PIPE PER CITY OF OCALA UTILITIES STANDARD DETAILS UP TO THE POINT OF METERING.

11. THE SITE WORK CONTRACTOR SHALL ENGAGE THE SERVICES OF A LICENSED PLUMBER TO INSTALL THE NEW WATER SERVICE LINE FROM THE BACK OF THE WATER METER TO THE BUILDING.

12. ALL SANITARY SEWER SERVICE LATERALS SHALL BE 4" PVC SDR 35 OR 6" PVC SDR 35 WITH A CLEANOUT SPACING OF 75 FEET ON-CENTER AND MINIMUM SLOPE FOR 6" LATERALS SHALL BE 0.6% AND A MINIMUM CLEANOUT SPACING OF 100 FEET ON-CENTER.

13. PUBLIC UTILITY EASEMENTS WILL BE PROVIDED AS REQUIRED FOR ALL UTILITIES SHOWN HERON BY METES AND BOUND DESCRIPTION AND IN ACCORDANCE WITH THE REGULATORY AGENCY DEPARTMENT FOR PUBLIC UTILITIES.

14. ALL TELEPHONE, GAS, TELEVISION CABLES OR OTHER CONNECTION THAT IS NON-CONDUCTIVE SHALL HAVE A LOCATOR WIRE.

15. ALL PUBLIC WATER SYSTEM COMPONENTS, EXCLUDING FIRE HYDRANTS, THAT WILL BE INSTALLED UNDER THIS PROJECT AND THAT WILL COME INTO CONTACT WITH DRINKING WATER WILL CONFORM TO NSF INTERNATIONAL STANDARD 61 AS ADOPTED IN RULE62-555.335, F.A.C.

16. ALL PIPE AND PIPE FITTINGS INSTALLED UNDER THIS PROJECT WILL CONTAIN NO MORE THAN 8.0% LEAD, AND ANY SOLDER OR FLUX USED IN THIS PROJECT WILL CONTAIN NO MORE THAN 0.2% LEAD.

17. ALL PIPE AND PIPE FITTINGS INSTALLED UNDER THIS PROJECT WILL BE COLOR CODED OR MARKED IN ACCORDANCE WITH SUBPARAGRAPH 62-555.320(21)(B)3, F.A.C.

18. A CONTINUOUS AND UNIFORM BEDDING WILL BE PROVIDED IN TRENCHES FOR UNDERGROUND PIPE INSTALLED UNDER THIS PROJECT; BACKFILL MATERIAL WILL BE TAMPED IN LAYERS AROUND UNDERGROUND PIPE INSTALLED UNDER THIS PROJECT AND TO A SUFFICIENT HEIGHT ABOVE THE PIPE TO ADEQUATELY SUPPORT AND PROTECT THE PIPE; AND UNSUITABLY SIZED STONES (AS DESCRIBED IN APPLICABLE AWWA STANDARDS OR MANUFACTURERS' RECOMMENDED INSTALLATION PROCEDURES) FOUND IN TRENCHES WILL BE REMOVED FOR A DEPTH OF AT LEAST SIX INCHES BELOW THE BOTTOM OF UNDERGROUND PIPE INSTALLED UNDER THIS PROJECT.

19. ALL WATER MAIN TEES, BENDS, PLUGS, AND HYDRANTS INSTALLED UNDER THIS PROJECT WILL BE PROVIDED WITH THRUST BLOCKS OR RESTRAINED JOINTS TO PREVENT MOVEMENT.

20. NEW OR ALTERED WATER MAINS THAT ARE INCLUDED IN THIS PROJECT AND THAT WILL BE CONSTRUCTED OF ASBESTOS-CEMENT OR POLYVINYL CHLORIDE PIPE WILL BE PRESSURE AND LEAKAGE TESTED IN ACCORDANCE WITH AWWA STANDARD C603 ORC605, RESPECTIVELY, AS INCORPORATED INTO RULE 62-555.330, F.A.C., AND ALL OTHER NEW OR ALTERED WATER MAINS INCLUDED IN THIS PROJECT WILL BE PRESSURE AND LEAKAGE TESTED IN ACCORDANCE WITH AWWA STANDARD C600 AS INCORPORATED INTO RULE 62-555.330.

21. NEW OR ALTERED WATER MAINS, INCLUDING FIRE HYDRANT LEADS AND INCLUDING SERVICE LINES THAT WILL BE UNDER THE CONTROL OF A PUBLIC WATER SYSTEM AND THAT HAVE AN INSIDE DIAMETER OF THREE INCHES OR GREATER, WILL BE DISINFECTED AND BACTERIOLOGICALLY EVALUATED IN ACCORDANCE WITH RULE 62-555.340, F.A.C.

22. SUITABLE COUPLINGS COMPLYING WITH ASTM SPECIFICATIONS ARE REQUIRED FOR JOINING DISSIMILAR MATERIALS.

23. PRIOR TO THE CITY OF OCALA ACCEPTING DISCHARGE TO CENTRAL SEWER THE WASH WATER FROM THE RECYCLE CENTER SHALL BE MONITORED AND TESTED ONCE A MONTH FOR A PERIOD OF SIX MONTHS VIA THE STORAGE TANK PROPOSED. TESTING RESULTS SHALL CONFIRM WASH WATER IS DOMESTIC WASTEWATER AND CONFORMS TO CHAPTER 62-604.130 FAC. A CHANGE IN USE WILL REQUIRE THE SAME SAID MONITORING AND TESTING AS STATED ABOVE PRIOR TO DISCHARGE TO THE CITY OF OCALA CENTRAL SEWER SYSTEM.

LEGEND:

▩	FOUND CONCRETE MONUMENT	PRM	PERMANENT REFERENCE MONUMENT
□	SET CONCRETE MONUMENT	POB	POINT OF BEGINNING
⦿	FOUND REBAR AND CAP	POC	POINT OF COMMENCEMENT
⊙	SET REBAR AND CAP	PRO	PROPOSED
●	FOUND NAIL AND TAB	RGE	RANGE
○	SET NAIL AND TAB	RES	RESIDENCE
⚲	POLE	R/W	RIGHT OF WAY
▣	WATER METER	SEC	SECTION
▨	UTILITY BOX	ST	SEPTIC TANK
PC	POINT OF CURVATURE	TWP	TOWNSHIP
PT	POINT OF TANGENCY	TYP	TYPICAL
—— X ——	WIRE FENCE	U/C	UNDER CONSTRUCTION
ASPH	ASPHALT	UE	UTILITY EASEMENT
BLK	BLOCK	℄	CENTERLINE
BDY	BOUNDARY	◁◑	GUY WIRE OR ANCHOR
CONC	CONCRETE	DRA	DRAINAGE RETENTION AREA
EL	ELEVATION	[E]	ELECTRIC BOX
FM	FIELD MEASURED	WPF	WOOD PRIVACY FENCE
PCP	PERMANENT CONTROL POINT	OHL	OVERHEAD LINES

JOB NO: 17-04

SHEET TITLE: GENERAL NOTES

PROJECT: CITY WIDE RECYCLING

DESIGNED BY: PRW | DRAWN BY: AMM | GDC DWG NAME: Cover_Notes

CHECKED BY: PRW / JCG | APPROVED BY: JCG | CLIENT: NICK GIUMARELLI

DATE: | SHEET NO: C002 of C012

REVISIONS

DATE	BY	DESCRIPTION
8-28-18	PRW	ADDED NOTES FOR FDEP

JAN. 22, 2018

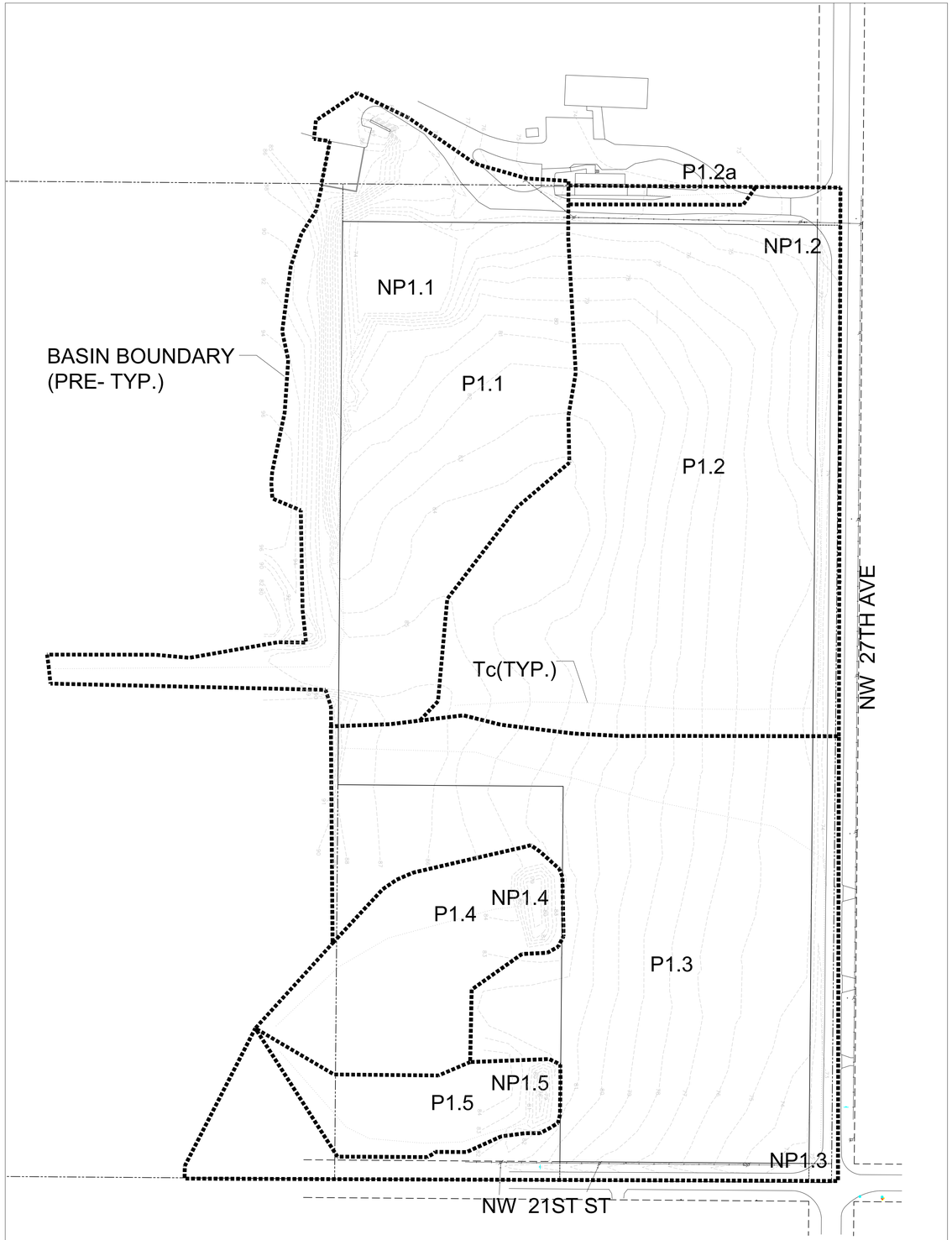
SEAL:

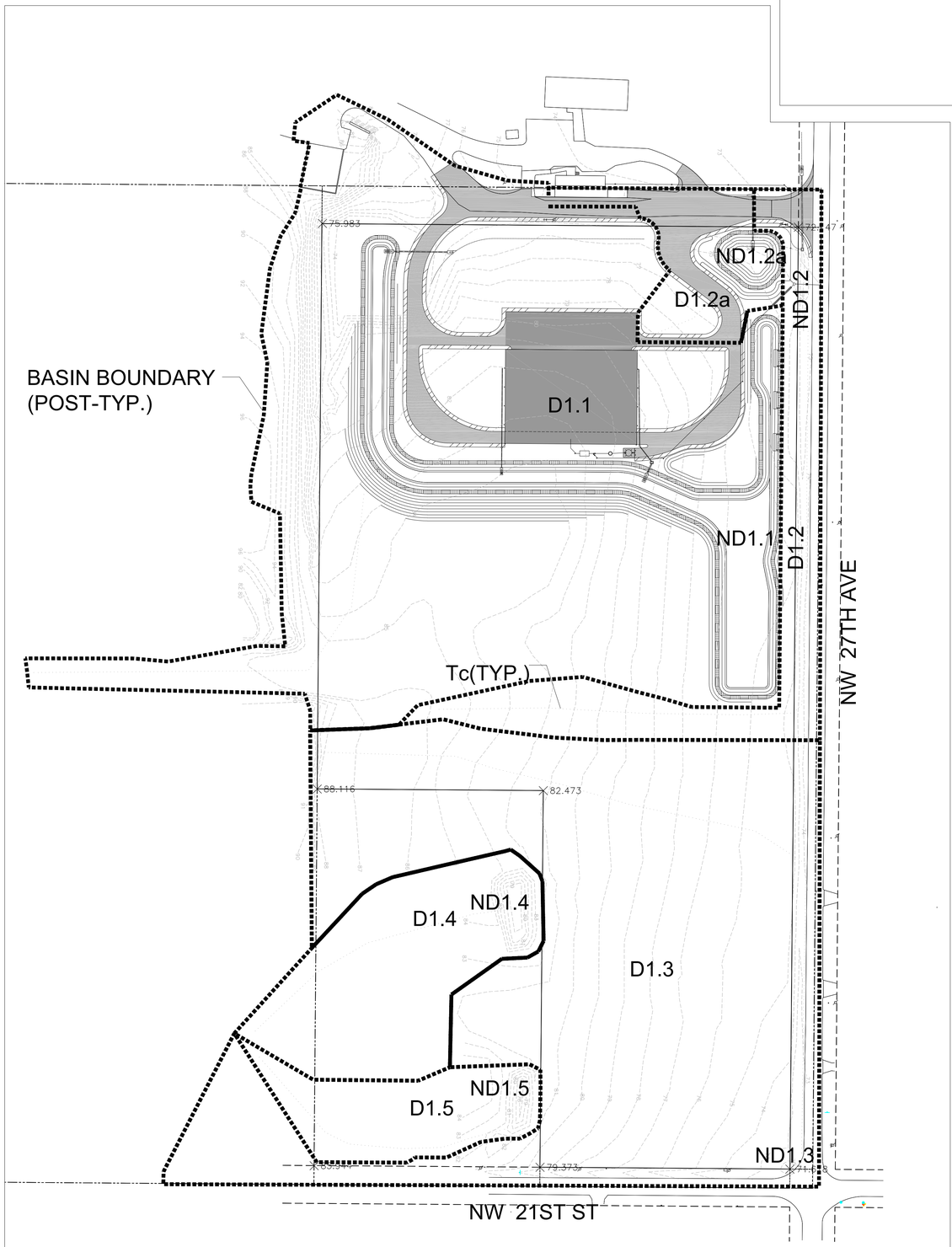
Juan C. Guerra, P.E.
Fla. Reg. # 0041000

Date:

Consulting Engineering
2817 NE 3rd St, Ocala, Florida 34470
(352) 629-8060 Phone
GDC@GuerraCorp.net
State of Florida Certificate of Authorization #4954

ENGINEER OF RECORD: GDC





SHEET TITLE: DRAINAGE BASIN MAPS
PROJECT: CITY WIDE RECYCLING
DESIGNED BY: AMM
DRAWN BY: AMM
CHECKED BY: PRW / JCG
APPROVED BY: JCG
DATE: JAN. 22, 2018
JOB NO: 17-04
GDC DWG NAME: 17-04 PSD
CLIENT: NICK GIUMARELLI
SHEET NO: C003 of C012

REVISIONS

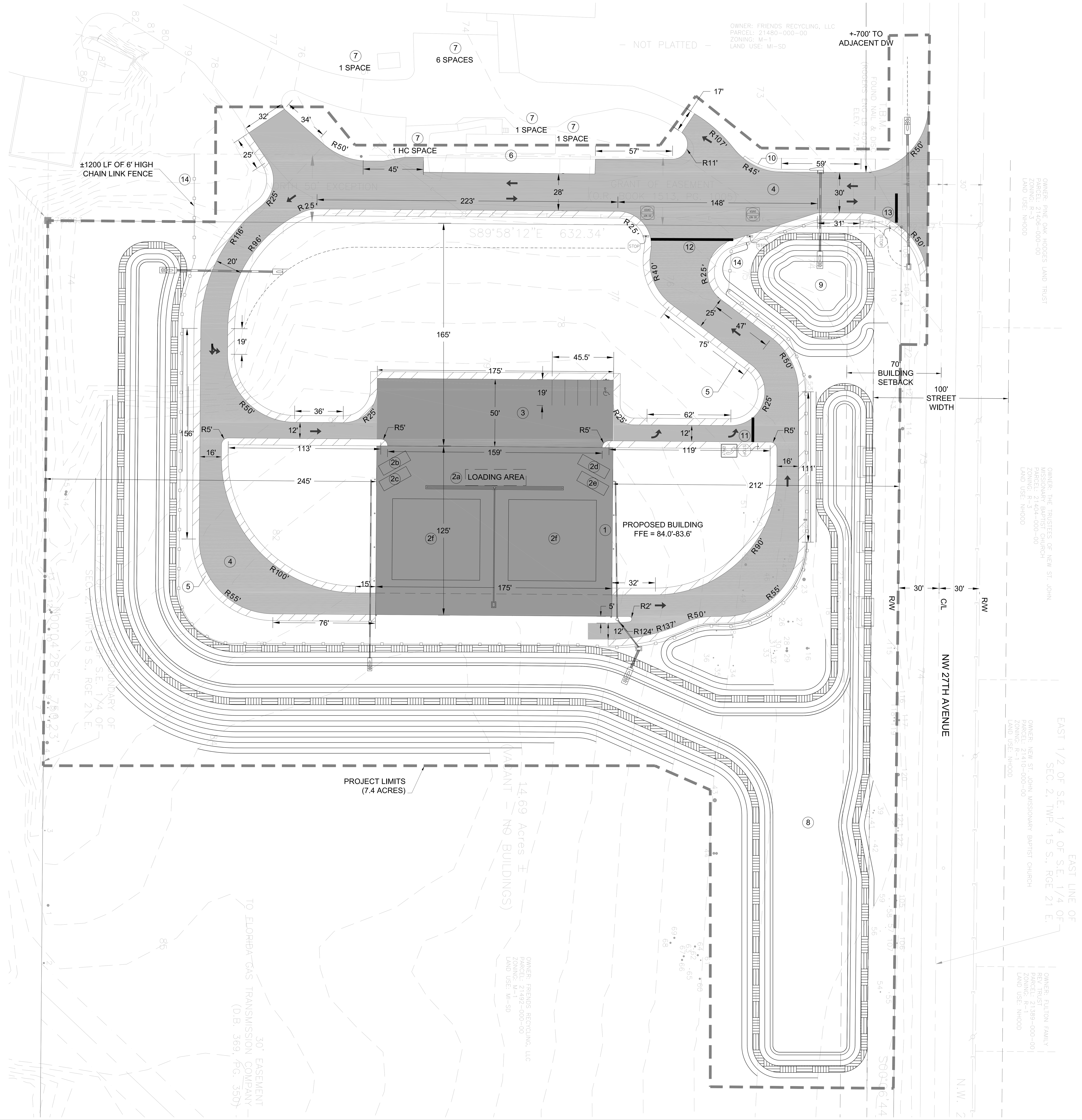
DESCRIPTION	DATE	BY

24x36 SCALE: 1" = 80'
11x17 SCALE: 1" = 160'
0 40' 80'

SEAL:

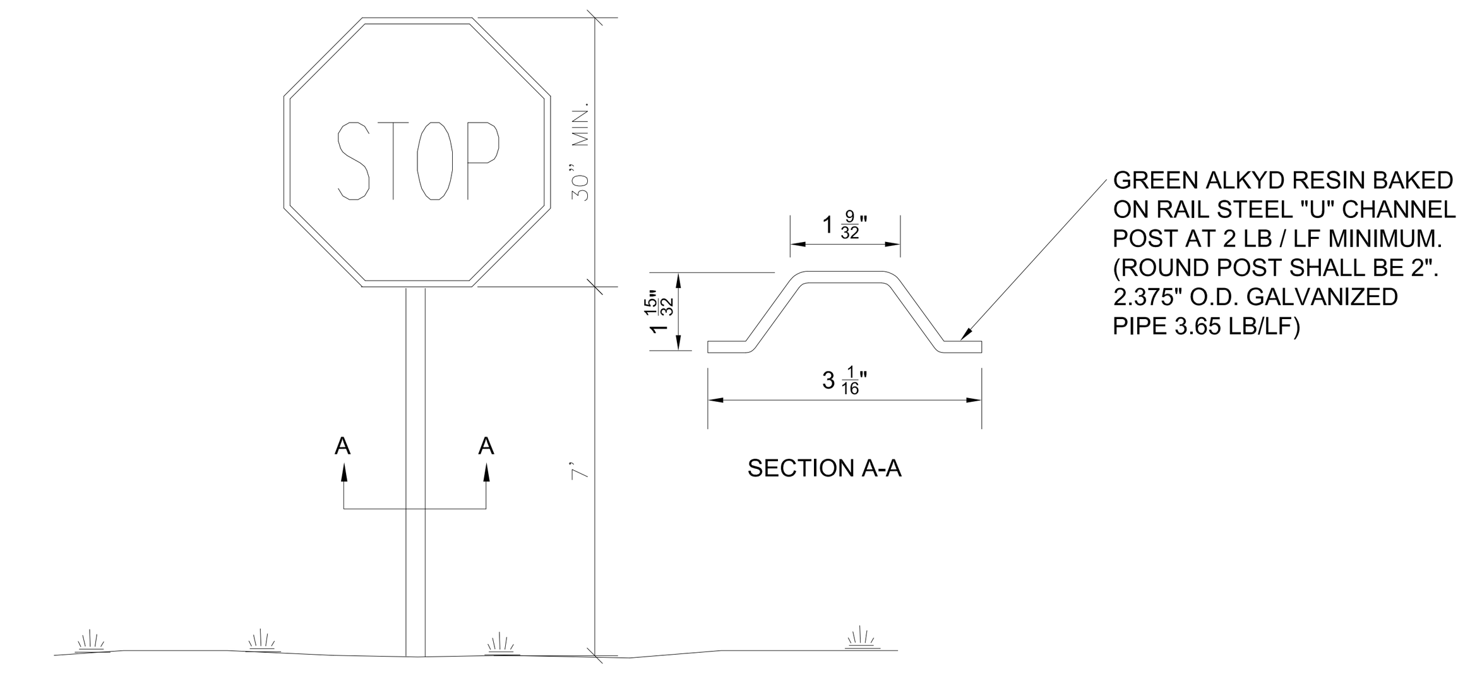
Juan C. Guerra, P.E.
Fla. Reg.: # 0041000
Date:

ENGINEER OF RECORD:
GDC
Consulting Engineering
2817 NE 3rd St. Ocala, Florida 34470
(352) 369-0619 Phone
GDC@GuerraCorp.net
State of Florida Certificate of Authorization #4954



SITE PLAN

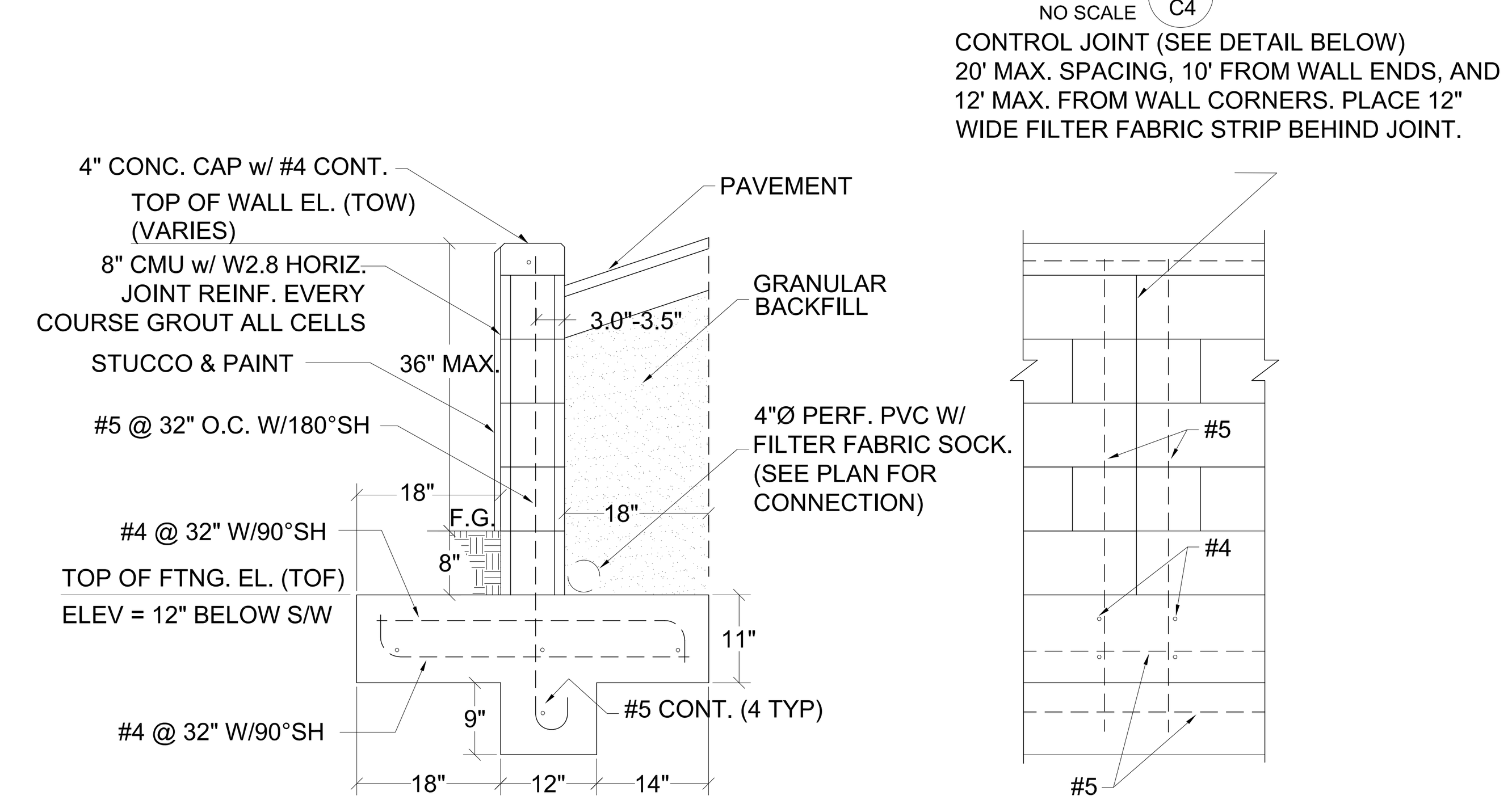
1. 175' X 125' NEW CITY WIDE RECYCLING CENTER (SEE SUPPORTING STRUCTURAL DETAILS & GEOTECHNICAL REPORT FOR FOUNDATION PREPARATION).
2a. TYPICAL 12' X 45' UN-STRIPED LOADING AREA
2b. ONE(1) - 20 CY CONTAINER FOR WASTE TIRE
2c. ONE(1) - 20 CY CONTAINER FOR METAL
2d. ONE(1) - 20 CY CONTAINER FOR PLASTICS
2e. ONE(1) - 40 CY CONTAINER FOR CARDBOARD & PAPER
2f. TWO(2) - MATERIAL STORAGE ZONES
3. CONCRETE PAVEMENT SECTION - SEE SHEET C5.1
4. HEAVY DUTY ASPHALT SECTION - SEE SHEET C5.1
5. 6" STABILIZED SHOULDER - SEE SHEET C5.1
6. EXISTING OFFICE AND SCALE
7. EXISTING PARKING
   - 9 STANDARD SPACES
   - 1 HANDICAP SPACE
   - 10 TOTAL SPACES
8. PROPOSED DRA 1.1
9. PROPOSED DRA 1.2a
10. PROPOSED TYPE "F" CURB - SEE DETAIL 6/C11
11. INSTALL 18 LF OF 24" WHITE THEMOPLASTIC STOP BAR W/STOP SIGN (R1-1) AND LEFT ONLY SIGN (R3-5L)
12. INSTALL 60 LF OF 24" WHITE THERMOPLASTIC STOP BAR W/DUEL STOP SIGNS (R1-1) AND DUEL DO NOT ENTER SIGNS (R5-1)
13. INSTALL 22 LF OF 24" WHITE THERMOPLASTIC STOP BAR W/ STOP SIGN (R1-1)
14. 6' CHAIN LINK FENCE TO ENCLOSE FACILITY



NOTE: BOTTOM OF SIGN MUST BE 7 FEET ABOVE GROUND.

STOP SIGN DETAIL

NO SCALE 1/C4

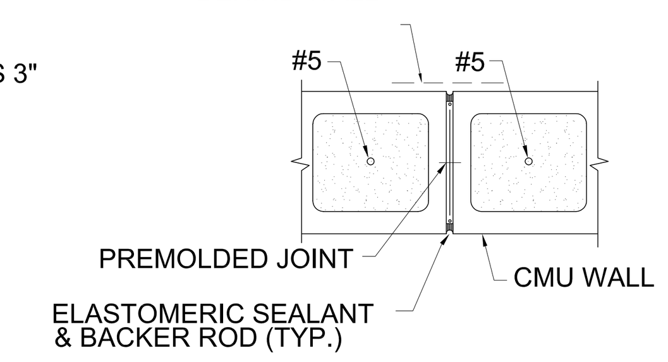


REINFORCED MASONRY RETAINING WALL SECTION

FRONT VIEW @ CONTROL JOINT

NOTES:

1. C.M.U. IS ASTM C90 8" TYPE II MOISTURE CONTROLLED, f'm = 1,900 psi. MORTAR IS ASTM C270 TYPE "S". GROUT IS ASTM C476 FINE.
2. STEEL fy = 60,000 psi
3. CONCRETE f'c = 3,000 psi
4. CLEAR TOP, BOTTOM, & SIDE COVER TO STEEL IS 3"
5. COMPACT FOOTING BOTTOM TO 95%
6. W2.8 HORIZONTAL JOINT REINFORCEMENT IS REQUIRED ON EVERY COURSE. DO NOT USE ACROSS CONTROL JOINTS.
7. BACKFILL 1.5' BEHIND WALL w/ CLEAN SAND.
8. EXPOSED SIDE OF WALL SHALL BE FINISHED WITH STUCCO AND PAINTED. PAINT COLOR TO BE COORDINATED WITH OWNER.



CONTROL JOINT DETAIL

RETAINING WALL 3.0' OR LESS

NO SCALE 2/C4

SHEET TITLE:	SITE LAYOUT
PROJECT:	CITY WIDE RECYCLING
DESIGNED BY: AMM	DRAWN BY: AMM
CHECKED BY: PRW / JCG	APPROVED BY: JCG
DATE: MAR. 2, 2018	JOB NO: 17-04
GDC DWG NAME: 17-04_SITE	CLIENT: NICK GIUMARELLI
SHEET NO: C004 of C012	

REVISIONS

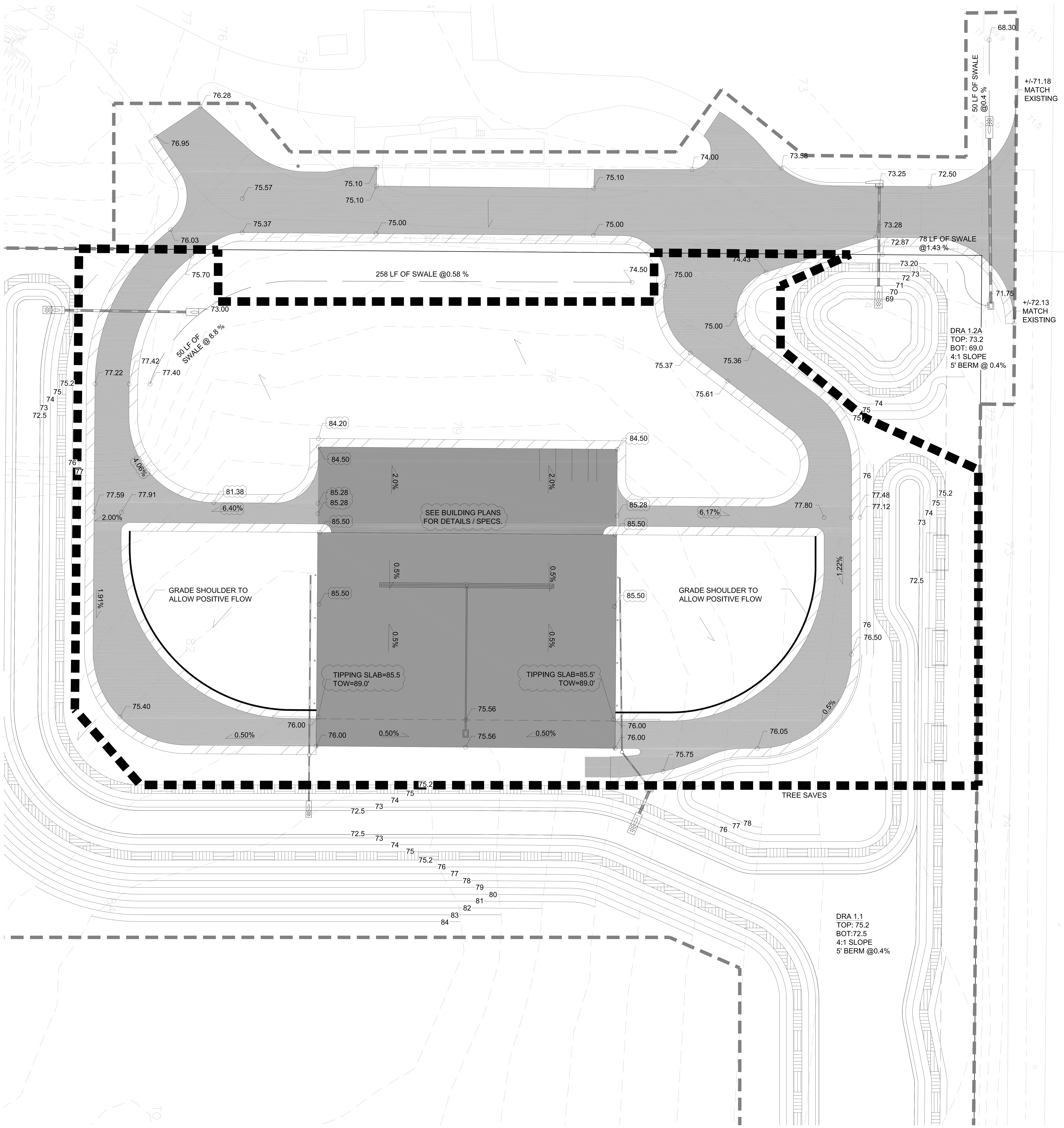
DATE	BY	DESCRIPTION

24x36 SCALE: 1" = 40'
11x17 SCALE: 1" = 80'

SEAL:

Juan C. Guerra, P.E.
Fla. Reg. # 0041000
Date:

ENGINEER OF RECORD:
GDC
Consulting Engineering
2817 NE 3rd St, Ocala, Florida 34470
(352) 629-8080 Phone
GDC@GuerraCorp.net
State of Florida Certificate of Authorization #4954



HEAVY PAVEMENT SECTION

NO SCALE 1 C5.1

2.0" MIN SP9.5 FINE MIX
8" MIN LIMEROCK (LBR 100)
12" MIN SUBGRADE (LBR 40) TYPE "B" STABLIZATION 98% MAX DRY DENSITY PER AASHTO T-180

MATERIALS, INSTALLATION, AND TESTING SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT #1493921 BY UNIVERSAL ENGINEERING, INC.

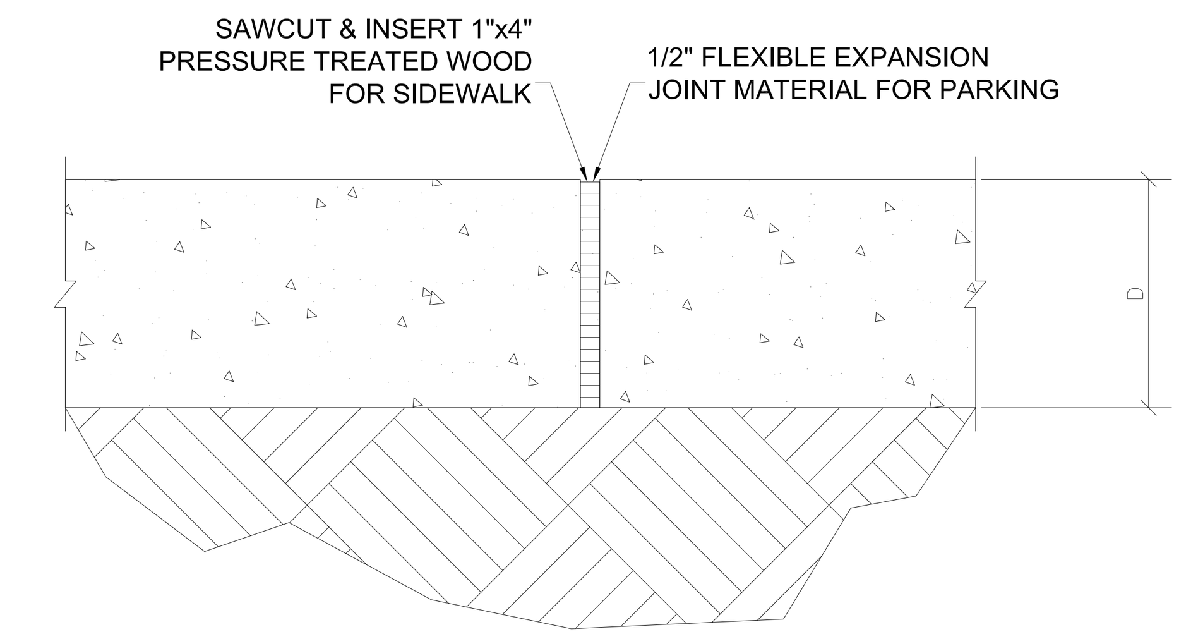
CONCRETE PAVEMENT SECTION

NO SCALE 2 C5.1

6.0" MIN 4000 PSI CONCRETE
12" MIN SUBGRADE (LBR 40) TYPE "B" STABLIZATION 95% MAX DRY DENSITY PER ASTM D 1557

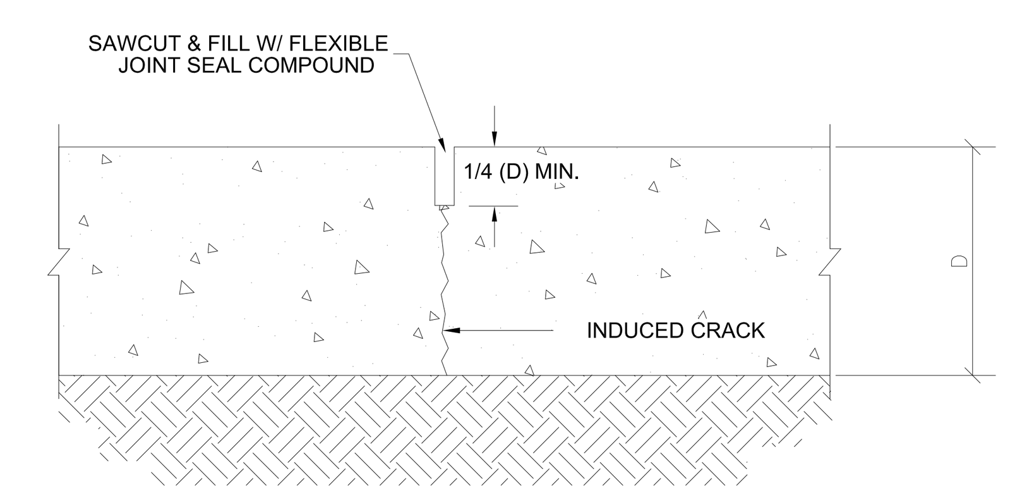
MATERIALS, INSTALLATION, AND TESTING SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT #1493921 BY UNIVERSAL ENGINEERING, INC.

INSTALL STEEL AS FOLLOWS:
W1.4 x W1.4 10ga
FLAT SHEETS, NOT ROLL



EXPANSION JOINT DETAIL

NO SCALE 3 C5.1



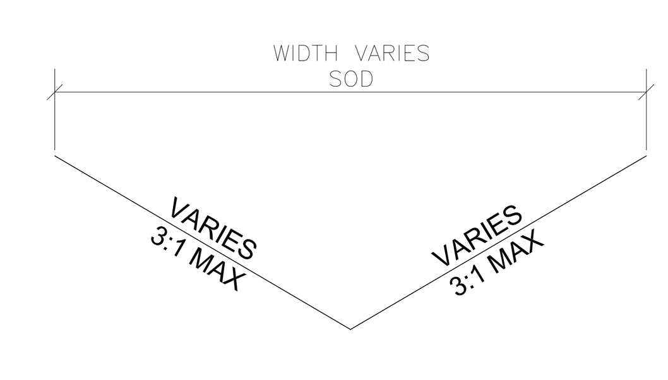
JOINTS MUST BE CUT WITHIN 24-HOURS AFTER POURING OR AS SOON AS CONCRETE HARDENS ENOUGH TO PERMIT THE WORK.

DEPTH OF CUT IS 1" MIN. FOR A 4" SLAB, 1 1/2" FOR A 6" SLAB (PARKING). WIDTH OF CUT MUST BE UNIFORM @ 1/8" OR 1/4".

PARKING JOINTS SHALL BE PLACED AS SHOWN ON DRAWINGS. SIDEWALK JOINTS SHALL BE PLACED AS SHOWN ABOVE.

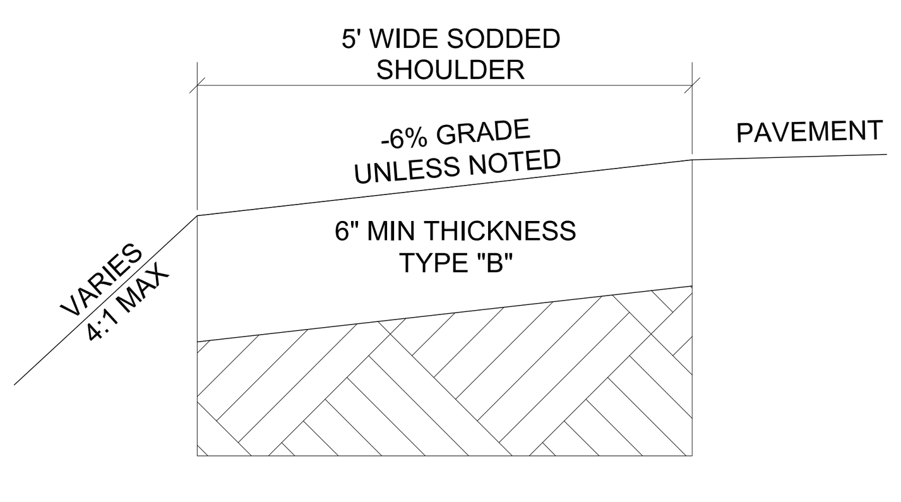
CONTRACTION JOINT DETAIL

NO SCALE 4 C5.1



TYPICAL SWALE DETAIL

NO SCALE 5 C5.1



SHOULDER SECTION

NO SCALE 6 C5.1

SHEET TITLE:	PAVING & GRADING PLAN	JOB NO: 17-04
PROJECT:	CITY WIDE RECYCLING	
DESIGNED BY: AMM	DRAWN BY: AMM	GDC DWG NAME: 17-04 PGD
CHECKED BY: PRW / JCG	APPROVED BY: JCG	CLIENT: NICK GIUMARELLI
DATE:	JAN. 22, 2018	SHEET NO: C005.1 of C012

REVISIONS

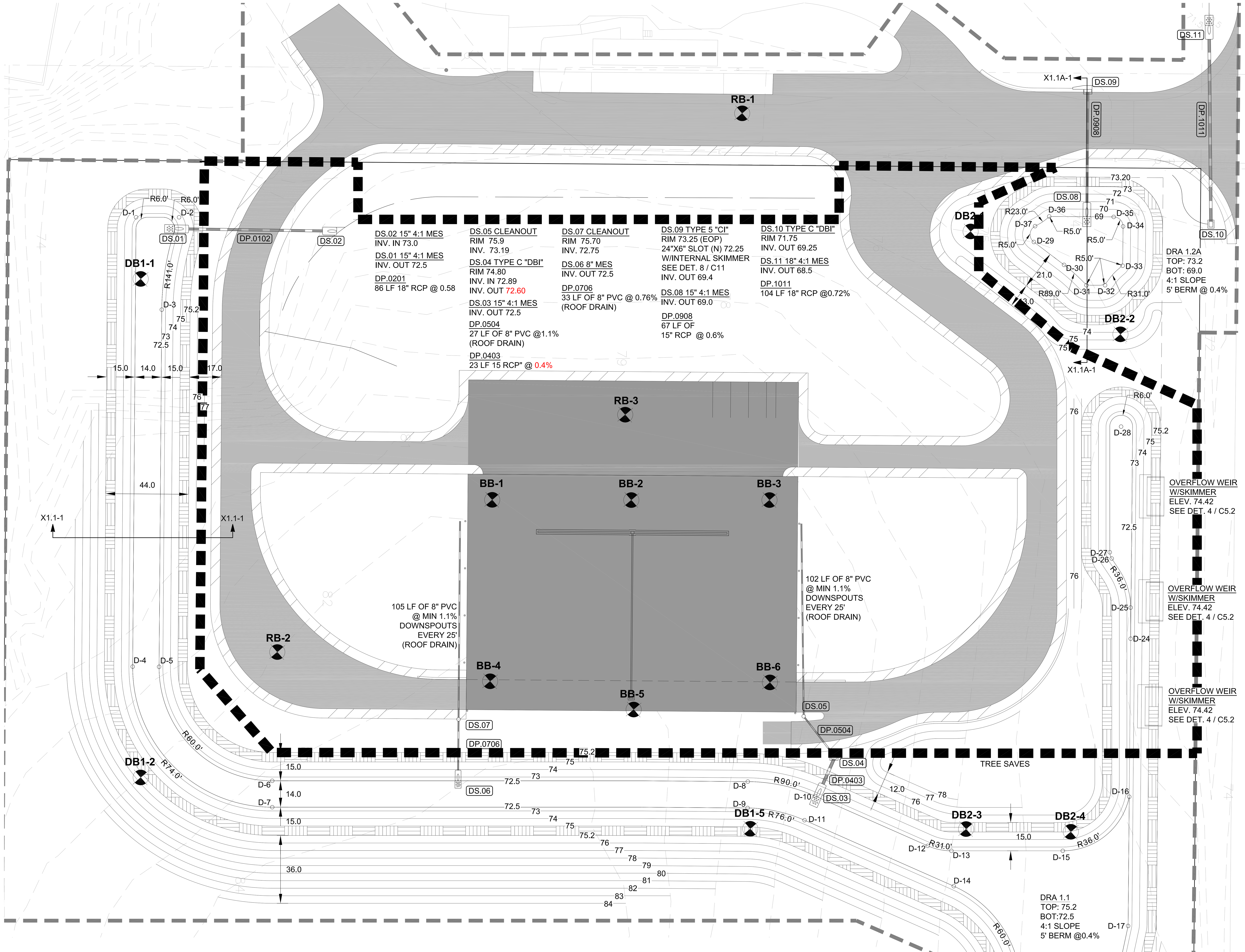
DATE	BY	DESCRIPTION
6/14/18	PW	GRADE / SLOPE CHANGES PER STRUCTURAL DESIGN
10/1/18	AM	REVISED CONCRETE PAVEMENT DETAIL (STEEL ADDED)

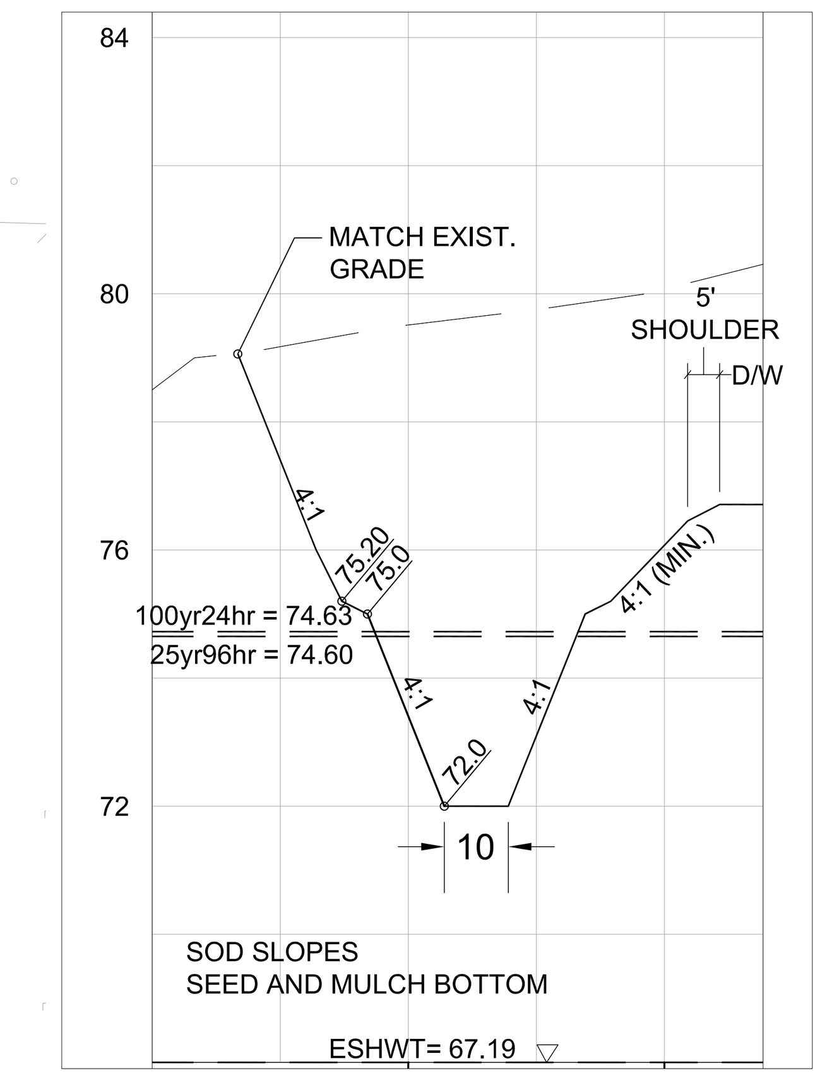
24x36. SCALE: 1" = 30'
11x17. SCALE: 1" = 60'
0 15' 30'

SEAL:

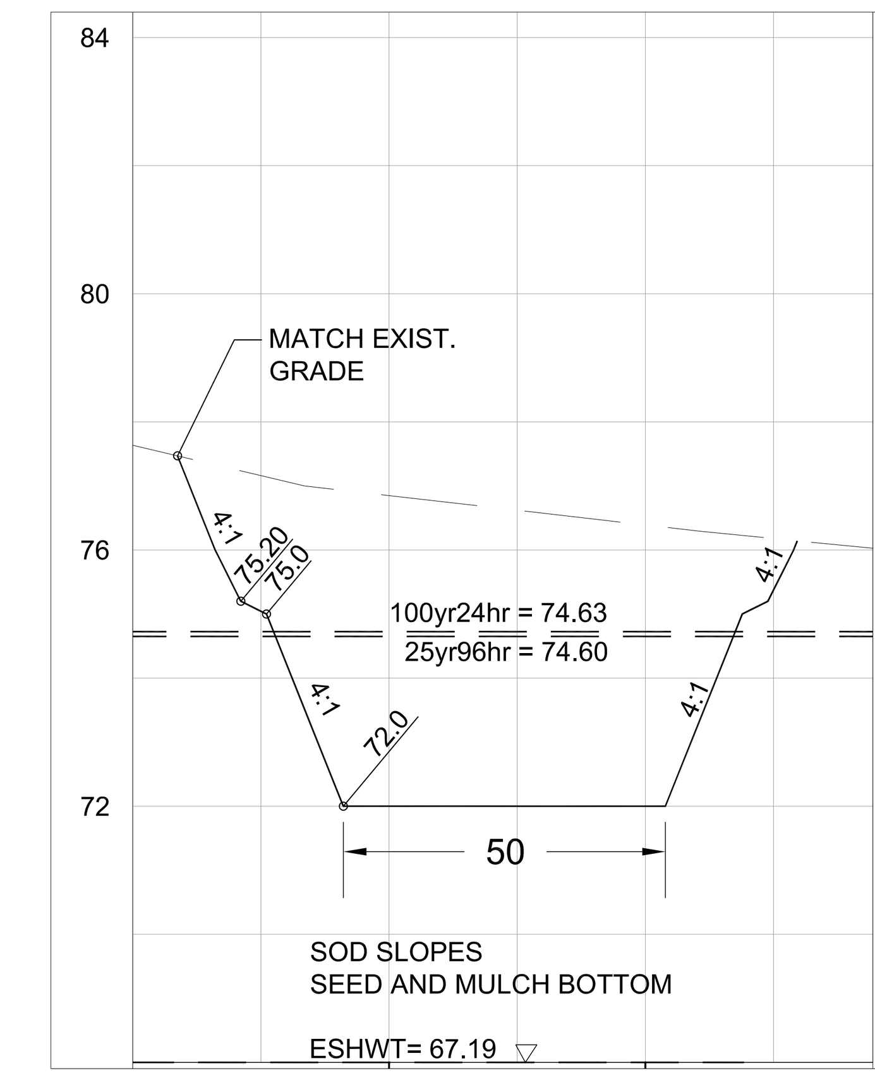
Juan C. Guerra, P.E.
Fla. Reg. # 0041000
Date:

ENGINEER OF RECORD:
GDC
Consulting Engineering
2817 NE 3rd St. Ocala, Florida 34470
(352) 629-8060 Phone
GDC@GuerraCorp.net
State of Florida Certificate of Authorization #4954

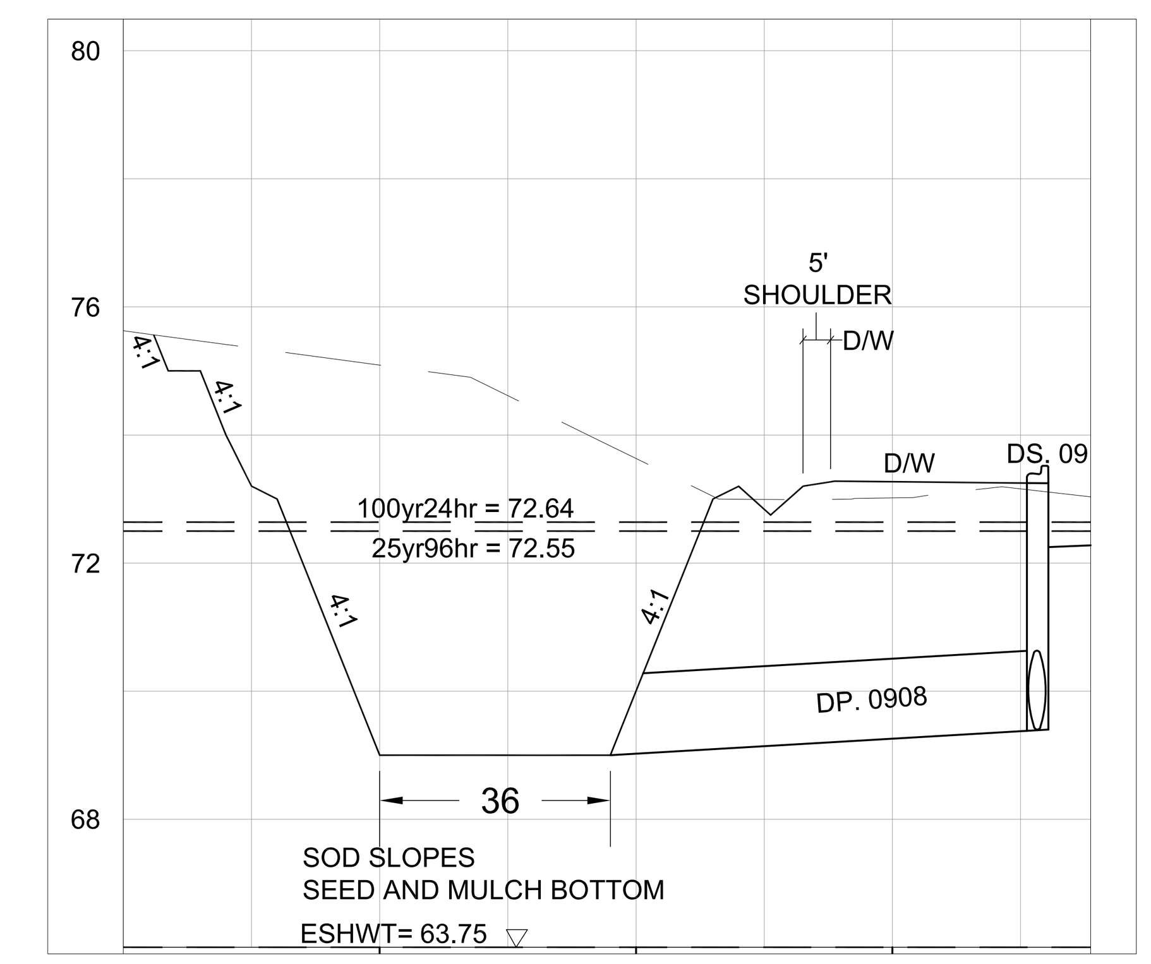




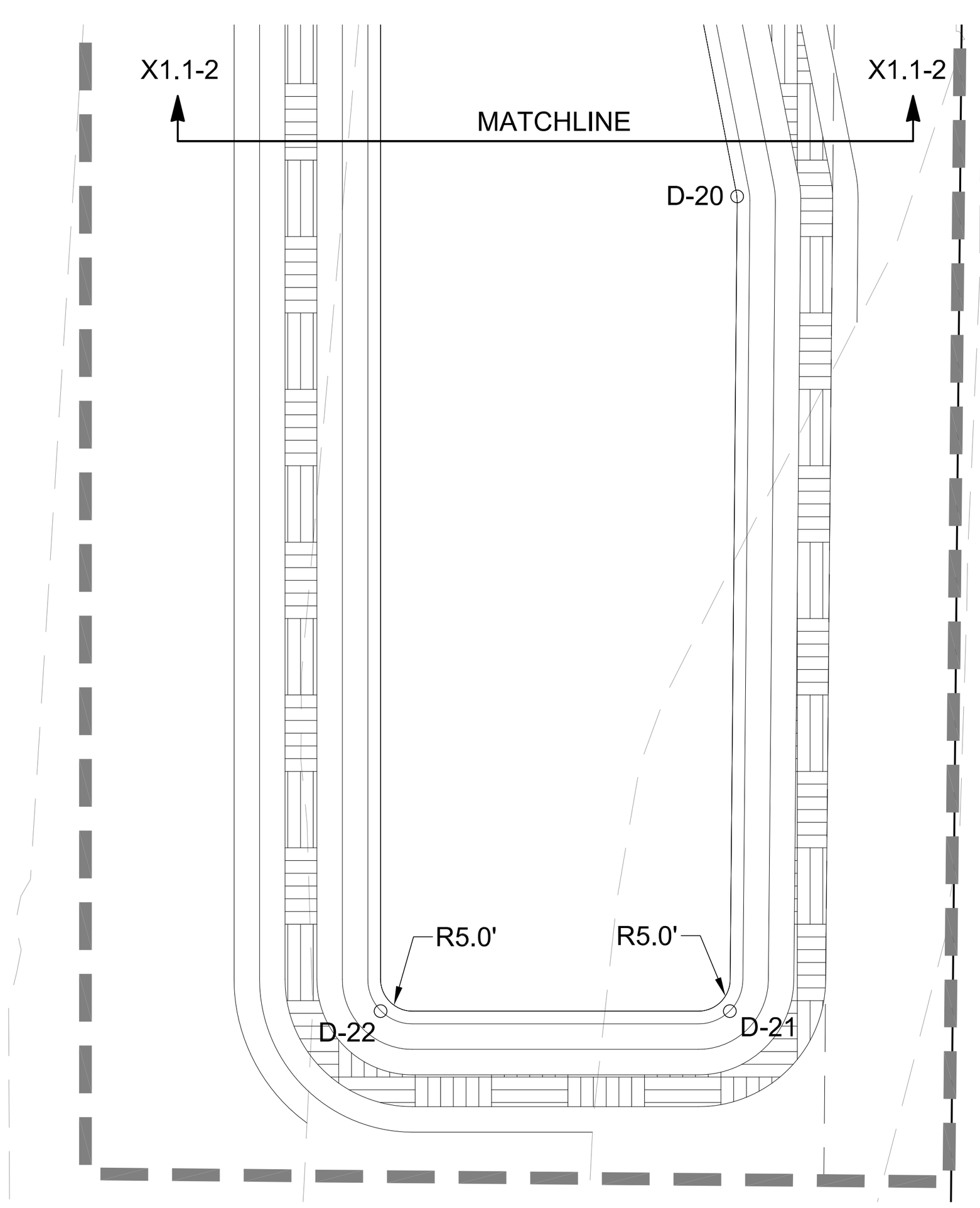
DRA X-SECTION X1.1-1 NO SCALE 1/C5.2



DRA X-SECTION X1.1-2 NO SCALE 2/C5.2

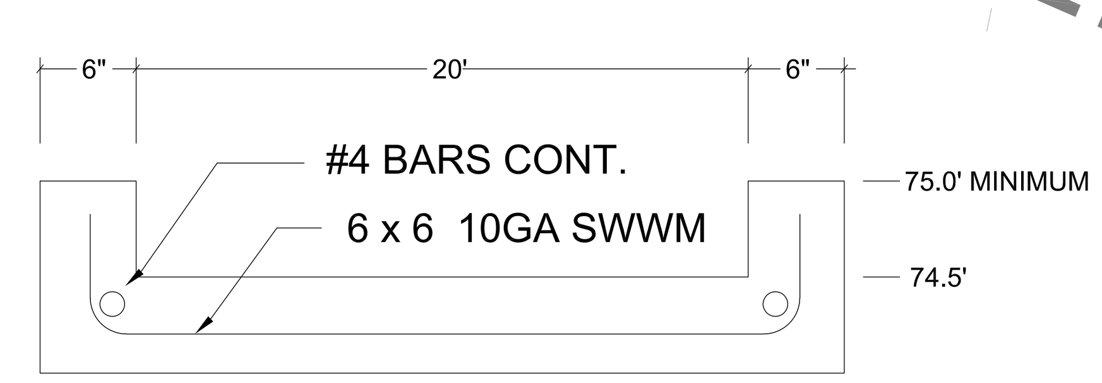


DRA X-SECTION X1.1A-1 NO SCALE 3/C5.2



DRA 1.1					
Elevation (ft)	Area (sf)	Area (ac)	Depth Inc. (ft)	Vol Inc. (cf)	Total Vol. (cf)
72.50	26168	0.601	0	0	0
73.00	31228	0.717	0.50	14349	14349
74.00	41482	0.952	1.00	36355	50704
75.00	51837	1.190	1.00	46660	97364

DRA 1.2a					
Elevation (ft)	Area (sf)	Area (ac)	Depth Inc. (ft)	Vol Inc. (cf)	Total Vol. (cf)
69.00	1300	0.0299	0	0	0
70.00	1914	0.044	1.00	1607	1607
71.00	2629	0.060	1.00	2271	3879
72.00	3444	0.079	1.00	3036	6915
73.00	4359	0.100	1.00	3901	10816



CONCRETE STRENGTH = 3,000 PSI OR MORE
SEE POST MOUNTED SKIMMER DETAIL 7/C11

OVERFLOW WEIR (3) NO SCALE 4/C5.2

DRA 1.1

ID	NORTHING	EASTING
D-1	N1773259.6157	E601817.2565
D-2	N1773259.6157	E601840.0685
D-3	N1773210.6207	E601830.8870
D-4	N1773021.2498	E601815.4570
D-5	N1773021.1441	E601829.4566
D-6	N1772960.6911	E601889.4549
D-7	N1772946.6911	E601889.4549

DRA 1.1 (cont.)

ID	NORTHING	EASTING
D-8	N1772960.2677	E602141.6372
D-9	N1772946.2681	E602141.5315
D-10	N1772952.5837	E602177.3514
D-11	N1772939.7794	E602171.6901
D-12	N1772926.1840	E602237.0611
D-13	N1772923.5364	E602249.5967
D-14	N1772904.7854	E602250.8379

DRA 1.1 (cont.)

ID	NORTHING	EASTING
D-15	N1772923.5364	E602308.6569
D-16	N1772952.2138	E602343.9043
D-17	N1772883.6895	E602343.2893
D-18	N1772850.2752	E602336.1333
D-19	N1772835.8312	E602336.0036
D-20	N1772802.2914	E602342.5587
D-21	N1772674.3489	E602341.4103

DRA 1.1 (cont.)

ID	NORTHING	EASTING
D-22	N1772674.3489	E602286.5756
D-23	N1772849.9098	E602286.5756
D-24	N1773036.0598	E602344.6569
D-25	N1773052.5786	E602344.6569
D-26	N1773078.5990	E602334.5881
D-27	N1773081.9206	E602333.5847
D-28	N1773148.5811	E602339.6666

DRA 1.2A

ID	NORTHING	EASTING
D-29	N1773246.5155	E602293.3133
D-30	N1773234.3776	E602309.3330
D-31	N1773223.5725	E602321.1980
D-32	N1773223.5725	E602331.0837
D-33	N1773233.9199	E602340.4326
D-34	N1773254.7667	E602340.6197
D-35	N1773259.8115	E602335.6577
D-36	N1773260.0698	E602301.4422
D-37	N1773254.9158	E602293.9861

JOB NO: 17-04

SHEET TITLE: DRAINAGE PLAN
PROJECT: CITY WIDE RECYCLING
DESIGNED BY: AMM
DRAWN BY: AMM
GDC DWG NAME: DRAINAGE PLAN
CHECKED BY: PRW / JCG
APPROVED BY: JCG
CLIENT: NICK GIUMARELLI
DATE: JAN. 22, 2018
SHEET NO: C005.2 of C012

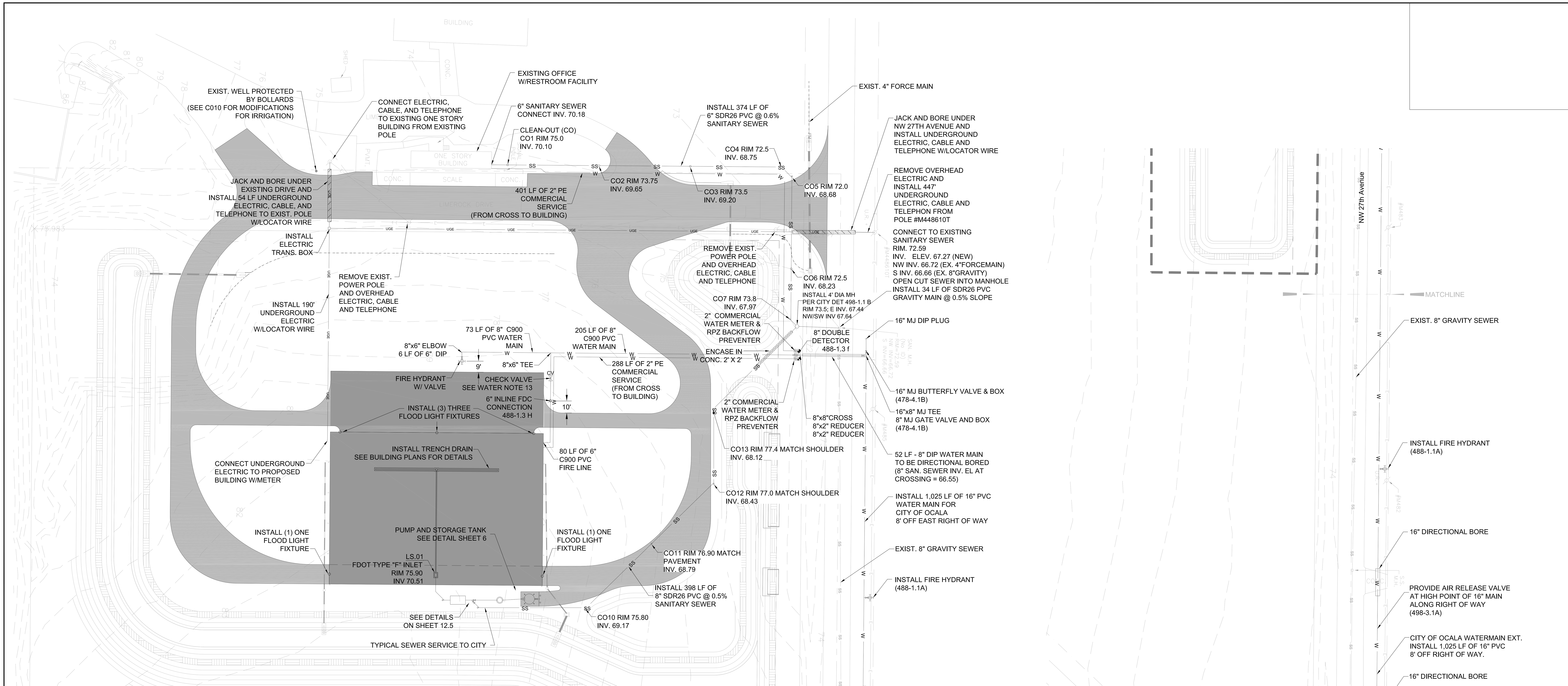
REVISIONS

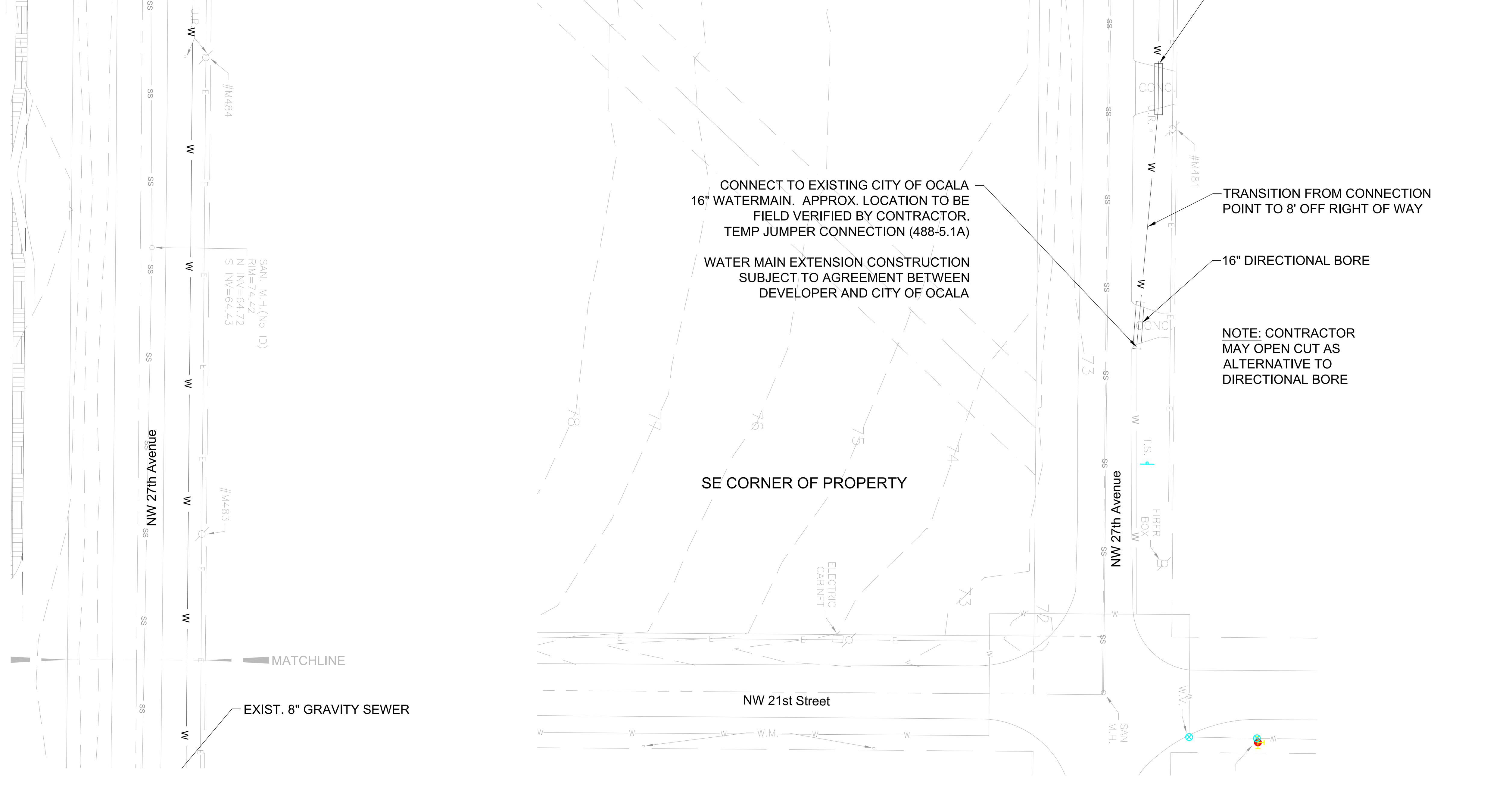
DATE	BY	DESCRIPTION
9-28-18	PRW	MINOR INVERT ADJUSTMENTS- STORM

24x36. SCALE: 1" = 30'
11x17. SCALE: 1" = 60'
0 15' 30'

SEAL:
Juan C. Guerra, P.E.
Fla. Reg. # 0041000
Date:

ENGINEER OF RECORD:
GDC
Consulting Engineering
2817 NE 3rd St. Ocala, Florida 34470
(352) 629-8060 Phone
GDC@GuerraCorp.net
State of Florida Certificate of Authorization #4954





WATER NOTES

1. THE WATER SERVICE PIPE, FROM THE MAIN TO THE METERED LOCATION, SHALL BE TWO INCHES (2") MINIMUM.
2. WATER CLEARANCE FROM FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) MUST BE OBTAINED BEFORE PLACING THE WATER SYSTEM IN OPERATION AND BEFORE ISSUANCE OF PARTIAL OR FINAL CERTIFICATE OF OCCUPANCY (CO).
3. WATER SYSTEM ASBUILT MUST BE SUBMITTED TO CITY PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY IN ACCORDANCE WITH SECTION 486 OF THIS MANUAL. ALL INSTALLED INFRASTRUCTURE SHALL BE REFERENCED TO STATE PLANE COORDINATES ON THE ASBUILTS.
4. CITY WILL MAINTAIN ALL WATER MAINS TWO INCH (2") IN DIAMETER AND ABOVE TO THE POINT OF METERING AND DOUBLE DETECTOR CHECK ASSEMBLY (DDC) LOCATION.
5. ALL BACKFLOW PREVENTERS ARE TO BE INSTALLED "BY CONTRACTOR" AND MAINTAINED "BY OWNER".
6. METER SERVICE IS TO BE INSTALLED BY CITY OF OCALA.
7. A GATE VALVE SHALL BE PROVIDED AT THE MAIN FOR ALL NEW SERVICE LINES WITH 2" PIPING.
8. ALL EXISTING METER BOXES AND BACKFLOW PREVENTERS THAT FALL IN AREAS OF NEW CONSTRUCTION ARE TO BE ADJUSTED TO THE NEW SURROUNDING GRADE.
9. CONTRACTOR SHALL CLEARLY MARK EACH METER BOX WITH THE UNIT IT SERVES.
10. ALL NEW BACKFLOW PREVENTION DEVICES SHALL BE TESTED BY CERTIFIED TESTERS AND COPIES OF SUCH TESTS SHALL BE PROVIDED TO THE CITY PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO) FOR THE UNIT TO WHICH THE DEVICE HAS BEEN INSTALLED FOR TESTING AND CERTIFICATION SHALL BE IN ACCORDANCE WITH 6.1, TESTING, MAINTENANCE, AND CERTIFICATION OF REQUIRED BACKFLOW PREVENTERS OF THE CITY'S MANUAL OF CROSS CONNECTION CONTROL.
11. ALL FIRE FIGHTING EQUIPMENT AND APPARATUS TO COMPLY WITH PRESENT STATE CODE/REQUIREMENTS.
12. ALL FIRE HYDRANTS SHALL BE FACTORY PAINTED RED WITH APPROPRIATELY COLORED CAPS / BONNETS.
13. FIRE PROTECTION SYSTEM DESIGN TO BE CONFIRMED WITH BUILDING DESIGNERS FOR APPROPRIATE PRESSURES. SHOULD ANY MODIFICATIONS BE REQUIRED THEY SHALL BE APPROVED BY THE CITY.

SEWER NOTES

1. CITY WILL MAINTAIN ALL SEWER MAINS UP TO THE PROPERTY LINE, THAT INCLUDE MANHOLES BOTH ONSITE AND OFFSITE. SEWER SERVICES AND CLEANOUTS WILL BE PRIVATE.
2. SEWER SYSTEM ASBUILT TO BE SUBMITTED TO WATER AND SEWER ENGINEER PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY (CO). ASBUILT TO BE IN ACCORDANCE WITH SECTION 496.
3. ALL MANHOLE COVERS ARE TO BE HINGED WITH LOCKS.
4. MANHOLE FLOW CHANNELS ARE TO BE RECONSTRUCTED AS REQUIRED BY THE WATER AND SEWER ENGINEER.
5. ALL EXISTING SANITARY SEWER MANHOLE COVERS THAT FALL IN AREAS OF NEW CONSTRUCTION ARE TO BE ADJUSTED TO THE NEW SURROUNDING GRADE.
6. ALL SEWER MAINS THAT ARE TO BE CITY MAINTAINED WILL REQUIRE AN ASBUILT DRAWING. THE DRAWING SHALL SHOW THE LOCATION OF ALL SEWER MAINS, MANHOLES AND SERVICES. ASBUILT DRAWING SHALL BE IN ACCORDANCE WITH SECTION 496, VOLUME III, CITY OF OCALA STANDARD SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION.
7. NO OAKS, LARGE OR AGGRESSIVELY ROOTED TREES CAN BE INSTALLED WITHIN 30 FEET OF SEWER MAINS.
8. DIP PIPE SHALL BE CLASS 350 AND CONFORM TO THE LATEST REQUIREMENTS OF ANSI/AWWA C150/A21.50 AND ANSI/AWWA C151/A21.51.
9. ALL SANITARY SEWER CLEAN-OUTS SHALL BE MAINTAINED BY THE OWNER AND THOSE WITHIN THE PAVEMENT SHALL BE TRAFFIC BEARING .
10. ALL RIMS ARE TO BE FLUSH WITH THE FINAL GRADES TO CREATE A SMOOTH FINISH.
11. DEFLECTION OF FLEXIBLE PIPE SHALL NOT EXCEED 5% AND SHALL BE TESTED PER FDEP METHODS AT LEAST 30 DAYS AFTER FINAL BACKFILL HAS BEEN PLACED. LEAKAGE EXFILTRATION OR INFILTRATION SHALL NOT EXCEED 200 GAL PER INCH OF PIPE DIAMETER PER MILE PER DAY AND BE PERFORMED WITH A MIN POSITIVE HEAD OF 2 FEET. AIR TESTS CONFORMING TO ASTM F-147 FOR PLASTIC PIPE SHALL ALSO BE REQUIRED.

JOB NO: 17-04

SHEET TITLE: UTILITY LAYOUT
PROJECT: CITY WIDE RECYCLING
DESIGNED BY: AMM | DRAWN BY: AMM | GDC DWG NAME: 17-04_UTIL
CHECKED BY: PRW / JCG | APPROVED BY: JCG | CLIENT: NICK GIUMARELLI
DATE: MAR. 16, 2018 | SHEET NO: C006 of C012

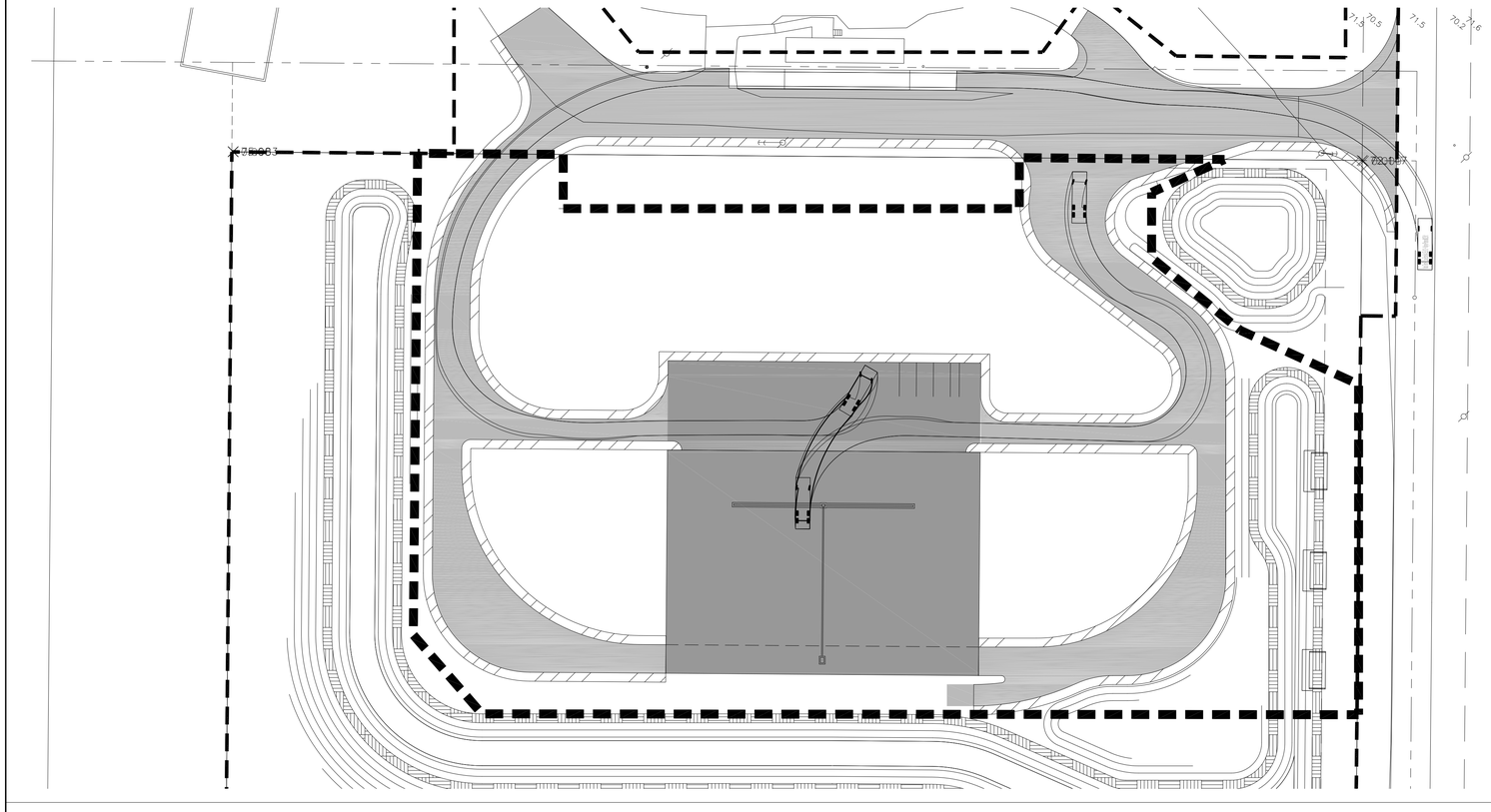
REVISIONS

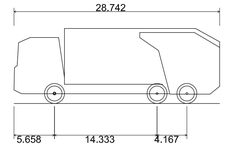
DATE	BY	DESCRIPTION
9-6-18	PRW	ADDED SEWER LATERAL FROM RECYCLE CENTER AND NOTES
9-28-18	PRW	MINOR INVERT ADJUSTMENTS- SEWER
10-03-18	PRW	MINOR INVERT ADJUSTMENTS- SEWER

24x36 SCALE: 1" = 40'
11x17 SCALE: 1" = 80'
0 20' 40'

SEAL:
Juan C. Guerra, P.E.
Fla. Reg. # 0041000
Date:

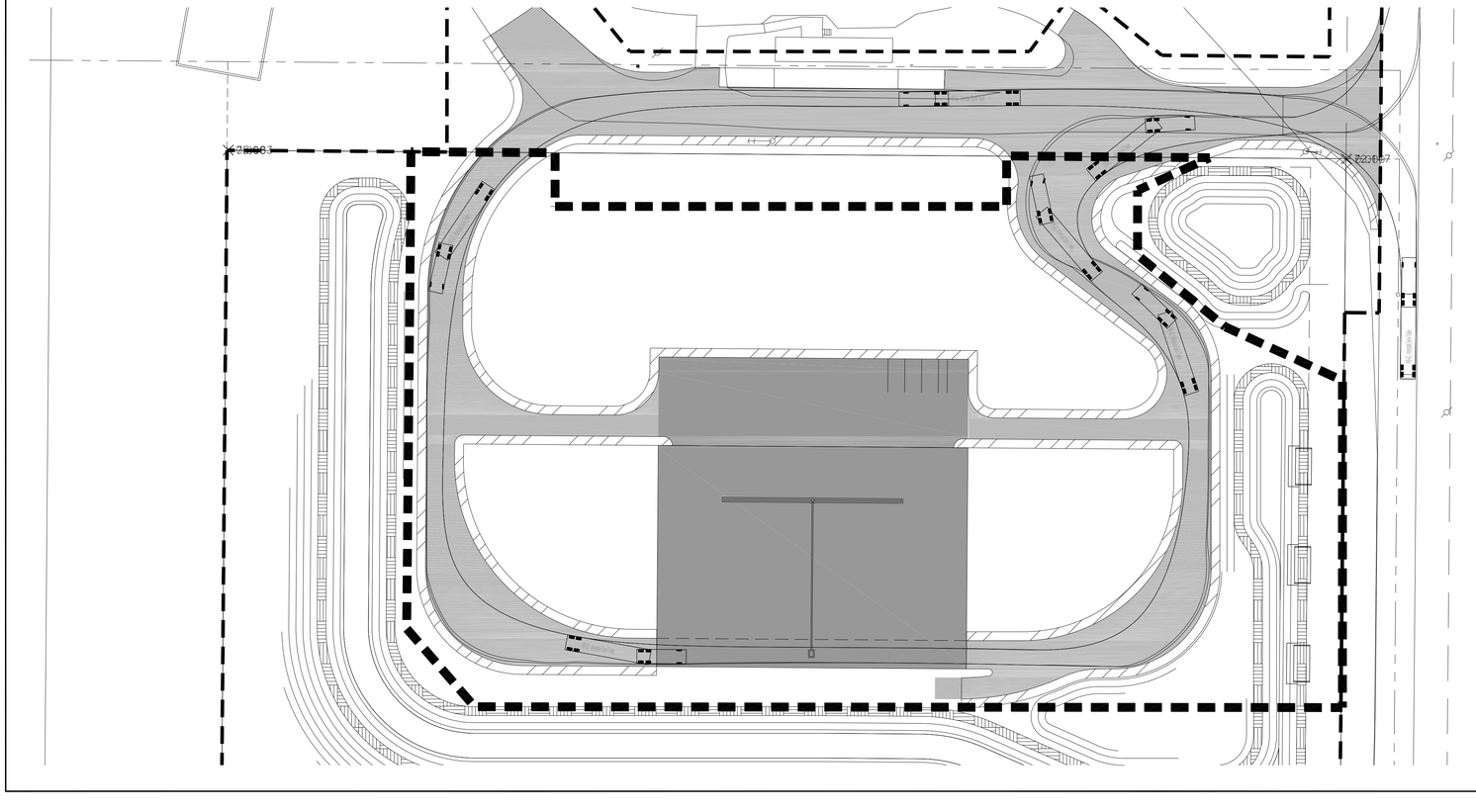
ENGINEER OF RECORD:
GDC
Consulting Engineering
2817 NE 3rd St. Ocala, Florida 34470
(352) 629-8060 Phone
GDC@GuerraCorp.net
State of Florida Certificate of Authorization #4954

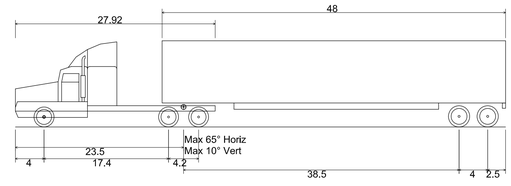




Mack TerraPro Low Entry 6x4 LEU 613 + Wayne Phoenix III 25Yd

Overall Length	28.742ft
Overall Width	8.000ft
Overall Body Height	10.481ft
Min Body Ground Clearance	1.311ft
Track Width	8.000ft
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	34.000ft





WB-62 - Interstate Semi-Trailer

Overall Length	68.500ft
Overall Width	8.500ft
Overall Body Height	12.052ft
Min Body Ground Clearance	1.334ft
Max Track Width	8.500ft
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	45.000ft

SHEET TITLE: TRUCK MOVEMENT
PROJECT: CITY WIDE RECYCLING
DESIGNED BY: AMM
CHECKED BY: PRW / JCG
DATE: JAN. 22, 2018
DRAWN BY: AMM
APPROVED BY: JCG
GDC DWG NAME: 17-04_SITE
CLIENT: NICK GIUMARELLI
JOB NO: 17-04
SHEET NO: C007 of C012

REVISIONS

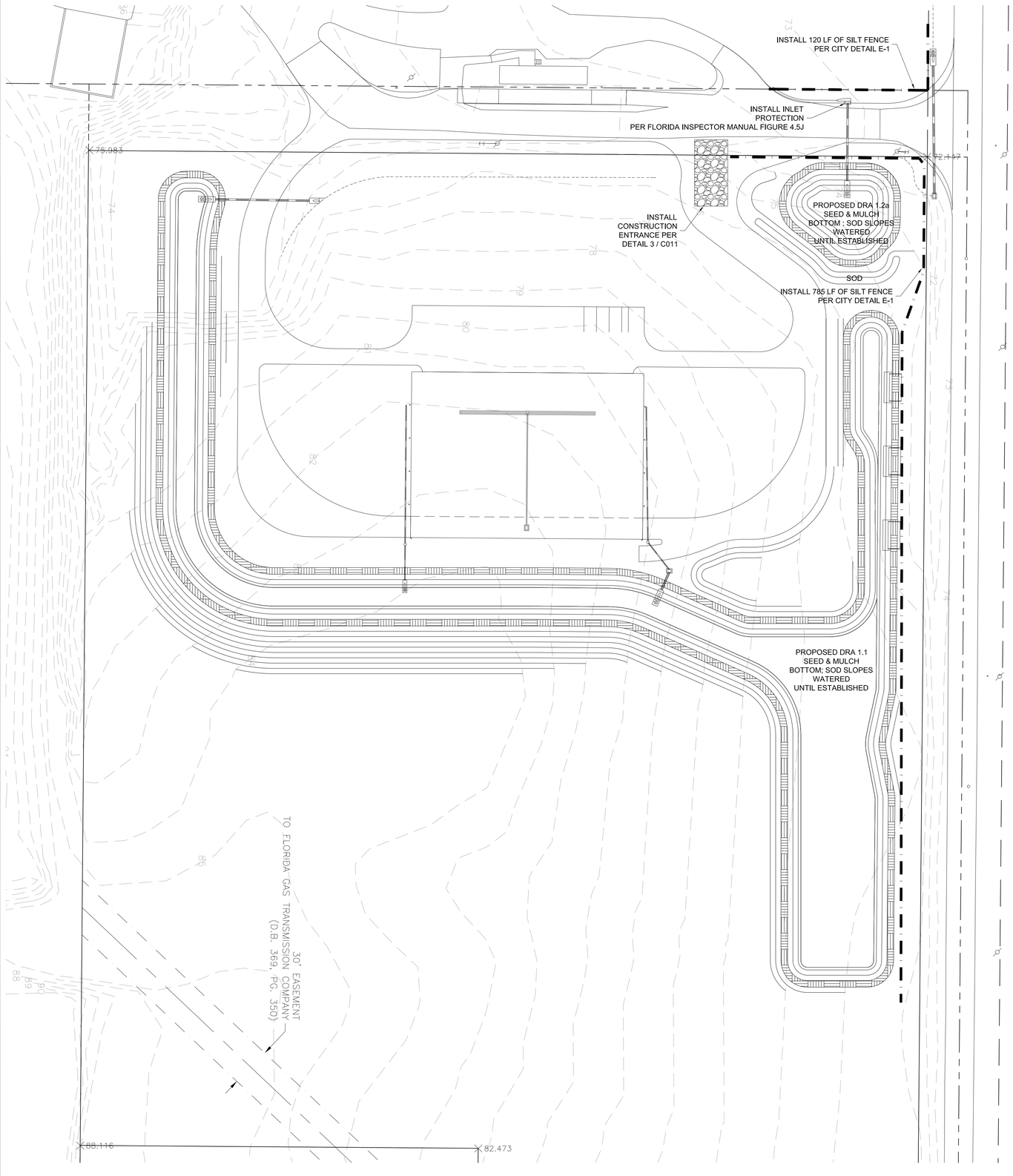
DESCRIPTION	BY	DATE

24x36 SCALE: 1" = 40'
11x17 SCALE: 1" = 80'
0 20' 40'

SEAL:

Juan C. Guerra, P.E.
Fla. Reg. # 0041000
Date:

ENGINEER OF RECORD:
Consulting Engineering
2817 NE 3rd St. Ocala, Florida 34470
(352) 629-8060 Phone
GDC@GuerraDorpint.net
State of Florida Certificate of Authorization #4954



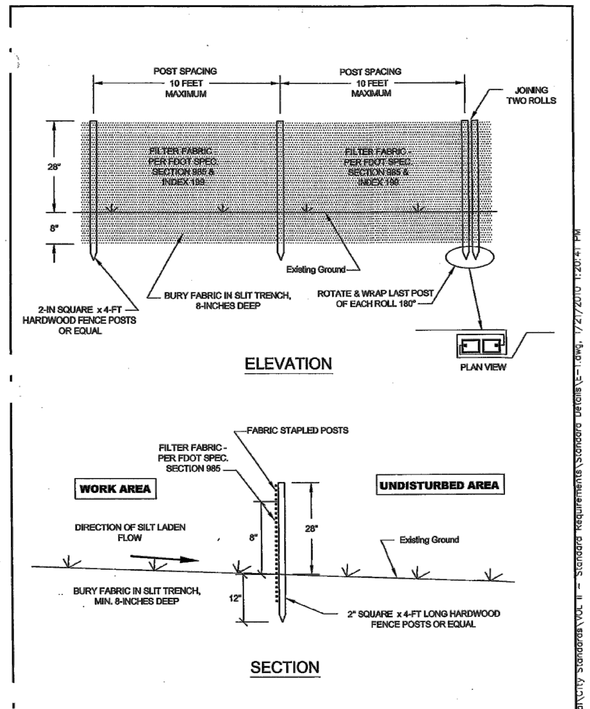
EROSION CONTROL NOTES

1. THE PURPOSE OF THIS PLAN IS TO ESTABLISH MINIMUM CONTROLS TO PROVIDE ASSURANCE THAT EROSION SHALL BE MINIMIZED AND SEDIMENTATION CONTROLLED DURING CONSTRUCTION.
2. IN ADDITION TO THIS EROSION CONTROL PLAN ALL PROJECTS THAT HAVE:

   A.) CONTRIBUTION OF STORMWATER DISCHARGES TO SURFACE WATERS OF THE STATE OR INTO A MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4); AND

   B.) DISTURBANCE OF ONE OR MORE ACRES OF LAND. LESS THAN ONE ACRE ALSO IS INCLUDED IF THE ACTIVITY IS PART OF A LARGER COMMON PLAN OF DEVELOPMENT OR SALE THAT WILL EXCEED THE ONE ACRE THRESHOLD. DISTURBANCE INCLUDES CLEARING, GRADING, AND EXCAVATING.
3. SHALL OBTAIN A NPDES PERMIT AND DEVELOP AND IMPLEMENT A STORMWATER POLLUTION PREVENTION PLAN (SWPPP). IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN THE PERMIT, DEVELOP THE SWPPP, AND IMPLEMENT BEST MANAGEMENT PRACTICES AS THE OPERATOR OF THE CONSTRUCTION SITE.
4. COVERAGE UNDER THE GENERIC PERMIT FOR CONSTRUCTION ACTIVITIES MAY BE OBTAINED ELECTRONICALLY USING DEP'S INTERACTIVE NOTICE OF INTENT (INOI) AVAILABLE AT HTTP://WWW.DEP.STATE.FL.US/WATER/STORMWATER/NPDES/INDEX.HTM
5. PRIOR TO START OF CONSTRUCTION ACTIVITIES, SILT FENCING SHALL BE INSTALLED AT LOCATIONS SHOWN ON THESE DRAWINGS. THE OWNER, THROUGH THE ENGINEER OF RECORD MAKE MAKE DELETIONS OR ADDITIONS TO THE SCOPE OF THESE PLANS.
6. TO MINIMIZE THE POTENTIAL FOR ADVERSE FLOODING TO ADJOINING PROPERTIES, THE STORMWATER SYSTEM SHALL BE CONSTRUCTED IN THE FOLLOWING SEQUENCE:

   6.1. DRAINAGE RETENTION AREAS, CONSTRUCTED TO ACCEPT SITE RUNOFF AND NOT CREATE ADVERSE FLOODING TO ADJACENT PROPERTIES.
   6.2. DOWNSTREAM PORTIONS OF SWALES AND STORMWATER PIPES
   6.3. REMAINDER OF STORMWATER SYSTEM.
7. CONTRACTOR SHALL USE FLORIDA EROSION AND SEDIMENTATION CONTROL INSPECTOR'S MANUAL (FESCIM) FOR REFERENCE DETAILS.
8. DRA'S SHALL BE EXCAVATED TO WITHIN 6"-12" OF THEIR FINAL BOTTOM ELEVATION. THE CONTRACTOR IS HEREBY NOTIFIED THAT THIS REQUIREMENT CAN ONLY BE MODIFIED BY THE ENGINEER OF RECORD. THE PROJECT WILL NOT BE CERTIFIED WITHOUT REMEDIAL MEASURES IF THIS CONSTRUCTION SEQUENCE IS NOT FOLLOWED.
9. CONTRACTOR SHALL PROTECT ALL PRIVATE PROPERTY FROM EROSION DURING WATER MAIN INSTALLATION WITH SILT FENCE AS NEEDED.
10. DURING CONSTRUCTION CONTRACTOR SHALL COORDINATE STORAGE AND STAGING OF CONSTRUCTION MATERIALS WITH OWNER. LOCATION SHALL BE WITHIN PARCEL NO. 21492-000-00 OR 21480-000-00. ALL MATERIALS SHALL BE STORED IN AN ORDERLY FASHION.
11. CONTRACTOR SHALL DEVELOP AND IMPLEMENT A PLAN TO ASSURE THAT ALL WASTE, SUCH AS DISCARDED BUILDING MATERIALS, CONCRETE TRUCK WASH-OUT, CHEMICALS, LITTER AND SANITARY WASTE, ARE PROPERLY CONTROLLED WHILE ON-SITE AND TRANSPORTED AND DISPOSED OF (OFF-SITE) IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. NO WASTE MATERIALS OF ANY KIND ARE PERMITTED TO BE BURIED ON-SITE OR DISCHARGED TO SURFACE WATERS OF THE STATE OR TO THE CITY STORM WATER SYSTEM.
12. CONTRACTOR SHALL PERIODICALLY SWEEP EXISTING ON-SITE PAVED SURFACES AS WELL AS ALL ABUTTING CITY STREETS, COUNTY ROADS AND STATE HIGHWAYS (AS APPROPRIATE FOR THE PARTICULAR PROJECT) TO KEEP THOSE SURFACES IN A SUBSTANTIALLY SEDIMENT-FREE CONDITION. SWEEPING SHALL BE DONE ON A PERIODIC, AS-NEEDED BASIS THROUGHOUT THE WORK WEEK INCLUDING, MOST IMPORTANTLY, AFTER EVERY RAIN EVENT AND EVERY FRIDAY AFTERNOON PRIOR TO CEASING WORK FOR THE WEEK.
13. NO SITE WORK SHALL BE CONDUCTED PRIOR TO OBTAINING A SITE PERMIT FROM THE CITY. CALL THE CITY GROWTH MANAGEMENT DEPARTMENT @ 352.629.8421 TO SCHEDULE THE PRE-CONSTRUCTION MEETING WHICH MUST BE HELD BEFORE INSTALLING ANY REQUIRED EROSION CONTROLS OR OBTAINING ANY SITE PERMITS.



CITY OF OCALA STANDARD — SILT FENCE — E-1 — Version of JAN. 25, 2010

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SHEET TITLE: EROSION CONTROL
PROJECT: CITY WIDE RECYCLING
DESIGNED BY: AMM
DRAWN BY: AMM
CHECKED BY: PRW / JCG
APPROVED BY: JCG
DATE: MAR. 2, 2018
JOB NO: 17-04
GDC DWG NAME: 17-04_SITE
CLIENT: NICK GIUMARELLI
SHEET NO: C008 of C012

REVISIONS:

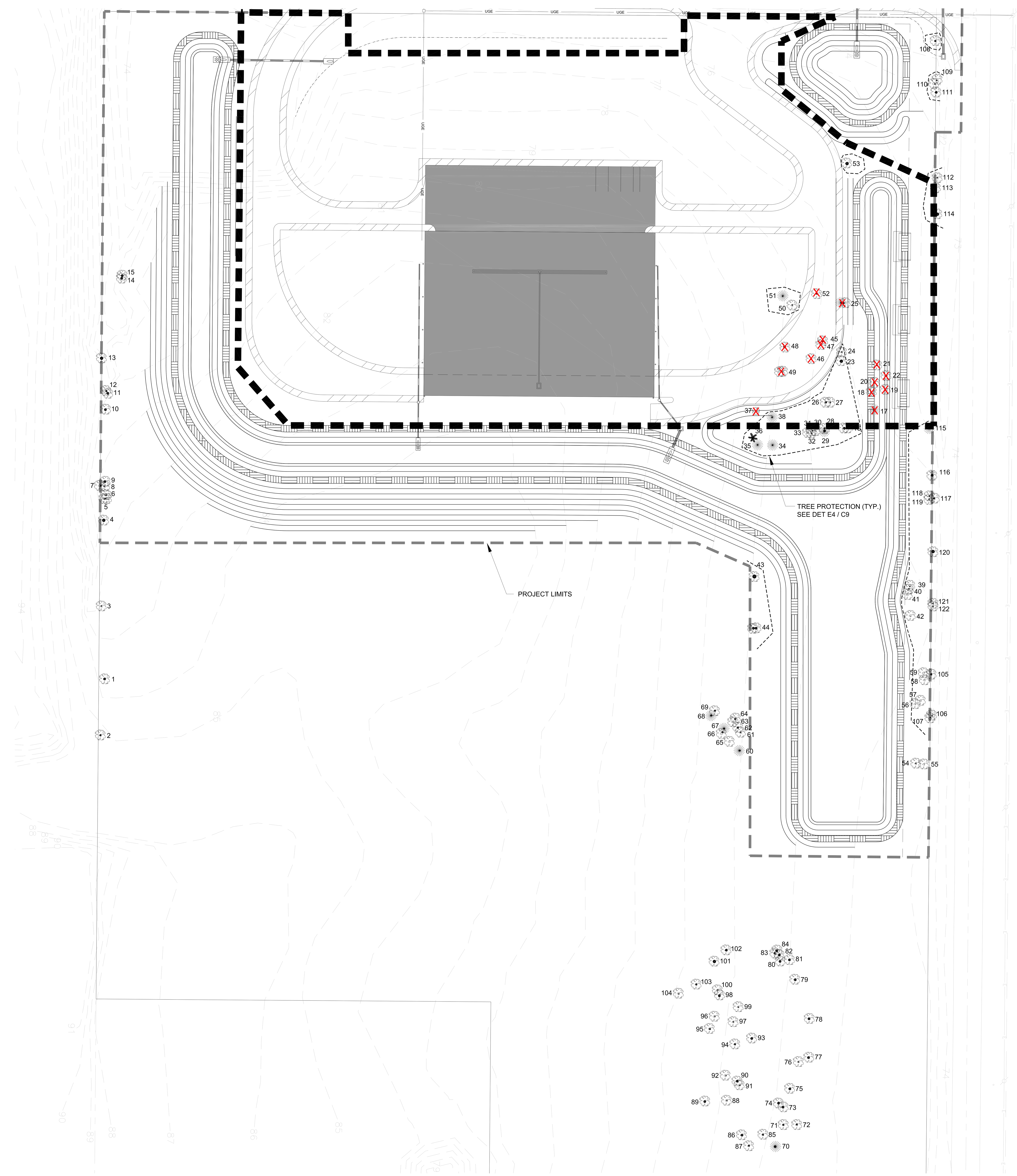
DESCRIPTION	BY	DATE

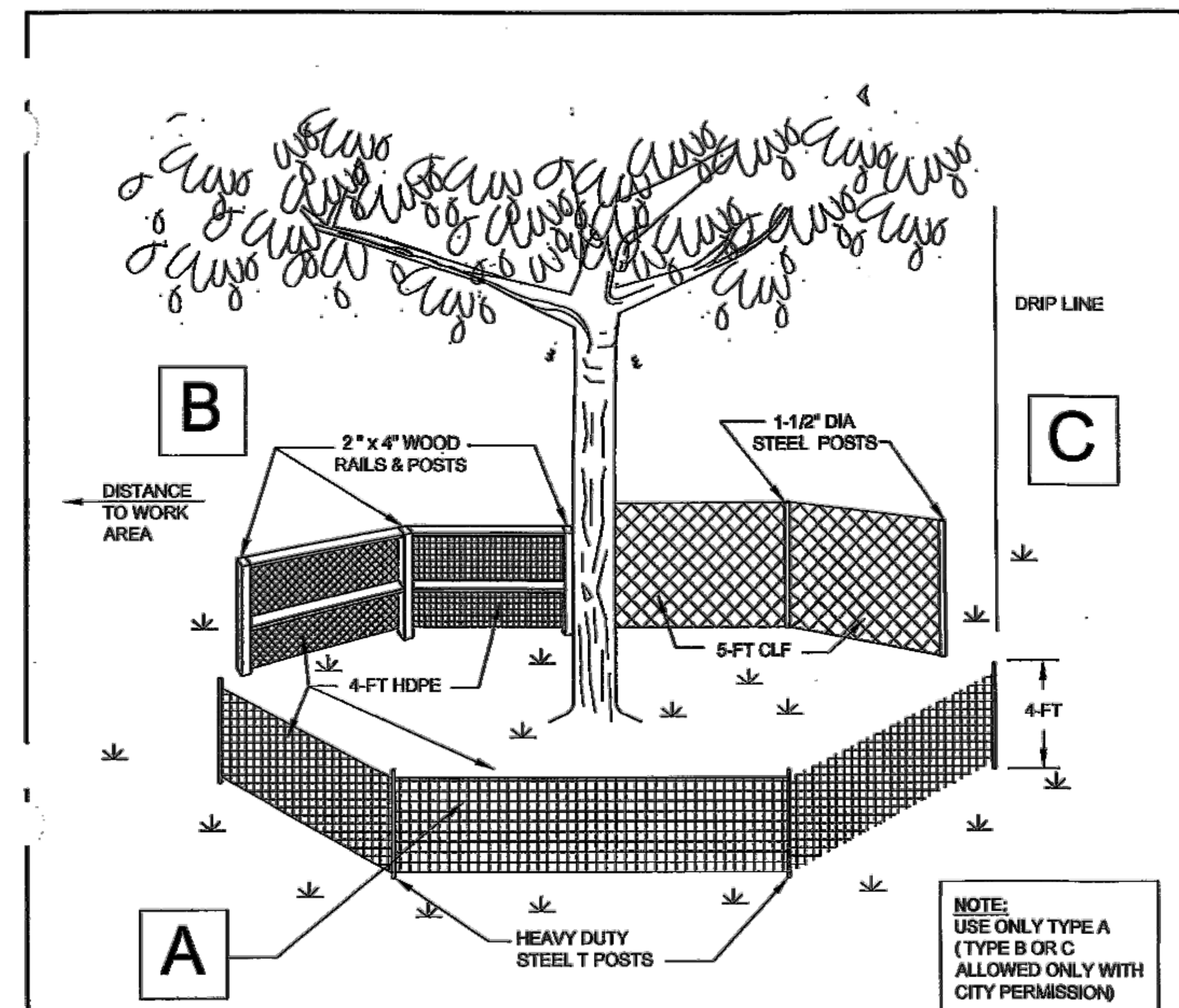
24x36 SCALE: 1" = 30'
11x17 SCALE: 1" = 60'
0 15' 30'

SEAL:

Juan C. Guerra, P.E.
Fla. Reg. #0041000
Date:

ENGINEER OF RECORD:
Consulting Engineering
2817 NE 3rd St. Ocala, Florida 34470
(352) 629-8060 Phone
GDC@GuerraCorp.net
State of Florida Certificate of Authorization #4454
GDC





GENERAL LAYOUT OF FENCE TYPES

TREE PROTECTION FENCE TYPE CHART							
FENCE TYPE	FENCE FABRIC MATERIAL	SET FENCE AT	DISTANCE TO WORK AREA	FENCE HEIGHT (MIN.)	POST TYPE	POST SPACING (MAX.)	MIDDLE & TOP SUPPORT
A STANDARD	HDPE HEAVY-DUTY ORANGE CONSTRUCTION BARRIER	DRIP LINE	10-FEET OR MORE	4-FEET	H-DUTY T-POST	8-FEET	16 GAUGE WIRE
B	HDPE HEAVY-DUTY ORANGE CONSTRUCTION BARRIER	90% OF DRIP LINE	5-FEET	4-FEET	2" x 4" WOOD	12-FEET	2"x 4" WOOD
C	GALVANIZED STEEL CHAIN LINK	75% OF DRIP LINE	3-FEET OR LESS	5-FEET	1-1/2" DIA. STEEL	12-FEET	NONE

CITY OF OCALA STANDARD — TREE PROTECTION — E-4 — Version of JAN. 21, 2010

Tree Preservation Table

ID	TYPE	STATUS
1	24" OAK	*
2	20" OAK	*
3	14" OAK	*
4	30" OAK	Save
5	TWIN 12" OAK	Save
6	12" OAK	Save
7	18" OAK	Save
8	10" OAK	Save
9	24" OAK	Save
10	24" OAK	Save
11	26" OAK	Save
12	20" OAK	Save
13	28" OAK	Save
14	24" OAK	Save
15	26" OAK	Save
16	24" & 14" OAK	Save
17	14" PINE	Remove
18	14" OAK	Remove
19	14" OAK	Remove
20	10" OAK	Remove
21	10" OAK	Remove
22	12" OAK	Remove
23	28" OAK	Save
24	14" OAK	Save
25	20"PINE & 18"OAK	Remove
26	16" OAK	Save
27	10" OAK	Save
28	16" OAK	Save
29	24" PINE	Save
30	8" OAK	Save
31	10" OAK	Save
32	12" OAK	Save
33	8" OAK	Save
34	14" PINE	Save
35	12" PINE	Save
36	10" PALM	Save
37	10" ELM	Remove
38	10" PINE	Save
39	10" OAK	Save
40	10" OAK	Save
41	6" OAK	Save
42	8" OAK	Save
43	38" OAK	Save
44	26" & 24" OAK	Save
45	10" OAK	Remove
46	12" OAK	Remove
47	8" OAK	Remove
48	24" OAK	Remove
49	6" & 10" OAK	Remove
50	10" OAK	Save
51	14" PINE	Save
52	18" OAK	Remove
53	30" OAK	Save
54	10" OAK	Save
55	8" OAK	Save
56	8" OAK	Save
57	8" OAK	Save
58	8" OAK	Save
59	8" OAK	Save
60	16" PINE	*
61	12" OAK	*

* OUTSIDE PROJECT LIMITS

Tree Preservation Table

ID	TYPE	STATUS
62	18" OAK	*
63	8" OAK	*
64	15" OAK	*
65	7" OAK	*
66	15" OAK	*
67	16" PINE	*
68	20" PINE	*
69	18" OAK	*
70	24" PINE	*
71	16" OAK	*
72	16' OAK	*
73	24" OAK	*
74	26" OAK	*
75	24" OAK	*
76	10" OAK	*
77	24" OAK	*
78	22" OAK	*
79	26" OAK	*
80	24" OAK	*
81	26" OAK	*
82	24" OAK	*
83	16" OAK	*
84	22" OAK	*
85	18" OAK	*
86	22" OAK	*
87	16" OAK	*
88	12" OAK	*
89	26" OAK	*
90	24" OAK	*
91	10" OAK	*
92	14" OAK	*
93	26" OAK	*
94	20" OAK	*
95	16" OAK	*
96	12" OAK	*
97	12" OAK	*
98	24" OAK	*
99	14" OAK	*
100	10" OAK	*
101	28" OAK	*
102	22" OAK	*
103	20" OAK	*
104	12" OAK	*
105	16" OAK	Save
106	10" OAK	Save
107	14" OAK	Save
108	20" OAK	Save
109	12" OAK	Save
110	12" OAK	Save
111	24" OAK	Save
112	10" OAK	Save
113	22" OAK	Save
114	30" OAK	Save
115	14" PINE	Save
116	22" OAK	Save
117	20" OAK	Save
118	12" OAK	Save
119	12" OAK	Save
120	30" OAK	Save
121	10" OAK	Save
122	12" OAK	Save

TREE LEGEND:
- OAK
- PINE
- PALM
- ELM

TREE CALCULATIONS

GENERAL REQUIREMENTS
INDUSTRIAL USE 1 TREE / 7500 SF
PROJECT AREAS = (145,640 SF + 179,753 SF) = 325,393 SF/7500 SF = 43 TREES REQUIRED

EXISTING SHADE TREES = 114 (EXCLUDING PINE / PALM FROM TABLE)
EXISTING SHADE TREES IN PROJECT AREAS = 70

PRESERVATION OF EXISTING TREES
70 TREES/(3.34AC+4.12AC)= 9.38 TREES/ACRE
THEREFORE, MINIMUM REQUIRED TO BE SAVED = 4 TREES / ACRES

(3.34AC + 4.12 AC) X 4 = 30 TREES REQUIRED

SHADE TREES TO BE REMOVED = 13

SHADE TREES TO BE SAVED = 57 , OKAY

ADDITIONAL
SHADE TREES TO BE PLANTED= 6 (LIVE OAK)
TOTAL TREES SAVED & PLANTED = 63

SEE LANDSCAPING & IRRIGATION (SHT. C010) FOR PLANTING LOCATION(S)

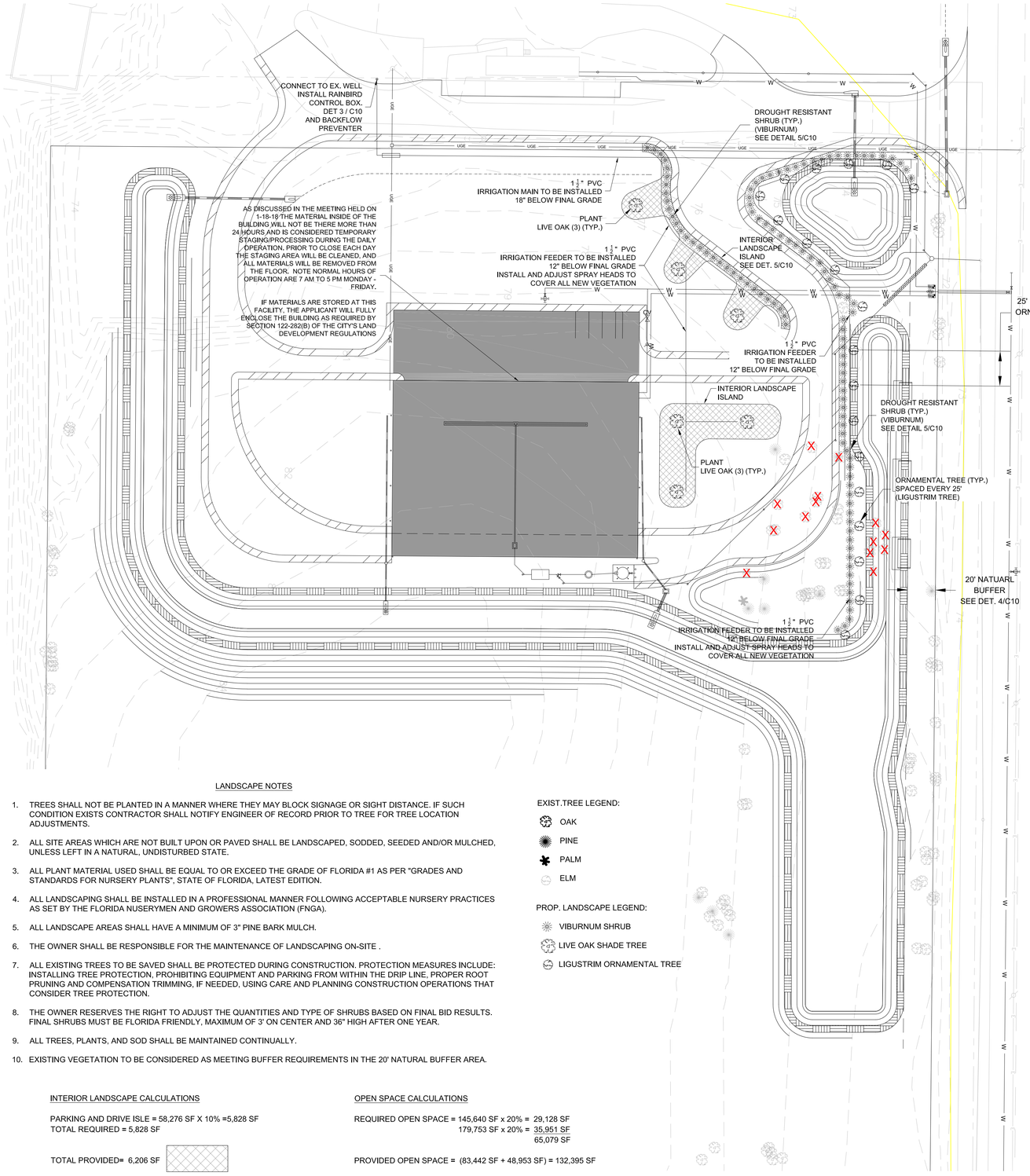
REVISIONS		
DATE	BY	DESCRIPTION

HORIZ. SCALE: 1" = 40'
VERT. SCALE: N.A.
0 20' 40'

SEAL:
Juan C. Guerra, P.E.
Fla. Reg. # 0041000
Date:

ENGINEER OF RECORD:
GDC
Consulting Engineering
2817 NE 3rd St. Ocala, Florida 34470
(352) 629-8060 Phone
GDC@GuerraCorp.net
State of Florida Certificate of Authorization #4954

SHEET TITLE: TREE PRESERVATION PLAN
JOB NO: 17-04
PROJECT: CITY WIDE RECYCLING
DESIGNED BY: AMM
DRAWN BY: AMM
GDC DWG NAME: 17-04_TP
CHECKED BY: PRW / JCG
APPROVED BY: JCG
CLIENT: NICK GIUMARELLI
DATE: MAR. 2, 2018
SHEET NO: C009 of C012



LANDSCAPE NOTES

1. TREES SHALL NOT BE PLANTED IN A MANNER WHERE THEY MAY BLOCK SIGNAGE OR SIGHT DISTANCE. IF SUCH CONDITION EXISTS CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD PRIOR TO TREE FOR TREE LOCATION ADJUSTMENTS.
2. ALL SITE AREAS WHICH ARE NOT BUILT UPON OR PAVED SHALL BE LANDSCAPED, SODDED, SEEDED AND/OR MULCHED, UNLESS LEFT IN A NATURAL, UNDISTURBED STATE.
3. ALL PLANT MATERIAL USED SHALL BE EQUAL TO OR EXCEED THE GRADE OF FLORIDA #1 AS PER "GRADES AND STANDARDS FOR NURSERY PLANTS", STATE OF FLORIDA, LATEST EDITION.
4. ALL LANDSCAPING SHALL BE INSTALLED IN A PROFESSIONAL MANNER FOLLOWING ACCEPTABLE NURSERY PRACTICES AS SET BY THE FLORIDA NUSERYMEN AND GROWERS ASSOCIATION (FNGA).
5. ALL LANDSCAPE AREAS SHALL HAVE A MINIMUM OF 3" PINE BARK MULCH.
6. THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF LANDSCAPING ON-SITE .
7. ALL EXISTING TREES TO BE SAVED SHALL BE PROTECTED DURING CONSTRUCTION. PROTECTION MEASURES INCLUDE: INSTALLING TREE PROTECTION, PROHIBITING EQUIPMENT AND PARKING FROM WITHIN THE DRIP LINE, PROPER ROOT PRUNING AND COMPENSATION TRIMMING, IF NEEDED, USING CARE AND PLANNING CONSTRUCTION OPERATIONS THAT CONSIDER TREE PROTECTION.
8. THE OWNER RESERVES THE RIGHT TO ADJUST THE QUANTITIES AND TYPE OF SHRUBS BASED ON FINAL BID RESULTS. FINAL SHRUBS MUST BE FLORIDA FRIENDLY, MAXIMUM OF 3' ON CENTER AND 36" HIGH AFTER ONE YEAR.
9. ALL TREES, PLANTS, AND SOD SHALL BE MAINTAINED CONTINUALLY.
10. EXISTING VEGETATION TO BE CONSIDERED AS MEETING BUFFER REQUIREMENTS IN THE 20' NATURAL BUFFER AREA.

EXIST.TREE LEGEND:

- OAK
- PINE
- PALM
- ELM

PROP. LANDSCAPE LEGEND:

- VIBURNUM SHRUB
- LIVE OAK SHADE TREE
- LIGUSTRIM ORNAMENTAL TREE

INTERIOR LANDSCAPE CALCULATIONS

PARKING AND DRIVE ISLE = 58,276 SF X 10% =5,828 SF
TOTAL REQUIRED = 5,828 SF

TOTAL PROVIDED= 6,206 SF

OPEN SPACE CALCULATIONS

REQUIRED OPEN SPACE = 145,640 SF x 20% = 29,128 SF
179,753 SF x 20% = 35,951 SF
65,079 SF

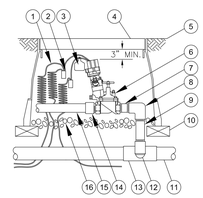
PROVIDED OPEN SPACE = (83,442 SF + 48,953 SF) = 132,395 SF

PLANTING SCHEDULE

QTY	PLANT TYPE	SIZE	CANOPY/SPACING	HT.
6	LIVE OAK SHADE TREE (B&B)	3.5 MIN CAL	6-8' SPREAD	13-15'
19	LIGUSTRIM TREE ORNAMENTAL (#30 /B&B)	1.5 MIN CAL	5' SPREAD	9'+
222	VIBURNUM DROUGHT RESISTANT SHRUB	#3	18"-24" SPREAD 3' OFF CENTER	18"-24"

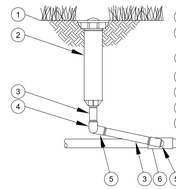
IRRIGATION NOTES

1. THE IRRIGATION SYSTEM SHALL BE INSTALLED TO PROVIDE FULL COVERAGE OF NEW TREES, SHRUBS, AND SOD WITHIN THE BUFFER AREAS, LANDSCAPE ISLANDS, AND RIGHT-OF-WAY. THE SOD IN THE DRA MUST BE WATERED UNTIL ESTABLISHED AND IS NOT COVERED BY THIS PLAN.
2. ALL POP-UP SPRAY HEADS SHALL BE ADJUSTED TO TARGET VEGETATION, INCLUDING CONTROLLING THE SPRAY ANGLE, AND ADDING RISERS AS NEEDED.
3. THE IRRIGATION MAIN LINES SHALL BE A MINIMUM OF 18" BELOW FINAL GRADE AND THE FEEDER LINES SHALL BE A MINIMUM OF 12" BELOW FINAL GRADE.
4. SLEEVES SHALL BE SCHEDULE 40 PVC AND A MINIMUM OF 18" BELOW FINAL GRADE.
5. A RAIN SENSOR SHALL BE INSTALLED WITH THE SYSTEM AND TESTED.
6. ONCE THE SYSTEM HAS BEEN ACCEPTED BY THE OWNER, AND AS-BULTS PROVIDED, THE CONTRACTOR SHALL MONITOR AND ADJUST AS NEEDED DURING THE FIRST 30 DAYS OF OPERATION.
7. ALL LANDSCAPE AREAS SHALL BE IRRIGATED DURING ESTABLISHMENT PERIOD.



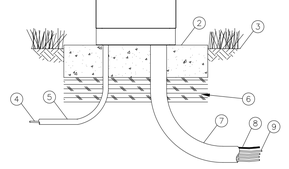
1. 30-INCH LINEAR LENGTH OF WIRE COILED
2. WATERPROOF CONNECTION: RAIN BIRD SPLICE-1 (1 OF 2)
3. ID TAG: RAIN BIRD VID SERIES
4. VALVE BOX WITH COVER: RAIN BIRD VB-STD
5. FINISH GRADE/TOP OF MULCH
6. REMOTE CONTROL VALVE: RAIN BIRD [illegible]
7. PVC SCH 80 NIPPLE (CLOSE)
8. PVC SCH 40 ELL
9. PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
10. BRICK (1 OF 4)
11. PVC MAINLINE PIPE
12. SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND SCH 40 ELL
13. PVC SCH 40 TEE OR ELL
14. PVC SCH 40 MALE ADAPTER
15. PVC LATERAL PIPE
16. 3.0-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL

ELECTRIC R.CONTROL VALVE — NO SCALE — 1/C10



1. FINISH GRADE/TOP OF MULCH
2. POP-UP SPRAY SPRINKLER: RAIN BIRD 1804 WITH RAIN BIRD ROTARY NOZZLE
3. PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
4. PVC SCH 40 ELL
5. PVC SCH 40 STREET ELL
6. PVC SCH 40 TEE OR ELL
7. PVC LATERAL PIPE

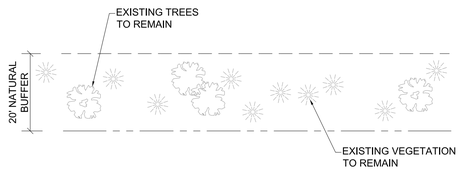
1804 RAINBIRD POP-UP SPRAY — NO SCALE — 2/C10



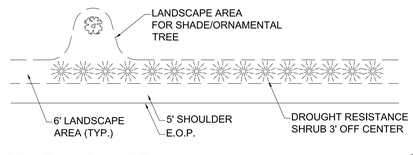
1. IRRIGATION CONTROLLER: RAIN BIRD ESP-LXMEF CONTROLLER WITH FLOW SMART MODULE INLXMM METAL CABINET AND LXMMPED METAL PEDESTAL. INSTALL CONTROLLER, CABINET AND PEDESTAL PER MANUFACTURER'S RECOMMENDATIONS.
2. CONCRETE PAD: 6-INCH MINIMUM THICKNESS
3. FINISH GRADE
4. POWER SUPPLY WIRE
5. 1-INCH SCH 40 PVC CONDUIT, FITTINGS AND SWEEP ELL FOR POWER SUPPLY
6. COMPACTED SUBGRADE
7. 3-INCH SCH 40 PVC CONDUIT, FITTINGS AND SWEEP ELL FOR STATION WIRES
8. FLOW SENSOR WIRE (PE 39, 89 OR 54) TO FLOW SENSOR
9. MASTER VALVE AND REMOTE CONTROL VALVE WIRES

NOTES:
1. ESP-LXMEF CONTROLLER IS AVAILABLE IN 8- OR 12-STATION BASE MODELS. ADDITIONAL MODULES IN 4-, 8- AND 12-STATION VERSIONS MAY BE ADDED TO BRING THE CONTROLLER UP TO 48 STATIONS MAXIMUM.
2. FOR EASE OF INSTALLATION INTO A CONTROLLER WITH MORE THAN 24 STATIONS, INSTALL A JUNCTION BOX AT THE BASE OF CONTROLLER AND TRANSITION LARGER VALVE AND COMMON WIRES FROM FIELD TO 18 AWG MULTI CONDUCTOR WIRE TO BE USED IN CONTROLLER.
3. PROVIDE PROPER GROUNDING COMPONENTS TO ACHIEVE GROUND RESISTANCE OF 10 OHMS OR LESS.

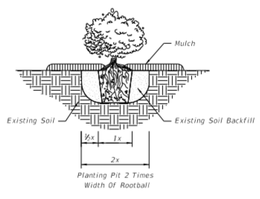
RAINBIRD ESP-LXMEF CONTROLLER — NO SCALE — 3/C10



NATURAL BUFFER — NO SCALE — 4/C10



INTERIOR LANDSCAPE — NO SCALE — 5/C10



GROUND COVER/SHRUB PLANTING

JOB NO: 17-04
SHEET TITLE: LANDSCAPE & IRRIGATION PLAN
PROJECT: CITY WIDE RECYCLING
DESIGNED BY: AMM
DRAWN BY: AMM
CHECKED BY: PRW / JCG
APPROVED BY: JCG
DATE: MAR. 16, 2018
GDC DWG NAME: 17-04_TP
CLIENT: NICK GIUMARELLI
SHEET NO: C010 of C012

REVISIONS

DESCRIPTION	DATE	BY

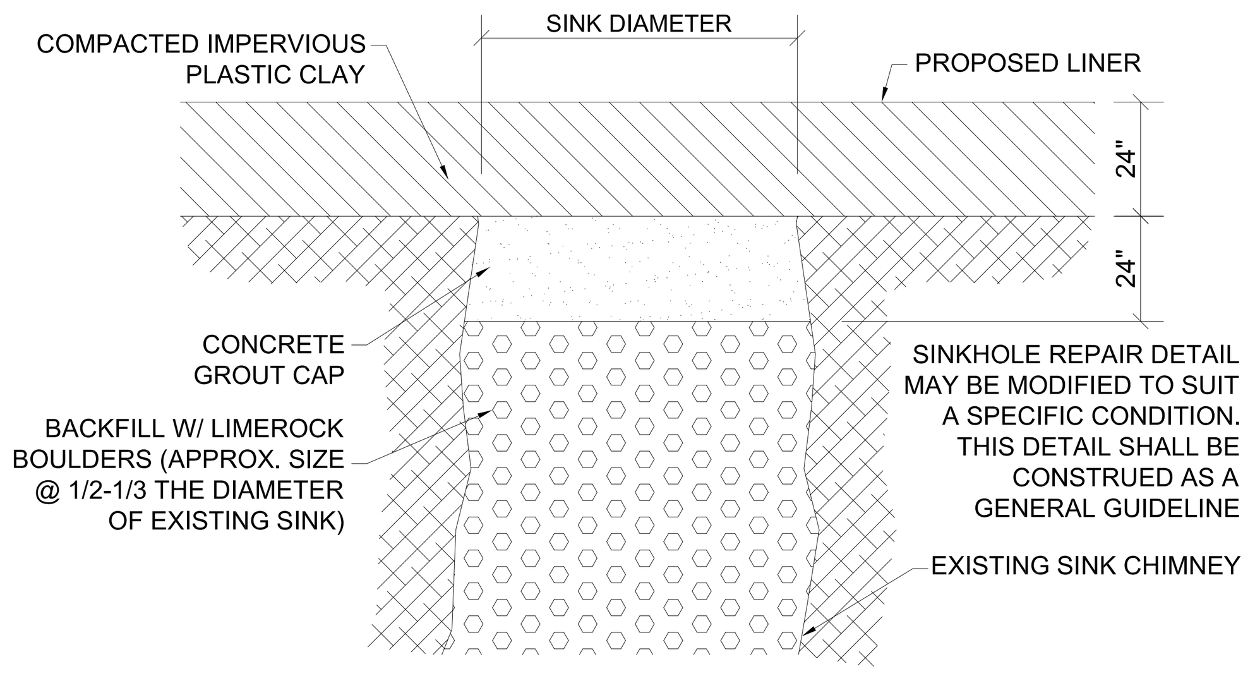
HORIZ. SCALE: 1" = 40'
VERT. SCALE: N.A.
0 20' 40'

SEAL:

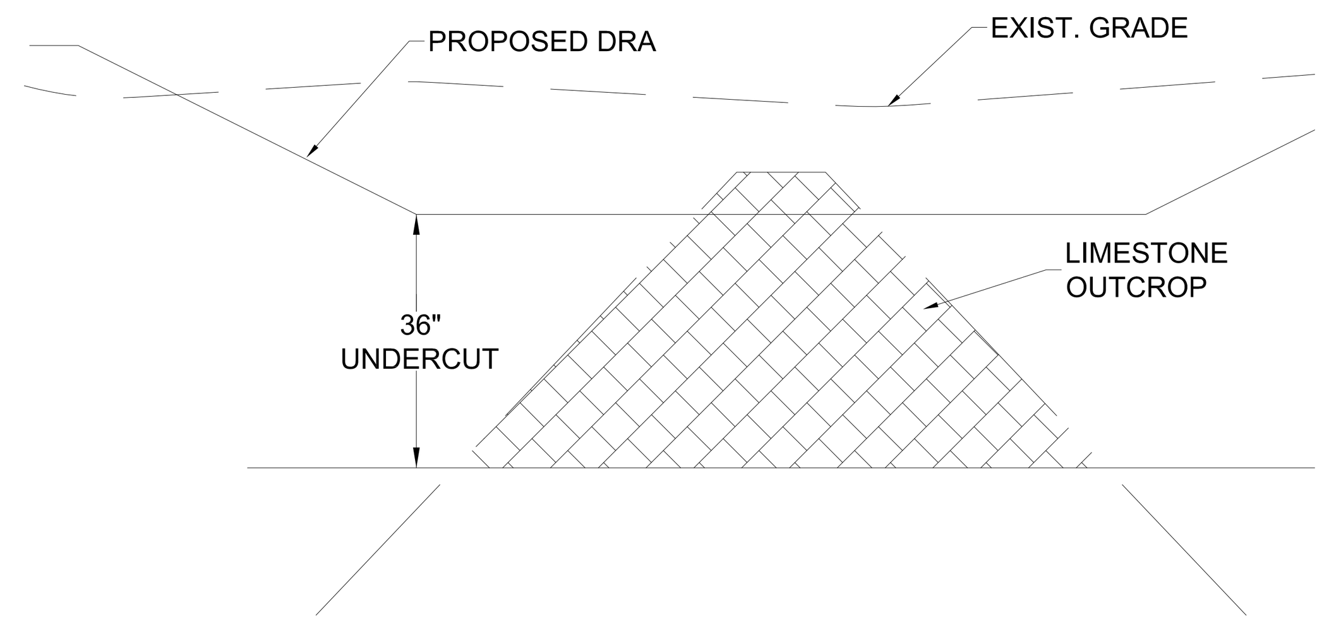
Juan C. Guerra, P.E.
Fla. Reg. # 0041000
Date:

Consulting Engineering
2817 NE 3rd St. Ocala, Florida 34470
(352) 628-8060 Phone
GDC@GuerraCorp.net
State of Florida Certificate of Authorization #4954

ENGINEER OF RECORD: GDC

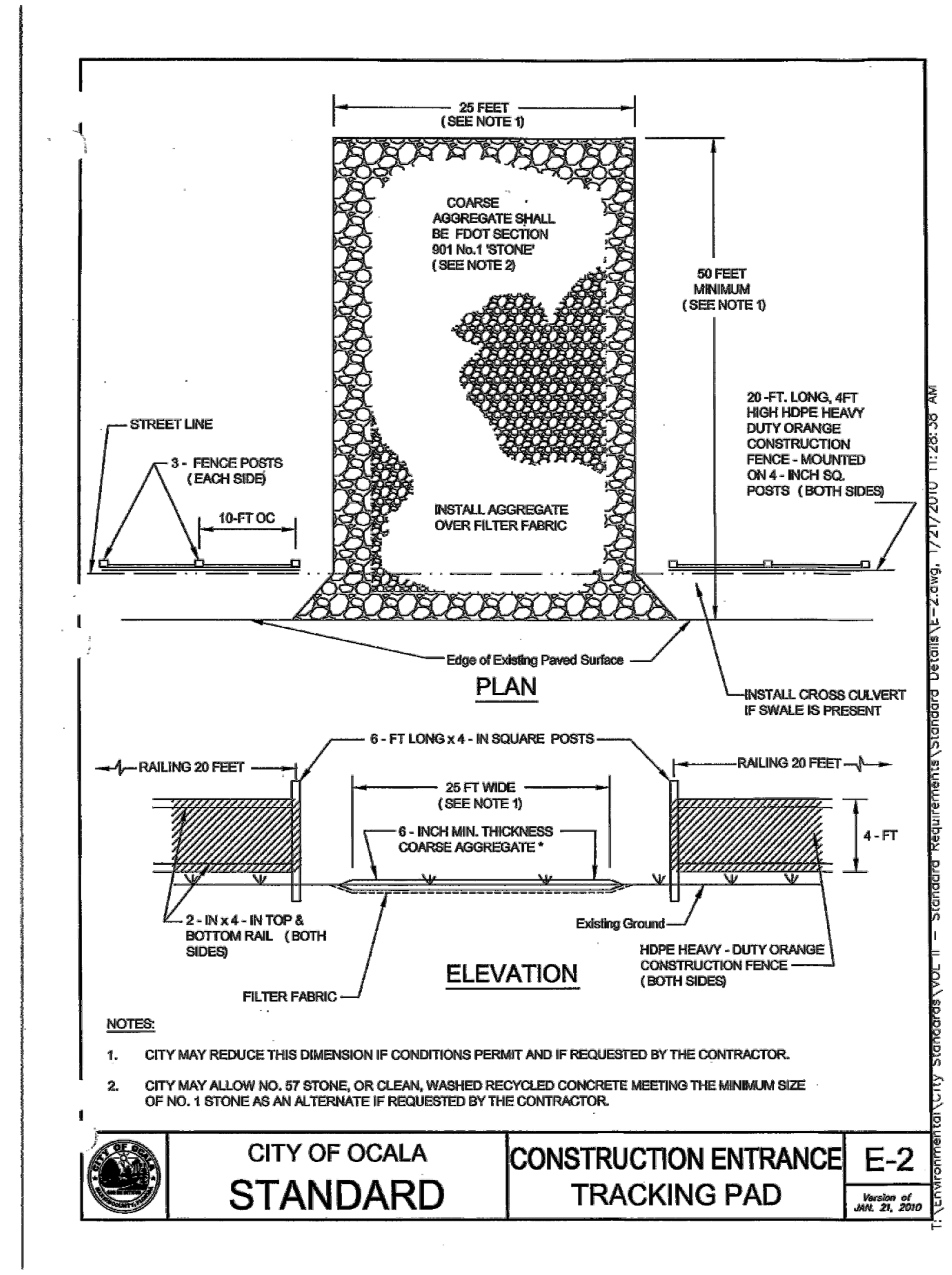


STANDARD SINKHOLE CHIMNEY REPAIR DETAIL
NO SCALE 1 C11

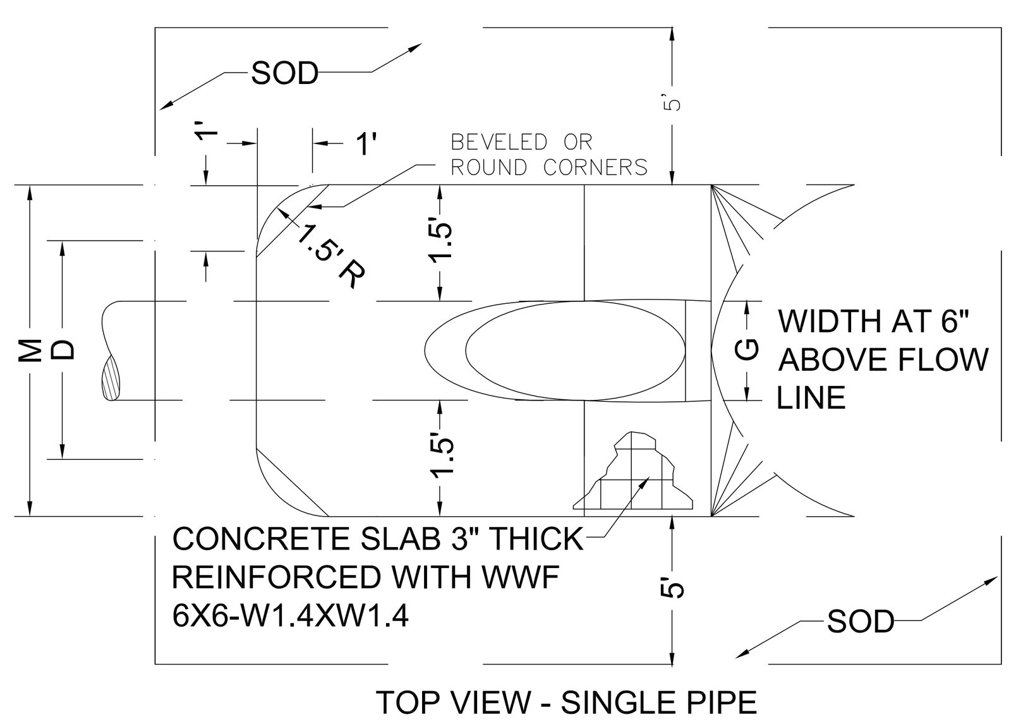


- UNDERCUT LIMESTONE TO CREATE A 36" THICK BARRIER BETWEEN BOTTOM OR SIDE OF DRA & TOP OF LIMESTONE.
- BACKFILL FOR 36" UNDERCUT SHALL BE MADE WITH NATIVE SANDS, UNCONSOLIDATED, MAX 10% FINES, WITH Kh>20FPD

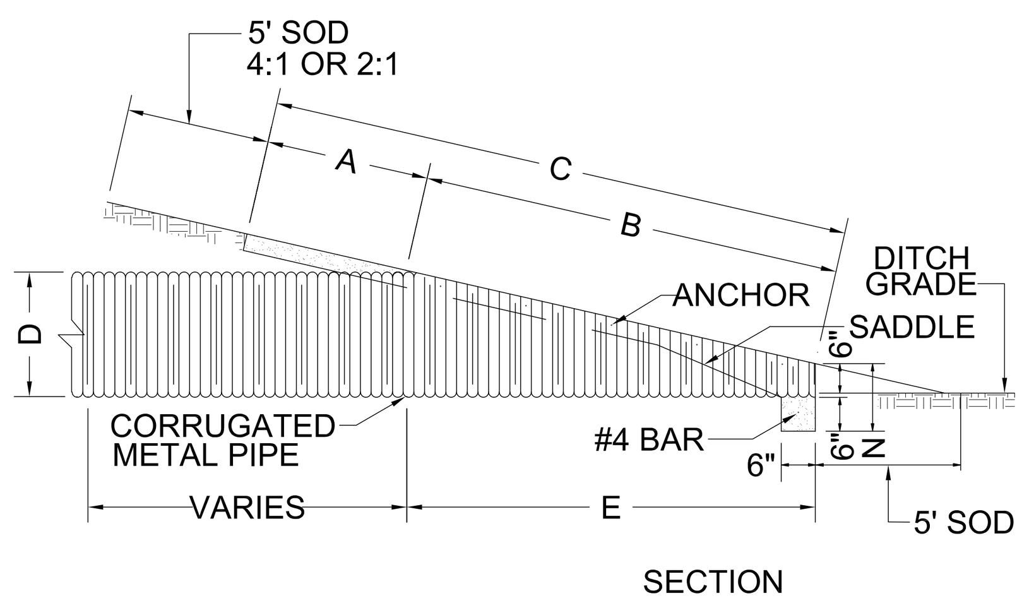
LIMESTONE UNDERCUT AT DRA
NO SCALE 2 C11



GRAVEL DRIVE FOR DRA CONSTRUCTION ACCESS
NO SCALE 3 C11



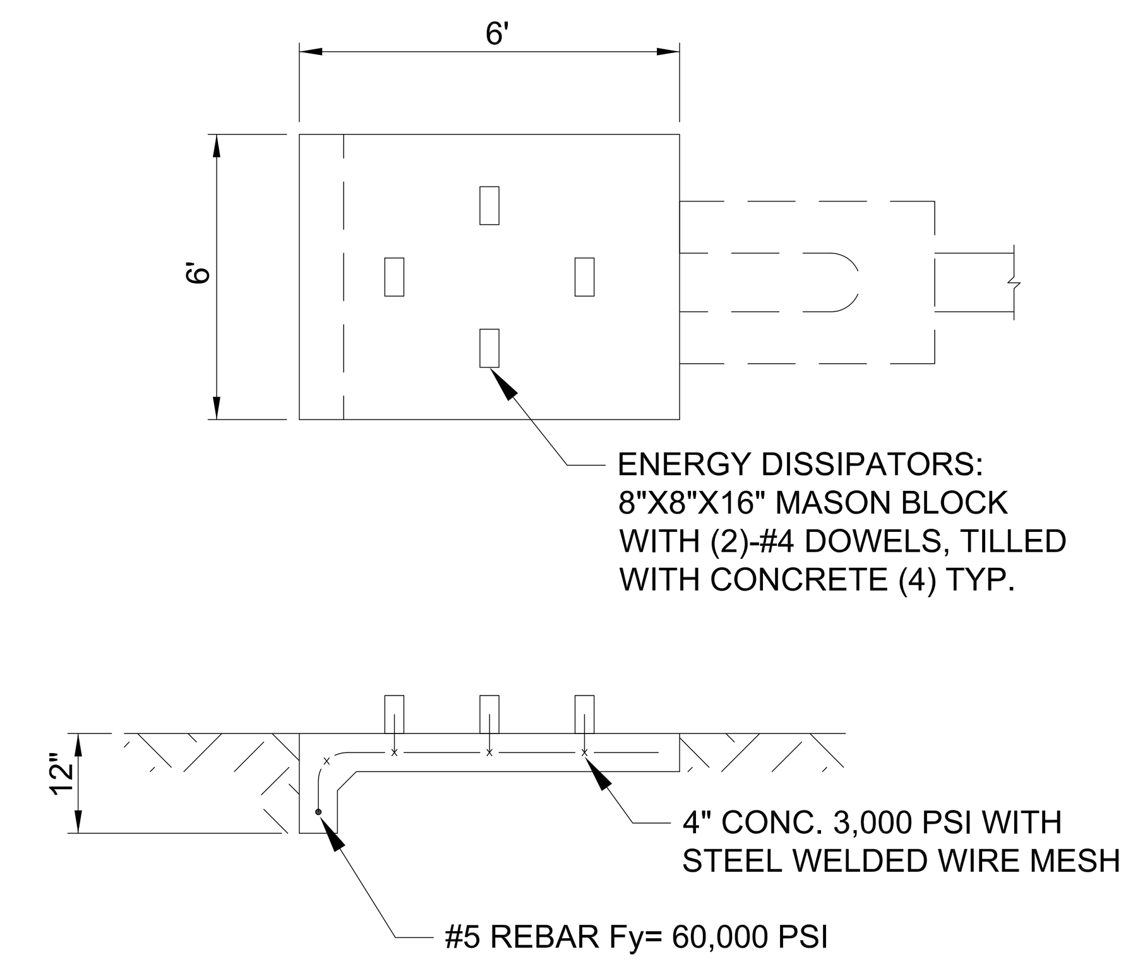
REFER TO INDEX #272 FOR VARIABLE DIMENSIONS GIVEN FOR VARYING PIPE SIZES AND SLOPES AND TYPICAL CONCRETE PIPE APPLICATIONS IN INDEX #273 AS LISTED BELOW.



MITERED ENDS AS PER INDEX NUMBERS 272 AND 273 OF F.D.O.T. ROAD DESIGN STANDARDS MANUAL ARE ALSO PERMITTED.

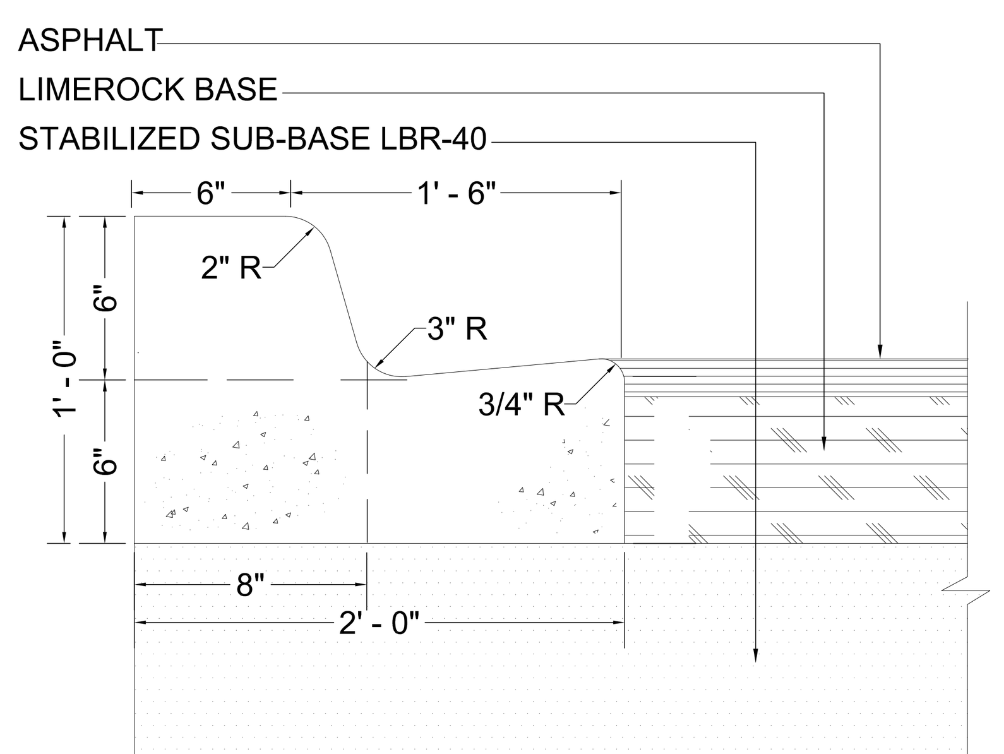
PROVIDE SOLID SODDING AROUND END WALL FOR CROSS DRAINS. SOD SHALL EXTEND OUTWARD FROM THE END WALL TO A DISTANCE OF 10 FEET.

CONCRETE MITERED END SECTION
NO SCALE 4 C11



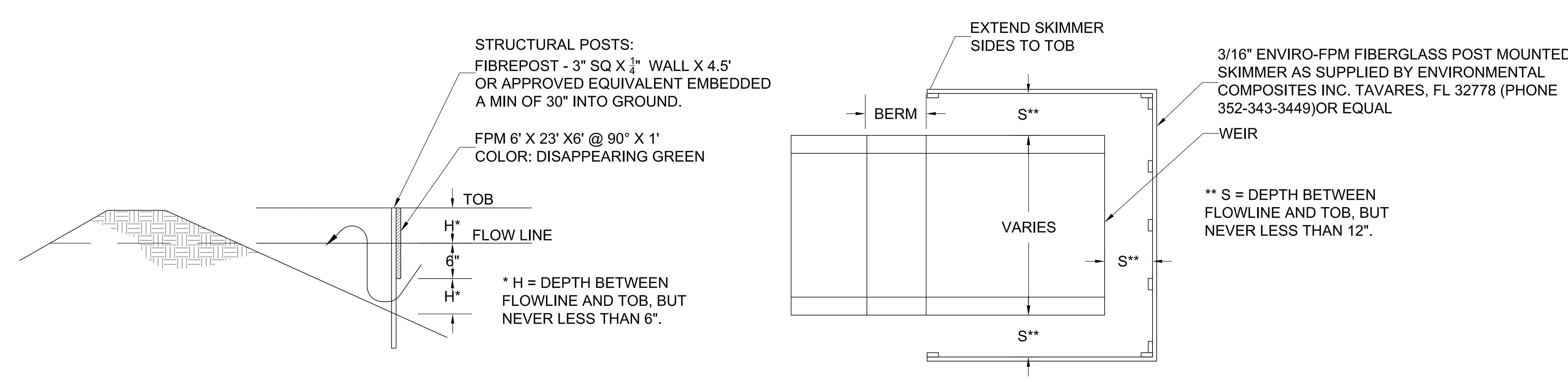
SPLASH PADS #4A

SPLASH PADS
NO SCALE 5 C11

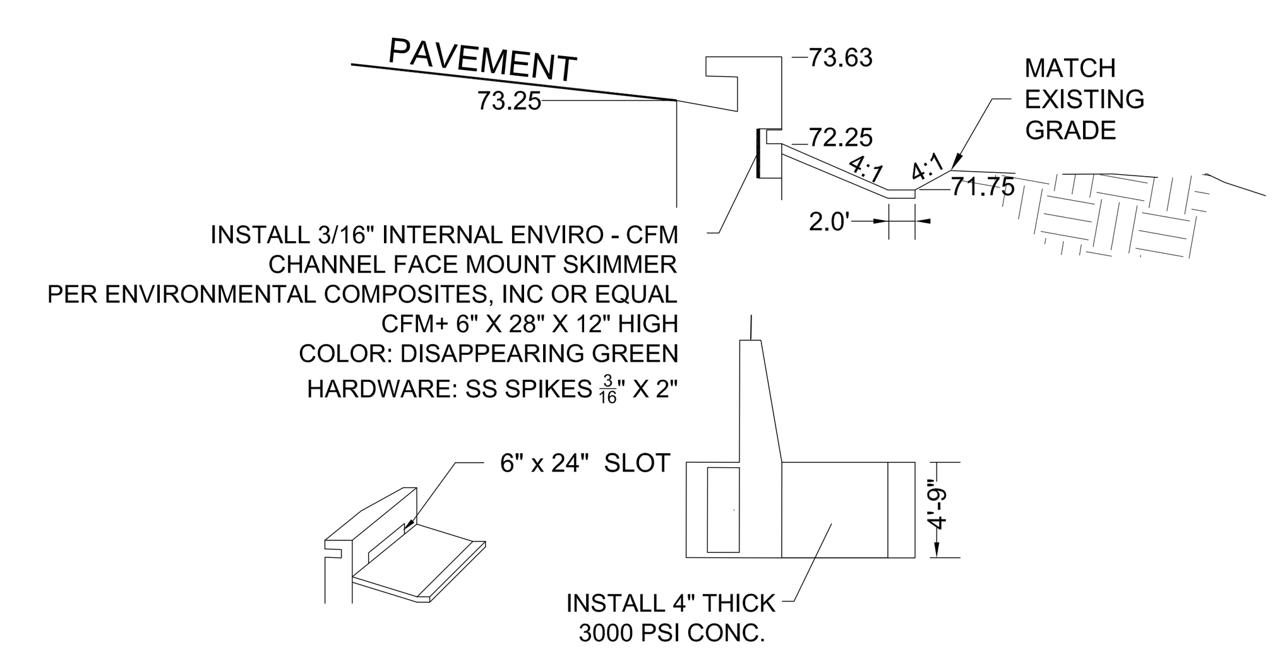


1. WHEN USED ON HIGH SIDE OF ROADWAYS, THE CROSS SLOPE OF THE GUTTER SHALL MATCH THE CROSS SLOPE OF THE ADJACENT PAVEMENT AND THE THICKNESS OF THE LIP SHALL BE 6", UNLESS OTHERWISE SHOWN ON PLANS.
2. SUB-BASE STABILIZATION SHALL BE TYPE B STABILIZATION CONFORMING TO SECTION 160-8 OF THE FLORIDA DOT STANDARD SPECIFICATION (EXCEPT WHEN THE USE OF MECHANICAL ROCK SPREADER IS NOT REQUIRED.)
3. LIMEROCK SHALL BE COMPACTED TO A MINIMUM OF 95% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T - 180.

CONCRETE CURB AND GUTTER TYPE F
NO SCALE 6 C11



POST MOUNTED DISCHARGE SKIMMER
NO SCALE 7 C11



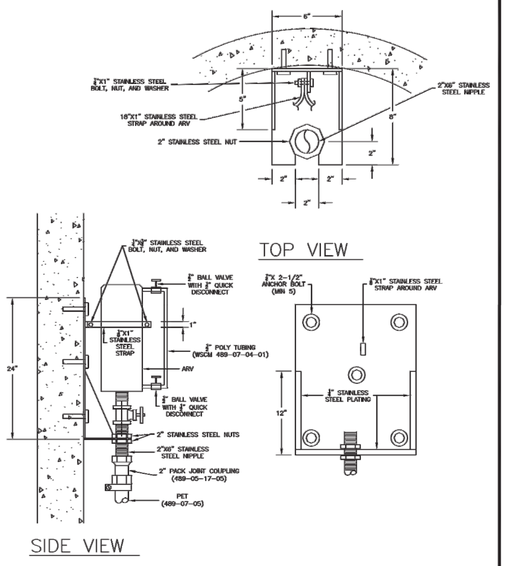
DS.09 MOD DISCHARGE STRUCTURE
NO SCALE 8 C11

SHEET TITLE:	GENERAL DETAILS
PROJECT:	CITY WIDE RECYCLING
JOB NO:	17-04
DESIGNED BY: PRW	DRAWN BY: AMM
CHECKED BY: PRW / JCG	APPROVED BY: JCG
DATE: JAN. 22, 2018	
GDC DWG NAME: Cover_Notes	CLIENT: NICK GUMARELLI
SHEET NO: C011 of C012	

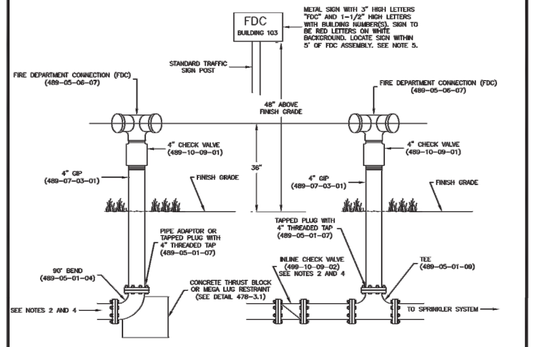
REVISIONS		
DATE	BY	DESCRIPTION

SEAL:
Juan C. Guerra, P.E.
Fla. Reg.# 0041000
Date:

ENGINEER OF RECORD:
GDC
Consulting Engineering
2817 NE 3rd St. Ocala, Florida 34470
(352) 629-8060 Phone
GDC@GuerraCorp.net
State of Florida Certificate of Authorization #4954



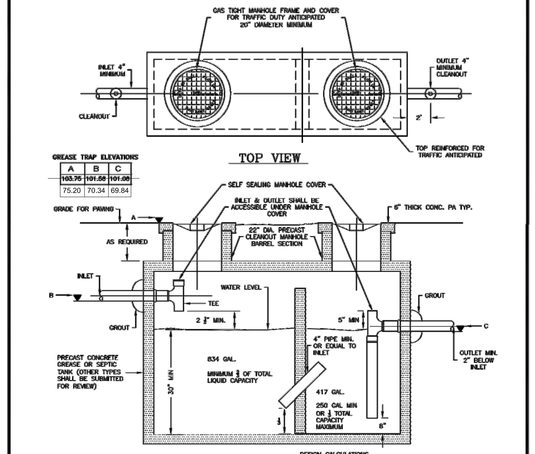
CITY OF OCALA STANDARD DETAIL	AIR RELEASE VALVE ASSEMBLY	SECTION 498-3.1 D
CITY OF OCALA WATER RESOURCES (352) 351-6772	SUPPORT BRACKET	SHT 1 OF 1
		REVISION DATE: 3/6/17



NOTES

1. ALL ABOVE-GROUND PARTS OF THE FDC ASSEMBLY, INCLUDING PIPING, SHALL BE PAINTED RED. PAINT SHALL BE POLYURETHANE, "SAFETY RED" OR EQUIVALENT.
2. PROVIDE AN INLINE CHECK VALVE ONLY WHERE FDC CONNECTIONS ARE INSTALLED AND FIRE HYDRANTS ARE CONNECTED UPSTREAM.
3. FDC MAY BE MOUNTED ON DOUBLE CHECK DETECTOR ASSEMBLIES (DCDA). SEE DETAIL WSCM 488-1.3G.
4. WHERE CHECK VALVES ARE INSTALLED BELOW GRADE PROVIDE A PRECAST UTILITY BOX SIZED TO ADEQUATELY MAINTAIN THE CHECK VALVE ASSEMBLY. UTILITY BOX SHALL BE AS SPECIFIED IN 489-03-99-10.
5. PROVIDE A SIGN INDICATING WHAT BUILDING(S) OR UNIT(S) THE FDC CONNECTION SUPPLIES WATER TO.
6. PROVIDE UNOBSTRUCTED CLEAR ZONE AROUND FDC CONNECTION OF 4' TO THE REAR AND 7-1/2' TO SIDES AND FRONT. NO BUILDINGS, FENCES, TREES OR LARGE SHRUBBERY SHALL BE LOCATED IN CLEAR ZONE.

CITY OF OCALA STANDARD DETAIL	FIRE DEPARTMENT CONNECTION 3" OR GREATER	SECTION 488-1.3 H
CITY OF OCALA WATER RESOURCES (352) 351-6772		SHT 1 OF 1
		REVISION DATE: 3/30/17



NOTE:
STRUCTURAL DESIGN OF GREASE TRAP SHALL BE IN ACCORDANCE WITH CHAPTER 106-6 OF THE FLORIDA ADMINISTRATIVE CODES.

DESIGN CALCULATIONS
(S)x(GS)=(NR/12)x(LF)=EFFECTIVE CAPACITY OF GREASE TRAP IN GALLONS
(S) = NUMBER OF SEATS IN DINING AREA
(GS) = GALLONS OF WASTE WATER PER SEAT (USE 25 GALLONS)
(NR) = NUMBER OF HOURS ESTABLISHMENT IS OPEN
(LF) = LOADING FACTOR-(2.0 WITH INTERSTATE HIGHWAYS, 1.5 OTHER FREEWAYS, 1.25 RECREATIONAL AREAS, 1.0 MAIN HIGHWAYS AND 0.75 OTHER HIGHWAYS)

NOTE

1. ACCESS FOR MONITORING THE INLET AND OUTLET PIPE FITTINGS OR BAFFLES SHALL BE PROVIDED FROM MANHOLES. CLEANOUTS SHALL BE INSTALLED BEFORE THE FIRST GREASE INTERCEPTOR AND WITHIN TWO FEET AFTER THE LAST INTERCEPTOR IN THE SERIES.
2. GREASE INTERCEPTOR (OR INTERCEPTORS) SHALL BE DESIGNED TO PRODUCE A CLARIFIED EFFLUENT ACCEPTABLE TO CITY OF OCALA STANDARDS. FOR ADDITIONAL INFORMATION, CALL CITY WASTEWATER MONITORING SUPERVISOR AT 629-8421.

GREASE TRAP DETAIL (1250 GALLONS)

CITY OF OCALA STANDARD DETAIL	GREASE OIL SEPARATOR	SECTION 498-2.2 A
CITY OF OCALA WATER RESOURCES (352) 351-6772		SHT 1 OF 1
		REVISION DATE: 3/6/17

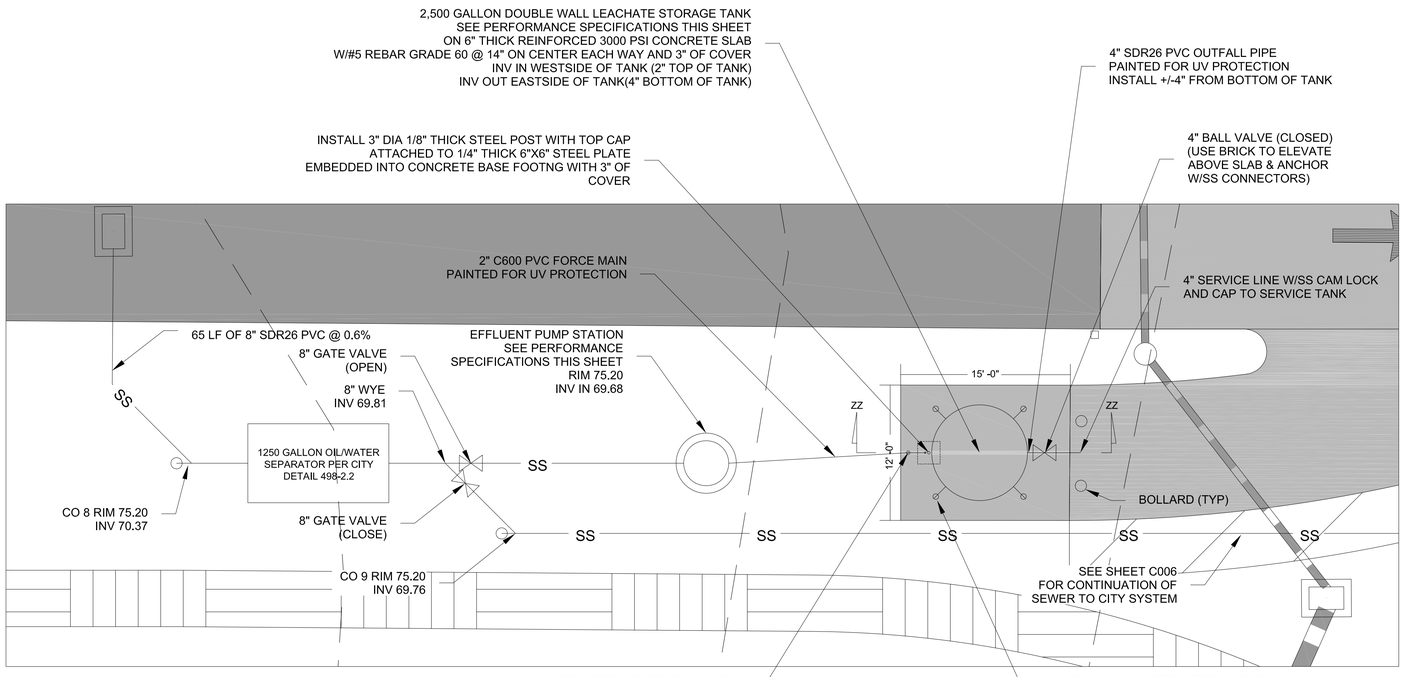
PERFORMANCE SPECIFICATIONS

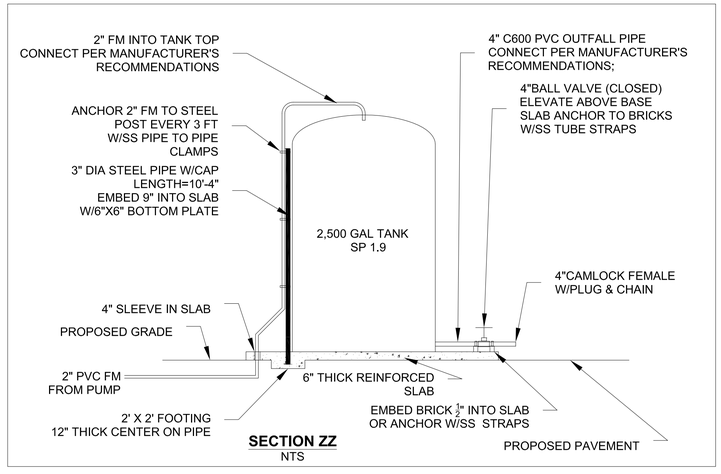
2,500 GALLON LEACHATE STORAGE TANK

- ABOVE GROUND
- UV RESISTANT
- VENTED
- CONTAINS LEVEL INDICATOR
- MANWAY
- FURNISH SHOP DRAWING TO ENGINEER FOR REVIEW AND APPROVAL

EFFLUENT PUMP STATION

- PHASE 3 POWER
- 40 GPM - 60 GPM
- MIN 28' TDH
- CONCRETE OR FIBERGLASS SUMP
- FDEP COMPLIANT FOR LEACHATE
- FURNISH SHOP DRAWING TO ENGINEER FOR REVIEW AND APPROVAL





SECTION ZZ
NTS

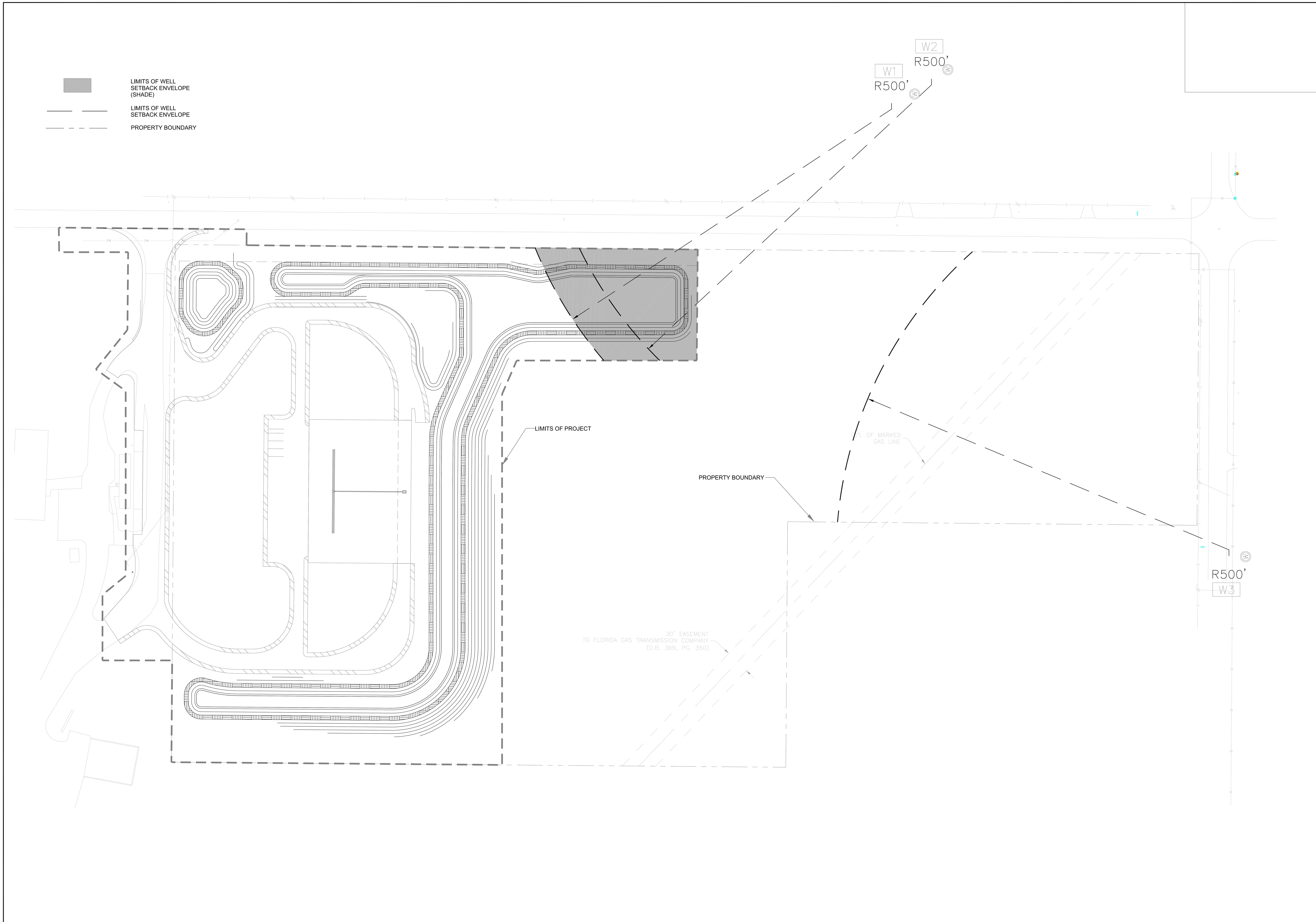
REVISIONS		
DATE	BY	DESCRIPTION
8-28-18	PRW	ADDED OIL/WATER SEPARATOR AND DETAILS
9-28-18	PRW	UPDATED DETAILS
9-06-19	PRW	OWNER REVISIONS -TANK SIZE

SHEET TITLE: WATER & SEWER DETAILS
PROJECT: CITY WIDE RECYCLING
DESIGNED BY: PRW | DRAWN BY: AMM | GDC DWG NAME: Cover_Notes
CHECKED BY: PRW / JCG | APPROVED BY: JCG | CLIENT: NICK GIUMARELLI
DATE: JAN. 22, 2018
JOB NO: 17-04
SHEET NO: C012.5 of C012

SEAL:
Juan C. Guerra, P.E.
Fla. Reg. # 0041000
Date:

Consulting Engineering
2817 NE 3rd St. Ocala, Florida 34470
(352) 629-8060 Phone
GDC@GuerraCorp.net
State of Florida Certificate of Authorization #4954

ENGINEER OF RECORD: GDC



SHEET TITLE: WELLS MAP

PROJECT: CITY WIDE RECYCLING

JOB NO: 17-04

DESIGNED BY: AMM

DRAWN BY: AMM

GDC DWG NAME: 17-04_SITE

CHECKED BY: PRW / JCG

APPROVED BY: JCG

CLIENT: NICK GIUMARELLI

DATE: SEP 27, 2019

SHEET NO: WM1 of WM1

REVISIONS

DATE	BY	DESCRIPTION

SCALE: 1" = 40'

0 25' 50'

SEAL:

Juan C. Guerra, P.E.
Fla. Reg. # 0041000
Date:

ENGINEER OF RECORD:

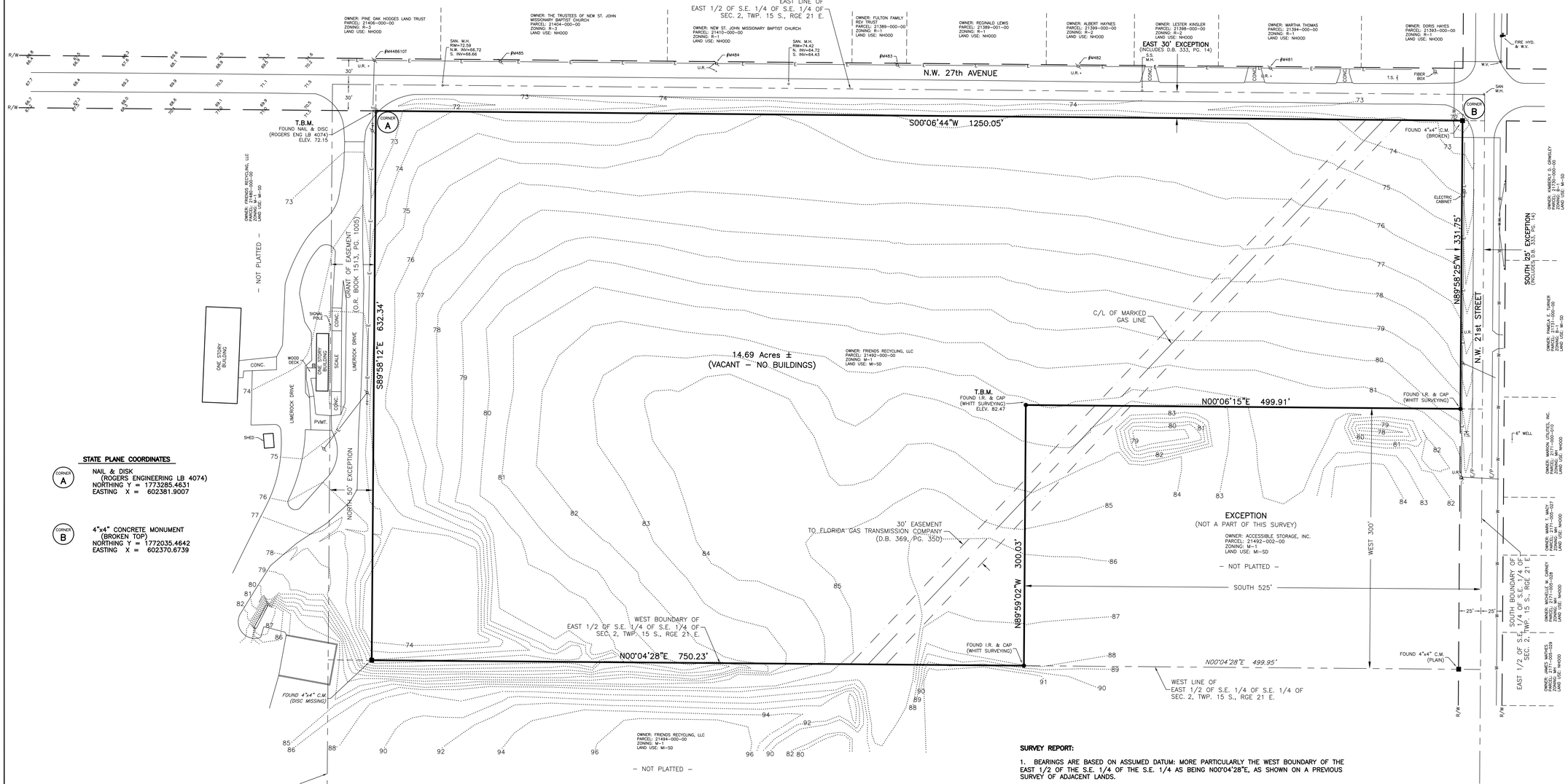
GDC

Consulting Engineering
2817 NE 3rd St, Ocala, Florida 34470
(352) 629-8060 Phone
GDC@GuerraCorp.net
State of Florida Certificate of Authorization #4954

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.



STATE PLANE COORDINATES

CORNER A
NAIL & DISK
(ROGERS ENGINEERING LB 4074)
NORTHING Y = 1773285.4631
EASTING X = 602381.9007

CORNER B
4"x4" CONCRETE MONUMENT
(BROKEN TOP)
NORTHING Y = 1772035.4642
EASTING X = 602370.6739

LEGEND

C.M.	CONCRETE MONUMENT
I.R.	IRON ROD
R/W	RIGHT OF WAY
E/P	EDGE OF PAVEMENT
C/L	CENTERLINE
HYD.	HYDRANT
W.V.	WATER VALVE
W.M.	WATER METER
U.R.	UTILITY RISER
T.S.	TRAFFIC SIGN
SEC.	SECTION
TWP.	TOWNSHIP
RGE.	RANGE
SAN. M.H.	SANITARY MANHOLE
ELEV.	ELEVATION
INV.	INVERT
	UTILITY POLE AND GUY ANCHOR
	OVERHEAD WIRES
	FENCE
CONC.	CONCRETE
	TREE (SEE TREE SCHEDULE)
	GROUND CONTOUR
T.B.M.	TEMPORARY BENCHMARK
PVMT.	PAVEMENT

LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE COUNTY OF MARION, STATE OF FLORIDA, AND IS DESCRIBED AS FOLLOWS:

THE EAST 1/2 OF THE S.E. 1/4 OF THE S.E. 1/4 IN SECTION 2, TOWNSHIP 15 SOUTH, RANGE 21 EAST, MARION COUNTY, FLORIDA; EXCEPT THE SOUTH 25 FEET, THE EAST 30 FEET AND THE NORTH 50 FEET THEREOF AND EXCEPT ROAD RIGHT OF WAY DEEDED TO MARION COUNTY BY DEED DATED JUNE 13, 1955 AND RECORDED IN DEED BOOK 333, PAGE 14, PUBLIC RECORDS OF MARION COUNTY, FLORIDA; TOGETHER WITH THAT CERTAIN GRANT OF EASEMENT DATED JULY 6, 1988, AND RECORDED IN OFFICIAL RECORDS BOOK 1513, PAGE 1005, PUBLIC RECORDS OF MARION COUNTY, FLORIDA.

LESS AND EXCEPT THE FOLLOWING DESCRIBED PARCEL: THE WEST 300 FEET OF THE SOUTH 525 FEET OF THE EAST 1/2 OF THE S.E. 1/4 OF THE S.E. 1/4 IN SECTION 2, TOWNSHIP 15 SOUTH, RANGE 21 EAST, MARION COUNTY, FLORIDA, LESS AND EXCEPT THE SOUTH 25 FEET THEREOF FOR ROAD RIGHT OF WAY.

SURVEY REPORT:

1. BEARINGS ARE BASED ON ASSUMED DATUM: MORE PARTICULARLY THE WEST BOUNDARY OF THE EAST 1/2 OF THE S.E. 1/4 OF THE S.E. 1/4 AS BEING N00°04'28"E, AS SHOWN ON A PREVIOUS SURVEY OF ADJACENT LANDS.

2. FIELD SURVEY DATE : 7-20-2017.

3. THE LEGAL DESCRIPTION AND TITLE INFORMATION REFLECTING RIGHTS-OF-WAY, OR EASEMENTS OF RECORD, WERE TAKEN FROM FIRST AMERICAN TITLE INSURANCE COMPANY, FILE NO.: 2090-2105054, DATED: 8-18-2014.

4. UNDERGROUND IMPROVEMENTS, OR UTILITIES, WERE NOT LOCATED.

5. ELEVATIONS AND CONTOURS SHOWN HEREON ARE BASED ON N.G.V.D. DATUM; CITY OF OCALA BM @ N.W. 27TH AVENUE AND N.W. 18TH STREET; ELEVATION 69.47 (NAVD-88).

6. THIS PROPERTY APPEARS TO BE IN A ZONE "X" (AREA OF MINIMAL FLOOD HAZARD) ACCORDING TO THE FEMA FLOOD INSURANCE RATE MAP COMMUNITY NUMBER 120330, PANEL 0508, SUFFIX E, EFFECTIVE DATE: APRIL 19, 2017.

7. SURVEY MEETS THE STANDARDS OF PRACTICE CONTAINED IN CHAPTER 5J-17.050 THROUGH .052, FLORIDA ADMINISTRATIVE CODE AND THE ACCURACY OBTAINED BY MEASUREMENT AND CALCULATION OF A CLOSED GEOMETRIC FIGURE WAS FOUND TO EXCEED THE MINIMUM RELATIVE DISTANCE ACCURACY FOR SUBURBAN LAND USE.

8. UNLESS IT BEARS THE SIGNATURE AND SEAL OF THE LICENSED SURVEYOR AND MAPPER, THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT VALID.

RODNEY K. ROGERS DATE
PROFESSIONAL SURVEYOR & MAPPER
REGISTRATION NO. 5274
STATE OF FLORIDA

DATE	REVISION

Robert L. Rogers, PE
Fl. Reg. No. 19227
rlrogers@rogerseng.com

Rodney K. Rogers, PSM
Fl. Reg. No. 5274
rkrogers@rogerseng.com

ROGERS ENGINEERING, LLC
Civil Engineering & Land Surveying
1105 S.E. 3rd Avenue • Ocala, Florida 34471 • Ph. (352) 622-9214 • Lic. Bus. #4074

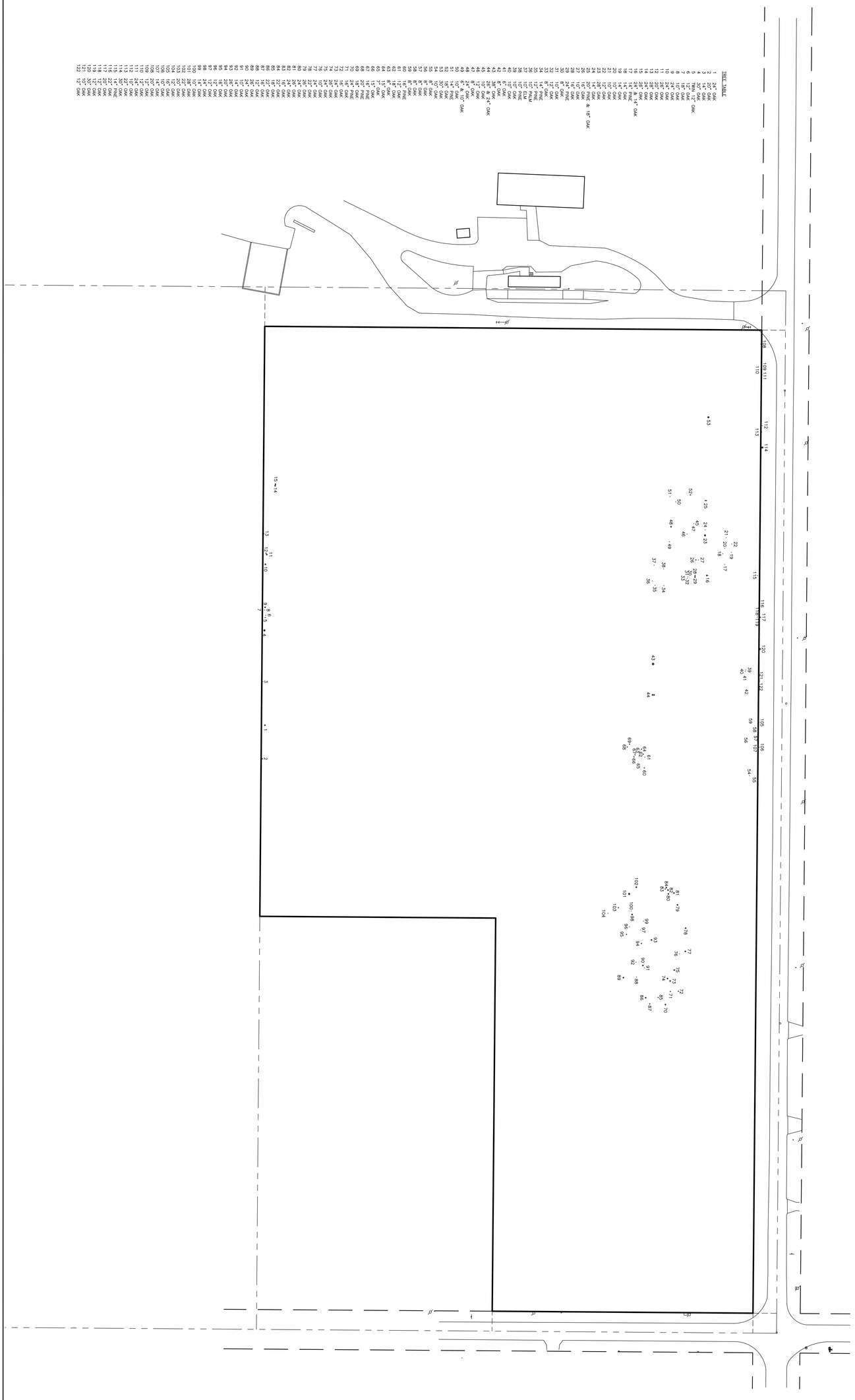
A BOUNDARY & TOPOGRAPHIC SURVEY
FOR
FRIENDS RECYCLING, LLC

JOB No.
17_21492-000-00

DATE
8-17-2017

SCALE
1"=60'

SHEET
1 OF 2



SHEET 2 OF 2	JOB No. 17_21492-000-00
SCALE 1"=60'	DATE 8-17-2017

A TREE LOCATION SURVEY
FOR
FRIENDS RECYCLING, LLC

ROGERS ENGINEERING, LLC
Civil Engineering & Land Surveying
1105 S.E. 3rd Avenue • Ocala, Florida 34471 • Ph. (352) 622-9214 • Lic. Bus. #4074

Robert L. Rogers, PE
Fl. Reg. No. 10027
rlrogers@rogerseng.com

Rodney K. Rogers, PSM
Fl. Reg. No. 5274
rkrogers@rogerseng.com

DATE	REVISION

City-Wide + Existing Office Water & Sewer Demand
Preliminary Design Report for Project
9/25/2018

Service Area, Water Use

Table 1.a. Average Daily Flow					
Description	**No. of Units**	**Unit**	**Flow Rate (GPD)**	**Average Daily Flow (GPD)**	**Gallons per Wash**
City-Wide Recycling Center					
Passengers[2]	15	EA	4	60	n/a
Employees[2]	2	EA	15	30	n/a
Washwater[1]	1	wash	n/a	n/a	2184
			SubTotal:	90	2184
			Maximum Gallons on a Wash Day:	2274	
Check to Meet Minimum ERU Flows					
Recycling Center Sewer ERU[5]	8	EA	275	2200	n/a
				2274 > 2200 Okay	
C & D Office					
Office[2]	9.5	100's SF	15	143	n/a
		OR			
Employees[2]	6	EA	15	90	n/a
			SubTotal:	143	
Check to Meet Minimum ERU Flows					
Office Sewer ERU[4]	1	EA	275	275	n/a
				143 < 275, so use 275	
			Sewer Demand :	**2549**	
			Water Demand:	**3186**	
Check to Meet Minimum ERU Flows					
Recycling Center Water ERU[5]	8	EA	300	2400	
Office Water ERU[4]	1	EA	300	300	
			SubTotal:	2700	
				3186 > 2700 Okay	

Reference Notes:

1. Washwater estimated based on operational use of facility per washdown event. Washing will only be performed as needed.
(SF of service area x 1/4" of washwater); (14,000 SF x 0.02083' = 292 CF => 2184 Gallons per wash)
2. Per Florida DOH Chapter 64E-6 FAC
3. City of Ocala Minimum Flows per ERU (300 GPD Water, 275 GPD Sewer)
4. Existing Office = 1.0 ERU per Table 1 of Ordinance 2011-31
5. City-Wide Recycling = 8.0 based on meter size from Ordinance 2011-13, use not listed in Table 1

Water - Table 1.b. Peaking Factor (GPD)	
2.25 x Avg Daily	7169
Washwater	n/a
2.25 x Avg Daily w/o Washwater	654

Source: Water Distribution Systems Handbook

Water - Table 1.c. Design Peak Hour (GPH)	
4 x Avg Daily	531
Washwater	n/a
4 x Avg Daily w/o Washwater	48

Source: Water Distribution Systems Handbook

Sewer- Peak Hour Flow (GPH)	
4 x Avg Daily	425
Washwater	n/a
4 x Avg Daily w/o Washwater	39

Source: Ten State Standards

Print Form | Reset Form

Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

DEP Form # 62-701.900(28), F.A.C.
Form Title: Closure Cost Estimating Form For Solid Waste Facilities
Effective Date: January 6, 2010
Incorporated in Rule 62-701.630(3), F.A.C.

CLOSURE COST ESTIMATING FORM FOR SOLID WASTE FACILITIES

Date of DEP Approval: _____

I. GENERAL INFORMATION:

Facility Name: Friends Recycling LLC WACS ID: 21012
Permit Application or Consent Order No.: MRF at 0019600-012-SO Expiration Date: _____
Facility Address: 2350 NW 27th Avenue, Ocala, FL 34475
Permittee or Owner/Operator: Friends Recycling, LLC
Mailing Address: 2350 NW 27th Avenue, Ocala, FL 34475

Latitude: N29 ° 12 ' 39.68 " Longitude: W82 ° 10 ' 10.36 "
Coordinate Method: _____ Datum: NAVD-88
Collected by: Rodney K. Rogers, PSM Company/Affiliation Rogers Engineering, LLC

Solid Waste Disposal Units Included in Estimate:

Phase / Cell	Acres	Date Unit Began Accepting Waste	Active Life of Unit From Date of Initial Receipt of Waste	If active: Remaining life of unit	If closed: Date last waste received	If closed: Official date of closing

Total disposal unit acreage included in this estimate: Closure: _____ Long-Term Care: _____

Facility type: ☐ Class I ☐ Class III ☐ C&D Debris Disposal
(Check all that apply) ☒ Other: Materials Recovery Facility

II. TYPE OF FINANCIAL ASSURANCE DOCUMENT (Check type)

☒ Letter of Credit* ☐ Insurance Certificate ☐ Escrow Account
☐ Performance Bond* ☐ Financial Test ☐ Form 29 (FA Deferral)
☐ Guarantee Bond* ☐ Trust Fund Agreement

* - Indicates mechanisms that require the use of a Standby Trust Fund Agreement

Northwest District
160 Government Center
Pensacola, FL 32502-5794
850-595-8360

Northeast District
7825 Baymeadows Way, Ste. B200
Jacksonville, FL 32256-7590
904-807-3300

Central District
3319 Maguire Blvd., Ste. 232
Orlando, FL 32803-3767
407-894-7555

Southwest District
13051 N. Telecom Pky.
Temple Terrace, FL 33637
813-632-7600

South District
2295 Victoria Ave., Ste. 364
Fort Myers, FL 33901-3881
239-332-6975

Southeast District
400 N. Congress Ave., Ste. 200
West Palm Beach, FL 33401
561-681-6600

III. ESTIMATE ADJUSTMENT

40 CFR Part 264 Subpart H as adopted by reference in Rule 62-701.630, Florida Administrative Code, (F.A.C.) sets forth the method of annual cost estimate adjustment. Cost estimates may be adjusted by using an inflation factor or by recalculating the maximum costs of closure in current dollars. Select one of the methods of cost estimate ajustment below.

☐ **(a) Inflation Factor Adjustment** ☐ **(b) Recalculated or New Cost Estimates**

Inflation adjustment using an inflation factor may only be made when a Department approved closure cost estimate exists and no changes have occurred in the facility operation which would necessitate modification to the closure plan. The inflation factor is derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce in its survey of Current Business. The inflation factor is the result of dividing the latest published annual Deflatory by the Deflator for the previous year. The inflation factor may also be obtained from the Solid Waste website www.dep.state.fl.us/waste/categories/swfr or call the Financial Coordinator at (850) 245-8706.

This adjustment is based on the Department approved closing cost estimate dated: _____

Latest Department Approved **Closing Cost** Estimate:		Current Year Inflation Factor, ***e.g. 1.02***		Inflation Adjusted Closing Cost Estimate:
_____	×	_____	=	_____

This adjustment is based on the Department approved long-term care cost estimate dated: _____

Latest Department Approved Annual **Long-Term Care** Cost Estimate:		Current Year Inflation Factor, ***e.g. 1.02***		Inflation Adjusted Annual Long-Term Care Cost Estimate:
_____	×	_____	=	_____

Number of Years of Long Term Care Remaining: × _____

Inflation Adjusted Long-Term Care Cost Estimate: = _____

Signature by: ☐ **Owner/Operator** ☐ **Engineer** (check what applies)

_____ Signature

_____ Address

_____ Name & Title

_____ City, State, Zip Code

_____ Date

_____ E-Mail Address

_____ Telephone Number

IV. ESTIMATED CLOSING COST (check what applies)

☐ **Recalculated Cost Estimate** ☐ **New Facility Cost Estimate**

Notes: 1. Cost estimates for the time period when the extent and manner of landfill operation makes closing most ex
2. Cost estimate must be certified by a professional engineer.
3. Cost estimates based on third party suppliers of material, equipment and labor at fair market value.
4. In some cases, a price quote in support of individual item estimates may be required.

Description	Unit	Number of Units	Cost / Unit	Total Cost
1. Proposed Monitoring Wells	**(Do not include wells already in existence.)**			
	EA			
			Subtotal Proposed Monitoring Wells:	
2. Slope and Fill (bedding layer between waste and barrier layer):				
Excavation	CY			
Placement and Spreading	CY			
Compaction	CY			
Off-Site Material	CY			
Delivery	CY			
			Subtotal Slope and Fill:	
3. Cover Material (Barrier Layer):				
Off-Site Clay	CY			
Synthetics - 40 mil	SY			
Synthetics - GCL	SY			
Synthetics - Geonet	SY			
Synthetics - Other (explain)				
			Subtotal Cover Material:	
4. Top Soil Cover:				
Off-Site Material	CY			
Delivery	CY			
Spread	CY			
			Subtotal Top Soil Cover:	
5. Vegetative Layer				
Sodding	SY			
Hydroseeding	AC			
Fertilizer	AC			
Mulch	AC			
Other (explain)				
			Subtotal Vegetative Layer:	
6. Stormwater Control System:				
Earthwork	CY			
Grading	SY			
Piping	LF			
Ditches	LF			
Berms	LF			
Control Structures	EA			
Other (explain)				
			Subtotal Stormwater Control System:	

Description	Unit	Number of Units	Cost / Unit	Total Cost
7. Passive Gas Control:				
Wells	EA			
Pipe and Fittings	LF			
Monitoring Probes	EA			
NSPS/Title V requirements	LS	1		
			Subtotal Passive Gas Control:	
8. Active Gas Extraction Control:				
Traps	EA			
Sumps	EA			
Flare Assembly	EA			
Flame Arrestor	EA			
Mist Eliminator	EA			
Flow Meter	EA			
Blowers	EA			
Collection System	LF			
Other (explain) _____				
			Subtotal Active Gas Extraction Control:	
9. Security System:				
Fencing	LF			
Gate(s)	EA			
Sign(s)	EA			
			Subtotal Security System:	
10. Engineering:				
Closure Plan Report	LS	1		
Certified Engineering Drawings	LS	1		
NSPS/Title V Air Permit	LS	1		
Final Survey	LS	1		
Certification of Closure	LS	1		
Other (explain) _____				
			Subtotal Engineering:	

Description	Hours	Cost / Hour	Hours	Cost / Hour	Total Cost
11. Professional Services					
	Contract Management		Quality Assurance		
P.E. Supervisor					
On-Site Engineer					
Office Engineer					
On-Site Technician					
Other (explain)					

Description	Unit	Number of Units	Cost / Unit	Total Cost
Quality Assurance Testing	LS	1		
			Subtotal Professional Services:	

	Subtotal of 1-11 Above:	
12. Contingency _____ % of Subtotal of 1-11 Above		
	Subtotal Contingency:	
	Estimated Closing Cost Subtotal:	

Description	Total Cost
13. Site Specific Costs	
Mobilization	
Waste Tire Facility	
Materials Recovery Facility	$36,399.58
Special Wastes	
Leachate Management System Modification	
Other (explain) _____	
_____ Subtotal Site Specific Costs:	$36,399.58

TOTAL ESTIMATED CLOSING COSTS ($): $36,399.58

V. ANNUAL COST FOR LONG-TERM CARE

See 62-701.600(1)a.1., 62-701.620(1), 62-701.630(3)a. and 62-701.730(11)b. F.A.C. for required term length. For landfills certified closed and Department accepted, enter the remaining long-term care length as "Other" and provide years remaining.

(Check Term Length) ☐ 5 Years ☐ 20 Years ☐ 30 Years ☐ Other, ___ Years

Notes: 1. Cost estimates must be certified by a professional engineer.

2. Cost estimates based on third party suppliers of material, equipment and labor at fair market value.

3. In some cases, a price quote in support of individual item estimates may be required.

All items must be addressed. Attach a detailed explanation for all entries left blank.

Description	Sampling Frequency (Events / Year)	Number of Wells	(Cost / Well) / Event	Annual Cost
1. Groundwater Monitoring [62-701.510(6), and (8)(a)]				
Monthly	12			
Quarterly	4			
Semi-Annually	2			
Annually	1			
			Subtotal Groundwater Monitoring:	
2. Surface Water Monitoring [62-701.510(4), and (8)(b)]				
Monthly	12			
Quarterly	4			
Semi-Annually	2			
Annually	1			
			Subtotal Surface Water Monitoring:	
3. Gas Monitoring [62-701.400(10)]				
Monthly	12			
Quarterly	4			
Semi-Annually	2			
Annually	1			
			Subtotal Gas Monitoring:	
4. Leachate Monitoring [62-701.510(5), (6)(b) and 62-701.510(8)c]				
Monthly	12			
Quarterly	4			
Semi-Annually	2			
Annually	1			
Other (explain) _____	_____			
_____			Subtotal Leachate Monitoring:	

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
5. Leachate Collection/Treatment Systems Maintenance				
Maintenance				
Collection Pipes	LF			
Sumps, Traps	EA			
Lift Stations	EA			
Cleaning	LS	1		
Tanks	EA			

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
5. (continued)				
Impoundments				
Liner Repair	SY			
Sludge Removal	CY			
Aeration Systems				
Floating Aerators	EA			
Spray Aerators	EA			
Disposal				
Off-site (Includes transportation and disposal)	1000 gallon			
			Subtotal Leachate Collection / Treatment Systems Maintenance:	
6. Groundwater Monitoring Well Maintenance				
Monitoring Wells	LF			
Replacement	EA			
Abandonment	EA			
			Subtotal Groundwater Monitoring Well Maintenance:	
7. Gas System Maintenance				
Piping, Vents	LF			
Blowers	EA			
Flaring Units	EA			
Meters, Valves	EA			
Compressors	EA			
Flame Arrestors	EA			
Operation	LS	1		
			Subtotal Gas System Maintenance:	
8. Landscape Maintenance				
Mowing	AC			
Fertilizer	AC			
			Subtotal Landscape Maintenance:	
9. Erosion Control and Cover Maintenance				
Sodding	SY			
Regrading	AC			
Liner Repair	SY			
Clay	CY			
			Subtotal Erosion Control and Cover Maintenance:	
10. Storm Water Management System Maintenance				
Conveyance Maintenance	LS	1		
			Subtotal Storm Water Management System Maintenance:	
11. Security System Maintenance				
Fences	LS	1		
Gate(s)	EA			
Sign(s)	EA			
			Subtotal Security System Maintenance:	

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
12. Utilities	LS	1		
			Subtotal Utilities:	
13. Leachate Collection/Treatment Systems Operation				
Operation				
P.E. Supervisor	HR			
On-Site Engineer	HR			
Office Engineer	HR			
OnSite Technician	HR			
Materials	LS	1		
		Subtotal Leachate Collection/Treatment Systems Operation:		
14. Administrative				
P.E. Supervisor	HR			
On-Site Engineer	HR			
Office Engineer	HR			
OnSite Technician	HR			
Other _____				
			Subtotal Administrative:	
			Subtotal of 1-14 Above:	
15. Contingency		% of Subtotal of 1-14 Above		
			Subtotal Contingency:	

Description	Unit	Number of Units / Year	Cost / Unit	Annual Cost
16. Site Specific Costs				
			Subtotal Site Specific Costs:	
			ANNUAL LONG-TERM CARE COST ($ / YEAR):	
			Number of Years of Long-Term Care:	
			TOTAL LONG-TERM CARE COST ($):	

VI. CERTIFICATION BY ENGINEER

This is to certify that the Cost Estimates pertaining to the engineering features of this solid waste management facility have been examined by me and found to conform to engineering principles applicable to such facilities. In my professional judgment, the Cost Estimates are a true, correct and complete representation of the financial liabilities for closing and/or long-term care of the facility and comply with the requirements of Rule 62-701.630 F.A.C. and all other Department of Environmental Protection rules, and statutes of the State of Florida. It is understood that the Cost Estimates shall be submitted to the Department annually, revised or adjusted as required by Rule 62-701.630(4), F.A.C.

Signature

2817 NE 3rd Street
Mailing Address

Juan, C. Guerra, P.E.
Name and Title (please type)

Ocala, FL 34470
City, State, Zip Code

10/1/19
Date

jcg@guerracorp.net
E-Mail address (if available)

0041000
Florida Registration Number (please affix seal)

352-629-8060
Telephone Number

JUAN C. GUERRA LICENSE NO. 41000 STATE OF FLORIDA PROFESSIONAL ENGINEER

VII. SIGNATURE BY OWNER/OPERATOR

Signature of Applicant 10-1-2019

2350 NW 27th Avenue
Mailing Address

Gerald Lourenco, Owner
Name and Title (please type)

Ocala, FL 34475
City, State, Zip Code

aws97@yahoo.com
E-Mail address (if available)

352-266-4853
Telephone Number

Enclosure 6:
Financial Assurance Detailed Cost Estimate For
City Wide Recycling

The following estimate assumes the maximum quantity of waste and recovered material are left at the facility. The conversion factors were in an April 2016 EPA document "Volume-to-Weight Conversion Factors" (attached)

	Amount of Material yd3	Conversion Factor lb/yd3	Tons of Each Material		
Waste Left on Site: **Assumes remaining waste is one day throughput described in application**					
Class I and III waste – one day throughput	2000	300	300.00		
C&D waste – one day throughput	2000	484	484.00		
Recovered materials left on site; assume bins are full					
Recovered metals	20	175	1.75		
Recovered cardboard and paper	40	74.54	1.49		
Recovered plastics	20	40.4	0.40		
Whole Waste Tires (estimate not more than 20 tires in the 20 CY bin at a time)	20	22.5	0.23		
Total Tons Remaining at Site			787.87		
Disposal cost (based on $42/ton at Advanced Waste Transfer Station, Ocala, FL)			**$33,090.53**		
Disposal Cost with 10% contingency fee			**$36,399.58**		

Juan C. Guerra, P.E.
Florida Reg. No. 0041000

Volume-to-Weight Conversion Factors
U.S. Environmental Protection Agency
Office of Resource Conservation and Recovery
April 2016

EPA's 1997 report, "Measuring Recycling: A Guide for State and Local Governments", was a guide to facilitate standardization of MSW data collection at the local level, which included volume-to-weight conversion factors for comparing recovery efforts between municipalities, regions and states. The factors are also valuable when planners work with the national recovery data presented in EPA's sustainable materials management report series.

This document provides updates to the volume-to-weight conversion factors found in the 1997 report Appendix B.

The goal of this update is to identify more current secondary data measurements of the various products. Of particular interest are products known to have been source reduced through light weighting since the early nineties such as plastic, glass and metal packaging. Some factors included on the original table are excluded from the revised table due to lack of updated data. Primary data collection was not performed.

The original Appendix B table included 12 materials categories; the updated table provides factors for 15 material categories, including the following.

- Appliances
- Automotive
- Carpeting
- Commingled Recyclables
- Electronics
- Food
- Glass
- Metals
- Municipal Solid Waste
- Paper
- Plastic
- Textiles
- Wood
- Yard Trimmings
- Construction & Demolition Debris (C&D)

All of the categories include multiple products and/or density measurements. Four product categories—carpeting, commingled recyclable material, electronics and construction and demolition debris—are new. Previously lead-acid batteries and scrap tires were separate categories but are combined into the single category "Automotive" in the updated table.

Other differences include the removal/addition of products within some of the categories to better reflect the current recycling industry. For example, eliminating "Tab Card" and adding "Mixed Paper" to the paper category reflects the move toward commingled recyclables collection. The addition of "Electronics" reflects the growth in these products since the original table was published.

The updated factors are shown in the table below.

Standard Volume-to-Weight Conversion Factors

Category	Recyclable Materials	Volume	Estimated Weight (lbs)	Source
Appliances	Major Appliances			
	Dishwasher	1 unit	125	1
	Clothes Dryer	1 unit	125	1
	Stove	1 unit	150	1
	Refrigerator	1 unit	250	1
	Clothes Washer	1 unit	150	1
Automotive	Lead-Acid Battery			
	Auto	one	36	3
	Truck	one	47	3
	Scrap Tire			
	Light Duty Tires (passenger, light truck)	one	22.5	5
	Commercial Tires	one	120	5
	Fluids			
	Used Motor Oil	gallon	7.4	2
	Antifreeze	gallon	8.42	2
	Other Automotive			
	Oil Filters not crushed	drum	175	1
	Oil Filters crushed	drum	700	1
	Oil Filters	gallon	5	1
Carpeting	Carpet			
	Carpet	cubic yard	147	6
	Carpet Padding	cubic yard	62	6
Commingled Recyclable Material	Containers (Plastic bottles, Aluminum cans, Steel cans, Glass bottles) and Paper			
	Commingled Recyclables	cubic yard	262	4
	Containers (Plastic bottles, Aluminum cans, Steel cans, Glass bottles), Corrugated Containers and Paper			
	Campus Recyclables	cubic yard	92	7
	Commingled Recyclables	cubic yard	111	4
	Containers (Plastic bottles, Aluminum cans, Steel cans, Glass bottles) – No paper			
	Campus Recyclables	cubic yard	70	7
	Commingled Recyclables	cubic yard	67	4
	Commercial Recyclables	cubic yard	113	8
	Containers (Cans, Plastic) - No glass			
	Campus Recyclables	cubic yard	32	7
	Containers (Cans, Plastic) and Paper - No glass			
	Residential Recyclables	cubic yard	260	2
	Containers (Food/beverage, Glass) Corrugated Containers and Paper			
	Commercial Recyclables	cubic yard	88	2
	Commercial Recyclables	cubic yard	58	21
	Multifamily Recyclables	cubic yard	96	2
	Multifamily Recyclables	cubic yard	51	21

Category	Recyclable Materials	Volume	Estimated Weight (lbs)	Source
Commingled Recyclable Material	*Single family Recyclables*	cubic yard	126	2
	Containers (Food/beverage, Glass) Corrugated Containers and Paper- No glass			
	Campus Recyclables	cubic yard	139	2
	Commercial Recyclables	cubic yard	155	2
Electronics	Computer Equipment			
	Desktop	one	27	24
	Laptop	one	9.8	24
	Monitor			
	CRT	one	40	1
	15"	one	30	2
	17"	one	45	2
	21"	one	60	2
	Flat Panel	one	24	1
	Mixed Monitors	one	29.4	24
	Televisions			
	CRT < 19 inch	one	41	1
	CRT ≥ 19 inch	one	73	1
	Flat Panel	one	29	1
	Mixed TVs	one	67.3	24
	Peripheral Devices			
	Printers	one	16.1	24
	Mice	one	0.2	9
	Keyboards	one	2.9	9
	Mobile Devices			
	Cellular Phone	one	0.22	9
	Mixed Electronics			
	Brown Goods	cubic yard	343	6
	Computer-related Electronics	cubic yard	354	6
	Other Small Consumer Electronics	cubic yard	438	6
Food				
	Fats, Oils, Grease	55-gallon	412	2
	Organics - commercial	cubic yard	135	21
	Source Separated Organics - commercial	cubic yard	1,000	15
	Food Waste - restaurants	cubic yard	396	21
	Food Waste	cubic yard	463	4
	Food Waste	cubic foot	22-45	4
	Food waste - university	gallon	3.8	22
	Food Waste	64 gallon toter	150	4
	Food waste	2 cubic yard full towable	2,736	4
Glass	Bottles			
	Loose	cubic yard	380	4

Category	Recyclable Materials	Volume	Estimated Weight (lbs)	Source
Metals	Aluminum Cans			
	Uncompacted	cubic yard	46	4
	Uncompacted	case = 24 cans	0.7	11
	Baled	cubic yard	250-500	10
	Steel Cans			
	Whole	cubic yard	50-175	10
	Baled	cubic yard	700-1,000	10
	Steel Cans - Institution			
	Whole	can	0.09	7
	Whole	cubic yard	136	7
Paper	Newsprint			
	Loose	cubic yard	360-800	1
	Baled	cubic yard	750-1,000	10
	Books - paperback, loose	cubic yard	428	23
	Old Corrugated Containers			
	Flattened	cubic yard	106	4
	Baled	cubic yard	700-1,100	10
	Old Corrugated Containers and Chip Board			
	Uncompacted	cubic yard	74.54	4
	Office Paper			
	Computer Paper			
	Loose	cubic yard	375-465	1
	Compacted/Baled	cubic yard	755-925	1
	Mixed			
	Loose	cubic yard	110-380	1
	Loose	cubic yard	323	4
	Compacted	cubic yard	610-755	1
	Shredded	cubic yard	128	4
	Mixed Baled	cubic yard	1,000-1,200	10
	Miscellaneous			
	Cartons (milk and juice) uncrushed	cubic yard	50	7
Plastic	PET			
	PET Bottles - baled	30"x42"x 48"	525-630	12
	PET Thermoform - baled	30"x42"x 48"	525-595	12
	HDPE			
	HDPE Dairy - baled	30"x42"x 48"	525-700	12
	HDPE Mixed - baled	30"x42"x 48"	525-700	12
	Mixed PET and HDPE			
	Loose	cubic yard	32	7
	Mixed Bottles/Containers #1 - #7			
	Loose	cubic yard	40.4	4
	Mixed Bottles/Containers #3 - #7			

Category	Recyclable Materials	Volume	Estimated Weight (lbs)	Source
Plastic	*Loose*	cubic yard	25.7	4
	Film			
	LDPE, loose	cubic yard	35	13
	LDPE, compacted	cubic yard	150	13
	LDPE, baled	30" x 42" x 48"	1,100	13
	Miscellaneous			
	Trash Bags	cubic yard	35	6
	Grocery/Merchandise Bags	cubic yard	35	6
	Expanded Polystyrene Packaging/Insulation	cubic yard	32	6
Textiles	Mixed Textiles			
	Loose	cubic yard	125-175	10
	Baled	cubic yard	600-750	10
Wood	Wood			
	Wood Chips, green	cubic yard	473	1
	Wood Chips, dry	cubic yard	243	1
	Saw Dust, wet	cubic yard	530	1
	Saw Dust, dry	cubic yard	275	1
	Pallets	one	25	1
	Pallets and Crates	cubic yard	169	18
	Christmas Trees, loose	cubic yard	30	1
Yard Trimmings	Yard Trimmings			
	Leaves	cubic yard	250-500	1
	Leaves (Minnesota)	cubic yard	300 - 383	15
	Mixed Yard Waste			
	Uncompacted	cubic yard	250	1
	Compacted	cubic yard	640	1
	Prunings & Trimmings	cubic yard	127	6
	Branches & Stumps	cubic yard	127	6
Municipal Solid Waste	MSW - Commercial			
	Commercial - dry waste	cubic yard	56-73	16, 8
	Commercial - all waste, uncompacted	cubic yard	138	21
	Mixed MSW - Residential, Institutional, Commercial			
	Uncompacted	cubic yard	250-300	14
	Compacted	cubic yard	400-700	14
	Mixed MSW - Multifamily uncompacted	cubic yard	95	21
	MSW - Landfill			
	Compacted - MSW Small Landfill with Best Management Practices	cubic yard	1,200-1,700	17
	Compacted - MSW Large Landfill with Best Management Practices	cubic yard	1,700-2,000	17

Category	Recyclable Materials	Volume	Estimated Weight (lbs)	Source
Municipal Solid Waste	*Compacted - MSW Very Large Landfill with Best Management and Cover Practices, Combined MMSW/Industrial/and other solid waste, or/and Leachate Recirculation*	cubic yard	>2,000	17
C &D	Concrete			
	Large Concrete with Re-bar	cubic yard	860	18
	Large Concrete without Re-bar	cubic yard	860	18
	Small Concrete with Re-bar	cubic yard	860	18
	Small Concrete without Re-bar	cubic yard	860	18
	Asphalt Paving			
	Large Asphalt Paving with Re-bar	cubic yard	773	19
	Large Asphalt Paving without Re-bar	cubic yard	773	19
	Small Asphalt Paving with Re-bar	cubic yard	773	19
	Small Asphalt Paving without Re-Bar	cubic yard	773	19
	Roofing			
	Composition Roofing	cubic yard	731	18
	Other Asphalt Roofing	cubic yard	731	18
	Other Aggregates	cubic yard	860	18
	Wood			
	Clean Dimensional Lumber	cubic yard	169	18
	Clean Engineered Wood	cubic yard	268	18
	Other Recyclable Wood	cubic yard	169	18
	Painted/Stained Wood	cubic yard	169	18
	Treated Wood	cubic yard	169	18
	Gypsum Board			
	Clean Gypsum Board	cubic yard	467	18
	Painted/Demolition Gypsum	cubic yard	467	18
	Aggregate			
	Large Rock	cubic yard	999	18
	Small Rock/Gravel	cubic yard	999	18
	Dirt and Sand	cubic yard	929	18
	Remainder/Composite Construction and Demolition	cubic yard	417	18
	Construction & Demolition Bulk	cubic yard	484	20
	Metal			
	Major Appliances	cubic yard	145	18
	Other Ferrous	cubic yard	225	18
	Other Non-Ferrous	cubic yard	225	18
	Remainder/Composite Metal (avg of metals, without used oil filters)	cubic yard	143	18
	HVAC Ducting	cubic yard	47	18

1	Oregon Department of Environmental Quality. 2007 Oregon Material Recovery and Waste Generation Rates Report September 2008 08-LQ-092. Attachment B: Measurement Standards and Reporting Guidelines 07-LQ-134. http://www.deq.state.or.us/lq/pubs/docs/sw/MRAttachmentB.pdf
2	Department of Ecology, State of Washington. Coordinated Prevention Grant Conversion Sheet. March, 2014. www.ecy.wa.gov/pubs/1107016.pdf
3	Factor developed using lead per battery data from Battery Council International. Recycling Rates 2009 to 2013. April 2014. http://c.ymcdn.com/sites/batterycouncil.org/resource/resmgr/BCI_Recycling_Rate_Study_200.pdf applied to battery composition data from Sulllivan, JL and Gaines, L. 2010. A Review of Battery Life Cycle Analysis: State of Knowledge and Critical Needs. October 2010. Center for Transportation Research, Energy Systems Division, Argonne National Laboratory ANL/ESD/10-7.
4	Keep America Beautiful. Volume-to-Weight Recycling and Trash Conversion Factors Report. December 2013.
5	Rubber Manufacturers Association (RMA). 2013 U.S. Scrap Tire Management Summary. November 2014. http://www.rma.org/download/scrap-tires/market-reports/US_STMarket2013.pdf
6	California Integrated Waste Management Board. Targeted Statewide Waste Characterization Study: Detailed Characterization of Construction and Demolition Waste. June 2006. http://www.calrecycle.ca.gov/publications/Documents/Disposal%5C34106007.pdf
	Brown Goods: larger, non-portable electronic goods that have some circuitry. Examples include microwaves, stereos, VCRs, DVD players, radios, audio/visual equipment, and non-CRT televisions (such as LCD televisions).
	Computer-related Electronics: electronics with large circuitry that is computer-related. Examples include processors, mice, keyboards, laptops, disk drives, printers, modems, and fax machines.
	Other Small Consumer Electronics: portable non-computer-related electronics with large circuitry. Examples include personal digital assistants (PDAs), cell phones, phone systems, phone answering machines, computer games and other electronic toys, portable CD players, camcorders, and digital cameras.
7	Keep America Beautiful, Recycle-Bowl Competition. Accessed February 2015. http://recycle-bowl.org/wp-content/uploads/Recycle-Bowl-Estimating-Data-Fact-Sheet.pdf
8	Great Forest. Volume to Weight Conversion Ratios for Commercial Office Waste in New York City. January 2013. Primary data; Commingled; large commercial properties (500,000 sq. ft – 1m sq. ft) in the New York metropolitan area. http://www.greatforest.com/files/FileUpload/files/Great%20Forest%20-%20Waste%20Conversion%20Paper%20-
9	US EPA Electronics Waste Management in the United States Through 2009 . May 2011.
10	WasteCare Corporation. Some Typical Loose and Baled Weights of Various Materials. Accessed April 2015. http://www.wastecare.com/Products-Services/Balers/aboutbalers.htm.
11	The Aluminum Association. U.S. Aluminum Beverage Can Recycling. http://www.aluminum.org/sites/default/files/section_images/UBCRecyclingRate2013.pdf
12	The Association of Postconsumer Plastic Recyclers (APR). Model Bale Specifications. http://www.plasticsrecycling.org
13	Caldwell, Maggie. Recycling Plastic Film and Shrink Wrap. May 16, 2014. http://www.federalinternational.com/blog/recy
14	Caterpillar Performance Handbook. 40th Edition. January 2010.
15	Minnesota Pollution Control Agency. Data provided by professional composter. 2015. Source separated organics - food scraps, non-recyclable paper (paper plates/towels/etc) and compostable plastics.
16	Minnesota Department of Administration 2015 hauler records (excludes organics).
17	Minnesota Pollution Control Agency. 2013 MPCA MSW Landfill Annual Report Data.
18	California Integrated Waste Management Board. Targeted Statewide Waste Characterization Study: Detailed Characterization of Construction and Demolition Waste. June 2006
19	Tellus scaled down by factor from Florida C&D study -- Converting C&D Debris from Volume to Weight: A Fact Sheet for C&D Debris Facility Operators, University of Florida, 2000.
20	Florida Dept of Environmental Protection http://www.dep.state.fl.us/waste/categories/recycling/cd/canddmain.htm
21	CalRecycle. 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California. September 10, 2015. http://www.calrecycle.ca.gov/Publications/Documents/1543/20151543.pdf Organics - putrescible material hauled by a contracted third party to a permitted facility mainly engaged in producing compost or mulch, or in anaerobic digestion of organics. Minor mechanical separation of contaminants or recyclable materials may occur at the facility prior to composting or digestion.
22	Goldstein, Nora. "Food Scraps Composting Laboratory". *BioCycle.* January 2013, Vol. 54, No. 1, p. 33. https: //www .biocycle.net/2013/01/22/food-scraps-composting-laboratory/
23	U.S. EPA. Standard Volume-to-Weight Conversion Factors. Last updated: February 28, 2006. https://www.epa.gov/smm/metrics-waste-reduction
24	National Center for Electronics Recycling (NCER). http://www.electronicsrecycling.org/ Mixed monitors and TVs: total pounds collected divided by total units collected.

Villie M. Smith, CFA, ASA
Marion County Property Appraiser

501 SE 25th Avenue, Ocala, FL 34471 Telephone: (352) 368-8300 Fax: (352) 368-8336

2019

21492-000-00

GOOGLE Street View

Prime Key: 547816 | MAP IT | Current as of 9/25/2019

Property Information

FRIENDS RECYCLING LLC
2350 NW 27TH AVE
OCALA FL 34475

Taxes / Assessments:
Map ID: 161
Millage: 1001

M.S.T.U.
PC: 40
Acres: 14.57

Situs: 2340 NW 27TH AVE OCALA

Current Value

Land Just Value	$239,051
Buildings	$0
Miscellaneous	$0
Total Just Value	$239,051
Total Assessed Value	$239,051
Exemptions	$0
Total Taxable	$239,051

Ex Codes:

History of Assessed Values

Year	Land Just	Building	Misc Value	Mkt/Just	Assessed Val	Exemptions	Taxable Val
2018	$239,051	$0	$0	$239,051	$239,051	$0	$239,051
2017	$239,051	$0	$0	$239,051	$239,051	$0	$239,051
2016	$227,939	$0	$0	$227,939	$227,939	$0	$227,939

Property Transfer History

Book/Page	Date	Instrument	Code	Q/U	V/I	Price
6100/0637	09/2014	41 CORP	4 V-APPRAISERS OPINION	Q	V	$375,000
5833/0810	03/2013	07 WARRANTY	4 V-APPRAISERS OPINION	Q	V	$323,400
5833/0808	01/2013	08 CORRECTIVE	0	U	V	$100
5802/1100	01/2013	07 WARRANTY	7 PORTIONUND INT	U	V	$100
4965/0811	01/2008	09 EASEMNT	0	U	V	$100
2048/1274	06/1994	07 WARRANTY	2 V-SALES VERIFICATION	U	V	$147,100
1513/1005	06/1988	02 DEED NC	0	U	V	$100
1094/1955	01/1982	07 WARRANTY	0	U	V	$60,000
1003/1914	06/1979	43 R-O-W	0	U	V	$100
0550/0192	06/1973	02 DEED NC	0	Q	V	$25,000

Property Description

SEC 02 TWP 15 RGE 21
E 1/2 OF SE 1/4 OF SE 1/4
EXC N 50 FT &
EXC S 25 FT FOR RD &

EXC E 30 FT FOR RD & EASMENT OVER N 50 FT
LESS & EXCEPT THE FOLLOWING: W 300 FT OF S 525 FT OF E 1/2
OF SE 1/4 OF SE 1/4 OF SEC 2.

Land Data - Warning: Verify Zoning

Use	CUse	Front	Depth	Zoning	Units	Type	Rate	Loc	Shp	Phy	Class Value	Just Value
4000		330.0	491.0	M1	162,169.00	SF	.6000	1.00	1.00	1.00	97,301	97,301
4000		630.0	750.0	M1	472,500.00	SF	.6000	1.00	1.00	0.50	141,750	141,750

Neighborhood 9985 - COMM-NW 27TH AVE TO HWY 326 — Total Land - Class $239,051
Mkt: 2 70 — Total Land - Just $239,051

Miscellaneous Improvements

Type	Nbr Units	Type	Life	Year In	Grade	Length	Width	Depr Value

Total Depreciated Value - $0

Appraiser Notes

Planning and Building

** Permit Search **

Permit Number	Amount	Issued Date	Complete Date	Description
BLD18-1421	$1,045,625	10/9/2018	1/1/1900	NEW INDUSTRIAL
SITE18-0023	$0	10/9/2018	1/1/1900	NEW COMMERCIAL

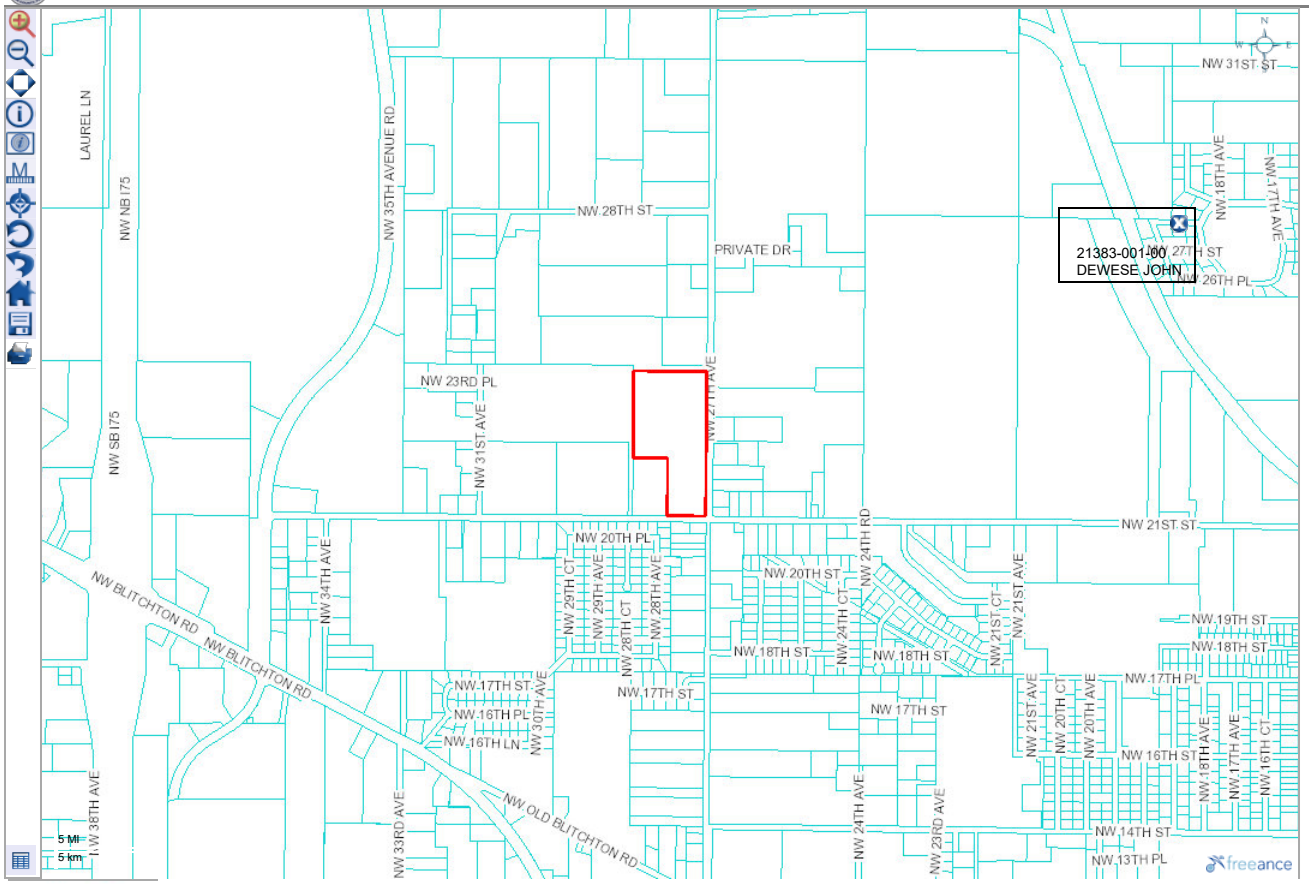
Cost/Market Summary

Buildings R.C.N.	$0	1/1/1800
Total Depreciation	$0	
Bldg - Just Value	$0	
Misc - Just Value	$0	3/11/2011
Land - Just Value	$239,051	10/11/2016
Total Just Value	$239,051	.

Bldg Nbr	RCN	Depreciation	Depreciated

Villie M. Smith, CFA, ASA
Marion County Property Appraiser

GIS Web Mapping Application
Last Updated: 09/20/2019



Mapping	Search

Selection Options Clear
Zoom to selected map feature

PARCEL	21492-000-00
PRC	PRC
PC	40
HX	
AG	
NAME	FRIENDS RECYCLING LLC
ADD_1	2350 NW 27TH AVE
ADD_2	OCALA FL 34475
ADD_3	
ADD_4	
ZIP	34475
SITUS_1	2340 NW 27TH AVE
MILL_GRP	1001
NABRHD	9985
ACRES	14.57
MO1	9
YR1	2014
PR_1	375000
MAP_NBR	161
TWP	15
RGE	21
SEC	2
BLDS	
USE_SF	
YRBLT1	
QUAL1	
TYPE1	
POOL	
BLD1_SF	
HX_YR	
RESUSESF	
RESTOTSF	
COMUSESF	
COMTOTSF	
RESBLDS	
COMBLDS	
AC	

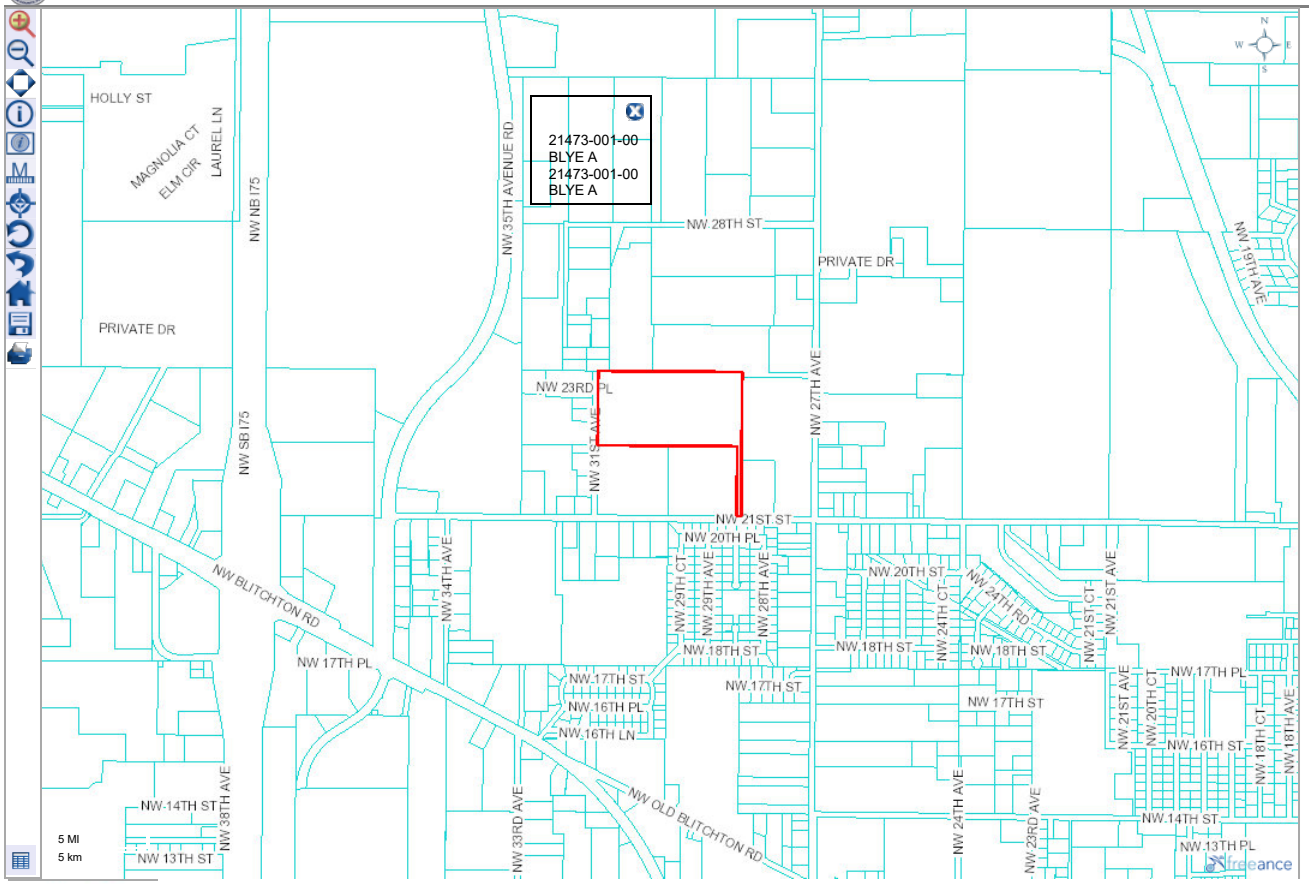
Map Tool Options **Active Tool: *Zoom In***

The current cursor mode is set to 'Zoom In'. Clicking on the map directly will zoom in on the map centered at the point clicked. Dragging on the map will create a 'Zoom Window' which will be used to approximate the new extent of the map.

Site Information

Villie M. Smith, CFA, ASA
Marion County Property Appraiser

GIS Web Mapping Application
Last Updated: 09/20/2019



Mapping | Search

Selection Options | Clear

Zoom to selected map feature

PARCEL	21494-000-00
PRC	PRC
PC	96
HX	
AG	
NAME	FRIENDS RECYCLING LLC
ADD_1	2350 NW 27TH AVE
ADD_2	OCALA FL 34475
ADD_3	
ADD_4	
ZIP	34475
SITUS_1	
MILL_GRP	1001
NABRHD	9985
ACRES	20.58
MO1	4
YR1	2015
PR_1	100
MAP_NBR	161
TWP	15
RGE	21
SEC	2
BLDS	
USE_SF	
YRBLT1	
QUAL1	
TYPE1	
POOL	
BLD1_SF	
HX_YR	
RESUSESF	
RESTOTSF	
COMUSESF	
COMTOTSF	
RESBLDS	
COMBLDS	
AC	

Map Tool Options **Active Tool: *Zoom In***

The current cursor mode is set to 'Zoom In'. Clicking on the map directly will zoom in on the map centered at the point clicked. Dragging on the map will create a 'Zoom Window' which will be used to approximate the new extent of the map.

Site Information

Villie M. Smith, CFA, ASA

Marion County Property Appraiser

501 SE 25th Avenue, Ocala, FL 34471 Telephone: (352) 368-8300 Fax: (352) 368-8336

2019

21494-000-00

Prime Key: 3189469 | MAP IT | Current as of 9/27/2019

Property Information

FRIENDS RECYCLING LLC
2350 NW 27TH AVE
OCALA FL 34475

Taxes / Assessments:
Map ID: 161
Millage: 1001

M.S.T.U.
PC: 96
Acres: 20.58

Current Value

Land Just Value	$192,150
Buildings	$0
Miscellaneous	$0
Total Just Value	$192,150
Total Assessed Value	$192,150
Exemptions	$0
Total Taxable	$192,150

Ex Codes:

History of Assessed Values

Year	Land Just	Building	Misc Value	Mkt/Just	Assessed Val	Exemptions	Taxable Val
2018	$192,150	$0	$0	$192,150	$192,150	$0	$192,150
2017	$194,266	$0	$0	$194,266	$194,266	$0	$194,266
2016	$194,266	$0	$0	$194,266	$194,266	$0	$194,266

Property Transfer History

Book/Page	Date	Instrument	Code	Q/U	V/I	Price
6207/1301	04/2015	05 QUIT CLAIM	0	U	V	$100
5316/0521	01/2010	70 OTHER	0	U	V	$100
5254/0879	08/2009	09 EASEMNT	0	U	V	$100
4965/0806	01/2008	09 EASEMNT	0	U	V	$100
3148/0047	04/2002	07 WARRANTY	2 V-SALES VERIFICATION	Q	V	$164,700

Property Description

SEC 02 TWP 15 RGE 21
N 670.35 FT OF W 1/2 OF SE 1/4 OF SE 1/4 &
& E 40 FT OF W 1/2 OF SE 1/4 OF SE 1/4 &
PLAT BOOK A PAGE 4
UNNAMED SUBDIVISION OF SW 1/4 OF SE 1/4 OF SECTION 2-15-21
N 670.35 FT OF E 1/2 OF SW 1/4 OF SE 1/4 EXC W 25 FT

Parent Parcel: 21493-000-00

Land Data - Warning: Verify Zoning

Use	CUse	Front	Depth	Zoning	Units	Type	Rate	Loc	Shp	Phy	Class Value	Just Value
9630		670.0	650.0	M1	435,500.00	SF	.45	001.00	1.00	0.50	500	97,988
9430		40.0	630.0	M1	.58	AC	20,000.00	001.00	0.89	0.50	5,162	5,162
9630		670.0	650.0	M2	10.00	AC	20,000.00	001.00	0.89	0.50	500	89,000

Neighborhood 9985 - COMM-NW 27TH AVE TO HWY 326 — Total Land - Class $6,162
Mkt: 2 70 — Total Land - Just $192,150

Miscellaneous Improvements

Type	Nbr Units	Type	Life	Year In	Grade	Length	Width	Depr Value

Total Depreciated Value - $0

Appraiser Notes

SIZE IS ADJ FOR TOTAL ACREAGE OWNED BY OWNER THAT IS CONTIGUOUS (41.65 ACRES)

Planning and Building

** Permit Search **

Permit Number	Amount	Issued Date	Complete Date	Description

Cost/Market Summary

Buildings R.C.N.	$0	1/1/1800
Total Depreciation	$0	
Bldg - Just Value	$0	
Misc - Just Value	$0	3/11/2011
Land - Just Value	$192,150	6/15/2018
Total Just Value	$192,150	.

Bldg Nbr	RCN	Depreciation	Depreciated

2019 FLORIDA LIMITED LIABILITY COMPANY ANNUAL REPORT

FILED
Apr 29, 2019
Secretary of State
1455055840CC

DOCUMENT# L99000005865

Entity Name: FRIENDS RECYCLING, L.L.C.

Current Principal Place of Business:

2350 N.W. 27TH AVENUE
OCALA, FL 34475-3330

Current Mailing Address:

2350 N.W. 27TH AVENUE
OCALA, FL 34475-3330 US

FEI Number: 59-3598319

Certificate of Status Desired: No

Name and Address of Current Registered Agent:

LOURENCO, GERALD
2350 N.W. 27TH AVENUE
OCALA, FL 34475-3330 US

The above named entity submits this statement for the purpose of changing its registered office or registered agent, or both, in the State of Florida.

SIGNATURE:

Electronic Signature of Registered Agent — Date

Authorized Person(s) Detail :

Title	MGR
Name	LOURENCO, GERALD
Address	2350 N.W. 27TH AVE.
City-State-Zip:	OCALA FL 34475-3330

I hereby certify that the information indicated on this report or supplemental report is true and accurate and that my electronic signature shall have the same legal effect as if made under oath; that I am a managing member or manager of the limited liability company or the receiver or trustee empowered to execute this report as required by Chapter 605, Florida Statutes; and that my name appears above, or on an attachment with all other like empowered.

SIGNATURE: GERALD LOURENCO MFMR 04/29/2019

Electronic Signature of Signing Authorized Person(s) Detail — Date