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Draft Pond Siting Report

Roadway Conceptual Analysis for Chuluota Road from SR 50 to Lake Pickett Road

Orange County Project Number: Y20-830

Submitted to: Orange County Public Works, Florida



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EXECUTIVE SUMMARY

Orange County is proposing to widen Chuluota Road from East Colonial Drive to Lake Pickett Road to improve roadway capacity. The total project length is approximately 1.93 miles of roadway. The improvements include the widening of Chuluota Road with the construction of four eleven-foot travel lanes, one 10-foot multiuse path, and one 6-foot sidewalk. The lengths of existing turn lanes are anticipated to remain. The roadway corridor spans a mix of commercial, residential, institutional, and pastureland uses. Refer to **Appendix A** for additional information regarding the potential typical sections.

The Chuluota Road project area is located within the Big Econlockhatchee River Basin within the jurisdiction of the St. Johns River Water Management District (SJRWMD). The Econlockhatchee River System is considered an Outstanding Florida Waters (OFW). Refer to **Appendix A** for the project location map and USGS quadrangle map.

The design calculations, conceptual plans, and survey information all use the NAVD88 vertical datum and Florida State Plane East (feet) coordinate system.

The purpose of this Pond Siting Report is to discuss, analyze, and identify the stormwater management plan for the proposed Chuluota Road improvements based on environmental, hydrologic, hydraulic, and economic factors. Stormwater management for water quality treatment and runoff attenuation is proposed by using wet detention ponds. The design of the drainage and stormwater facilities will comply with the standards set forth by the FDOT drainage manual, the St. Johns River Water Management District (SJRWMD) Environmental Resource Permit (ERP) manual and the Orange County Land Development Code.

The roadway project limits has been divided into nine drainage sub-basins (four major basins with basins 1, 2, and 4 further divided into multiple sub-basins). The water quality treatment and attenuation volumes for all four of the major basins is proposed to be accommodated within new pond sites or expansions of existing ponds. For all basins which will require the construction of a new pond or expansion of an existing pond, at least two alternatives were evaluated.

The County is now considering Ponds 3C and 4C as preferred alternatives to accommodate water quality and attenuation volume requirements for all basins. These two pond sites are provided in addition to the two other alternatives evaluated for each basin. Because these pond sites came up late in the analysis stage, ICPR runs have not been included and will be completed during final design. Stormwater computations (water quality and quantity requirements) are included.

This report evaluates the adequacy of the pond sites using a volumetric analysis, which accounts for the water quality treatment and water quantity attenuation requirements for runoff. Please note the volumetric analyses of the pond sites were performed with preliminary data. Pond sizes and

configurations may change during the final design as refinements to the roadway design are made, and topographic survey is obtained. Please refer to Table 11 in Section 9.0 for the Pond Summary Matrix.

New County-preferred Alternatives

Pond 3C is the recommended pond for Drainage Basin 1, 2, and 3. This pond site requires the partial acquisition of the commercial parcel under the ownership of First Baptist Church of Oviedo Inc. The parcel size is listed at 40.22 acres and the proposed pond 3C footprint is approximately 6 acres. The proposed pond site is adjacent to the west side of Chuluota Road. The outfall from the proposed pond is conveyed west to the existing wetland and eventually to Corner Lake. There are no wetlands within the proposed footprint of this pond site location. The seasonal high-water table is 67.0 ft NAVD88 based on a combination of LiDAR and a wetland delineation. A wet detention pond is proposed at this location due to the high-water table. Preliminary pond sizing calculations indicate that Drainage Basins 1, 2, and 3 require a total of 3.90 ac-ft of treatment and attenuation volume to accommodate the proposed roadway configuration and pond footprint. Pond sizing calculations were also completed to provide the required volume at one foot below the inside maintenance berm. The ability to convey runoff from Basin 1 north may require Chuluota Road to be raised in the vicinity of the SR50 intersection. Alternatively, a portion of Basin 1 can continue to drain to the FDOT drainage systems on SR50 such that peak discharges into FDOT right-of-way is maintained or reduced, and the remainder of Basin 1 can be conveyed to Pond 3C. This pond alternative assumes that the crown of Chuluota Road can be raised to elevation 70 ft NAVD88 in the vicinity of Pond 3C.

Pond 4C is an alternative pond for Drainage Basin 4. It is located on the northeast corner of Chuluota Road and Lake Pickett Road. The parcel will require acquisition because of proposed improvements to Lake Pickett Road as part of another project, so the County is interested in using this parcel for stormwater and water quality needs for Chuluota Road Basin 4. The parcel size is listed at 2.046 acres, and the proposed pond 4C footprint is 1.0 acre. The outfall from the proposed pond is conveyed south to Lake Pickett Road. There are no wetlands in this pond site location. The measured seasonal high-water table is 4.9 feet below existing ground. Pond 4C is proposed as a wet detention pond. Preliminary pond sizing calculations indicate that Basin 4 requires a total of 0.95 ac-ft of treatment and attenuation volume to accommodate the proposed roadway configuration and pond footprint. Pond sizing calculations were also completed to provide the required volume at one foot below the inside maintenance berm.

Preferred alternatives other than Pond 3C and Pond 4C

Pond 1A is an alternate pond for Drainage Basin 1. This pond site requires the partial acquisition of the commercial parcel under the ownership of Captiva 16910 LLC. The parcel size is listed at 1.99 acres and the proposed pond 1A footprint is 0.53 acres. The proposed pond site is adjacent to the east side of Chuluota Road. The outfall from the proposed pond is ultimately conveyed east to the

existing wetland. There are no wetlands in this pond site location. Proposed Pond 1A has an estimated low potential risk of contamination, see Contamination Report in **Appendix G**. It should be noted that the County has taken the position that despite a low-risk designation, they still have concerns over any improvements that would impact this property. This is a disadvantage for consideration of Pond 1A. Pond 1A has an average seasonal high-water depth 4.8 feet below the existing ground elevation and is proposed as a wet detention pond. Preliminary pond sizing calculations indicate that Basin 1 requires a total of 0.35 ac-ft of treatment and attenuation volume to accommodate the proposed roadway configuration and pond footprint. Pond sizing calculations were also completed to provide the required volume at one foot below the inside maintenance berm.

Pond 2A is the recommended pond for Drainage Basin 2. This pond site would require a joint use pond between Corner Lake Middle School (Orange County School District). The parcel size is listed at 26.01 acres and the proposed pond 2A footprint is 3.35 acres. Pond 2A would incorporate two existing Corner Lake Middle School, "Pond 1" and "Pond 3" in the Corner Lake Middle School plans (ERP#27857-1). The proposed pond site is adjacent to the west side of Chuluota Road. The outfall from the proposed pond is ultimately conveyed to the existing wetland west of the site. There are no wetlands in this pond site location. Pond 2A has a measured seasonal high-water depth of 3.7 feet below the existing ground elevation and is proposed as a wet detention pond. Pond 2A was sized to accommodate the treatment and attenuation volume of both Basin 1 and Basin 2 and the existing volumes required from Corner Lake Middle School (ERP#27857-1). Preliminary sizing calculations indicate that Basin 1 and Basin 2 requires a total of 0.22 ac-ft and 1.73 ac-ft of treatment and attenuation volume respectively to accommodate the proposed roadway configuration and pond footprint. Pond sizing calculations were also completed to provide the required volume at one foot below the inside maintenance berm.

Pond 3A is the recommended pond for Drainage Basin 3. This pond site requires the partial acquisition of the commercial parcel under the ownership of First Baptist Church of Oviedo Inc. The parcel size is listed at 40.22 acres and the proposed pond 3A footprint is 1.78 acres. The proposed pond site is adjacent to the west side of Chuluota Road. The outfall from the proposed pond is conveyed west to the existing wetland and eventually to Corner Lake. There are wetlands in this pond site location and impacts are summarized in Table 11. The seasonal high-water table is 67.0 ft NAVD88 based on a combination of LiDAR and a wetland delineation. A wet detention pond is proposed at this location due to the high-water table. Preliminary pond sizing calculations indicate that Basin 3 requires a total of 2.09 ac-ft of treatment and attenuation volume to accommodate the proposed roadway configuration and pond footprint. Pond sizing calculations were also completed to provide the required volume at one foot below the inside maintenance berm.

Pond 4A is the recommended pond for Drainage Basin 4. This pond site requires the partial acquisition of the parcel under the private ownership of David E Axel Trust. The parcel size is listed at 40.41 acres and the proposed pond 4A footprint is 0.89 acres. The proposed pond site is adjacent

to the south side of Lake Pickett Road East of Chuluota Road. The outfall from the proposed pond is conveyed east to Lake Pickett Road. There are no wetlands in this pond site location. The measured seasonal high-water table is 2.2 feet below existing ground. Pond 4A is proposed as a wet detention pond. Preliminary pond sizing calculations indicate that Basin 4 requires a total of 0.77 ac-ft of treatment and attenuation volume to accommodate the proposed roadway configuration and pond footprint. Pond sizing calculations were also completed to provide the required volume at one foot below the inside maintenance berm.

Additional information, such as the survey and geotechnical data, has been obtained for this report to further refine the pond sizes and verify the right of way needs for the ponds. This report provides pond site alternatives that are hydraulically feasible and environmentally permissible based on the available information. Locations were analyzed and evaluated for the following:

- Pond size required at tie down locations
- Stormwater conveyance and hydraulic parameters
- Parcel(s) required for acquisition
- FEMA flood zone(s)
- Wetland impacts
- Listed species impacts
- Contamination
- Cultural resources (archaeological and historical)
- Social impacts
- Other environmental impacts
- Utility conflicts
- Construction/maintenance concerns
- Public opinion
- Aesthetics
- Access issues
- Current land use zoning
- Future land use zoning
- Total cost of each alternative
- Potential risks associated with each alternative
- Recommendations/ranking

SECTION 1.0 – INTRODUCTION

The purpose of this Pond Siting Report is to discuss, analyze, and identify the stormwater management plan for the proposed Chuluota Road improvements based on environmental, hydrologic, hydraulic, and economic factors. Stormwater management for water quality treatment and runoff attenuation is proposed by using wet detention ponds. The design of the drainage and stormwater facilities will comply with the standards set forth by the FDOT drainage manual, the St.

Johns River Water Management District (SJRWMD) Environmental Resource Permit (ERP) manual and the Orange County Land Development Code.

The roadway project limits has been divided into nine drainage sub-basins. The water quality and attenuation for two of the sub-basins will be provided in existing runoff attenuation systems, while seven of the sub-basins will be provided for in proposed pond sites or expansions of existing ponds. For all sub-basins which will require the construction of a new pond or expansion of an existing pond, at least two alternatives were evaluated. This report evaluates the adequacy of the pond sites using a volumetric analysis, which accounts for the water quality treatment and water quantity attenuation for runoff. Please note the volumetric analyses of the pond sites were performed with preliminary data. Pond sizes and configurations may change during the final design as refinements to the roadway design are made, and topographic survey is obtained. Please refer to Table 11 in Section 9.0 for the Pond Summary Matrix.

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- Pond size required at tie down locations
- Stormwater conveyance and hydraulic parameters
- Parcel(s) required for acquisition
- FEMA flood zone(s)
- Wetland impacts
- Listed species impacts
- Contamination
- Cultural resources (archaeological and historical)
- Social impacts
- Other environmental impacts
- Utility conflicts
- Construction/maintenance concerns
- Public opinion
- Aesthetics
- Access issues
- Current land use zoning
- Future land use zoning
- Total cost of each alternative
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SECTION 2.0 – PROJECT DESCRIPTION

Orange County is proposing to widen Chuluota Road from East Colonial Drive to Lake Pickett Road to improve roadway capacity. The total project length is approximately 1.93 miles of roadway. The improvements include the widening of Chuluota Road with the construction of four eleven-foot travel lanes, one 10-foot multiuse path, and one 6-foot sidewalk. The lengths of existing turn lanes are anticipated to remain. The roadway corridor spans a mix of commercial, residential, institutional, and pastureland uses. Refer to **Appendix A** for additional information regarding the potential typical sections.

The Chuluota Road project area is located within the Big Econlockhatchee River Basin within the jurisdiction of the St. Johns River Water Management District (SJRWMD). The Econlockhatchee River System is considered an Outstanding Florida Waters (OFW). Refer to **Appendix A** for the project location map and USGS quadrangle map.

The project vertical datum is the North American Vertical Datum of 1988 (NAVD88) and all elevations contained in this document and the plans reference this datum unless otherwise noted. Conversion from NGVD29 to NAVD88 is -1.1 feet.

SECTION 3.0 – DATA COLLECTION

The following list includes the major sources of data utilized for the pond siting analysis:

- Aerial photography
- Digital one-foot contour topography created from LiDAR (Light Detection and Ranging) data for Orange County (NAVD 88)
- GIS Soils data from NRCS Web Soil Survey, 2018
- Engineer's field reviews of existing conditions
- Environmental Resource Permit documents from adjacent developments
 - #21001 Cypress Lakes (multiple phases)
 - #27857 Corner Lake Middle School
 - #57286 Lukas Estates
 - #63516 Corner Lake Estates
 - #63516 Corner Lakes Plaza
 - #81542 Country Lake Estates
 - #83067 BP Amoco (Retail Shopping Center)
 - #101908-1 and -2 Mandalay Subdivision & Estates / Lake Pickett Rd Realignment
 - #101908-4 Lake Pickett Road and Chuluota Road Intersection Improvements
- Proposed development plans
 - ERP#21001 Cypress Lakes Phase I (Parcel P), aka YardCo

- ERP#166225 YardCo – East Colonial
- FDOT 60% Roadway Plans for SR 50, 239203-7-52-01
- Cross Life Church
- The Grow Farm & Garden Community
- East Orange Trail
- FEMA Flood Insurance Rate Maps (FIRMs), panels 12095C0285F, 12095C0295F, and 12095C0305F, all effective 9/25/2009
- SJRWMD Environmental Resource Permit, Applicant’s Handbook, Volume I and II (May 2016)
- Orange County Municipal Code
- FDOT Drainage Manual 2022
- FDOT Drainage Design Guide 2022
- FDOT Drainage Connection Handbook 2020
- Orange County GIS database
- Orange County Property Appraiser’s website information
- Draft Econ River Basin – Lake Pickett Sub-Watershed Model Refinement Memo and model by SAI, 2015
- U.S. Fish and Wildlife Service (USFWS) datasets for National Wetland Inventory (NWI) (2019)
- FDEP Conservation Areas Map Direct Access in September 2021
- Roadway Borings obtained by NADIC in September 2021

SECTION 4.0 – DESIGN CRITERIA

The design of the stormwater management facilities for the project is governed by the rules set forth by SJRWMD and Orange County. Water treatment and attenuation requirements will comply with the guidelines as defined in the SJRWMD ERP Manual.

The stormwater management facilities have been sized to meet the criteria of the SJRWMD and the Orange County Public Works Department Engineering Manual. The following drainage design criteria has been used for the sizing of the proposed stormwater management ponds:

- For a project or portion of a project located within an open drainage basin, the allowable discharge is based on the SJRWMD’s 24-hour, 25-year rainfall maps and the NRCS Type II Florida Modified 24-hour rainfall distribution.
- The Orange County Municipal Code indicates that “[f]or predevelopment time of concentration between zero and thirty (30) minutes, use six-hour storm duration for design” and “[f]or predevelopment time of concentration over thirty (30) minutes, use twenty-four-hour storm duration for design.” The 25-year 6-hour rainfall total is 5.75 inches, and the 24-year 24-hour rainfall total is 8.4 inches (based on intensity of rainfall derived from FDOT rainfall charts, per municipal code). For this project, a

design storm of the 25-year, 24-hour rainfall was used for pond sizing to meet the SJRWMD criteria and to be conservative.

- The post-development volume of direct runoff must not exceed the pre-development volume of direct runoff for the 25-year frequency, 96-hour duration storm for systems discharging to landlocked lakes which are adjacent to properties of more than one ownership. These systems shall not cause an increase in the total pre-development flood stage. [SJRWMD Permit Information Manual (PIM) Part III, Chapter 3, Section 3.2.1(c)]
- A stormwater facility shall be designed as an open space amenity which is consistent with the urban design concepts of the particular CVC. Stormwater facilities serving nonresidential development may be located outside of the area designated for commercial or office development.
- Except as stated below, a retention or detention facility shall be designed with a maximum side slope of 5:1, so that fencing is not required. A wet-bottom retention pond with a side slope steeper than 5:1 may be permitted as an integral element of the urban design or architectural theme of the development.
- Pool depths should be a minimum of six feet below the design "normal" water level.
- A wet-bottom retention pond shall be landscaped in accordance with the following criteria:
 - a) Up to two and one-half acres. At least ten percent of the land above the design high-water level, excluding maintenance berms, shall be landscaped with plant materials other than ground cover over at least fifty percent of the required area, and at least fifty percent of those plant materials shall be native species; or a littoral zone band at least five feet in width for at least fifty percent of the shoreline shall be established with native aquatic or semi-aquatic plant species.
 - b) From two and one-half to five acres. At least five percent of the land above the design high-water level excluding maintenance berms shall be landscaped with plant materials other than ground cover over at least fifty percent of the required area, and at least fifty percent of those plant materials shall be native species; or a littoral zone band at least five feet in width for at least thirty-five percent of the shoreline shall be established with native aquatic or semi-aquatic plant species.
 - c) More than five acres. A littoral zone band at least five feet in width for at least twenty percent of the shoreline shall be established with native aquatic or semi-aquatic plant species.
- A wet-bottom retention pond shall be designed as a barrier-free aesthetic amenity.
- A skimmer shall be provided on a wet-bottom stormwater management facility to minimize the accumulation of trash and pollutants.
- Any wet-bottom retention pond visible from any existing arterial right-of-way shall provide an aquatic planting in a continuous band on the side of the pond remote from the right-of-way to screen the bank area between the normal water elevation and the high-water elevation. This littoral zone planting shall be at least four feet wide and average six feet wide.

- A dry-bottom stormwater management facility shall be designed with at least five percent of the area above the peak stage elevation landscaped with plant materials other than ground cover over at least fifty percent of the required area, and at least fifty percent of those plant materials shall be native species.
- A dry-bottom stormwater management facility shall be unfenced with a maximum side slope of 5:1 and shall be sodded.
- Any dry-bottom stormwater management facility visible from any existing arterial right-of-way shall provide screening in the form of a hedge, berm, wall, or combination in a continuous band on the side of the facility proximate to the right-of-way to screen the bank area of the facility.

The water quality of the receiving water for this drainage basin, Corner Lake, was reviewed by Orange County in February of 2021. The water sampling location, Station ID BE3, is located at the center of the lake. Please refer to Table 1 for a partial summary of the routine samples taken at approximately 0.5 meters of depth within the lake. According to the sample results, Corner Lake would not be classified as an impaired water body by the Florida Department of Environmental Protection (FDEP). The Chuluota Road project area is located within the Big Econlockhatchee River Basin within the jurisdiction of the St. Johns River Water Management District (SJRWMD). The Econlockhatchee River System is considered an Outstanding Florida Waters (OFW).

Table 1 – Water Quality Samples

Station ID	WBID	Category	Characteristic	Result Value	Result Units	Analysis Date
BE3	140023	Routine Sample	Nitrogen, Nitrite (NO ₂) + Nitrate (NO ₃) as N	9.00	ug/l	5/18/2021
BE3	140023	Routine Sample	Phosphorus as P	13.00	ug/l	5/18/2021
BE3	140023	Routine Sample	pH	6.00		5/18/2021
BE3	140023	Routine Sample	Sulfur, sulfate (SO ₄) as SO ₄	5.52	mg/l	5/18/2021
BE3	140023	Routine Sample	Turbidity	1.60	NTU	5/18/2021
BE3	140023	Routine Sample	Total Suspended Solids (TSS)	3	mg/l	5/18/2021

SECTION 5.0 – ENVIRONMENTAL LOOK AROUND

An Ecological Summary Report (ESR) has been prepared as part of a Roadway Conceptual Analysis (RCA) study for Chuluota Road from Colonial Drive (SR 50) to Lake Pickett Road. This ESR documents ecological features located within the study corridor, such as wetland and/or other surface water communities; occurrence or potential for occurrence of federally- and/ or state-protected wildlife species and their habitat, and the likelihood of involvement of such

features during project implementation.

Riparian Habitat Protection Zone

The Chuluota Road study corridor lies within the Econlockhatchee River Drainage Basin and includes Riparian Habitat Protection Zone (RHPZ) of the Econlockhatchee River and its tributaries. Wetlands contiguous with Econlockhatchee River and tributaries and 50-foot landward of the wetland limits are identified as RHPZ. Some wetland systems located within the Chuluota Road RCA study corridor are considered RHPZ wetlands via connection with Silcox Branch and Mill Branch, named tributaries (Appendix D: Figure 13).

Wetlands and Other Surface Waters

Current ecological conditions within the study corridor were evaluated to determine the potential for adverse wetland and/or other surface water impacts, and RHPZ upland impacts, associated with one alignment and 8 stormwater management pond locations. Wetland and/or other surface waters were aerially interpreted and verified through ground-truthing activities (Appendix D: Figure 6-1 and 6-2) and should be delineated during the final design and permitting phase.

A summary of impacts, by type, roadway, and stormwater pond locations, are provided in Table 2 and Appendix D (Figure 14-1 and 14-2).

Table 2 – Approximate Wetland and Other Surface Water Impacts Associated with Chuluota Road RCA

Wetland/Other Surface Water ID	FLUCFCS Code	Proposed Alignment Impact (ac)*	Proposed Pond ID	Proposed Pond Impact (ac)*	RHPZ Uplands (ac)*
WL-1	6170	0.33			
WL-2	6170				
WL-3	6410	0.16			
WL-7	6210		Pond 3A	0.73	1.09
WL-7	6210		Pond 3B	0.11	0.18
WL-8	6300		Pond 2B	0.97**	
WL-9	6250		Pond 1B	1.22**	0.07
SW-1	5130	2.73***			
Upland			FC Pond 1	0.05**	
TOTAL		3.22		3.08	1.34

* Impact acreages are based on approximate limits through aerial interpretation and limited ground-truthing activities.

** Impacts to a system or upland area under a recorded conservation easement. Additional mitigation is likely required to offset the mitigation value that was offset by the easement.

*** Upland-cut surface waters would not be jurisdictional unless inhabited by protected wildlife species.

Wetlands and other surface waters are regulated by federal, state, and local government policies. Impacts to jurisdictional wetlands and other surface waters will require coordination regulatory agencies during the permitting of the proposed project and may require mitigation to

offset adverse impacts. Mitigation credits, including RHPZ credits, are available through the Orange County owned TM-Econ Mitigation Bank Phase IV mitigation bank (summary of currently available mitigation is provided in Table 3).

Table 3 – Summary of Available Mitigation Credits from TM-Econ MB Phase IV for Chuluota Road RCA.

Mitigation Bank (MB)	Bank Service Area	*Credits Available
TM-Econ MB Phase IV, Orange County	(18) St. Johns River (Canaveral Marshes to Wekiva), (19) Econlockhatchee River Nested, (23) Lake Jesup, part of (20) Southern St. Johns River, Boggy Creek, Lake Hart, Lake Myrtle, and East Lake Toho	227.84 State (Includes RHPZ credits) 371.836 Federal

*Based on coordination with OCEPD personnel on May 3, 2022.

Threatened and Endangered Species

A desktop review of readily available public databases was conducted to evaluate the occurrence or potential for occurrence of federally and/or state protected wildlife species, followed by visual observations conducted via pedestrian transects throughout suitable habitat. Wildlife observations included direct (visual observation of species, scat, nests, etc.), and audible detection. A summary of protected wildlife species with potential for involvement is provided in Table 4.

Table 4 – Summary of Federally- and/or -state protected wildlife species with potential involvement during project implementation.

Scientific Name	Common Name	Protection Status	Findings
Reptiles			
<i>Gopher polyphemus</i>	Gopher tortoise	ST	Although no burrows were observed within suitable habitat; the area is not precluded from gopher tortoises entering the property and establishing burrows. During final design, and prior to construction, a survey in accordance with FWC's survey protocol is recommended.
Birds			
<i>Polyborus plancus audubonii</i>	Audubon's Crested Caracara	FT	No crested caracaras were observed during site review, and it is anticipated that the proposed roadway improvements will not adversely affect the crested caracara; however, additional surveys may be necessary based on final design.
<i>Antigone canadensis pratensis</i>	Florida sandhill crane	ST	Suitable habitat is present for foraging and nesting within and adjacent to the study corridor. It is recommended a survey following FWC's survey protocol be conducted between December and August for active nest sites. If no nest sites are detected, additional coordination with FWC is not required.

Protection Status Key ST = State-Designated Threatened, FT = Federal Designation - Threatened

Data Source: FWS ECOS Invalid source specified.; FNAI (FNAI, 2022)

Florida's endangered species, and threatened species (FWC, 2021)

The Florida Department of Agriculture and Consumer Services (FDACS) regulates the economic use of plant species identified as endangered, threatened, or commercially exploited. A desktop review of readily available public databases of known federally- and/or state-protected, or commercially exploited flora was conducted for the study corridor, followed by ground-truthing. One commercially exploited plant was identified within the study corridor:

- Saw palmetto (*Serenoa repens*)

No federal and/or state protected plant species were identified during the ground-truth activities. FDACS does not regulate disturbance of plant species from construction activities; therefore, the presence of these plants within the study corridor will not require coordination with regulatory agencies.

Wildlife Crossings

The potential of implementing wildlife crossings within the Chuluota Road study corridor was evaluated using several criteria, including current ecological conditions, proximity of existing conservation lands, biodiversity matrix, and proposed future development. An evaluation was conducted for one potential wildlife crossing locations along the study corridor:

- Wildlife Crossing 1 – south of Cypress Lake Glen Boulevard

Based on the, and wildlife known to inhabit this area, a wildlife crossing is not justified due to the lack of sustainable natural communities and a continuous corridor for wildlife movement. A wildlife crossing in this location may be reconsidered in the future should plans to develop the area west of Chuluota Road.

SECTION 6.0 – EXISTING & PROPOSED CONDITIONS

Chuluota Road, through the project limits, consists of a two-lane rural minor arterial roadway with turn lanes for the adjacent residential subdivisions. Generally, stormwater flows off the roadway into roadside ditches, which convey the storm water to wetlands or storm drains. The wetlands primarily drain to the northwest into Corner Lake. For a depiction of the existing drainage features, please refer to the Hydrologic & Natural Features Map shown on Figure 2.

Land Use

The existing land along the project corridor consist mostly of residential and conservation areas. A few businesses and two schools exist within the project corridor.

The largest land use within the project corridor are residential areas containing single family residential subdivisions. These existing subdivisions include Cypress Lakes, Corner Lake, and Country Lake. The businesses along the project corridor include Circle K, BP, and the Corner Lakes

shopping plaza. The two schools within the project limits are Corner Lake Middle School and Columbia Elementary School.

Drainage Basins and Ultimate Receiving Water Bodies

The Chuluota Road project area is located within the Big Econlockhatchee River Basin within the jurisdiction of the St. Johns River Water Management District (SJRWMD). The Econlockhatchee River System is considered an Outstanding Florida Waters (OFW).

Nine existing roadway basins are delineated along the corridor (four major basins with several subbasins, as described below). These basins generally outfall into roadside ditches, which convey the stormwater to adjacent wetlands or to existing storm drain systems. These existing drainage systems provide positive outfalls for the basins. There is no existing stormwater treatment or attenuation of flows in most basins. Runoff from subbasin 2B is conveyed to an existing wet detention pond east of Schoolview Way, and runoff from subbasin 4-100 and 4-200 are conveyed to an existing pond on the northwest corner of Lake Pickett Road and Chuluota Road. All of Basin 4 (4-100, 4-200, 4-300, and 4-400) are ultimately conveyed to wet detention ponds farther east on Lake Pickett Road.

Runoff from Basins 1A and 2B is ultimately conveyed to the Econlockhatchee River. Runoff from Basins 2A, 2B, and 3 is ultimately conveyed to Corner Lake.

Existing Cross Drains

Three existing cross drains are located within the study area as indicated in Table 5 below. CD #1 receives offsite runoff from the east side of Chuluota Road (such as runoff from Cypress Lakes ERP 21001-1) and conveys it to a wetland south of Corner Lake Drive which ultimately drains to Corner Lake. CD #2 receives offsite runoff from the east side of Chuluota Road (such as runoff from Cypress Lakes ERP 21001-1) and conveys it to a wetland south of Long Boat Lane which ultimately drains to Corner Lake. CD #3 receives offsite runoff from the west side of Chuluota Road including a large forested wetland (offsite in Basin 4-300) and conveys it to a stormdrain system on the east side of Chuluota Road which discharges to a stormdrain along Lake Pickett Road.

Table 5 – Existing Cross Drains

Culvert	Station	Existing Conditions		Proposed Conditions	Comments
		#	Size/ Type	Size/ Type	
CD #1	46+25	1	30" RCP	30" RCP	
CD #2	74+92	1	42" CMP	42" RCP	
CD #3	107+75	1	24" RCP	24" RCP	

Existing Permits

Over twelve permits were researched to obtain stormwater and environmental design information for existing systems within the project corridor. Please refer to Table 6 for a summary of permits referenced during the development of the proposed stormwater management systems for Chuluota RCA.

Table 6 – Existing Permits

Project Name	Agency/Permit Type	Permit No.	Date Issued	Description
Lake Pickett Road Realignment	SJRWMD/ ERP Standard General	101908 – 4	11/14/2011	Proposed intersection improvements of Chuluota Road at Lake Pickett Road
Lukas Estates Subdivision	SJRWMD/ ERP Standard General	57286 – 1	5/24/2000	Construction plans for Lukas Estates
Corner Lake Middle School	SJRWMD/ ERP Standard General	27857 – 1	1/13/1997	Retention pond plans for Corner Lake Middle School
Corner Lake Plaza	SJRWMD/ ERP Standard General	63516 – 8	11/18/2014	Proposed Drainage Modifications for the Corner Lake Plaza
Corner Lake Estates	SJRWMD/ ERP Standard General	81542 – 9	7/10/2000	The construction of a surface water management system, which consists of a 243-acre single-family residential subdivision to be known as Corner Lake Estate Subdivision
CR 419 Improvement Plans	SJRWMD/ ERP Standard General	58045 – 1	12/1/1999	The proposed County Road (CR) 419 expansion project conducted by Orange County

Other existing environmental resource permit documents that were reviewed include:

- #21001 Cypress Lakes (multiple phases)
- #27857 Corner Lake Middle School
- #57286 Lukas Estates
- #63516 Corner Lake Estates
- #63516 Corner Lakes Plaza
- #81542 Country Lake Estates
- #83067 BP Amoco (Retail Shopping Center)

- #101908-1 and -2 Mandalay Subdivision & Estates / Lake Pickett Rd Realignment
- #101908-4 Lake Pickett Road and Chuluota Road Intersection Improvements

Proposed development plans that were reviewed include:

- ERP#21001 Cypress Lakes Phase I (Parcel P), aka YardCo
- ERP#166225 YardCo – East Colonial
- FDOT 60% Roadway Plans for SR 50, 239203-7-52-01
- Cross Life Church
- The Grow Farm & Garden Community
- East Orange Trail

EXISTING DRAINAGE CONDITIONS

Basin 1A

Basin 1A consists of the southbound portion of grassed right-of-way and existing pavement area of the intersection of SR-50 and Chuluota Road beginning at station 10+00 north to station 17+00 containing 1.28 acres of right-of-way. The soil is classified as HSG A/D. The measured SHWT is 67.2 ft NAVD88 or 4.8 feet below existing ground (Appendix E). County LiDAR indicates that Basin 1A ranges in elevation from 68 feet to 73 feet (mean 72 feet). The offsite drainage area is 0.32 acres including 0.15 acres of impervious from FDOT. Stormwater runoff is conveyed by a ditch into an existing FDOT storm drain system draining west along SR-50. There is no present stormwater attenuation or water quality treatment.



Roadside ditch facing south



Existing inlet which drains west in FDOT SR-50 storm drain. Photo facing north.

Basin 1B

Basin 1B consists of the northbound portion of grassed right-of-way and existing pavement area of the intersection of SR-50 and Chuluota Road beginning at station 10+00 north to station 12+00 containing 0.30 acres of right-of-way. The soil is classified as HSG A/D. The SHWT is estimated to be 68 ft NAVD88 based on a combination of LiDAR and a wetland delineation (Appendix E). County LiDAR indicates that Basin 1B ranges in elevation from 68 feet to 73 feet (mean 69 feet). The offsite drainage area is 0.20 acres of impervious from FDOT. Stormwater runoff sheet flows into the existing FDOT storm drain system draining east along SR-50. There is no present stormwater attenuation or water quality treatment.



Google Street View of Chuluota Road and SR-50, with existing FDOT inlet along SR-50 indicated in red. View facing north and east.

Basin 2A

Basin 2A begins at the centerline of the existing service entry way into the Corner Lakes Plaza at station 17+00 moving to include the southbound portion of roadway and grassed right-of-way and ending at station 29+70. The basin contains 1.60 acres of right-of-way. The soil is classified as HSG A/D. The measured SHWT is 67.3 ft NAVD88 or 3.7 feet below existing ground (Appendix E). County LiDAR indicates that Basin 2A ranges in elevation from 70 feet to 73 feet (mean 71 feet). There is no offsite drainage area entering the Chuluota right-of-way in Basin 2A. Stormwater runoff sheet flows into a ditch which is conveyed via a ditch bottom inlet and storm drain into the existing pond north of the intersection between Schoolview Way and Chuluota Road. There are three existing ponds located on the Corner Lake Middle School property, and offsite basins for Corner Lake Middle School from ERP#27857 are included in the ICPR calculations associated with this basin (Appendix B). Additionally, areas associated with the Schoolview Way ponds and a proposed intersection with Cypress Lake Glen Blvd also are included in calculations in Appendix B.



Roadside ditch facing south

Chuluota Road Roadway Conceptual Analysis (RCA)
From East Colonial Drive (SR 50) to Lake Pickett Road



Google Street View of Chuluota Road and Schoolview Way showing ditch bottom inlet which drains to existing pond.



Existing pond on Schoolview Way

Basin 2B

Basin 2B begins at station 12+00 including the northbound portion of roadway and grassed right-of-way until station 29+70. At station 29+70 the basin widens to include both northbound and southbound lanes and the respective grassed right-of-way. The basin continues to station 47+80. The basin contains 7.62 acres of right-of-way. An 0.38-acre offsite area composed of a residential berm from Corner Lakes drains to the right-of-way. The soil is classified as HSG A and A/D. The SHWT is estimated to be 68.0 ft NAVD88 based on a combination of LiDAR and a wetland delineation (Appendix E). County LiDAR indicates that Basin 2B ranges in elevation from 66.7 feet

to 73.5 feet (mean 70.7 feet). Stormwater runoff sheet flows into adjacent roadside ditches that flow towards an existing cross drain (CD-1) located at station 46+25. The existing cross drain flows toward the wetland system to the west of Chuluota Road. A side drain under Corner Lake Drive conveys this runoff to wetlands west of Chuluota Road in Basin 3.



Roadside ditch facing north



Roadside ditch facing south. These inlets convey runoff under Cypress Lake Glen Blvd.

Basin 3

Basin 3 begins at station 47+80 and extends to station 97+50 and includes both northbound and southbound lanes. The basin contains 13.77 acres of right-of-way. An 0.93-acre offsite area composed of a berm from Columbia Elementary School drains to the right-of-way. The soil is

classified as HSG A/D. The SHWT is estimated to vary between 65.0 and 67.0 ft NAVD88 based on a combination of LiDAR and a wetland delineation (Appendix E). County LiDAR indicates that Basin 3 ranges in elevation from 64.9 feet to 73.7 feet (mean 69.2 feet). Stormwater runoff sheet flows into adjacent roadside ditches that flow towards an existing cross drain (CD-2) located at station 74+92. The existing cross drain drains to a relict wetland canal west of Chuluota Road which ultimately discharges to Corner Lake.



Existing side drain under Corner Lake Drive which conveys runoff from Basin 2B to Basin 3



Roadside ditch facing north

Chuluota Road Roadway Conceptual Analysis (RCA)
From East Colonial Drive (SR 50) to Lake Pickett Road



Existing floodplain compensation pond on Corner Lake Estates



Existing cross drain (east side)



Existing cross drain outlet (west side)

Basin 4-100

Basin 4-100 begins at station 116+70 at the middle of the Lake Pickett Road and Chuluota Road intersection and extends north. It includes southbound Chuluota Road and westbound Lake Pickett Road only. The basin contains 1.67 acres of right-of-way. The soil is classified as HSG A/D. County LiDAR indicates that Basin 4-100 ranges in elevation from 71.0 feet to 73.8 feet (mean 72.3 feet). The soil is classified as HSG A, with a SHWT depth of 2.5 feet or less based on the soil types. Runoff from the northwest corner of the Chuluota Road and Lake Pickett Road intersection is conveyed via sheet flow into an existing dry pond northeast of Lake Pickett Road and Chuluota Road. Runoff is ultimately conveyed to the existing storm drain system along Lake Pickett Road to wet detention ponds associated with the Mandalay Subdivision (ERP#101908-1, -2, and -4).



Existing dry pond northeast of Lake Pickett Road and Chuluota Road

Basin 4-200

Basin 4-200 begins at station 110+50 and extends north to the middle of the Lake Pickett Road and Chuluota Road intersection at 116+70. It includes southbound Chuluota Road and eastbound Lake Pickett Road only. The basin contains 0.12 acres of right-of-way. There are 0.28 acres of offsite area directed toward the right-of-way. The soil is classified as HSG A/D. County LiDAR indicates that Basin 4-200 ranges in elevation from 69.7 feet to 73.8 feet (mean 72.0 feet). The soil is classified as HSG A, with a SHWT depth of 2.5 feet or less based on the soil types. County LiDAR indicates that Basin 4-200 ranges in elevation from 69.7 feet to 74 feet (mean 72.4 feet). Runoff is conveyed via sheet flow to swales which are collected by a ditch bottom inlet. The runoff is then conveyed to the dry detention pond in Basin 4-100. Runoff is ultimately conveyed to the existing storm drain system along Lake Pickett Road to wet detention ponds associated with the Mandalay Subdivision (ERP#101908-1, -2, and -4).



Ditch bottom inlet at southwest intersection of Lake Pickett Road and Chuluota Road, facing north.

Basin 4-300

Basin 4-300 begins at station 97+50 and extends to 110+50 and includes southbound Chuluota Road only. The basin contains 1.13 acres within the right-of-way. There are 32.44 acres of offsite drainage including wetlands and pasture on the west side of Chuluota Road. County LiDAR indicates that Basin 4-300 ranges in elevation from 66.7 feet to 74.3 feet (mean 70.9 feet). The soil is classified as HSG A/D. The measured SHWT is 5.0 feet below existing ground (Appendix E). Runoff is conveyed via sheet flow to a roadside ditch which drains to a cross drain under Chuluota Road. That cross drain conveys runoff to a storm drain on the east side of Chuluota Road (in Basin 4-400). Runoff is ultimately conveyed to the existing storm drain system along Lake Pickett Road to wet detention ponds associated with the Mandalay Subdivision (ERP#101908-1, -2, and -4).



Cross drain which conveys runoff from basin 4-300 to storm drain on east side of Chuluota Road, facing north and east.



Existing offsite wetland containing pond cypress and swamp tupelo which drains into the right-of-way, facing west.

Basin 4-400

Basin 4-400 begins at station 97+50 and extends north of the intersection of Chuluota Road and Lake Pickett Road and includes northbound Chuluota Road only. The basin contains 2.85 acres within the right-of-way. There are 5.82 acres of offsite drainage including offsite wetlands and pasture on the east side of Chuluota Road. County LiDAR indicates that Basin 4-400 ranges in elevation from 67.8 feet to 74.7 feet (mean 71.7 feet). The soil is classified as HSG A/D. The measured SHWT is 2.2 feet below existing ground (Appendix E). Onsite runoff is conveyed via sheet flow to a roadside ditch, which drains to a storm drain system along Chuluota Road. Offsite runoff flows into two inlets which also drain into the storm drain system along Chuluota Road. This storm

drain connects to a storm drain system along Lake Pickett Road, which drains to wet detention ponds associated with the Mandalay Subdivision (ERP#101908-1, -2, and -4).



Existing offsite swale, facing south



Existing inlet which conveys offsite runoff from pasture to existing storm drain along Chuluota Road, facing east.



Ditch bottom inlet which conveys sheet flow from Chuluota Road to existing storm drain, facing south.



Roadside ditch, facing south

PROPOSED DRAINAGE CONDITIONS

The storm water runoff from the project limits will be collected in closed drainage systems (storm sewers) that will discharge to proposed wet detention ponds. The sizing of the post-development drainage basins has been estimated such that the runoff will not cause adverse impacts to existing offsite storm sewer systems. The proposed ponds have also been sized to achieve the required water quality treatment and water quantity attenuation volumes including floodplain compensation where necessary.

There are a total of four existing roadway drainage basins within the project limits, and these basins have been subdivided into nine subbasins. Proposed runoff from all basins, basins 1A, 1B, 2A, 2B, 3, 4-100, 4-200, 4-300, and 4-400 will drain to proposed wet detention ponds. There are no proposed modifications within basin 4-100, so the existing conditions were used in all calculations in that basin. Refer to the Drainage Maps in **Appendix A** for the roadway drainage basin limits as well as the proposed pond locations. Table 7 provides a summary of the proposed basin limits.

Table 7 – Summary of Proposed Drainage Basins

Basin Name	From Station	To Station	Roadway
Basin 1A	10+00	17+00 LT	Chuluota Road
Basin 1B	10+00	12+00 RT	Chuluota Road
Basin 2A	17+00 LT	29+70 LT	Chuluota Road
Basin 2B	12+00 RT	47+80	Chuluota Road
Basin 3	47+80	97+50	Chuluota Road
Basin 4-100	116+70 LT	117+00 LT	Chuluota Road
Basin 4-200	110+50 LT	116+70 LT	Chuluota Road
Basin 4-300	103+90 LT	110+50 LT	Chuluota Road
Basin 4-400	97+50	107+00 RT	Chuluota Road

SOIL CONDITIONS

The soils are classified as hydrologic soil groups (HSG) A, B, A/D, B/D. Most of the project corridor soils are classified as HSG A/D. For a depiction of the soil types and location along the project, please refer to the Soils Maps in Appendix D (Figures 4-1 and 4-2). Soil types along the project corridor are listed in Table 8.

Table 8 – Soils

Soil Type	Soil Map ID	Hydrologic Soil Group
Archbold fine sand	2	A
Basinger fine sand	3	A/D
Felda fine sand	15	A/D
Ona fine sand	26	B/D
Pomello fine sand	34	A
St. Johns find sand	37	B/D
Samsula muck	40	A/D
Sanibel muck	42	A/D
Smyrna-Smyrna, wet, fine sand	44	A/D
Tavares fine sand	46	A
Wabasso fine sand	51	A/D

Soil Type	Soil Map ID	Hydrologic Soil Group
Wauberg fine sand	53	D
Zolfo fine sand	54	A
Water	99	-

Basin 1A

Proposed Basin 1A consists of the southbound portion of grassed right-of-way and existing pavement area of the intersection of SR-50 and Chuluota Road beginning at station 10+00 north to station 17+00. This is within the Middle Econlockhatchee River watershed and is considered an open basin. Offsite runoff from East Colonial Drive drains to this basin. The preferred options for Basin 1A are to allow runoff to drain to the proposed East Colonial Drive FDOT drainage system west of Chuluota Road or to convey runoff north to proposed Pond 3C.

Basin 1B

Proposed Basin 1B consists of the northbound portion of grassed right-of-way and existing pavement area of the intersection of SR-50 and Chuluota Road beginning at station 10+00 north to station 12+00. This is within the Middle Econlockhatchee River watershed and is considered an open basin. Offsite runoff from East Colonial Drive drains to this basin. The preferred options for Basin 1A are to allow runoff to drain to the proposed East Colonial Drive FDOT drainage system west of Chuluota Road or to convey runoff north to proposed Pond 3C.

Basin 2A

Basin 2A begins at the centerline of the existing service entry way into the Corner Lakes Plaza at station 17+00 moving to include the southbound portion of roadway and grassed right-of-way and ending at station 29+70. This is within the Middle Econlockhatchee River watershed and is considered an open basin. Basin 2A ultimately outfalls the existing wetlands west of Chuluota. There are no offsite areas draining towards the road, though modifications to Schoolview Way and a proposed modification to the Cypress Lake Glen Blvd intersection will drain to the preferred pond, either Proposed Pond 2A or Pond 3C. A closed drainage system (storm sewers) that will discharge to the Proposed Pond 2A or Pond 3C is the recommended stormwater management system for Basin 2A.

Basin 2B

Basin 2B begins at station 12+00 including the northbound portion of roadway and grassed right-of-way until station 29+70. At station 29+70 the basin widens to include both northbound and southbound lanes and the respective grassed right-of-way. The basin continues to station 47+80. This is within the Lower Econlockhatchee River watershed and is considered an open basin. Basin 2B ultimately outfalls the existing wetlands west of Chuluota. There is 0.38 acres of offsite areas draining towards the road. A closed drainage system (storm sewers) that will discharge to the Proposed Pond 2A or Pond 3C is the recommended stormwater management system for Basin 2B.

Basin 3

Basin 3 begins at station 47+80 and extends to station 97+50 and includes both northbound and southbound lanes. This is within the Lower Econlockhatchee River watershed and is considered an open basin. Basin 3 ultimately outfalls to Corner Lake west of Chuluota. There is 0.93 acres of offsite area draining toward the right-of-way. A closed drainage system (storm sewers) that will discharge to a proposed wet detention pond on the west side of Chuluota Road is the recommended stormwater management system for Basin 3.

Basin 4

Basin 4 begins at station 97+50 and extends north of the intersection of Chuluota Road and Lake Pickett Road. This is within the Lower Econlockhatchee River watershed and is considered an open basin. Basin 4 ultimately outfalls to Lake Pickett Road outfall. A sizeable portion of the pastureland both east and west of Basin 4 drains towards the roadway in the existing conditions. This water is then conveyed north to a stormdrain along Lake Pickett Road. The proposed conditions for Basin 4 would continue to capture and convey offsite water in a closed drainage system and convey it to the stormdrain along Lake Pickett Road. A separate closed drainage system (storm sewers) will collect roadway runoff and convey it to a proposed wet detention pond, which is the recommended stormwater management system for Basin 4. The wet detention pond will discharge to the stormdrain along Lake Pickett Road.

SECTION 7.0 – FLOODPLAIN & ENVIRONMENTAL INFORMATION

Based on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM's) dated September 25, 2009, portions of the study area are located within Zone A (100 Year) floodplain. There are no Zone AE floodplains within the study area. The Zone A floodplains occur:

- East of Chuluota Road across from Corner Lake Middle School. This Zone A floodplain is isolated.
- North and South of Cypress Lake Glen Boulevard. This Zone A floodplain ultimately drains to Lake Pickett.

Please refer to Appendix A for a depiction of the floodplains in the study area. There are no floodways within the project limits. There will be floodplain impacts within the project corridor that will be mitigated by providing compensatory volume in proposed floodplain compensation ponds. There is 0.029 ac-ft of floodplain impact between STA 22+00 and 26+00, and there is 0.769 ac-ft of floodplain impacts between 73+00 and 90+00. Calculations supporting the floodplain compensatory volume required and those provided are included in Appendix D. A floodplain compensatory pond (FC-1) is proposed across from Corner Lake Middle School, and a floodplain compensatory pond (FC-2) is proposed adjacent to wetlands south of Lake Pickett Road and east of Chuluota Road.

A wetland survey was performed by MSE Group, LLC, and the potential wetland/surface water impacts were quantified for each pond option. Potential wetland and species impacts are listed in the Pond Summary Matrix (Table 11). There are no archaeological or historical impacts. A contamination report is included in Appendix G.

SECTION 8.0 – STORMWATER PONDS

POND SIZING AND LOCATION

The preliminary stormwater ponds have been sized based upon the proposed typical sections to determine the impervious surface for each segment of the road. The impervious surface was then used to determine the required treatment and runoff volumes for the basins. The pond sites were selected based upon several criteria. This criterion included existing land use, right of way and drainage easements, topography, wetland impacts, and floodplain impacts. LIDAR Topography was reviewed to provide sufficient elevation change for the conveyance of the run-off from the roadway to the pond site. The preliminary road grade was used to control maximum pond stages, ensuring positive flow from the roadway to the ponds. Where possible wetland and floodplain impacts have been avoided.

Geotechnical soil borings at some of the proposed pond locations (provided by Nadic) or the LiDAR elevations at delineated wetland boundaries (provided by MSE Group) were used to determine the seasonal high / control elevations. Top of berm elevations were established using the adjacent existing grade or the adjacent proposed roadway grade. In all basins, the design peak stage in each pond was kept below the lowest sag inlet in the drainage basin with at least one foot of clearance.

After establishing the berm and control elevations for the pond sites, each berm was offset 20 feet to the inside Top of Bank. Then this was sloped at a 4H:1V slope to the control elevation to get the pond area at this elevation. These pond stages and areas were used to calculate storage volumes. See **Appendix B** for the pond development calculations. Please see **Appendix A** for the drainage basin maps and pond locations.

During final design: pond bottom elevations, pond control elevations, pond sizes and pond configurations could vary from the preliminary ponds shown in this report based upon final topographic survey that was not available during this conceptual pond design.

STORMWATER MODELING

An Interconnected Pond Routing (ICPR) model was developed to determine the feasibility of the proposed project and associated ponds. Three scenarios were developed: Existing, Primary, and Alternate. The Existing scenario simulates existing conditions. Because pond sites 3C and 4C came up late in the analysis stage, ICPR runs have not been included and will be completed during final design.

The Primary scenario simulates the preferred pond alternatives, as follows:

- Basin 1 drains to Pond 2A which discharges to an existing pond on Corner Lake Middle School and ultimately to wetlands to the west;
- Basin 2A and 2B drain to Pond 2A which discharges to an existing pond on Corner Lake Middle School and ultimately to wetlands to the west;
- Basin 3 drains to Pond 3A which discharges to wetlands south of Corner Lake; and
- Basin 4 drains to Pond 4A which discharges to an existing stormdrain along Lake Pickett Road.

The Alternate scenario simulates the alternate pond options, as follows:

- Basin 1 drains to Pond 1A which discharges to the drainage system along East Colonial Drive (SR50) to the east;
- Basin 2A and 2B drain to Pond 2B which discharges to wetlands south of Corner Lake;
- Basin 3 drains to Pond 3B which discharges to wetlands south of Corner Lake; and
- Basin 4 drains to Pond 4B which discharges to an existing stormdrain along Lake Pickett Road.

The Orange County rainfall distribution was for a 25-year event of 8.4 inches over a 24-hour period. No 100-year 24-hour simulation was performed. Unit hydrograph 256 was used. Curve numbers were derived from GIS data for soil hydraulic groups, land use, aerial imagery, and proposed plans, and calculations are included in Appendix B. All Time of Concentrations (T_c) were set to the minimum of 10 minutes for both the existing and proposed alternates except for basin 4-300. The overland flow time of concentration for Basin 4-300 was calculated with the kinematic wave formula into the wetland before being routed into the stormwater system (see Appendix B). Existing stormdrain elevations were based on available permit documentation, an existing regional model received from SAI on 2021-09-30, or reasonable assumptions. Existing ditch geometry was approximated from LiDAR data. LiDAR elevation was used as the tailwater elevation for existing East Colonial Drive (SR50) ditches. The 25-year 24-hour design high water of “PondB” in the Lake Pickett Road permit plans (ERP101908-4) was used as the tailwater elevation for Basin 4. Seasonal high water table information was used as the tailwater for Basin 3. Reasonable proposed stormdrain sizes and inverts were used in the model, but the stormdrain system will need to be optimized at final design once survey and a proposed roadway profile is available.

Offsite basins were modeled as separate basins, and offsite runoff is routed in all simulations. The existing three drainage basins associated with Corner Lake Middle School (“Schoolview Way Ponds”) are simulated in the existing, primary, and alternate scenarios to demonstrate no increase in peak discharges at the outlet of that system.

The design high water for each pond was constrained by required freeboard to both the top of berm and clearance to the lowest sag inlet draining to each pond (see Appendix C). Sag inlet elevations were calculated based on the existing roadway profile pulled from existing LiDAR data unless otherwise stated. Weir structures were placed to provide the minimum water quality volume in each pond, and the weirs were sized iteratively based on design high water and peak outflow discharge. The summary of existing and proposed discharge shows no increase in the peak 25-year 24-hour discharge across all basins, demonstrating the primary and alternate pond options are viable (Table 9).

Table 9 – Peak Discharge at Outfalls

Outlet	Peak Discharge (cfs)		
	Existing	Primary	Alternate
SR50 East	10.47	0.53	2.50
SR50 West	1.87	0.0	0.0
Schoolview Way Ponds Outlet	54.64	53.34	51.52
Corner Lake Wetland	31.95	23.75	29.63
Lake Pickett Rd Stormdrain	14.23	14.23	10.13

Table 10 – Peak Stage at Proposed Ponds

Pond	Scenario	Peak Stage (ft)
2A	Primary	70.05
3A	Primary	69.73
4A	Primary	66.97
1A	Alternate	70.68
2B	Alternate	70.31
3B	Alternate	69.98
4B	Alternate	69.71

SECTION 9.0 – RESULTS

A pond summary matrix is provided in Table 11.

All ponds will be designed to meet Orange County standards with regards to aesthetics.

Public Opinion is TBD pending the first public meeting.

New County-preferred Alternatives

Pond 3C is the recommended pond for Drainage Basin 1, 2, and 3. This pond site requires the partial acquisition of the commercial parcel under the ownership of First Baptist Church of Oviedo Inc. The parcel size is listed at 40.22 acres and the proposed pond 3C footprint is approximately 6 acres. The proposed pond site is adjacent to the west side of Chuluota Road. The outfall from the proposed pond is conveyed west to the existing wetland and eventually to Corner Lake. There are

no wetlands within the proposed footprint of this pond site location. The seasonal high-water table is 67.0 ft NAVD88 based on a combination of LiDAR and a wetland delineation. A wet detention pond is proposed at this location due to the high-water table. Preliminary pond sizing calculations indicate that Drainage Basins 1, 2, and 3 require a total of 3.90 ac-ft of treatment and attenuation volume to accommodate the proposed roadway configuration and pond footprint. Pond sizing calculations were also completed to provide the required volume at one foot below the inside maintenance berm. As for pond alternatives in Basin 1 and 2A, the ability to convey runoff from Basin 1 north may require Chuluota Road to be raised in the vicinity of the SR50 intersection. Alternatively, a portion of Basin 1 can continue to drain to the FDOT drainage systems on SR50 such that peak discharges into FDOT right-of-way is maintained or reduced, and the remainder of Basin 1 can be conveyed to Pond 3C. This pond alternative assumes that the crown of Chuluota Road can be raised to elevation 70 ft NAVD88 in the vicinity of Pond 3C.

Pond 4C is an alternative pond for Drainage Basin 4. It is located on the northeast corner of Chuluota Road and Lake Pickett Road. The parcel will require acquisition because of proposed improvements to Lake Pickett Road as part of another project, so the County is interested in using this parcel for stormwater and water quality needs for Chuluota Road Basin 4. The parcel size is listed at 2.046 acres, and the proposed pond 4C footprint is 1.0 acre. The outfall from the proposed pond is conveyed south to Lake Pickett Road. There are no wetlands in this pond site location. The measured seasonal high-water table is 4.9 feet below existing ground. Pond 4C is proposed as a wet detention pond. Preliminary pond sizing calculations indicate that Basin 4 requires a total of 0.95 ac-ft of treatment and attenuation volume to accommodate the proposed roadway configuration and pond footprint. Pond sizing calculations were also completed to provide the required volume at one foot below the inside maintenance berm.

Pond alternatives other than Ponds 3C and 4C.

Drainage Basin 1

Diverting all runoff from Drainage Basin 1 to Pond 2A in Drainage Basin 2 is the preferred option and would eliminate the need for any ponds in Basin 1. Basin 1 currently drains to the FDOT drainage system on East Colonial Drive (SR50) both east and west of Chuluota Road. Based on a preliminary review of proposed SR50 improvement plans, raising the roadway profile of Chuluota Road may be necessary to tie into the proposed SR50 alignment. Depending on how much Chuluota Road is raised, it may be possible to convey all Chuluota Road runoff to Pond 2A in Drainage Basin 2. Pond 2A have the capacity to treat and attenuate all runoff from Basin 1. If the roadway profile of Chuluota Road cannot be raised sufficiently for all runoff to be conveyed to Pond 2A, then a small portion of Drainage Basin 1 can continue to drain to the FDOT drainage systems on SR50 such that peak discharges into FDOT right-of-way is maintained or reduced, and the remainder of Basin 1 can be conveyed to Pond 2A.

If the above option is not feasible and a pond option is deemed necessary in Basin 1, Pond 1A is the recommended pond for Drainage Basin 1. This pond site requires the partial acquisition of a commercial parcel under the ownership of Captiva 16910 LLC. The parcel size is listed at 1.99 acres and the proposed pond 1A footprint is 0.53 acres. The proposed pond site is adjacent to the east side of Chuluota Road. The outfall from the proposed pond is ultimately conveyed east to the existing wetland. There are no wetland impacts associated with this pond option. According to the geotechnical analysis Pond 1A has an average seasonal high-water depth 4.8 feet below the existing ground elevation. Proposed Pond 1A has an estimated low potential risk of contamination, see Contamination Report in **Appendix G**. It should be noted that the County has taken the position that despite a low-risk designation, they still have concerns over any improvements that would impact this property. This is a disadvantage for consideration of Pond 1A. Pond 1A is proposed as a wet detention pond. Preliminary pond sizing calculations indicate that Basin 1 requires a total of 0.35 ac-ft of treatment and attenuation volume to accommodate the proposed roadway configuration and pond site. Pond sizing calculations were also completed to provide the required volume at one foot below the inside maintenance berm.

Pond 1B is the secondary option should Pond 1A not be utilized. This pond site requires the partial acquisition of a parcel from PSM Corner Lakes Plaza LLC. This parcel is located 1100 feet west of the existing Right-of-way of Chuluota Road. The parcel size is listed at 2.62 acres and the proposed pond 1B footprint is 0.79 acres. Pond 1B would also require an easement to run behind the existing shopping plaza to convey water from the Right-of-way to the pond. The outfall from the proposed pond is ultimately conveyed west to the existing wetland. There are wetland impacts associated with this pond option. Pond 1B has an average seasonal high-water depth of 68 ft NAVD88 based on a combination of LiDAR and a wetland delineation (Appendix E). Pond 1B is proposed as a wet detention pond. Preliminary pond sizing calculations indicate that Basin 1 requires a total of 0.35 ac-ft of treatment and attenuation volume to accommodate the proposed roadway configuration and pond site. Pond sizing calculations were also completed to provide the required volume at one foot below the inside maintenance berm.

Drainage Basin 2

Pond 2A is the recommended pond for Drainage Basin 2. This pond site would require a joint use pond between Corner Lake Middle School (Orange County School District). Schoolview Way is proposed to be vacated and a new intersection is proposed with Cypress Lake Glen Boulevard to improve operations which has been coordinated with Orange County Schools, thereby allowing the vacated site to be used for a needed pond site (Pond 2A). The parcel size is listed at 26.01 acres and the proposed pond 2A footprint is 3.35 acres. Pond 2A would incorporate two existing Corner Lake Middle School, Ponds 1 and 3 in the Corner Lake Middle School plans. The proposed pond site is adjacent to the west side of Chuluota Road. The outfall from the proposed pond is ultimately conveyed to the existing wetland west of the site. There are no wetland impacts associated with this pond option. The measured SHWT is 67.3 ft NAVD88 or 3.7 feet below existing ground (Appendix

E). Pond 2A would remain a wet detention pond. Pond 2A was sized to accommodate the treatment and attenuation volume of both Basin 1 and Basin 2 and the existing volumes required from Corner Lake Middle School (ERP#27857-1). Preliminary sizing calculations indicate that Basin 1 and Basin 2 requires a total of 0.22 ac-ft and 1.73 ac-ft of treatment and attenuation volume respectively to accommodate the proposed roadway configuration and pond site. Pond sizing calculations were also completed to provide the required volume at one foot below the inside maintenance berm.

Pond 2B is the secondary option should Pond 2A not be utilized. This pond site requires the partial acquisition of a parcel from Corner Lakes Estates Homeowners Association Inc. This parcel lies west and adjacent to the existing Right-of-way of Chuluota Road. The parcel size is listed at 3.01 acres and the proposed pond footprint is 2.07 acres. The outfall from the proposed pond is conveyed west to the existing wetland and ultimately to Corner Lake. There will be wetland impacts with this pond option. The SHWT is estimated to be 68.0 ft NAVD88 based on a combination of LiDAR and a wetland delineation (Appendix E). The option is proposed as a wet detention pond. Preliminary pond sizing calculations indicate that Basin 2 requires a total of 2.24 ac-ft of treatment and attenuation volume to accommodate the proposed roadway configuration and pond site. Pond sizing calculations were also completed to provide the required volume at one foot below the inside maintenance berm. This pond is located within an existing conservation area. Additionally, it may be difficult to convey offsite runoff around the proposed pond berm due to limited area.

Drainage Basin 3

Pond 3A is the recommended pond for Drainage Basin 3. This pond site requires the partial acquisition a commercial parcel under the ownership of First Baptist Church of Oviedo Inc. The owner is not opposed to a pond taking. The parcel size is listed at 40.22 acres and the proposed pond 3A footprint is 1.78 acres. The proposed pond site is adjacent to the west side of Chuluota Road. The outfall from the proposed pond is conveyed west to the existing wetland and eventually to Corner Lake. There will be wetland impacts with this pond option. The SHWT is estimated to be 67.0 ft NAVD88 based on a combination of LiDAR and a wetland delineation (Appendix E). Pond 3A is proposed as a wet detention pond. Preliminary pond sizing calculations indicate that Basin 3 with this pond option requires a total of 2.09 ac-ft of treatment and attenuation volume to accommodate the proposed roadway configuration and pond site. Pond sizing calculations were also completed to provide the required volume at one foot below the inside maintenance berm.

Pond 3B is the secondary option should Pond 3A not be utilized. This pond site requires the partial acquisition a parcel from First Baptist Church of Oviedo Inc. The owner is not opposed to a pond taking. The parcel size is listed at 40.22 acres and the proposed pond 3B footprint is 1.25 acres. The proposed pond site is adjacent to the west side of Chuluota Road. The outfall from the proposed pond is conveyed west to the existing wetland and eventually to Corner Lake. There will be wetland impacts with this pond option. The SHWT is estimated to be 65.0 ft NAVD88 based on a combination of LiDAR and a wetland delineation (Appendix E). The option is proposed as a wet detention pond.

Preliminary pond sizing calculations indicate that Basin 3 with this pond option requires a total of 1.96 ac-ft of treatment and attenuation volume to accommodate the proposed roadway configuration and pond site. Pond sizing calculations were also completed to provide the required volume at one foot below the inside maintenance berm.

Drainage Basin 4

Pond 4A is the recommended pond for Drainage Basin 4. This pond site requires the partial acquisition of a parcel under the private ownership of David E Axel Trust. The parcel size is listed at 40.41 acres and the proposed pond 4B footprint is 0.89 acres. The proposed pond site is adjacent to the south side of Lake Pickett Road East of Chuluota Road. The outfall from the proposed pond is conveyed east to Lake Pickett Road. There are no wetland impacts associated with this pond option. The measured SHWT is 2.2 feet below existing ground (Appendix E). Pond 4A is proposed as a wet detention pond. Preliminary pond sizing calculations indicate that Basin 4 requires a total of 0.77 ac-ft of treatment and attenuation volume to accommodate the proposed roadway configuration and pond site. Pond sizing calculations were also completed to provide the required volume at one foot below the inside maintenance berm.

Pond 4B is the secondary option should Pond 4A not be utilized. This pond site requires the partial acquisition of a parcel under the private ownership of Larry and Ann Linder. The parcel size is listed at 74.37 acres and the proposed pond 4B footprint is 0.86 acres. The proposed pond site is adjacent to the west side of Chuluota Road. The outfall from the proposed pond is conveyed west to the existing wetland and eventually to Corner Lake. There are no wetland impacts associated with this pond option. The measured SHWT is 5.0 feet below existing ground (Appendix E). Pond 4B is proposed as a wet detention pond. Preliminary pond sizing calculations indicate that Basin 4 requires a total of 0.95 ac-ft of treatment and attenuation volume to accommodate the proposed roadway configuration and pond site. Pond sizing calculations were also completed to provide the required volume at one foot below the inside maintenance berm.



Table 11 – Pond Summary Matrix

Evaluation Criteria	Pond Sites											
	Basin 1		Basin 2		Basin 3			Basin 4			Floodplain Compensation	
	1A	1B	2A	2B	3A	3B	3C	4A	4B	4C	FC1	FC2
Treatment Method	Wet detention	Wet detention	Wet detention	Wet detention	Wet detention	Wet detention	Wet detention	Wet detention	Wet detention	Wet detention		
Pond Size (ac)	0.53	0.79	3.55	2.07	1.78	1.25	6.03	0.89	0.86	1.00	0.05	1.12
Parcel Area (ac)	1.99	2.62	26.01	3.01	40.22	40.22	40.22	40.41	74.37	2.046	0.83	40.41
Drainage Easement Area (Sq-Ft)	2,420	26,425	-	-	1,500	1,500	1,500	19,920	-	1,500	-	-
Seasonal High Water (ft)	67.2	68	67.3	68	67	65	67	64.8	68	67	68.9	66.6
No. Property owners	1	1	1	1	1	1	1	1	1	1	1	1
Land Use	Commercial	Wetlands Conservation area	Institutional	Wetlands Conservation area	Woodland	Woodland	Woodland	Pastural	Pastural	Pastural	Woodland	Pastural
Floodplains Impacts	No	No	No	No	No	No	No	No	No	No	No	No
Wetland Impacts	No	Yes	No	Yes	Yes	Yes	Yes	No	No	No	No	No
Wildlife Impacts	No	No	No	No	No	No	No	Moderate - Gopher tortoise	Moderate - Gopher tortoise	Moderate - Gopher tortoise	No	Moderate - Gopher tortoise
Cultural & Archeological Impacts	No	No	No	No	No	No	No	No	No	No	No	No
Utilities	None	Yes	None	None	None	None	None	None	None	None	None	None



Evaluation Criteria	Pond Sites											
	Basin 1		Basin 2		Basin 3			Basin 4			Floodplain Compensation	
	1A	1B	2A	2B	3A	3B	3C	4A	4B	4C	FC1	FC2
Contamination Risk Potential	Low – See Contamination Report	None	None	None	None	None	None	None	None	None	None	None
Joint Use Pond	No	No	Yes (OCSD/County-owned)	No	No	No	No	No	No	No	No	No
Raised Roadway Elevation Required	No	No	Yes	No	Yes	Yes	Yes	No	No	No	No	No
Recommendation Ranking	2*	3*	1	2	2	3	1	2	3	1	1	1
Wetland Mitigation Cost **	\$0	\$140,000	\$0	\$111,000	\$84,000	\$13,000	\$0	\$0	\$0	\$0	\$0	\$0
RHPZ Uplands Mitigation	\$0	\$8,000	\$0	\$0	\$103,000	\$17,000	\$0	\$0	\$0	\$0	\$0	\$0
Pond Construction Cost	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Storm Sewer to Pond from Road R/W	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Storm Sewer from Pond to Discharge Point	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Total Cost	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD

* Preferred option is to direct water to Pond 3C, Pond 2A, or proposed SR50 (FDOT) drainage system and avoid a pond in Basin 1.

** Mitigation cost based on credits available at TM-Econ IV Mitigation Bank (Orange County Owned Bank). Cost \$135,000 per wetland or RHPZ credit as of May 2022.

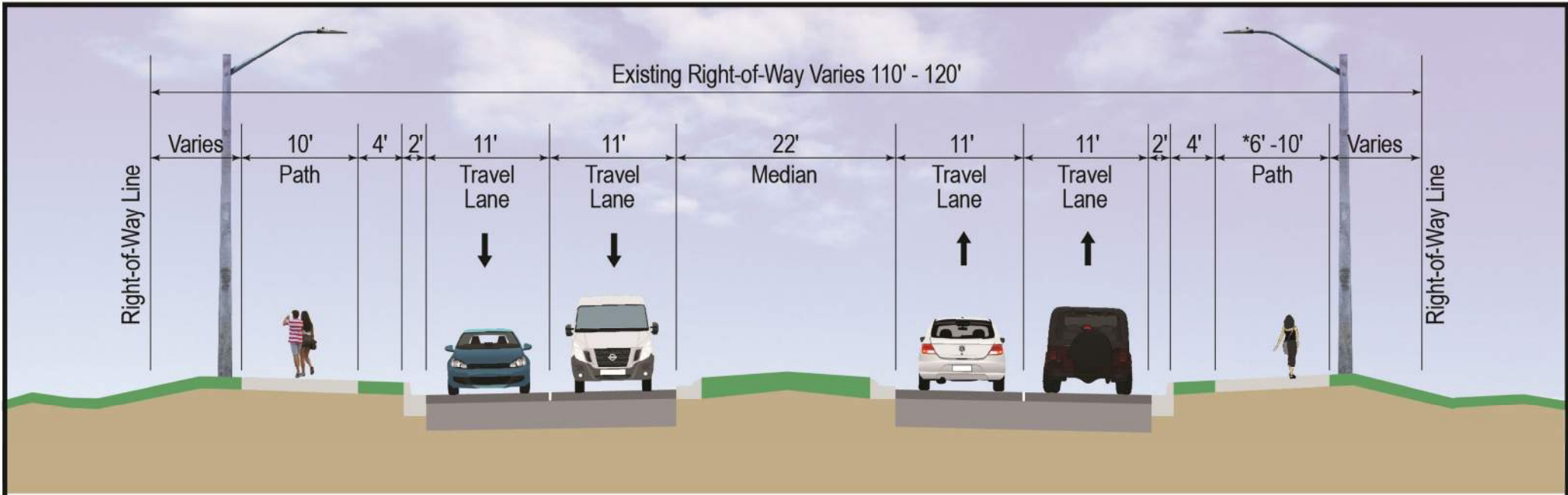
SECTION 10.0 – CONCLUSIONS

The proposed pond sites have been analyzed using a volumetric analysis, which accounts for water quality treatment and water quantity for runoff attenuation including floodplain compensation. The analysis completed in this report verifies whether the existing parcels can accommodate pond sites with adequate volume when considering the estimated seasonal high-water elevations, ground elevations, and potential natural contouring.

For Basins 1, 2, and 3, the preferred pond site is Pond 3C due to the lower cost estimation compared to the other options. Additionally, there are no wetland impacts. The proposed Pond 3C is also expected to accommodate the modifications proposed to the Cypress Lake Glen Boulevard intersection. An alternative to Pond 3C would be Pond 2, which requires modification to two ponds already owned by the County, and Pond 3A. Pond 3C will preclude the use of that property for a proposed church, yet the combination of Ponds 2A and 3A would not.

For Basin 4, the preferred pond site is Pond 4C due to its low footprint and potential lower cost.

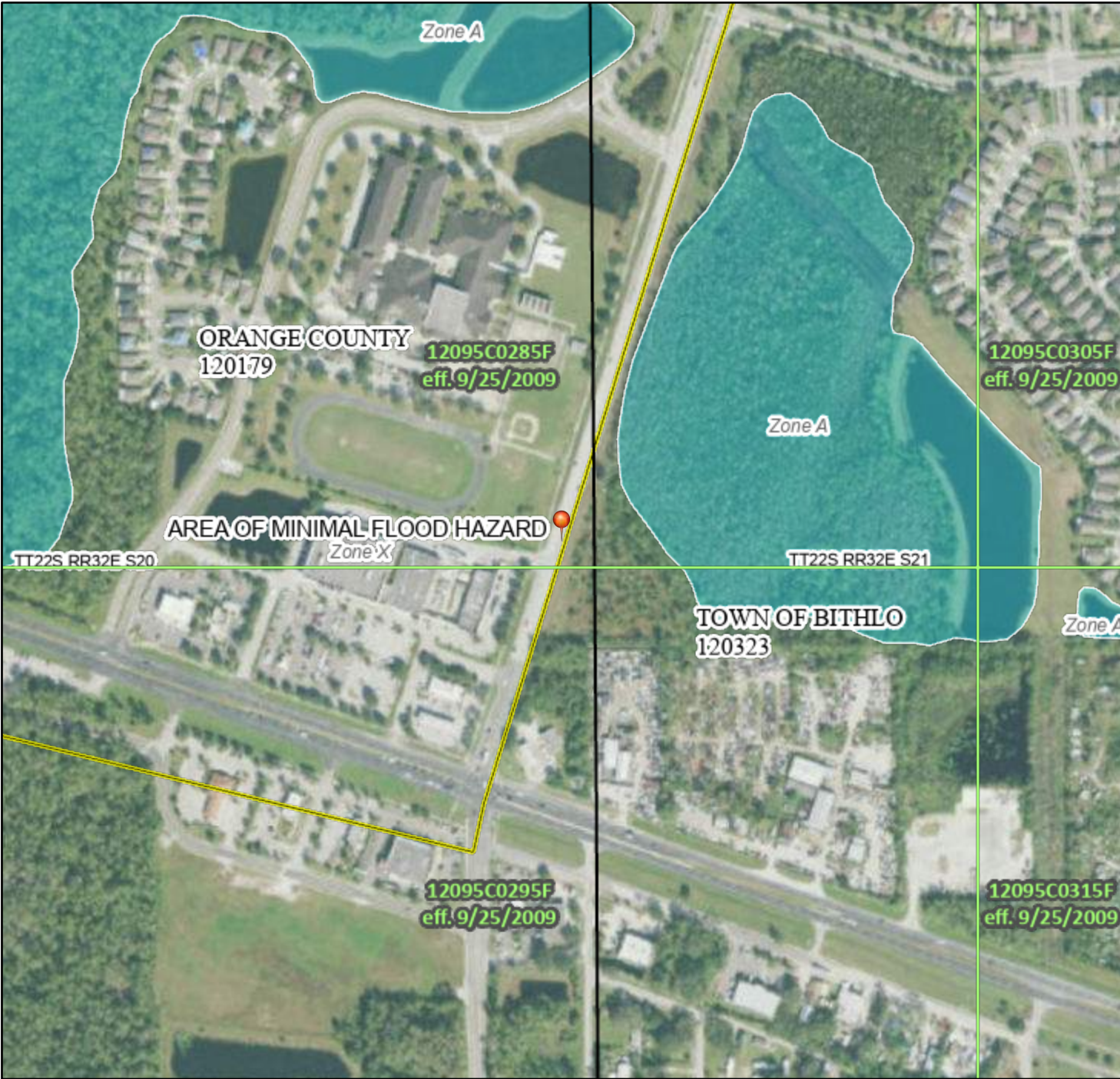
Appendix A – Drainage Maps (Pre- and Post-development)



TYPICAL SECTION 2
 Chuluota Road - 700' North of SR 50 to Corner Lake Drive
 Four-Lane Divided Section



* 6' Sidewalk Provided from 700' North of SR 50 to Cypress Lake Glen Blvd



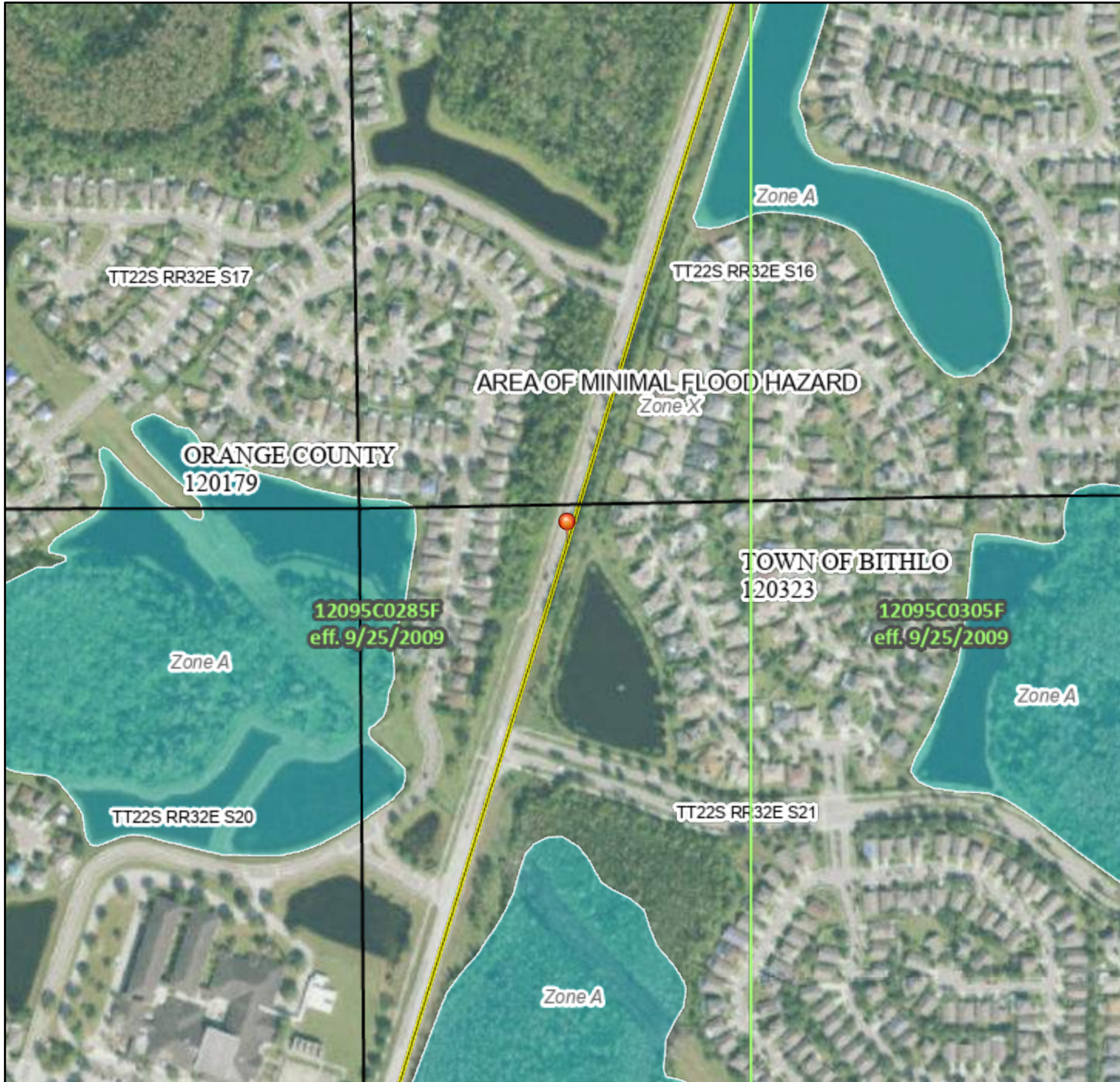
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GLJLWDD IOFRGB/LI LW LV GRV YRLGDV GHVULHG-BORZ
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ZV HSRUVHGRQ DV \$ DQGGRV GRV
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7LV BSLBHLV YRLGLI WKHQRU RUHR WKHIROORZQJES
HDFQWV GR GRV DSSDU EDVBSLBU IOFRGJRHDEHV
OHJG VDDHEDV BSVHDLRQGDVH FFRWALGQMLLHV
)SSQD QEHU DQD)SHIFWL YHGDMV D&LHV IRU
XDESSG DQD XRGUQLJG DJHV FQDQW EH XHGIRU
UHODWRAJRRVH



Legend for Flood Hazard Symbols:

- Zone A:** Labeled 'Zone A' on the map.
- Zone X:** Labeled 'Zone X' on the map.
- Area of Minimal Flood Hazard:** Labeled 'AREA OF MINIMAL FLOOD HAZARD' on the map.
- Orange County:** Labeled 'ORANGE COUNTY 120179'.
- Town of Bithlo:** Labeled 'TOWN OF BITHLO 120323'.
- Parcel 12095C0285F:** Labeled '12095C0285F eff. 9/25/2009'.
- Parcel 12095C0305F:** Labeled '12095C0305F eff. 9/25/2009'.

Legend for Flood Hazard Symbols (continued):

- Zone A:** Labeled 'Zone A' on the map.
- Zone X:** Labeled 'Zone X' on the map.
- Area of Minimal Flood Hazard:** Labeled 'AREA OF MINIMAL FLOOD HAZARD' on the map.
- Orange County:** Labeled 'ORANGE COUNTY 120179'.
- Town of Bithlo:** Labeled 'TOWN OF BITHLO 120323'.
- Parcel 12095C0285F:** Labeled '12095C0285F eff. 9/25/2009'.
- Parcel 12095C0305F:** Labeled '12095C0305F eff. 9/25/2009'.

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 DFXUDR WDDGUG/

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 ZV HSRUWHGRQ DV \$ DDCGRV GRW
 UHOFRW FROQHV RU DFCQFQV VBXHXQV WRWKLVDVHDDG
 WLF 74H DDCGHIFWLYHLQRUBMLRQB FROQHRU
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DFXUR WDDGUG/

7KH IO RRG KQUGLQRUBMLRQ LV GULYHG GLUHFWO IURWKH
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REVISIONS			
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID

**PRE-DEVELOPMENT
 DRAINAGE MAP**

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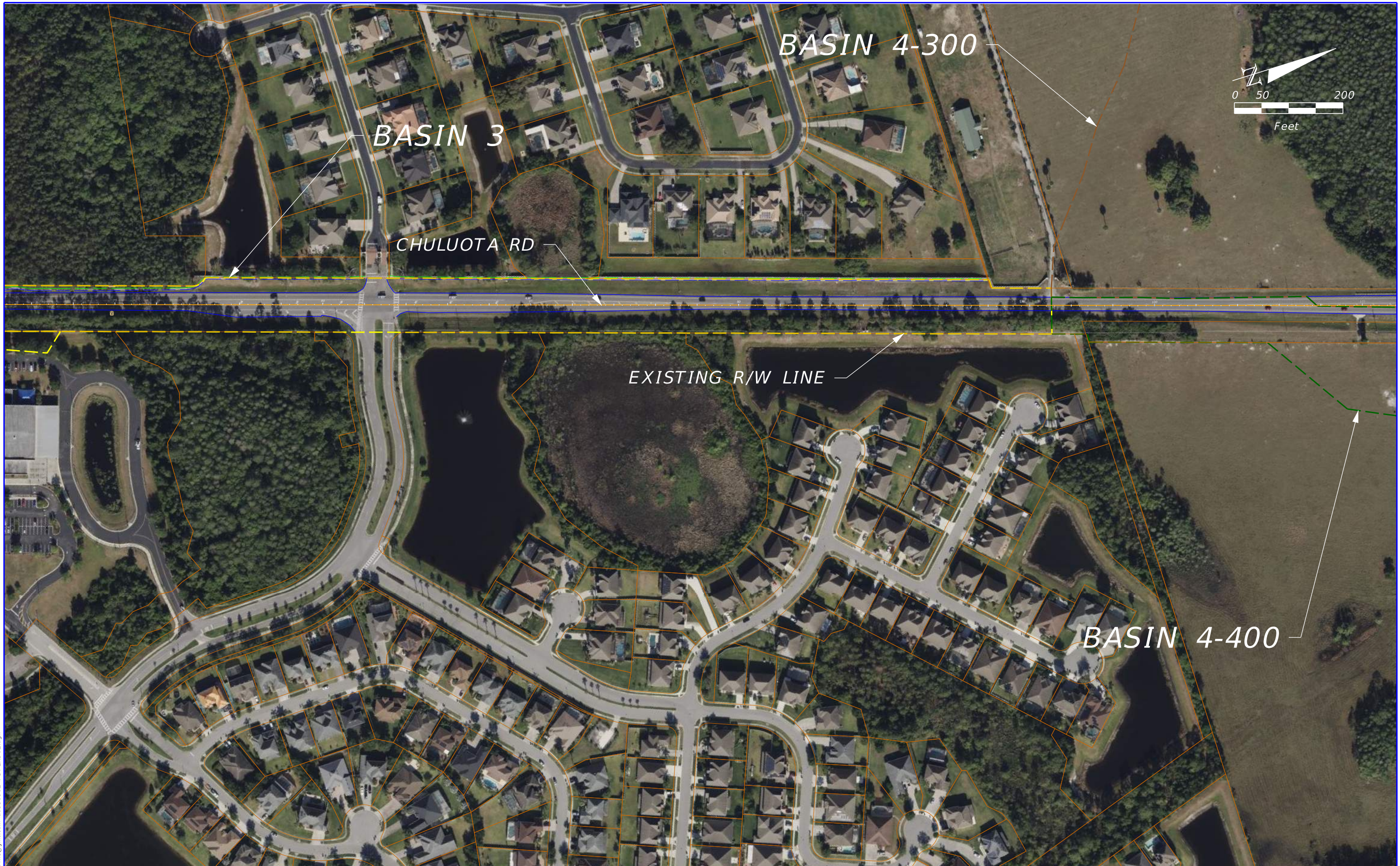
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID

**PRE-DEVELOPMENT
 DRAINAGE MAP**

SHEET NO.
A-2



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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID

**PRE-DEVELOPMENT
 DRAINAGE MAP**

SHEET
 NO.
 A-3



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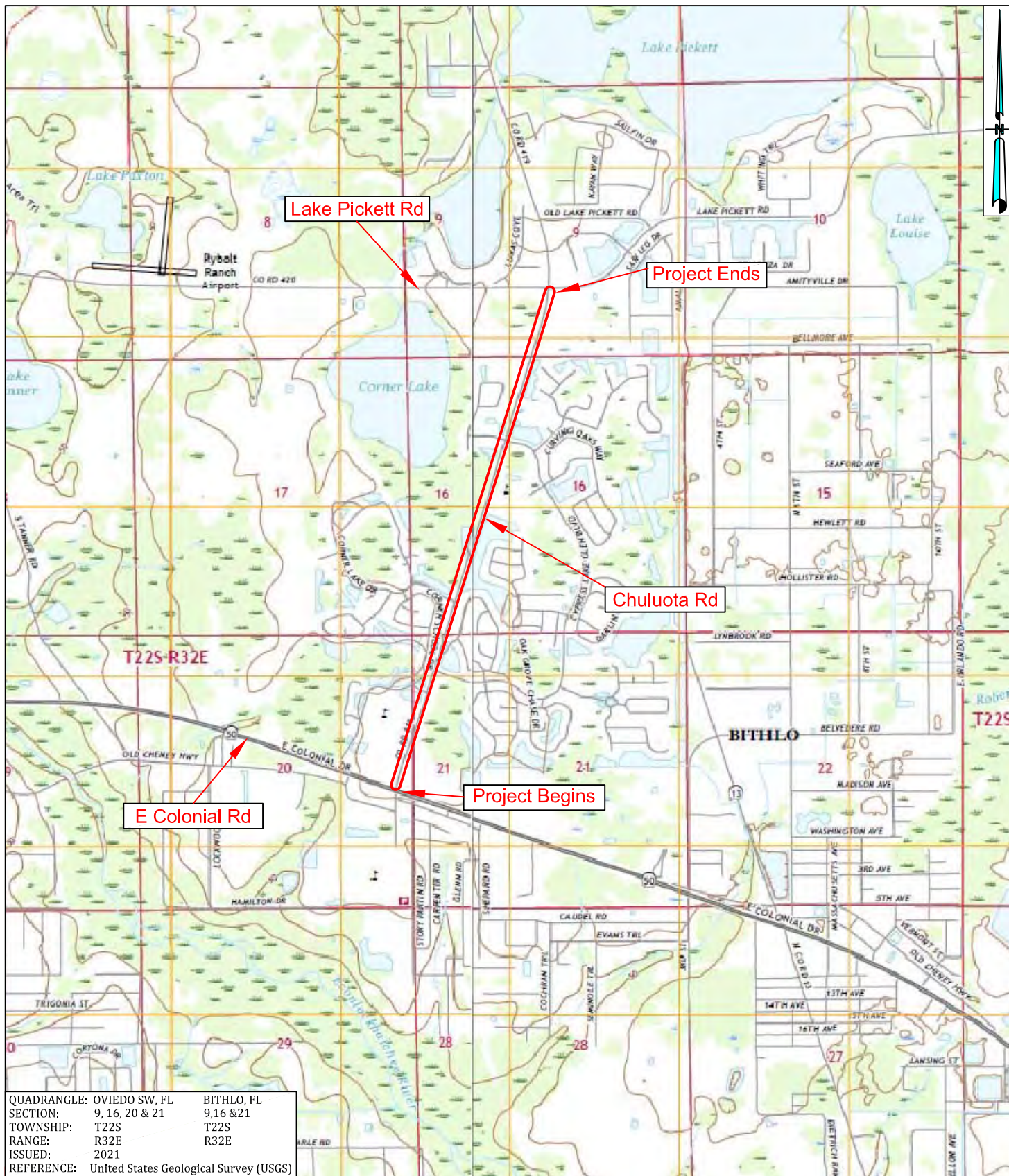
REVISIONS	
DATE	DESCRIPTION

DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID

**PRE-DEVELOPMENT
 DRAINAGE MAP**

SHEET NO.
A-4



QUADRANGLE: OVIEDO SW, FL BITHLO, FL
 SECTION: 9, 16, 20 & 21 9, 16 & 21
 TOWNSHIP: T22S T22S
 RANGE: R32E R32E
 ISSUED: 2021
 REFERENCE: United States Geological Survey (USGS)

NOT TO SCALE

□ Approximate Project Location

REVISIONS			NAMES	DATES
DATES	BY	DESCRIPTION	DRAWN BY: MB	09-29-2021
			CHECKED BY: GNN	09-29-2021
			DESIGNED BY: N/A	N/A
			CHECKED BY: N/A	N/A
			APPROVED BY:	



GODWIN N. NNADI, Ph.D., P.E.
 FL REGISTRATION NO. 50637
 NADIC ENGINEERING SERVICES, INC.
 601 N. HART BOULEVARD
 ORLANDO, FL 32818
 PH (407) 521-4771 FAX (407) 521-4772
 CERTIFICATE OF AUTHORIZATION NO. 8214

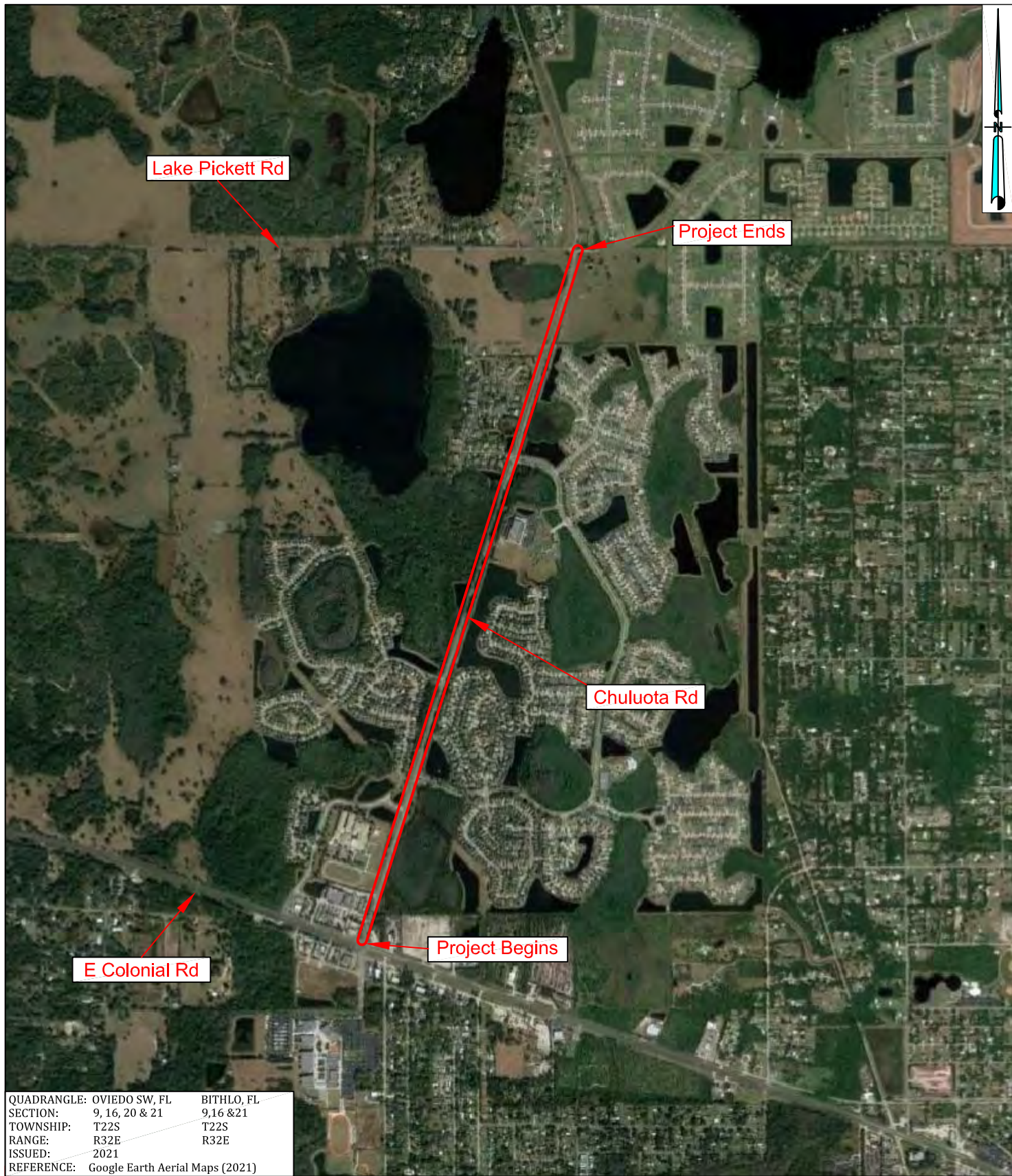


ORANGE COUNTY, FLORIDA

COUNTY	CONTRACT No.
ORANGE	Y20-830-CH

FIGURE 2
USGS QUADRANGLE MAP

PROJECT NAME:
 CHULOUTA ROAD
 ROADWAY CONCEPTUAL
 ANALYSIS (RCA)



Lake Pickett Rd

Project Ends

Chulouta Rd

Project Begins


E Colonial Rd

QUADRANGLE: OVIEDO SW, FL BITHLO, FL
 SECTION: 9, 16, 20 & 21 9,16 &21
 TOWNSHIP: T22S T22S
 RANGE: R32E R32E
 ISSUED: 2021
 REFERENCE: Google Earth Aerial Maps (2021)

NOT TO SCALE

Approximate Project Location

REVISIONS			NAMES	DATES
DATES	BY	DESCRIPTION	DRAWN BY: MB	10-04-2021
			CHECKED BY: GNN	10-04-2021
			DESIGNED BY: N/A	N/A
			CHECKED BY: N/A	N/A
			APPROVED BY:	



NADIC
 GODWIN N. NNADI, Ph.D., P.E.
 FL REGISTRATION NO. 50637
 NADIC ENGINEERING SERVICES, INC.
 601 N. HART BOULEVARD
 ORLANDO, FL 32818
 PH (407) 521-4771 FAX (407) 521-4772
 CERTIFICATE OF AUTHORIZATION NO. 8214



ORANGE COUNTY FLORIDA

ORANGE COUNTY, FLORIDA	
COUNTY	CONTRACT No.
ORANGE	Y20-830-CH

FIGURE 1
VICINITY MAP
PROJECT NAME:
CHULOUTA ROAD ROADWAY CONCEPTUAL ANALYSIS (RCA)



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REVISIONS				STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			POST-DEVELOPMENT DRAINAGE MAP	SHEET NO. A-5
DATE	DESCRIPTION	DATE	DESCRIPTION	ROAD NO.	COUNTY	FINANCIAL PROJECT ID		



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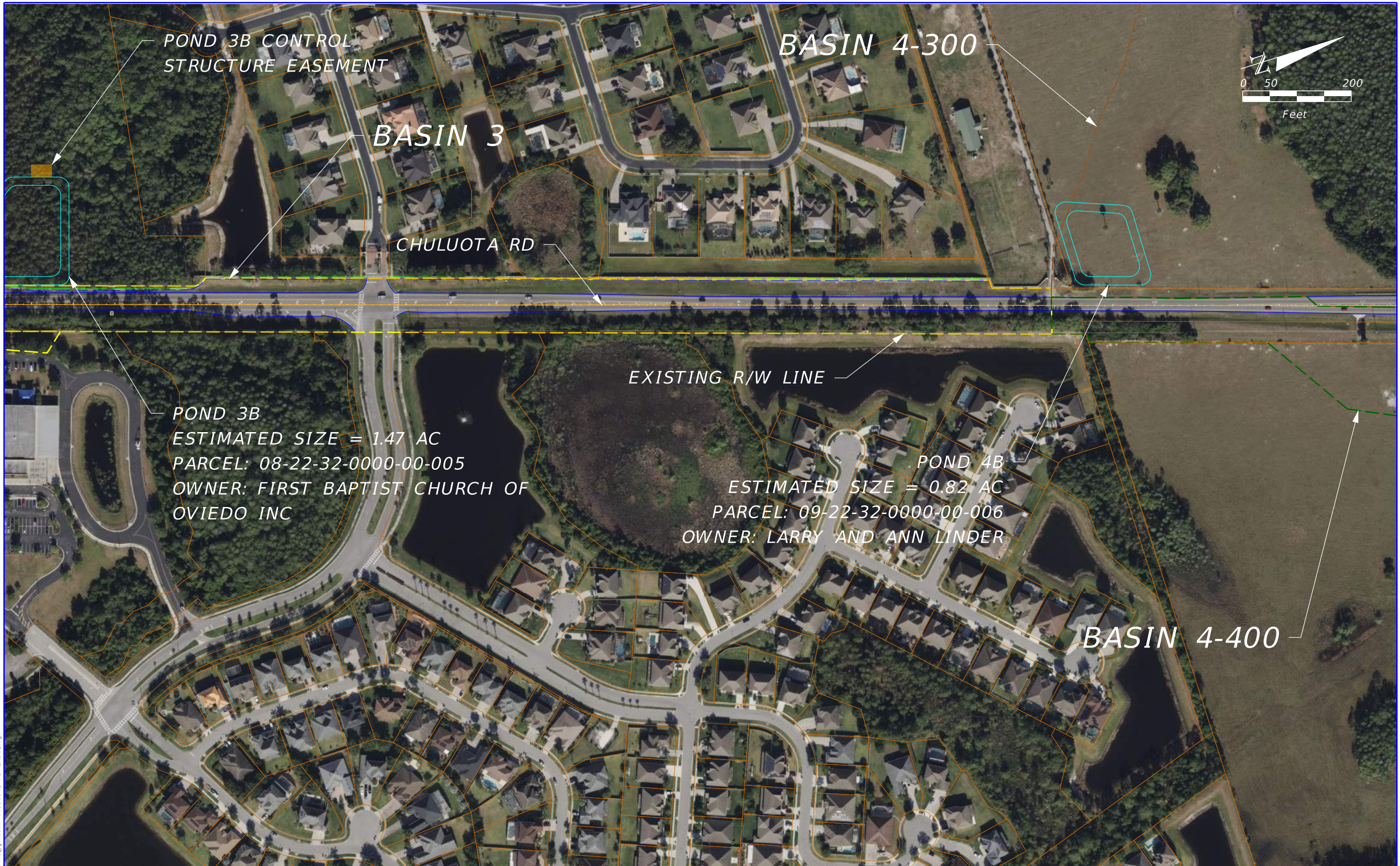
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID

**POST-DEVELOPMENT
DRAINAGE MAP**

SHEET NO.
A-6



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REVISIONS				STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			POST-DEVELOPMENT DRAINAGE MAP	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	ROAD NO.	COUNTY	FINANCIAL PROJECT ID		A-7



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REVISIONS	
DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID

**POST-DEVELOPMENT
DRAINAGE MAP**

SHEET NO.
A-8

Appendix B – Pre- and Post-Development Calculations

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 1A (Primary with runoff conveyed to Pond 2A)

Subject Pre-Developed CN and SCS Runoff Volume Calculation

Basin Designation 1A (Existing)
 Type Evaluation Pre-Developed

Drainage Area begins at Station 10+70
 and continues until Station 17+00

Existing Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lanes (2 by 12')	24	630	15,120	0.35
Turn Lanes	12	150	1,800	0.04
Transition/Taper Lanes	6	50	300	0.01
Sidewalk LT	6	0	0	0
Curb/gutter	2	630	1,260	0.03
Total Impervious Area =			18,480	0.43

- L = Approximate Roadway Length (ft)
- R = Average Right-of-Way Width in Basin (ft)
- I_ Ex = Impervious Area (ac)
- P = Pervious Area (ac)
- At = Total Existing Onsite Basin Area (ac) (Excluding Pond Area)
- Off = Total Offsite Impervious Area (ac)

L = 630 ft
 R = 56.95 ft

At = (R*L) / 43560
 At = 0.82 ac

I_ Ex = 0.43 ac

P = At - I_ Ex
 P = 0.39 ac

From existing Drainage Map:
 Off = 0.15 ac

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 1A (Primary with runoff conveyed to Pond 2A)

Subject Post-Developed CN and SCS Runoff Volume Calculation

Basin Designation 1A (Proposed)
 Type Evaluation Post-Developed

Drainage Area begins at Station 10+70
 and continues until Station 17+00

Proposed Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lanes (2 by 11')	22	630	13,860	0.32
Turn Lanes (x3)	36	150	5,400	0.12
Transition/Taper Lanes	6	50	300	0.01
Sidewalk LT	10	630	6,300	0.14
Curb/gutter (inner & outer)	2	1,260	2,520	0.06
Total Impervious Area =			<u>28,380</u>	<u>0.65</u>

L = Approximate Roadway Length (ft)

R = Average Right-of-Way Width in Basin (ft)

I = Impervious Area (ac)

P = Pervious Area (ac)

At = Total Existing Onsite Basin Area (ac) (Excluding Pond Area)

Off = Total Offsite Impervious Area (ac)

L = 630 ft

R = 56.95 ft

$A_{tp} = (R \cdot L) / 43560$

Atp = 0.82 ac

I = 0.65 ac

$I_{New} = I - I_{Ex}$

I_{New} = 0.22 ac

P = Atp - I

P = 0.17 ac

From existing Drainage Map:

Off = 0.15 ac

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 1A (Primary with runoff conveyed to Pond 2A)

Subject Pre-Developed CN and SCS Runoff Volume Calculation

Existing Condition

Basin Designation 1A (Existing)
 Type Evaluation Pre-Developed
 Basin Size 0.82 ac Total Drainage Area 1.14 ac
 Rainfall Depth 8.40 in

$$\text{Weighted, CN} = \frac{\text{Product}}{\text{Area}} \qquad \text{Soil Storage, } S = \frac{1000}{\text{CN}} - 10$$

$$\text{Runoff, } R = \frac{(P - (0.2S))^2}{P + (0.8S)} \qquad \text{Runoff Volume, } V = \frac{R}{12} \times \text{Area}$$

Basin **For this analysis, all soils are assumed to be D soils for grass.*

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	0.43	42.14
Grass, Good Condition	A	39	0.00	0
Grass, Good Condition	D	80	0.39	31.2
Total Area =			<u>0.82</u>	<u>73.34</u>

Offsite

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	0.15	14.7
Grass, Good Condition (offsite)	D	80	0.17	13.6
Total Area =			<u>0.32</u>	<u>28.3</u>

Basin
 CN= 89.44

S= 1.18 in

R= 7.13 in

V= 0.49 ac-ft

Offsite
 CN= 88.44

S= 1.31 in

R= 7.01 in

V= 0.19 ac-ft

Total Volume= 0.68 ac-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 1A (Primary with runoff conveyed to Pond 2A)

Subject Post-Developed CN and SCS Runoff Volume Calculation

Proposed Condition

Basin Designation 1A (Proposed)
 Type Evaluation Post-Developed
 Basin Size 0.82 ac Total Drainage Area 1.14 ac
 Rainfall Depth 8.40 in

$$\text{Weighted, CN} = \frac{\text{Product}}{\text{Area}}$$

$$\text{Runoff, R} = \frac{(P - (0.2S))^2}{P + (0.8S)}$$

$$\text{Soil Storage, S} = \frac{1000}{\text{CN}} - 10$$

$$\text{Runoff Volume, V} = \frac{\text{R}}{12} \times \text{Area}$$

Basin *For this analysis, all soils are assumed to be D soils for grass.

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	0.65	63.7
Grass, Good Condition	A	39	0.00	0
Grass, Good Condition	D	80	0.17	13.6
Total Area =			<u>0.82</u>	<u>77.3</u>

Offsite

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	0.15	14.7
Grass, Good Condition (offsite)	D	80	0.17	13.6
Total Area =			<u>0.32</u>	<u>28.3</u>

Basin
 CN= 94.27

S= 0.61 in

R= 7.71 in

V= 0.53 ac-ft

Offsite
 CN= 88.44

S= 1.31 in

R= 7.01 in

V= 0.19 ac-ft

Total Volume= 0.72 ac-ft

Post Developed Volume - Pre Developed Volume =

0.04 ac-ft = 1742.40 cu-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 1A (Primary with runoff conveyed to Pond 2A)

Subject Treatment Volume Calculation

SJRWMD Treatment Volume Requirement

Water Quality Volume for a Wet Detention System is based upon 2.5" times the additional onsite impervious area and 1" times the total offsite drainage area. The project is located within the Econ River Basin and requires an additional 50% treatment volume.

$V_t = 2.5 \text{ inches of runoff times the new impervious area}$

$V_t = (I\text{-New} * 2.5 \text{ in}) / 12$

$V_t = \underline{0.05} \text{ ac-ft}$

Is Offsite Area Contributing to the Basin (yes or no)?

Yes

Offsite Area, Off = 0.32 ac

$V_t(\text{off}) = (\text{Off} * 1.0 \text{ in}) / 12$

$V_t(\text{off}) = \underline{0.03} \text{ ac-ft}$

Did the existing basin receive treatment (Yes or No)?

No

Will the existing treatment system will be impacted by the proposed improvements (yes or no)?

No

Existing Required Treatment area for basin = 0 ac

Existing Required Treatment Volume for basin, $V_t(\text{Ex}) = \underline{0} \text{ ac-ft}$

Treatment Volume Required = $[V_t + V_t(\text{Off}) + V_t(\text{Ex})]$

Treatment Volume Required = 0.08 ac-ft

Is Basin Part of an OFW (yes or no)?

Yes

(If Yes, then add an additional 50% Treatment Volume)

(Econ River Basin)

Total Basin Required Treatment Volume = 0.12 ac-ft

Total Peak Storage Volume Requirement

The Total Peak Storage Volume Required is:

Volume (peak) = Treatment Volume + Estimated Peak Attenuation Volume

Treatment Volume = 0.12 ac-ft = 5,227.19 cubic feet

Attenuation Volume = 0.04 ac-ft = 1742.40 cubic feet

Volume (peak) = 0.16 ac-ft = 6,969.60 cubic feet

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 1B (Primary with runoff conveyed to Pond 2A)

Subject Pre-Developed CN and SCS Runoff Volume Calculation

Basin Designation 1B (Existing)
 Type Evaluation Pre-Developed

Drainage Area begins at Station 10+70
 and continues until Station 12+10

Existing Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lanes (2 by 12')	24	140	3,360	0.08
Sidewalk RT	6	0	0	0
Curb/gutter	2	140	280	0.01
Total Impervious Area =			3,640	0.09

L = Approximate Roadway Length (ft)
 R = Approximate Average Right-of-Way Width in Basin (ft)
 I_Ex = Impervious Area (ac)
 P = Pervious Area (ac)
 At = Total Existing Onsite Basin Area (ac) (Excluding Pond Area)
 Off = Total Offsite Impervious Area (ac)

L = 140 ft
 R = 44.53 ft

At = (R*L) / 43560
 At = 0.14 ac

I_Ex = 0.09 ac

P = At - I_Ex
 P = 0.05 ac

From existing Drainage Map:
 Off = 0.20 ac

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 1B (Primary with runoff conveyed to Pond 2A)

Subject Post-Developed CN and SCS Runoff Volume Calculation

Basin Designation 1B (Proposed)
 Type Evaluation Post-Developed

Drainage Area begins at Station 10+70
 and continues until Station 12+10

Proposed Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lanes (3 by 11')	33	140	4,620	0.11
Sidewalk RT	6	140	840	0.02
Curb/gutter (inner & outer)	2	280	560	0.01
Total Impervious Area =			6,020	0.14

- L = Approximate Roadway Length (ft)
- R = Average Right-of-Way Width in Basin (ft)
- I = Impervious Area (ac)
- P = Pervious Area (ac)
- Atp = Proposed Total Existing Onsite Basin Area (ac) (Excluding Pond Area)
- Off = Total Offsite Impervious Area (ac)

L = 140 ft
 R = 44.53 ft

Atp = (R*L) / 43560
 Atp = 0.14 ac

I = 0.14 ac
 I_{New} = I - I_{Ex}
 I_{New} = 0.05 ac

P = Atp - I
 P = 0 ac

From existing Drainage Map:
 Off = 0.20 ac

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 1B (Primary with runoff conveyed to Pond 2A)

Subject Pre-Developed CN and SCS Runoff Volume Calculation

Existing Condition

Basin Designation 1B (Existing)
 Type Evaluation Pre-Developed
 Basin Size 0.14 ac Total Drainage Area 0.34 ac
 Rainfall Depth 8.40 in

Weighted, CN = $\frac{\text{Product}}{\text{Area}}$

Soil Storage, S = $\frac{1000}{\text{CN}} - 10$

Runoff, R = $\frac{(P - (0.2S))^2}{P + (0.8S)}$

Runoff Volume, V = $\frac{R}{12} \times \text{Area}$

Basin **For this analysis, all soils are assumed to be D soils for grass.*

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	0.09	8.82
Grass, Good Condition	A	39	0.00	0
Grass, Good Condition	D	80	0.05	4
Total Area =			<u>0.14</u>	<u>12.82</u>

Offsite

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	0.20	19.6
Grass, Good Condition (offsite)	D	80	0.00	0
Total Area =			<u>0.20</u>	<u>19.6</u>

Basin
 CN= 91.57

Offsite
 CN= 98

S= 0.92 in

S= 0.2 in

R= 7.39 in

R= 8.16 in

V= 0.09 ac-ft

V= 0.14 ac-ft

Total Volume= 0.23 ac-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 1B (Primary with runoff conveyed to Pond 2A)

Subject Post-Developed CN and SCS Runoff Volume Calculation

Proposed Condition

Basin Designation 1B (Proposed)
 Type Evaluation Post-Developed
 Basin Size 0.14 ac
 Rainfall Depth 8.40 in

Total Drainage Area 0.34 ac

Weighted, CN = $\frac{\text{Product}}{\text{Area}}$

Soil Storage, S = $\frac{1000}{\text{CN}} - 10$

Runoff, R = $\frac{(P - (0.2S))^2}{P + (0.8S)}$

Runoff Volume, V = $\frac{R}{12} \times \text{Area}$

Basin

**For this analysis, all soils are assumed to be D soils for grass.*

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	0.14	13.72
Grass, Good Condition	A	39	0.00	0
Grass, Good Condition	D	80	0.00	0
Total Area =			0.14	13.72

Offsite

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	0.20	19.6
Grass, Good Condition (offsite)	D	80	0.00	0
Total Area =			0.20	19.6

Basin
 CN= 98

S= 0.2 in

R= 8.16 in

V= 0.10 ac-ft

Offsite
 CN= 98

S= 0.2 in

R= 8.16 in

V= 0.14 ac-ft

Total Volume= 0.24 ac-ft

Post Developed Volume - Pre Developed Volume =

0.01 ac-ft = 435.60 cu-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 1B (Primary with runoff conveyed to Pond 2A)

Subject Treatment Volume Calculation

SJRWMD Treatment Volume Requirement

Water Quality Volume for a Wet Detention System is based upon 2.5" times the additional onsite impervious area and 1" times the total offsite drainage area. The project is located within the Econ River Basin and requires an additional 50% treatment volume.

$V_t = 2.5 \text{ inches of runoff times the new impervious area}$

$V_t = (I\text{-New} * 2.5 \text{ in}) / 12$

$V_t = \underline{0.01} \text{ ac-ft}$

Is Offsite Area Contributing to the Basin (yes or no)?

Yes

Offsite Area, Off = 0.20 ac

$V_t(\text{off}) = (\text{Off} * 1.0 \text{ in}) / 12$

$V_t(\text{off}) = \underline{0.02} \text{ ac-ft}$

Did the existing basin receive treatment (Yes or No)?

No

Will the existing treatment system will be impacted by the proposed improvements (yes or no)?

No

Existing Required Treatment area for basin = 0 ac

Existing Required Treatment Volume for basin, $V_t(\text{Ex}) = \underline{0} \text{ ac-ft}$

Treatment Volume Required = $[V_t + V_t(\text{Off}) + V_t(\text{Ex})]$

Treatment Volume Required = 0.03 ac-ft

Is Basin Part of an OFW (yes or no)?

Yes

(If Yes, then add an additional 50% Treatment
(Econ River Basin))

Total Basin Required Treatment Volume = 0.05 ac-ft

Total Peak Storage Volume Requirement

The Total Peak Storage Volume Required is:

Volume (peak) = Treatment Volume + Estimated Peak Attenuation Volume

Treatment Volume = 0.05 ac-ft = 1,960.20 cu-ft

Attenuation Volume = 0.01 ac-ft = 435.60 cu-ft

Volume (peak) = 0.06 ac-ft = 2,395.80 cu-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report**Basin No.** 1A (Alternative with runoff conveyed to Pond 1A)**Subject** Pre-Developed CN and SCS Runoff Volume Calculation

Basin Designation 1A (Existing)
Type Evaluation Pre-Developed

Drainage Area begins at Station 10+70
and continues until Station 17+00

Existing Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lanes (2 by 12')	24	630	15,120	0.35
Turn Lanes	12	150	1,800	0.04
Transition/Taper Lanes	6	50	300	0.01
Sidewalk LT	6	0	0	0
Curb/gutter	2	630	1,260	0.03
Total Impervious Area =			18,480	0.43

L = Approximate Roadway Length (ft)

R = Average Right-of-Way Width in Basin (ft)

I_Ex = Impervious Area (ac)

P = Pervious Area (ac)

At = Total Existing Onsite Basin Area (ac) (Excluding Pond Area)

Off = Total Offsite Impervious Area (ac)

L = 630 ft

R = 56.95 ft

At = $(R * L) / 43560$

At = 0.82 ac

I_Ex = 0.43 ac

P = At - I_Ex

P = 0.39 ac

From existing Drainage Map:

Off = 0.15 ac

PROJECT: Chuluota Road Widening Conceptual Drainage Report**Basin No.** 1A (Alternative with runoff conveyed to Pond 1A)**Subject** Post-Developed CN and SCS Runoff Volume Calculation

Basin Designation 1A (Proposed)
 Type Evaluation Post-Developed

Drainage Area begins at Station 10+70
 and continues until Station 17+00

Proposed Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lanes (2 by 11')	22	630	13,860	0.32
Turn Lanes (x3)	36	150	5,400	0.12
Transition/Taper Lanes	6	50	300	0.01
Sidewalk LT	10	630	6,300	0.14
Curb/gutter (inner & outer)	2	1,260	2,520	0.06
Total Impervious Area =			28,380	0.65

L = Approximate Roadway Length (ft)

R = Average Right-of-Way Width in Basin (ft)

I = Impervious Area (ac)

P = Pervious Area (ac)

Atp = Total Existing Onsite Basin Area (ac) (Excluding Pond Area)

Off = Total Offsite Impervious Area (ac)

L = 630 ftR = 56.95 ft

Atp = (R*L) / 43560

Atp = 0.82 acI = 0.65 ac

I_New = I - I_Ex

I_New = 0.22 ac

P = Atp-I

P = 0.17 ac

From existing Drainage Map:

Off = 0.15 ac

PROJECT: Chuluota Road Widening Conceptual Drainage Report**Basin No.** 1A (Alternative with runoff conveyed to Pond 1A)**Subject** Pre-Developed CN and SCS Runoff Volume Calculation**Existing Condition**

Basin Designation 1A (Existing)
 Type Evaluation Pre-Developed
 Basin Size 0.82 ac Total Drainage Area 1.14 ac
 Rainfall Depth 8.40 in

$$\text{Weighted, CN} = \frac{\text{Product}}{\text{Area}}$$

$$\text{Soil Storage, } S = \frac{1000}{\text{CN}} - 10$$

$$\text{Runoff, } R = \frac{(P - (0.2S))^2}{P + (0.8S)}$$

$$\text{Runoff Volume, } V = \frac{R}{12} \times \text{Area}$$

Basin

**For this analysis, all soils are assumed to be D soils for grass.*

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	0.43	42.14
Grass, Good Condition	A	39	0.00	0
Grass, Good Condition	D	80	0.39	31.2
Total Area =			<u>0.82</u>	<u>73.34</u>

Offsite

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	0.15	14.7
Grass, Good Condition (offsite)	D	80	0.17	13.6
Total Area =			<u>0.32</u>	<u>28.3</u>

$$\text{Basin} \\ \text{CN} = \underline{89.44}$$

$$\text{Offsite} \\ \text{CN} = \underline{88.44}$$

$$S = \underline{1.18} \text{ in}$$

$$S = \underline{1.31} \text{ in}$$

$$R = \underline{7.13} \text{ in}$$

$$R = \underline{7.01} \text{ in}$$

$$V = \underline{0.49} \text{ ac-ft}$$

$$V = \underline{0.19} \text{ ac-ft}$$

$$\text{Total Volume} = \underline{0.68} \text{ ac-ft}$$

PROJECT: Chuluota Road Widening Conceptual Drainage Report**Basin No.** 1A (Alternative with runoff conveyed to Pond 1A)**Subject** Post-Developed CN and SCS Runoff Volume Calculation**Proposed Condition**

Basin Designation 1A (Proposed)
 Type Evaluation Post-Developed
 Basin Size 0.82 ac Total Drainage Area 1.14 ac
 Rainfall Depth 8.40 in

$$\text{Weighted, CN} = \frac{\text{Product}}{\text{Area}}$$

$$\text{Runoff, R} = \frac{(P - (0.2S))^2}{P + (0.8S)}$$

$$\text{Soil Storage, S} = \frac{1000}{\text{CN}} - 10$$

$$\text{Runoff Volume, V} = \frac{\text{R}}{12} \times \text{Area}$$

Basin **For this analysis, all soils are assumed to be D soils for grass.*

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	0.65	63.7
Grass, Good Condition	A	39	0.00	0
Grass, Good Condition	D	80	0.17	13.6
Total Area =			0.82	77.3

Offsite

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	0.15	14.7
Grass, Good Condition (offsite)	D	80	0.17	13.6
Total Area =			0.32	28.3

Basin
 CN= 94.27

S= 0.61 in

R= 7.71 in

V= 0.53 ac-ft

Total Volume= 0.72 ac-ft

Offsite
 CN= 88.44

S= 1.31 in

R= 7.01 in

V= 0.19 ac-ft

Post Developed Volume - Pre Developed Volume =

0.04 ac-ft = 1742.40 cu-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 1A (Alternative with runoff conveyed to Pond 1A)

Subject Treatment Volume Calculation

SJRWMD Treatment Volume Requirement

Water Quality Volume for a Wet Detention System is based upon 2.5" times the additional onsite impervious area and 1" times the total offsite drainage area. The project is located within the Econ River Basin and requires an additional 50% treatment volume.

$V_t = 2.5 \text{ inches of runoff times the new impervious area}$

$V_t = (I\text{-New} * 2.5 \text{ in}) / 12$

$V_t = \underline{\quad 0.05 \text{ ac-ft}$

Is Offsite Area Contributing to the Basin (yes or no)?

Yes

Offsite Area, Off = 0.32 ac

$V_t(\text{off}) = (\text{Off} * 1.0 \text{ in}) / 12$

$V_t(\text{off}) = \underline{\quad 0.03 \text{ ac-ft}$

Did the existing basin receive treatment (Yes or No)?

No

Will the existing treatment system will be impacted by the proposed improvements (yes or no)?

No

Existing Required Treatment area for basin = 0 ac

Existing Required Treatment Volume for basin, $V_t(\text{Ex}) = \underline{\quad 0 \text{ ac-ft}$

Treatment Volume Required = $[V_t + V_t(\text{Off}) + V_t(\text{Ex})]$

Treatment Volume Required = 0.08 ac-ft

Is Basin Part of an OFW (yes or no)?

Yes

(If Yes, then add an additional 50% Treatment Volume)

(Econ River Basin)

Total Basin Required Treatment Volume = 0.12 ac-ft

Total Peak Storage Volume Requirement

The Total Peak Storage Volume Required is:

Volume (peak) = Treatment Volume + Estimated Peak Attenuation Volume

Treatment Volume = 0.12 ac-ft = 5,227.19 cubic feet

Attenuation Volume = 0.04 ac-ft = 1742.40 cubic feet

Volume (peak) = 0.16 ac-ft = 6,969.60 cubic feet

PROJECT: Chuluota Road Widening Conceptual Drainage Report**Basin No.** 1B (Alternative with runoff conveyed to Pond 1A)**Subject** Pre-Developed CN and SCS Runoff Volume Calculation

Basin Designation 1B (Existing)
 Type Evaluation Pre-Developed

Drainage Area begins at Station 10+70
 and continues until Station 12+10

Existing Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lanes (2 by 12')	24	140	3,360	0.08
Sidewalk RT	6	0	0	0
Curb/gutter	2	140	280	0.01
Total Impervious Area =			3,640	0.09

L = Approximate Roadway Length (ft)

R = Approximate Average Right-of-Way Width in Basin (ft)

I_Ex = Impervious Area (ac)

P = Pervious Area (ac)

At = Total Existing Onsite Basin Area (ac) (Excluding Pond Area)

Off = Total Offsite Impervious Area (ac)

$$L = \frac{140}{1} \text{ ft}$$

$$R = \frac{44.53}{1} \text{ ft}$$

$$At = (R * L) / 43560$$

$$At = \frac{0.14}{1} \text{ ac}$$

$$I_{\text{Ex}} = \frac{0.09}{1} \text{ ac}$$

$$P = At - I_{\text{Ex}}$$

$$P = \frac{0.05}{1} \text{ ac}$$

From existing Drainage Map:

$$Off = \frac{0.20}{1} \text{ ac}$$

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 1B (Alternative with runoff conveyed to Pond 1A)

Subject Post-Developed CN and SCS Runoff Volume Calculation

Basin Designation 1B (Proposed)

Type Evaluation Post-Developed

Drainage Area begins at Station 10+70

and continues until Station 12+10

Proposed Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lanes (3 by 11')	33	140	4,620	0.11
Sidewalk RT	6	140	840	0.02
Curb/gutter (inner & outer)	2	280	560	0.01
Total Impervious Area =			6,020	0.14

L = Approximate Roadway Length (ft)

R = Average Right-of-Way Width in Basin (ft)

I = Impervious Area (ac)

P = Pervious Area (ac)

Atp = Proposed Total Existing Onsite Basin Area (ac) (Excluding Pond Area)

Off = Total Offsite Impervious Area (ac)

$$L = \underline{140 \text{ ft}}$$

$$R = \underline{44.53 \text{ ft}}$$

$$Atp = (R \cdot L) / 43560$$

$$Atp = \underline{0.14 \text{ ac}}$$

$$I = \underline{0.14 \text{ ac}}$$

$$I_{\text{New}} = I - I_{\text{Ex}}$$

$$I_{\text{New}} = \underline{0.05 \text{ ac}}$$

$$P = Atp - I$$

$$P = \underline{0 \text{ ac}}$$

From existing Drainage Map:

$$Off = \underline{0.20 \text{ ac}}$$

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 1B (Alternative with runoff conveyed to Pond 1A)

Subject Pre-Developed CN and SCS Runoff Volume Calculation

Existing Condition

Basin Designation 1B (Existing)
 Type Evaluation Pre-Developed
 Basin Size 0.14 ac Total Drainage Area 0.74 ac
 Rainfall Depth 8.40 in

$$\text{Weighted, CN} = \frac{\text{Product}}{\text{Area}}$$

$$\text{Runoff, R} = \frac{(P - (0.2S))^2}{P + (0.8S)}$$

$$\text{Soil Storage, S} = \frac{1000}{\text{CN}} - 10$$

$$\text{Runoff Volume, V} = \frac{\text{R}}{12} \times \text{Area}$$

Basin **For this analysis, all soils are assumed to be D soils for grass.*

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	0.09	8.82
Grass, Good Condition	A	39	0.00	0
Grass, Good Condition	D	80	0.05	4
Total Area =			<u>0.14</u>	<u>12.82</u>

Offsite

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	0.20	19.6
Grass, Good Condition (offsite)	D	80	0.00	0
Total Area =			<u>0.20</u>	<u>19.6</u>

Proposed Pond Location

**For this analysis, all soils are assumed to be all D*

Soil Land Use Description	Soil Group	CN	Area (ac)
Pond Area at DHW (Woods, good)	A/D	77	0.40

Basin	Offsite	Pond
CN= <u>91.57</u>	CN= <u>98</u>	CN= <u>77</u>
S= <u>0.92 in</u>	S= <u>0.2 in</u>	S= <u>2.99 in</u>
R= <u>7.39 in</u>	R= <u>8.16 in</u>	R= <u>5.64 in</u>
V= <u>0.09 ac-ft</u>	V= <u>0.14 ac-ft</u>	V= <u>0.19 ac-ft</u>

Total Volume= 0.42 ac-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 1B (Alternative with runoff conveyed to Pond 1A)

Subject Post-Developed CN and SCS Runoff Volume Calculation

Proposed Condition

Basin Designation 1B (Proposed)
 Type Evaluation Post-Developed
 Basin Size 0.14 ac Total Drainage Area 0.74 ac
 Rainfall Depth 8.40 in

$$\text{Weighted, CN} = \frac{\text{Product}}{\text{Area}}$$

$$\text{Runoff, R} = \frac{(P - (0.2S))^2}{P + (0.8S)}$$

$$\text{Soil Storage, S} = \frac{1000}{\text{CN}} - 10$$

$$\text{Runoff Volume, V} = \frac{R}{12} \times \text{Area}$$

Basin **For this analysis, all soils are assumed to be D soils for grass.*

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	0.14	13.72
Grass, Good Condition	A	39	0.00	0
Grass, Good Condition	D	80	0.00	0
Total Area =			0.14	13.72

Offsite

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	0.20	19.6
Grass, Good Condition (offsite)	D	80	0.00	0
Total Area =			0.20	19.6

Proposed Pond Location

Soil Land Use Description	Soil Group	CN	Area (ac)
Pond Area at DHW (Water)	-	100	0.40

Basin CN= <u>98</u> S= <u>0.2 in</u> R= <u>8.16 in</u> V= <u>0.10 ac-ft</u>	Offsite CN= <u>98</u> S= <u>0.2 in</u> R= <u>8.16 in</u> V= <u>0.14 ac-ft</u>	Pond CN= <u>100</u> S= <u>0 in</u> R= <u>8.40 in</u> V= <u>0.28 ac-ft</u>
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Total Volume= 0.52 ac-ft

Post Developed Volume - Pre Developed Volume =

0.10 ac-ft = 4356.00 cu-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 1B (Alternative with runoff conveyed to Pond 1A)

Subject Treatment Volume Calculation

SJRWMD Treatment Volume Requirement

Water Quality Volume for a Wet Detention System is based upon 2.5" times the additional onsite impervious area and 1" times the total offsite drainage area. The project is located within the Econ River Basin and requires an additional 50% treatment volume.

$V_t = 2.5 \text{ inches of runoff times the new impervious area}$

$V_t = (I\text{-New} * 2.5 \text{ in}) / 12$

$V_t = \underline{0.01} \text{ ac-ft}$

Is Offsite Area Contributing to the Basin (yes or no)? Yes

Offsite Area, Off = 0.60 ac

$V_t(\text{off}) = (\text{Off} * 1.0 \text{ in}) / 12$

$V_t(\text{off}) = \underline{0.05} \text{ ac-ft}$

Did the existing basin receive treatment (Yes or No)? No

Will the existing treatment system will be impacted by the proposed improvements (yes or no)? No

Existing Required Treatment area for basin = 0 ac

Existing Required Treatment Volume for basin, $V_t(\text{Ex}) = \underline{0} \text{ ac-ft}$

Treatment Volume Required = $[V_t + V_t(\text{Off}) + V_t(\text{Ex})]$

Treatment Volume Required = 0.06 ac-ft

Is Basin Part of an OFW (yes or no)? Yes (If Yes, then add an additional 50% Treatment
(Econ River Basin))

Total Basin Required Treatment Volume = 0.09 ac-ft

Total Peak Storage Volume Requirement

The Total Peak Storage Volume Required is:

Volume (peak) = Treatment Volume + Estimated Peak Attenuation Volume

Treatment Volume = 0.09 ac-ft = 3,920.40 cu-ft

Attenuation Volume = 0.10 ac-ft = 4356.00 cu-ft

Volume (peak) = 0.19 ac-ft = 8,276.40 cu-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 2A (Primary with runoff conveyed to Pond 2A)

Subject Pre-Developed CN and SCS Runoff Volume Calculation

Basin Designation 2A (Existing)
 Type Evaluation Pre-Developed

Drainage Area begins at Station 17+00
 and continues until Station 29+70

Existing Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lanes (2 by 12')	24	1,270	30,480	0.7
Sidewalk LT	6	1,270	7,620	0.17
Curb/gutter	2	0	0	0
Shoulder	5	1,270	6,350	0.15
Total Impervious Area =			44,450	1.02

Existing Schoolview Way Configuration				
Description	Width	Length	Product (sq. ft)	Product (ac)
Lanes from Corner School Drive (2 by 14')	28	274	7,672	0.18
Left Turn Lane to Corner School Dr	14	239	3,346	0.08
Right Turn Lane to Corner School Dr	14	109	1,526	0.04
Curb/gutter (outer)	2	383	766	0.02
Curb/gutter (inner)	2	190	380	0.01
Total Impervious Area =			13,690	0.33

L = Approximate Roadway Length (ft)
 R = Average Right-of-Way Width in Basin (ft)
 I_ Ex = Impervious Area (ac)
 P = Pervious Area (ac)
 At = Total Existing Onsite Basin Area (ac) (Excluding Pond Area)
 Off = Total Offsite Impervious Area (ac)

$$\begin{array}{l} L = \underline{\quad 1,270 \quad} \text{ ft} \\ R = \underline{\quad 55 \quad} \text{ ft} \\ \\ At = (R \cdot L) / 43560 \\ At = \underline{\quad 1.6 \quad} \text{ ac} \end{array} \qquad \begin{array}{l} I_Ex = \underline{\quad 1.02 \quad} \text{ ac} \\ \\ P = At - I_Ex \\ P = \underline{\quad 0.58 \quad} \text{ ac} \end{array}$$

From existing Drainage Map:

$$Off = \underline{\quad 0.33 \quad} \text{ ac}$$

PROJECT: Chuluota Road Widening Conceptual Drainage Report**Basin No.** 2A (Primary with runoff conveyed to Pond 2A)**Subject** Post-Developed CN and SCS Runoff Volume Calculation

Basin Designation 2A (Proposed)
 Type Evaluation Post-Developed

Drainage Area begins at Station 17+00
 and continues until Station 29+70

Proposed Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lanes (3 by 11')	33	1,270	41,910	0.96
Sidewalk LT	10	1,270	12,700	0.29
Curb/gutter (inner & outer)	2	2,540	5,080	0.12
Shoulder	5	0	0	0
Total Impervious Area =			59,690	1.37

Proposed Schoolview Way Configuration				
Description	Width	Length	Product (sq. ft)	Product (ac)
Lane from Corner School Drive (1 by 14')	14	446	6,244	0.14
Lane from Corner School Drive (1 by 14')	14	185	2,590	0.06
Left Turn Lane to Corner School Dr	14	74	1,036	0.02
Right Turn Lane to Corner School Dr	14	191	2,674	0.06
Curb/gutter (outer)	2	376	752	0.02
Curb/gutter (inner)	2	355	710	0.02
Total Impervious Area =			14,006	0.32

L = Approximate Roadway Length (ft)

R = Average Right-of-Way Width in Basin (ft)

I = Impervious Area (ac)

P = Pervious Area (ac)

At = Total Existing Onsite Basin Area (ac) (Excluding Pond Area)

Off = Total Offsite Impervious Area (ac)

$$L = \frac{1,270}{\text{ft}}$$

$$R = \frac{55}{\text{ft}}$$

$$Atp = (R*L) / 43560$$

$$Atp = \frac{1.6}{\text{ac}}$$

From existing Drainage Map:

$$Off = \frac{0.32}{\text{ac}}$$

$$I = \frac{1.37}{\text{ac}}$$

$$I_{\text{New}} = I - I_{\text{Ex}}$$

$$I_{\text{New}} = \frac{0.35}{\text{ac}}$$

$$P = Atp - I$$

$$P = \frac{0.23}{\text{ac}}$$

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 2A (Primary with runoff conveyed to Pond 2A)

Subject Pre-Developed CN and SCS Runoff Volume Calculation

Existing Condition

Basin Designation 2A (Existing)
 Type Evaluation Pre-Developed
 Basin Size 1.60 ac Total Drainage Area 5.53 ac
 Rainfall Depth 8.40 in

$$\text{Weighted, CN} = \frac{\text{Product}}{\text{Area}} \qquad \text{Soil Storage, } S = \frac{1000}{\text{CN}} - 10$$

$$\text{Runoff, } R = \frac{(P - (0.2S))^2}{P + (0.8S)} \qquad \text{Runoff Volume, } V = \frac{R}{12} \times \text{Area}$$

Basin

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	1.02	99.96
Grass, Good Condition	A	39	0.00	0
Grass, Good Condition	D	80	0.58	46.40
Total Area =			1.60	146.36

Existing Pond Area

**For this analysis, all soils are assumed to be D soils for grass.*

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	0.33	32.34
Grass, Good Condition	A/D	80	0.91	72.80
Existing Pond 1 at DHW	-	100	1.89	189.00
Existing Pond 3 at DHW	-	100	0.43	43.00
Total Area =			3.56	232.00

Proposed Intersection Area

**For this analysis, all soils are assumed to be D soils for grass.*

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Grass, Good Condition	A/D	80	0.32	25.60
Grass, Good Condition	A/D	80	0.05	4.00
Total Area =			0.37	29.60

Basin CN= <u>91.48</u> S= <u>0.93 in</u> R= <u>7.38 in</u> V= <u>0.98 ac-ft</u>	Pond CN= 65.17 S= 5.34 in R= 4.24 in V= 1.26 ac-ft	Intersection CN= <u>80</u> S= <u>2.5 in</u> R= <u>6.00 in</u> V= <u>0.19 ac-ft</u>
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Total Volume= 1.17 ac-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 2A (Primary with runoff conveyed to Pond 2A)

Subject Post-Developed CN and SCS Runoff Volume Calculation

Proposed Condition

Basin Designation 2A (Proposed)
 Type Evaluation Post-Developed
 Basin Size 1.60 ac Total Drainage Area 5.53 ac
 Rainfall Depth 8.40 in

$$\text{Weighted, CN} = \frac{\text{Product}}{\text{Area}} \qquad \text{Soil Storage, } S = \frac{1000}{\text{CN}} - 10$$

$$\text{Runoff, } R = \frac{(P - (0.2S))^2}{P + (0.8S)} \qquad \text{Runoff Volume, } V = \frac{R}{12} \times \text{Area}$$

Basin

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	1.37	134.26
Grass, Good Condition	A	39	0.00	0
Grass, Good Condition	D	80	0.23	18.4
Total Area =			<u>1.60</u>	<u>152.66</u>

Existing Pond Area

**For this analysis, all soils are assumed to be D soils for grass.*

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Grass, Good Condition	A/D	80	1.11	88.80
Pond 2A at DHW	-	100	2.45	245.00
Total Area =			<u>3.56</u>	<u>245.00</u>

Proposed Intersection Area

**For this analysis, all soils are assumed to be D soils for grass.*

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	0.32	31.36
Grass, Good Condition	A/D	80	0.05	4.00
Total Area =			<u>0.37</u>	<u>35.36</u>

Basin CN= <u>95.41</u> S= <u>0.48</u> in R= <u>7.85</u> in V= <u>1.05</u> ac-ft	Pond CN= 68.82 S= 4.53 in R= 4.67 in V= 1.39 ac-ft	Intersection CN= <u>95.57</u> S= <u>0.46</u> in R= <u>7.87</u> in V= <u>0.24</u> ac-ft
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Total Volume= 1.29 ac-ft

Post Developed Volume - Pre Developed Volume =

0.12 ac-ft = 5252.47 cu-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 2A (Primary with runoff conveyed to Pond 2A)

Subject Treatment Volume Calculation

SJRWMD Treatment Volume Requirement

Water Quality Volume for a Wet Detention System is based upon 2.5" times the additional onsite impervious area and 1" times the total offsite drainage area. The project is located within the Econ River Basin and requires an additional 50% treatment volume.

Vt = 2.5 inches of runoff times the new impervious area

Vt = (I-New * 2.5 in) / 12

Vt = 0.07 ac-ft

Is Offsite Area Contributing to the Basin (yes or no)?

Yes

Offsite Area, Off = 3.93 ac

Vt(off) = (Off * 1.0 in) / 12

Vt(off) = 0.33 ac-ft

Did the existing basin receive treatment (Yes or No)?

No

Will the existing treatment system will be impacted by the proposed improvements (yes or no)?

No

Existing Required Treatment area for basin = 0 ac

Existing Required Treatment Volume for basin, Vt(Ex) = 0 ac-ft

Treatment Volume Required = [Vt + Vt(Off)+Vt(Ex)]

Treatment Volume Required = 0.40 ac-ft

Is Basin Part of an OFW (yes or no)?

Yes

(Econ River Basin)

(If Yes, then add an additional 50% Treatment Volume)

Total Basin Required Treatment Volume = 0.60 ac-ft

Step No. 3, Pond 2 - Total Peak Storage Volume Requirement

The Total Peak Storage Volume Required is:

Volume (peak) = Treatment Volume + Estimated Peak Attenuation Volume

Treatment Volume = 0.60 ac-ft = 26,136.00 cu-ft

Attenuation Volume = 0.12 ac-ft = 5,252.47 cu-ft

Volume (peak) = 0.72 ac-ft = 31,388.47 cu-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report
Basin No. 2A (Alternative with runoff conveyed to Pond 2B)
Subject Pre-Developed CN and SCS Runoff Volume Calculation

Basin Designation 2A (Existing)
 Type Evaluation Pre-Developed

Drainage Area begins at Station 17+00
 and continues until Station 29+70

Existing Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lanes (2 by 12')	24	1,270	30,480	0.7
Sidewalk LT	6	1,270	7,620	0.17
Curb/gutter	2	0	0	0
Shoulder	5	1,270	6,350	0.15
Total Impervious Area =			44,450	1.02

L = Approximate Roadway Length (ft)
 R = Average Right-of-Way Width in Basin (ft)
 I_Ex = Impervious Area (ac)
 P = Pervious Area (ac)
 At = Total Existing Onsite Basin Area (ac) (Excluding Pond Area)
 Off = Total Offsite Impervious Area (ac)

L = 1,270 ft I_Ex = 1.02 ac
 R = 55 ft
 At = (R*L) / 43560 P = At-I_Ex
 At = 1.6 ac P = 0.58 ac

From existing Drainage Map:
 Off = 0.00 ac

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 2A (Alternative with runoff conveyed to Pond 2B)

Subject Post-Developed CN and SCS Runoff Volume Calculation

Basin Designation 2A (Proposed)
 Type Evaluation Post-Developed

Drainage Area begins at Station 17+00
 and continues until Station 29+70

Proposed Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lanes (3 by 11')	33	1,270	41,910	0.96
Sidewalk LT	10	1,270	12,700	0.29
Curb/gutter (inner & outer)	2	2,540	5,080	0.12
Shoulder	5	0	0	0
Total Impervious Area =			59,690	1.37

L = Approximate Roadway Length (ft)
 R = Average Right-of-Way Width in Basin (ft)
 I = Impervious Area (ac)
 P = Pervious Area (ac)
 At = Total Existing Onsite Basin Area (ac) (Excluding Pond Area)
 Off = Total Offsite Impervious Area (ac)

L =	<u>1,270</u> ft	I =	<u>1.37</u> ac
R =	<u>55</u> ft	I _{New} = I - I _{Ex}	
A _{tp} = (R*L) / 43560		I _{New} =	<u>0.35</u> ac
A _{tp} =	<u>1.6</u> ac	P = A _{tp} - I	
		P =	<u>0.23</u> ac
From existing Drainage Map:			
Off =	<u>0.00</u> ac		

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 2A (Alternative with runoff conveyed to Pond 2B)

Subject Pre-Developed CN and SCS Runoff Volume Calculation

Existing Condition

Basin Designation 2A (Existing)
 Type Evaluation Pre-Developed
 Basin Size 1.60 ac
 Rainfall Depth 8.40 in

Weighted, CN = $\frac{\text{Product}}{\text{Area}}$

Soil Storage, S = $\frac{1000}{CN} - 10$

Runoff, R = $\frac{(P - (0.2S))^2}{P + (0.8S)}$

Runoff Volume, V = $\frac{R}{12} \times \text{Area}$

Basin

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	1.02	99.96
Grass, Good Condition	A	39	0.00	0
Grass, Good Condition	D	80	0.58	46.40
Total Area =			1.60	146.36

Basin
 CN= 91.48
 S= 0.93 in
 R= 7.38 in
 V= 0.98 ac-ft

Total Volume= 0.98 ac-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 2A (Alternative with runoff conveyed to Pond 2B)

Subject Post-Developed CN and SCS Runoff Volume Calculation

Proposed Condition

Basin Designation 2A (Proposed)
 Type Evaluation Post-Developed
 Basin Size 1.60 ac
 Rainfall Depth 8.40 in

Weighted, CN = $\frac{\text{Product}}{\text{Area}}$

Soil Storage, S = $\frac{1000}{CN} - 10$

Runoff, R = $\frac{(P - (0.2S))^2}{P + (0.8S)}$

Runoff Volume, V = $\frac{R}{12} \times \text{Area}$

Basin

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	1.37	134.26
Grass, Good Condition	A	39	0.00	0
Grass, Good Condition	D	80	0.23	18.4
Total Area =			1.60	152.66

Basin
 CN= 95.41
 S= 0.48 in
 R= 7.85 in
 V= 1.05 ac-ft

Total Volume= 1.05 ac-ft

Post Developed Volume - Pre Developed Volume =
0.06 ac-ft = 2739.30 cu-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 2A (Alternative with runoff conveyed to Pond 2B)

Subject Treatment Volume Calculation

SJRWMD Treatment Volume Requirement

Water Quality Volume for a Wet Detention System is based upon 2.5" times the additional onsite impervious area and 1" times the total offsite drainage area. The project is located within the Econ River Basin and requires an additional 50% treatment volume.

$V_t = 2.5 \text{ inches of runoff times the new impervious area}$

$V_t = (I\text{-New} * 2.5 \text{ in}) / 12$

$V_t = \underline{0.07 \text{ ac-ft}}$

Is Offsite Area Contributing to the Basin (yes or no)?

No

Offsite Area, Off = 0.00 ac

$V_t(\text{off}) = (\text{Off} * 1.0 \text{ in}) / 12$

$V_t(\text{off}) = \underline{0.00 \text{ ac-ft}}$

Did the existing basin receive treatment (Yes or No)?

No

Will the existing treatment system will be impacted by the proposed improvements (yes or no)?

No

Existing Required Treatment area for basin = 0 ac

Existing Required Treatment Volume for basin, $V_t(\text{Ex}) = \underline{0 \text{ ac-ft}}$

Treatment Volume Required = $[V_t + V_t(\text{Off}) + V_t(\text{Ex})]$

Treatment Volume Required = 0.07 ac-ft

Is Basin Part of an OFW (yes or no)?

Yes

(If Yes, then add an additional 50% Treatment Volume)

(Econ River Basin)

Total Basin Required Treatment Volume = 0.11 ac-ft

Step No. 3, Pond 2 - Total Peak Storage Volume Requirement

The Total Peak Storage Volume Required is:

Volume (peak) = Treatment Volume + Estimated Peak Attenuation Volume

Treatment Volume = 0.11 ac-ft = 4,573.80 cu-ft

Attenuation Volume = 0.06 ac-ft = 2,739.30 cu-ft

Volume (peak) = 0.17 ac-ft = 7,313.10 cu-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 2B (Primary with runoff conveyed to Pond 2A)

Subject Pre-Developed CN and SCS Runoff Volume Calculation

Basin Designation 2B (Existing)
Type Evaluation Pre-Developed

Drainage Area begins at Station 12+70
and continues until Station 47+85

Existing Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lanes (1 by 12')	12	600	7,200	0.17
Through Lanes (2 by 12')	24	2,920	70,080	1.61
Turn Lanes	12	1,465	17,580	0.4
Sidewalk LT	6	1805	10,830	0.25
Transition/Taper Lanes	6	180	1,080	0.02
Paved Median Lanes	12	885	10,620	0.24
Curb/gutter	2	0	0	0
Shoulder	5	5,320	26,600	0.61
Total Impervious Area =			143,990	3.3

L = Approximate Roadway Length (ft)

R = Average Right-of-Way Width in Basin (ft)

I_Ex = Impervious Area (ac)

P = Pervious Area (ac)

At = Total Existing Onsite Basin Area (ac) (Excluding Pond Area)

Off = Total Offsite Impervious Area (ac)

$$L = \underline{3,515 \text{ ft}}$$

$$R = \underline{93 \text{ ft}}$$

$$At = (R*L) / 43560$$

$$At = \underline{7.52 \text{ ac}}$$

$$I_{\text{Ex}} = \underline{3.3 \text{ ac}}$$

$$P = At - I_{\text{Ex}}$$

$$P = \underline{4.22 \text{ ac}}$$

From existing Drainage Map:

$$Off = \underline{0.00 \text{ ac}}$$

PROJECT: Chuluota Road Widening Conceptual Drainage Report**Basin No.** 2B (Primary with runoff conveyed to Pond 2A)**Subject** Post-Developed CN and SCS Runoff Volume Calculation

Basin Designation 2B (Proposed)

Type Evaluation Post-Developed

Drainage Area begins at Station 12+70and continues until Station 47+85

Proposed Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lanes (2 by 11')	22	600	13,200	0.3
Through Lanes (4 by 11')	44	2,920	128,480	2.95
Turn Lanes	12	1,465	17,580	0.4
Sidewalk LT	6	1,805	10,830	0.25
Sidewalk RT	10	3,510	35,100	0.81
Transition/Taper Lanes	6	180	1,080	0.02
Paved Median Lanes	12	885	10,620	0.24
Curb/gutter (inner/outer)	2	7,040	14,080	0.32
Shoulder	5	0	0	0
Total Impervious Area =			230,970	5.29

L = Approximate Roadway Length (ft)

R = Average Right-of-Way Width in Basin (ft)

I = Impervious Area (ac)

P = Pervious Area (ac)

Atp = Proposed Total Existing Onsite Basin Area (ac) (Excluding Pond Area)

Off = Total Offsite Impervious Area (ac)

L = 3,515 ftR = 93 ft $Atp = (R * L) / 43560$ Atp = 7.52 acI = 5.29 ac $I_{New} = I - I_{Ex}$ I_{New} = 1.99 ac

P = Atp - I

P = 2.23 ac

From existing Drainage Map:

Off = 0.00 ac

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 2B (Primary with runoff conveyed to Pond 2A)

Subject Pre-Developed CN and SCS Runoff Volume Calculation

Existing Condition

Basin Designation 2B (Existing)
 Type Evaluation Pre-Developed
 Basin Size 7.52 ac
 Rainfall Depth 8.40 in

Weighted, CN = $\frac{\text{Product}}{\text{Area}}$

Runoff, R = $\frac{(P - (0.2S))^2}{P + (0.8S)}$

Soil Storage, S = $\frac{1000}{CN} - 10$

Runoff Volume, V = $\frac{R}{12} \times \text{Area}$

Basin

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	3.30	323.4
Grass, Good Condition	A	39	0.00	0
Grass, Good Condition	D	80	4.22	337.6
Total Area =			<u>7.52</u>	<u>661</u>

Offsite

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Grass, Good Condition (offsite)	D	80	0.38	30.4
				<u>30</u>

Basin
 CN= 87.9

S= 1.38 in

R= 6.94 in

V= 4.35 ac-ft

Offsite
 CN= 80

S= 2.5 in

R= 5.18 in

V= 0.16 ac-ft

Total Volume= 4.52 ac-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report**Basin No.** 2B (Primary with runoff conveyed to Pond 2A)**Subject** Post-Developed CN and SCS Runoff Volume Calculation**Proposed Condition**

Basin Designation 2B (Proposed)
 Type Evaluation Post-Developed
 Basin Size 7.52 ac
 Rainfall Depth 8.40 in

$$\text{Weighted, CN} = \frac{\text{Product}}{\text{Area}}$$

$$\text{Runoff, R} = \frac{(P - (0.2S))^2}{P + (0.8S)}$$

$$\text{Soil Storage, S} = \frac{1000}{\text{CN}} - 10$$

$$\text{Runoff Volume, V} = \frac{\text{R}}{12} \times \text{Area}$$

Basin

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	5.29	518.42
Grass, Good Condition	A	39	0.00	0
Grass, Good Condition	D	80	2.23	178.4
Total Area =			7.52	696.82

Offsite

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Grass, Good Condition (offsite)	D	80	0.38	30.4
Total			0.38	30.4

$$\text{Basin} \\ \text{CN} = \underline{92.66}$$

$$\text{S} = \underline{0.79 \text{ in}}$$

$$\text{R} = \underline{7.52 \text{ in}}$$

$$\text{V} = \underline{4.71 \text{ ac-ft}}$$

$$\text{Total Volume} = \underline{4.90 \text{ ac-ft}}$$

$$\text{Offsite} \\ \text{CN} = \underline{80}$$

$$\text{S} = \underline{2.5 \text{ in}}$$

$$\text{R} = \underline{6.00 \text{ in}}$$

$$\text{V} = \underline{0.19 \text{ ac-ft}}$$

Post Developed Volume - Pre Developed Volume =

$$\underline{\text{Total } 0.39 \text{ ac-ft}} = \underline{16,988.40 \text{ cu-ft}}$$

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 2B (Primary with runoff conveyed to Pond 2A)

Subject Treatment Volume Calculation

SJRWMD Treatment Volume Requirement

Water Quality Volume for a Wet Detention System is based upon 2.5" times the additional onsite impervious area and 1" times the total offsite drainage area. The project is located within the Econ River Basin and requires an additional 50% treatment volume.

Vt = 2.5 inches of runoff times the new impervious area

Vt = (I-New * 2.5 in) / 12

Vt = 0.41 ac-ft

Is Offsite Area Contributing to the Basin (yes or no)?

No

Offsite Area, Off = 0.00 ac

Vt(off) = (Off * 1.0 in) / 12

Vt(off) = 0.00 ac-ft

Did the existing basin receive treatment (Yes or No)?

No

Will the existing treatment system will be impacted by the proposed improvements (yes or no)?

No

Existing Required Treatment area for basin =

0 ac

Existing Required Treatment Volume for basin, Vt(Ex) =

0 ac-ft

Treatment Volume Required = [Vt + Vt(Off)+Vt(Ex)]

Treatment Volume Required = 0.41 ac-ft

Is Basin Part of an OFW (yes or no)?

Yes

(Econ River Basin)

(If Yes, then add an additional 50% Treatment Volume)

Total Basin Required Treatment Volume = 0.62 ac-ft

Total Peak Storage Volume Requirement

The Total Peak Storage Volume Required is:

Volume (peak) = Treatment Volume + Estimated Peak Attenuation Volume

Treatment Volume = 0.62 ac-ft = 26,789.40 cu-ft

Attenuation Volume = 0.39 ac-ft = 16,988.40 cu-ft

Volume (peak) = 1.01 ac-ft = 43,777.80 cu-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report**Basin No.** 2B (Alternative with runoff conveyed to Pond 2B)**Subject** Pre-Developed CN and SCS Runoff Volume Calculation

Basin Designation 2B (Existing)
 Type Evaluation Pre-Developed

Drainage Area begins at Station 12+70
 and continues until Station 47+85

Existing Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lanes (1 by 12')	12	600	7,200	0.17
Through Lanes (2 by 12')	24	2,920	70,080	1.61
Turn Lanes	12	1,465	17,580	0.4
Sidewalk LT	6	1805	10,830	0.25
Transition/Taper Lanes	6	180	1,080	0.02
Paved Median Lanes	12	885	10,620	0.24
Curb/gutter	2	0	0	0
Shoulder	5	5,320	26,600	0.61
Total Impervious Area =			143,990	3.3

L = Approximate Roadway Length (ft)

R = Average Right-of-Way Width in Basin (ft)

I_Ex = Impervious Area (ac)

P = Pervious Area (ac)

At = Total Existing Onsite Basin Area (ac) (Excluding Pond Area)

Off = Total Offsite Impervious Area (ac)

$$L = \underline{3,515 \text{ ft}}$$

$$R = \underline{93 \text{ ft}}$$

$$At = (R*L) / 43560$$

$$At = \underline{7.52 \text{ ac}}$$

$$I_{\text{Ex}} = \underline{3.3 \text{ ac}}$$

$$P = At - I_{\text{Ex}}$$

$$P = \underline{4.22 \text{ ac}}$$

From existing Drainage Map:

$$Off = \underline{0.00 \text{ ac}}$$

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 2B (Alternative with runoff conveyed to Pond 2B)

Subject Post-Developed CN and SCS Runoff Volume Calculation

Basin Designation 2B (Proposed)
Type Evaluation Post-Developed

Drainage Area begins at Station 12+70
and continues until Station 47+85

Proposed Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lanes (2 by 11')	22	600	13,200	0.3
Through Lanes (4 by 11')	44	2,920	128,480	2.95
Turn Lanes	12	1,465	17,580	0.4
Sidewalk LT	6	1,805	10,830	0.25
Sidewalk RT	10	3,510	35,100	0.81
Transition/Taper Lanes	6	180	1,080	0.02
Paved Median Lanes	12	885	10,620	0.24
Curb/gutter (inner/outer)	2	7,040	14,080	0.32
Shoulder	5	0	0	0
Total Impervious Area =			230,970	5.29

L = Approximate Roadway Length (ft)

R = Average Right-of-Way Width in Basin (ft)

I = Impervious Area (ac)

P = Pervious Area (ac)

Atp = Proposed Total Existing Onsite Basin Area (ac) (Excluding Pond Area)

Off = Total Offsite Impervious Area (ac)

$$L = \frac{3,515}{1} \text{ ft}$$

$$R = \frac{93}{1} \text{ ft}$$

$$Atp = (R \cdot L) / 43560$$

$$Atp = \frac{7.52}{1} \text{ ac}$$

$$I = \frac{5.29}{1} \text{ ac}$$

$$I_{\text{New}} = I - I_{\text{Ex}}$$

$$I_{\text{New}} = \frac{1.99}{1} \text{ ac}$$

$$P = Atp - I$$

$$P = \frac{2.23}{1} \text{ ac}$$

From existing Drainage Map:

$$Off = \frac{0.00}{1} \text{ ac}$$

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 2B (Alternative with runoff conveyed to Pond 2B)

Subject Pre-Developed CN and SCS Runoff Volume Calculation

Existing Condition

Basin Designation 2B (Existing)
 Type Evaluation Pre-Developed
 Basin Size 7.52 ac
 Rainfall Depth 8.40 in

$$\text{Weighted, CN} = \frac{\text{Product}}{\text{Area}}$$

$$\text{Runoff, R} = \frac{(P - (0.2S))^2}{P + (0.8S)}$$

$$\text{Soil Storage, S} = \frac{1000}{\text{CN}} - 10$$

$$\text{Runoff Volume, V} = \frac{\text{R}}{12} \times \text{Area}$$

Basin

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	3.30	323.4
Grass, Good Condition	A	39	0.00	0
Grass, Good Condition	D	80	4.22	337.6
Total Area =			<u>7.52</u>	<u>661</u>

Offsite

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Grass, Good Condition (offsite)	D	80	0.38	30.4
Total			<u>0.38</u>	<u>30.4</u>

Proposed Pond Location

**For this analysis, all soils are assumed to be all D*

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Pond Area at DHW (Woods, good)	A/D	77	1.30	100.1
Total			<u>1.30</u>	<u>100.1</u>

Basin	Offsite	Pond
CN= <u>87.9</u>	CN= <u>80</u>	CN= <u>77</u>
S= <u>1.38 in</u>	S= <u>2.5 in</u>	S= <u>2.99 in</u>
R= <u>6.94 in</u>	R= <u>6.00 in</u>	R= <u>5.64 in</u>
V= <u>4.35 ac-ft</u>	V= <u>0.19 ac-ft</u>	V= <u>0.61 ac-ft</u>

Total Volume= 5.15 ac-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 2B (Alternative with runoff conveyed to Pond 2B)

Subject Post-Developed CN and SCS Runoff Volume Calculation

Proposed Condition

Basin Designation 2B (Proposed)
 Type Evaluation Post-Developed
 Basin Size 7.52 ac
 Rainfall Depth 8.40 in

$$\text{Weighted, CN} = \frac{\text{Product}}{\text{Area}}$$

$$\text{Runoff, R} = \frac{(P - (0.2S))^2}{P + (0.8S)}$$

$$\text{Soil Storage, S} = \frac{1000}{\text{CN}} - 10$$

$$\text{Runoff Volume, V} = \frac{\text{R}}{12} \times \text{Area}$$

Basin

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	5.29	518.42
Grass, Good Condition	A	39	0.00	0
Grass, Good Condition	D	80	2.23	178.4
Total Area =			7.52	696.82

Offsite

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Grass, Good Condition (offsite)	D	80	0.38	30.4
Total			0.38	30.4

Proposed Pond Location

**For this analysis, all soils are assumed to be all D*

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Pond Area at DHW (Water)	-	100	1.30	130
Total			1.30	130

Basin
 CN= 92.66
 S= 0.79 in
 R= 7.52 in
 V= 4.71 ac-ft

Offsite
 CN= 80
 S= 2.5 in
 R= 6.00 in
 V= 0.19 ac-ft

Pond
 CN= 100
 S= 0 in
 R= 8.40 in
 V= 0.91 ac-ft

Total Volume= 5.81 ac-ft

Post Developed Volume - Pre Developed Volume =

Total 1.46 ac-ft = 63,597.60 cu-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 2B (Alternative with runoff conveyed to Pond 2B)

Subject Treatment Volume Calculation

SJRWMD Treatment Volume Requirement

Water Quality Volume for a Wet Detention System is based upon 2.5" times the additional onsite impervious area and 1" times the total offsite drainage area. The project is located within the Econ River Basin and requires an additional 50% treatment volume.

Vt = 2.5 inches of runoff times the new impervious area

Vt = (I-New * 2.5 in) / 12

Vt = 0.41 ac-ft

Is Offsite Area Contributing to the Basin (yes or no)?

No

Offsite Area, Off = 0.00 ac

Vt(off) = (Off * 1.0 in) / 12

Vt(off) = 0.00 ac-ft

Did the existing basin receive treatment (Yes or No)?

No

Will the existing treatment system will be impacted by the proposed improvements (yes or no)?

No

Existing Required Treatment area for basin =

0 ac

Existing Required Treatment Volume for basin, Vt(Ex) =

0 ac-ft

Treatment Volume Required = [Vt + Vt(Off)+Vt(Ex)]

Treatment Volume Required = 0.41 ac-ft

Is Basin Part of an OFW (yes or no)?

Yes

(If Yes, then add an additional 50% Treatment Volume)

(Econ River Basin)

Total Basin Required Treatment Volume = 0.62 ac-ft

Total Peak Storage Volume Requirement

The Total Peak Storage Volume Required is:

Volume (peak) = Treatment Volume + Estimated Peak Attenuation Volume

Treatment Volume = 0.62 ac-ft = 26,789.40 cu-ft

Attenuation Volume = 1.46 ac-ft = 63,597.60 cu-ft

Volume (peak) = 2.08 ac-ft = 90,387.00 cu-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report**Basin No.** 3 (Primary with runoff conveyed to Pond 3A)**Subject** Pre-Developed CN and SCS Runoff Volume Calculation

Basin Designation 3 (Existing)
 Type Evaluation Pre-Developed

Drainage Area begins at Station 47+85
 and continues until Station 97+55

Existing Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lanes (2 by 12')	24	4,970	119,280	2.74
Turn Lanes	12	1,520	18,240	0.42
Transition/Taper Lanes	6	1,765	10,590	0.24
Paved Median Lanes	12	190	2,280	0.05
Sidewalk LT	6	4,815	28,890	0.66
Sidewalk RT	6	0	0	0
Shoulder	5	9,940	49,700	1.14
Total Impervious Area =			228,980	5.25

L = Approximate Roadway Length (ft)

R = Average Right-of-Way Width in Basin (ft)

I_Ex = Impervious Area (ac)

P = Pervious Area (ac)

At = Total Existing Onsite Basin Area (ac) (Excluding Pond Area)

Off = Total Offsite Impervious Area (ac)

L = 4,970 ftR = 120.54 ft

At = (R*L) / 43560

At = 13.75 acI_Ex = 5.25 ac

P = At - I_Ex

P = 8.5 ac

From existing Drainage Map:

Off = 0.00 ac

PROJECT: Chuluota Road Widening Conceptual Drainage Report**Basin No.** 3 (Primary with runoff conveyed to Pond 3A)**Subject** Post-Developed CN and SCS Runoff Volume Calculation

Basin Designation 3 (Proposed)
 Type Evaluation Post-Developed

Drainage Area begins at Station 47+85
 and continues until Station 97+55

Proposed Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lanes (4 by 11')	44	4,970	218,680	5.02
Turn Lanes	12	1,520	18,240	0.42
Transition/Taper Lanes	6	1,765	10,590	0.24
Paved Median Lanes	12	190	2,280	0.05
Sidewalk LT	6	4,970	29,820	0.68
Sidewalk RT	10	4,970	49,700	1.14
Curb/gutter (inners & outers)	2	19,880	39,760	0.91
Total Impervious Area =			369,070	8.46

L = Approximate Roadway Length (ft)

R = Average Right-of-Way Width in Basin (ft)

I = Impervious Area (ac)

P = Pervious Area (ac)

Atp = Proposed Total Existing Onsite Basin Area (ac) (Excluding Pond Area)

Off = Total Offsite Impervious Area (ac)

L = 4,970 ftR = 120.54 ft

Atp = (R*L) / 43560

Atp = 13.75 acI = 8.46 ac

I_New = I - I_Ex

I_New = 3.21 ac

P = Atp - I

P = 5.29 ac

From existing Drainage Map:

Off = 0.00 ac

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 3 (Primary with runoff conveyed to Pond 3A)

Subject Pre-Developed CN and SCS Runoff Volume Calculation

Existing Condition

Basin Designation 3 (Existing)
 Type Evaluation Pre-Developed
 Basin Size 13.75 ac Total Drainage Area 15.78 ac
 Rainfall Depth 8.40 in

$$\text{Weighted, CN} = \frac{\text{Product}}{\text{Area}}$$

$$\text{Runoff, R} = \frac{(P - (0.2S))^2}{P + (0.8S)}$$

$$\text{Soil Storage, S} = \frac{1000}{\text{CN}} - 10$$

$$\text{Runoff Volume, V} = \frac{\text{R}}{12} \times \text{Area}$$

Basin **For this analysis, all soils are assumed to be D soils for grass.*

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	5.25	514.5
Grass, Good Condition	A	39	0.00	0
Grass, Good Condition	D	80	8.50	680
Total Area =			<u>13.75</u>	<u>1194.5</u>

Offsite

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Grass, Good Condition (offsite)	D	80	0.23	18.4
Grass, Good Condition (offsite)	D	80	0.70	56
Total Area =			<u>0.93</u>	<u>74.4</u>

Proposed Pond Location

**For this analysis, all soils are assumed to be all D*

Soil Land Use Description	Soil Group	CN	Area (ac)
Pond Area at DHW (Woods, good)	A/D	77	1.10

Basin	Offsite	Pond
CN= <u>86.87</u>	CN= <u>80</u>	CN= <u>77</u>
S= <u>1.51</u> in	S= <u>2.5</u> in	S= <u>2.99</u> in
R= <u>6.83</u> in	R= <u>6.00</u> in	R= <u>5.64</u> in
V= <u>7.82</u> ac-ft	V= <u>0.47</u> ac-ft	V= <u>0.52</u> ac-ft
Total Volume= <u>8.80</u> ac-ft		

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 3 (Primary with runoff conveyed to Pond 3A)

Subject Post-Developed CN and SCS Runoff Volume Calculation

Proposed Condition

Basin Designation 3 (Proposed)
 Type Evaluation Post-Developed
 Basin Size 13.75 ac Total Drainage Area 15.78 ac
 Rainfall Depth 8.40 in

$$\text{Weighted, CN} = \frac{\text{Product}}{\text{Area}} \qquad \text{Soil Storage, } S = \frac{1000}{\text{CN}} - 10$$

$$\text{Runoff, } R = \frac{(P - (0.2S))^2}{P + (0.8S)} \qquad \text{Runoff Volume, } V = \frac{R}{12} \times \text{Area}$$

Basin *For this analysis, all soils are assumed to be D soils for grass.

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	8.46	829.08
Grass, Good Condition	A	39	0.00	0
Grass, Good Condition	D	80	5.29	423.2
Total Area =			<u>13.75</u>	<u>1252.28</u>

Offsite

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Grass, Good Condition (offsite)	D	80	0.23	18.4
Grass, Good Condition (offsite)	D	80	0.70	56
Total Area =			<u>0.93</u>	<u>74.4</u>

Proposed Pond Location

**For this analysis, all soils are assumed to be all D*

Soil Land Use Description	Soil Group	CN	Area (ac)
Pond Area at DHW (Water)	-	100	1.10

Basin	Offsite	Pond
CN= <u>91.07</u>	CN= <u>80</u>	CN= <u>100</u>
S= <u>0.98 in</u>	S= <u>2.5 in</u>	S= <u>0 in</u>
R= <u>7.33 in</u>	R= <u>6.00 in</u>	R= <u>8.40 in</u>
V= <u>8.40 ac-ft</u>	V= <u>0.47 ac-ft</u>	V= <u>0.77 ac-ft</u>

Total Volume= 9.63 ac-ft

Post Developed Volume - Pre Developed Volume =
0.83 ac-ft = 36,154.80 cu-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 3 (Primary with runoff conveyed to Pond 3A)

Subject Treatment Volume Calculation

SJRWMD Treatment Volume Requirement

Water Quality Volume for a Wet Detention System is based upon 2.5" times the additional onsite impervious area and 1" times the total offsite drainage area. The project is located within the Econ River Basin and requires an additional 50% treatment volume.

$V_t = 2.5 \text{ inches of runoff times the new impervious area}$

$V_t = (I\text{-New} * 2.5 \text{ in}) / 12$

$V_t = \underline{0.67 \text{ ac-ft}}$

Is Offsite Area Contributing to the Basin (yes or no)?

Yes

Offsite Area, Off = 2.03 ac

$V_t(\text{off}) = (\text{Off} * 1.0 \text{ in}) / 12$

$V_t(\text{off}) = \underline{0.17 \text{ ac-ft}}$

Did the existing basin receive treatment (Yes or No)?

No

Will the existing treatment system will be impacted by the proposed improvements (yes or no)?

No

Existing Required Treatment area for basin =

0 ac

Existing Required Treatment Volume for basin, $V_t(\text{Ex}) =$

0 ac-ft

Treatment Volume Required = $[V_t + V_t(\text{Off}) + V_t(\text{Ex})]$

Treatment Volume Required = 0.84 ac-ft

Is Basin Part of an OFW (yes or no)?

Yes

(If Yes, then add an additional 50% Treatment Volume)

(Econ River Basin)

Total Basin Required Treatment Volume =

1.26 ac-ft

Total Peak Storage Volume Requirement

The Total Peak Storage Volume Required is:

Volume (peak) = Treatment Volume + Estimated Peak Attenuation Volume

Treatment Volume = 1.26 ac-ft = 54,885.60 cu-ft

Attenuation Volume = 0.83 ac-ft = 36,154.80 cu-ft

Volume (peak) = 2.09 ac-ft = 91,040.40 cu-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report**Basin No.** 3 (Alternative with runoff conveyed to Pond 3B)**Subject** Pre-Developed CN and SCS Runoff Volume Calculation

Basin Designation 3 (Existing)
 Type Evaluation Pre-Developed

Drainage Area begins at Station 47+85
 and continues until Station 97+55

Existing Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lanes (2 by 12')	24	4,970	119,280	2.74
Turn Lanes	12	1,520	18,240	0.42
Transition/Taper Lanes	6	1,765	10,590	0.24
Paved Median Lanes	12	190	2,280	0.05
Sidewalk LT	6	4,815	28,890	0.66
Sidewalk RT	6	0	0	0
Shoulder	5	9,940	49,700	1.14
Total Impervious Area =			228,980	5.25

L = Approximate Roadway Length (ft)

R = Average Right-of-Way Width in Basin (ft)

I_Ex = Impervious Area (ac)

P = Pervious Area (ac)

At = Total Existing Onsite Basin Area (ac) (Excluding Pond Area)

Off = Total Offsite Impervious Area (ac)

L = 4,970 ftR = 120.54 ft

At = (R*L) / 43560

At = 13.75 acI_Ex = 5.25 ac

P = At - I_Ex

P = 8.5 ac

From existing Drainage Map:

Off = 0.00 ac

PROJECT: Chuluota Road Widening Conceptual Drainage Report**Basin No.** 3 (Alternative with runoff conveyed to Pond 3B)**Subject** Post-Developed CN and SCS Runoff Volume Calculation

Basin Designation 3 (Proposed)
 Type Evaluation Post-Developed

Drainage Area begins at Station 47+85
 and continues until Station 97+55

Proposed Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lanes (4 by 11')	44	4,970	218,680	5.02
Turn Lanes	12	1,520	18,240	0.42
Transition/Taper Lanes	6	1,765	10,590	0.24
Paved Median Lanes	12	190	2,280	0.05
Sidewalk LT	6	4,970	29,820	0.68
Sidewalk RT	10	4,970	49,700	1.14
Curb/gutter (inners & outers)	2	19,880	39,760	0.91
Total Impervious Area =			369,070	8.46

L = Approximate Roadway Length (ft)

R = Average Right-of-Way Width in Basin (ft)

I = Impervious Area (ac)

P = Pervious Area (ac)

Atp = Proposed Total Existing Onsite Basin Area (ac) (Excluding Pond Area)

Off = Total Offsite Impervious Area (ac)

$$L = \frac{4,970}{1} \text{ ft}$$

$$R = \frac{120.54}{1} \text{ ft}$$

$$Atp = (R * L) / 43560$$

$$Atp = \frac{13.75}{1} \text{ ac}$$

$$I = \frac{8.46}{1} \text{ ac}$$

$$I_{\text{New}} = I - I_{\text{Ex}}$$

$$I_{\text{New}} = \frac{3.21}{1} \text{ ac}$$

$$P = Atp - I$$

$$P = \frac{5.29}{1} \text{ ac}$$

From existing Drainage Map:

$$Off = \frac{0.00}{1} \text{ ac}$$

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 3 (Alternative with runoff conveyed to Pond 3B)

Subject Pre-Developed CN and SCS Runoff Volume Calculation

Existing Condition

Basin Designation 3 (Existing)
 Type Evaluation Pre-Developed
 Basin Size 13.75 ac Total Drainage Area 15.40 ac
 Rainfall Depth 8.40 in

$$\text{Weighted, CN} = \frac{\text{Product}}{\text{Area}}$$

$$\text{Runoff, R} = \frac{(P - (0.2S))^2}{P + (0.8S)}$$

$$\text{Soil Storage, S} = \frac{1000}{\text{CN}} - 10$$

$$\text{Runoff Volume, V} = \frac{R}{12} \times \text{Area}$$

Basin **For this analysis, all soils are assumed to be D soils for grass.*

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	5.25	514.5
Grass, Good Condition	A	39	0.00	0
Grass, Good Condition	D	80	8.50	680
Total Area =			<u>13.75</u>	<u>1194.5</u>

Offsite

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Grass, Good Condition (offsite)	D	80	0.23	18.4
Grass, Good Condition (offsite)	D	80	0.70	56
Total Area =			<u>0.93</u>	<u>74.4</u>

Proposed Pond Location

**For this analysis, all soils are assumed to be all D*

Soil Land Use Description	Soil Group	CN	Area (ac)
Pond Area at DHW (Woods, good)	A/D	77	0.72

Basin	Offsite	Pond
CN= <u>86.87</u>	CN= <u>80</u>	CN= <u>77</u>
S= <u>1.51</u> in	S= <u>2.5</u> in	S= <u>2.99</u> in
R= <u>6.83</u> in	R= <u>6.00</u> in	R= <u>5.64</u> in
V= <u>7.82</u> ac-ft	V= <u>0.47</u> ac-ft	V= <u>0.34</u> ac-ft
Total Volume= <u>8.62</u> ac-ft		

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 3 (Alternative with runoff conveyed to Pond 3B)

Subject Post-Developed CN and SCS Runoff Volume Calculation

Proposed Condition

Basin Designation 3 (Proposed)
 Type Evaluation Post-Developed
 Basin Size 13.75 ac Total Drainage Area 15.40 ac
 Rainfall Depth 8.40 in

$$\text{Weighted, CN} = \frac{\text{Product}}{\text{Area}}$$

$$\text{Runoff, R} = \frac{(P - (0.2S))^2}{P + (0.8S)}$$

$$\text{Soil Storage, S} = \frac{1000}{\text{CN}} - 10$$

$$\text{Runoff Volume, V} = \frac{\text{R}}{12} \times \text{Area}$$

Basin **For this analysis, all soils are assumed to be D soils for grass.*

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	8.46	829.08
Grass, Good Condition	A	39	0.00	0
Grass, Good Condition	D	80	5.29	423.2
Total Area =			<u>13.75</u>	<u>1252.28</u>

Offsite

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Grass, Good Condition (offsite)	D	80	0.23	18.4
Grass, Good Condition (offsite)	D	80	0.70	56
Total Area =			<u>0.93</u>	<u>74.4</u>

Proposed Pond Location

**For this analysis, all soils are assumed to be all D*

Soil Land Use Description	Soil Group	CN	Area (ac)
Pond Area at DHW (Water)	-	100	0.72

Basin	Offsite	Pond
CN= <u>91.07</u>	CN= <u>80</u>	CN= <u>100</u>
S= <u>0.98 in</u>	S= <u>2.5 in</u>	S= <u>0 in</u>
R= <u>7.33 in</u>	R= <u>6.00 in</u>	R= <u>8.40 in</u>
V= <u>8.40 ac-ft</u>	V= <u>0.47 ac-ft</u>	V= <u>0.50 ac-ft</u>

Total Volume= 9.37 ac-ft

Post Developed Volume - Pre Developed Volume =

0.74 ac-ft = 32,234.40 cu-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 3 (Alternative with runoff conveyed to Pond 3B)

Subject Treatment Volume Calculation

SJRWMD Treatment Volume Requirement

Water Quality Volume for a Wet Detention System is based upon 2.5" times the additional onsite impervious area and 1" times the total offsite drainage area. The project is located within the Econ River Basin and requires an additional 50% treatment volume.

$V_t = 2.5 \text{ inches of runoff times the new impervious area}$

$V_t = (I\text{-New} * 2.5 \text{ in}) / 12$

$V_t = \underline{0.67 \text{ ac-ft}}$

Is Offsite Area Contributing to the Basin (yes or no)?

Yes

Offsite Area, Off = 1.65 ac

$V_t(\text{off}) = (\text{Off} * 1.0 \text{ in}) / 12$

$V_t(\text{off}) = \underline{0.14 \text{ ac-ft}}$

Did the existing basin receive treatment (Yes or No)?

No

Will the existing treatment system will be impacted by the proposed improvements (yes or no)?

No

Existing Required Treatment area for basin = 0 ac

Existing Required Treatment Volume for basin, $V_t(\text{Ex}) = \underline{0 \text{ ac-ft}}$

Treatment Volume Required = $[V_t + V_t(\text{Off}) + V_t(\text{Ex})]$

Treatment Volume Required = 0.81 ac-ft

Is Basin Part of an OFW (yes or no)?

Yes

(Econ River Basin)

(If Yes, then add an additional 50% Treatment Volume)

Total Basin Required Treatment Volume = 1.22 ac-ft

Total Peak Storage Volume Requirement

The Total Peak Storage Volume Required is:

Volume (peak) = Treatment Volume + Estimated Peak Attenuation Volume

Treatment Volume = 1.22 ac-ft = 52,925.40 cu-ft

Attenuation Volume = 0.74 ac-ft = 32,234.40 cu-ft

Volume (peak) = 1.96 ac-ft = 85,159.80 cu-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 4-200 (Primary with runoff conveyed to Pond 4A)

Subject Pre-Developed CN and SCS Runoff Volume Calculation

Basin Designation 4-200 (Existing)

Type Evaluation Pre-Developed

Drainage Area begins at Station 110+50

and continues until Station 111+92

Existing Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lanes (1 by 12')	12	120	1,440	0.03
Sidewalk LT	6	0	0	0.00
Shoulder	5	120	600	0.01
Total Impervious Area =			2,040	0.04

L = Approximate Roadway Length (ft)

R = Average Right-of-Way Width in Basin (ft)

I_Ex = Impervious Area (ac)

P = Pervious Area (ac)

At = Total Existing Onsite Basin Area (ac) (Excluding Pond Area)

Off = Total Offsite Impervious Area (ac)

$$L = \frac{120}{1} \text{ ft}$$

$$R = \frac{45}{1} \text{ ft}$$

$$At = (R * L) / 43560$$

$$At = \frac{0.12}{1} \text{ ac}$$

$$I_{Ex} = \frac{0.04}{1} \text{ ac}$$

$$P = At - I_{Ex}$$

$$P = \frac{0.08}{1} \text{ ac}$$

From existing Drainage Map:

$$Off = \frac{0.13}{1} \text{ ac}$$

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 4-200 (Primary with runoff conveyed to Pond 4A)

Subject Post-Developed CN and SCS Runoff Volume Calculation

Basin Designation 4-200 (Proposed)

Type Evaluation Post-Developed

Drainage Area begins at Station 110+50

and continues until Station 111+92

Proposed Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lanes (2 by 11')	22	120	2,640	0.06
Sidewalk LT	6	120	720	0.02
Curb/gutter Inner & outer)	2	240	480	0.01
Total Impervious Area =			3,840	0.09

L = Approximate Roadway Length (ft)

R = Average Right-of-Way Width in Basin (ft)

I = Impervious Area (ac)

P = Pervious Area (ac)

Atp = Proposed Total Existing Onsite Basin Area (ac) (Excluding Pond Area)

Off = Total Offsite Impervious Area (ac)

$$L = \underline{120 \text{ ft}}$$

$$R = \underline{45 \text{ ft}}$$

$$Atp = (R*L) / 43560$$

$$Atp = \underline{0.12 \text{ ac}}$$

$$I = \underline{0.09}$$

$$I_{\text{New}} = I - I_{\text{Ex}}$$

$$I_{\text{New}} = \underline{0.05 \text{ ac}}$$

$$P = Atp - I$$

$$P = \underline{0.03 \text{ ac}}$$

From existing Drainage Map:

$$Off = \underline{0.13 \text{ ac}}$$

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 4-200 (Primary with runoff conveyed to Pond 4A)

Subject Pre-Developed CN and SCS Runoff Volume Calculation

Existing Condition

Basin Designation 4-200 (Existing)
 Type Evaluation Pre-Developed
 Basin Size 0.12 ac Total Drainage Area 2.07 ac
 Rainfall Depth 8.40 in

$$\text{Weighted, CN} = \frac{\text{Product}}{\text{Area}}$$

$$\text{Runoff, R} = \frac{(P - (0.2S))^2}{P + (0.8S)}$$

$$\text{Soil Storage, S} = \frac{1000}{\text{CN}} - 10$$

$$\text{Runoff Volume, V} = \frac{\text{R}}{12} \times \text{Area}$$

Basin

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	0.04	3.92
Grass, Good Condition	A	39	0.08	3.12
Total Area =			<u>0.12</u>	<u>7.04</u>

Offsite

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Offsite)	-	98	0.13	12.74
Grass, Good Condition (Offsite)	A	39	0.15	5.85
Total Area =			<u>0.28</u>	<u>18.59</u>

Basin 4-100

**For this analysis, all soils are assumed to be D soils for grass.*

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Offsite)	-	98	0.71	69.58
Grass, Good Condition (Offsite)	A/D	80	0.96	76.8
Total Area =			<u>1.67</u>	<u>146.38</u>

Basin
 CN= 58.67
 S= 7.04 in
 R= 3.48 in
 V= 0.03 ac-ft

Offsite
 CN= 66.39
 S= 5.06 in
 R= 4.38 in
 V= 0.10 ac-ft

Basin 4-100
 CN= 87.65
 S= 1.41 in
 R= 6.92 in
 V= 0.96 ac-ft

Total Volume= 1.09 ac-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 4-200 (Primary with runoff conveyed to Pond 4A)

Subject Post-Developed CN and SCS Runoff Volume Calculation

Proposed Condition

Basin Designation 4-200 (Proposed)
 Type Evaluation Pre-Developed
 Basin Size Area (ac) ac Total Drainage Area 2.07 ac
 Rainfall Depth 8.40 in

$$\text{Weighted, CN} = \frac{\text{Product}}{\text{Area}} \qquad \text{Soil Storage, } S = \frac{1000}{\text{CN}} - 10$$

$$\text{Runoff, } R = \frac{(P - (0.2S))^2}{P + (0.8S)} \qquad \text{Runoff Volume, } V = \frac{R}{12} \times \text{Area}$$

Basin

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	0.09	8.82
Grass, Good Condition	A	39	0.03	1.17
Total Area =			0.12	9.99

Offsite

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Offsite)	-	98	0.13	12.74
Grass, Good Condition (Offsite)	A	39	0.15	5.85
Total Area =			0.28	18.59

Basin 4-100

**For this analysis, all soils are assumed to be D soils for grass.*

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Offsite)	-	98	0.71	69.58
Grass, Good Condition (Offsite)	A/D	80	0.96	76.8
Total Area =			1.67	146.38

Basin
 CN= 83.25
 S= 2.01 in
 R= 6.39 in
 V= 0.06 ac-ft

Offsite
 CN= 66.39
 S= 5.06 in
 R= 4.38 in
 V= 0.10 ac-ft

Basin 4-100
 CN= 87.65
 S= 1.41 in
 R= 6.92 in
 V= 0.96 ac-ft

Total Volume= 1.12 ac-ft

Post Developed Volume - Pre Developed Volume =

0.03 ac-ft = 1306.80 cu-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 4-200 (Primary with runoff conveyed to Pond 4A)

Subject Treatment Volume Calculation

SJRWMD Treatment Volume Requirement

Water Quality Volume for a Wet Detention System is based upon 2.5" times the additional onsite impervious area and 1" times the total offsite drainage area. The project is located within the Econ River Basin and requires an additional 50% treatment volume.

$V_t = 2.5 \text{ inches of runoff times the new impervious area}$

$V_t = (I\text{-New} * 2.5 \text{ in}) / 12$

$V_t =$ 0.01 ac-ft

Is Offsite Area Contributing to the Basin (yes or no)?

No

Offsite Area, Off = 0.00 ac

**Offsite routed around system thus no offsite water quality provided.*

$V_t(\text{off}) = (\text{Off} * 1.0 \text{ in}) / 12$

$V_t(\text{off}) =$ 0.00 ac-ft

Did the existing basin receive treatment (Yes or No)?

No

Will the existing treatment system will be impacted by the proposed improvements (yes or no)?

No

Existing Required Treatment area for basin = 0 ac

Existing Required Treatment Volume for basin, $V_t(\text{Ex}) =$ 0 ac-ft

Treatment Volume Required = $[V_t + V_t(\text{Off}) + V_t(\text{Ex})]$

Treatment Volume Required = 0.01 ac-ft

Is Basin Part of an OFW (yes or no)?

Yes

(If Yes, then add an additional 50% Treatment Volume)

(Econ River Basin)

Total Basin Required Treatment Volume = 0.02 ac-ft

Total Peak Storage Volume Requirement

The Total Peak Storage Volume Required is:

Volume (peak) = Treatment Volume + Estimated Peak Attenuation Volume

Treatment Volume = 0.02 ac-ft = 0,653.40 cu-ft

Attenuation Volume = 0.03 ac-ft = 0,130.68 cu-ft

Volume (peak) = 0.045 ac-ft = 1,960.20 cu-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 4-200 (Alternative with runoff conveyed to Pond 4B)

Subject Pre-Developed CN and SCS Runoff Volume Calculation

Basin Designation 4-200 (Existing)

Type Evaluation Pre-Developed

Drainage Area begins at Station 110+50

and continues until Station 111+92

Existing Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lanes (1 by 12')	12	120	1,440	0.03
Sidewalk LT	6	0	0	0.00
Shoulder	5	120	600	0.01
Total Impervious Area =			2,040	0.04

L = Approximate Roadway Length (ft)

R = Average Right-of-Way Width in Basin (ft)

I_Ex = Impervious Area (ac)

P = Pervious Area (ac)

At = Total Existing Onsite Basin Area (ac) (Excluding Pond Area)

Off = Total Offsite Impervious Area (ac)

$$L = \underline{120 \text{ ft}}$$

$$R = \underline{45 \text{ ft}}$$

$$At = (R * L) / 43560$$

$$At = \underline{0.12 \text{ ac}}$$

$$I_{\text{Ex}} = \underline{0.04 \text{ ac}}$$

$$P = At - I_{\text{Ex}}$$

$$P = \underline{0.08 \text{ ac}}$$

From existing Drainage Map:

$$Off = \underline{0.13 \text{ ac}}$$

PROJECT: Chuluota Road Widening Conceptual Drainage Report**Basin No.** 4-200 (Alternative with runoff conveyed to Pond 4B)**Subject** Post-Developed CN and SCS Runoff Volume Calculation

Basin Designation 4-200 (Proposed)

Type Evaluation Post-Developed

Drainage Area begins at Station 110+50and continues until Station 111+92

Proposed Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lanes (2 by 11')	22	120	2,640	0.06
Sidewalk LT	6	120	720	0.02
Curb/gutter Inner & outer)	2	240	480	0.01
Total Impervious Area =			3,840	0.09

L = Approximate Roadway Length (ft)

R = Average Right-of-Way Width in Basin (ft)

I = Impervious Area (ac)

P = Pervious Area (ac)

Atp = Proposed Total Existing Onsite Basin Area (ac) (Excluding Pond Area)

Off = Total Offsite Impervious Area (ac)

L = 120 ftR = 45 ft

Atp = (R*L) / 43560

Atp = 0.12 acI = 0.09

I_New = I - I_Ex

I_New = 0.05 ac

P = Atp-I

P = 0.03 ac

From existing Drainage Map:

Off = 0.13 ac

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 4-200 (Alternative with runoff conveyed to Pond 4B)

Subject Pre-Developed CN and SCS Runoff Volume Calculation

Existing Condition

Basin Designation 4-200 (Existing)
 Type Evaluation Pre-Developed
 Basin Size 0.12 ac Total Drainage Area 2.07 ac
 Rainfall Depth 8.40 in

$$\text{Weighted, CN} = \frac{\text{Product}}{\text{Area}}$$

$$\text{Runoff, R} = \frac{(P - (0.2S))^2}{P + (0.8S)}$$

$$\text{Soil Storage, S} = \frac{1000}{\text{CN}} - 10$$

$$\text{Runoff Volume, V} = \frac{\text{R}}{12} \times \text{Area}$$

Basin

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	0.04	3.92
Grass, Good Condition	A	39	0.08	3.12
Total Area =			<u>0.12</u>	<u>7.04</u>

Offsite

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Offsite)	-	98	0.13	12.74
Grass, Good Condition (Offsite)	A	39	0.15	5.85
Total Area =			<u>0.28</u>	<u>18.59</u>

Basin 4-100

**For this analysis, all soils are assumed to be D soils for grass.*

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Offsite)	-	98	0.71	69.58
Grass, Good Condition (Offsite)	A/D	80	0.96	76.8
Total Area =			<u>1.67</u>	<u>146.38</u>

Basin
 CN= 58.67
 S= 7.04 in
 R= 3.48 in
 V= 0.03 ac-ft

Offsite
 CN= 66.39
 S= 5.06 in
 R= 4.38 in
 V= 0.10 ac-ft

Basin 4-100
 CN= 87.65
 S= 1.41 in
 R= 6.92 in
 V= 0.96 ac-ft

Total Volume= 1.09 ac-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 4-200 (Alternative with runoff conveyed to Pond 4B)

Subject Post-Developed CN and SCS Runoff Volume Calculation

Proposed Condition

Basin Designation 4-200 (Proposed)
 Type Evaluation Pre-Developed
 Basin Size Area (ac) ac Total Drainage Area 2.07 ac
 Rainfall Depth 8.40 in

$$\text{Weighted, CN} = \frac{\text{Product}}{\text{Area}} \qquad \text{Soil Storage, S} = \frac{1000}{\text{CN}} - 10$$

$$\text{Runoff, R} = \frac{(P - (0.2S))^2}{P + (0.8S)} \qquad \text{Runoff Volume, V} = \frac{R}{12} \times \text{Area}$$

Basin

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	0.09	8.82
Grass, Good Condition	A	39	0.03	1.17
Total Area =			0.12	9.99

Offsite

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Offsite)	-	98	0.13	12.74
Grass, Good Condition (Offsite)	A	39	0.15	5.85
Total Area =			0.28	18.59

Basin 4-100

**For this analysis, all soils are assumed to be D soils for grass.*

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Offsite)	-	98	0.71	69.58
Grass, Good Condition (Offsite)	A/D	80	0.96	76.8
Total Area =			1.67	146.38

Basin
 CN= 83.25
 S= 2.01 in
 R= 6.39 in
 V= 0.06 ac-ft

Offsite
 CN= 66.39
 S= 5.06 in
 R= 4.38 in
 V= 0.10 ac-ft

Basin 4-100
 CN= 87.65
 S= 1.41 in
 R= 6.92 in
 V= 0.96 ac-ft

Total Volume= 1.12 ac-ft

Post Developed Volume - Pre Developed Volume =
0.03 ac-ft = 1306.80 cu-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 4-200 (Alternative with runoff conveyed to Pond 4B)

Subject Treatment Volume Calculation

SJRWMD Treatment Volume Requirement

Water Quality Volume for a Wet Detention System is based upon 2.5" times the additional onsite impervious area and 1" times the total offsite drainage area. The project is located within the Econ River Basin and requires an additional 50% treatment volume.

$V_t = 2.5 \text{ inches of runoff times the new impervious area}$

$V_t = (I\text{-New} * 2.5 \text{ in}) / 12$

$V_t = \underline{\quad 0.01 \text{ ac-ft} \quad}$

Is Offsite Area Contributing to the Basin (yes or no)?

Yes

Offsite Area, Off = 0.00 ac

**Offsite routed around system thus no offsite water quality provided. Pond Location included in offsite area.*

$V_t(\text{off}) = (\text{Off} * 1.0 \text{ in}) / 12$

$V_t(\text{off}) = \underline{\quad 0.00 \text{ ac-ft} \quad}$

Did the existing basin receive treatment (Yes or No)?

No

Will the existing treatment system will be impacted by the proposed improvements (yes or no)?

No

Existing Required Treatment area for basin = 0 ac

Existing Required Treatment Volume for basin, $V_t(\text{Ex}) = \underline{\quad 0 \text{ ac-ft} \quad}$

Treatment Volume Required = $[V_t + V_t(\text{Off}) + V_t(\text{Ex})]$

Treatment Volume Required = 0.01 ac-ft

Is Basin Part of an OFW (yes or no)?

Yes

(If Yes, then add an additional 50% Treatment Volume)

(Econ River Basin)

Total Basin Required Treatment Volume = 0.02 ac-ft

Total Peak Storage Volume Requirement

The Total Peak Storage Volume Required is:

Volume (peak) = Treatment Volume + Estimated Peak Attenuation Volume

Treatment Volume = 0.02 ac-ft = 0,653.40 cu-ft

Attenuation Volume = 0.03 ac-ft = 130.68 cu-ft

Volume (peak) = 0.045 ac-ft = 1,960.20 cu-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report**Basin No.** 4-300 (Alternative with runoff conveyed to Pond 4B)**Subject** Pre-Developed CN and SCS Runoff Volume Calculation

Basin Designation 4-300 (Existing)

Type Evaluation Pre-Developed

Drainage Area begins at Station 97+55and continues until Station 111+92

Existing Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lanes (1 by 12')	12	1,298	15,572	0.36
Turn Lanes	12	400	4,800	0.11
Transition/Taper Lanes	6	260	1,560	0.04
Sidewalk LT	6	0	0	0
Shoulder	5	1,298	6,489	0.15
Total Impervious Area =			28,421	0.66

L = Approximate Roadway Length (ft)

R = Average Right-of-Way Width in Basin (ft)

I_Ex = Impervious Area (ac)

P = Pervious Area (ac)

At = Total Existing Onsite Basin Area (ac) (Excluding Pond Area)

Off = Total Offsite Impervious Area (ac)

L = 1,298 ftR = 37.96 ft

At = (R*L) / 43560

At = 1.13 acI_Ex = 0.66 ac

P = At - I_Ex

P = 0.47 ac

From existing Drainage Map:

Off = 0.24 ac

PROJECT: Chuluota Road Widening Conceptual Drainage Report**Basin No.** 4-300 (Alternative with runoff conveyed to Pond 4B)**Subject** Pre-Developed CN and SCS Runoff Volume Calculation

Basin Designation 4-300 (Existing)

Type Evaluation Pre-Developed

Drainage Area begins at Station 97+55and continues until Station 111+92

Existing Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lanes (1 by 12')	12	1,298	15,572	0.36
Turn Lanes	12	400	4,800	0.11
Transition/Taper Lanes	6	260	1,560	0.04
Sidewalk LT	6	0	0	0
Shoulder	5	1,298	6,489	0.15
Total Impervious Area =			28,421	0.66

L = Approximate Roadway Length (ft)

R = Average Right-of-Way Width in Basin (ft)

I_Ex = Impervious Area (ac)

P = Pervious Area (ac)

At = Total Existing Onsite Basin Area (ac) (Excluding Pond Area)

Off = Total Offsite Impervious Area (ac)

L = 1,298 ftR = 37.96 ft

At = (R*L) / 43560

At = 1.13 acI_Ex = 0.66 ac

P = At - I_Ex

P = 0.47 ac

From existing Drainage Map:

Off = 0.24 ac

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 4-300 (Alternative with runoff conveyed to Pond 4B)

Subject Post-Developed CN and SCS Runoff Volume Calculation

Basin Designation 4-300 (Proposed)

Type Evaluation Post-Developed

Drainage Area begins at Station 97+55

and continues until Station 111+92

Proposed Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lanes (2 by 11')	22	1,298	28,549	0.66
Turn Lanes	12	400	4,800	0.11
Transition/Taper Lanes	6	260	1,560	0.04
Sidewalk LT	6	1,298	7,786	0.18
Curb/gutter (inner & outer)	2	2,595	5,191	0.12
Total Impervious Area =			47,886	1.11

L = Approximate Roadway Length (ft)

R = Average Right-of-Way Width in Basin (ft)

I = Impervious Area (ac)

P = Pervious Area (ac)

Atp = Proposed Total Existing Onsite Basin Area (ac) (Excluding Pond Area)

Off = Total Offsite Impervious Area (ac)

$$L = \underline{1,298 \text{ ft}}$$

$$R = \underline{37.96 \text{ ft}}$$

$$Atp = (R*L) / 43560$$

$$Atp = \underline{1.13 \text{ ac}}$$

$$I = \underline{1.11}$$

$$I_{\text{New}} = I - I_{\text{Ex}}$$

$$I_{\text{New}} = \underline{0.45 \text{ ac}}$$

$$P = Atp - I$$

$$P = \underline{0.02 \text{ ac}}$$

From existing Drainage Map:

$$Off = \underline{0.24 \text{ ac}}$$

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 4-300 (Alternative with runoff conveyed to Pond 4B)

Subject Pre-Developed CN and SCS Runoff Volume Calculation

Existing Condition

Basin Designation 4-300 (Existing)
 Type Evaluation Pre-Developed
 Basin Size 1.13 ac Total Drainage Area 33.57 ac
 Rainfall Depth 8.40 in

$$\text{Weighted, CN} = \frac{\text{Product}}{\text{Area}}$$

$$\text{Runoff, R} = \frac{(P - (0.2S))^2}{P + (0.8S)}$$

$$\text{Soil Storage, S} = \frac{1000}{\text{CN}} - 10$$

$$\text{Runoff Volume, V} = \frac{\text{R}}{12} \times \text{Area}$$

Basin **For this analysis, all soils are assumed to be D soils for grass.*

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	0.66	64.68
Grass, Good Condition	A/D	80	0.47	37.60
Total Area =			<u>1.13</u>	<u>102.28</u>

Offsite **For this analysis, all soils are assumed to be D soils for grass.*

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area	-	98	0.24	23.52
Wetland	-	98	7.00	686.00
Grass, Good Condition	A	39	17.25	672.75
Grass, Good Condition	A/D	80	7.50	600.00
Pond Location (Grass, Good Condition)	A	39	0.45	17.55
Total Area =			<u>32.44</u>	<u>1999.82</u>

Basin
 CN= 90.51

S= 1.05 in

R= 7.26 in

V= 0.68 ac-ft

Offsite
 CN= 61.65

S= 6.22 in

R= 3.83 in

V= 10.35 ac-ft

Total Volume= 11.03 ac-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 4-300 (Alternative with runoff conveyed to Pond 4B)

Subject Post-Developed CN and SCS Runoff Volume Calculation

Proposed Condition

Basin Designation 4-300 (Proposed)
 Type Evaluation Post-Developed
 Basin Size 1.13 ac Total Drainage Area 1.58 ac
 Rainfall Depth 8.40 in

Weighted, CN = $\frac{\text{Product}}{\text{Area}}$

Soil Storage, S = $\frac{1000}{\text{CN}} - 10$

Runoff, R = $\frac{(P - (0.2S))^2}{P + (0.8S)}$

Runoff Volume, V = $\frac{R}{12} \times \text{Area}$

Basin **For this analysis, all soils are assumed to be D soils for grass.*

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	1.11	108.78
Grass, Good Condition	A/D	80	0.02	1.6
Total Area =			<u>1.13</u>	<u>110.38</u>

Offsite **For this analysis, all soils are assumed to be D soils for grass.*

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area	-	98	0.24	23.52
Wetland	-	98	7.00	686.00
Grass, Good Condition	A	39	17.25	672.75
Grass, Good Condition	A/D	80	7.50	600.00
Pond Area at DHW (Water)	-	100	0.45	45.00
Total Area =			<u>32.44</u>	<u>2027.27</u>

Basin
 CN= 97.68

Offsite
 CN= 62.49

S= 0.24 in

S= 6 in

R= 8.12 in

R= 3.93 in

V= 0.76 ac-ft

V= 10.62 ac-ft

Total Volume= 11.38 ac-ft

Post Developed Volume - Pre Developed Volume =

0.35 ac-ft = 15,246.00 cu-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 4-300 (Alternative with runoff conveyed to Pond 4B)

Subject Treatment Volume Calculation

SJRWMD Treatment Volume Requirement

Water Quality Volume for a Wet Detention System is based upon 2.5" times the additional onsite impervious area and 1" times the total offsite drainage area. The project is located within the Econ River Basin and requires an additional 50% treatment volume.

$V_t = 2.5 \text{ inches of runoff times the new impervious area}$

$V_t = (I\text{-New} * 2.5 \text{ in}) / 12$

$V_t = \underline{\quad 0.09 \text{ ac-ft} \quad}$

Is Offsite Area Contributing to the Basin (yes or no)?

Yes

Offsite Area, Off = 0.45 ac

**Offsite routed around system thus no offsite water quality provided. Pond Location included in offsite area.*

$V_t(\text{off}) = (\text{Off} * 1.0 \text{ in}) / 12$

$V_t(\text{off}) = \underline{\quad 0.04 \text{ ac-ft} \quad}$

Did the existing basin receive treatment (Yes or No)?

No

Will the existing treatment system will be impacted by the proposed improvements (yes or no)?

No

Existing Required Treatment area for basin = 0 ac

Existing Required Treatment Volume for basin, $V_t(\text{Ex}) = \underline{\quad 0 \text{ ac-ft} \quad}$

Treatment Volume Required = $[V_t + V_t(\text{Off}) + V_t(\text{Ex})]$

Treatment Volume Required = 0.13 ac-ft

Is Basin Part of an OFW (yes or no)?

Yes

(If Yes, then add an additional 50% Treatment Volume)

(Econ River Basin)

Total Basin Required Treatment Volume = 0.20 ac-ft

Total Peak Storage Volume Requirement

The Total Peak Storage Volume Required is:

Volume (peak) = Treatment Volume + Estimated Peak Attenuation Volume

Treatment Volume = 0.20 ac-ft = 8,494.20 cu-ft

Attenuation Volume = 0.35 ac-ft = 15,246.00 cu-ft

Volume (peak) = 0.55 ac-ft = 23,740.20 cu-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report**Basin No.** 4-400 (Alternative with runoff conveyed to Pond 4B)**Subject** Pre-Developed CN and SCS Runoff Volume Calculation

Basin Designation 4-400 (Existing)

Type Evaluation Pre-Developed

Drainage Area begins at Station 97+55and continues until Station 111+92

Existing Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lanes (1 by 12')	12	1,420	17,036	0.39
Turn Lanes	12	492	5,904	0.14
Sidewalk RT	6	0	0	0
Shoulder	5	1,420	7,099	0.16
Total Impervious Area =			22,940	0.53

L = Approximate Roadway Length (ft)

R = Average Right-of-Way Width in Basin (ft)

I_Ex = Impervious Area (ac)

P = Pervious Area (ac)

At = Total Existing Onsite Basin Area (ac) (Excluding Pond Area)

Off = Total Offsite Impervious Area (ac)

$$L = \frac{1,420}{1} \text{ ft}$$

$$R = \frac{87}{1} \text{ ft}$$

$$At = (R * L) / 43560$$

$$At = \frac{2.85}{1} \text{ ac}$$

$$I_{Ex} = \frac{0.53}{1} \text{ ac}$$

$$P = At - I_{Ex}$$

$$P = \frac{2.32}{1} \text{ ac}$$

From existing Drainage Map:

$$Off = \frac{0.46}{1} \text{ ac}$$

PROJECT: Chuluota Road Widening Conceptual Drainage Report**Basin No.** 4-400 (Alternative with runoff conveyed to Pond 4B)**Subject** Post-Developed CN and SCS Runoff Volume Calculation

Basin Designation 4-400 (Proposed)

Type Evaluation Post-Developed

Drainage Area begins at Station 97+55and continues until Station 111+92

Proposed Impervious Area Tabulation				
Description	Width	Length	Product (sq. ft)	Product (ac)
Through Lane (1 by 11')	11	1,420	15,617	0.36
Transition to Turn Lane (1 by 11')	11	928	10,205	0.23
Turn Lanes	12	492	5,904	0.14
Sidewalk RT	10	1419.7	14,197	0.33
Curb/gutter (inner & outer)	2	2,839	5,679	0.13
Shoulder	5	492	2,460	0.06
Total Impervious Area =			54,061	1.25

L = Approximate Roadway Length (ft)

R = Average Right-of-Way Width in Basin (ft)

I = Impervious Area (ac)

P = Pervious Area (ac)

Atp = Proposed Total Existing Onsite Basin Area (ac) (Excluding Pond Area)

Off = Total Offsite Impervious Area (ac)

L = 1,420 ftR = 87 ft

Atp = (R*L) / 43560

Atp = 2.85 acI = 1.25 ac

I_New = I - I_Ex

I_New = 0.72 ac

P = Atp-I

P = 1.6 ac

From existing Drainage Map:

Off = 0.46 ac

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 4-400 (Alternative with runoff conveyed to Pond 4B)

Subject Pre-Developed CN and SCS Runoff Volume Calculation

Existing Condition

Basin Designation 4-400 (Existing)
 Type Evaluation Pre-Developed
 Basin Size 2.85 ac Total Drainage Area 2.85 ac
 Rainfall Depth 8.40 in

$$\text{Weighted, CN} = \frac{\text{Product}}{\text{Area}}$$

$$\text{Runoff, R} = \frac{(P - (0.2S))^2}{P + (0.8S)}$$

$$\text{Soil Storage, S} = \frac{1000}{\text{CN}} - 10$$

$$\text{Runoff Volume, V} = \frac{R}{12} \times \text{Area}$$

Basin **For this analysis, all soils are assumed to be D soils for grass.*

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	0.53	51.94
Grass, Good Condition	A/D	80	2.32	185.6
Total Area =			<u>2.85</u>	<u>237.54</u>

Offsite **For this analysis, all soils are assumed to be D soils for grass.*

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	0.46	45.08
Grass, Good Condition (Offsite)	A/D	80	3.82	305.6
Grass, Good Condition (Offsite)	A	39	2	78
Total Area =			<u>5.82</u>	<u>383.6</u>

Basin
 CN= 83.35

S= 2 in

R= 6.40 in

V= 1.52 ac-ft

Total Volume= 3.62 ac-ft

Offsite
 CN= 65.91

S= 5.17 in

R= 4.33 in

V= 2.10 ac-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 4-400 (Alternative with runoff conveyed to Pond 4B)

Subject Post-Developed CN and SCS Runoff Volume Calculation

Proposed Condition

Basin Designation 4-400 (Proposed)
 Type Evaluation Post-Developed
 Basin Size 2.85 ac Total Drainage Area 8.67 ac
 Rainfall Depth 8.40 in

$$\text{Weighted, CN} = \frac{\text{Product}}{\text{Area}}$$

$$\text{Runoff, R} = \frac{(P - (0.2S))^2}{P + (0.8S)}$$

$$\text{Soil Storage, S} = \frac{1000}{\text{CN}} - 10$$

$$\text{Runoff Volume, V} = \frac{\text{R}}{12} \times \text{Area}$$

Basin **For this analysis, all soils are assumed to be D soils for grass.*

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	1.25	122.5
Grass, Good Condition	A/D	80	1.6	128
Total Area =			<u>2.85</u>	<u>250.5</u>

Offsite **For this analysis, all soils are assumed to be D soils for grass.*

Soil Land Use Description	Soil Group	CN	Area (ac)	Product
Impervious Area (Roadway and Sidewalk)	-	98	0.00	0
Grass, Good Condition (Offsite)	A/D	80	3.82	305.6
Grass, Good Condition (Offsite)	A	39	2	78
Total Area =			<u>5.82</u>	<u>383.6</u>

Basin
 CN= 87.89

S= 1.38 in

R= 6.94 in

V= 1.65 ac-ft

Total Volume= 3.75 ac-ft

Offsite
 CN= 65.91

S= 5.17 in

R= 4.33 in

V= 2.10 ac-ft

Post Developed Volume - Pre Developed Volume =
0.13 ac-ft = 5,662.80 cu-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Basin No. 4-400 (Alternative with runoff conveyed to Pond 4B)

Subject Treatment Volume Calculation

SJRWMD Treatment Volume Requirement

Water Quality Volume for a Wet Detention System is based upon 2.5" times the additional onsite impervious area and 1" times the total offsite drainage area. The project is located within the Econ River Basin and requires an additional 50% treatment volume.

Vt = 2.5 inches of runoff times the new impervious area

$$Vt = (I-New * 2.5 \text{ in}) / 12$$

$$Vt = \underline{0.15 \text{ ac-ft}}$$

Is Offsite Area Contributing to the Basin (yes or no)? Yes

$$\text{Offsite Area, Off} = \underline{0.00 \text{ ac}}$$

**Offsite routed around system thus no offsite water quality provided. Pond Location included in offsite area.*

$$Vt(\text{off}) = (\text{Off} * 1.0 \text{ in}) / 12$$

$$Vt(\text{off}) = \underline{0.00 \text{ ac-ft}}$$

Did the existing basin receive treatment (Yes or No)? No

Will the existing treatment system will be impacted by the proposed improvements (yes or no)? No

$$\text{Existing Required Treatment area for basin} = \underline{0 \text{ ac}}$$

$$\text{Existing Required Treatment Volume for basin, } Vt(\text{Ex}) = \underline{0 \text{ ac-ft}}$$

$$\text{Treatment Volume Required} = [Vt + Vt(\text{Off}) + Vt(\text{Ex})]$$

$$\text{Treatment Volume Required} = \underline{0.15 \text{ ac-ft}}$$

Is Basin Part of an OFW (yes or no)? Yes (If Yes, then add an additional 50% Treatment Volume)
(Econ River Basin)

$$\text{Total Basin Required Treatment Volume} = \underline{0.23 \text{ ac-ft}}$$

Total Peak Storage Volume Requirement

The Total Peak Storage Volume Required is:

Volume (peak) = Treatment Volume + Estimated Peak Attenuation Volume

$$\text{Treatment Volume} = 0.23 \text{ ac-ft} = 9,801.00 \text{ cu-ft}$$

$$\text{Attenuation Volume} = 0.13 \text{ ac-ft} = 5,662.80 \text{ cu-ft}$$

$$\text{Volume (peak)} = 0.36 \text{ ac-ft} = 15,463.80 \text{ cu-ft}$$

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 1A

Subject: Pond Calculations

Step No. 1, Pond 1A - Pond Type

Geotechnical analysis for the project took one boring within the limits of Pond 1A. The results are shown below.

Average Ground Surface Elevation at pond =	<u>72 ft NAVD88</u>
Seasonal High Water Table Elevation =	<u>67.2 ft NAVD88</u>
Seasonal High Water Table depth =	<u>4.8 ft</u>

Based upon the existing SHWT the pond will be a

Wet Pond or Dry Pond

Step No. 2, Pond 1A - Storage Height Estimate (based upon Average Wet Season Water Elevation)

The Average Wet Seasonal Water Elevation and the existing ground elevation is taken from the geotechnical information. The Berm Elevation is assumed to be equal to the low elevation along a LiDAR cut Chuluota Road's centerline. Therefore the treatment volume and the peak attenuation volume are constrained to the following storage height (SH) or CH (See Step No. 5).

SH = Store Berm Elevation - Freeboard - Seasonal High Water Table Elevation

Existing Ground Elevation =	<u>72 ft NGVD88</u>
Berm Elevation =	<u>73 ft NGVD88</u>
Freeboard =	<u>1.00 ft</u>
Seasonal High Water Table EL =	<u>67.2 ft NGVD88</u>
SH =	<u>4.80 ft</u>

Note: Check CH (Step No. 5) before calculating pond configuration

Pond 1A would receive water from Basins 1A & 1B.

Volume 1A =	<u>6,969.60 cu-ft</u>	=	<u>0.16 ac-ft</u>
Volume 1B =	<u>8,276.40 cu-ft</u>	=	<u>0.19 ac-ft</u>
Total =	<u>15,246.00 cu-ft</u>	=	<u>0.35 ac-ft</u>

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 1A

Subject: Pond Calculations

Step No. 3, Pond 1A - Pond Configuration

Use the formula for a rectangular box to determine the water surface area of a pond with vertical sides.

Volume = Length * Width * Height

Where: V = Volume from Step No. 3
 L = Length of Pond
 W = Width of Pond
 H = Height (Lesser Height SH or CH from Step No.'s 2 or 6)

Assume that the width (W) is half of the Length (L), therefore $L/W = 2$

$$\text{Volume} = \underline{15,246} \text{ cu-ft} = L * W * H \text{ where } L = 2 * W$$

$$H = \underline{2.310} \text{ ft}$$

$$W = \underline{57} \text{ ft}$$

$$L = \underline{115} \text{ ft}$$

Step No. 4, Pond 1A - Accounting for the Pond Side Slopes

Pond Side Slope assumed to be 1:4

$$L(\text{top}) = 2 * (\text{SH} * \text{Side Slope}) + L$$

$$W(\text{top}) = 2 * (\text{SH} * \text{Side Slope}) + W$$

Where: L(top) = Length of the pond at the top slope
 W(top) = Width of the pond at top slope
 L = Length of Pond from Step No. 4
 W = Width of Pond from Step No. 4

$$L(\text{top}) = \underline{133} \text{ ft}$$

$$W(\text{top}) = \underline{76} \text{ ft}$$

$$\text{Area @ Peak Design Stage} = L(\text{top}) * W(\text{top})$$

$$\text{Area @ Peak Design Stage} = \underline{0.23} \text{ ac}$$

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 1A

Subject: Pond Calculations

Step No. 5, Pond 1A - Accounting for Energy Loss

Urban section with closed storm sewer system therefore 10-year attenuation constrained to the following height (CH).

CH = Low point in gutter - Clearance - Estimated Energy Loss - Average Wet Season Water Elevation

Low Point in the gutter =	<u>70.61</u>	ft NGVD88	Crown at SR50 at Chuluota intersection based on proposed SR50 improvements is 72.4 FT NAVD88. Edge of the sidewalk is 1.79 feet below the SR50 crown.
Distance from Low Point to Pond =	<u>100</u>	ft	
Clearance =	<u>1.00</u>	ft	Assume Minor Losses
Estimated Energy Loss =	<u>0.1</u>	ft	Assume 0.05% Slope
Average Wet Season Water Elevation =	<u>67.2</u>	ft NGVD88	From Step No. 2
CH =	<u>2.31</u>	ft	

Step No. 6, Pond 1A - Accounting for Maintenance Berms

Desired Maintenance Berm Width = 20.00 ft

Length = L(top) + (2 * Berm Width) = 173 ft

Width = W(top) + (2 * Berm Width) = 116 ft

Pond Area Requirement = 0.46 ac

Increasing Pond Area by: 15% to account for preceding information being preliminary (range between 10 and 20 percent).

Total Pond Area Requirement = 0.53 ac

Note: This estimate is for pond size only, further estimates for pond access and conveyance are site specific and should be added to the "Pond Area Requirement" estimated above.

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 1A

Subject: Pond Calculations

Step No. 7, Pond 1A - Permanent Pool Volume

PPV = RT*FR / CF	PPV =	0.55 Permanent Pool Volume (ac-ft)
FR = DA * C * R / WS	RT =	21 Residence Time (days)
Q = C * I * A	FR =	0.32 Average Flow Rate (ac-inches/day) = Q*12
I = R / (WS * CF)	Q =	0.03 Average Flow Rate (ac-ft/day)
	I =	0.0185 Rainfall Intensity (ft/day)
	DA =	1.48 Drainage Area to Pond (ac)
	C =	0.96 Runoff Coefficient (estimate)
	R =	34 Wet Season Normal Rainfall (in)
	WS =	153 Length of Wet Season June-October = 153 days
	CF =	12 Conversion Factor (12 in/ft)

Mean depth must be between 2 and 8 feet

Max depth must not exceed 12 feet below invert of bleed down device

Minimum Depth 3.65 ft

Littoral Zone Planting (Orange County Guidelines)	% of land above DHW landscaped	Littoral band width (ft)	% of shoreline established with native aquatic or semi-aquatic plant species
Pond Size < 2.5 AC	10	5	50
2.5 AC <= Pond Size <= 5 AC	5	5	35
Pond Size > 5 AC		5	20
If visible from ROW		6	

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 1A

Subject: Pond Calculations

Step No. 8, Pond - Cut/Fill Requirements

Elevation	Area
Seasonal High Water Table = <u>67.2</u> ft NGVD88	<u>0.07</u> ac
Existing Ground/ Peak Design Stage = <u>72</u> ft NGVD88	<u>0.30</u> ac
Freeboard = <u>1.00</u> ft NGVD88	
Top of Berm = <u>73.00</u> ft NGVD88	<u>0.40</u> ac
Linear slope interpolation	<u>0.057</u> ac/ft of elevation

ICPR Pond Inlet Invert = 66 ft NGVD88

The minimum depth to the pond bottom is 6 FT in Orange County from Existing ground

Pipe Depth = 6 ft
 Additional Excavation = 0 ft
 Sediment Buffer = 0.5 ft

Pond Bottom Elevation = 65.5 ft -0.027 ac

Cut Volume

0.8881 ac-ft

1432.9 cu-yd

Fill Volume

Assuming a 2:1 rectangle at Top of Berm

W = 93.3 ft

L = 186.7 ft

Berm Width 20 ft

Perimeter = 600.03 ft

755.6 cu-yd

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 1A

Subject: Pond Calculations

Step No. 9, Pond - Water Quality Elevation

Basin(s)	Volume	
1A	0.12	ac-ft
1B	0.09	ac-ft
Total	<u>0.21</u>	ac-ft

	Elevation	Area
Seasonal High Water Table =	<u>67.2</u> ft NGVD88	<u>0.07</u> ac
Water Quality Depth=	<u>1.75</u> ft	<u>0.17</u> ac
Water Quality Volume=	<u>0.210</u> ac-ft	
Water Quality Elevation=	<u>69.0</u> ft NGVD88	
Peak Design Stage=	<u>72.0</u> ft NGVD89	
Linear slope interpolation		<u>0.057</u> ac-ft of elevation

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 1B

Subject: Pond Calculations

Step No. 1, Pond 1B - Pond Type

Geotechnical analysis for the project took one boring within the limits of Pond 1B. The results are shown below.

Average Ground Surface Elevation at pond =	<u>69 ft NAVD88</u>
Seasonal High Water Table Elevation =	<u>68 ft NAVD88</u>
Seasonal High Water Table depth =	<u>1 ft</u>

Based upon the existing SHWT the pond will be a

Wet Pond or Dry Pond

Step No. 2, Pond 1B - Storage Height Estimate (based upon Average Wet Season Water Elevation)

The Average Wet Seasonal Water Elevation and the existing ground elevation is taken from the a combination of LiDAR and a wetland delineation (see Appendix). The Berm Elevation is assumed to be equal to the low elevation along a LiDAR cut Chuluota Road's centerline. Therefore the treatment volume and the peak attenuation volume are constrained to the following storage height (SH) or CH (See Step No. 5).

SH = Store Berm Elevation - Freeboard - Seasonal High Water Table Elevation

Existing Ground Elevation =	<u>69 ft NGVD88</u>
Berm Elevation =	<u>70 ft NGVD88</u>
Freeboard =	<u>1.00 ft</u>
Seasonal High Water Table EL =	<u>68 ft NGVD88</u>
SH =	<u>1.00 ft</u>

Note: Check CH (Step No. 5) before calculating pond configuration

Pond 1B would receive water from Basins 1A & 1B.

Volume 1A =	<u>6,969.60 cu-ft</u>	=	<u>0.16 ac-ft</u>
Volume 1B =	<u>8,276.40 cu-ft</u>	=	<u>0.19 ac-ft</u>
Total =	<u>15,246.00 cu-ft</u>	=	<u>0.35 ac-ft</u>

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 1B

Subject: Pond Calculations

Step No. 3, Pond 1B - Pond Configuration

Use the formula for a rectangular box to determine the water surface area of a pond with vertical sides.

Volume = Length * Width * Height

Where: V = Volume from Step No. 3
 L = Length of Pond
 W = Width of Pond
 H = Height (Lesser Height SH or CH from Step No.'s 2 or 6)

Assume that the width (W) is half of the Length (L), therefore $L/W = 2$

$$\text{Volume} = \underline{15,246 \text{ cu-ft}} = L * W * H \text{ where } L = 2 * W$$

$$H = \underline{1.000 \text{ ft}}$$

$$W = \underline{87 \text{ ft}}$$

$$L = \underline{175 \text{ ft}}$$

Step No. 4, Pond 1B - Accounting for the Pond Side Slopes

Pond Side Slope assumed to be 1:4

$L(\text{top}) = 2 * (\text{SH} * \text{Side Slope}) + L$

$W(\text{top}) = 2 * (\text{SH} * \text{Side Slope}) + W$

Where: L(top) = Length of the pond at the top slope
 W(top) = Width of the pond at top slope
 L = Length of Pond from Step No. 4
 W = Width of Pond from Step No. 4

$$L(\text{top}) = \underline{183 \text{ ft}}$$

$$W(\text{top}) = \underline{95 \text{ ft}}$$

Area @ Peak Design Stage = $L(\text{top}) * W(\text{top})$

Area @ Peak Design Stage = 0.40 ac

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 1B

Subject: Pond Calculations

Step No. 5, Pond 1B - Accounting for Energy Loss

Urban section with closed storm sewer system therefore 10-year attenuation constrained to the following height (CH).

CH = Low point in gutter - Clearance - Estimated Energy Loss - Average Wet Season Water Elevation

Low Point in the gutter =	<u>70.61</u>	ft NGVD88	Crown at SR50 at Chuluota intersection based on proposed SR50 improvements is 72.4 FT NAVD88. Edge of the sidewalk is 1.79 feet below the SR50 crown.
Distance from Low Point to Pond =	<u>100</u>	ft	
Clearance =	<u>1.00</u>	ft	Assume Minor Losses
Estimated Energy Loss =	<u>0.5</u>	ft	Assume 0.05% Slope
Average Wet Season Water Elevation =	<u>68</u>	ft NGVD88	From Step No. 2
CH =	<u>1.11</u>	ft	

Step No. 6, Pond 1B - Accounting for Maintenance Berms

Desired Maintenance Berm Width = 20.00 ft

Length = L(top) + (2 * Berm Width) = 223 ft

Width = W(top) + (2 * Berm Width) = 135 ft

Pond Area Requirement = 0.69 ac

Increasing Pond Area by: 15% to account for preceding information being preliminary (range between 10 and 20 percent).

Total Pond Area Requirement = 0.79 ac

Note: This estimate is for pond size only, further estimates for pond access and conveyance are site specific and should be added to the "Pond Area Requirement" estimated above.

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 1B

Subject: Pond Calculations

Step No. 7, Pond 1B - Permanent Pool Volume

PPV = RT*FR / CF	PPV =	0.55 Permanent Pool Volume (ac-ft)
FR = DA * C * R / WS	RT =	21 Residence Time (days)
Q = C * I * A	FR =	0.32 Average Flow Rate (ac-inches/day) = Q*12
I = R / (WS * CF)	Q =	0.03 Average Flow Rate (ac-ft/day)
	I =	0.0185 Rainfall Intensity (ft/day)
	DA =	1.48 Drainage Area to Pond (ac)
	C =	0.96 Runoff Coefficient
	R =	34 Wet Season Normal Rainfall (in)
	WS =	153 Length of Wet Season June-October = 153 days
	CF =	12 Conversion Factor (12 in/ft)

Mean depth must be between 2 and 8 feet

Max depth must not exceed 12 feet below invert of bleed down device

Minimum Depth 2.00 ft

Littoral Zone Planting (Orange County Guidelines)	% of land above DHW landscaped	Littoral band width (ft)	% of shoreline established with native aquatic or semi-aquatic plant species
Pond Size < 2.5 AC	10	5	50
2.5 AC <= Pond Size <= 5 AC	5	5	35
Pond Size > 5 AC		5	20
If visible from ROW		6	

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 1B

Subject: Pond Calculations

Step No. 8, Pond - Cut/Fill Requirements

Elevation	Area
Seasonal High Water Table = <u>68.0</u> ft NGVD88	<u>0.35</u> ac
Existing Ground/ Peak Design Stage = <u>69</u> ft NGVD88	0.40 ac
Freeboard = <u>1.00</u> ft	<u> </u>
Top of Berm = <u>70.00</u> ft NGVD88	<u>0.45</u> ac
Linear slope interpolation	<u>0.050</u> ac/ft of elevation

ICPR Pond Inlet Invert = 0 ft NGVD88

The minimum depth to the pond bottom is 6 FT in Orange County from Existing ground

Pipe Depth = 0 ft
 Additional Excavation = 6 ft
 Sediment Buffer = 0.5 ft

Pond Bottom Elevation = 62.5 ft 0.077 ac

Cut Volume

1.55 ac-ft

2500.6 cu-yd

Fill Volume

Assuming a 2:1 rectangle at Top of Berm

W = 98.9 ft

L = 197.8 ft

Berm Width : 20 ft

Perimeter = 633.44 ft

797.7 cu-yd

Notes:

This pond was not modeled in ICPR. It is not a preferred or secondary alternative.

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 1B

Subject: Pond Calculations

Step No. 9, Pond - Water Quality Elevation

Basin(s)	Volume	
1A	0.12	ac-ft
1B	0.05	ac-ft
Total	<u>0.17</u>	ac-ft

	Elevation	Area
Seasonal High Water Table =	<u>68.0</u> ft NGVD88	<u>0.35</u> ac
Water Quality Depth=	<u>0.47</u> ft	<u>0.37</u> ac
Water Quality Volume=	<u>0.172</u> ac-ft	
Water Quality Elevation=	<u>68.5</u> ft NGVD88	
Peak Design Stage=	<u>69.0</u> ft NGVD89	
Linear slope interpolation	<u>0.050</u> ac-ft of elevation	

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 2A

Subject: Pond Calculations

Step No. 1, Pond 2A - Pond Type

Geotechnical analysis for the project took one boring within the limits of Pond 2A. The results are shown below.

Average Ground Surface Elevation at pond =	<u>71 ft NAVD88</u>
Seasonal High Water Table Elevation =	<u>67.3 ft NAVD88</u>
Seasonal High Water Table depth =	<u>3.7 ft</u>

Based upon the existing SHWT the pond will be a

Wet Pond or Dry Pond

Step No. 2, Pond 2A - Storage Height Estimate (based upon Average Wet Season Water Elevation)

The Average Wet Seasonal Water Elevation and the existing ground elevation is taken from the geotechnical information. The Berm Elevation is assumed to be equal to the low elevation along a LiDAR cut Chuluota Road's centerline. Therefore the treatment volume and the peak attenuation volume are constrained to the following storage height (SH) or CH (See Step No. 5).

SH = Store Berm Elevation - Freeboard - Seasonal High Water Table Elevation

Existing Ground Elevation =	<u>71 ft NGVD88</u>
Berm Elevation =	<u>72 ft NGVD88</u>
Freeboard =	<u>1.00 ft</u>
Seasonal High Water Table EL =	<u>67.3 ft NGVD88</u>
SH =	<u>3.70 ft</u>

Note: Check CH (Step No. 5) before calculating pond configuration

Pond 2A would receive water from Basins 1A, 1B, 2A, and 2B.

Volume 1A =	<u>6,969.60</u> cu-ft	=	<u>0.16</u> ac-ft
Volume 1B =	<u>2,395.80</u> cu-ft	=	<u>0.06</u> ac-ft
Volume 2A =	<u>31,388.47</u> cu-ft	=	<u>0.72</u> ac-ft
Volume 2B =	<u>43,777.80</u> cu-ft	=	<u>1.01</u> ac-ft
Total =	<u>84,531.67</u> cu-ft	=	<u>1.94</u> ac-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 2A

Subject: Pond Calculations

Step No. 3, Pond 2A - Accounting for Energy Loss

Urban section with closed storm sewer system therefore 10-year attenuation constrained to the following height (CH).

CH = Low point in gutter - Clearance - Estimated Energy Loss - Average Wet Season Water Elevation

Low Point in the gutter =	<u>69.695</u>	ft NGVD88	Crown at low point is 70.3 FT NAVD88.
Distance from Low Point to Pond =	<u>100</u>	ft	Proposed gutter at 0.605 FT below crown.
Clearance =	<u>1.00</u>	ft	Assume Minor Losses
Estimated Energy Loss =	<u>0.1</u>	ft	Assume 0.05% Slope
Average Wet Season Water Elevation =	<u>67.3</u>	ft NGVD88	From Step No. 2
CH =	<u>1.295</u>	ft	

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 2A

Subject: Pond Calculations - Existing

Step No. 4, Pond 2A - Pond Configuration

Corner Lake Middle Pond 1 Existing						
Description	Stage (ft)	Pond Area (ac)	Total Volume (ac-ft)	Height (ft)	Inc. Vol (ac-ft)	Cum. Vol (ac-ft)
NWL	66.50	1.35				0.00
			1.45	1.50	2.17	
Inside of Maintenance Berm	68.00	1.54				2.17
			1.71	1.50	2.57	
DHW	69.50	1.89				4.74
			2.00	1.00	2.00	
Top of Bank	70.50	2.12				6.74

Corner Lake Middle Pond 2 Existing						
Description	Stage (ft)	Pond Area (ac)	Total Volume (ac-ft)	Height (ft)	Inc. Vol (ac-ft)	Cum. Vol (ac-ft)
NWL	66.50	2.08				0.00
			2.21	1.50	3.31	
Inside of Maintenance Berm	68.00	2.33				3.31
			2.54	1.50	3.81	
DHW	69.50	2.76				7.12
			2.90	1.00	2.90	
Top of Bank	70.50	3.04				10.02

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 2A

Subject: Pond Calculations - Existing

Step No. 4, Pond 2A - Pond Configuration

Corner Lake Middle Pond 3 Existing						
Description	Stage (ft)	Pond Area (ac)	Total Volume (ac-ft)	Height (ft)	Inc. Vol (ac-ft)	Cum. Vol (ac-ft)
NWL	66.50	0.25				0.00
			0.31	1.50	0.46	
	68.00	0.36				0.46
			0.39	1.50	0.59	
DHW	69.50	0.43				1.05
			0.45	1.00	0.45	
Inside of Maintenance Berm	70.50	0.47				1.50
			0.54	1.00	0.54	
Top of Bank	71.50	0.60				2.03

Corner Lake Middle Ponds 1, 2, and 3 Existing Combined						
Description	Stage (ft)	Pond Area (ac)	Total Volume (ac-ft)	Height (ft)	Inc. Vol (ac-ft)	Cum. Vol (ac-ft)
NWL	66.50	3.68				0.00
			3.93	1.39	5.47	
Weir Crest	67.89	4.19				5.47
			4.21	0.11	0.46	
	68.00	4.23				5.93
			4.65	1.50	6.98	
DHW	69.50	5.07				12.91
			5.35	1.00	5.35	
Top of Bank	70.50	5.63				18.26

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 2A

Subject: Pond Calculations - Proposed

Step No. 4, Pond 2A - Pond Configuration

Proposed Pond 2A (Merger of Existing Ponds 1 and 3)						
Description	Stage (ft)	Pond Area (ac)	Total Volume (ac-ft)	Height (ft)	Inc. Vol (ac-ft)	Cum. Vol (ac-ft)
NWL	66.50	1.73				0.00
			1.84	1.50	2.76	
	68.00	1.95				2.76
			2.12	1.50	3.17	
	69.50	2.28				5.93
			2.32	0.50	1.16	
	70.00	2.37				7.09
			2.41	0.50	1.20	
DHW	70.50	2.45				8.29
			2.41	0.50	1.20	
	71.00	2.53				9.50
			2.62	1.00	2.62	
Top of Bank	72.00	2.71				12.12
					Total (ac-ft)	12.12

EXISTING @ DHW	
Ponds 1, 2, and 3 Existing Combined (ac-ft)	12.91
Pond 2 Existing (ac-ft)	7.12
Ponds 1 and 3 Existing (ac-ft)	5.79

Proposed	
Proposed Pond 2A Total @ DHW 69.5 (ac-ft)	5.93
Proposed Pond 2A Total @ DHW 70.5 (ac-ft)	8.29

*Merger of Corner Lake Middle Ponds 1 and 3

Storage Gained by Merging Corner Lake Middle Ponds 1 and 3 to create Proposed Pond 2A @ DHW 70 ft	2.51	ac-ft
Storage Required (Basins 1A, 1B, 2A, 2B)	2.08	ac-ft
Excess Storage	0.43	ac-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 2A

Subject: Pond Calculations

Step No. 5, Pond 2A - Cut/Fill Requirements

Elevation	Area
Normal Water Level = <u>66.5</u> ft NGVD88	<u>1.73</u> ac
Existing Ground = <u>71</u> ft NGVD88	
Peak Design Stage = <u>70.50</u> ft NGVD88	<u>2.37</u> ac
Freeboard = <u>2.00</u> ft	
Top of Berm = <u>72.50</u> ft NGVD88	<u>2.71</u> ac
Linear slope interpolation	<u>0.160</u> ac/ft of elevation

ICPR Pond Inlet Invert = 61 ft NGVD88

The minimum depth to the pond bottom is 6 FT in Orange County from Existing ground

Pipe Depth = <u>10</u> ft	
Additional Excavation = <u>0</u> ft	
Sediment Buffer = <u>0.5</u> ft	
Pond Bottom Elevation = <u>60.5</u> ft	<u>0.770</u> ac

Cut Volume

2.51 ac-ft

4047.9 cu-yd

Fill Volume

Assuming a 2:1 rectangle at Top of Berm

W = 242.9 ft

L = 485.9 ft

Berm Width : 20 ft

Perimeter = 1497.69 ft

1886.0 cu-yd

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 2A

Subject: Pond Calculations

Step No. 6, Pond 2A - Water Quality Elevation

Chuluota Road Water Quality Requirements

Basin(s)	Volume	
1A	0.12	ac-ft
1B	0.05	ac-ft
2A	0.60	ac-ft
2B	0.62	ac-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 2B

Subject: Pond Calculations

Step No. 1, Pond 2B - Pond Type

Geotechnical analysis for the project took one boring within the limits of Pond 2B. The results are shown below.

Average Ground Surface Elevation at pond =	<u>67.5 ft NAVD88</u>
Seasonal High Water Table Elevation =	<u>68.0 ft NAVD88</u>
Seasonal High Water Table depth =	<u>-0.5 ft</u>

Based upon the existing SHWT the pond will be a

Wet Pond or Dry Pond

Step No. 2, Pond 2B - Storage Height Estimate (based upon Average Wet Season Water Elevation)

The Average Wet Seasonal Water Elevation and the existing ground elevation is taken from the a combination of LiDAR and a wetland delineation (see Appendix). The Berm Elevation is assumed to be equal to the low elevation along a LiDAR cut Chuluota Road's centerline. Therefore the treatment volume and the peak attenuation volume are constrained to the following storage height (SH) or CH (See Step No. 5).

SH = Store Berm Elevation - Freeboard - Seasonal High Water Table Elevation

Existing Ground Elevation =	<u>67.5 ft NGVD88</u>
Berm Elevation =	71.7 ft NGVD88
Freeboard =	<u>1.00 ft</u>
Seasonal High Water Table EL =	<u>68 ft NGVD88</u>
SH =	<u>2.70 ft</u>

Note: Check CH (Step No. 5) before calculating pond configuration

Pond 2B would receive water from Basins 2A, and 2B.

Volume 2A =	<u>7,313.10</u> cu-ft	=	<u>0.17</u> ac-ft
Volume 2B =	<u>90,387.00</u> cu-ft	=	<u>2.08</u> ac-ft
Total =	<u>97,700.10</u> cu-ft	=	<u>2.24</u> ac-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 2B

Subject: Pond Calculations

Step No. 3, Pond 2B - Pond Configuration

Use the formula for a rectangular box to determine the water surface area of a pond with vertical sides.

Volume = Length * Width * Height

Where: V = Volume from Step No. 3
 L = Length of Pond
 W = Width of Pond
 H = Height (Lesser Height SH or CH from Step No.'s 2 or 6)

Assume that the width (W) is half of the Length (L), therefore $L/W = 2$

$$\text{Volume} = \frac{97,700 \text{ cu-ft}}{\quad\quad\quad} = L * W * H \text{ where } L = 2 * W$$

$$H = \frac{1.995 \text{ ft}}{\quad\quad\quad}$$

$$W = \frac{156 \text{ ft}}{\quad\quad\quad}$$

$$L = \frac{313 \text{ ft}}{\quad\quad\quad}$$

Step No. 4, Pond 2B - Accounting for the Pond Side Slopes

Pond Side Slope assumed to be 1:4

$$L(\text{top}) = 2 * (\text{SH} * \text{Side Slope}) + L$$

$$W(\text{top}) = 2 * (\text{SH} * \text{Side Slope}) + W$$

Where: L(top) = Length of the pond at the top slope
 W(top) = Width of the pond at top slope
 L = Length of Pond from Step No. 4
 W = Width of Pond from Step No. 4

$$L(\text{top}) = \frac{329 \text{ ft}}{\quad\quad\quad}$$

$$W(\text{top}) = \frac{172 \text{ ft}}{\quad\quad\quad}$$

$$\text{Area @ Peak Design Stage} = L(\text{top}) * W(\text{top})$$

$$\text{Area @ Peak Design Stage} = \frac{1.30}{\quad\quad\quad} \text{ ac}$$

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 2B

Subject: Pond Calculations

Step No. 5, Pond 2B - Accounting for Energy Loss

Urban section with closed storm sewer system therefore 10-year attenuation constrained to the following height (CH).

CH = Low point in gutter - Clearance - Estimated Energy Loss - Average Wet Season Water Elevation

Low Point in the gutter =	<u>71.095</u>	ft NGVD88	Crown at low point is 71.7 FT NAVD88.
			Proposed gutter at 0.605 FT below crown.
Distance from Low Point to Pond =	<u>100</u>	ft	
Clearance =	<u>1.00</u>	ft	Assume Minor Losses
Estimated Energy Loss =	<u>0.1</u>	ft	Assume 0.05% Slope
Average Wet Season Water Elevation =	<u>68</u>	ft NGVD88	From Step No. 2
CH =	<u>1.995</u>	ft	

Step No. 6, Pond 2B - Accounting for Maintenance Berms

Desired Maintenance Berm Width = 20.00 ft

Length = L(top) + (2 * Berm Width) = 369 ft

Width = W(top) + (2 * Berm Width) = 212 ft

Pond Area Requirement = 1.80 ac

Increasing Pond Area by: 15% to account for preceding information being preliminary (range between 10 and 20 percent).

Total Pond Area Requirement = 2.07 ac

Note: This estimate is for pond size only, further estimates for pond access and conveyance are site specific and should be added to the "Pond Area Requirement" estimated above.

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 2B

Subject: Pond Calculations

Step No. 7, Pond 2B - Permanent Pool Volume

PPV = RT*FR / CF	PPV =	4.01 Permanent Pool Volume (ac-ft)
FR = DA * C * R / WS	RT =	21 Residence Time (days)
Q = C * I * A	FR =	2.29 Average Flow Rate (ac-inches/day) = Q*12
I = R / (WS * CF)	Q =	0.19 Average Flow Rate (ac-ft/day)
	I =	0.0185 Rainfall Intensity (ft/day)
	DA =	10.80 Drainage Area to Pond (ac)
	C =	0.95 Runoff Coefficient (estimate)
	R =	34 Wet Season Normal Rainfall (in)
	WS =	153 Length of Wet Season June-October = 153 days
	CF =	12 Conversion Factor (12 in/ft)

Mean depth must be between 2 and 8 feet

Max depth must not exceed 12 feet below invert of bleed down device

Minimum Depth 3.56 ft

Littoral Zone Planting (Orange County Guidelines)	% of land above DHW landscaped	Littoral band width (ft)	% of shoreline established with native aquatic or semi-aquatic plant species
Pond Size < 2.5 AC	10	5	50
2.5 AC <= Pond Size <= 5 AC	5	5	35
Pond Size > 5 AC		5	20
If visible from ROW		6	

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 2B

Subject: Pond Calculations

Step No. 8, Pond - Cut/Fill Requirements

Elevation	Area
Seasonal High Water Table = <u>68.0</u> ft NGVD88	<u>1.04</u> ac
Existing Ground = <u>67.5</u> ft NGVD88	<u>1.00</u> ac
Peak Design Stage = <u>70.70</u> ft NGVD89	<u>1.30</u> ac
Freeboard = <u>1.00</u> ft	
Top of Berm = <u>71.70</u> ft NGVD88	<u>1.40</u> ac
Linear slope interpolation	<u>0.095</u> ac/ft of elevation

ICPR Pond Inlet Invert = 65 ft NGVD88

The minimum depth to the pond bottom is 6 FT in Orange County from Existing ground

Pipe Depth = <u>2.5</u> ft	
Additional Excavation = <u>3.5</u> ft	
Sediment Buffer = <u>0.5</u> ft	
Pond Bottom Elevation = <u>61</u> ft	<u>0.377</u> ac

Cut Volume

4.4664 ac-ft

7205.7 cu-yd

Fill Volume

Assuming a 2:1 rectangle at Top of Berm

W = 174.5 ft

L = 348.9 ft

Berm Width: 20 ft

Perimeter = 1086.76 ft

1883.7 cu-yd

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 2B

Subject: Pond Calculations

Step No. 9, Pond - Water Quality Elevation

Basin(s)	Volume
2A	<u>0.11</u> ac-ft
2B	<u>0.62</u> ac-ft
	<u> </u>
Total	<u>0.72</u> ac-ft

	Elevation	Area
Seasonal High Water Table =	<u>68.0</u> ft NGVD88	<u>1.04</u> ac
Water Quality Depth=	<u>0.67</u> ft	<u>1.11</u> ac
Water Quality Volume=	<u>0.720</u> ac-ft	
Water Quality Elevation=	<u>68.7</u> ft NGVD88	
Peak Design Stage=	<u>70.7</u> ft NGVD89	

Linear slope interpolation 0.095 ac/ft of elevation

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 3A

Subject: Pond Calculations

Step No. 1, Pond 3A - Pond Type

Geotechnical analysis for the project took one boring within the limits of Pond 3A. The results are shown below.

Average Ground Surface Elevation at pond =	<u>67.5 ft NAVD88</u>
Seasonal High Water Table Elevation =	<u>67.0 ft NAVD88</u>
Seasonal High Water Table depth =	<u>0.5 ft</u>

Based upon the existing SHWT the pond will be a

Wet Pond or Dry Pond

Step No. 2, Pond 3A - Storage Height Estimate (based upon Average Wet Season Water Elevation)

The Average Wet Seasonal Water Elevation and the existing ground elevation is taken from the a combination of LiDAR and a wetland delineation (see Appendix). The Berm Elevation is assumed to be equal to the low elevation along a LiDAR cut Chuluota Road's centerline. Therefore the treatment volume and the peak attenuation volume are constrained to the following storage height (SH) or CH (See Step No. 5).

SH = Store Berm Elevation - Freeboard - Seasonal High Water Table Elevation

Existing Ground Elevation =	<u>67.5 ft NGVD88</u>
Berm Elevation =	71 ft NGVD88
Freeboard =	<u>1.00 ft</u>
Seasonal High Water Table EL =	<u>67 ft NGVD88</u>
SH =	<u>3.00 ft</u>

Note: Check CH (Step No. 6) before calculating pond configuration

Pond 3A would receive water from Basin 3.

Volume 3 =	<u>91,040.40</u> cu-ft	=	<u>2.09</u> ac-ft
Total =	<u>91,040.40</u> cu-ft	=	<u>2.09</u> ac-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 3A

Subject: Pond Calculations

Step No. 3, Pond 3A - Pond Configuration

Use the formula for a rectangular box to determine the water surface area of a pond with vertical sides.

Volume = Length * Width * Height

Where: V = Volume from Step No. 3
 L = Length of Pond
 W = Width of Pond
 H = Height (Lesser Height SH or CH from Step No.'s 2 or 6)

Assume that the width (W) is half of the Length (L), therefore $L/W = 2$

$$\text{Volume} = \underline{91,040} \text{ cu-ft} = L * W * H \text{ where } L = 2 * W$$

$$H = \underline{2.295} \text{ ft}$$

$$W = \underline{141} \text{ ft}$$

$$L = \underline{282} \text{ ft}$$

Step No. 4, Pond 3A - Accounting for the Pond Side Slopes

Pond Side Slope assumed to be 1:4

$$L(\text{top}) = 2 * (\text{SH} * \text{Side Slope}) + L$$

$$W(\text{top}) = 2 * (\text{SH} * \text{Side Slope}) + W$$

Where: L(top) = Length of the pond at the top slope
 W(top) = Width of the pond at top slope
 L = Length of Pond from Step No. 4
 W = Width of Pond from Step No. 4

$$L(\text{top}) = \underline{300} \text{ ft}$$

$$W(\text{top}) = \underline{159} \text{ ft}$$

$$\text{Area @ Peak Design Stage} = L(\text{top}) * W(\text{top})$$

$$\text{Area @ Peak Design Stage} = \underline{1.10} \text{ ac}$$

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 3A

Subject: Pond Calculations

Step No. 5, Pond 3A - Accounting for Energy Loss

Urban section with closed storm sewer system therefore 10-year attenuation constrained to the following height (CH).

CH = Low point in gutter - Clearance - Estimated Energy Loss - Average Wet Season Water Elevation

Low Point in the gutter =	<u>70.395</u>	ft NGVD88	Assume crown at low point will be raised to 71 FT NAVD88. Proposed gutter at 0.605 FT below crown.
Distance from Low Point to Pond =	<u>100</u>	ft	
Clearance =	<u>1.00</u>	ft	Assume Minor Losses
Estimated Energy Loss =	<u>0.1</u>	ft	Assume 0.05% Slope
Average Wet Season Water Elevation =	<u>67</u>	ft NGVD88	From Step No. 2
CH =	<u>2.295</u>	ft	

Step No. 6, Pond 3A - Accounting for Maintenance Berms

Desired Maintenance Berm Width = 20.00 ft

Length = L(top) + (2 * Berm Width) = 340 ft

Width = W(top) + (2 * Berm Width) = 199 ft

Pond Area Requirement = 1.55 ac

Increasing Pond Area by: 15% to account for preceding information being preliminary (range between 10 and 20 percent).

Total Pond Area Requirement = **1.78 ac**

Note: This estimate is for pond size only, further estimates for pond access and conveyance are site specific and should be added to the "Pond Area Requirement" estimated above.

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 3A

Subject: Pond Calculations

Step No. 7, Pond 3A - Permanent Pool Volume

PPV = RT*FR / CF	PPV =	4.99 Permanent Pool Volume (ac-ft)
FR = DA * C * R / WS	RT =	21 Residence Time (days)
Q = C * I * A	FR =	2.85 Average Flow Rate (ac-inches/day) = Q*12
I = R / (WS * CF)	Q =	0.24 Average Flow Rate (ac-ft/day)
	I =	0.0185 Rainfall Intensity (ft/day)
	DA =	15.78 Drainage Area to Pond (ac)
	C =	0.81 Runoff Coefficient (estimate)
	R =	34 Wet Season Normal Rainfall (in)
	WS =	153 Length of Wet Season June-October = 153 days
	CF =	12 Conversion Factor (12 in/ft)

Mean depth must be between 2 and 8 feet

Max depth must not exceed 12 feet below invert of bleed down device

Minimum Depth 5.48 ft

Littoral Zone Planting (Orange County Guidelines)	% of land above DHW landscaped	Littoral band width (ft)	% of shoreline established with native aquatic or semi-aquatic plant species
Pond Size < 2.5 AC	10	5	50
2.5 AC <= Pond Size <= 5 AC	5	5	35
Pond Size > 5 AC		5	20
If visible from ROW		6	

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 3A

Subject: Pond Calculations

Step No. 8, Pond - Cut/Fill Requirements

Elevation	Area
Seasonal High Water Table = <u>67.0</u> ft NGVD88	<u>0.84</u> ac
Existing Ground = <u>67.5</u> ft NGVD88	<u>0.88</u> ac
Peak Design Stage = <u>70.00</u> ft NGVD89	<u>1.10</u> ac
Freeboard = <u>1.00</u> ft	
Top of Berm = <u>71.00</u> ft NGVD88	<u>1.18</u> ac
Linear slope interpolation	<u>0.086</u> ac/ft of elevation

ICPR Pond Inlet Invert = 62.3 ft NGVD88

The minimum depth to the pond bottom is 6 FT in Orange County from Existing ground

Pipe Depth = <u>5.2</u> ft	
Additional Excavation = <u>0.8</u> ft	
Sediment Buffer = <u>0.5</u> ft	
Pond Bottom Elevation = <u>61</u> ft	<u>0.325</u> AC

Cut Volume	Fill Volume
<u>3.9217</u> ac-ft	Assuming a 2:1 rectangle at Top of Berm
<u>6327</u> cu-yd	W = <u>160.5</u> ft
	L = <u>320.9</u> ft
	Berm Width: <u>20</u> ft
	Perimeter = <u>1002.80</u> ft
	<u>1634.2</u> cu-yd

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 3A

Subject: Pond Calculations

Step No. 9, Pond - Water Quality Elevation

Basin(s)	Volume	
3	1.26	ac-ft
Total	<u>1.26</u>	ac-ft

	Elevation	Area
Seasonal High Water Table =	<u>67.0</u> ft NGVD88	<u>0.84</u> ac
Water Quality Depth=	<u>1.40</u> ft	<u>0.96</u> ac
Water Quality Volume=	<u>1.260</u> ac-ft	
Water Quality Elevation=	<u>68.4</u> ft NGVD88	
Peak Design Stage=	<u>70.0</u> ft NGVD89	
	Linear slope interpolation	<u>0.086</u> ac/ft of elevation

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 3B

Subject: Pond Calculations

Step No. 1, Pond 3B - Pond Type

Geotechnical analysis for the project took one boring within the limits of Pond 3B. The results are shown below.

Average Ground Surface Elevation =	<u>65.5 ft NAVD88</u>
Average Ground Surface Elevation at pond =	<u>65.0 ft NAVD88</u>
Seasonal High Water Table depth =	<u>0.5 ft</u>

Based upon the existing SHWT the pond will be a

Wet Pond or Dry Pond

Step No. 2, Pond 3B - Storage Height Estimate (based upon Average Wet Season Water Elevation)

The Average Wet Seasonal Water Elevation and the existing ground elevation is taken from the a combination of LiDAR and a wetland delineation (see Appendix). The Berm Elevation is assumed to be equal to the low elevation along a LiDAR cut Chuluota Road's centerline. Therefore the treatment volume and the peak attenuation volume are constrained to the following storage height (SH) or CH (See Step No. 5).

SH = Store Berm Elevation - Freeboard - Seasonal High Water Table Elevation

Existing Ground Elevation =	<u>65.5 ft NGVD88</u>
Berm Elevation =	71 ft NGVD88
Freeboard =	<u>1.00 ft</u>
Seasonal High Water Table EL =	<u>65 ft NGVD88</u>
SH =	<u>5.00 ft</u>

Note: Check CH (Step No. 6) before calculating pond configuration

Pond 3B would receive water from Basin 3.

Volume 3 =	<u>85,159.80 cu-ft</u>	=	<u>1.96 ac-ft</u>
Total =	<u>85,159.80 cu-ft</u>	=	<u>1.96 ac-ft</u>

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 3B

Subject: Pond Calculations

Step No. 3, Pond 3B - Pond Configuration

Use the formula for a rectangular box to determine the water surface area of a pond with vertical sides.

Volume = Length * Width * Height

Where: V = Volume from Step No. 3
 L = Length of Pond
 W = Width of Pond
 H = Height (Lesser Height SH or CH from Step No.'s 2 or 6)

Assume that the width (W) is half of the Length (L), therefore $L/W = 2$

$$\text{Volume} = \underline{85,160} \text{ cu-ft} = L * W * H \text{ where } L = 2 * W$$

$$H = \underline{4.295} \text{ ft}$$

$$W = \underline{100} \text{ ft}$$

$$L = \underline{199} \text{ ft}$$

Step No. 4, Pond 3B - Accounting for the Pond Side Slopes

Pond Side Slope assumed to be 1:4

$$L(\text{top}) = 2 * (\text{SH} * \text{Side Slope}) + L$$

$$W(\text{top}) = 2 * (\text{SH} * \text{Side Slope}) + W$$

Where: L(top) = Length of the pond at the top slope
 W(top) = Width of the pond at top slope
 L = Length of Pond from Step No. 4
 W = Width of Pond from Step No. 4

$$L(\text{top}) = \underline{233} \text{ ft}$$

$$W(\text{top}) = \underline{134} \text{ ft}$$

$$\text{Area @ Peak Design Stage} = L(\text{top}) * W(\text{top})$$

$$\text{Area @ Peak Design Stage} = \underline{0.72} \text{ ac}$$

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 3B

Subject: Pond Calculations

Step No. 5, Pond 3B - Accounting for Energy Loss

Urban section with closed storm sewer system therefore 10-year attenuation constrained to the following height (CH).

CH = Low point in gutter - Clearance - Estimated Energy Loss - Average Wet Season Water Elevation

Low Point in the gutter =	70.395	ft NGVD88	Assume crown at low point will be raised to 71 FT NAVD88. Proposed gutter at 0.605 FT below crown.
Distance from Low Point to Pond =	100	ft	
Clearance =	1.00	ft	Assume Minor Losses
Estimated Energy Loss =	0.1	ft	Assume 0.05% Slope
Average Wet Season Water Elevation =	65	ft NGVD88	From Step No. 2
CH =	4.295	ft	

Step No. 6, Pond 3B - Accounting for Maintenance Berms

Desired Maintenance Berm Width = 20.00 ft

Length = L(top) + (2 * Berm Width) = 273 ft

Width = W(top) + (2 * Berm Width) = 174 ft

Pond Area Requirement = 1.09 ac

Increasing Pond Area by: 15% to account for preceding information being preliminary (range between 10 and 20 percent).

Total Pond Area Requirement = **1.25 ac**

Note: This estimate is for pond size only, further estimates for pond access and conveyance are site specific and should be added to the "Pond Area Requirement" estimated above.

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 3B

Subject: Pond Calculations

Step No. 7, Pond 3B - Permanent Pool Volume

PPV = RT*FR / CF	PPV =	5.41 Permanent Pool Volume (ac-ft)
FR = DA * C * R / WS	RT =	21 Residence Time (days)
Q = C * I * A	FR =	3.09 Average Flow Rate (ac-inches/day) = Q*12
I = R / (WS * CF)	Q =	0.26 Average Flow Rate (ac-ft/day)
	I =	0.0185 Rainfall Intensity (ft/day)
	DA =	15.40 Drainage Area to Pond (ac)
	C =	0.90 Runoff Coefficient (estimate)
	R =	34 Wet Season Normal Rainfall (in)
	WS =	153 Length of Wet Season ,June-October = 153 days
	CF =	12 Conversion Factor (12 in/ft)

Mean depth must be between 2 and 8 feet

Max depth must not exceed 12 feet below invert of bleed down device

Minimum Depth 11.89 ft

Littoral Zone Planting (Orange County Guidelines)	% of land above DHW landscaped	Littoral band width (ft)	% of shoreline established with native aquatic or semi-aquatic plant species
Pond Size < 2.5 AC	10	5	50
2.5 AC <= Pond Size <= 5 AC	5	5	35
Pond Size > 5 AC		5	20
If visible from ROW		6	

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 3B

Subject: Pond Calculations

Step No. 8, Pond - Cut/Fill Requirements

Elevation	Area
Seasonal High Water Table = <u>65.0</u> ft NGVD88	<u>0.41</u> ac
Existing Ground = <u>65.5</u> ft NGVD88	<u>0.44</u> ac
Peak Design Stage = <u>70.00</u> ft NGVD89	<u>0.72</u> ac
Freeboard = <u>1.00</u> ft	
Top of Berm = <u>71.00</u> ft NGVD88	<u>0.78</u> ac
Linear slope interpolation	<u>0.063</u> ac/ft

ICPR Pond Inlet Invert = 62.3 ft NGVD88

The minimum depth to the pond bottom is 6 FT in Orange County from Existing ground

Pipe Depth = <u>3.2</u> ft	
Additional Excavation = <u>2.8</u> ft	
Sediment Buffer = <u>0.5</u> ft	
Pond Bottom Elevation = <u>59</u> ft	<u>0.030</u> ac

Cut Volume

1.5146 ac-ft

2443.6 cu-yd

Fill Volume

Assuming a 2:1 rectangle at Top of Berm

W = 130.4 ft

L = 260.8 ft

Berm Width : 20 ft

Perimeter = 822.27 ft

1583.6 cu-yd

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 3C

Subject: Pond Calculations

Step No. 1, Pond 3C - Pond Type

Geotechnical analysis for the project took one boring within the limits of Pond 3A and one at Pond 3B. The results are shown below.

	3A	3B
Average Ground Surface Elevation =	67.5	65.5 ft NAVD88
Average Ground Surface Elevation at pond =	67.0	65.0 ft NAVD88
Seasonal High Water Table depth =	0.5	0.5 ft

Based upon the existing SHWT the pond will be a

Wet Pond or Dry Pond

Step No. 2, Pond 3C - Storage Height Estimate (based upon Average Wet Season Water Elevation)

The Average Wet Seasonal Water Elevation and the existing ground elevation is taken from the a combination of LiDAR and a wetland delineation (see Appendix). The Berm Elevation is assumed to be equal to the low elevation along a LiDAR cut Chuluota Road's centerline. Therefore the treatment volume and the peak attenuation volume are constrained to the following storage height (SH) or CH (See Step No. 5).

SH = Store Berm Elevation - Freeboard - Seasonal High Water Table Elevation

Existing Ground Elevation =	<u>65.5</u> ft NGVD88
Berm Elevation =	69.2 ft NGVD88
Freeboard =	<u>1.00</u> ft
Seasonal High Water Table EL =	<u>67.0</u> ft NGVD88
SH =	<u>1.20</u> ft

Note: Check CH (Step No. 6) before calculating pond configuration

Pond 3C would receive water from Basins 1A, 1B, 2A, 2B, and 3.

For the purposes of estimating the required size of Pond 3C, the water quality and attenuation volumes are summed from the primary alternatives for Basins 1A, 1B, 2A, 2B, and 3.

Volume 1A =	<u>6,969.60</u> cu-ft	=	<u>0.16</u> ac-ft
Volume 1B =	<u>2,395.80</u> cu-ft	=	<u>0.06</u> ac-ft
Volume 2A =	<u>31,388.47</u> cu-ft	=	<u>0.72</u> ac-ft
Volume 2B =	<u>43,777.80</u> cu-ft	=	<u>1.01</u> ac-ft
Volume 3 =	<u>85,159.80</u> cu-ft	=	<u>1.96</u> ac-ft
Total =	<u>169,691.47</u> cu-ft	=	<u>3.90</u> ac-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 3C

Subject: Pond Calculations

Step No. 3, Pond 3C - Pond Configuration

Use the formula for a rectangular box to determine the water surface area of a pond with vertical sides.

Volume = Length * Width * Height

Where: V = Volume from Step No. 3
 L = Length of Pond
 W = Width of Pond
 H = Height (Lesser Height SH or CH from Step No.'s 2 or 6)

Assume that the width (W) is half of the Length (L), therefore $L/W = 2$

$$\text{Volume} = \underline{169,691} \text{ cu-ft} = L * W * H \text{ where } L = 2 * W$$

$$H = \underline{1.2} \text{ ft}$$

$$W = \underline{266} \text{ ft}$$

$$L = \underline{532} \text{ ft}$$

Step No. 4, Pond 3C - Accounting for the Pond Side Slopes

Pond Side Slope assumed to be 1:4

$$L(\text{top}) = 2 * (\text{SH} * \text{Side Slope}) + L$$

$$W(\text{top}) = 2 * (\text{SH} * \text{Side Slope}) + W$$

Where: L(top) = Length of the pond at the top slope
 W(top) = Width of the pond at top slope
 L = Length of Pond from Step No. 4
 W = Width of Pond from Step No. 4

$$L(\text{top}) = \underline{541} \text{ ft}$$

$$W(\text{top}) = \underline{276} \text{ ft}$$

$$\text{Area @ Peak Design Stage} = L(\text{top}) * W(\text{top})$$

$$\text{Area @ Peak Design Stage} = \underline{3.42} \text{ ac}$$

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 3C

Subject: Pond Calculations

Step No. 5, Pond 3C - Accounting for Energy Loss

Urban section with closed storm sewer system therefore 10-year attenuation constrained to the following height (CH).

CH = Low point in gutter - Clearance - Estimated Energy Loss - Average Wet Season Water Elevation

Low Point in the gutter =	69.395	ft NGVD88	Assume crown at low point will be raised to 70 FT NAVD88. Proposed gutter at 0.605 FT below crown.
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Distance from Low Point to Pond =	<u>100</u>	ft	
Clearance =	<u>1.00</u>	ft	Assume Minor Losses
Estimated Energy Loss =	<u>0.1</u>	ft	Assume 0.05% Slope
Average Wet Season Water Elevation =	<u>67.0</u>	ft NGVD88	From Step No. 2
CH =	<u>1.295</u>	ft	

Step No. 6, Pond 3C - Accounting for Maintenance Berms, Freeboard, and Tie-downs

Desired Maintenance Berm Width =	<u>20.00</u>	ft	
Freeboard Buffer Width =	<u>4.00</u>	ft	all sides
Top of Berm Elevation =	69.2	ft	
Existing Ground Elevation =	65.5	ft	
Tie Down Buffer Width =	<u>14.80</u>	ft	all sides
Additional Buffer Width =	<u>5.00</u>	ft	all sides

Length = L(top) + 2 * (Berm Width + Tie Down Buffer Width + Freeboard Buffer Width + Additional Buffer Width) = 629.01 ft

Width = W(top) + 2 * (Berm Width + Tie Down Buffer Width + Freeboard Buffer Width + Additional Buffer Width) = 363 ft

Pond Area Requirement = 5.24 ac

Increasing Pond Area by: 15% to account for preceding information being preliminary (range between 10 and 20 percent).

Total Pond Area Requirement = **6.03 ac**

Note: This estimate is for pond size only, further estimates for pond access and conveyance are site specific and should be added to the "Pond Area Requirement" estimated above.

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 3B

Subject: Pond Calculations

Step No. 9, Pond - Water Quality Elevation

Basin(s)	Volume
3	<u>1.22</u> ac-ft
Total	<u>1.22</u> ac-ft

Elevation	Area
Seasonal High Water Table = <u>65.0</u> ft NGVD88	<u>0.41</u> ac
Water Quality Depth= <u>2.52</u> ft	<u>0.56</u> ac
Water Quality Volume= <u>1.220</u> ac-ft	
Water Quality Elevation= <u>67.5</u> ft NGVD88	
Peak Design Stage= <u>70.0</u> ft NGVD89	
Linear slope interpolation	<u>0.063</u> ac/ft of elevation

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 4A

Subject: Pond Calculations

Step No. 1, Pond 4A - Pond Type

Geotechnical analysis for the project took one boring within the limits of Pond 4A. The results are shown below.

Average Ground Surface Elevation at pond =	<u>67</u> ft NAVD88
Seasonal High Water Table Elevation =	<u>64.8</u> ft NAVD88
Seasonal High Water Table depth =	<u>2.2</u> ft

Based upon the existing SHWT the pond will be a

Wet Pond or Dry Pond

Step No. 2, Pond 4A - Storage Height Estimate (based upon Average Wet Season Water Elevation)

The Average Wet Seasonal Water Elevation and the existing ground elevation is taken from the geotechnical information. The Berm Elevation is assumed to be equal to the low elevation along Lake Pickett Road. Therefore the treatment volume and the peak attenuation volume are constrained to the following storage height (SH) or CH (See Step No. 5).

SH = Store Berm Elevation - Freeboard - Seasonal High Water Table Elevation

Existing Ground Elevation =	<u>67</u> ft NGVD88
Berm Elevation =	68 ft NGVD88
Freeboard =	<u>1.00</u> ft
Seasonal High Water Table EL =	<u>64.8</u> ft NGVD88
SH =	<u>2.20</u> ft

Note: Check CH (Step No. 6) before calculating pond configuration

Pond 4A would receive water from 4-200, 4-300, and 4-400.

Volume 4-400 =	<u>21,997.80</u> cu-ft	=	<u>0.51</u> ac-ft
Volume 4-300 =	<u>9,365.40</u> cu-ft	=	<u>0.22</u> ac-ft
Volume 4-200 =	<u>1,960.20</u> cu-ft	=	<u>0.05</u> ac-ft
Total =	<u>33,323.40</u> cu-ft	=	<u>0.77</u> ac-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 4A

Subject: Pond Calculations

Step No. 3, Pond 4A - Pond Configuration

Use the formula for a rectangular box to determine the water surface area of a pond with vertical sides.

Volume = Length * Width * Height

Where: V = Volume from Step No. 3
 L = Length of Pond
 W = Width of Pond
 H = Height (Lesser Height SH or CH from Step No.'s 2 or 6)

Assume that the width (W) is half of the Length (L), therefore $L/W = 2$

$$\text{Volume} = \underline{33,323} \text{ cu-ft} = L * W * H \text{ where } L = 2 * W$$

$$H = \underline{2.200} \text{ ft}$$

$$W = \underline{87} \text{ ft}$$

$$L = \underline{174} \text{ ft}$$

Step No. 4, Pond 4A - Accounting for the Pond Side Slopes

Pond Side Slope assumed to be 1:4

$$L(\text{top}) = 2 * (\text{SH} * \text{Side Slope}) + L$$

$$W(\text{top}) = 2 * (\text{SH} * \text{Side Slope}) + W$$

Where: L(top) = Length of the pond at the top slope
 W(top) = Width of the pond at top slope
 L = Length of Pond from Step No. 4
 W = Width of Pond from Step No. 4

$$L(\text{top}) = \underline{192} \text{ ft}$$

$$W(\text{top}) = \underline{105} \text{ ft}$$

$$\text{Area @ Peak Design Stage} = L(\text{top}) * W(\text{top})$$

$$\text{Area @ Peak Design Stage} = \underline{0.46} \text{ ac}$$

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 4A

Subject: Pond Calculations

Step No. 5, Pond 4A - Accounting for Energy Loss

Urban section with closed storm sewer system therefore 10-year attenuation constrained to the following height (CH).

CH = Low point in gutter - Clearance - Estimated Energy Loss - Average Wet Season Water Elevation

Low Point in the gutter =	<u>72.395</u>	ft NGVD88	Crown at low point is 73 FT NAVD88.
Distance from Low Point to Pond =	<u>100</u>	ft	Proposed gutter at 0.605 FT below crown.
Clearance =	<u>1.00</u>	ft	Assume Minor Losses
Estimated Energy Loss =	<u>0.1</u>	ft	Assume 0.05% Slope
Average Wet Season Water Elevation =	<u>64.8</u>	ft NGVD88	From Step No. 2
CH =	<u>6.495</u>	ft	

Step No. 6, Pond 4A - Accounting for Maintenance Berms

Desired Maintenance Berm Width = 20.00 ft

Length = L(top) + (2 * Berm Width) = 232 ft

Width = W(top) + (2 * Berm Width) = 145 ft

Pond Area Requirement = 0.77 ac

Increasing Pond Area by: 15% to account for preceding information being preliminary (range between 10 and 20 percent).

Total Pond Area Requirement = 0.89 ac

Note: This estimate is for pond size only, further estimates for pond access and conveyance are site specific and should be added to the "Pond Area Requirement" estimated above.

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 4A

Subject: Pond Calculations

Step No. 7, Pond 4A - Permanent Pool Volume

PPV = RT*FR / CF	PPV =	10.21 Permanent Pool Volume (ac-ft)
FR = DA * C * R / WS	RT =	21 Residence Time (days)
Q = C * I * A	FR =	5.84 Average Flow Rate (ac-inches/day) = Q*12
I = R / (WS * CF)	Q =	0.49 Average Flow Rate (ac-ft/day)
	I =	0.0185 Rainfall Intensity (ft/day)
	DA =	44.77 Drainage Area to Pond (ac)
	C =	0.59 Runoff Coefficient (estimate)
	R =	34 Wet Season Normal Rainfall (in)
	WS =	153 Length of Wet Season June-October = 153 days
	CF =	12 Conversion Factor (12 in/ft)

Mean depth must be between 2 and 8 feet

Max depth must not exceed 12 feet below invert of bleed down device

Minimum Depth 29.38 ft

Littoral Zone Planting (Orange County Guidelines)	% of land above DHW landscaped	Littoral band width (ft)	% of shoreline established with native aquatic or semi-aquatic plant species
Pond Size < 2.5 AC	10	5	50
2.5 AC <= Pond Size <= 5 AC	5	5	35
Pond Size > 5 AC		5	20
If visible from ROW		6	

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 4A

Subject: Pond Calculations

Step No. 8, Pond - Cut/Fill Requirements

Elevation	Area
Seasonal High Water Table = <u>64.8</u> ft NGVD88	<u>0.35</u> ac
Existing Ground = <u>67</u> ft NGVD88	<u>0.46</u> ac
Peak Design Stage = <u>67.00</u> ft NGVD89	<u>0.46</u> ac
Freeboard = <u>1.00</u> ft	
Top of Berm = <u>68.00</u> ft NGVD88	<u>0.51</u> ac
Linear slope interpolation	<u>0.051</u> ac/ft of elevation

ICPR Pond Inlet Invert = 59.5 ft NGVD88

The minimum depth to the pond bottom is 6 FT in Orange County from Existing ground

Pipe Depth = <u>7.5</u> ft	
Additional Excavation = <u>0</u> ft	
Sediment Buffer = <u>0.5</u> ft	
Pond Bottom Elevation = <u>59</u> ft	<u>0.051</u> ac

Cut Volume

2.0448 ac-ft

3299 cu-yd

Fill Volume

Assuming a 2:1 rectangle at Top of Berm

W = 105.5 ft

L = 211.1 ft

Berm Width : 20 ft

Perimeter = 673.29 ft

847.9 cu-yd

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 4A

Subject: Pond Calculations

Step No. 9, Pond - Water Quality Elevation

Basin(s)	Volume	
4-200	0.02	ac-ft
4-300	0.14	ac-ft
4-400	0.29	ac-ft
Total	0.44	ac-ft

	Elevation	Area
Seasonal High Water Table =	<u>64.8</u> ft NGVD88	<u>0.35</u> ac
Water Quality Depth =	<u>1.17</u> ft	<u>0.41</u> ac
Water Quality Volume =	<u>0.440</u> ac-ft	
Water Quality Elevation =	<u>66.0</u> ft NGVD88	
Peak Design Stage =	<u>67.0</u> ft NGVD89	
	Linear slope interpolation	<u>0.051</u> ac/ft of elevation

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 4B

Subject: Pond Calculations

Step No. 1, Pond 4B - Pond Type

Geotechnical analysis for the project took one boring within the limits of Pond 4B. The results are shown below.

Average Ground Surface Elevation at pond = 73 ft NAVD88
 Seasonal High Water Table Elevation = 68.0 ft NAVD88
 Seasonal High Water Table depth = 5.0 ft

Based upon the existing SHWT the pond will be a

Wet Pond or Dry Pond

Step No. 2, Pond 4B - Storage Height Estimate (based upon Average Wet Season Water Elevation)

The Average Wet Seasonal Water Elevation and the existing ground elevation is taken from the geotechnical information. The Berm Elevation is assumed to be equal to the low elevation along a LiDAR cut Chuluota Road's centerline. Therefore the treatment volume and the peak attenuation volume are constrained to the following storage height (SH) or CH (See Step No. 5).

SH = Store Berm Elevation - Freeboard - Seasonal High Water Table Elevation

Existing Ground Elevation = 73 ft NGVD88
 Berm Elevation = 73 ft NGVD88
 Freeboard = 1.00 ft
 Seasonal High Water Table EL = 68 ft NGVD88
 SH = 4.00 ft

Note: Check CH (Step No. 6) before calculating pond configuration

Pond 4B would receive water from 4-200, 4-300, and 4-400.

Volume 4-400 =	<u>15,463.80</u> cu-ft	=	<u>0.36</u> ac-ft
Volume 4-300 =	<u>23,740.20</u> cu-ft	=	<u>0.55</u> ac-ft
Volume 4-200 =	<u>1,960.20</u> cu-ft	=	<u>0.05</u> ac-ft
Total =	<u>41,164.20</u> cu-ft	=	<u>0.95</u> ac-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 4B

Subject: Pond Calculations

Step No. 3, Pond 4B - Pond Configuration

Use the formula for a rectangular box to determine the water surface area of a pond with vertical sides.

Volume = Length * Width * Height

Where: V = Volume from Step No. 3
 L = Length of Pond
 W = Width of Pond
 H = Height (Lesser Height SH or CH from Step No.'s 2 or 6)

Assume that the width (W) is half of the Length (L), therefore $L/W = 2$

$$\text{Volume} = \underline{41,164} \text{ cu-ft} = L * W * H \text{ where } L = 2 * W$$

$$H = \underline{3.295} \text{ ft}$$

$$W = \underline{79} \text{ ft}$$

$$L = \underline{158} \text{ ft}$$

Step No. 4, Pond 4B - Accounting for the Pond Side Slopes

Pond Side Slope assumed to be 1:4

$$L(\text{top}) = 2 * (\text{SH} * \text{Side Slope}) + L$$

$$W(\text{top}) = 2 * (\text{SH} * \text{Side Slope}) + W$$

Where: L(top) = Length of the pond at the top slope
 W(top) = Width of the pond at top slope
 L = Length of Pond from Step No. 4
 W = Width of Pond from Step No. 4

$$L(\text{top}) = \underline{184} \text{ ft}$$

$$W(\text{top}) = \underline{105} \text{ ft}$$

Area @ Peak Design Stage = L(top) * W(top)

$$\text{Area @ Peak Design Stage} = \underline{0.45} \text{ ac}$$

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 4B

Subject: Pond Calculations

Step No. 5, Pond 4B - Accounting for Energy Loss

Urban section with closed storm sewer system therefore 10-year attenuation constrained to the following height (CH).

CH = Low point in gutter - Clearance - Estimated Energy Loss - Average Wet Season Water Elevation

Low Point in the gutter =	<u>72.395</u>	ft NGVD88	Road at low point is 73 FT NAVD88.
Distance from Low Point to Pond =	<u>100</u>	ft	Proposed gutter at 0.605 FT below crown.
Clearance =	<u>1.00</u>	ft	Assume Minor Losses
Estimated Energy Loss =	<u>0.1</u>	ft	Assume 0.05% Slope
Average Wet Season Water Elevation =	<u>68</u>	ft NGVD88	From Step No. 2
CH =	<u>3.295</u>	ft	

Step No. 6, Pond 4B - Accounting for Maintenance Berms

Desired Maintenance Berm Width = 20.00 ft

Length = L(top) + (2 * Berm Width) = 224 ft

Width = W(top) + (2 * Berm Width) = 145 ft

Pond Area Requirement = 0.75 ac

Increasing Pond Area by: 15% to account for preceding information being preliminary (range between 10 and 20 percent).

Total Pond Area Requirement = 0.86 ac

Note: This estimate is for pond size only, further estimates for pond access and conveyance are site specific and should be added to the "Pond Area Requirement" estimated above.

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 4B

Subject: Pond Calculations

Step No. 7, Pond 4B - Permanent Pool Volume

PPV = RT*FR / CF	PPV =	10.21 Permanent Pool Volume (ac-ft)
FR = DA * C * R / WS	RT =	21 Residence Time (days)
Q = C * I * A	FR =	5.84 Average Flow Rate (ac-inches/day) = Q*12
I = R / (WS * CF)	Q =	0.49 Average Flow Rate (ac-ft/day)
	I =	0.0185 Rainfall Intensity (ft/day)
	DA =	44.77 Drainage Area to Pond (ac)
	C =	0.59 Runoff Coefficient (estimate)
	R =	34 Wet Season Normal Rainfall (in)
	WS =	153 Length of Wet Season June-October = 153 days
	CF =	12 Conversion Factor (12 in/ft)

Mean depth must be between 2 and 8 feet

Max depth must not exceed 12 feet below invert of bleed down device

Minimum Depth 35.62 ft

Littoral Zone Planting (Orange County Guidelines)	% of land above DHW landscaped	Littoral band width (ft)	% of shoreline established with native aquatic or semi-aquatic plant species
Pond Size < 2.5 AC	10	5	50
2.5 AC <= Pond Size <= 5 AC	5	5	35
Pond Size > 5 AC		5	20
If visible from ROW		6	

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 4B

Subject: Pond Calculations

Step No. 8, Pond - Cut/Fill Requirements

Elevation	Area
Seasonal High Water Table = <u>68.0</u> ft NGVD88	<u>0.25</u> ac
Existing Ground = <u>73</u> ft NGVD88	<u>0.50</u> ac
Peak Design Stage = <u>72.00</u> ft NGVD89	<u>0.45</u> ac
Freeboard = <u>1.00</u> ft	
Top of Berm = <u>73.00</u> ft NGVD88	<u>0.50</u> ac
Linear slope interpolation	<u>0.050</u> ac/ft of elevation

ICPR Pond Inlet Invert = 65 ft NGVD88

The minimum depth to the pond bottom is 6 FT in Orange County from Existing ground

Pipe Depth = <u>8</u> ft	
Additional Excavation = <u>0</u> ft	
Sediment Buffer = <u>0.5</u> ft	
Pond Bottom Elevation = <u>64.5</u> ft	<u>0.073</u> ac

Cut Volume	Fill Volume
<u>2.4193</u> ac-ft	Assuming a 2:1 rectangle at Top of Berm
<u>3903.1</u> cu-yd	W = <u>103.9</u> ft
	L = <u>207.9</u> ft
	Berm Width: <u>20</u> ft
	Perimeter = <u>663.59</u> ft
	<u>0.0</u> cu-yd

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 4B

Subject: Pond Calculations

Step No. 9, Pond - Water Quality Elevation

Basin(s)	Volume	
4-200	0.02	ac-ft
4-300	0.20	ac-ft
4-400	0.23	ac-ft
Total	0.44	ac-ft

	Elevation	Area
Seasonal High Water Table =	<u>68.0</u> ft NGVD88	<u>0.25</u> ac
Water Quality Depth=	<u>1.54</u> ft	<u>0.32</u> ac
Water Quality Volume=	<u>0.440</u> ac-ft	
Water Quality Elevation=	<u>69.5</u> ft NGVD88	
Peak Design Stage=	<u>72.0</u> ft NGVD89	
	Linear slope interpolation	<u>0.050</u> ac/ft of elevation

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 4C

Subject: Pond Calculations

Step No. 1, Pond 4C - Pond Type

Geotechnical analysis for the project took one boring within the vicinity of Pond 4C, boring P-9 which was taken southwest of the Chuluota Road and Lake Pickett Road intersection. The results are shown below."

Average Ground Surface Elevation =	<u>71.9 ft NAVD88</u>
Average Ground Surface Elevation at pond =	<u>67.0 ft NAVD88</u>
Seasonal High Water Table depth =	<u>4.9 ft</u>

Based upon the existing SHWT the pond will be a

Wet Pond or Dry Pond

Step No. 2, Pond 4C - Storage Height Estimate (based upon Average Wet Season Water Elevation)

The Average Wet Seasonal Water Elevation and the existing ground elevation is taken from the a combination of LiDAR and a wetland delineation (see Appendix). The Berm Elevation is assumed to be equal to the low elevation along a LiDAR cut Chuluota Road's centerline. Therefore the treatment volume and the peak attenuation volume are constrained to the following storage height (SH) or CH (See Step No. 5).

SH = Store Berm Elevation - Freeboard - Seasonal High Water Table Elevation

Existing Ground Elevation =	<u>71.9 ft NGVD88</u>
Berm Elevation =	71.9 ft NGVD88
Freeboard =	<u>1.00 ft</u>
Seasonal High Water Table EL =	<u>67.0 ft NGVD88</u>
SH =	<u>3.90 ft</u>

Note: Check CH (Step No. 6) before calculating pond configuration

Pond 4C would receive water from 4-200, 4-300, and 4-400.

Volume 4-400 =	<u>15,463.80</u> cu-ft	=	<u>0.36</u> ac-ft
Volume 4-300 =	<u>23,740.20</u> cu-ft	=	<u>0.55</u> ac-ft
Volume 4-200 =	<u>1,960.20</u> cu-ft	=	<u>0.05</u> ac-ft
Total =	<u>41,164.20</u> cu-ft	=	<u>0.95</u> ac-ft

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 4C

Subject: Pond Calculations

Step No. 3, Pond 4C - Pond Configuration

Use the formula for a rectangular box to determine the water surface area of a pond with vertical sides.

Volume = Length * Width * Height

Where: V = Volume from Step No. 3
 L = Length of Pond
 W = Width of Pond
 H = Height (Lesser Height SH or CH from Step No.'s 2 or 6)

Assume that the width (W) is half of the Length (L), therefore $L/W = 2$

$$\text{Volume} = \underline{41,164} \text{ cu-ft} = L * W * H \text{ where } L = 2 * W$$

$$H = \underline{1.3} \text{ ft}$$

$$W = \underline{126} \text{ ft}$$

$$L = \underline{252} \text{ ft}$$

Step No. 4, Pond 4C - Accounting for the Pond Side Slopes

Pond Side Slope assumed to be 1:4

$$L(\text{top}) = 2 * (\text{SH} * \text{Side Slope}) + L$$

$$W(\text{top}) = 2 * (\text{SH} * \text{Side Slope}) + W$$

Where: L(top) = Length of the pond at the top slope
 W(top) = Width of the pond at top slope
 L = Length of Pond from Step No. 4
 W = Width of Pond from Step No. 4

$$L(\text{top}) = \underline{262} \text{ ft}$$

$$W(\text{top}) = \underline{136} \text{ ft}$$

$$\text{Area @ Peak Design Stage} = L(\text{top}) * W(\text{top})$$

$$\text{Area @ Peak Design Stage} = \underline{0.82} \text{ ac}$$

PROJECT: Chuluota Road Widening Conceptual Drainage Report

Pond No.: 4C

Subject: Pond Calculations

Step No. 5, Pond 4C - Accounting for Energy Loss

Urban section with closed storm sewer system therefore 10-year attenuation constrained to the following height (CH).

CH = Low point in gutter - Clearance - Estimated Energy Loss - Average Wet Season Water Elevation

Low Point in the gutter = 69.395 ft NGVD88

Assume crown at low point will be raised to 70 FT NAVD88. Proposed gutter at 0.605 FT below crown.

Distance from Low Point to Pond =	<u>100</u>	ft	
Clearance =	<u>1.00</u>	ft	Assume Minor Losses
Estimated Energy Loss =	<u>0.1</u>	ft	Assume 0.05% Slope
Average Wet Season Water Elevation =	<u>67.0</u>	ft NGVD88	From Step No. 2
CH =	<u>1.295</u>	ft	

Step No. 6, Pond 4C - Accounting for Maintenance Berms, Freeboard, and Tie-downs

Desired Maintenance Berm Width =	<u>20.00</u>	ft	
Freeboard Buffer Width =	<u>4.00</u>	ft	all sides
Top of Berm Elevation =	71.9	ft	
Existing Ground Elevation =	71.9	ft	
Tie Down Buffer Width =	<u>0.00</u>	ft	all sides
Additional Buffer Width =	<u>5.00</u>	ft	all sides
Length = L(top) + 2 * (Berm Width + Tie Down Buffer Width + Freeboard Buffer Width + Additional Buffer Width) =	<u>320.50</u>	ft	
Width = W(top) + 2 * (Berm Width + Tie Down Buffer Width + Freeboard Buffer Width + Additional Buffer Width) =	<u>194</u>	ft	

Pond Area Requirement = 1.43 ac

Increasing Pond Area by: 15% to account for preceding information being preliminary (range between 10 and 20 percent).

Total Pond Area Requirement = **1.64 ac**

Note: This estimate is for pond size only, further estimates for pond access and conveyance are site specific and should be added to the "Pond Area Requirement" estimated above.



Project: 20-01459-001 Chuluota Road

By: MWS Date: 15-Apr-22

Checked: _____ Date: _____

Time of Concentration (Tc) Calculations Method: Federal Highway Administration Kinematic Wave Formula

Basin: 4-300 Total Tc: 110.97 min

i 0.35 in/hr (FDOT IDF curve)

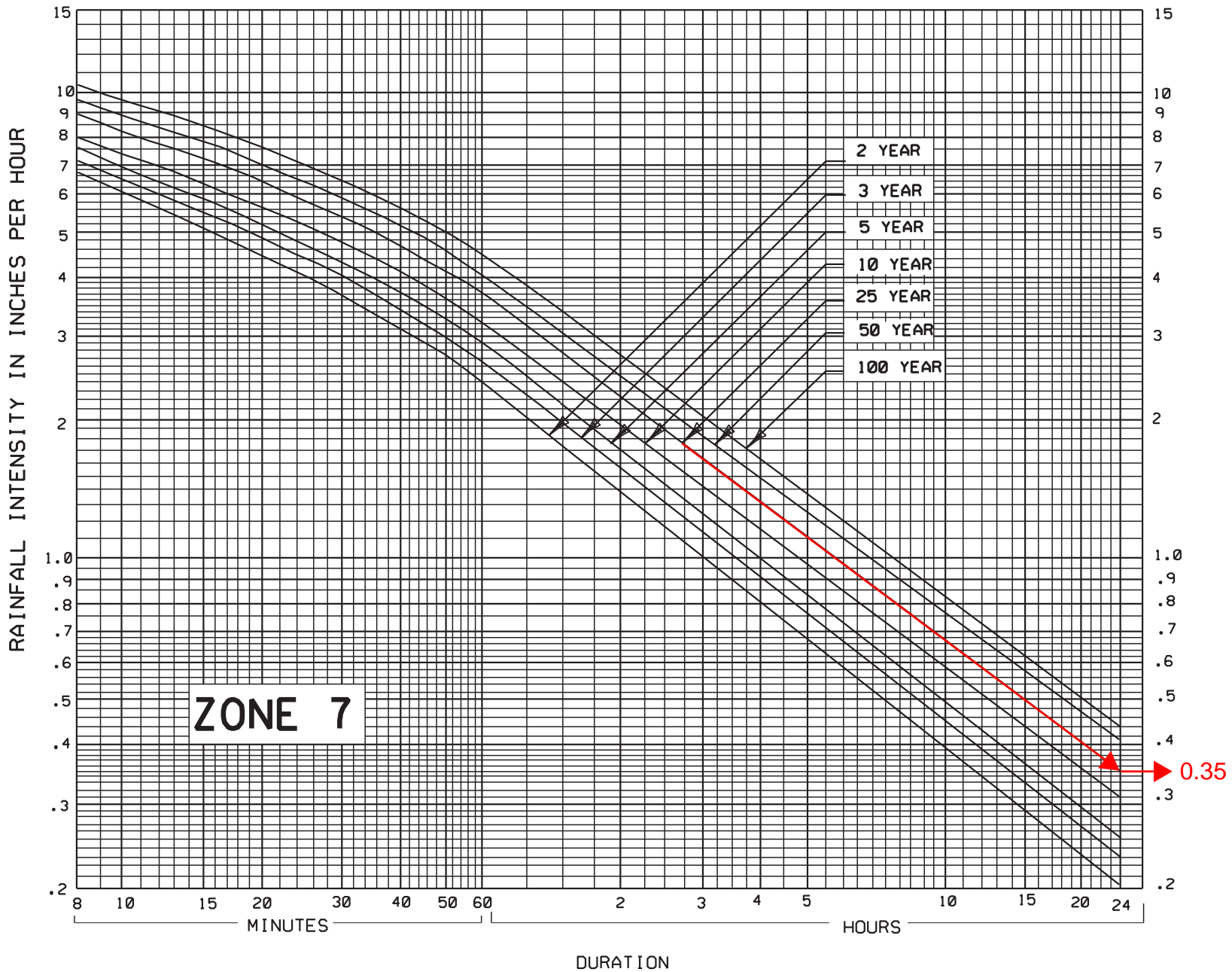
Section		
1	2	3

Sheet Flow	Length (ft)	L	825
$T_c = \frac{0.93L^{0.6}n^{0.6}}{i^{0.4}S^{0.3}}$	Elevation 1 (Upstream, ft)		73.1
	Elevation 2 (Downstream, ft)		68.5
	Slope (ft/ft)	S	0.00558
	Mannings n	n	0.13
	Tc (min)		110.97

Channel Flow	Length (ft)	
$T_c = \frac{L}{V}$	Elevation 1 (Upstream, ft)	
	Elevation 2 (Downstream, ft)	
	Slope (ft/ft)	S
	Mannings n	n
$V = \frac{1.49}{n} R^{2/3} S^{0.5}$	Area (sqft)	A
	Wetted Perimeter (ft)	P
	Hydraulic Radius	R
	Velocity (ft/s)	V
	Tc (hr)	
Tc (min)		

Assumptions

No recognizable channel, only a slight depression seen. All overland flow from the farthest point to the southeast corner of the basin. Wetland area is assumed to have a constant pool of 68.3 ft and treated as another pond. No actual channel from the wetland to the cross pipe.



RAINFALL INTENSITY-DURATION-FREQUENCY CURVES
ZONE 7

Simple Basin: Basin 1A

Scenario: Existing
Node: Basin 1 drop inlet
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 0.8200 ac
Curve Number: 89.4
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 1A Offsite

Scenario: Existing
Node: Manhole 1
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 0.3200 ac
Curve Number: 88.4
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 1B

Scenario: Existing
Node: NZA-0710
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs

Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 0.1400 ac
Curve Number: 91.6
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 1B Offsite

Scenario: Existing
Node: Basin 1 Catch Basin
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 0.2000 ac
Curve Number: 98.0
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 2A

Scenario: Existing
Node: NZA-0290
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 1.6000 ac
Curve Number: 89.8
% Impervious: 0.00
% DCIA: 0.00

% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 2B

Scenario: Existing
Node: NZA-0430
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 7.5200 ac
Curve Number: 87.9
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 2B Offsite

Scenario: Existing
Node: Schoolview Way Ponds (location of
proposed Pond 2A modification)
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 0.3800 ac
Curve Number: 80.0
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 3

Scenario: Existing
Node: NZA-0490
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 13.7500 ac
Curve Number: 86.9
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 3 Offsite

Scenario: Existing
Node: NZA-0470
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 0.9300 ac
Curve Number: 80.0
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 4-100

Scenario: Existing
Node: NZA-0540
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs

Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 1.6700 ac
Curve Number: 87.7
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 4-200

Scenario: Existing
Node: NZA-0530
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 0.1200 ac
Curve Number: 58.7
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 4-200 Offsite

Scenario: Existing
Node: NZA-0530
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 0.2800 ac
Curve Number: 66.4
% Impervious: 0.00
% DCIA: 0.00

% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 4-300

Scenario: Existing
Node: Existing Cypress Dome
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 1.1300 ac
Curve Number: 90.5
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 4-300 Offsite

Scenario: Existing
Node: Existing Cypress Dome
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 111.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 32.4400 ac
Curve Number: 61.7
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 4-400

Scenario: Existing
Node: NZA-0570
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 2.8500 ac
Curve Number: 83.4
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 4-400 Offsite

Scenario: Existing
Node: NZA-0550
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 5.8200 ac
Curve Number: 65.9
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Corner Lake Pond Area

Scenario: Existing
Node: Schoolview Way Ponds (location of
proposed Pond 2A modification)
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min

Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 3.5600 ac
Curve Number: 65.2
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Corner School Dr Proposed Intersection Area

Scenario: Existing
Node: Schoolview Way Ponds (location of
proposed Pond 2A modification)
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 0.3700 ac
Curve Number: 80.0
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Corner School ERP27857-1 DA-1

Scenario: Existing
Node: Schoolview Way Ponds (location of
proposed Pond 2A modification)
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 14.8600 ac

Curve Number: 86.6
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Corner School ERP27857-1 DA-2

Scenario: Existing
Node: Corner School Pond 2
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 16.4000 ac
Curve Number: 87.5
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Corner School ERP27857-1 DA-3

Scenario: Existing
Node: Schoolview Way Ponds (location of
proposed Pond 2A modification)
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 4.3100 ac
Curve Number: 85.9
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Proposed Pond 1A

Scenario: Existing
 Node: NZA-0710
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 20.0000 min
 Max Allowable Q: 0.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: UH256
 Peaking Factor: 256.0
 Area: 0.4000 ac
 Curve Number: 77.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment: Assumed Tc of flow through the woods

Simple Basin: Proposed Pond 2B

Scenario: Existing
 Node: Existing Wetland Buffer
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 20.0000 min
 Max Allowable Q: 0.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: UH256
 Peaking Factor: 256.0
 Area: 1.3000 ac
 Curve Number: 77.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment: Assumed Tc of flow through the woods

Simple Basin: Proposed Pond 3A

Scenario: Existing

Node: Corner Lake Wetland
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 20.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 1.1000 ac
Curve Number: 77.0
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment: Assumed Tc of flow through the woods

Simple Basin: Proposed Pond 3B

Scenario: Existing
Node: Corner Lake Wetland
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 20.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 0.7200 ac
Curve Number: 77.0
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment: Assumed Tc of flow through the woods

Simple Basin: Proposed Pond 4A

Scenario: Existing
Node: NZA-0550
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 111.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256

Peaking Factor: 256.0
 Area: 0.4600 ac
 Curve Number: 80.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment: Tc estimated as similar to Basin 4-300 Offsite

Simple Basin: Basin 1A

Scenario: Proposed - 1 Primary
 Node: Basin 1 drop inlet
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 10.0000 min
 Max Allowable Q: 0.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: UH256
 Peaking Factor: 256.0
 Area: 0.8200 ac
 Curve Number: 94.3
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin: Basin 1A Offsite

Scenario: Proposed - 1 Primary
 Node: Manhole 1
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 10.0000 min
 Max Allowable Q: 0.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: UH256
 Peaking Factor: 256.0
 Area: 0.3200 ac
 Curve Number: 88.4
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin: Basin 1B

Scenario: Proposed - 1 Primary
Node: Basin 1 Catch Basin
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 0.1400 ac
Curve Number: 98.0
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 1B Offsite

Scenario: Proposed - 1 Primary
Node: Basin 1 Catch Basin
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 0.2000 ac
Curve Number: 98.0
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 2A

Scenario: Proposed - 1 Primary
Node: NZA-0290
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 1.6000 ac
Curve Number: 95.4
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 2B

Scenario: Proposed - 1 Primary
Node: NZA-0600
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 7.5200 ac
Curve Number: 92.7
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 2B Offsite

Scenario: Proposed - 1 Primary
Node: Schoolview Way Ponds (location of
proposed Pond 2A modification)
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs

Time Shift: 0.0000 hr
 Unit Hydrograph: UH256
 Peaking Factor: 256.0
 Area: 0.3800 ac
 Curve Number: 80.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin: Basin 3

Scenario: Proposed - 1 Primary
 Node: NZA-0490
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 10.0000 min
 Max Allowable Q: 0.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: UH256
 Peaking Factor: 256.0
 Area: 13.7500 ac
 Curve Number: 91.1
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin: Basin 3 Offsite

Scenario: Proposed - 1 Primary
 Node: NZA-0470
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 10.0000 min
 Max Allowable Q: 0.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: UH256
 Peaking Factor: 256.0
 Area: 0.9300 ac
 Curve Number: 80.0
 % Impervious: 0.00
 % DCIA: 0.00

% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 4-100

Scenario: Proposed - 1 Primary
Node: NZA-0540
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 1.6700 ac
Curve Number: 87.7
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 4-200

Scenario: Proposed - 1 Primary
Node: NZA-0530
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 0.1200 ac
Curve Number: 83.3
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 4-200 Offsite

Scenario: Proposed - 1 Primary
 Node: NZA-0530
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 10.0000 min
 Max Allowable Q: 0.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: UH256
 Peaking Factor: 256.0
 Area: 0.2800 ac
 Curve Number: 66.4
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin: Basin 4-300

Scenario: Proposed - 1 Primary
 Node: Existing Cypress Dome
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 10.0000 min
 Max Allowable Q: 0.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: UH256
 Peaking Factor: 256.0
 Area: 1.1300 ac
 Curve Number: 97.7
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin: Basin 4-300 Offsite

Scenario: Proposed - 1 Primary
 Node: Existing Cypress Dome
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 111.0000 min
 Max Allowable Q: 0.00 cfs

Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 32.4400 ac
Curve Number: 61.7
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 4-400

Scenario: Proposed - 1 Primary
Node: NZA-0570
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 2.8500 ac
Curve Number: 87.9
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 4-400 Offsite

Scenario: Proposed - 1 Primary
Node: NZA-0550
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 5.8200 ac
Curve Number: 65.9
% Impervious: 0.00
% DCIA: 0.00

% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Corner Lake Pond Area

Scenario: Proposed - 1 Primary
Node: Schoolview Way Ponds (location of
proposed Pond 2A modification)
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 3.5600 ac
Curve Number: 68.8
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Corner School Dr Proposed Intersection Area

Scenario: Proposed - 1 Primary
Node: Schoolview Way Ponds (location of
proposed Pond 2A modification)
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 0.3700 ac
Curve Number: 95.6
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Corner School ERP27857-1 DA-1

Scenario: Proposed - 1 Primary
Node: Schoolview Way Ponds (location of
proposed Pond 2A modification)
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 14.8600 ac
Curve Number: 86.6
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Corner School ERP27857-1 DA-2

Scenario: Proposed - 1 Primary
Node: Schoolview Way Ponds (location of
proposed Pond 2A modification)
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 16.4000 ac
Curve Number: 87.5
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Corner School ERP27857-1 DA-3

Scenario: Proposed - 1 Primary
Node: Corner School Pond 2
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number

Time of Concentration: 10.0000 min
 Max Allowable Q: 0.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: UH256
 Peaking Factor: 256.0
 Area: 4.3100 ac
 Curve Number: 85.9
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin: Proposed Pond 3A

Scenario: Proposed - 1 Primary
 Node: Pond 3A
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 10.0000 min
 Max Allowable Q: 0.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: UH256
 Peaking Factor: 256.0
 Area: 1.1000 ac
 Curve Number: 100.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin: Proposed Pond 4A

Scenario: Proposed - 1 Primary
 Node: Pond 4A
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 10.0000 min
 Max Allowable Q: 0.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: UH256
 Peaking Factor: 256.0
 Area: 0.4600 ac
 Curve Number: 100.0

% Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin: Basin 1A

Scenario: Proposed - 2 Alternate
 Node: Basin 1 drop inlet
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 10.0000 min
 Max Allowable Q: 0.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: UH256
 Peaking Factor: 256.0
 Area: 0.8200 ac
 Curve Number: 94.3
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin: Basin 1A Offsite

Scenario: Proposed - 2 Alternate
 Node: Manhole 1
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 10.0000 min
 Max Allowable Q: 0.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: UH256
 Peaking Factor: 256.0
 Area: 0.3200 ac
 Curve Number: 88.4
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin: Basin 1B

Scenario: Proposed - 2 Alternate
Node: Basin 1 Catch Basin
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 0.1400 ac
Curve Number: 98.0
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 1B Offsite

Scenario: Proposed - 2 Alternate
Node: Basin 1 Catch Basin
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 0.2000 ac
Curve Number: 98.0
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 2A

Scenario: Proposed - 2 Alternate
Node: NZA-0290
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs

Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 1.6000 ac
Curve Number: 95.4
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 2B

Scenario: Proposed - 2 Alternate
Node: NZA-0600
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 7.5200 ac
Curve Number: 92.7
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 2B Offsite

Scenario: Proposed - 2 Alternate
Node: Schoolview Way Ponds (location of
proposed Pond 2A modification)
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 0.3800 ac
Curve Number: 80.0
% Impervious: 0.00

% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 3

Scenario: Proposed - 2 Alternate
Node: NZA-0490
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 13.7500 ac
Curve Number: 91.1
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 3 Offsite

Scenario: Proposed - 2 Alternate
Node: NZA-0470
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 0.9300 ac
Curve Number: 80.0
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 4-100

Scenario: Proposed - 2 Alternate
Node: NZA-0540
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 1.6700 ac
Curve Number: 87.7
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 4-200

Scenario: Proposed - 2 Alternate
Node: NZA-0530
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 0.1200 ac
Curve Number: 83.3
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 4-200 Offsite

Scenario: Proposed - 2 Alternate
Node: NZA-0530
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs

Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 0.2800 ac
Curve Number: 66.4
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 4-300

Scenario: Proposed - 2 Alternate
Node: Existing Cypress Dome
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 1.1300 ac
Curve Number: 97.7
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 4-300 Offsite

Scenario: Proposed - 2 Alternate
Node: Existing Cypress Dome
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 111.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 32.4400 ac
Curve Number: 62.5
% Impervious: 0.00
% DCIA: 0.00

% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 4-400

Scenario: Proposed - 2 Alternate
Node: NZA-0570
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 2.8500 ac
Curve Number: 87.9
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 4-400 Offsite

Scenario: Proposed - 2 Alternate
Node: NZA-0550
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 5.8200 ac
Curve Number: 65.9
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Corner Lake Pond Area

Scenario: Proposed - 2 Alternate
 Node: Schoolview Way Ponds (location of
 proposed Pond 2A modification)
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 10.0000 min
 Max Allowable Q: 0.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: UH256
 Peaking Factor: 256.0
 Area: 3.5600 ac
 Curve Number: 65.2
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin: Corner School Dr Proposed Intersection Area

Scenario: Proposed - 2 Alternate
 Node: Schoolview Way Ponds (location of
 proposed Pond 2A modification)
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 10.0000 min
 Max Allowable Q: 0.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: UH256
 Peaking Factor: 256.0
 Area: 0.3700 ac
 Curve Number: 80.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin: Corner School ERP27857-1 DA-1

Scenario: Proposed - 2 Alternate
 Node: Schoolview Way Ponds (location of
 proposed Pond 2A modification)
 Hydrograph Method: NRCS Unit Hydrograph

Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 14.8600 ac
Curve Number: 86.6
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Corner School ERP27857-1 DA-2

Scenario: Proposed - 2 Alternate
Node: Corner School Pond 2
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 16.4000 ac
Curve Number: 87.5
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Corner School ERP27857-1 DA-3

Scenario: Proposed - 2 Alternate
Node: Schoolview Way Ponds (location of
proposed Pond 2A modification)
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0

Area: 4.3100 ac
Curve Number: 85.9
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Proposed Pond 1A

Scenario: Proposed - 2 Alternate
Node: Pond 1A
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 0.4000 ac
Curve Number: 100.0
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Proposed Pond 2B

Scenario: Proposed - 2 Alternate
Node: Pond 2B
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 1.3000 ac
Curve Number: 100.0
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Proposed Pond 3B

Scenario: Proposed - 2 Alternate
 Node: Pond 3B
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 10.0000 min
 Max Allowable Q: 0.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: UH256
 Peaking Factor: 256.0
 Area: 0.7200 ac
 Curve Number: 100.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Node: Basin 1 Catch Basin

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 66.96 ft
 Warning Stage: 69.30 ft

Stage [ft]	Area [ac]	Area [ft2]
66.96	0.0100	436
69.30	0.0100	436

Comment: Assumed the height was the same as the other catch basin across Chuluota Rd.

Node: Basin 1 drop inlet

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 69.62 ft
 Warning Stage: 69.72 ft

Stage [ft]	Area [ac]	Area [ft2]
69.62	0.0100	436
69.72	0.0100	436

Comment: Upper elevation from LIDAR

Node: Corner Lake Wetland

Scenario: Existing
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 65.00 ft
Warning Stage: 68.30 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	65.00
0	0	0	24.0000	65.00

Comment:

Node: Corner School Pond 2

Scenario: Existing
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 66.50 ft
Warning Stage: 69.50 ft

Stage [ft]	Area [ac]	Area [ft2]
66.50	2.0800	90605
68.00	2.3300	101495
69.50	2.8600	124582
70.50	3.0400	132422

Comment:

Node: Existing Cypress Dome

Scenario: Existing
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 68.30 ft
Warning Stage: 70.00 ft

Stage [ft]	Area [ac]	Area [ft2]
68.30	7.0000	304920
71.00	11.0000	479160

Comment: Approximated from LiDAR

Node: Existing Wetland Buffer

Scenario: Existing
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 63.72 ft
Warning Stage: 69.07 ft

Stage [ft]	Area [ac]	Area [ft2]
66.82	0.1220	5314
67.32	0.3860	16814
69.32	2.6820	116828
70.00	2.6820	116828

Comment:

Node: Lake Pickett Rd Stormdrain

Scenario: Existing
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 65.76 ft
Warning Stage: 71.50 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	65.76
0	0	0	24.0000	65.76

Comment:

Node: Manhole 1

Scenario: Existing
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 68.49 ft
Warning Stage: 71.87 ft

Stage [ft]	Area [ac]	Area [ft2]
68.49	0.0100	436
71.87	0.0100	436

Comment:

Node: NZA-0290

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 70.00 ft
 Warning Stage: 72.00 ft

Stage [ft]	Area [ac]	Area [ft2]
70.00	0.0100	436
72.00	0.0100	436

Comment:

Node: NZA-0300

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 70.00 ft
 Warning Stage: 71.00 ft

Stage [ft]	Area [ac]	Area [ft2]
70.00	0.0100	436
71.00	0.0100	436

Comment:

Node: NZA-0310

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 69.50 ft
 Warning Stage: 71.50 ft

Stage [ft]	Area [ac]	Area [ft2]
69.50	0.0100	436
71.50	0.0100	436

Comment:

Node: NZA-0320

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 69.60 ft
 Warning Stage: 72.00 ft

Stage [ft]	Area [ac]	Area [ft2]
69.60	0.0100	436
72.00	0.0100	436

Comment:

Node: NZA-0330

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 69.20 ft
 Warning Stage: 71.20 ft

Stage [ft]	Area [ac]	Area [ft2]
69.20	0.0100	436
71.20	0.0100	436

Comment:

Node: NZA-0340

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 68.90 ft
 Warning Stage: 69.30 ft

Stage [ft]	Area [ac]	Area [ft2]
68.90	0.0100	436
69.30	0.0100	436

Comment:

Node: NZA-0350

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 67.30 ft
 Warning Stage: 70.30 ft

Stage [ft]	Area [ac]	Area [ft2]
67.30	0.0100	436
70.30	0.0100	436

Comment:

Node: NZA-0430

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 70.10 ft
 Warning Stage: 71.40 ft

Stage [ft]	Area [ac]	Area [ft2]
70.10	0.0100	436
71.40	0.0100	436

Comment:

Node: NZA-0440

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 70.00 ft
 Warning Stage: 70.70 ft

Stage [ft]	Area [ac]	Area [ft2]
70.00	0.0100	436
70.70	0.0100	436

Comment:

Node: NZA-0450

Scenario: Existing
 Type: Stage/Area

Base Flow: 0.00 cfs
 Initial Stage: 67.00 ft
 Warning Stage: 67.30 ft

Stage [ft]	Area [ac]	Area [ft2]
67.00	0.0100	436
67.30	0.0100	436

Comment: Assumed elevation invert, other based on the channel elevation

Node: NZA-0470

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 65.20 ft
 Warning Stage: 68.42 ft

Stage [ft]	Area [ac]	Area [ft2]
65.20	0.0100	436
68.42	0.0100	436

Comment: Based on LiDAR

Node: NZA-0480

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 66.90 ft
 Warning Stage: 69.60 ft

Stage [ft]	Area [ac]	Area [ft2]
66.90	0.0100	436
69.60	0.0100	436

Comment:

Node: NZA-0490

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 66.90 ft
 Warning Stage: 69.60 ft

Stage [ft]	Area [ac]	Area [ft2]
66.90	0.0100	436
69.60	0.0100	436

Comment:

Node: NZA-0530

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 69.00 ft
 Warning Stage: 70.00 ft

Stage [ft]	Area [ac]	Area [ft2]
69.00	0.0100	436
70.00	0.0100	436

Comment: Assumed elevations

Node: NZA-0540

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 69.00 ft
 Warning Stage: 71.00 ft

Stage [ft]	Area [ac]	Area [ft2]
69.00	0.0100	436
71.00	0.0100	436

Comment: Assumed elevations

Node: NZA-0550

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 61.00 ft
 Warning Stage: 74.00 ft

Stage [ft]	Area [ac]	Area [ft2]
61.00	0.0100	436

Stage [ft]	Area [ac]	Area [ft2]
74.00	0.0100	436

Comment: Approximated from plans

Node: NZA-0570

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 70.10 ft
 Warning Stage: 70.90 ft

Stage [ft]	Area [ac]	Area [ft2]
70.10	0.0100	436
70.90	0.0100	436

Comment: Elevation of the inlet to the right and the grate top

Node: NZA-0590

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 64.30 ft
 Warning Stage: 68.42 ft

Stage [ft]	Area [ac]	Area [ft2]
64.30	0.0100	436
68.42	0.0100	436

Comment:

Node: NZA-0600

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 70.50 ft
 Warning Stage: 72.00 ft

Stage [ft]	Area [ac]	Area [ft2]
70.50	0.0100	436
72.00	0.0100	436

Comment:

Node: NZA-0710

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 70.50 ft
 Warning Stage: 71.50 ft

Stage [ft]	Area [ac]	Area [ft2]
69.30	0.0100	436
71.50	0.0100	436

Comment: Elevations set as the overtopping elevation and the lowest channel elevation

Node: NZA-0830

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 66.40 ft
 Warning Stage: 70.60 ft

Stage [ft]	Area [ac]	Area [ft2]
66.40	0.0100	436
72.00	0.0100	436

Comment:

Node: SR50 East

Scenario: Existing
 Type: Time/Stage
 Base Flow: 0.00 cfs
 Initial Stage: 70.11 ft
 Warning Stage: 70.61 ft
 Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	70.11
0	0	0	24.0000	70.11

Comment:

Node: SR50 West

Scenario: Existing
 Type: Time/Stage
 Base Flow: 0.00 cfs
 Initial Stage: 70.11 ft
 Warning Stage: 70.61 ft
 Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	70.11
0	0	0	24.0000	70.11

Comment:

Node: Schoolview Way Ponds (location of proposed Pond 2A modification)

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 66.00 ft
 Warning Stage: 70.50 ft

Stage [ft]	Area [ac]	Area [ft2]
66.50	1.6000	69696
68.00	1.9000	82764
69.50	2.3200	101059
70.50	2.7200	118483

Comment:

Node: Schoolview Way Ponds Outlet

Scenario: Existing
 Type: Time/Stage
 Base Flow: 0.00 cfs
 Initial Stage: 67.02 ft
 Warning Stage: 68.00 ft
 Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	67.02
0	0	0	24.0000	67.02

Comment:

Node: Basin 1 Catch Basin

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 65.00 ft
 Warning Stage: 69.61 ft

Stage [ft]	Area [ac]	Area [ft2]
64.00	0.0100	436
70.40	0.0100	436

Comment: Assumed lower elevation

Node: Basin 1 drop inlet

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 66.00 ft
 Warning Stage: 69.61 ft

Stage [ft]	Area [ac]	Area [ft2]
66.00	0.0100	436
70.40	0.0100	436

Comment: Upper elevation from LiDAR

Node: Corner Lake wetland

Scenario: Proposed - 1 Primary
 Type: Time/Stage
 Base Flow: 0.00 cfs
 Initial Stage: 65.00 ft
 Warning Stage: 68.30 ft
 Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	65.00
0	0	0	24.0000	65.00

Comment:

Node: Corner School Pond 2

Scenario: Proposed - 1 Primary

Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 66.50 ft
 Warning Stage: 69.50 ft

Stage [ft]	Area [ac]	Area [ft2]
66.50	2.0800	90605
68.00	2.3300	101495
69.50	2.8600	124582
70.50	3.0400	132422

Comment:

Node: Existing Cypress Dome

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 68.30 ft
 Warning Stage: 70.00 ft

Stage [ft]	Area [ac]	Area [ft2]
68.30	7.0000	304920
71.00	11.0000	479160

Comment: Approximated from LiDAR

Node: Existing Wetland Buffer

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 63.72 ft
 Warning Stage: 69.07 ft

Stage [ft]	Area [ac]	Area [ft2]
66.82	0.1220	5314
67.32	0.3860	16814
69.32	2.6820	116828
70.00	2.6820	116828

Comment:

Node: Lake Pickett Rd Stormdrain

Scenario: Proposed - 1 Primary
 Type: Time/Stage
 Base Flow: 0.00 cfs
 Initial Stage: 65.76 ft
 Warning Stage: 71.50 ft
 Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	65.76
0	0	0	24.0000	65.76

Comment:

Node: Manhole 1

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 65.00 ft
 Warning Stage: 69.61 ft

Stage [ft]	Area [ac]	Area [ft2]
65.00	0.0100	436
70.40	0.0100	436

Comment:

Node: NZA-0290

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 66.50 ft
 Warning Stage: 68.70 ft

Stage [ft]	Area [ac]	Area [ft2]
61.50	0.0100	436
70.40	0.0100	436

Comment: Assumed lower elevation

Node: NZA-0300

Scenario: Proposed - 1 Primary
 Type: Stage/Area

Base Flow: 0.00 cfs
 Initial Stage: 65.00 ft
 Warning Stage: 68.70 ft

Stage [ft]	Area [ac]	Area [ft2]
62.00	0.0100	436
70.40	0.0100	436

Comment: Assumed lower elevation

Node: NZA-0320

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 67.60 ft
 Warning Stage: 70.40 ft

Stage [ft]	Area [ac]	Area [ft2]
67.60	0.0100	436
70.40	0.0100	436

Comment:

Node: NZA-0430

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 65.00 ft
 Warning Stage: 69.61 ft

Stage [ft]	Area [ac]	Area [ft2]
63.70	0.0100	436
70.40	0.0100	436

Comment: Assumed lower elevation

Node: NZA-0440

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 65.00 ft
 Warning Stage: 68.70 ft

Stage [ft]	Area [ac]	Area [ft2]
63.00	0.0100	436
70.40	0.0100	436

Comment: Assumed lower elevation

Node: NZA-0450

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 65.60 ft
 Warning Stage: 70.00 ft

Stage [ft]	Area [ac]	Area [ft2]
65.60	0.0100	436
70.00	0.0100	436

Comment:

Node: NZA-0470

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 67.00 ft
 Warning Stage: 70.40 ft

Stage [ft]	Area [ac]	Area [ft2]
63.40	0.0100	436
70.40	0.0100	436

Comment: Assumed elevation

Node: NZA-0480

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 67.00 ft
 Warning Stage: 70.40 ft

Stage [ft]	Area [ac]	Area [ft2]
64.00	0.0100	436

Stage [ft]	Area [ac]	Area [ft2]
70.40	0.0100	436

Comment:

Node: NZA-0490

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 67.00 ft
 Warning Stage: 68.10 ft

Stage [ft]	Area [ac]	Area [ft2]
64.60	0.0100	436
70.40	0.0100	436

Comment:

Node: NZA-0530

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 67.00 ft
 Warning Stage: 72.40 ft

Stage [ft]	Area [ac]	Area [ft2]
67.00	0.0100	436
72.40	0.0100	436

Comment: Assumed elevations

Node: NZA-0540

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 67.00 ft
 Warning Stage: 72.40 ft

Stage [ft]	Area [ac]	Area [ft2]
67.00	0.0100	436
72.40	0.0100	436

Comment: Assumed elevations

Node: NZA-0550

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 65.00 ft
 Warning Stage: 72.40 ft

Stage [ft]	Area [ac]	Area [ft2]
65.00	0.0100	436
74.00	0.0100	436

Comment: Assumed elevation

Node: NZA-0570

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 68.10 ft
 Warning Stage: 70.60 ft

Stage [ft]	Area [ac]	Area [ft2]
70.10	0.0100	436
70.90	0.0100	436

Comment:

Node: NZA-0600

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 65.00 ft
 Warning Stage: 68.70 ft

Stage [ft]	Area [ac]	Area [ft2]
63.50	0.0100	436
70.40	0.0100	436

Comment: Assumed lower elevation

Node: NZA-0750

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 67.00 ft
 Warning Stage: 70.40 ft

Stage [ft]	Area [ac]	Area [ft2]
62.60	0.0100	436
70.40	0.0100	436

Comment: Assumed elevations

Node: NZA-0770

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 62.80 ft
 Warning Stage: 70.60 ft

Stage [ft]	Area [ac]	Area [ft2]
62.80	0.0100	436
71.00	0.0100	436

Comment:

Node: NZA-0830

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 66.40 ft
 Warning Stage: 70.60 ft

Stage [ft]	Area [ac]	Area [ft2]
66.40	0.0100	436
72.00	0.0100	436

Comment:

Node: NZA-0870

Scenario: Proposed - 1 Primary
 Type: Stage/Area

Base Flow: 0.00 cfs
 Initial Stage: 0.00 ft
 Warning Stage: 0.00 ft

Comment:

Node: NZA-0880

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 0.00 ft
 Warning Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
65.00	0.0100	436
72.00	0.0100	436

Comment:

Node: NZA-0890

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 0.00 ft
 Warning Stage: 0.00 ft

Comment:

Node: Pond 3A

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 67.00 ft
 Warning Stage: 70.00 ft

Stage [ft]	Area [ac]	Area [ft2]
67.00	0.8400	36590
71.00	1.1800	51401

Comment:

Node: Pond 4A

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 64.80 ft
 Warning Stage: 67.00 ft

Stage [ft]	Area [ac]	Area [ft2]
64.80	0.3500	15246
68.00	0.5100	22216

Comment:

Node: SR50 East

Scenario: Proposed - 1 Primary
 Type: Time/Stage
 Base Flow: 0.00 cfs
 Initial Stage: 70.11 ft
 Warning Stage: 70.61 ft
 Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	70.11
0	0	0	24.0000	70.11

Comment:

Node: SR50 West

Scenario: Proposed - 1 Primary
 Type: Time/Stage
 Base Flow: 0.00 cfs
 Initial Stage: 70.11 ft
 Warning Stage: 70.61 ft
 Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	70.11
0	0	0	24.0000	70.11

Comment:

Node: Schoolview Way Ponds (location of proposed Pond 2A modification)

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 66.50 ft
 Warning Stage: 71.00 ft

Stage [ft]	Area [ac]	Area [ft2]
66.50	1.7300	75359
68.00	1.9500	84942
69.50	2.2800	99317
70.50	2.4500	106722
72.00	2.7100	118048

Comment:

Node: Schoolview Way Ponds Outlet

Scenario: Proposed - 1 Primary
 Type: Time/Stage
 Base Flow: 0.00 cfs
 Initial Stage: 67.02 ft
 Warning Stage: 68.00 ft
 Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	67.02
0	0	0	24.0000	67.02

Comment:

Node: Basin 1 Catch Basin

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 66.70 ft
 Warning Stage: 69.61 ft

Stage [ft]	Area [ac]	Area [ft2]
66.70	0.0100	436
69.30	0.0100	436

Comment: Assumed lower elevation

Node: Basin 1 drop inlet

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 67.62 ft
 Warning Stage: 69.61 ft

Stage [ft]	Area [ac]	Area [ft2]
67.62	0.0100	436
69.72	0.0100	436

Comment:

Node: Corner Lake wetland

Scenario: Proposed - 2 Alternate
 Type: Time/Stage
 Base Flow: 0.00 cfs
 Initial Stage: 65.00 ft
 Warning Stage: 68.30 ft
 Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	65.00
0	0	0	24.0000	65.00

Comment:

Node: Corner School Pond 2

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 66.50 ft
 Warning Stage: 69.50 ft

Stage [ft]	Area [ac]	Area [ft2]
66.50	2.0800	90605
68.00	2.3300	101495
69.50	2.8600	124582
70.50	3.0400	132422

Comment:

Node: Existing Cypress Dome

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 68.30 ft
 Warning Stage: 70.00 ft

Stage [ft]	Area [ac]	Area [ft2]
68.30	7.0000	304920
71.00	11.0000	479160

Comment: Approximated from LiDAR

Node: Lake Pickett Rd Stormdrain

Scenario: Proposed - 2 Alternate
 Type: Time/Stage
 Base Flow: 0.00 cfs
 Initial Stage: 65.76 ft
 Warning Stage: 71.50 ft
 Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	65.76
0	0	0	24.0000	65.76

Comment:

Node: Manhole 1

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 66.90 ft
 Warning Stage: 69.61 ft

Stage [ft]	Area [ac]	Area [ft2]
66.90	0.0100	436
71.87	0.0100	436

Comment:

Node: NZA-0290

Scenario: Proposed - 2 Alternate

Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 65.00 ft
 Warning Stage: 70.10 ft

Stage [ft]	Area [ac]	Area [ft2]
65.00	0.0100	436
72.70	0.0100	436

Comment: Assumed lower elevation

Node: NZA-0300

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 64.60 ft
 Warning Stage: 70.10 ft

Stage [ft]	Area [ac]	Area [ft2]
64.60	0.0100	436
72.70	0.0100	436

Comment:

Node: NZA-0320

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 67.60 ft
 Warning Stage: 70.10 ft

Stage [ft]	Area [ac]	Area [ft2]
67.60	0.0100	436
72.00	0.0100	436

Comment:

Node: NZA-0330

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 67.20 ft

Warning Stage: 70.10 ft

Stage [ft]	Area [ac]	Area [ft2]
67.20	0.0100	436
71.10	0.0100	436

Comment:

Node: NZA-0340

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 66.90 ft
 Warning Stage: 70.10 ft

Stage [ft]	Area [ac]	Area [ft2]
66.90	0.0100	436
71.00	0.0100	436

Comment:

Node: NZA-0430

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 66.50 ft
 Warning Stage: 69.61 ft

Stage [ft]	Area [ac]	Area [ft2]
66.50	0.0100	436
72.80	0.0100	436

Comment: Assumed lower elevation

Node: NZA-0440

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 65.60 ft
 Warning Stage: 70.10 ft

Stage [ft]	Area [ac]	Area [ft2]
65.60	0.0100	436
70.70	0.0100	436

Comment: Assumed lower elevation

Node: NZA-0450

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 65.60 ft
 Warning Stage: 70.60 ft

Stage [ft]	Area [ac]	Area [ft2]
65.60	0.0100	436
70.00	0.0100	436

Comment: Assumed elevation invert

Node: NZA-0470

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 65.30 ft
 Warning Stage: 70.40 ft

Stage [ft]	Area [ac]	Area [ft2]
66.40	0.0100	436
68.50	0.0100	436

Comment: Assumed elevation

Node: NZA-0480

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 65.00 ft
 Warning Stage: 70.40 ft

Stage [ft]	Area [ac]	Area [ft2]
65.00	0.0100	436
72.00	0.0100	436

Comment:

Node: NZA-0490

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 65.20 ft
 Warning Stage: 70.40 ft

Stage [ft]	Area [ac]	Area [ft2]
65.20	0.0100	436
72.00	0.0100	436

Comment:

Node: NZA-0530

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 69.00 ft
 Warning Stage: 71.40 ft

Stage [ft]	Area [ac]	Area [ft2]
69.00	0.0100	436
73.00	0.0100	436

Comment: Assumed elevations

Node: NZA-0540

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 69.00 ft
 Warning Stage: 71.40 ft

Stage [ft]	Area [ac]	Area [ft2]
69.00	0.0100	436
71.00	0.0100	436

Comment: Assumed elevations

Node: NZA-0550

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 65.00 ft
 Warning Stage: 71.40 ft

Stage [ft]	Area [ac]	Area [ft2]
65.00	0.0100	436
74.00	0.0100	436

Comment: Assumed elevation

Node: NZA-0570

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 68.10 ft
 Warning Stage: 71.40 ft

Stage [ft]	Area [ac]	Area [ft2]
66.00	0.0100	436
73.00	0.0100	436

Comment:

Node: NZA-0600

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 66.20 ft
 Warning Stage: 70.10 ft

Stage [ft]	Area [ac]	Area [ft2]
66.20	0.0100	436
73.00	0.0100	436

Comment: Assumed lower elevation

Node: NZA-0750

Scenario: Proposed - 2 Alternate
 Type: Stage/Area

Base Flow: 0.00 cfs
 Initial Stage: 63.60 ft
 Warning Stage: 70.40 ft

Stage [ft]	Area [ac]	Area [ft2]
63.60	0.0100	436
72.00	0.0100	436

Comment: Assumed elevations

Node: NZA-0820

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 68.00 ft
 Warning Stage: 71.40 ft

Stage [ft]	Area [ac]	Area [ft2]
66.00	0.0100	436
73.20	0.0100	436

Comment:

Node: NZA-0830

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 66.40 ft
 Warning Stage: 70.60 ft

Stage [ft]	Area [ac]	Area [ft2]
66.40	0.0100	436
72.00	0.0100	436

Comment:

Node: NZA-0850

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 67.50 ft
 Warning Stage: 71.40 ft

Stage [ft]	Area [ac]	Area [ft2]
67.50	0.0100	436
73.00	0.0100	436

Comment:

Node: NZA-0880

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 65.60 ft
 Warning Stage: 70.00 ft

Stage [ft]	Area [ac]	Area [ft2]
65.60	0.0100	436
70.00	0.0100	436

Comment:

Node: NZA-0920

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 0.00 ft
 Warning Stage: 0.00 ft

Comment:

Node: NZA-0930

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 0.00 ft
 Warning Stage: 0.00 ft

Comment:

Node: Pond 1A

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 68.00 ft
 Warning Stage: 72.00 ft

Stage [ft]	Area [ac]	Area [ft2]
67.20	0.0700	3049
73.00	0.4000	17424

Comment:

Node: Pond 2B

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 68.00 ft
 Warning Stage: 70.70 ft

Stage [ft]	Area [ac]	Area [ft2]
68.00	1.0400	45302
71.70	1.4000	60984

Comment:

Node: Pond 3B

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 65.00 ft
 Warning Stage: 70.00 ft

Stage [ft]	Area [ac]	Area [ft2]
65.00	0.4100	17860
71.00	0.7800	33977

Comment:

Node: Pond 4B

Scenario: Proposed - 2 Alternate
 Type: Stage/Area

Base Flow: 0.00 cfs
 Initial Stage: 68.00 ft
 Warning Stage: 72.00 ft

Stage [ft]	Area [ac]	Area [ft2]
68.00	0.2500	10890
73.00	0.5000	21780

Comment:

Node: SR50 East

Scenario: Proposed - 2 Alternate
 Type: Time/Stage
 Base Flow: 0.00 cfs
 Initial Stage: 70.11 ft
 Warning Stage: 70.61 ft
 Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	70.11
0	0	0	24.0000	70.11

Comment:

Node: SR50 West

Scenario: Proposed - 2 Alternate
 Type: Time/Stage
 Base Flow: 0.00 cfs
 Initial Stage: 70.11 ft
 Warning Stage: 70.61 ft
 Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	70.11
0	0	0	24.0000	70.11

Comment:

Node: Schoolview Way Ponds (location of proposed Pond 2A modification)

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs

Initial Stage: 66.50 ft
Warning Stage: 69.50 ft

Stage [ft]	Area [ac]	Area [ft2]
66.50	1.6000	69696
68.00	1.9000	82764
69.50	2.3200	101059
70.50	2.7200	118483

Comment:

Node: Schoolview Way Ponds Outlet

Scenario: Proposed - 2 Alternate
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 67.02 ft
Warning Stage: 68.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	67.02
0	0	0	24.0000	67.02

Comment:

Pipe Link: 18" RCP

	Upstream	Downstream
Scenario: Existing	Invert: 66.96 ft	Invert: 66.56 ft
From Node: Basin 1 Catch Basin	Manning's N: 0.0120	Manning's N: 0.0120
To Node: SR50 East	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 155.76 ft	Op Table:	Op Table:
FHWA Code: 0	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0000	Manning's N: 0.0000
Exit Loss Coef: 0.50	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000

Comment: Assumed up/downstream inverts, slope matches the ground slope at the grate tops

Pipe Link: 18" RCP1		Upstream	Downstream
Scenario:	Existing	Invert: 69.62 ft	Invert: 69.49 ft
From Node:	Basin 1 drop inlet	Manning's N: 0.0120	Manning's N: 0.0120
To Node:	Manhole 1	Geometry: Circular	Geometry: Circular
Link Count:	1	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Flow Direction:	Both	Bottom Clip	
Damping:	0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length:	26.00 ft	Op Table:	Op Table:
FHWA Code:	0	Ref Node:	Ref Node:
Entr Loss Coef:	0.50	Manning's N: 0.0000	Manning's N: 0.0000
Exit Loss Coef:	0.50	Top Clip	
Bend Loss Coef:	0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location:	0.00 dec	Op Table:	Op Table:
Energy Switch:	Energy	Ref Node:	Ref Node:
		Manning's N: 0.0000	Manning's N: 0.0000

Comment: No upstream invert located, assume dhthe pipe had a 0.5% negative slope.

Pipe Link: 18" RCP2		Upstream	Downstream
Scenario:	Existing	Invert: 68.94 ft	Invert: 67.30 ft
From Node:	Manhole 1	Manning's N: 0.0120	Manning's N: 0.0120
To Node:	SR50 West	Geometry: Circular	Geometry: Circular
Link Count:	1	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Flow Direction:	Both	Bottom Clip	
Damping:	0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length:	267.18 ft	Op Table:	Op Table:
FHWA Code:	0	Ref Node:	Ref Node:
Entr Loss Coef:	0.50	Manning's N: 0.0000	Manning's N: 0.0000
Exit Loss Coef:	0.50	Top Clip	
Bend Loss Coef:	0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location:	0.00 dec	Op Table:	Op Table:
Energy Switch:	Energy	Ref Node:	Ref Node:
		Manning's N: 0.0000	Manning's N: 0.0000

Comment:

Pipe Link: Connecting 36" RCP		Upstream	Downstream
Scenario:	Existing	Invert: 61.00 ft	Invert: 60.85 ft
From Node:	Schoolview Way	Manning's N: 0.0120	Manning's N: 0.0120
To Node:	Ponds (location of proposed Pond 2A modification)	Geometry: Circular	Geometry: Circular
Link Count:	1	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Flow Direction:	Both	Bottom Clip	
Damping:	0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length:		Op Table:	Op Table:
FHWA Code:		Ref Node:	Ref Node:
Entr Loss Coef:		Manning's N: 0.0000	Manning's N: 0.0000
Exit Loss Coef:		Top Clip	
Bend Loss Coef:		Default: 0.00 ft	Default: 0.00 ft
Bend Location:		Op Table:	Op Table:
Energy Switch:		Ref Node:	Ref Node:
		Manning's N: 0.0000	Manning's N: 0.0000

Length:	145.00 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	0	Op Table:		Op Table:	
Entr Loss Coef:	0.50	Ref Node:		Ref Node:	
Exit Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Bend Loss Coef:	0.00				
Bend Location:	0.00 dec				
Energy Switch:	Momentum				

Comment:

Pipe Link: Connecting 48" PVC		Upstream	Downstream
Scenario:	Existing	Invert: 61.00 ft	Invert: 60.85 ft
From Node:	Schoolview Way Ponds (location of proposed Pond 2A modification)	Manning's N: 0.0090	Manning's N: 0.0090
		Geometry: Circular	Geometry: Circular
		Max Depth: 4.00 ft	Max Depth: 4.00 ft
		Bottom Clip	
To Node:	Corner School Pond 2	Default: 0.00 ft	Default: 0.00 ft
		Op Table:	Op Table:
Link Count:	1	Ref Node:	Ref Node:
Flow Direction:	Both	Manning's N: 0.0000	Manning's N: 0.0000
Damping:	0.0000 ft	Top Clip	
Length:	152.00 ft	Default: 0.00 ft	Default: 0.00 ft
FHWA Code:	0	Op Table:	Op Table:
Entr Loss Coef:	0.50	Ref Node:	Ref Node:
Exit Loss Coef:	0.50	Manning's N: 0.0000	Manning's N: 0.0000
Bend Loss Coef:	0.00		
Bend Location:	0.00 dec		
Energy Switch:	Energy		

Comment:

Weir Link: Corner School Pond 2 Orifice		Bottom Clip	
Scenario:	Existing		
From Node:	Corner School Pond 2	Default: 0.00 ft	
To Node:	Schoolview Way Ponds Outlet	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default: 0.00 ft	
Weir Type:	Sharp Crested Vertical	Op Table:	
Geometry Type:	Circular	Ref Node:	
Invert:	66.50 ft	Discharge Coefficients	
Control Elevation:	66.50 ft	Weir Default: 3.500	
Max Depth:	0.38 ft	Weir Table:	
		Orifice Default: 0.600	
		Orifice Table:	

Comment:

Weir Link: Corner School Pond 2 Overflow

Scenario:	Existing	Bottom Clip	
From Node:	Corner School Pond 2	Default:	0.00 ft
To Node:	Schoolview Way Ponds Outlet	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:	
Geometry Type:	Trapezoidal	Ref Node:	
Invert:	67.89 ft	Discharge Coefficients	
Control Elevation:	67.89 ft	Weir Default:	3.500
Max Depth:	2.61 ft	Weir Table:	
Extrapolation Method:	Normal Projection	Orifice Default:	0.600
Bottom Width:	30.00 ft	Orifice Table:	
Left Slope:	4.000 (h:v)		
Right Slope:	4.000 (h:v)		

Comment:

Pipe Link: L-0160P

	Upstream	Downstream	
Scenario:	Existing	Invert: 69.50 ft	
From Node:	NZA-0300	Manning's N: 0.0120	
To Node:	NZA-0310	Manning's N: 0.0120	
Link Count:	1	Geometry: Circular	
Flow Direction:	Both	Max Depth: 1.50 ft	
Damping:	0.0000 ft	Bottom Clip	
Length:	15.18 ft	Default:	0.00 ft
FHWA Code:	0	Op Table:	
Entr Loss Coef:	0.50	Ref Node:	
Exit Loss Coef:	0.50	Manning's N:	0.0000
Bend Loss Coef:	0.00	Top Clip	
Bend Location:	0.00 dec	Default:	0.00 ft
Energy Switch:	Energy	Op Table:	
		Ref Node:	
		Manning's N:	0.0000

Comment: Assumed size, elevations based on the channel elevations

Pipe Link: L-0170P

	Upstream	Downstream	
Scenario:	Existing	Invert: 69.20 ft	
From Node:	NZA-0320	Manning's N: 0.0120	
To Node:	NZA-0330	Manning's N: 0.0120	
Link Count:	1	Geometry: Circular	
Flow Direction:	Both	Max Depth: 2.00 ft	
Damping:	0.0000 ft	Bottom Clip	
Length:	176.41 ft	Default:	0.00 ft
FHWA Code:	0	Op Table:	
Entr Loss Coef:	0.50	Ref Node:	
		Manning's N:	0.0000

Exit Loss Coef: 0.50	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000

Comment: Size assumed, elevations from channel elevations

Pipe Link: L-0200P	Upstream	Downstream
Scenario: Existing	Invert: 68.90 ft	Invert: 69.10 ft
From Node: NZA-0340	Manning's N: 0.0120	Manning's N: 0.0120
To Node: NZA-0350	Geometry: Circular	
Link Count: 1	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 23.00 ft	Op Table:	Op Table:
FHWA Code: 0	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0000	Manning's N: 0.0000
Exit Loss Coef: 0.50	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000

Comment: Assumed size, elevations form channel elevations

Pipe Link: L-0240P	Upstream	Downstream
Scenario: Existing	Invert: 67.10 ft	Invert: 66.90 ft
From Node: NZA-0490	Manning's N: 0.0120	Manning's N: 0.0120
To Node: NZA-0480	Geometry: Circular	
Link Count: 1	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 144.06 ft	Op Table:	Op Table:
FHWA Code: 0	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0000	Manning's N: 0.0000
Exit Loss Coef: 0.50	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000

Comment: Assumed size, elevations based on LIDAR

Pipe Link: L-0260P	Upstream	Downstream
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Scenario:	Existing	Invert:	68.69 ft	Invert:	67.00 ft
From Node:	Existing Cypress Dome	Manning's N:	0.0120	Manning's N:	0.0120
		Geometry:	Circular	Geometry:	Circular
To Node:	NZA-0570	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000	Op Table:		Op Table:	
Length:	85.87 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment: elevations from the LIDAR

Pipe Link: L-0300P		Upstream		Downstream	
Scenario:	Existing	Invert:	70.00 ft	Invert:	66.85 ft
From Node:	NZA-0540	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	NZA-0550	Geometry:	Circular	Geometry:	Circular
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000	Default:	0.00 ft	Default:	0.00 ft
Length:	116.86 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	0.50	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment: Assumed size and elevations

Pipe Link: L-0310P		Upstream		Downstream	
Scenario:	Existing	Invert:	67.00 ft	Invert:	65.00 ft
From Node:	NZA-0570	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	NZA-0550	Geometry:	Circular	Geometry:	Circular
Link Count:	1	Max Depth:	2.50 ft	Max Depth:	2.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000	Default:	0.00 ft	Default:	0.00 ft
Length:	488.77 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	0.50	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft

Bend Location:	0.00 dec	Op Table:	Op Table:
Energy Switch:	Energy	Ref Node:	Ref Node:
		Manning's N:	Manning's N:
		0.0000	0.0000

Comment:

Pipe Link: L-0320P	Upstream	Downstream
Scenario: Existing	Invert: 60.96 ft	Invert: 60.78 ft
From Node: NZA-0530	Manning's N: 0.0120	Manning's N: 0.0120
To Node: NZA-0550	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 141.92 ft	Op Table:	Op Table:
FHWA Code: 0	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0000	Manning's N: 0.0000
Exit Loss Coef: 0.50	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000

Comment: Assumed size and elevations

Pipe Link: L-0330P	Upstream	Downstream
Scenario: Existing	Invert: 62.00 ft	Invert: 62.00 ft
From Node: NZA-0470	Manning's N: 0.0120	Manning's N: 0.0120
To Node: NZA-0590	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 4.00 ft	Max Depth: 4.00 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 63.00 ft	Op Table:	Op Table:
FHWA Code: 0	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0000	Manning's N: 0.0000
Exit Loss Coef: 0.50	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000

Comment: Assumed size, elevations based on LIDAR
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Channel Link: L-0340C	Upstream	Downstream
Scenario: Existing	Invert: 67.20 ft	Invert: 65.20 ft
From Node: NZA-0480	Manning's N: 0.0420	Manning's N: 0.0420

To Node: NZA-0470	Geometry: Trapezoidal		Geometry: Trapezoidal	
Link Count: 1	Max Depth: 1.20 ft	Extrapolation: Normal	Max Depth: 1.20 ft	Extrapolation: Normal
Flow Direction: Both	Bottom Width: 2.00 ft	Left Slope: 11.700 (h:v)	Bottom Width: 2.00 ft	Left Slope: 11.700 (h:v)
Damping: 0.0000 ft	Right Slope: 11.700 (h:v)	Bottom Clip		
Length: 562.03 ft	Default: 0.00 ft	Op Table:	Default: 0.00 ft	Op Table:
Contraction Coef: 0.00	Ref Node:	Ref Node:	Manning's N: 0.0000	
Expansion Coef: 0.00	Top Clip			
Entr Loss Coef: 0.00	Default: 0.00 ft	Op Table:	Default: 0.00 ft	Op Table:
Exit Loss Coef: 0.00	Ref Node:	Ref Node:	Manning's N: 0.0000	
Bend Loss Coef: 0.00	Manning's N: 0.0000	Manning's N: 0.0000		
Bend Location: 0.00 dec				
Energy Switch: Energy				
Comment:				

Channel Link: L-0360C	Upstream		Downstream	
Scenario: Existing	Invert: 71.00 ft	Manning's N: 0.0420	Invert: 70.50 ft	Manning's N: 0.0420
From Node: NZA-0600	Geometry: Trapezoidal		Geometry: Trapezoidal	
To Node: NZA-0440	Max Depth: 1.50 ft	Extrapolation: Normal	Max Depth: 1.50 ft	Extrapolation: Normal
Link Count: 1	Bottom Width: 5.00 ft	Left Slope: 12.700 (h:v)	Bottom Width: 5.00 ft	Left Slope: 12.700 (h:v)
Flow Direction: Both	Right Slope: 12.700 (h:v)	Bottom Clip		
Damping: 0.0000 ft	Default: 0.00 ft	Op Table:	Default: 0.00 ft	Op Table:
Length: 450.00 ft	Ref Node:	Ref Node:	Manning's N: 0.0000	
Contraction Coef: 0.00	Top Clip			
Expansion Coef: 0.00	Default: 0.00 ft	Op Table:	Default: 0.00 ft	Op Table:
Entr Loss Coef: 0.00	Ref Node:	Ref Node:	Manning's N: 0.0000	
Exit Loss Coef: 0.00	Manning's N: 0.0000	Manning's N: 0.0000		
Bend Loss Coef: 0.00				
Bend Location: 0.00 dec				
Energy Switch: Energy				
Comment:				

Pipe Link: L-0370P	Upstream		Downstream	
Scenario: Existing	Invert: 60.78 ft	Manning's N: 0.0120	Invert: 59.97 ft	Manning's N: 0.0120
From Node: NZA-0550	Geometry: Circular		Geometry: Circular	
To Node: Lake Pickett Rd	Max Depth: 3.00 ft	Bottom Clip		
Stormdrain				
Link Count: 1				

Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000	Op Table:		Op Table:	
Length:	900.00 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Channel Link: L-0380C	Upstream	Downstream
Scenario: Existing	Invert: 64.30 ft	Invert: 63.30 ft
From Node: NZA-0590	Manning's N: 0.0420	Manning's N: 0.0420
To Node: Corner Lake	Geometry: Trapezoidal	Geometry: Trapezoidal
Wetland	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Link Count: 1	Extrapolation: Normal	Extrapolation: Normal
Flow Direction: Both	Bottom Width: 10.00 ft	Bottom Width: 10.00 ft
Damping: 0.0000	Left Slope: 3.000 (h:v)	Left Slope: 3.000 (h:v)
Length: 258.13 ft	Right Slope: 3.000 (h:v)	Right Slope: 3.000 (h:v)
Contraction Coef: 0.00	Bottom Clip	
Expansion Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Entr Loss Coef: 0.00	Op Table:	Op Table:
Exit Loss Coef: 0.00	Ref Node:	Ref Node:
Bend Loss Coef: 0.00	Manning's N: 0.0000	Manning's N: 0.0000
Bend Location: 0.00 dec	Top Clip	
Energy Switch: Energy	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000

Comment: Assumed channel, elevations from LiDAR

Pipe Link: L-0400P	Upstream	Downstream
Scenario: Existing	Invert: 70.00 ft	Invert: 66.00 ft
From Node: NZA-0290	Manning's N: 0.0120	Manning's N: 0.0120
To Node: Schoolview Way	Geometry: Circular	Geometry: Circular
Ponds (location of proposed Pond 2A modification)	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Link Count: 1	Bottom Clip	
Flow Direction: Both	Default: 0.00 ft	Default: 0.00 ft
Damping: 0.0000	Op Table:	Op Table:
Length: 82.33 ft	Ref Node:	Ref Node:
FHWA Code: 0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef: 0.50	Top Clip	
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:

Exit Loss Coef: 0.50	Ref Node:	Ref Node:
Bend Loss Coef: 0.00	Manning's N: 0.0000	Manning's N: 0.0000
Bend Location: 0.00 dec		
Energy Switch: Energy		

Comment: Assumed size, elevations based on grate and pond elevation

Weir Link: L-0460W

Scenario: Existing	Bottom Clip
From Node: Basin 1 Catch Basin	Default: 0.00 ft
To Node: SR50 East	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Gravel Road Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 69.30 ft	Discharge Coefficients
Control Elevation: 69.30 ft	Weir Default: 2.800
Max Depth: 99.00 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment:

Weir Link: L-0480W

Scenario: Existing	Bottom Clip
From Node: NZA-0300	Default: 0.00 ft
To Node: NZA-0310	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Gravel Road Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 71.00 ft	Discharge Coefficients
Control Elevation: 71.00 ft	Weir Default: 2.800
Max Depth: 99.00 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment:

Weir Link: L-0490W

Scenario: Existing	Bottom Clip
From Node: NZA-0320	Default: 0.00 ft
To Node: NZA-0330	Op Table:

Link Count: 1	
Flow Direction: Both	Ref Node:
Damping: 0.0000 ft	Top Clip
Weir Type: Gravel Road Vertical	Default: 0.00 ft
Geometry Type: Rectangular	Op Table:
Invert: 72.00 ft	Ref Node:
Control Elevation: 72.00 ft	Discharge Coefficients
Max Depth: 99.00 ft	Weir Default: 2.800
Max Width: 20.00 ft	Weir Table:
Fillet: 0.00 ft	Orifice Default: 0.600
	Orifice Table:

Comment:

Weir Link: L-0500W

Scenario: Existing	Bottom Clip
From Node: NZA-0340	Default: 0.00 ft
To Node: NZA-0350	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Gravel Road Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 69.30 ft	Discharge Coefficients
Control Elevation: 69.30 ft	Weir Default: 2.800
Max Depth: 99.00 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment:

Weir Link: L-0520W

Scenario: Existing	Bottom Clip
From Node: NZA-0470	Default: 0.00 ft
To Node: NZA-0590	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Gravel Road Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 68.42 ft	Discharge Coefficients
Control Elevation: 68.42 ft	Weir Default: 2.800
Max Depth: 99.00 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment:

Weir Link: L-0530W

Scenario:	Existing	Bottom Clip
From Node:	NZA-0490	Default: 0.00 ft
To Node:	NZA-0480	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	70.40 ft	Discharge Coefficients
Control Elevation:	70.40 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-0540W

Scenario:	Existing	Bottom Clip
From Node:	Existing Cypress Dome	Default: 0.00 ft
To Node:	NZA-0570	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	73.00 ft	Discharge Coefficients
Control Elevation:	73.00 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-0550W

Scenario:	Existing	Bottom Clip
From Node:	NZA-0570	Default: 0.00 ft
To Node:	NZA-0550	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	70.90 ft	Discharge Coefficients
Control Elevation:	70.90 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600

Fillet: 0.00 ft

Orifice Table:

Comment:

Weir Link: L-0560W

Scenario:	Existing	Bottom Clip
From Node:	NZA-0540	Default: 0.00 ft
To Node:	NZA-0530	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	73.20 ft	Discharge Coefficients
Control Elevation:	73.20 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-0570W

Scenario:	Existing	Bottom Clip
From Node:	NZA-0530	Default: 0.00 ft
To Node:	NZA-0550	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	73.00 ft	Discharge Coefficients
Control Elevation:	73.00 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-0580W

Scenario:	Existing	Bottom Clip
From Node:	NZA-0550	Default: 0.00 ft
To Node:	Lake Pickett Rd Stormdrain	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip

Damping:	0.0000 ft	
Weir Type:	Gravel Road Vertical	Default: 0.00 ft
Geometry Type:	Rectangular	Op Table:
Invert:	71.40 ft	Ref Node:
Control Elevation:	71.40 ft	Discharge Coefficients
Max Depth:	99.00 ft	Weir Default: 2.800
Max Width:	20.00 ft	Weir Table:
Fillet:	0.00 ft	Orifice Default: 0.600
		Orifice Table:

Comment:

Weir Link: L-0600W

Scenario:	Existing	Bottom Clip
From Node:	Basin 1 drop inlet	Default: 0.00 ft
To Node:	Basin 1 Catch Basin	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	70.30 ft	Discharge Coefficients
Control Elevation:	70.30 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-0610W

Scenario:	Existing	Bottom Clip
From Node:	Manhole 1	Default: 0.00 ft
To Node:	SR50 West	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	70.10 ft	Discharge Coefficients
Control Elevation:	70.10 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Channel Link: L-0630C		Upstream	Downstream
Scenario:	Existing	Invert: 71.00 ft	Invert: 69.30 ft
From Node:	NZA-0710	Manning's N: 0.0420	Manning's N: 0.0420
To Node:	Basin 1 Catch Basin	Geometry: Trapezoidal	Geometry: Trapezoidal
Link Count:	1	Max Depth: 1.00 ft	Max Depth: 1.00 ft
Flow Direction:	Both	Extrapolation: Normal	Extrapolation: Normal
Damping:	0.0000 ft	Bottom Width: 3.00 ft	Bottom Width: 3.00 ft
Length:	135.16 ft	Left Slope: 7.000 (h:v)	Left Slope: 7.000 (h:v)
Contraction Coef:	0.00	Right Slope: 7.000 (h:v)	Right Slope: 7.000 (h:v)
Expansion Coef:	0.00	Bottom Clip	
Entr Loss Coef:	0.00	Default: 0.00 ft	Default: 0.00 ft
Exit Loss Coef:	0.00	Op Table:	Op Table:
Bend Loss Coef:	0.00	Ref Node:	Ref Node:
Bend Location:	0.00 dec	Manning's N: 0.0000	Manning's N: 0.0000
Energy Switch:	Energy	Top Clip	
		Default: 0.00 ft	Default: 0.00 ft
		Op Table:	Op Table:
		Ref Node:	Ref Node:
		Manning's N: 0.0000	Manning's N: 0.0000

Comment:

Weir Link: L-0640W		Bottom Clip
Scenario:	Existing	Default: 0.00 ft
From Node:	NZA-0430	Op Table:
To Node:	NZA-0710	Ref Node:
Link Count:	1	Top Clip
Flow Direction:	Both	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:
Weir Type:	Gravel Road Vertical	Ref Node:
Geometry Type:	Rectangular	Discharge Coefficients
Invert:	71.50 ft	Weir Default: 2.800
Control Elevation:	71.50 ft	Weir Table:
Max Depth:	99.00 ft	Orifice Default: 0.600
Max Width:	20.00 ft	Orifice Table:
Fillet:	0.00 ft	

Comment:

Pipe Link: L-0650P		Upstream	Downstream
Scenario:	Existing	Invert: 64.61 ft	Invert: 64.05 ft
From Node:	NZA-0450	Manning's N: 0.0120	Manning's N: 0.0120
To Node:	Existing Wetland	Geometry: Circular	Geometry: Circular
Buffer:		Max Depth: 2.50 ft	Max Depth: 2.50 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:

Length:	129.00 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Pipe Link: L-0660P		Upstream	Downstream		
Scenario:	Existing	Invert:	63.72 ft	Invert:	63.69 ft
From Node:	Existing Wetland Buffer	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	NZA-0830	Geometry:	Circular	Geometry:	Circular
Link Count:	1	Max Depth:	2.50 ft	Max Depth:	2.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	158.00 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	0.50	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: L-0670W		Bottom Clip	
Scenario:	Existing	Default:	0.00 ft
From Node:	NZA-0450	Op Table:	
To Node:	Existing Wetland Buffer	Ref Node:	
Link Count:	1	Top Clip	
Flow Direction:	Both	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:	
Weir Type:	Gravel Road Vertical	Ref Node:	
Geometry Type:	Rectangular	Discharge Coefficients	
Invert:	70.00 ft	Weir Default:	2.800
Control Elevation:	70.00 ft	Weir Table:	
Max Depth:	99.00 ft	Orifice Default:	0.600
Max Width:	20.00 ft	Orifice Table:	
Fillet:	0.00 ft		

Comment:

Weir Link: L-0680W

Scenario:	Existing	Bottom Clip
From Node:	Existing Wetland Buffer	Default: 0.00 ft
To Node:	NZA-0830	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	70.00 ft	Discharge Coefficients
Control Elevation:	70.00 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-0690W

Scenario:	Existing	Bottom Clip
From Node:	Basin 1 drop inlet	Default: 0.00 ft
To Node:	Manhole 1	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	70.10 ft	Discharge Coefficients
Control Elevation:	70.10 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-0800W

Scenario:	Existing	Bottom Clip
From Node:	NZA-0830	Default: 0.00 ft
To Node:	Corner Lake Wetland	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	66.40 ft	Discharge Coefficients
Control Elevation:	66.40 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600

Fillet: 0.00 ft

Orifice Table:

Comment:

Weir Link: Schoolview Way Overland

Scenario:	Existing	Bottom Clip
From Node:	NZA-0290	Default: 0.00 ft
To Node:	Schoolview Way Ponds (location of proposed Pond 2A modification)	Op Table:
		Ref Node:
Link Count:	1	Top Clip
Flow Direction:	Both	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:
Weir Type:	Gravel Road Vertical	Ref Node:
Geometry Type:	Rectangular	Discharge Coefficients
Invert:	71.40 ft	Weir Default: 2.800
Control Elevation:	71.40 ft	Weir Table:
Max Depth:	99.00 ft	Orifice Default: 0.600
Max Width:	20.00 ft	Orifice Table:
Fillet:	0.00 ft	

Comment:

Channel Link: Trapezoidal channel 2

	Upstream	Downstream
Scenario:	Existing	Existing
From Node:	NZA-0310	NZA-0320
To Node:	NZA-0320	
Link Count:	1	
Flow Direction:	Both	Both
Damping:	0.0000 ft	0.0000 ft
Length:	422.16 ft	
Contraction Coef:	0.00	0.00
Expansion Coef:	0.00	0.00
Entr Loss Coef:	0.00	0.00
Exit Loss Coef:	0.00	0.00
Bend Loss Coef:	0.00	0.00
Bend Location:	0.00 dec	
Energy Switch:	Energy	
	Invert: 69.50 ft	Invert: 69.60 ft
	Manning's N: 0.0420	Manning's N: 0.0420
	Geometry: Trapezoidal	Geometry: Trapezoidal
	Max Depth: 2.00 ft	Max Depth: 2.00 ft
	Extrapolation: Normal	Extrapolation: Normal
	Bottom Width: 8.00 ft	Bottom Width: 8.00 ft
	Left Slope: 8.800 (h:v)	Left Slope: 8.800 (h:v)
	Right Slope: 8.800 (h:v)	Right Slope: 8.800 (h:v)
	Bottom Clip	Bottom Clip
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000
	Top Clip	Top Clip
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000

Comment: Max channel depth is 1.5 ft for manning's value

Channel Link: Trapezoidal channel 1		Upstream	Downstream
Scenario:	Existing	Invert: 70.50 ft	Invert: 70.00 ft
From Node:	NZA-0440	Manning's N: 0.0600	Manning's N: 0.0600
To Node:	NZA-0300	Geometry: Trapezoidal	Geometry: Trapezoidal
Link Count:	1	Max Depth: 0.70 ft	Max Depth: 0.70 ft
Flow Direction:	Both	Extrapolation: Normal	Extrapolation: Normal
Damping:	0.0000 ft	Bottom Width: 5.00 ft	Bottom Width: 5.00 ft
Length:	567.92 ft	Left Slope: 15.000 (h:v)	Left Slope: 15.000 (h:v)
Contraction Coef:	0.00	Right Slope: 15.000 (h:v)	Right Slope: 15.000 (h:v)
Expansion Coef:	0.00	Bottom Clip	
Entr Loss Coef:	0.00	Default: 0.00 ft	Default: 0.00 ft
Exit Loss Coef:	0.00	Op Table:	Op Table:
Bend Loss Coef:	0.00	Ref Node:	Ref Node:
Bend Location:	0.00 dec	Manning's N: 0.0000	Manning's N: 0.0000
Energy Switch:	Energy	Top Clip	
		Default: 0.00 ft	Default: 0.00 ft
		Op Table:	Op Table:
		Ref Node:	Ref Node:
		Manning's N: 0.0000	Manning's N: 0.0000

Comment:

Channel Link: Trapezoidal channel 3		Upstream	Downstream
Scenario:	Existing	Invert: 69.20 ft	Invert: 68.90 ft
From Node:	NZA-0330	Manning's N: 0.0420	Manning's N: 0.0420
To Node:	NZA-0340	Geometry: Trapezoidal	Geometry: Trapezoidal
Link Count:	1	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Flow Direction:	Both	Extrapolation: Normal	Extrapolation: Normal
Damping:	0.0000 ft	Bottom Width: 20.00 ft	Bottom Width: 20.00 ft
Length:	263.27 ft	Left Slope: 11.300 (h:v)	Left Slope: 11.300 (h:v)
Contraction Coef:	0.00	Right Slope: 11.300 (h:v)	Right Slope: 11.300 (h:v)
Expansion Coef:	0.00	Bottom Clip	
Entr Loss Coef:	0.00	Default: 0.00 ft	Default: 0.00 ft
Exit Loss Coef:	0.00	Op Table:	Op Table:
Bend Loss Coef:	0.00	Ref Node:	Ref Node:
Bend Location:	0.00 dec	Manning's N: 0.0000	Manning's N: 0.0000
Energy Switch:	Energy	Top Clip	
		Default: 0.00 ft	Default: 0.00 ft
		Op Table:	Op Table:
		Ref Node:	Ref Node:
		Manning's N: 0.0000	Manning's N: 0.0000

Comment: Max channel depth is 1.5 for mannings value

Channel Link: Triangular 1		Upstream	Downstream
Scenario:	Existing	Invert: 70.10 ft	Invert: 70.10 ft
From Node:	NZA-0430	Manning's N: 0.0600	Manning's N: 0.0600

To Node: NZA-0600	Geometry: Trapezoidal		Geometry: Trapezoidal	
Link Count: 1	Max Depth: 1.30 ft	Extrapolation: Normal	Max Depth: 1.30 ft	Extrapolation: Normal
Flow Direction: Both	Bottom Width: 0.01 ft	Left Slope: 5.800 (h:v)	Bottom Width: 0.01 ft	Left Slope: 5.800 (h:v)
Damping: 0.0000 ft	Right Slope: 5.800 (h:v)			
Length: 239.10 ft				
Contraction Coef: 0.00	Bottom Clip			
Expansion Coef: 0.00	Default: 0.00 ft	Op Table:	Default: 0.00 ft	Op Table:
Entr Loss Coef: 0.00	Ref Node:	Ref Node:		
Exit Loss Coef: 0.00	Manning's N: 0.0000	Manning's N: 0.0000		
Bend Loss Coef: 0.00	Top Clip			
Bend Location: 0.00 dec	Default: 0.00 ft	Op Table:	Default: 0.00 ft	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:		
	Manning's N: 0.0000	Manning's N: 0.0000		

Comment: No triangular option available

Channel Link: Triangular channel 2		Upstream		Downstream	
Scenario: Existing	Invert: 69.10 ft	Invert: 67.30 ft			
From Node: NZA-0350	Manning's N: 0.0420	Manning's N: 0.0420			
To Node: NZA-0450	Geometry: Trapezoidal		Geometry: Trapezoidal		
Link Count: 1	Max Depth: 3.00 ft	Extrapolation: Normal	Max Depth: 3.00 ft	Extrapolation: Normal	
Flow Direction: Both	Bottom Width: 0.01 ft	Left Slope: 9.200 (h:v)	Bottom Width: 0.01 ft	Left Slope: 9.200 (h:v)	
Damping: 0.0000 ft	Right Slope: 9.200 (h:v)				
Length: 954.39 ft	Bottom Clip				
Contraction Coef: 0.00	Default: 0.00 ft	Op Table:	Default: 0.00 ft	Op Table:	
Expansion Coef: 0.00	Ref Node:	Ref Node:			
Entr Loss Coef: 0.00	Manning's N: 0.0000	Manning's N: 0.0000			
Exit Loss Coef: 0.00	Top Clip				
Bend Loss Coef: 0.00	Default: 0.00 ft	Op Table:	Default: 0.00 ft	Op Table:	
Bend Location: 0.00 dec	Ref Node:	Ref Node:			
Energy Switch: Energy	Manning's N: 0.0000	Manning's N: 0.0000			

Comment: Max depth is 1.5 ft for mannings value, no triangle option

Weir Link: Corner School Pond 2 Orifice		Bottom Clip	
Scenario: Proposed - 1 Primary	Default: 0.00 ft		
From Node: Corner School Pond 2	Op Table:		
To Node: Schoolview Way Ponds Outlet	Ref Node:		
Link Count: 1			
Flow Direction: Both	Top Clip		

Damping:	0.0000 ft	
Weir Type:	Sharp Crested Vertical	Default: 0.00 ft
Geometry Type:	Circular	Op Table:
Invert:	66.50 ft	Ref Node:
Control Elevation:	66.50 ft	Discharge Coefficients
Max Depth:	0.38 ft	Weir Default: 3.500
		Weir Table:
		Orifice Default: 0.600
		Orifice Table:

Comment:

Weir Link: Corner School Pond 2 Overflow

Scenario:	Proposed - 1 Primary	Bottom Clip
From Node:	Corner School Pond 2	Default: 0.00 ft
To Node:	Schoolview Way Ponds Outlet	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:
Geometry Type:	Trapezoidal	Ref Node:
Invert:	67.89 ft	Discharge Coefficients
Control Elevation:	67.89 ft	Weir Default: 3.500
Max Depth:	2.61 ft	Weir Table:
Extrapolation Method:	Normal Projection	Orifice Default: 0.600
Bottom Width:	30.00 ft	Orifice Table:
Left Slope:	4.000 (h:v)	
Right Slope:	4.000 (h:v)	

Comment:

Pipe Link: L-0160P

	Upstream	Downstream
Scenario:	Proposed - 1	
	Invert: 62.00 ft	Invert: 61.50 ft
Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0300	Geometry: Circular
To Node:	NZA-0290	Geometry: Circular
	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Link Count:	1	Bottom Clip
Flow Direction:	Both	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:
Length:	91.00 ft	Ref Node:
FHWA Code:	0	Manning's N: 0.0000
Entr Loss Coef:	0.50	Manning's N: 0.0000
Exit Loss Coef:	0.50	Top Clip
Bend Loss Coef:	0.00	Default: 0.00 ft
Bend Location:	0.00 dec	Op Table:
Energy Switch:	Energy	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000

Comment: Assumed size, elevations

Pipe Link: L-0240P		Upstream	Downstream
Scenario:	Proposed - 1	Invert: 64.60 ft	Invert: 64.00 ft
	Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0490	Geometry: Circular	Geometry: Circular
To Node:	NZA-0480	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	144.06 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment: Assumed size and lower elevation			

Pipe Link: L-0250P		Upstream	Downstream
Scenario:	Proposed - 1	Invert: 66.00 ft	Invert: 65.00 ft
	Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	Basin 1 drop inlet	Geometry: Circular	Geometry: Circular
To Node:	Manhole 1	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	26.00 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment: No upstream invert located, assume dhthe pipe had a 0.5% negative slope.			

Pipe Link: L-0260P		Upstream	Downstream
Scenario:	Proposed - 1	Invert: 68.69 ft	Invert: 67.00 ft
	Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	Existing Cypress	Geometry: Circular	Geometry: Circular
	Dome	Max Depth: 2.00 ft	Max Depth: 2.00 ft
To Node:	NZA-0570	Bottom Clip	
Link Count:	1	Default: 0.00 ft	Default: 0.00 ft
Flow Direction:	Both	Op Table:	Op Table:
Damping:	0.0000 ft	Ref Node:	Ref Node:
Length:	85.87 ft	Manning's N: 0.0000	Manning's N: 0.0000
FHWA Code:	0	Top Clip	

Entr Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Exit Loss Coef:	0.50	Op Table:		Op Table:	
Bend Loss Coef:	0.00	Ref Node:		Ref Node:	
Bend Location:	0.00 dec	Manning's N:	0.0000	Manning's N:	0.0000
Energy Switch:	Energy				

Comment: Assumed size, elevations from the LiDAR

Pipe Link: L-0300P		Upstream	Downstream		
Scenario:	Proposed - 1	Invert:	70.00 ft	Invert:	66.85 ft
	Primary	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	NZA-0540	Geometry:	Circular	Geometry:	Circular
To Node:	NZA-0550	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	116.00 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment: Assumed size and elevations

Pipe Link: L-0310P		Upstream	Downstream		
Scenario:	Proposed - 1	Invert:	67.00 ft	Invert:	65.00 ft
	Primary	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	NZA-0570	Geometry:	Circular	Geometry:	Circular
To Node:	NZA-0550	Max Depth:	2.50 ft	Max Depth:	2.50 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	488.00 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Pipe Link: L-0320P		Upstream	Downstream
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Scenario:	Proposed - 1	Invert: 60.96 ft	Invert: 60.78 ft
	Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0530	Geometry: Circular	Geometry: Circular
To Node:	NZA-0550	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	105.00 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000

Comment: Assumed size and elevations

Pipe Link: L-0370P		Upstream	Downstream
Scenario:	Proposed - 1	Invert: 60.78 ft	Invert: 59.97 ft
	Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0550	Geometry: Circular	Geometry: Circular
To Node:	NZA-0770	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	900.00 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000

Comment: Assumed size

Pipe Link: L-0400P		Upstream	Downstream
Scenario:	Proposed - 1	Invert: 61.50 ft	Invert: 61.00 ft
	Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0290	Geometry: Circular	Geometry: Circular
To Node:	Schoolview Way Ponds (location of proposed Pond 2A modification)	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	82.33 ft	Ref Node:	Ref Node:
		Manning's N: 0.0000	Manning's N: 0.0000
		Top Clip	
		Default: 0.00 ft	Default: 0.00 ft

FHWA Code:	0	Op Table:	Op Table:
Entr Loss Coef:	0.50	Ref Node:	Ref Node:
Exit Loss Coef:	0.50	Manning's N:	0.0000
Bend Loss Coef:	0.00	Manning's N:	0.0000
Bend Location:	0.00 dec		
Energy Switch:	Energy		

Comment: Assumed size, elevations

Weir Link: L-0480W

Scenario:	Proposed - 1 Primary	Bottom Clip
From Node:	NZA-0300	Default: 0.00 ft
To Node:	NZA-0290	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	70.30 ft	Discharge Coefficients
Control Elevation:	70.30 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-0530W

Scenario:	Proposed - 1 Primary	Bottom Clip
From Node:	NZA-0490	Default: 0.00 ft
To Node:	NZA-0480	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	70.40 ft	Discharge Coefficients
Control Elevation:	70.40 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-0540W

Scenario:	Proposed - 1 Primary	Bottom Clip
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From Node:	Existing Cypress Dome	
To Node:	NZA-0570	Default: 0.00 ft
Link Count:	1	Op Table:
Flow Direction:	Both	Ref Node:
Damping:	0.0000 ft	Top Clip
Weir Type:	Gravel Road Vertical	Default: 0.00 ft
Geometry Type:	Rectangular	Op Table:
Invert:	73.00 ft	Ref Node:
Control Elevation:	73.00 ft	Discharge Coefficients
Max Depth:	99.00 ft	Weir Default: 2.800
Max Width:	20.00 ft	Weir Table:
Fillet:	0.00 ft	Orifice Default: 0.600
		Orifice Table:

Comment:

Weir Link: L-0550W

Scenario:	Proposed - 1 Primary	Bottom Clip
From Node:	NZA-0570	Default: 0.00 ft
To Node:	NZA-0550	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	72.40 ft	Discharge Coefficients
Control Elevation:	72.40 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-0560W

Scenario:	Proposed - 1 Primary	Bottom Clip
From Node:	NZA-0540	Default: 0.00 ft
To Node:	NZA-0530	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	73.20 ft	Discharge Coefficients
Control Elevation:	73.20 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-0570W	
Scenario: Proposed - 1 Primary	Bottom Clip
From Node: NZA-0530	Default: 0.00 ft
To Node: NZA-0550	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Gravel Road Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 73.00 ft	Discharge Coefficients
Control Elevation: 73.00 ft	Weir Default: 2.800
Max Depth: 99.00 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment:

Weir Link: L-0580W	
Scenario: Proposed - 1 Primary	Bottom Clip
From Node: NZA-0550	Default: 0.00 ft
To Node: NZA-0770	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Gravel Road Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 71.40 ft	Discharge Coefficients
Control Elevation: 71.40 ft	Weir Default: 2.800
Max Depth: 99.00 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment:

Weir Link: L-0600W	
Scenario: Proposed - 1 Primary	Bottom Clip
From Node: Basin 1 drop inlet	Default: 0.00 ft
To Node: Basin 1 Catch Basin	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Gravel Road Vertical	Op Table:

Geometry Type: Rectangular
 Invert: 70.30 ft
 Control Elevation: 70.30 ft
 Max Depth: 99.00 ft
 Max Width: 20.00 ft
 Fillet: 0.00 ft

Ref Node:
 Discharge Coefficients
 Weir Default: 2.800
 Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment:

Pipe Link: L-0650P	Upstream	Downstream
Scenario: Proposed - 1	Invert: 64.61 ft	Invert: 64.05 ft
Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node: NZA-0450	Geometry: Circular	Geometry: Circular
To Node: Existing Wetland Buffer	Max Depth: 2.50 ft	Max Depth: 2.50 ft
	Bottom Clip	
Link Count: 1	Default: 0.00 ft	Default: 0.00 ft
Flow Direction: Both	Op Table:	Op Table:
Damping: 0.0000 ft	Ref Node:	Ref Node:
Length: 129.00 ft	Manning's N: 0.0000	Manning's N: 0.0000
FHWA Code: 0	Top Clip	
Entr Loss Coef: 0.50	Default: 0.00 ft	Default: 0.00 ft
Exit Loss Coef: 0.50	Op Table:	Op Table:
Bend Loss Coef: 0.00	Ref Node:	Ref Node:
Bend Location: 0.00 dec	Manning's N: 0.0000	Manning's N: 0.0000
Energy Switch: Energy		

Comment:

Pipe Link: L-0660P	Upstream	Downstream
Scenario: Proposed - 1	Invert: 63.72 ft	Invert: 63.69 ft
Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node: Existing Wetland Buffer	Geometry: Circular	Geometry: Circular
To Node: NZA-0830	Max Depth: 2.50 ft	Max Depth: 2.50 ft
	Bottom Clip	
Link Count: 1	Default: 0.00 ft	Default: 0.00 ft
Flow Direction: Both	Op Table:	Op Table:
Damping: 0.0000 ft	Ref Node:	Ref Node:
Length: 158.00 ft	Manning's N: 0.0000	Manning's N: 0.0000
FHWA Code: 0	Top Clip	
Entr Loss Coef: 0.50	Default: 0.00 ft	Default: 0.00 ft
Exit Loss Coef: 0.50	Op Table:	Op Table:
Bend Loss Coef: 0.00	Ref Node:	Ref Node:
Bend Location: 0.00 dec	Manning's N: 0.0000	Manning's N: 0.0000
Energy Switch: Energy		

Comment:

Weir Link: L-0670W	
Scenario:	Proposed - 1 Primary
From Node:	NZA-0450
To Node:	Existing Wetland Buffer
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Gravel Road Vertical
Geometry Type:	Rectangular
Invert:	70.00 ft
Control Elevation:	70.00 ft
Max Depth:	99.00 ft
Max Width:	20.00 ft
Fillet:	0.00 ft
	Bottom Clip
	Default: 0.00 ft
	Op Table:
	Ref Node:
	Top Clip
	Default: 0.00 ft
	Op Table:
	Ref Node:
	Discharge Coefficients
	Weir Default: 2.800
	Weir Table:
	Orifice Default: 0.600
	Orifice Table:
Comment:	

Weir Link: L-0680W	
Scenario:	Proposed - 1 Primary
From Node:	Existing Wetland Buffer
To Node:	NZA-0830
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Gravel Road Vertical
Geometry Type:	Rectangular
Invert:	70.00 ft
Control Elevation:	70.00 ft
Max Depth:	99.00 ft
Max Width:	20.00 ft
Fillet:	0.00 ft
	Bottom Clip
	Default: 0.00 ft
	Op Table:
	Ref Node:
	Top Clip
	Default: 0.00 ft
	Op Table:
	Ref Node:
	Discharge Coefficients
	Weir Default: 2.800
	Weir Table:
	Orifice Default: 0.600
	Orifice Table:
Comment:	

Weir Link: L-0690W	
Scenario:	Proposed - 1 Primary
From Node:	Basin 1 drop inlet
To Node:	Manhole 1
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Gravel Road Vertical
Geometry Type:	Rectangular
Invert:	70.10 ft
Control Elevation:	70.10 ft
Max Depth:	99.00 ft
Max Width:	20.00 ft
	Bottom Clip
	Default: 0.00 ft
	Op Table:
	Ref Node:
	Top Clip
	Default: 0.00 ft
	Op Table:
	Ref Node:
	Discharge Coefficients
	Weir Default: 2.800
	Weir Table:
	Orifice Default: 0.600

Fillet: 0.00 ft

Orifice Table:

Comment:

Pipe Link: L-0780P		Upstream	Downstream
Scenario:	Proposed - 1	Invert: 64.00 ft	Invert: 63.70 ft
	Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	Basin 1 Catch Basin	Geometry: Circular	Geometry: Circular
To Node:	NZA-0430	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	200.00 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000

Comment: Assumed pipe size

Weir Link: L-0790W		Bottom Clip	
Scenario:	Proposed - 1 Primary	Default: 0.00 ft	
From Node:	Basin 1 Catch Basin	Op Table:	
To Node:	NZA-0430	Ref Node:	
Link Count:	1	Top Clip	
Flow Direction:	Both	Default: 0.00 ft	
Damping:	0.0000 ft	Op Table:	
Weir Type:	Gravel Road Vertical	Ref Node:	
Geometry Type:	Rectangular	Discharge Coefficients	
Invert:	69.70 ft	Weir Default: 2.800	
Control Elevation:	69.70 ft	Weir Table:	
Max Depth:	99.00 ft	Orifice Default: 0.600	
Max Width:	20.00 ft	Orifice Table:	
Fillet:	0.00 ft		

Comment:

Pipe Link: L-0800P		Upstream	Downstream
Scenario:	Proposed - 1	Invert: 65.00 ft	Invert: 64.00 ft
	Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	Manhole 1	Geometry: Circular	Geometry: Circular
To Node:	Basin 1 Catch Basin	Max Depth: 3.00 ft	Max Depth: 3.00 ft

Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	139.10 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment: Assumed size and elevations			

Weir Link: L-0800W			
Scenario:	Proposed - 1 Primary	Bottom Clip	
From Node:	NZA-0830	Default:	0.00 ft
To Node:	Corner Lake wetland	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:	
Geometry Type:	Rectangular	Ref Node:	
Invert:	66.40 ft	Discharge Coefficients	
Control Elevation:	66.40 ft	Weir Default:	2.800
Max Depth:	99.00 ft	Weir Table:	
Max Width:	20.00 ft	Orifice Default:	0.600
Fillet:	0.00 ft	Orifice Table:	
Comment:			

Weir Link: L-0810W			
Scenario:	Proposed - 1 Primary	Bottom Clip	
From Node:	Manhole 1	Default:	0.00 ft
To Node:	Basin 1 Catch Basin	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:	
Geometry Type:	Rectangular	Ref Node:	
Invert:	70.30 ft	Discharge Coefficients	
Control Elevation:	70.30 ft	Weir Default:	2.800
Max Depth:	99.00 ft	Weir Table:	
Max Width:	20.00 ft	Orifice Default:	0.600
Fillet:	0.00 ft	Orifice Table:	
Comment:			

Pipe Link: L-0820P		Upstream	Downstream
Scenario:	Proposed - 1	Invert: 62.50 ft	Invert: 62.00 ft
	Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0440	Geometry: Circular	Geometry: Circular
To Node:	NZA-0300	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	990.57 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment: Assumed size and elevations			

Pipe Link: L-0830P		Upstream	Downstream
Scenario:	Proposed - 1	Invert: 63.00 ft	Invert: 62.50 ft
	Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0600	Geometry: Circular	Geometry: Circular
To Node:	NZA-0440	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	455.41 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment: Assumed size			

Weir Link: L-0850W		
Scenario:	Proposed - 1 Primary	Bottom Clip
From Node:	NZA-0430	Default: 0.00 ft
To Node:	NZA-0600	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	71.00 ft	Discharge Coefficients
Control Elevation:	71.00 ft	Weir Default: 2.800

Max Depth: 99.00 ft	
Max Width: 20.00 ft	Weir Table:
Fillet: 0.00 ft	Orifice Default: 0.600
	Orifice Table:

Comment:

Weir Link: L-0860W

Scenario: Proposed - 1 Primary	Bottom Clip
From Node: NZA-0600	Default: 0.00 ft
To Node: NZA-0440	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Gravel Road Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 69.70 ft	Discharge Coefficients
Control Elevation: 69.70 ft	Weir Default: 2.800
Max Depth: 99.00 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment:

Weir Link: L-0870W

Scenario: Proposed - 1 Primary	Bottom Clip
From Node: NZA-0440	Default: 0.00 ft
To Node: NZA-0300	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Gravel Road Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 69.70 ft	Discharge Coefficients
Control Elevation: 69.70 ft	Weir Default: 2.800
Max Depth: 99.00 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment:

Pipe Link: L-0880P

	Upstream	Downstream
Scenario: Proposed - 1	Invert: 67.62 ft	Invert: 66.90 ft
Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node: NZA-0300	Geometry: Circular	Geometry: Circular

To Node:	NZA-0320	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	None	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	437.33 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment: assumed size					

Pipe Link:	L-0920P	Upstream		Downstream	
Scenario:	Proposed - 1	Invert:	62.60 ft	Invert:	62.30 ft
	Primary	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	NZA-0750	Geometry:	Circular	Geometry:	Circular
To Node:	Pond 3A	Max Depth:	4.00 ft	Max Depth:	4.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	247.41 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment: Assumed size and elevation					

Weir Link:	L-0930W				
Scenario:	Proposed - 1 Primary	Bottom Clip			
From Node:	NZA-0300	Default:	0.00 ft		
To Node:	NZA-0320	Op Table:			
Link Count:	1	Ref Node:			
Flow Direction:	Both	Top Clip			
Damping:	0.0000 ft	Default:	0.00 ft		
Weir Type:	Gravel Road Vertical	Op Table:			
Geometry Type:	Rectangular	Ref Node:			
Invert:	70.40 ft	Discharge Coefficients			
Control Elevation:	70.40 ft	Weir Default:	2.800		
Max Depth:	99.00 ft	Weir Table:			
Max Width:	20.00 ft	Orifice Default:	0.600		
Fillet:	0.00 ft	Orifice Table:			
Comment:					

Weir Link: L-0970W		
Scenario:	Proposed - 1 Primary	Bottom Clip
From Node:	NZA-0750	Default: 0.00 ft
To Node:	Pond 3A	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	71.00 ft	Discharge Coefficients
Control Elevation:	71.00 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:
Comment:		

Pipe Link: L-0990P			Upstream	Downstream
Scenario:	Proposed - 1 Primary	Invert:	64.00 ft	Invert: 63.40 ft
From Node:	NZA-0480	Manning's N:	0.0120	Manning's N: 0.0120
To Node:	NZA-0470	Geometry:	Circular	Geometry: Circular
Link Count:	1	Max Depth:	3.00 ft	Max Depth: 3.00 ft
Flow Direction:	Both	Bottom Clip		
Damping:	0.0000 ft	Default:	0.00 ft	Default: 0.00 ft
Length:	562.03 ft	Op Table:		Op Table:
FHWA Code:	0	Ref Node:		Ref Node:
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N: 0.0000
Exit Loss Coef:	0.50	Top Clip		
Bend Loss Coef:	0.00	Default:	0.00 ft	Default: 0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:
Energy Switch:	Energy	Ref Node:		Ref Node:
		Manning's N:	0.0000	Manning's N: 0.0000
Comment: Assumed size and elevation				

Pipe Link: L-1000P			Upstream	Downstream
Scenario:	Proposed - 1 Primary	Invert:	63.40 ft	Invert: 62.60 ft
From Node:	NZA-0470	Manning's N:	0.0120	Manning's N: 0.0120
To Node:	NZA-0750	Geometry:	Circular	Geometry: Circular
Link Count:	1	Max Depth:	3.00 ft	Max Depth: 3.00 ft
Flow Direction:	Both	Bottom Clip		
Damping:	0.0000 ft	Default:	0.00 ft	Default: 0.00 ft
Length:	763.00 ft	Op Table:		Op Table:
FHWA Code:	0	Ref Node:		Ref Node:
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N: 0.0000
Exit Loss Coef:	0.50	Top Clip		
		Default:	0.00 ft	Default: 0.00 ft

Bend Loss Coef: 0.00	Op Table:	Op Table:
Bend Location: 0.00 dec	Ref Node:	Ref Node:
Energy Switch: Energy	Manning's N: 0.0000	Manning's N: 0.0000

Comment: Assumed size and elevation

Weir Link: L-1010W

Scenario: Proposed - 1 Primary	Bottom Clip
From Node: NZA-0480	Default: 0.00 ft
To Node: NZA-0470	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Gravel Road Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 70.40 ft	Discharge Coefficients
Control Elevation: 70.40 ft	Weir Default: 2.800
Max Depth: 99.00 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment:

Weir Link: L-1020W

Scenario: Proposed - 1 Primary	Bottom Clip
From Node: NZA-0470	Default: 0.00 ft
To Node: NZA-0750	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Gravel Road Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 70.40 ft	Discharge Coefficients
Control Elevation: 70.40 ft	Weir Default: 2.800
Max Depth: 99.00 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment:

Drop Structure Link: L-1040DS

	Upstream Pipe	Downstream Pipe
Scenario: Proposed - 1	Invert: 60.50 ft	Invert: 59.97 ft
Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node: Pond 4A	Geometry: Circular	Geometry: Circular
To Node: Lake Pickett Rd	Max Depth: 2.50 ft	Max Depth: 2.50 ft

	Stormdrain	Bottom Clip	
Link Count:	1	Default: 0.00 ft	Default: 0.00 ft
Flow Direction:	Both	Op Table:	Op Table:
Solution:	Combine	Ref Node:	Ref Node:
Increments:	0	Manning's N: 0.0000	Manning's N: 0.0000
Pipe Count:	1	Top Clip	
Damping:	0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length:	130.86 ft	Op Table:	Op Table:
FHWA Code:	0	Ref Node:	Ref Node:
Entr Loss Coef:	0.50	Manning's N: 0.0000	Manning's N: 0.0000
Exit Loss Coef:	0.50		
Bend Loss Coef:	0.00		
Bend Location:	0.00 dec		
Energy Switch:	Energy		
Pipe Comment: Assumed			

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	66.00 ft	Ref Node:	
Control Elevation:	66.00 ft	Discharge Coefficients	
Max Depth:	99.00 ft	Weir Default:	3.500
Max Width:	4.00 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	
Weir Comment: Minimum elevation of 66.0 for water quality.			

Weir Component		Bottom Clip	
Weir:	2	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Circular	Op Table:	
Invert:	64.80 ft	Ref Node:	
Control Elevation:	64.80 ft	Discharge Coefficients	
Max Depth:	0.50 ft	Weir Default:	3.200
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	
Weir Comment:			

Drop Structure Comment:

Pipe Link: L-1050P		Upstream	Downstream
Scenario:	Proposed - 1 Primary	Invert: 59.97 ft	Invert: 59.50 ft
		Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0770	Geometry: Circular	Geometry: Circular
To Node:	Pond 4A	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	130.00 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000

Comment:

Weir Link: L-1070W		Bottom Clip
Scenario:	Proposed - 1 Primary	Default: 0.00 ft
From Node:	NZA-0770	Op Table:
To Node:	Pond 4A	Ref Node:
Link Count:	1	Top Clip
Flow Direction:	Both	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:
Weir Type:	Gravel Road Vertical	Ref Node:
Geometry Type:	Rectangular	Discharge Coefficients
Invert:	72.00 ft	Weir Default: 2.800
Control Elevation:	72.00 ft	Weir Table:
Max Depth:	99.00 ft	Orifice Default: 0.600
Max Width:	20.00 ft	Orifice Table:
Fillet:	0.00 ft	

Comment:

Weir Link: L-1080W		Bottom Clip
Scenario:	Proposed - 1 Primary	Default: 0.00 ft
From Node:	NZA-0770	Op Table:
To Node:	Lake Pickett Rd Stormdrain	Ref Node:
Link Count:	1	Top Clip
Flow Direction:	Both	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:
Weir Type:	Gravel Road Vertical	Ref Node:
Geometry Type:	Rectangular	Discharge Coefficients
Invert:	72.00 ft	Weir Default: 2.800
Control Elevation:	72.00 ft	Weir Table:
Max Depth:	99.00 ft	

Max Width: 20.00 ft
 Fillet: 0.00 ft

Orifice Default: 0.600
 Orifice Table:

Comment:

Drop Structure Link: L-1090DS		Upstream Pipe	Downstream Pipe
Scenario:	Proposed - 1	Invert: 66.00 ft	Invert: 65.00 ft
	Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	Pond 3A	Geometry: Circular	Geometry: Circular
To Node:	Corner Lake wetland	Max Depth: 3.00 ft	Max Depth: 3.00 ft
		Bottom Clip	
Link Count:	1	Default: 0.00 ft	Default: 0.00 ft
Flow Direction:	Both	Op Table:	Op Table:
Solution:	Combine	Ref Node:	Ref Node:
Increments:	0	Manning's N: 0.0000	Manning's N: 0.0000
Pipe Count:	1	Top Clip	
Damping:	0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length:	793.05 ft	Op Table:	Op Table:
FHWA Code:	0	Ref Node:	Ref Node:
Entr Loss Coef:	0.50	Manning's N: 0.0000	Manning's N: 0.0000
Exit Loss Coef:	0.50		
Bend Loss Coef:	0.00		
Bend Location:	0.00 dec		
Energy Switch:	Energy		

Pipe Comment:

Weir Component		
Weir:	1	Bottom Clip
Weir Count:	1	Default: 0.00 ft
Weir Flow Direction:	Both	Op Table:
Damping:	0.0000 ft	Ref Node:
Weir Type:	Sharp Crested Vertical	Top Clip
Geometry Type:	Rectangular	Default: 0.00 ft
Invert:	68.65 ft	Op Table:
Control Elevation:	68.65 ft	Ref Node:
Max Depth:	99.00 ft	Discharge Coefficients
Max Width:	6.00 ft	Weir Default: 3.200
Fillet:	0.00 ft	Weir Table:
		Orifice Default: 0.600
		Orifice Table:

Weir Comment: Minimum elevation for water quality is 68.4'

Weir Component		
Weir:	2	Bottom Clip
Weir Count:	1	Default: 0.00 ft
Weir Flow Direction:	Both	Op Table:
Damping:	0.0000 ft	Ref Node:

Weir Type: Sharp Crested Vertical
 Geometry Type: Circular
 Invert: 67.00 ft
 Control Elevation: 67.00 ft
 Max Depth: 0.75 ft

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: Assumed

Drop Structure Comment:

Drop Structure Link: L-1120DS		Upstream Pipe		Downstream Pipe	
Scenario:	Proposed - 1	Invert:	61.00 ft	Invert:	60.85 ft
	Primary	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	Schoolview Way	Geometry:	Circular	Geometry:	Circular
	Ponds (location of proposed Pond 2A modification)	Max Depth:	2.50 ft	Max Depth:	2.50 ft
		Bottom Clip			
		Default:	0.00 ft	Default:	0.00 ft
To Node:	Corner School Pond 2	Op Table:		Op Table:	
		Ref Node:		Ref Node:	
Link Count:	1	Manning's N:	0.0000	Manning's N:	0.0000
Flow Direction:	Both	Top Clip			
		Default:	0.00 ft	Default:	0.00 ft
Solution:	Combine	Op Table:		Op Table:	
Increments:	0	Ref Node:		Ref Node:	
Pipe Count:	2	Manning's N:	0.0000	Manning's N:	0.0000
Damping:	0.0000 ft				
Length:	382.04 ft				
FHWA Code:	0				
Entr Loss Coef:	0.50				
Exit Loss Coef:	0.50				
Bend Loss Coef:	0.00				
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component	
Weir:	1
Bottom Clip	
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Top Clip	
Geometry Type:	Circular
Invert:	66.50 ft
Control Elevation:	66.50 ft
	Default: 0.00 ft
	Op Table:
	Ref Node:

Max Depth: 0.50 ft

Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Weir Component	
Weir: 2	Bottom Clip
Weir Count: 1	Default: 0.00 ft
Weir Flow Direction: Both	Op Table:
Damping: 0.0000 ft	Ref Node:
Weir Type: Horizontal	Top Clip
Geometry Type: Rectangular	Default: 0.00 ft
Invert: 67.30 ft	Op Table:
Control Elevation: 67.30 ft	Ref Node:
Max Depth: 99.00 ft	Discharge Coefficients
Max Width: 6.00 ft	Weir Default: 3.200
Fillet: 0.00 ft	Weir Table:
	Orifice Default: 0.600
	Orifice Table:

Weir Comment: Mimimum elevation is 67.3'

Drop Structure Comment:

Pipe Link: L-1130P	Upstream	Downstream
Scenario: Proposed - 1	Invert: 63.70 ft	Invert: 63.00 ft
Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node: NZA-0430	Geometry: Circular	Geometry: Circular
To Node: NZA-0600	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Link Count: 1	Bottom Clip	
Flow Direction: Both	Default: 0.00 ft	Default: 0.00 ft
Damping: 0.0000 ft	Op Table:	Op Table:
Length: 239.00 ft	Ref Node:	Ref Node:
FHWA Code: 0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef: 0.50	Top Clip	
Exit Loss Coef: 0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef: 0.00	Op Table:	Op Table:
Bend Location: 0.00 dec	Ref Node:	Ref Node:
Energy Switch: Energy	Manning's N: 0.0000	Manning's N: 0.0000

Comment:

Pipe Link: L-1170P	Upstream	Downstream
Scenario: Proposed - 1	Invert: 0.00 ft	Invert: 0.00 ft

Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node: NZA-0870	Geometry: Circular	Geometry: Circular
To Node: NZA-0570	Max Depth: 2.50 ft	Max Depth: 2.50 ft
Link Count: 1	Bottom Clip	
Flow Direction: None	Default: 0.00 ft	Default: 0.00 ft
Damping: 0.0000 ft	Op Table:	Op Table:
Length: 984.32 ft	Ref Node:	Ref Node:
FHWA Code: 0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef: 0.50	Top Clip	
Exit Loss Coef: 0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef: 0.00	Op Table:	Op Table:
Bend Location: 0.00 dec	Ref Node:	Ref Node:
Energy Switch: Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment:		

Pipe Link: L-1180P	Upstream	Downstream
Scenario: Proposed - 1	Invert: 0.00 ft	Invert: 0.00 ft
Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node: NZA-0870	Geometry: Circular	Geometry: Circular
To Node: NZA-0490	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Link Count: 1	Bottom Clip	
Flow Direction: None	Default: 0.00 ft	Default: 0.00 ft
Damping: 0.0000 ft	Op Table:	Op Table:
Length: 1559.35 ft	Ref Node:	Ref Node:
FHWA Code: 0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef: 0.50	Top Clip	
Exit Loss Coef: 0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef: 0.00	Op Table:	Op Table:
Bend Location: 0.00 dec	Ref Node:	Ref Node:
Energy Switch: Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment:		

Pipe Link: L-1190P	Upstream	Downstream
Scenario: Proposed - 1	Invert: 0.00 ft	Invert: 0.00 ft
Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node: NZA-0880	Geometry: Circular	Geometry: Circular
To Node: NZA-0750	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Link Count: 1	Bottom Clip	
Flow Direction: None	Default: 0.00 ft	Default: 0.00 ft
Damping: 0.0000 ft	Op Table:	Op Table:
Length: 1939.93 ft	Ref Node:	Ref Node:
FHWA Code: 0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef: 0.50	Top Clip	
Exit Loss Coef: 0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef: 0.00	Op Table:	Op Table:

Bend Location: 0.00 dec Ref Node: Ref Node:
 Energy Switch: Energy Manning's N: 0.0000 Manning's N: 0.0000

Comment:

Pipe Link: L-1200P	Upstream	Downstream
Scenario: Proposed - 1	Invert: 0.00 ft	Invert: 0.00 ft
Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node: NZA-0880	Geometry: Circular	Geometry: Circular
To Node: NZA-0320	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Link Count: 1	Bottom Clip	
Flow Direction: None	Default: 0.00 ft	Default: 0.00 ft
Damping: 0.0000 ft	Op Table:	Op Table:
Length: 1428.86 ft	Ref Node:	Ref Node:
FHWA Code: 0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef: 0.50	Top Clip	
Exit Loss Coef: 0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef: 0.00	Op Table:	Op Table:
Bend Location: 0.00 dec	Ref Node:	Ref Node:
Energy Switch: Energy	Manning's N: 0.0000	Manning's N: 0.0000

Comment:

Pipe Link: L-1210P	Upstream	Downstream
Scenario: Proposed - 1	Invert: 0.00 ft	Invert: 0.00 ft
Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node: NZA-0890	Geometry: Circular	Geometry: Circular
To Node: NZA-0290	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Link Count: 1	Bottom Clip	
Flow Direction: None	Default: 0.00 ft	Default: 0.00 ft
Damping: 0.0000 ft	Op Table:	Op Table:
Length: 1215.84 ft	Ref Node:	Ref Node:
FHWA Code: 0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef: 0.50	Top Clip	
Exit Loss Coef: 0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef: 0.00	Op Table:	Op Table:
Bend Location: 0.00 dec	Ref Node:	Ref Node:
Energy Switch: Energy	Manning's N: 0.0000	Manning's N: 0.0000

Comment:

Pipe Link: L-1220P	Upstream	Downstream
Scenario: Proposed - 1	Invert: 0.00 ft	Invert: 0.00 ft
Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node: NZA-0890	Geometry: Circular	Geometry: Circular

To Node:	Basin 1 drop inlet	Max Depth:	3.00 ft	Max Depth:	3.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	None	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	610.98 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Weir Link: Schoolview Way Overland					
Scenario:	Proposed - 1 Primary	Bottom Clip			
From Node:	NZA-0290	Default:	0.00 ft		
To Node:	Schoolview Way Ponds (location of proposed Pond 2A modification)	Op Table:			
		Ref Node:			
Link Count:	1	Top Clip			
Flow Direction:	Both	Default:	0.00 ft		
Damping:	0.0000 ft	Op Table:			
Weir Type:	Gravel Road Vertical	Ref Node:			
Geometry Type:	Rectangular	Discharge Coefficients			
Invert:	69.70 ft	Weir Default:	2.800		
Control Elevation:	69.70 ft	Weir Table:			
Max Depth:	99.00 ft	Orifice Default:	0.600		
Max Width:	20.00 ft	Orifice Table:			
Fillet:	0.00 ft				
Comment:					

Pipe Link: Connecting 36" RCP		Upstream		Downstream	
Scenario:	Proposed - 2	Invert:	61.00 ft	Invert:	60.85 ft
	Alternate	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	Schoolview Way	Geometry: Circular		Geometry: Circular	
	Ponds (location of proposed Pond 2A modification)	Max Depth:	3.00 ft	Max Depth:	3.00 ft
		Bottom Clip			
To Node:	Corner School Pond 2	Default:	0.00 ft	Default:	0.00 ft
		Op Table:		Op Table:	
		Ref Node:		Ref Node:	
Link Count:	1	Manning's N:	0.0000	Manning's N:	0.0000
Flow Direction:	Both	Top Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	145.00 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	

Entr Loss Coef: 0.50 Manning's N: 0.0000 Manning's N: 0.0000
 Exit Loss Coef: 0.50
 Bend Loss Coef: 0.00
 Bend Location: 0.00 dec
 Energy Switch: Energy

Comment:

Pipe Link: Connecting 48" PVC		Upstream	Downstream
Scenario:	Proposed - 2	Invert: 61.00 ft	Invert: 60.85 ft
	Alternate	Manning's N: 0.0090	Manning's N: 0.0090
From Node:	Schoolview Way	Geometry: Circular	Geometry: Circular
	Ponds (location of proposed Pond 2A modification)	Max Depth: 4.00 ft	Max Depth: 4.00 ft
To Node:	Corner School Pond 2	Bottom Clip	
		Default: 0.00 ft	Default: 0.00 ft
Link Count:	1	Op Table:	Op Table:
Flow Direction:	Both	Ref Node:	Ref Node:
		Manning's N: 0.0000	Manning's N: 0.0000
Damping:	0.0000 ft	Top Clip	
Length:	152.00 ft	Default: 0.00 ft	Default: 0.00 ft
FHWA Code:	0	Op Table:	Op Table:
Entr Loss Coef:	0.50	Ref Node:	Ref Node:
Exit Loss Coef:	0.50	Manning's N: 0.0000	Manning's N: 0.0000
Bend Loss Coef:	0.00		
Bend Location:	0.00 dec		
Energy Switch:	Energy		

Comment:

Weir Link: Corner School Pond 2 Orifice		Bottom Clip	
Scenario:	Proposed - 2 Alternate	Default: 0.00 ft	
From Node:	Corner School Pond 2	Op Table:	
To Node:	Schoolview Way Ponds Outlet	Ref Node:	
Link Count:	1	Top Clip	
Flow Direction:	Both	Default: 0.00 ft	
Damping:	0.0000 ft	Op Table:	
Weir Type:	Sharp Crested Vertical	Ref Node:	
Geometry Type:	Circular	Discharge Coefficients	
Invert:	66.50 ft	Weir Default: 3.500	
Control Elevation:	66.50 ft	Weir Table:	
Max Depth:	0.38 ft	Orifice Default: 0.600	
		Orifice Table:	

Comment:

Weir Link: Corner School Pond 2 Overflow		
Scenario:	Proposed - 2 Alternate	Bottom Clip
From Node:	Corner School Pond 2	Default: 0.00 ft
To Node:	Schoolview Way Ponds Outlet	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:
Geometry Type:	Trapezoidal	Ref Node:
Invert:	67.89 ft	Discharge Coefficients
Control Elevation:	67.89 ft	Weir Default: 3.500
Max Depth:	2.61 ft	Weir Table:
Extrapolation Method:	Normal Projection	Orifice Default: 0.600
Bottom Width:	30.00 ft	Orifice Table:
Left Slope:	4.000 (h:v)	
Right Slope:	4.000 (h:v)	
Comment:		

Pipe Link: L-0170P		
	Upstream	Downstream
Scenario:	Proposed - 2	Invert: 67.60 ft
	Alternate	Manning's N: 0.0120
From Node:	NZA-0320	Geometry: Circular
To Node:	NZA-0330	Max Depth: 3.00 ft
Link Count:	1	Bottom Clip
Flow Direction:	Both	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:
Length:	176.41 ft	Ref Node:
FHWA Code:	0	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip
Exit Loss Coef:	0.50	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:
Bend Location:	0.00 dec	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000
Comment: Size assumed, elevations from channel elevations		

Pipe Link: L-0240P		
	Upstream	Downstream
Scenario:	Proposed - 2	Invert: 65.20 ft
	Alternate	Manning's N: 0.0120
From Node:	NZA-0490	Geometry: Circular
To Node:	NZA-0480	Max Depth: 3.00 ft
Link Count:	1	Bottom Clip
Flow Direction:	Both	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:
Length:	144.06 ft	Ref Node:
FHWA Code:	0	Manning's N: 0.0000

Entr Loss Coef: 0.50	Top Clip	
Exit Loss Coef: 0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef: 0.00	Op Table:	Op Table:
Bend Location: 0.00 dec	Ref Node:	Ref Node:
Energy Switch: Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment: Assumed size and lower elevation		

Pipe Link: L-0250P	Upstream	Downstream
Scenario: Proposed - 2	Invert: 67.62 ft	Invert: 66.90 ft
Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node: Basin 1 drop inlet	Geometry: Circular	Geometry: Circular
To Node: Manhole 1	Max Depth: 4.00 ft	Max Depth: 4.00 ft
Link Count: 1	Bottom Clip	
Flow Direction: Both	Default: 0.00 ft	Default: 0.00 ft
Damping: 0.0000 ft	Op Table:	Op Table:
Length: 26.00 ft	Ref Node:	Ref Node:
FHWA Code: 0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef: 0.50	Top Clip	
Exit Loss Coef: 0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef: 0.00	Op Table:	Op Table:
Bend Location: 0.00 dec	Ref Node:	Ref Node:
Energy Switch: Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment:		

Pipe Link: L-0260P	Upstream	Downstream
Scenario: Proposed - 2	Invert: 68.69 ft	Invert: 67.00 ft
Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node: Existing Cypress Dome	Geometry: Circular	Geometry: Circular
To Node: NZA-0570	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Link Count: 1	Bottom Clip	
Flow Direction: Both	Default: 0.00 ft	Default: 0.00 ft
Damping: 0.0000 ft	Op Table:	Op Table:
Length: 85.87 ft	Ref Node:	Ref Node:
FHWA Code: 0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef: 0.50	Top Clip	
Exit Loss Coef: 0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef: 0.00	Op Table:	Op Table:
Bend Location: 0.00 dec	Ref Node:	Ref Node:
Energy Switch: Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment: Assumed size, elevations from the LiDAR		

Pipe Link: L-0300P		Upstream	Downstream
Scenario:	Proposed - 2	Invert: 70.00 ft	Invert: 66.85 ft
	Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0540	Geometry: Circular	Geometry: Circular
To Node:	NZA-0550	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	116.00 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment: Assumed size and elevations			

Pipe Link: L-0370P		Upstream	Downstream
Scenario:	Proposed - 2	Invert: 60.78 ft	Invert: 59.97 ft
	Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0550	Geometry: Circular	Geometry: Circular
To Node:	Lake Pickett Rd Stormdrain	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	900.00 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment:			

Weir Link: L-0490W		
Scenario:	Proposed - 2 Alternate	Bottom Clip
From Node:	NZA-0320	Default: 0.00 ft
To Node:	NZA-0330	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	72.00 ft	Discharge Coefficients

Control Elevation: 72.00 ft	
Max Depth: 99.00 ft	Weir Default: 2.800
Max Width: 20.00 ft	Weir Table:
Fillet: 0.00 ft	Orifice Default: 0.600
	Orifice Table:

Comment:

Weir Link: L-0530W

Scenario: Proposed - 2 Alternate	Bottom Clip
From Node: NZA-0490	Default: 0.00 ft
To Node: NZA-0480	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Gravel Road Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 70.40 ft	Discharge Coefficients
Control Elevation: 70.40 ft	Weir Default: 2.800
Max Depth: 99.00 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment:

Weir Link: L-0540W

Scenario: Proposed - 2 Alternate	Bottom Clip
From Node: Existing Cypress Dome	Default: 0.00 ft
To Node: NZA-0570	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Gravel Road Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 73.00 ft	Discharge Coefficients
Control Elevation: 73.00 ft	Weir Default: 2.800
Max Depth: 99.00 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment:

Weir Link: L-0560W

Scenario: Proposed - 2 Alternate	Bottom Clip
From Node: NZA-0540	Default: 0.00 ft

To Node:	NZA-0530	
Link Count:	1	Op Table:
Flow Direction:	Both	Ref Node:
Damping:	0.0000 ft	Top Clip
Weir Type:	Gravel Road Vertical	Default: 0.00 ft
Geometry Type:	Rectangular	Op Table:
Invert:	73.20 ft	Ref Node:
Control Elevation:	73.20 ft	Discharge Coefficients
Max Depth:	99.00 ft	Weir Default: 2.800
Max Width:	20.00 ft	Weir Table:
Fillet:	0.00 ft	Orifice Default: 0.600
		Orifice Table:

Comment:

Weir Link: L-0570W

Scenario:	Proposed - 2 Alternate	Bottom Clip
From Node:	NZA-0530	Default: 0.00 ft
To Node:	NZA-0550	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	73.00 ft	Discharge Coefficients
Control Elevation:	73.00 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-0580W

Scenario:	Proposed - 2 Alternate	Bottom Clip
From Node:	NZA-0550	Default: 0.00 ft
To Node:	Lake Pickett Rd Stormdrain	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	71.40 ft	Discharge Coefficients
Control Elevation:	71.40 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-0600W		
Scenario:	Proposed - 2 Alternate	Bottom Clip
From Node:	Basin 1 drop inlet	Default: 0.00 ft
To Node:	Basin 1 Catch Basin	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	70.30 ft	Discharge Coefficients
Control Elevation:	70.30 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:
Comment:		

Pipe Link: L-0650P			Upstream	Downstream
Scenario:	Proposed - 2 Alternate	Invert:	64.61 ft	Invert: 64.05 ft
From Node:	NZA-0450	Manning's N:	0.0120	Manning's N: 0.0120
To Node:	NZA-0830	Geometry:	Circular	Geometry: Circular
Link Count:	1	Max Depth:	2.50 ft	Max Depth: 2.50 ft
Flow Direction:	Both	Bottom Clip		
Damping:	0.0000 ft	Default:	0.00 ft	Default: 0.00 ft
Length:	129.00 ft	Op Table:		Op Table:
FHWA Code:	0	Ref Node:		Ref Node:
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N: 0.0000
Exit Loss Coef:	0.50	Top Clip		
Bend Loss Coef:	0.00	Default:	0.00 ft	Default: 0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:
Energy Switch:	Energy	Ref Node:		Ref Node:
		Manning's N:	0.0000	Manning's N: 0.0000
Comment:				

Weir Link: L-0690W		
Scenario:	Proposed - 2 Alternate	Bottom Clip
From Node:	Basin 1 drop inlet	Default: 0.00 ft
To Node:	Manhole 1	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	70.10 ft	Discharge Coefficients
Control Elevation:	70.10 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:

Max Width: 20.00 ft
 Fillet: 0.00 ft

Orifice Default: 0.600
 Orifice Table:

Comment:

Pipe Link: L-0780P		Upstream	Downstream
Scenario:	Proposed - 2	Invert: 66.70 ft	Invert: 66.50 ft
	Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	Basin 1 Catch Basin	Geometry: Circular	Geometry: Circular
To Node:	NZA-0430	Max Depth: 4.00 ft	Max Depth: 4.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	200.00 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000

Comment: Assumed pipe size

Weir Link: L-0790W		Bottom Clip	
Scenario:	Proposed - 2 Alternate	Default: 0.00 ft	
From Node:	Basin 1 Catch Basin	Op Table:	
To Node:	NZA-0430	Ref Node:	
Link Count:	1	Top Clip	
Flow Direction:	Both	Default: 0.00 ft	
Damping:	0.0000 ft	Op Table:	
Weir Type:	Gravel Road Vertical	Ref Node:	
Geometry Type:	Rectangular	Discharge Coefficients	
Invert:	71.50 ft	Weir Default: 2.800	
Control Elevation:	71.50 ft	Weir Table:	
Max Depth:	99.00 ft	Orifice Default: 0.600	
Max Width:	20.00 ft	Orifice Table:	
Fillet:	0.00 ft		

Comment:

Pipe Link: L-0800P		Upstream	Downstream
Scenario:	Proposed - 2	Invert: 66.90 ft	Invert: 66.70 ft
	Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	Manhole 1	Geometry: Circular	Geometry: Circular

To Node:	Basin 1 Catch Basin	Max Depth:	4.00 ft	Max Depth:	4.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	139.10 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment: Assumed size and elevations					

Weir Link: L-0800W					
Scenario:	Proposed - 2 Alternate	Bottom Clip			
From Node:	NZA-0830	Default:	0.00 ft		
To Node:	Corner Lake wetland	Op Table:			
Link Count:	1	Ref Node:			
Flow Direction:	Both	Top Clip			
Damping:	0.0000 ft	Default:	0.00 ft		
Weir Type:	Gravel Road Vertical	Op Table:			
Geometry Type:	Rectangular	Ref Node:			
Invert:	66.40 ft	Discharge Coefficients			
Control Elevation:	66.40 ft	Weir Default:	2.800		
Max Depth:	99.00 ft	Weir Table:			
Max Width:	20.00 ft	Orifice Default:	0.600		
Fillet:	0.00 ft	Orifice Table:			
Comment:					

Weir Link: L-0810W					
Scenario:	Proposed - 2 Alternate	Bottom Clip			
From Node:	Manhole 1	Default:	0.00 ft		
To Node:	Basin 1 Catch Basin	Op Table:			
Link Count:	1	Ref Node:			
Flow Direction:	Both	Top Clip			
Damping:	0.0000 ft	Default:	0.00 ft		
Weir Type:	Gravel Road Vertical	Op Table:			
Geometry Type:	Rectangular	Ref Node:			
Invert:	70.30 ft	Discharge Coefficients			
Control Elevation:	70.30 ft	Weir Default:	2.800		
Max Depth:	99.00 ft	Weir Table:			
Max Width:	20.00 ft	Orifice Default:	0.600		
Fillet:	0.00 ft	Orifice Table:			
Comment:					

Pipe Link: L-0820P		Upstream	Downstream
Scenario:	Proposed - 2	Invert: 65.60 ft	Invert: 64.60 ft
	Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0440	Geometry: Circular	Geometry: Circular
To Node:	NZA-0300	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	990.57 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment: Assumed size and elevations			

Pipe Link: L-0830P		Upstream	Downstream
Scenario:	Proposed - 2	Invert: 66.20 ft	Invert: 65.60 ft
	Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0600	Geometry: Circular	Geometry: Circular
To Node:	NZA-0440	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	455.41 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment: Assumed size			

Weir Link: L-0850W		Bottom Clip
Scenario:	Proposed - 2 Alternate	Default: 0.00 ft
From Node:	NZA-0430	Op Table:
To Node:	NZA-0600	Ref Node:
Link Count:	1	
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	71.00 ft	Discharge Coefficients
Control Elevation:	71.00 ft	Weir Default: 2.800

Max Depth: 99.00 ft	
Max Width: 20.00 ft	Weir Table:
Fillet: 0.00 ft	Orifice Default: 0.600
	Orifice Table:

Comment:

Weir Link: L-0860W

Scenario: Proposed - 2 Alternate	Bottom Clip
From Node: NZA-0600	Default: 0.00 ft
To Node: NZA-0440	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Gravel Road Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 70.10 ft	Discharge Coefficients
Control Elevation: 70.10 ft	Weir Default: 2.800
Max Depth: 99.00 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment:

Weir Link: L-0870W

Scenario: Proposed - 2 Alternate	Bottom Clip
From Node: NZA-0440	Default: 0.00 ft
To Node: NZA-0300	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Gravel Road Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 70.10 ft	Discharge Coefficients
Control Elevation: 70.10 ft	Weir Default: 2.800
Max Depth: 99.00 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment:

Pipe Link: L-0880P

	Upstream	Downstream
Scenario: Proposed - 2	Invert: 67.00 ft	Invert: 67.60 ft
Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node: NZA-0300	Geometry: Circular	Geometry: Circular

To Node:	NZA-0320	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000	Op Table:		Op Table:	
Length:	437.33 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment: assumed size					

Pipe Link:	L-0890P	Upstream		Downstream	
Scenario:	Proposed - 2	Invert:	67.20 ft	Invert:	66.90 ft
	Alternate	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	NZA-0330	Geometry: Circular		Geometry: Circular	
To Node:	NZA-0340	Max Depth:	3.00 ft	Max Depth:	3.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000	Op Table:		Op Table:	
Length:	263.27 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment: Assumed size					

Pipe Link:	L-0900P	Upstream		Downstream	
Scenario:	Proposed - 2	Invert:	66.90 ft	Invert:	65.60 ft
	Alternate	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	NZA-0340	Geometry: Circular		Geometry: Circular	
To Node:	NZA-0880	Max Depth:	3.00 ft	Max Depth:	3.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000	Op Table:		Op Table:	
Length:	974.33 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment: Assumed size

Pipe Link: L-0920P		Upstream	Downstream
Scenario:	Proposed - 2	Invert: 62.60 ft	Invert: 62.30 ft
	Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0750	Geometry: Circular	Geometry: Circular
To Node:	Pond 3B	Max Depth: 4.00 ft	Max Depth: 4.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	551.07 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000

Comment:

Weir Link: L-0930W		Bottom Clip	
Scenario:	Proposed - 2 Alternate	Default: 0.00 ft	
From Node:	NZA-0300	Op Table:	
To Node:	NZA-0320	Ref Node:	
Link Count:	1	Top Clip	
Flow Direction:	Both	Default: 0.00 ft	
Damping:	0.0000 ft	Op Table:	
Weir Type:	Gravel Road Vertical	Ref Node:	
Geometry Type:	Rectangular	Discharge Coefficients	
Invert:	70.10 ft	Weir Default: 2.800	
Control Elevation:	70.10 ft	Weir Table:	
Max Depth:	99.00 ft	Orifice Default: 0.600	
Max Width:	20.00 ft	Orifice Table:	
Fillet:	0.00 ft		

Comment:

Weir Link: L-0940W		Bottom Clip	
Scenario:	Proposed - 2 Alternate	Default: 0.00 ft	
From Node:	NZA-0330	Op Table:	
To Node:	NZA-0340	Ref Node:	
Link Count:	1	Top Clip	
Flow Direction:	Both	Default: 0.00 ft	
Damping:	0.0000 ft		

Weir Type:	Gravel Road Vertical	
Geometry Type:	Rectangular	Op Table:
Invert:	70.10 ft	Ref Node:
Control Elevation:	70.10 ft	Discharge Coefficients
Max Depth:	99.00 ft	Weir Default: 2.800
Max Width:	20.00 ft	Weir Table:
Fillet:	0.00 ft	Orifice Default: 0.600
		Orifice Table:

Comment:

Weir Link: L-0950W

Scenario:	Proposed - 2 Alternate	Bottom Clip
From Node:	NZA-0340	Default: 0.00 ft
To Node:	NZA-0880	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	70.10 ft	Discharge Coefficients
Control Elevation:	70.10 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Pipe Link: L-0990P

	Upstream	Downstream
Scenario:	Proposed - 2	Invert: 65.00 ft
	Alternate	Invert: 64.40 ft
From Node:	NZA-0480	Manning's N: 0.0120
To Node:	NZA-0470	Manning's N: 0.0120
Link Count:	1	Geometry: Circular
Flow Direction:	Both	Geometry: Circular
Damping:	0.0000 ft	Max Depth: 3.00 ft
Length:	562.03 ft	Max Depth: 3.00 ft
FHWA Code:	0	Bottom Clip
Entr Loss Coef:	0.50	Default: 0.00 ft
Exit Loss Coef:	0.50	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:
Bend Location:	0.00 dec	Op Table:
Energy Switch:	Energy	Ref Node:
	Manning's N: 0.0000	Ref Node:
		Manning's N: 0.0000
		Top Clip
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000

Comment: Assumed size and elevation

Pipe Link: L-1000P		Upstream	Downstream
Scenario:	Proposed - 2 Alternate	Invert: 64.40 ft	Invert: 63.60 ft
		Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0470	Geometry: Circular	Geometry: Circular
To Node:	NZA-0750	Max Depth: 4.00 ft	Max Depth: 4.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000	Op Table:	Op Table:
Length:	763.00 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment: Assumed size and elevation			

Weir Link: L-1010W		Bottom Clip
Scenario:	Proposed - 2 Alternate	Default: 0.00 ft
From Node:	NZA-0480	Op Table:
To Node:	NZA-0470	Ref Node:
Link Count:	1	Top Clip
Flow Direction:	Both	Default: 0.00 ft
Damping:	0.0000	Op Table:
Weir Type:	Gravel Road Vertical	Ref Node:
Geometry Type:	Rectangular	Discharge Coefficients
Invert:	70.40 ft	Weir Default: 2.800
Control Elevation:	70.40 ft	Weir Table:
Max Depth:	99.00 ft	Orifice Default: 0.600
Max Width:	20.00 ft	Orifice Table:
Fillet:	0.00 ft	
Comment:		

Weir Link: L-1020W		Bottom Clip
Scenario:	Proposed - 2 Alternate	Default: 0.00 ft
From Node:	NZA-0470	Op Table:
To Node:	NZA-0750	Ref Node:
Link Count:	1	Top Clip
Flow Direction:	Both	Default: 0.00 ft
Damping:	0.0000	Op Table:
Weir Type:	Gravel Road Vertical	Ref Node:
Geometry Type:	Rectangular	Discharge Coefficients
Invert:	70.40 ft	Weir Default: 2.800
Control Elevation:	70.40 ft	Weir Table:
Max Depth:	99.00 ft	

Max Width: 20.00 ft
 Fillet: 0.00 ft

Orifice Default: 0.600
 Orifice Table:

Comment:

Pipe Link: L-1080P	Upstream	Downstream
Scenario: Proposed - 2	Invert: 65.60 ft	Invert: 65.00 ft
Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node: NZA-0880	Geometry: Circular	Geometry: Circular
To Node: Pond 2B	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Link Count: 1	Bottom Clip	
Flow Direction: Both	Default: 0.00 ft	Default: 0.00 ft
Damping: 0.0000 ft	Op Table:	Op Table:
Length: 150.97 ft	Ref Node:	Ref Node:
FHWA Code: 0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef: 0.50	Top Clip	
Exit Loss Coef: 0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef: 0.00	Op Table:	Op Table:
Bend Location: 0.00 dec	Ref Node:	Ref Node:
Energy Switch: Energy	Manning's N: 0.0000	Manning's N: 0.0000

Comment:

Weir Link: L-1090W	Bottom Clip	
Scenario: Proposed - 2 Alternate	Default: 0.00 ft	
From Node: NZA-0880	Op Table:	
To Node: Pond 2B	Ref Node:	
Link Count: 1	Top Clip	
Flow Direction: Both	Default: 0.00 ft	
Damping: 0.0000 ft	Op Table:	
Weir Type: Gravel Road Vertical	Ref Node:	
Geometry Type: Rectangular	Discharge Coefficients	
Invert: 71.70 ft	Weir Default: 2.800	
Control Elevation: 71.70 ft	Weir Table:	
Max Depth: 99.00 ft	Orifice Default: 0.600	
Max Width: 20.00 ft	Orifice Table:	
Fillet: 0.00 ft		

Comment:

Pipe Link: L-1100P	Upstream	Downstream
Scenario: Proposed - 2	Invert: 65.00 ft	Invert: 64.60 ft
Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node: NZA-0290	Geometry: Circular	Geometry: Circular

To Node:	NZA-0300	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	90.47 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Weir Link: L-1110W					
Scenario:	Proposed - 2 Alternate	Bottom Clip			
From Node:	NZA-0290	Default:	0.00 ft		
To Node:	NZA-0300	Op Table:			
Link Count:	1	Ref Node:			
Flow Direction:	Both	Top Clip			
Damping:	0.0000 ft	Default:	0.00 ft		
Weir Type:	Gravel Road Vertical	Op Table:			
Geometry Type:	Rectangular	Ref Node:			
Invert:	71.70 ft	Discharge Coefficients			
Control Elevation:	71.70 ft	Weir Default:	2.800		
Max Depth:	99.00 ft	Weir Table:			
Max Width:	20.00 ft	Orifice Default:	0.600		
Fillet:	0.00 ft	Orifice Table:			
Comment:					

Pipe Link: L-1120P					
Scenario:	Proposed - 2 Alternate	Upstream		Downstream	
		Invert:	66.50 ft	Invert:	66.00 ft
From Node:	NZA-0430	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Pond 1A	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	124.92 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	0.50	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: L-1130P		Upstream	Downstream
Scenario:	Proposed - 2	Invert: 67.00 ft	Invert: 66.00 ft
	Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0570	Geometry: Circular	Geometry: Circular
To Node:	NZA-0820	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	850.83 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment:			

Pipe Link: L-1140P		Upstream	Downstream
Scenario:	Proposed - 2	Invert: 66.00 ft	Invert: 65.00 ft
	Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0820	Geometry: Circular	Geometry: Circular
To Node:	Pond 4B	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	128.88 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment:			

Weir Link: L-1150W		
Scenario:	Proposed - 2 Alternate	Bottom Clip
From Node:	NZA-0570	Default: 0.00 ft
To Node:	NZA-0820	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	71.40 ft	Discharge Coefficients
Control Elevation:	71.40 ft	Weir Default: 2.800

Max Depth: 99.00 ft
 Max Width: 20.00 ft
 Fillet: 0.00 ft

Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment:

Drop Structure Link: L-1170DS		Upstream Pipe	Downstream Pipe
Scenario:	Proposed - 2	Invert: 66.80 ft	Invert: 66.40 ft
	Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	Pond 2B	Geometry: Circular	Geometry: Circular
To Node:	NZA-0830	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Solution:	Combine	Op Table:	Op Table:
Increments:	0	Ref Node:	Ref Node:
Pipe Count:	1	Manning's N: 0.0000	Manning's N: 0.0000
Damping:	0.0000 ft	Top Clip	
Length:	194.11 ft	Default: 0.00 ft	Default: 0.00 ft
FHWA Code:	0	Op Table:	Op Table:
Entr Loss Coef:	0.50	Ref Node:	Ref Node:
Exit Loss Coef:	0.50	Manning's N: 0.0000	Manning's N: 0.0000
Bend Loss Coef:	0.00		
Bend Location:	0.00 dec		
Energy Switch:	Energy		

Pipe Comment:

Weir Component		Bottom Clip
Weir:	1	Default: 0.00 ft
Weir Count:	1	Op Table:
Weir Flow Direction:	Both	Ref Node:
Damping:	0.0000 ft	Top Clip
Weir Type:	Sharp Crested Vertical	Default: 0.00 ft
Geometry Type:	V-Notch Up	Op Table:
Invert:	69.15 ft	Ref Node:
Control Elevation:	69.15 ft	Discharge Coefficients
Max Depth:	1.00 ft	Weir Default: 3.200
Max Width:	1.50 ft	Weir Table:
		Orifice Default: 0.600
		Orifice Table:

Weir Comment: Minimum water quality elevation of 68.7' required

Weir Component		Bottom Clip
Weir:	2	Default: 0.00 ft
Weir Count:	1	Op Table:
Weir Flow Direction:	Both	Ref Node:
Damping:	0.0000 ft	

Weir Type: Sharp Crested Vertical
 Geometry Type: Circular
 Invert: 68.00 ft
 Control Elevation: 68.00 ft
 Max Depth: 0.33 ft

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Drop Structure Comment:

Weir Link: L-1180W

Scenario: Proposed - 2 Alternate
 From Node: Pond 2B
 To Node: NZA-0830
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Weir Type: Paved Road Vertical
 Geometry Type: Rectangular
 Invert: 70.00 ft
 Control Elevation: 70.00 ft
 Max Depth: 99.00 ft
 Max Width: 20.00 ft
 Fillet: 0.00 ft

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: L-1220P

Scenario: Proposed - 2 Alternate
 From Node: NZA-0850
 To Node: NZA-0550
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Length: 1270.69 ft
 FHWA Code: 0
 Entr Loss Coef: 0.50
 Exit Loss Coef: 0.50
 Bend Loss Coef: 0.00
 Bend Location: 0.00 dec
 Energy Switch: Energy

Upstream	Downstream
Invert: 67.50 ft	Invert: 66.80 ft
Manning's N: 0.0120	Manning's N: 0.0120
Geometry: Circular	
Max Depth: 1.50 ft	Max Depth: 1.50 ft
Bottom Clip	
Default: 0.00 ft	Default: 0.00 ft
Op Table:	Op Table:
Ref Node:	Ref Node:
Manning's N: 0.0000	Manning's N: 0.0000
Top Clip	
Default: 0.00 ft	Default: 0.00 ft
Op Table:	Op Table:
Ref Node:	Ref Node:
Manning's N: 0.0000	Manning's N: 0.0000

Comment:

Drop Structure Link: L-1230DS		Upstream Pipe	Downstream Pipe
Scenario:	Proposed - 2	Invert: 67.70 ft	Invert: 67.50 ft
	Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	Pond 4B	Geometry: Circular	Geometry: Circular
To Node:	NZA-0850	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Solution:	Combine	Op Table:	Op Table:
Increments:	0	Ref Node:	Ref Node:
Pipe Count:	1	Manning's N: 0.0000	Manning's N: 0.0000
Damping:	0.0000 ft	Top Clip	
Length:	147.59 ft	Default: 0.00 ft	Default: 0.00 ft
FHWA Code:	0	Op Table:	Op Table:
Entr Loss Coef:	0.50	Ref Node:	Ref Node:
Exit Loss Coef:	0.50	Manning's N: 0.0000	Manning's N: 0.0000
Bend Loss Coef:	0.00		
Bend Location:	0.00 dec		
Energy Switch:	Energy		

Pipe Comment:

Weir Component		
Weir:	1	Bottom Clip
Weir Count:	1	Default: 0.00 ft
Weir Flow Direction:	Both	Op Table:
Damping:	0.0000 ft	Ref Node:
Weir Type:	Sharp Crested Vertical	Top Clip
Geometry Type:	V-Notch Up	Default: 0.00 ft
Invert:	69.50 ft	Op Table:
Control Elevation:	69.50 ft	Ref Node:
Max Depth:	1.50 ft	Discharge Coefficients
Max Width:	1.00 ft	Weir Default: 3.200
		Weir Table:
		Orifice Default: 0.600
		Orifice Table:

Weir Comment: Minimum elevation is 69.5 for water quality

Weir Component		
Weir:	2	Bottom Clip
Weir Count:	1	Default: 0.00 ft
Weir Flow Direction:	Both	Op Table:
Damping:	0.0000 ft	Ref Node:
Weir Type:	Sharp Crested Vertical	Top Clip
Geometry Type:	Circular	Default: 0.00 ft
Invert:	68.00 ft	Op Table:
Control Elevation:	68.00 ft	Ref Node:

Max Depth: 0.33 ft

Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Drop Structure Comment:

Weir Link: L-1260W

Scenario:	Proposed - 2 Alternate	Bottom Clip	
From Node:	NZA-0850	Default:	0.00 ft
To Node:	NZA-0550	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:	
Geometry Type:	Rectangular	Ref Node:	
Invert:	71.40 ft	Discharge Coefficients	
Control Elevation:	71.40 ft	Weir Default:	2.800
Max Depth:	99.00 ft	Weir Table:	
Max Width:	20.00 ft	Orifice Default:	0.600
Fillet:	0.00 ft	Orifice Table:	

Comment:

Drop Structure Link: L-1270DS

	Upstream Pipe	Downstream Pipe
Scenario:	Proposed - 2 Alternate	
	Invert: 66.70 ft	Invert: 66.30 ft
	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	Pond 1A	
	Geometry: Circular	Geometry: Circular
To Node:	SR50 East	
	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Link Count:	1	
	Bottom Clip	
Flow Direction:	Both	
	Default: 0.00 ft	Default: 0.00 ft
Solution:	Combine	
	Op Table:	Op Table:
Increments:	0	
	Ref Node:	Ref Node:
Pipe Count:	1	
	Manning's N: 0.0000	Manning's N: 0.0000
Damping:	0.0000 ft	
	Top Clip	
Length:	361.52 ft	
	Default: 0.00 ft	Default: 0.00 ft
FHWA Code:	0	
	Op Table:	Op Table:
Entr Loss Coef:	0.50	
	Ref Node:	Ref Node:
Exit Loss Coef:	0.50	
	Manning's N: 0.0000	Manning's N: 0.0000
Bend Loss Coef:	0.00	
Bend Location:	0.00 dec	
Energy Switch:	Energy	

Pipe Comment:

Weir Component	
Weir: 1	Bottom Clip
Weir Count: 1	Default: 0.00 ft
Weir Flow Direction: Both	Op Table:
Damping: 0.0000	Ref Node:
Weir Type: Sharp Crested Vertical	Top Clip
Geometry Type: V-Notch Up	Default: 0.00 ft
Invert: 67.20 ft	Op Table:
Control Elevation: 67.20 ft	Ref Node:
Max Depth: 1.80 ft	Discharge Coefficients
Max Width: 0.80 ft	Weir Default: 3.200
	Weir Table:
	Orifice Default: 0.600
	Orifice Table:

Weir Comment: Minimum water quality elevation of 69.0'

Drop Structure Comment:

Drop Structure Link: L-1290DS		Upstream Pipe	Downstream Pipe
Scenario: Proposed - 2		Invert: 64.50 ft	Invert: 65.00 ft
Alternate		Manning's N: 0.0120	Manning's N: 0.0120
From Node: Pond 3B		Geometry: Circular	Geometry: Circular
To Node: Corner Lake wetland		Max Depth: 2.00 ft	Max Depth: 2.00 ft
		Bottom Clip	
Link Count: 1		Default: 0.00 ft	Default: 0.00 ft
Flow Direction: Both		Op Table:	Op Table:
Solution: Combine		Ref Node:	Ref Node:
Increments: 0		Manning's N: 0.0000	Manning's N: 0.0000
Pipe Count: 1		Top Clip	
Damping: 0.0000 ft		Default: 0.00 ft	Default: 0.00 ft
Length: 274.59 ft		Op Table:	Op Table:
FHWA Code: 0		Ref Node:	Ref Node:
Entr Loss Coef: 0.50		Manning's N: 0.0000	Manning's N: 0.0000
Exit Loss Coef: 0.50			
Bend Loss Coef: 0.00			
Bend Location: 0.00 dec			
Energy Switch: Energy			

Pipe Comment:

Weir Component	
Weir: 1	Bottom Clip
Weir Count: 1	Default: 0.00 ft
Weir Flow Direction: Both	Op Table:
Damping: 0.0000	Ref Node:
Weir Type: Sharp Crested Vertical	Top Clip
Geometry Type: Circular	Default: 0.00 ft

Invert: 65.00 ft
 Control Elevation: 65.00 ft
 Max Depth: 0.50 ft

Op Table:

Ref Node:

Discharge Coefficients

Weir Default: 3.200
 Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Weir Comment: Assumed

Weir Component

Weir: 2
 Weir Count: 1
 Weir Flow Direction: Both
 Damping: 0.0000
 Weir Type: Sharp Crested Vertical
 Geometry Type: Rectangular
 Invert: 67.50 ft
 Control Elevation: 67.50 ft
 Max Depth: 1.00 ft
 Max Width: 3.00 ft
 Fillet: 0.00 ft

Bottom Clip

Default: 0.00 ft
 Op Table:
 Ref Node:

Top Clip

Default: 0.00 ft
 Op Table:
 Ref Node:

Discharge Coefficients

Weir Default: 3.200
 Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Weir Comment: Minimum of 67.5' for water quality

Drop Structure Comment:

Pipe Link: L-1310P

Scenario: Proposed - 2
 Alternate
 From Node: Basin 1 drop inlet
 To Node: NZA-0920
 Link Count: 1
 Flow Direction: None
 Damping: 0.0000
 Length: 611.06 ft
 FHWA Code: 0
 Entr Loss Coef: 0.50
 Exit Loss Coef: 0.50
 Bend Loss Coef: 0.00
 Bend Location: 0.00 dec
 Energy Switch: Energy

Upstream

Invert: 0.00 ft
 Manning's N: 0.0120
 Geometry: Circular
 Max Depth: 4.00 ft
 Bottom Clip
 Default: 0.00 ft
 Op Table:
 Ref Node:
 Manning's N: 0.0000
 Top Clip
 Default: 0.00 ft
 Op Table:
 Ref Node:
 Manning's N: 0.0000

Downstream

Invert: 0.00 ft
 Manning's N: 0.0120
 Geometry: Circular
 Max Depth: 4.00 ft
 Bottom Clip
 Default: 0.00 ft
 Op Table:
 Ref Node:
 Manning's N: 0.0000
 Top Clip
 Default: 0.00 ft
 Op Table:
 Ref Node:
 Manning's N: 0.0000

Comment:

Pipe Link: L-1330P		Upstream	Downstream
Scenario:	Proposed - 2	Invert: 0.00 ft	Invert: 0.00 ft
	Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0880	Geometry: Circular	Geometry: Circular
To Node:	NZA-0750	Max Depth: 4.00 ft	Max Depth: 4.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	None	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	1956.21 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment:			

Pipe Link: L-1340P		Upstream	Downstream
Scenario:	Proposed - 2	Invert: 0.00 ft	Invert: 0.00 ft
	Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0930	Geometry: Circular	Geometry: Circular
To Node:	NZA-0490	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	None	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	1560.19 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment:			

Simulation: 25yr 24hr
 Scenario: Existing
 Run Date/Time: 5/18/2022 2:01:11 PM
 Program Version: ICPR4 4.07.01

General				
Run Mode:	Hot Start		Hot Start Simulation: Hotstart	
	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	1.0000
End Time:	0	0	0	24.0000

Hot Start Time: 0 0 0 1.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph
Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:

Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight 0.5 dec
Fact:
dZ Tolerance: 0.0010 ft

IA Recovery Time: 24.0000 hr
ET for Manual Basins: False

Smp/Man Basin Rain Global

Max dZ: 1.0000 ft	Opt:
Link Optimizer Tol: 0.0001 ft	OF Region Rain Opt: Global
	Rainfall Name: ~ORANGE
Edge Length Option: Automatic	Rainfall Amount: 8.40 in
	Storm Duration: 24.0000 hr
Dflt Damping (2D): 0.0050 ft	Dflt Damping (1D): 0.0050 ft
Min Node Srf Area 100 ft2	Min Node Srf Area 100 ft2
(2D):	(1D):
Energy Switch (2D): Energy	Energy Switch (1D): Energy

Comment:

Simulation: Hotstart

Scenario: Existing
 Run Date/Time: 5/18/2022 2:00:52 PM
 Program Version: ICPR4 4.07.01

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	24.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph
Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:

Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight	0.5 dec		
Fact:			
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain	Global
		Opt:	
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~ORANGE
		Rainfall Amount:	0.01 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area	100 ft2	Min Node Srf Area	100 ft2
(2D):		(1D):	
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: 25yr 24hr

Scenario: Proposed - 1 Primary
Run Date/Time: 5/18/2022 2:01:17 PM
Program Version: ICPR4 4.07.01

General

Run Mode: Hot Start

Hot Start Simulation: Hotstart

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	1.0000
End Time:	0	0	0	24.0000
Hot Start Time:	0	0	0	1.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:

Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6

IA Recovery Time: 24.0000 hr
ET for Manual Basins: False

Over-Relax Weight	0.5 dec	Smp/Man Basin Rain	Global
Fact:		Opt:	
dZ Tolerance:	0.0010 ft	OF Region Rain Opt:	Global
Max dZ:	1.0000 ft	Rainfall Name:	~ORANGE
Link Optimizer Tol:	0.0001 ft	Rainfall Amount:	8.40 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area	100 ft2	Min Node Srf Area	100 ft2
(2D):		(1D):	
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: Hotstart

Scenario: Proposed - 1 Primary
 Run Date/Time: 5/18/2022 2:00:54 PM
 Program Version: ICPR4 4.07.01

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	2.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File
Save Restart: False

Resources & Lookup Tables

Resources
Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables
Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:

Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight: 0.5 dec
Fact:
dZ Tolerance: 0.0010 ft

Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft

Edge Length Option: Automatic

Dflt Damping (2D): 0.0050 ft
Min Node Srf Area: 100 ft2
(2D):
Energy Switch (2D): Energy

IA Recovery Time: 24.0000 hr
ET for Manual Basins: False

Smp/Man Basin Rain: Global
Opt:
OF Region Rain Opt: Global
Rainfall Name: ~ORANGE
Rainfall Amount: 0.01 in
Storm Duration: 24.0000 hr

Dflt Damping (1D): 0.0050 ft
Min Node Srf Area: 100 ft2
(1D):
Energy Switch (1D): Energy

Comment:

Simulation: 25yr 24hr

Scenario: Proposed - 2 Alternate
Run Date/Time: 5/18/2022 2:01:25 PM
Program Version: ICPR4 4.07.01

General

Run Mode: Hot Start Hot Start Simulation: Hotstart

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	1.0000
End Time:	0	0	0	24.0000
Hot Start Time:	0	0	0	1.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:

Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching: SAOR	IA Recovery Time: 24.0000 hr
Max Iterations: 6	ET for Manual Basins: False
Over-Relax Weight 0.5 dec	
Fact:	
dZ Tolerance: 0.0010 ft	Smp/Man Basin Rain Global
	Opt:
Max dZ: 1.0000 ft	OF Region Rain Opt: Global
Link Optimizer Tol: 0.0001 ft	Rainfall Name: ~ORANGE
	Rainfall Amount: 8.40 in
Edge Length Option: Automatic	Storm Duration: 24.0000 hr
Dflt Damping (2D): 0.0050 ft	Dflt Damping (1D): 0.0050 ft
Min Node Srf Area 100 ft2	Min Node Srf Area 100 ft2
(2D):	(1D):
Energy Switch (2D): Energy	Energy Switch (1D): Energy

Comment:

Simulation: Hotstart

Scenario: Proposed - 2 Alternate
 Run Date/Time: 5/18/2022 2:00:55 PM
 Program Version: ICPR4 4.07.01

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	2.0000
	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]	
Min Calculation Time:	60.0000	0.1000	900.0000	
Max Calculation Time:		30.0000		

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
 Reference ET Folder:
 Unit Hydrograph
 Folder:

Lookup Tables

Boundary Stage Set:
 Extern Hydrograph Set:
 Curve Number Set:

 Green-Ampt Set:
 Vertical Layers Set:
 Impervious Set:
 Roughness Set:
 Crop Coef Set:
 Fillable Porosity Set:
 Conductivity Set:
 Leakage Set:

Tolerances & Options

Time Marching: SAOR
 Max Iterations: 6
 Over-Relax Weight 0.5 dec
 Fact:
 dZ Tolerance: 0.0010 ft

 Max dZ: 1.0000 ft
 Link Optimizer Tol: 0.0001 ft

 Edge Length Option: Automatic

 Dflt Damping (2D): 0.0050 ft
 Min Node Srf Area 100 ft2
 (2D):
 Energy Switch (2D): Energy

IA Recovery Time: 24.0000 hr
 ET for Manual Basins: False

 Smp/Man Basin Rain Global
 Opt:
 OF Region Rain Opt: Global
 Rainfall Name: ~ORANGE
 Rainfall Amount: 0.01 in
 Storm Duration: 24.0000 hr

 Dflt Damping (1D): 0.0050 ft
 Min Node Srf Area 100 ft2
 (1D):
 Energy Switch (1D): Energy

Comment:

Simple Basin Runoff Summary [Existing]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
Basin 1A	25yr 24hr	1.35	9.0000	8.38	7.10	0.8200	89.4	0.00	0.00
Basin 1A Offsite	25yr 24hr	0.52	9.0000	8.38	6.98	0.3200	88.4	0.00	0.00
Basin 1B	25yr 24hr	0.23	9.0000	8.38	7.36	0.1400	91.6	0.00	0.00
Basin 1B Offsite	25yr 24hr	0.35	8.9667	8.38	8.13	0.2000	98.0	0.00	0.00
Basin 2A	25yr 24hr	2.65	9.0000	8.38	7.15	1.6000	89.8	0.00	0.00
Basin 2B	25yr 24hr	12.23	9.0000	8.38	6.92	7.5200	87.9	0.00	0.00
Basin 2B Offsite	25yr 24hr	0.56	9.0000	8.38	5.97	0.3800	80.0	0.00	0.00
Basin 3	25yr 24hr	22.12	9.0000	8.38	6.80	13.7500	86.9	0.00	0.00
Basin 3 Offsite	25yr 24hr	1.37	9.0000	8.38	5.97	0.9300	80.0	0.00	0.00
Basin 4-100	25yr 24hr	2.71	9.0000	8.38	6.89	1.6700	87.7	0.00	0.00
Basin 4-200	25yr 24hr	0.11	9.0333	8.38	3.46	0.1200	58.7	0.00	0.00
Basin 4-200 Offsite	25yr 24hr	0.31	9.0167	8.38	4.36	0.2800	66.4	0.00	0.00
Basin 4-300	25yr 24hr	1.88	9.0000	8.38	7.23	1.1300	90.5	0.00	0.00
Basin 4-300 Offsite	25yr 24hr	17.08	10.8500	8.38	3.72	32.4400	61.7	0.00	0.00
Basin 4-400	25yr 24hr	4.40	9.0000	8.38	6.37	2.8500	83.4	0.00	0.00
Basin 4-400 Offsite	25yr 24hr	6.46	9.0167	8.38	4.30	5.8200	65.9	0.00	0.00
Corner Lake Pond Area	25yr 24hr	3.88	9.0167	8.38	4.22	3.5600	65.2	0.00	0.00
Corner School Dr Proposed Intersection Area	25yr 24hr	0.55	9.0000	8.38	5.97	0.3700	80.0	0.00	0.00
Corner School ERP27857 -1 DA-1	25yr 24hr	23.83	9.0000	8.38	6.76	14.8600	86.6	0.00	0.00
Corner School ERP27857 -1 DA-2	25yr 24hr	26.56	9.0000	8.38	6.87	16.4000	87.5	0.00	0.00

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
Corner School ERP27857 -1 DA-3	25yr 24hr	6.86	9.0000	8.38	6.67	4.3100	85.9	0.00	0.00
Proposed Pond 1A	25yr 24hr	0.53	9.0833	8.38	5.61	0.4000	77.0	0.00	0.00
Proposed Pond 2B	25yr 24hr	1.73	9.0833	8.38	5.61	1.3000	77.0	0.00	0.00
Proposed Pond 3A	25yr 24hr	1.46	9.0833	8.38	5.61	1.1000	77.0	0.00	0.00
Proposed Pond 3B	25yr 24hr	0.96	9.0833	8.38	5.61	0.7200	77.0	0.00	0.00
Proposed Pond 4A	25yr 24hr	0.39	10.5833	8.38	5.87	0.4600	80.0	0.00	0.00

Simple Basin Runoff Summary [Proposed - 1 Primary]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
Basin 1A	25yr 24hr	1.40	9.0000	8.38	7.68	0.8200	94.3	0.00	0.00
Basin 1A Offsite	25yr 24hr	0.52	9.0000	8.38	6.98	0.3200	88.4	0.00	0.00
Basin 1B	25yr 24hr	0.24	8.9667	8.38	8.13	0.1400	98.0	0.00	0.00
Basin 1B Offsite	25yr 24hr	0.35	8.9667	8.38	8.13	0.2000	98.0	0.00	0.00
Basin 2A	25yr 24hr	2.74	9.0000	8.38	7.82	1.6000	95.4	0.00	0.00
Basin 2B	25yr 24hr	12.71	9.0000	8.38	7.49	7.5200	92.7	0.00	0.00
Basin 2B Offsite	25yr 24hr	0.56	9.0000	8.38	5.97	0.3800	80.0	0.00	0.00
Basin 3	25yr 24hr	22.98	9.0000	8.38	7.30	13.7500	91.1	0.00	0.00
Basin 3 Offsite	25yr 24hr	1.37	9.0000	8.38	5.97	0.9300	80.0	0.00	0.00
Basin 4-100	25yr 24hr	2.71	9.0000	8.38	6.89	1.6700	87.7	0.00	0.00
Basin 4-200	25yr 24hr	0.19	9.0000	8.38	6.36	0.1200	83.2	0.00	0.00
Basin 4-200 Offsite	25yr 24hr	0.31	9.0167	8.38	4.36	0.2800	66.4	0.00	0.00
Basin 4-300	25yr 24hr	1.95	8.9667	8.38	8.09	1.1300	97.7	0.00	0.00
Basin 4-300 Offsite	25yr 24hr	17.08	10.8500	8.38	3.72	32.4400	61.7	0.00	0.00

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
Basin 4-400	25yr 24hr	4.63	9.0000	8.38	6.92	2.8500	87.9	0.00	0.00
Basin 4-400 Offsite	25yr 24hr	6.46	9.0167	8.38	4.30	5.8200	65.9	0.00	0.00
Corner Lake Pond Area	25yr 24hr	4.24	9.0167	8.38	4.65	3.5600	68.8	0.00	0.00
Corner School Dr Proposed Intersection Area	25yr 24hr	0.63	9.0000	8.38	7.84	0.3700	95.6	0.00	0.00
Corner School ERP27857 -1 DA-1	25yr 24hr	23.83	9.0000	8.38	6.76	14.8600	86.6	0.00	0.00
Corner School ERP27857 -1 DA-2	25yr 24hr	26.56	9.0000	8.38	6.87	16.4000	87.5	0.00	0.00
Corner School ERP27857 -1 DA-3	25yr 24hr	6.86	9.0000	8.38	6.67	4.3100	85.9	0.00	0.00
Proposed Pond 3A	25yr 24hr	1.90	8.9500	8.38	8.37	1.1000	100.0	0.00	0.00
Proposed Pond 4A	25yr 24hr	0.80	8.9500	8.38	8.37	0.4600	100.0	0.00	0.00

Simple Basin Runoff Summary [Proposed - 2 Alternate]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
Basin 1A	25yr 24hr	1.40	9.0000	8.38	7.68	0.8200	94.3	0.00	0.00
Basin 1A Offsite	25yr 24hr	0.52	9.0000	8.38	6.98	0.3200	88.4	0.00	0.00
Basin 1B	25yr 24hr	0.24	8.9667	8.38	8.13	0.1400	98.0	0.00	0.00
Basin 1B Offsite	25yr 24hr	0.35	8.9667	8.38	8.13	0.2000	98.0	0.00	0.00
Basin 2A	25yr 24hr	2.74	9.0000	8.38	7.82	1.6000	95.4	0.00	0.00
Basin 2B	25yr 24hr	12.71	9.0000	8.38	7.49	7.5200	92.7	0.00	0.00
Basin 2B Offsite	25yr 24hr	0.56	9.0000	8.38	5.97	0.3800	80.0	0.00	0.00

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
Basin 3	25yr 24hr	22.98	9.0000	8.38	7.30	13.7500	91.1	0.00	0.00
Basin 3 Offsite	25yr 24hr	1.37	9.0000	8.38	5.97	0.9300	80.0	0.00	0.00
Basin 4-100	25yr 24hr	2.71	9.0000	8.38	6.89	1.6700	87.7	0.00	0.00
Basin 4-200	25yr 24hr	0.19	9.0000	8.38	6.36	0.1200	83.2	0.00	0.00
Basin 4-200 Offsite	25yr 24hr	0.31	9.0167	8.38	4.36	0.2800	66.4	0.00	0.00
Basin 4-300	25yr 24hr	1.95	8.9667	8.38	8.09	1.1300	97.7	0.00	0.00
Basin 4-300 Offsite	25yr 24hr	17.55	10.8500	8.38	3.82	32.4400	62.5	0.00	0.00
Basin 4-400	25yr 24hr	4.63	9.0000	8.38	6.92	2.8500	87.9	0.00	0.00
Basin 4-400 Offsite	25yr 24hr	6.46	9.0167	8.38	4.30	5.8200	65.9	0.00	0.00
Corner Lake Pond Area	25yr 24hr	3.88	9.0167	8.38	4.22	3.5600	65.2	0.00	0.00
Corner School Dr Proposed Intersection Area	25yr 24hr	0.55	9.0000	8.38	5.97	0.3700	80.0	0.00	0.00
Corner School ERP27857 -1 DA-1	25yr 24hr	23.83	9.0000	8.38	6.76	14.8600	86.6	0.00	0.00
Corner School ERP27857 -1 DA-2	25yr 24hr	26.56	9.0000	8.38	6.87	16.4000	87.5	0.00	0.00
Corner School ERP27857 -1 DA-3	25yr 24hr	6.86	9.0000	8.38	6.67	4.3100	85.9	0.00	0.00
Proposed Pond 1A	25yr 24hr	0.69	8.9500	8.38	8.37	0.4000	100.0	0.00	0.00
Proposed Pond 2B	25yr 24hr	2.25	8.9500	8.38	8.37	1.3000	100.0	0.00	0.00
Proposed Pond 3B	25yr 24hr	1.25	8.9500	8.38	8.37	0.7200	100.0	0.00	0.00

Node Max Conditions [Existing]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Basin 1 Catch Basin	25yr 24hr	69.30	70.11	0.0010	7.36	10.47	1336
Basin 1 drop inlet	25yr 24hr	69.72	70.16	0.0001	1.35	1.35	455
Corner Lake Wetland	25yr 24hr	68.30	65.00	0.0000	31.95	0.00	0
Corner School Pond 2	25yr 24hr	69.50	68.51	0.0004	58.19	54.64	109282
Existing Cypress Dome	25yr 24hr	70.00	69.41	0.0003	17.79	3.03	376632
Existing Wetland Buffer	25yr 24hr	69.07	66.71	0.0010	6.89	6.78	351
Lake Pickett Rd Stormdrain	25yr 24hr	71.50	65.76	0.0000	14.23	0.00	0
Manhole 1	25yr 24hr	71.87	70.15	0.0001	1.87	1.87	500
NZA-0290	25yr 24hr	72.00	70.73	0.0010	2.65	2.65	494
NZA-0300	25yr 24hr	71.00	70.94	0.0002	5.88	5.75	9477
NZA-0310	25yr 24hr	71.50	70.78	0.0004	5.75	5.54	6787
NZA-0320	25yr 24hr	72.00	70.76	0.0004	5.54	5.47	6718
NZA-0330	25yr 24hr	71.20	70.02	0.0002	5.47	5.39	5899
NZA-0340	25yr 24hr	69.30	70.01	0.0005	5.39	5.34	6167
NZA-0350	25yr 24hr	70.30	70.01	0.0010	5.34	5.32	12450
NZA-0430	25yr 24hr	71.40	71.73	0.0010	12.23	12.22	2677
NZA-0440	25yr 24hr	70.70	71.27	0.0006	5.95	5.88	14128
NZA-0450	25yr 24hr	67.30	66.74	0.0010	5.32	5.49	160
NZA-0470	25yr 24hr	68.42	65.46	0.0023	23.46	23.42	6282
NZA-0480	25yr 24hr	69.60	68.37	0.0010	22.12	22.09	10687
NZA-0490	25yr 24hr	69.60	70.50	0.0010	22.12	22.12	580
NZA-0530	25yr 24hr	70.00	66.18	0.0010	0.42	0.53	100
NZA-0540	25yr 24hr	71.00	70.74	0.0009	2.71	2.71	520
NZA-0550	25yr 24hr	74.00	66.17	0.0006	14.34	14.23	1172
NZA-0570	25yr 24hr	70.90	67.82	0.0004	4.40	4.40	609
NZA-0590	25yr 24hr	68.42	65.38	0.0003	23.42	23.42	5260
NZA-0600	25yr 24hr	72.00	71.67	0.0008	5.97	5.95	7712
NZA-0710	25yr 24hr	71.50	71.48	0.0002	7.01	7.01	1175
NZA-0830	25yr 24hr	70.60	66.64	0.0010	6.78	6.71	440
SR50 East	25yr 24hr	70.61	70.11	0.0000	10.47	0.00	0
SR50 West	25yr 24hr	70.61	70.11	0.0000	1.87	0.00	0
Schoolview Way Ponds (location of proposed Pond 2A)	25yr 24hr	70.50	68.57	0.0005	38.31	32.62	89728

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
modification)							
Schoolview Way Ponds Outlet	25yr 24hr	68.00	67.02	0.0000	54.64	0.31	0

Node Max Conditions [Proposed - 1 Primary]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Basin 1 Catch Basin	25yr 24hr	69.61	70.46	0.0010	4.35	5.54	938
Basin 1 drop inlet	25yr 24hr	69.61	70.46	0.0010	1.40	2.56	871
Corner Lake wetland	25yr 24hr	68.30	65.00	0.0000	23.75	0.00	0
Corner School Pond 2	25yr 24hr	69.50	68.50	0.0004	53.66	53.34	109125
Existing Cypress Dome	25yr 24hr	70.00	69.42	0.0001	17.80	3.07	376983
Existing Wetland Buffer	25yr 24hr	69.07	64.82	0.0001	0.00	0.00	335
Lake Pickett Rd Stormdrain	25yr 24hr	71.50	65.76	0.0000	14.23	0.79	0
Manhole 1	25yr 24hr	69.61	70.46	0.0010	3.02	2.70	678
NZA-0290	25yr 24hr	68.70	70.07	0.0010	17.73	17.69	1017
NZA-0300	25yr 24hr	68.70	70.43	0.0010	15.19	15.16	457
NZA-0320	25yr 24hr	70.40	68.18	0.0003	0.28	0.00	1424
NZA-0430	25yr 24hr	69.61	70.46	0.0010	5.54	2.80	1088
NZA-0440	25yr 24hr	68.70	70.44	0.0010	15.25	15.19	465
NZA-0450	25yr 24hr	70.00	64.82	0.0001	0.00	0.00	109
NZA-0470	25yr 24hr	70.40	70.57	0.0010	24.34	24.33	475
NZA-0480	25yr 24hr	70.40	70.75	0.0010	22.97	22.97	502
NZA-0490	25yr 24hr	68.10	70.80	0.0010	22.98	22.97	1698
NZA-0530	25yr 24hr	72.40	68.11	0.0010	0.50	0.61	438
NZA-0540	25yr 24hr	72.40	70.74	0.0010	2.71	2.71	522
NZA-0550	25yr 24hr	72.40	68.11	0.0010	14.18	14.13	1133
NZA-0570	25yr 24hr	70.60	68.23	0.0009	4.63	4.57	645
NZA-0600	25yr 24hr	68.70	70.45	0.0010	15.48	15.25	775
NZA-0750	25yr 24hr	70.40	69.84	0.0010	24.33	24.30	1851
NZA-0770	25yr 24hr	70.60	67.70	0.0010	14.13	14.10	465
NZA-0830	25yr 24hr	70.60	64.82	0.0001	0.00	0.00	197

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NZA-0870	25yr 24hr	0.00	0.00	0.0000	0.00	0.00	100
NZA-0880	25yr 24hr	0.00	0.00	0.0000	0.00	0.00	100
NZA-0890	25yr 24hr	0.00	0.00	0.0000	0.00	0.00	100
Pond 3A	25yr 24hr	70.00	69.73	0.0004	26.20	23.75	46706
Pond 4A	25yr 24hr	67.00	66.97	0.0005	14.88	14.23	19973
SR50 East	25yr 24hr	70.61	70.11	0.0000	0.00	0.00	0
SR50 West	25yr 24hr	70.61	70.11	0.0000	0.00	0.00	0
Schoolview Way Ponds (location of proposed Pond 2A modification)	25yr 24hr	71.00	70.05	0.0010	73.42	48.90	103355
Schoolview Way Ponds Outlet	25yr 24hr	68.00	67.02	0.0000	53.34	0.31	0

Node Max Conditions [Proposed - 2 Alternate]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Basin 1 Catch Basin	25yr 24hr	69.61	70.70	0.0010	4.56	4.14	1095
Basin 1 drop inlet	25yr 24hr	69.61	70.70	0.0010	1.40	2.81	1068
Corner Lake wetland	25yr 24hr	68.30	65.00	0.0000	29.63	0.00	0
Corner School Pond 2	25yr 24hr	69.50	68.48	0.0002	55.22	51.52	108928
Existing Cypress Dome	25yr 24hr	70.00	69.72	0.0001	20.41	0.91	396672
Lake Pickett Rd Stormdrain	25yr 24hr	71.50	65.76	0.0000	10.13	0.00	0
Manhole 1	25yr 24hr	69.61	70.70	0.0010	2.96	2.98	762
NZA-0290	25yr 24hr	70.10	70.63	0.0010	2.74	2.71	526
NZA-0300	25yr 24hr	70.10	70.61	0.0010	15.35	15.32	1257
NZA-0320	25yr 24hr	70.10	70.58	0.0010	15.32	15.28	1099
NZA-0330	25yr 24hr	70.10	70.44	0.0010	15.28	15.25	1094
NZA-0340	25yr 24hr	70.10	70.42	0.0010	15.25	15.21	2250
NZA-0430	25yr 24hr	69.61	70.69	0.0010	4.13	2.44	820
NZA-0440	25yr 24hr	70.10	70.63	0.0010	12.68	12.64	1559
NZA-0450	25yr 24hr	70.60	66.78	0.0004	0.21	0.02	596

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NZA-0470	25yr 24hr	70.40	70.19	0.0008	24.26	24.11	2758
NZA-0480	25yr 24hr	70.40	70.56	0.0010	22.95	22.89	1493
NZA-0490	25yr 24hr	70.40	70.68	0.0010	22.98	22.95	1112
NZA-0530	25yr 24hr	71.40	73.04	0.0007	0.50	0.50	436
NZA-0540	25yr 24hr	71.40	70.74	0.0006	2.71	2.71	520
NZA-0550	25yr 24hr	71.40	65.97	0.0002	10.13	10.13	569
NZA-0570	25yr 24hr	71.40	69.72	0.0009	4.63	4.55	1757
NZA-0600	25yr 24hr	70.10	70.64	0.0010	12.71	12.68	886
NZA-0750	25yr 24hr	70.40	70.07	0.0010	24.11	23.95	2927
NZA-0820	25yr 24hr	71.40	69.72	0.0010	2.95	2.84	1836
NZA-0830	25yr 24hr	70.60	66.77	0.0004	12.86	12.86	535
NZA-0850	25yr 24hr	71.40	68.01	0.0001	0.53	0.53	2087
NZA-0880	25yr 24hr	70.00	70.39	0.0010	15.21	15.11	2077
NZA-0920	25yr 24hr	0.00	0.00	0.0000	0.00	0.00	100
NZA-0930	25yr 24hr	0.00	0.00	0.0000	0.00	0.00	100
Pond 1A	25yr 24hr	72.00	70.68	0.0007	3.24	2.50	11673
Pond 2B	25yr 24hr	70.70	70.31	0.0010	17.36	12.86	55106
Pond 3B	25yr 24hr	70.00	69.98	0.0005	25.20	16.91	31264
Pond 4B	25yr 24hr	72.00	69.71	0.0002	2.84	0.91	14628
SR50 East	25yr 24hr	70.61	70.11	0.0000	2.50	3.24	0
SR50 West	25yr 24hr	70.61	70.11	0.0000	0.00	0.00	0
Schoolview Way Ponds (location of proposed Pond 2A modification)	25yr 24hr	69.50	68.54	0.0002	35.66	29.78	89316
Schoolview Way Ponds Outlet	25yr 24hr	68.00	67.02	0.0000	51.52	0.31	0

Link Min/Max Conditions [Existing]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
18" RCP	25yr 24hr	0.54	0.00	-0.46	0.31	0.31	0.31
18" RCP1	25yr 24hr	0.54	0.00	-0.01	0.94	0.72	0.83
18" RCP2	25yr 24hr	1.26	0.00	0.02	0.82	0.71	0.77
Connecting 36" RCP	25yr 24hr	10.53	-0.05	-0.03	1.49	1.49	1.49
Connecting 48" PVC	25yr 24hr	22.09	-0.11	-0.07	1.76	1.76	1.76
Corner School Pond 2 Orifice	25yr 24hr	0.65	-0.31	0.00	5.86	5.86	5.86
Corner School Pond 2 Overflow	25yr 24hr	53.99	0.00	0.05	2.70	2.70	2.70
L-0160P	25yr 24hr	5.75	0.00	0.59	5.02	8.85	6.55
L-0170P	25yr 24hr	5.47	0.00	-0.01	2.90	4.48	3.69
L-0200P	25yr 24hr	0.31	0.00	0.00	0.57	2.08	1.31
L-0240P	25yr 24hr	20.34	0.00	-0.07	6.47	7.48	6.98
L-0260P	25yr 24hr	3.03	0.00	-0.03	3.76	6.74	5.25
L-0300P	25yr 24hr	2.71	0.00	-0.02	3.89	7.53	5.71
L-0310P	25yr 24hr	4.40	0.00	-0.04	3.98	2.42	3.04
L-0320P	25yr 24hr	0.53	0.00	0.36	0.30	0.30	0.30
L-0330P	25yr 24hr	23.42	-0.12	-3.30	2.03	2.07	2.05
L-0340C	25yr 24hr	22.09	0.00	-0.03	1.21	3.46	2.33
L-0360C	25yr 24hr	5.95	0.00	0.00	0.66	1.56	0.94
L-0370P	25yr 24hr	14.23	0.00	0.06	2.01	2.01	2.01
L-0380C	25yr 24hr	23.42	0.00	-0.09	1.64	0.91	1.28
L-0400P	25yr 24hr	2.65	0.00	-0.02	3.86	1.50	2.68
L-0460W	25yr 24hr	9.93	0.00	-8.57	0.61	0.61	0.61
L-0480W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-0490W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-0500W	25yr 24hr	5.03	0.00	-0.01	0.91	0.91	0.91
L-0520W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-0530W	25yr 24hr	1.78	0.00	-0.02	0.89	0.89	0.89
L-0540W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-0550W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-0560W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-0570W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-0580W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-0600W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-0610W	25yr 24hr	0.62	0.00	0.00	0.00	0.00	0.00
L-0630C	25yr 24hr	7.01	0.00	-0.01	2.27	0.99	1.63
L-0640W	25yr 24hr	6.25	0.00	-0.01	1.35	1.35	1.35
L-0650P	25yr 24hr	5.49	-0.24	1.70	1.23	1.12	1.17
L-0660P	25yr 24hr	6.78	0.00	1.28	1.38	1.38	1.38
L-0670W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-0680W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
L-0690W	25yr 24hr	0.81	0.00	0.00	0.67	0.67	0.67
L-0800W	25yr 24hr	6.71	0.00	-0.01	1.38	1.38	1.38
Schoolview Way Overland	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
Trapazoidal channel 2	25yr 24hr	5.54	0.00	-0.01	0.25	0.75	0.44
Trapezoidal channel 1	25yr 24hr	5.88	0.00	0.00	0.46	0.92	0.54
Trapezoidal channel 3	25yr 24hr	5.39	0.00	-0.02	0.36	0.40	0.31
Triangular 1	25yr 24hr	5.97	0.00	-0.02	0.39	0.42	0.40
Triangular channel 2	25yr 24hr	5.32	0.00	0.00	0.70	2.72	1.71

Link Min/Max Conditions [Proposed - 1 Primary]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
Corner School Pond 2 Orifice	25yr 24hr	0.65	-0.31	0.00	5.85	5.85	5.85
Corner School Pond 2 Overflow	25yr 24hr	52.70	0.00	0.02	2.68	2.68	2.68
L-0160P	25yr 24hr	13.64	-1.84	-0.95	4.34	4.34	4.34
L-0240P	25yr 24hr	17.75	-0.15	2.38	2.51	2.51	2.51
L-0250P	25yr 24hr	2.56	-0.23	-2.37	1.61	-0.85	0.84
L-0260P	25yr 24hr	3.07	0.00	-0.03	3.77	6.77	5.27
L-0300P	25yr 24hr	2.71	0.00	0.02	3.89	7.45	5.65
L-0310P	25yr 24hr	4.57	0.00	0.62	3.98	1.12	2.54
L-0320P	25yr 24hr	0.61	-0.03	0.18	0.20	0.20	0.20
L-0370P	25yr 24hr	14.13	-0.18	0.74	2.00	2.00	2.00
L-0400P	25yr 24hr	15.93	-1.86	0.82	5.07	5.07	5.07
L-0480W	25yr 24hr	2.61	0.00	-0.02	1.01	1.01	1.01
L-0530W	25yr 24hr	13.42	0.00	0.02	1.67	1.67	1.67
L-0540W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-0550W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-0560W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-0570W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-0580W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-0600W	25yr 24hr	1.41	0.00	-0.92	0.50	0.50	0.50
L-0650P	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-0660P	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-0670W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
L-0680W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-0690W	25yr 24hr	0.95	0.00	0.91	0.29	0.29	0.29
L-0780P	25yr 24hr	1.86	-1.53	-1.86	0.26	0.26	0.26
L-0790W	25yr 24hr	4.28	-0.03	-4.23	0.42	0.42	0.42
L-0800P	25yr 24hr	2.70	-0.79	2.26	0.38	0.38	0.38
L-0800W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-0810W	25yr 24hr	0.99	0.00	0.99	0.38	0.38	0.38
L-0820P	25yr 24hr	8.58	-1.45	-0.17	2.73	2.73	2.73
L-0830P	25yr 24hr	7.71	-1.08	0.40	2.45	2.45	2.45
L-0850W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-0860W	25yr 24hr	14.09	0.00	4.20	1.56	1.56	1.56
L-0870W	25yr 24hr	14.34	0.00	-2.49	1.65	1.65	1.65
L-0880P	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-0920P	25yr 24hr	24.30	-0.01	-3.09	1.93	1.93	1.93
L-0930W	25yr 24hr	0.28	0.00	0.00	0.00	0.00	0.00
L-0970W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-0990P	25yr 24hr	18.40	-0.01	-1.58	2.60	2.60	2.60
L-1000P	25yr 24hr	22.53	-0.01	1.55	3.19	3.19	3.19
L-1010W	25yr 24hr	11.56	0.00	0.01	1.65	1.65	1.65
L-1020W	25yr 24hr	3.89	0.00	0.00	1.15	1.15	1.15
L-1040DS - Pipe	25yr 24hr	14.23	-0.79	-0.79	0.00	0.00	0.00
L-1040DS - Weir: 1	25yr 24hr	13.32	0.00	0.01	3.44	3.44	3.44
L-1040DS - Weir: 2	25yr 24hr	0.92	-0.79	0.00	4.67	4.67	4.67
L-1050P	25yr 24hr	14.10	-0.21	-0.48	4.49	4.49	4.49
L-1070W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-1080W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-1090DS - Pipe	25yr 24hr	23.75	0.00	0.01	0.00	0.00	0.00
L-1090DS - Weir: 1	25yr 24hr	21.53	0.00	-0.01	3.32	3.32	3.32
L-1090DS - Weir: 2	25yr 24hr	2.79	0.00	-0.01	6.33	6.33	6.33
L-1120DS - Pipe	25yr 24hr	48.90	-0.01	0.07	0.00	0.00	0.00
L-1120DS - Weir: 1	25yr 24hr	0.74	-0.01	0.00	3.75	3.75	3.75
L-1120DS - Weir: 2	25yr 24hr	48.82	0.00	-0.11	1.06	1.06	1.06
L-1130P	25yr 24hr	2.80	-2.06	1.75	0.40	0.40	0.40
L-1170P	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-1180P	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-1190P	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-1200P	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-1210P	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
L-1220P	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
Schoolview Way Overland	25yr 24hr	9.49	0.00	-0.01	1.52	1.52	1.52

Link Min/Max Conditions [Proposed - 2 Alternate]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
Connecting 36" RCP	25yr 24hr	9.61	-0.05	0.04	1.36	1.36	1.36
Connecting 48" PVC	25yr 24hr	20.17	-0.11	0.08	1.60	1.60	1.60
Corner School Pond 2 Orifice	25yr 24hr	0.64	-0.31	0.00	5.82	5.82	5.82
Corner School Pond 2 Overflow	25yr 24hr	50.88	0.00	0.01	2.65	2.65	2.65
L-0170P	25yr 24hr	15.28	0.00	2.21	2.59	2.59	2.30
L-0240P	25yr 24hr	22.29	0.00	2.45	3.15	3.15	3.15
L-0250P	25yr 24hr	2.08	-0.65	2.06	0.22	0.18	0.20
L-0260P	25yr 24hr	0.91	-2.97	0.68	-0.95	-3.73	-2.34
L-0300P	25yr 24hr	2.71	0.00	0.02	3.89	7.55	5.72
L-0370P	25yr 24hr	10.13	0.00	-0.19	1.43	1.43	1.43
L-0490W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-0530W	25yr 24hr	8.28	0.00	-0.01	1.48	1.48	1.48
L-0540W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-0560W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-0570W	25yr 24hr	0.50	0.00	0.01	0.00	0.00	0.00
L-0580W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-0600W	25yr 24hr	2.02	0.00	1.87	0.41	0.41	0.41
L-0650P	25yr 24hr	0.02	-0.21	0.02	-0.04	-0.06	-0.05
L-0690W	25yr 24hr	0.86	-0.21	0.83	0.16	0.16	0.16
L-0780P	25yr 24hr	4.13	-1.41	4.07	0.34	0.33	0.33
L-0790W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-0800P	25yr 24hr	2.67	-1.34	2.60	0.23	0.22	0.23
L-0800W	25yr 24hr	12.86	0.00	0.01	1.71	1.71	1.71
L-0810W	25yr 24hr	0.97	0.00	-0.97	0.28	0.28	0.28
L-0820P	25yr 24hr	3.79	0.00	-0.08	2.14	2.14	2.14
L-0830P	25yr 24hr	3.99	0.00	-0.22	2.02	2.18	1.80
L-0850W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-0860W	25yr 24hr	11.39	0.00	0.01	1.36	1.36	1.36
L-0870W	25yr 24hr	12.16	0.00	0.01	1.58	1.58	1.58
L-0880P	25yr 24hr	9.59	0.00	0.39	3.05	3.54	3.22

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
L-0890P	25yr 24hr	13.75	-0.09	-2.02	1.97	1.94	1.95
L-0900P	25yr 24hr	14.21	-0.34	1.41	2.01	2.01	2.01
L-0920P	25yr 24hr	23.95	-0.12	-2.30	1.91	1.91	1.91
L-0930W	25yr 24hr	13.58	0.00	-0.01	1.65	1.65	1.65
L-0940W	25yr 24hr	9.18	0.00	-0.01	1.42	1.42	1.42
L-0950W	25yr 24hr	9.61	0.00	0.00	1.54	1.54	1.54
L-0990P	25yr 24hr	22.53	0.00	1.35	3.19	3.19	3.19
L-1000P	25yr 24hr	24.11	-0.04	2.51	1.92	1.92	1.92
L-1010W	25yr 24hr	3.52	0.00	0.00	1.11	1.11	1.11
L-1020W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-1080P	25yr 24hr	15.11	-0.70	-1.73	2.14	2.14	2.14
L-1090W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-1100P	25yr 24hr	2.71	-0.01	0.37	1.77	1.52	1.46
L-1110W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-1120P	25yr 24hr	2.44	-1.15	0.40	0.78	0.78	0.78
L-1130P	25yr 24hr	2.95	-0.46	1.39	0.59	0.42	0.50
L-1140P	25yr 24hr	2.84	-0.43	-1.53	0.40	0.40	0.40
L-1150W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-1170DS - Pipe	25yr 24hr	3.10	0.00	0.00	0.00	0.00	0.00
L-1170DS - Weir: 1	25yr 24hr	2.50	0.00	0.00	3.33	3.33	3.33
L-1170DS - Weir: 2	25yr 24hr	0.60	0.00	0.00	7.05	7.05	7.05
L-1180W	25yr 24hr	9.76	0.00	0.00	1.56	1.56	1.56
L-1220P	25yr 24hr	0.53	0.00	0.00	0.99	2.51	1.75
L-1230DS - Pipe	25yr 24hr	0.53	0.00	0.00	0.00	0.00	0.00
L-1230DS - Weir: 1	25yr 24hr	0.02	0.00	0.00	0.00	0.00	0.00
L-1230DS - Weir: 2	25yr 24hr	0.51	0.00	0.00	5.99	5.99	5.99
L-1260W	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-1270DS - Pipe	25yr 24hr	2.50	-3.24	-3.24	0.00	0.00	0.00
L-1270DS - Weir: 1	25yr 24hr	2.50	-3.24	0.14	-4.50	-4.50	-4.50
L-1290DS - Pipe	25yr 24hr	16.91	0.00	-0.01	0.00	0.00	0.00
L-1290DS - Weir: 1	25yr 24hr	1.30	0.00	0.00	6.61	6.61	6.61
L-1290DS - Weir: 2	25yr 24hr	15.87	0.00	-0.01	5.29	5.29	5.29
L-1310P	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-1330P	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00
L-1340P	25yr 24hr	0.00	0.00	0.00	0.00	0.00	0.00

Scenario Difference Summary

Existing Project: C:\Users\sdcollins\Johnson, Mirmiran Thompson\20-01459-001 - Chuluota Road RCA Y20-830 - 05 - Working Files\ICPR\Chuluota\Project.i4p

Existing Scenario: Existing

Proposed Project: C:\Users\sdcollins\Johnson, Mirmiran Thompson\20-01459-001 - Chuluota Road RCA Y20-830 - 05 - Working Files\ICPR\Chuluota\Project.i4p

Proposed Scenario: Proposed - 1 Primary

Additions

Data Type (Additions)	Count
Node (Stage Area)	7
Link (Pipe)	17
Link (Weir)	11
Link (Drop Structure)	3

Node (Stage Area) (Additions)
NZA-0750
NZA-0770
NZA-0870
NZA-0880
NZA-0890
Pond 3A
Pond 4A

Link (Pipe) (Additions)
L-0250P
L-0780P
L-0800P
L-0820P
L-0830P
L-0880P
L-0920P
L-0990P
L-1000P
L-1050P
L-1130P
L-1170P
L-1180P
L-1190P
L-1200P
L-1210P
L-1220P

Link (Weir) (Additions)
L-0790W
L-0810W
L-0850W
L-0860W
L-0870W

Link (Weir) (Additions)
L-0930W
L-0970W
L-1010W
L-1020W
L-1070W
L-1080W

Link (Drop Structure) (Additions)
L-1040DS
L-1090DS
L-1120DS

Deletions

Data Type (Deletions)	Count
Simple Basin	3
Node (Stage Area)	6
Link (Channel)	9
Link (Pipe)	8
Link (Weir)	6

Simple Basin (Deletions)
Proposed Pond 1A
Proposed Pond 2B
Proposed Pond 3B

Node (Stage Area) (Deletions)
NZA-0310
NZA-0330
NZA-0340
NZA-0350
NZA-0590
NZA-0710

Link (Channel) (Deletions)
L-0340C
L-0360C
L-0380C
L-0630C
Trapezoidal channel 2
Trapezoidal channel 1
Trapezoidal channel 3
Triangular 1
Triangular channel 2

Link (Pipe) (Deletions)
18" RCP
18" RCP1
18" RCP2

Link (Pipe) (Deletions)
Connecting 36" RCP
Connecting 48" PVC
L-0170P
L-0200P
L-0330P

Link (Weir) (Deletions)
L-0460W
L-0490W
L-0500W
L-0520W
L-0610W
L-0640W

Modifications

Data Type (Modifications)	Count
Simple Basin	14
Node (Stage Area)	18
Link (Pipe)	8
Link (Weir)	4
Simulation	1

Simple Basin (Modifications)
Basin 1A
Basin 1B
Basin 2A
Basin 2B
Basin 3
Basin 4-200
Basin 4-300
Basin 4-400
Corner Lake Pond Area
Corner School Dr Proposed Intersection Area
Corner School ERP27857-1 DA-2
Corner School ERP27857-1 DA-3
Proposed Pond 3A
Proposed Pond 4A

Node (Stage Area) (Modifications)
Basin 1 Catch Basin
Basin 1 drop inlet
Manhole 1
NZA-0290
NZA-0300
NZA-0320
NZA-0430
NZA-0440
NZA-0450

Node (Stage Area) (Modifications)
NZA-0470
NZA-0480
NZA-0490
NZA-0530
NZA-0540
NZA-0550
NZA-0570
NZA-0600
Schoolview Way Ponds (location of proposed Pond 2A modification)

Link (Pipe) (Modifications)
L-0160P
L-0240P
L-0260P
L-0300P
L-0310P
L-0320P
L-0370P
L-0400P

Link (Weir) (Modifications)
L-0480W
L-0550W
L-0580W
Schoolview Way Overland

Simulation (Modifications)
Hotstart

Duplicates

Data Type (Duplicates)	Count
<N/A>	0

Additions (Detailed)

Proposed Project: C:\Users\sdcollins\Johnson, Mirmiran Thompson\20-01459-001 - Chuluota Road RCA Y20-830 - 05 - Working Files\ICPR\Chuluota\Project.i4p
 Proposed Scenario: Proposed - 1 Primary

Node: NZA-0750

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 67.00 ft
 Warning Stage: 70.40 ft

Stage [ft]	Area [ac]	Area [ft2]
62.60	0.0100	436
70.40	0.0100	436

Comment: Assumed elevations

Node: NZA-0770

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 62.80 ft
 Warning Stage: 70.60 ft

Stage [ft]	Area [ac]	Area [ft2]
62.80	0.0100	436
71.00	0.0100	436

Comment:

Node: NZA-0870

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 0.00 ft
 Warning Stage: 0.00 ft

Comment:

Node: NZA-0880

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 0.00 ft
 Warning Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
65.00	0.0100	436
72.00	0.0100	436

Comment:

Node: NZA-0890

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 0.00 ft
 Warning Stage: 0.00 ft

Comment:

Node: Pond 3A

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 67.00 ft
 Warning Stage: 70.00 ft

Stage [ft]	Area [ac]	Area [ft2]
67.00	0.8400	36590
71.00	1.1800	51401

Comment:

Node: Pond 4A

Scenario: Proposed - 1 Primary
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 64.80 ft
 Warning Stage: 67.00 ft

Stage [ft]	Area [ac]	Area [ft2]
64.80	0.3500	15246
68.00	0.5100	22216

Comment:

Pipe Link: L-0250P		Upstream	Downstream
Scenario:	Proposed - 1	Invert: 66.00 ft	Invert: 65.00 ft
	Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	Basin 1 drop inlet	Geometry: Circular	Geometry: Circular
To Node:	Manhole 1	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	26.00 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000

Comment: No upstream invert located, assume dhte pipe had a 0.5% negative slope.

Pipe Link: L-0780P		Upstream	Downstream
Scenario:	Proposed - 1	Invert: 64.00 ft	Invert: 63.70 ft
	Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	Basin 1 Catch Basin	Geometry: Circular	Geometry: Circular
To Node:	NZA-0430	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	200.00 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000

Comment: Assumed pipe size

Pipe Link: L-0800P	Upstream	Downstream
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Scenario:	Proposed - 1	Invert: 65.00 ft	Invert: 64.00 ft
	Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	Manhole 1	Geometry: Circular	Geometry: Circular
To Node:	Basin 1 Catch Basin	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	139.10 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment: Assumed size and elevations			

Pipe Link: L-0820P		Upstream	Downstream
Scenario:	Proposed - 1	Invert: 62.50 ft	Invert: 62.00 ft
	Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0440	Geometry: Circular	Geometry: Circular
To Node:	NZA-0300	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	990.57 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment: Assumed size and elevations			

Pipe Link: L-0830P		Upstream	Downstream
Scenario:	Proposed - 1	Invert: 63.00 ft	Invert: 62.50 ft
	Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0600	Geometry: Circular	Geometry: Circular
To Node:	NZA-0440	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	455.41 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft

Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N:	0.0000
Manning's N: 0.0000			
Comment: Assumed size			

Pipe Link: L-0880P	Upstream	Downstream
Scenario: Proposed - 1	Invert: 67.62 ft	Invert: 66.90 ft
Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node: NZA-0300	Geometry: Circular	Geometry: Circular
To Node: NZA-0320	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Link Count: 1	Bottom Clip	
Flow Direction: None	Default: 0.00 ft	Default: 0.00 ft
Damping: 0.0000 ft	Op Table:	Op Table:
Length: 437.33 ft	Ref Node:	Ref Node:
FHWA Code: 0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef: 0.50	Top Clip	
Exit Loss Coef: 0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef: 0.00	Op Table:	Op Table:
Bend Location: 0.00 dec	Ref Node:	Ref Node:
Energy Switch: Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment: assumed size		

Pipe Link: L-0920P	Upstream	Downstream
Scenario: Proposed - 1	Invert: 62.60 ft	Invert: 62.30 ft
Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node: NZA-0750	Geometry: Circular	Geometry: Circular
To Node: Pond 3A	Max Depth: 4.00 ft	Max Depth: 4.00 ft
Link Count: 1	Bottom Clip	
Flow Direction: Both	Default: 0.00 ft	Default: 0.00 ft
Damping: 0.0000 ft	Op Table:	Op Table:
Length: 247.41 ft	Ref Node:	Ref Node:
FHWA Code: 0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef: 0.50	Top Clip	
Exit Loss Coef: 0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef: 0.00	Op Table:	Op Table:
Bend Location: 0.00 dec	Ref Node:	Ref Node:
Energy Switch: Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment: Assumed size and elevation		

Pipe Link: L-0990P	Upstream	Downstream
Scenario: Proposed - 1	Invert: 64.00 ft	Invert: 63.40 ft
Primary	Manning's N: 0.0120	Manning's N: 0.0120

From Node:	NZA-0480	Geometry: Circular	Geometry: Circular
To Node:	NZA-0470	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	562.03 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment: Assumed size and elevation			

Pipe Link: L-1000P		Upstream	Downstream
Scenario:	Proposed - 1	Invert: 63.40 ft	Invert: 62.60 ft
	Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0470	Geometry: Circular	Geometry: Circular
To Node:	NZA-0750	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	763.00 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment: Assumed size and elevation			

Pipe Link: L-1050P		Upstream	Downstream
Scenario:	Proposed - 1	Invert: 59.97 ft	Invert: 59.50 ft
	Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0770	Geometry: Circular	Geometry: Circular
To Node:	Pond 4A	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	130.00 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:

Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: L-1130P		Upstream	Downstream
Scenario:	Proposed - 1	Invert: 63.70 ft	Invert: 63.00 ft
	Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0430	Geometry: Circular	Geometry: Circular
To Node:	NZA-0600	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	239.00 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment:			

Pipe Link: L-1170P		Upstream	Downstream
Scenario:	Proposed - 1	Invert: 0.00 ft	Invert: 0.00 ft
	Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0870	Geometry: Circular	Geometry: Circular
To Node:	NZA-0570	Max Depth: 2.50 ft	Max Depth: 2.50 ft
Link Count:	1	Bottom Clip	
Flow Direction:	None	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	984.32 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment:			

Pipe Link: L-1180P		Upstream	Downstream
Scenario:	Proposed - 1	Invert: 0.00 ft	Invert: 0.00 ft
	Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0870	Geometry: Circular	Geometry: Circular
To Node:	NZA-0490	Max Depth: 3.00 ft	Max Depth: 3.00 ft

Link Count:	1	Bottom Clip	
Flow Direction:	None	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	1559.35 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment:			

Pipe Link: L-1190P		Upstream	Downstream
Scenario:	Proposed - 1	Invert: 0.00 ft	Invert: 0.00 ft
	Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0880	Geometry: Circular	Geometry: Circular
To Node:	NZA-0750	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	None	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	1939.93 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment:			

Pipe Link: L-1200P		Upstream	Downstream
Scenario:	Proposed - 1	Invert: 0.00 ft	Invert: 0.00 ft
	Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0880	Geometry: Circular	Geometry: Circular
To Node:	NZA-0320	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	None	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	1428.86 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment:			

Pipe Link: L-1210P		Upstream	Downstream
Scenario:	Proposed - 1	Invert: 0.00 ft	Invert: 0.00 ft
	Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0890	Geometry: Circular	Geometry: Circular
To Node:	NZA-0290	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	None	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	1215.84 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment:			

Pipe Link: L-1220P		Upstream	Downstream
Scenario:	Proposed - 1	Invert: 0.00 ft	Invert: 0.00 ft
	Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0890	Geometry: Circular	Geometry: Circular
To Node:	Basin 1 drop inlet	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	None	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	610.98 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment:			

Weir Link: L-0790W		
Scenario:	Proposed - 1 Primary	Bottom Clip
From Node:	Basin 1 Catch Basin	Default: 0.00 ft
To Node:	NZA-0430	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	69.70 ft	Discharge Coefficients
Control Elevation:	69.70 ft	Weir Default: 2.800

Max Depth: 99.00 ft
 Max Width: 20.00 ft
 Fillet: 0.00 ft

Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment:

Weir Link: L-0810W

Scenario: Proposed - 1 Primary
 From Node: Manhole 1
 To Node: Basin 1 Catch Basin
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Weir Type: Gravel Road Vertical
 Geometry Type: Rectangular
 Invert: 70.30 ft
 Control Elevation: 70.30 ft
 Max Depth: 99.00 ft
 Max Width: 20.00 ft
 Fillet: 0.00 ft

Bottom Clip
 Default: 0.00 ft
 Op Table:
 Ref Node:
 Top Clip
 Default: 0.00 ft
 Op Table:
 Ref Node:
 Discharge Coefficients
 Weir Default: 2.800
 Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment:

Weir Link: L-0850W

Scenario: Proposed - 1 Primary
 From Node: NZA-0430
 To Node: NZA-0600
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Weir Type: Gravel Road Vertical
 Geometry Type: Rectangular
 Invert: 71.00 ft
 Control Elevation: 71.00 ft
 Max Depth: 99.00 ft
 Max Width: 20.00 ft
 Fillet: 0.00 ft

Bottom Clip
 Default: 0.00 ft
 Op Table:
 Ref Node:
 Top Clip
 Default: 0.00 ft
 Op Table:
 Ref Node:
 Discharge Coefficients
 Weir Default: 2.800
 Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment:

Weir Link: L-0860W

Scenario: Proposed - 1 Primary
 From Node: NZA-0600
 To Node: NZA-0440

Bottom Clip
 Default: 0.00 ft
 Op Table:

Link Count:	1	
Flow Direction:	Both	Ref Node:
Damping:	0.0000 ft	Top Clip
Weir Type:	Gravel Road Vertical	Default: 0.00 ft
Geometry Type:	Rectangular	Op Table:
Invert:	69.70 ft	Ref Node:
Control Elevation:	69.70 ft	Discharge Coefficients
Max Depth:	99.00 ft	Weir Default: 2.800
Max Width:	20.00 ft	Weir Table:
Fillet:	0.00 ft	Orifice Default: 0.600
		Orifice Table:

Comment:

Weir Link: L-0870W

Scenario:	Proposed - 1 Primary	Bottom Clip
From Node:	NZA-0440	Default: 0.00 ft
To Node:	NZA-0300	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	69.70 ft	Discharge Coefficients
Control Elevation:	69.70 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-0930W

Scenario:	Proposed - 1 Primary	Bottom Clip
From Node:	NZA-0300	Default: 0.00 ft
To Node:	NZA-0320	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	70.40 ft	Discharge Coefficients
Control Elevation:	70.40 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-0970W	
Scenario:	Proposed - 1 Primary
From Node:	NZA-0750
To Node:	Pond 3A
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Gravel Road Vertical
Geometry Type:	Rectangular
Invert:	71.00 ft
Control Elevation:	71.00 ft
Max Depth:	99.00 ft
Max Width:	20.00 ft
Fillet:	0.00 ft
	Bottom Clip
	Default: 0.00 ft
	Op Table:
	Ref Node:
	Top Clip
	Default: 0.00 ft
	Op Table:
	Ref Node:
	Discharge Coefficients
	Weir Default: 2.800
	Weir Table:
	Orifice Default: 0.600
	Orifice Table:
Comment:	

Weir Link: L-1010W	
Scenario:	Proposed - 1 Primary
From Node:	NZA-0480
To Node:	NZA-0470
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Gravel Road Vertical
Geometry Type:	Rectangular
Invert:	70.40 ft
Control Elevation:	70.40 ft
Max Depth:	99.00 ft
Max Width:	20.00 ft
Fillet:	0.00 ft
	Bottom Clip
	Default: 0.00 ft
	Op Table:
	Ref Node:
	Top Clip
	Default: 0.00 ft
	Op Table:
	Ref Node:
	Discharge Coefficients
	Weir Default: 2.800
	Weir Table:
	Orifice Default: 0.600
	Orifice Table:
Comment:	

Weir Link: L-1020W	
Scenario:	Proposed - 1 Primary
From Node:	NZA-0470
To Node:	NZA-0750
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Gravel Road Vertical
Geometry Type:	Rectangular
Invert:	70.40 ft
Control Elevation:	70.40 ft
Max Depth:	99.00 ft
Max Width:	20.00 ft
	Bottom Clip
	Default: 0.00 ft
	Op Table:
	Ref Node:
	Top Clip
	Default: 0.00 ft
	Op Table:
	Ref Node:
	Discharge Coefficients
	Weir Default: 2.800
	Weir Table:
	Orifice Default: 0.600

Fillet: 0.00 ft

Orifice Table:

Comment:

Weir Link: L-1070W

Scenario:	Proposed - 1 Primary	Bottom Clip
From Node:	NZA-0770	Default: 0.00 ft
To Node:	Pond 4A	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	72.00 ft	Discharge Coefficients
Control Elevation:	72.00 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-1080W

Scenario:	Proposed - 1 Primary	Bottom Clip
From Node:	NZA-0770	Default: 0.00 ft
To Node:	Lake Pickett Rd Stormdrain	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	72.00 ft	Discharge Coefficients
Control Elevation:	72.00 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Drop Structure Link: L-1040DS

	Upstream Pipe	Downstream Pipe
Scenario:	Proposed - 1	Invert: 59.97 ft
	Primary	Manning's N: 0.0120
From Node:	Pond 4A	Geometry: Circular
To Node:	Lake Pickett Rd Stormdrain	Max Depth: 2.50 ft
		Bottom Clip

Link Count:	1	Default:	0.00 ft	Default:	0.00 ft
Flow Direction:	Both	Op Table:		Op Table:	
Solution:	Combine	Ref Node:		Ref Node:	
Increments:	0	Manning's N:	0.0000	Manning's N:	0.0000
Pipe Count:	1	Top Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	130.86 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	0.50				
Bend Loss Coef:	0.00				
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment: Assumed

Weir Component			
Weir:	1	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Sharp Crested Vertical	Top Clip	
Geometry Type:	Rectangular	Default:	0.00 ft
Invert:	66.00 ft	Op Table:	
Control Elevation:	66.00 ft	Ref Node:	
Max Depth:	99.00 ft	Discharge Coefficients	
Max Width:	4.00 ft	Weir Default:	3.500
Fillet:	0.00 ft	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment: Minimum elevation of 66.0 for water quality.

Weir Component			
Weir:	2	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Sharp Crested Vertical	Top Clip	
Geometry Type:	Circular	Default:	0.00 ft
Invert:	64.80 ft	Op Table:	
Control Elevation:	64.80 ft	Ref Node:	
Max Depth:	0.50 ft	Discharge Coefficients	
		Weir Default:	3.200
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Drop Structure Comment:

Drop Structure Link: L-1090DS		Upstream Pipe	Downstream Pipe
Scenario:	Proposed - 1	Invert: 66.00 ft	Invert: 65.00 ft
	Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	Pond 3A	Geometry: Circular	Geometry: Circular
To Node:	Corner Lake wetland	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Bottom Clip			
Link Count:	1	Default: 0.00 ft	Default: 0.00 ft
Flow Direction:	Both	Op Table:	Op Table:
Solution:	Combine	Ref Node:	Ref Node:
Increments:	0	Manning's N: 0.0000	Manning's N: 0.0000
Pipe Count:	1	Top Clip	
Damping:	0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length:	793.05 ft	Op Table:	Op Table:
FHWA Code:	0	Ref Node:	Ref Node:
Entr Loss Coef:	0.50	Manning's N: 0.0000	Manning's N: 0.0000
Exit Loss Coef:	0.50		
Bend Loss Coef:	0.00		
Bend Location:	0.00 dec		
Energy Switch:	Energy		

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default: 0.00 ft	
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default: 0.00 ft	
Geometry Type:	Rectangular	Op Table:	
Invert:	68.65 ft	Ref Node:	
Control Elevation:	68.65 ft	Discharge Coefficients	
Max Depth:	99.00 ft	Weir Default: 3.200	
Max Width:	6.00 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default: 0.600	
		Orifice Table:	

Weir Comment: Minimum elevation for water quality is 68.4'

Weir Component		Bottom Clip	
Weir:	2	Default: 0.00 ft	
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default: 0.00 ft	
Geometry Type:	Circular	Op Table:	
Invert:	67.00 ft	Ref Node:	
Control Elevation:	67.00 ft	Discharge Coefficients	
Max Depth:	0.75 ft	Weir Default: 3.200	
		Weir Table:	
		Orifice Default: 0.600	

Orifice Table:

Weir Comment: Assumed

Drop Structure Comment:

Drop Structure Link: L-1120DS		Upstream Pipe	Downstream Pipe
Scenario:	Proposed - 1	Invert: 61.00 ft	Invert: 60.85 ft
	Primary	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	Schoolview Way	Geometry: Circular	Geometry: Circular
	Ponds (location of proposed Pond 2A modification)	Max Depth: 2.50 ft	Max Depth: 2.50 ft
		Bottom Clip	
		Default: 0.00 ft	Default: 0.00 ft
To Node:	Corner School Pond 2	Op Table:	Op Table:
		Ref Node:	Ref Node:
Link Count:	1	Manning's N: 0.0000	Manning's N: 0.0000
Flow Direction:	Both	Top Clip	
		Default: 0.00 ft	Default: 0.00 ft
Solution:	Combine	Op Table:	Op Table:
Increments:	0	Ref Node:	Ref Node:
Pipe Count:	2	Manning's N: 0.0000	Manning's N: 0.0000
Damping:	0.0000 ft		
Length:	382.04 ft		
FHWA Code:	0		
Entr Loss Coef:	0.50		
Exit Loss Coef:	0.50		
Bend Loss Coef:	0.00		
Bend Location:	0.00 dec		
Energy Switch:	Energy		

Pipe Comment:

Weir Component	
Weir:	1
	Bottom Clip
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
	Top Clip
Geometry Type:	Circular
	Default: 0.00 ft
Invert:	66.50 ft
	Op Table:
Control Elevation:	66.50 ft
	Ref Node:
Max Depth:	0.50 ft
	Discharge Coefficients
	Weir Default: 3.200
	Weir Table:
	Orifice Default: 0.600
	Orifice Table:

Weir Comment:

Weir Component

Weir: 2 Weir Count: 1 Weir Flow Direction: Both Damping: 0.0000 ft Weir Type: Horizontal Geometry Type: Rectangular Invert: 67.30 ft Control Elevation: 67.30 ft Max Depth: 99.00 ft Max Width: 6.00 ft Fillet: 0.00 ft	<div style="background-color: #cccccc; padding: 2px; border: 1px solid black; margin-bottom: 2px;">Bottom Clip</div> Default: 0.00 ft Op Table: Ref Node:
	<div style="background-color: #cccccc; padding: 2px; border: 1px solid black; margin-bottom: 2px;">Top Clip</div> Default: 0.00 ft Op Table: Ref Node:
	<div style="background-color: #cccccc; padding: 2px; border: 1px solid black; margin-bottom: 2px;">Discharge Coefficients</div> Weir Default: 3.200 Weir Table: Orifice Default: 0.600 Orifice Table:

Weir Comment: Mimimum elevation is 67.3'
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Drop Structure Comment:

Deletions (Detailed)

Existing Project: C:\Users\sdcollins\Johnson, Mirmiran Thompson\20-01459-001 - Chuluota Road RCA Y20-830 - 05 - Working Files\ICPR\Chuluota\Project.i4p
 Existing Scenario: Existing

Simple Basin: Proposed Pond 1A

Scenario: Existing
 Node: NZA-0710
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 20.0000 min
 Max Allowable Q: 0.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: UH256
 Peaking Factor: 256.0
 Area: 0.4000 ac
 Curve Number: 77.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment: Assumed Tc of flow through the woods

Simple Basin: Proposed Pond 2B

Scenario: Existing
 Node: Existing Wetland Buffer
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 20.0000 min
 Max Allowable Q: 0.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: UH256
 Peaking Factor: 256.0
 Area: 1.3000 ac
 Curve Number: 77.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment: Assumed Tc of flow through the woods

Simple Basin: Proposed Pond 3B

Scenario: Existing
 Node: Corner Lake Wetland
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 20.0000 min
 Max Allowable Q: 0.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: UH256
 Peaking Factor: 256.0
 Area: 0.7200 ac
 Curve Number: 77.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment: Assumed Tc of flow through the woods

Node: NZA-0310

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 69.50 ft
 Warning Stage: 71.50 ft

Stage [ft]	Area [ac]	Area [ft2]
69.50	0.0100	436
71.50	0.0100	436

Comment:

Node: NZA-0330

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 69.20 ft
 Warning Stage: 71.20 ft

Stage [ft]	Area [ac]	Area [ft2]
69.20	0.0100	436
71.20	0.0100	436

Comment:

Node: NZA-0340

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 68.90 ft
 Warning Stage: 69.30 ft

Stage [ft]	Area [ac]	Area [ft2]
68.90	0.0100	436
69.30	0.0100	436

Comment:

Node: NZA-0350

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 67.30 ft
 Warning Stage: 70.30 ft

Stage [ft]	Area [ac]	Area [ft2]
67.30	0.0100	436
70.30	0.0100	436

Comment:

Node: NZA-0590

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 64.30 ft
 Warning Stage: 68.42 ft

Stage [ft]	Area [ac]	Area [ft2]
64.30	0.0100	436
68.42	0.0100	436

Comment:

Node: NZA-0710

Scenario: Existing
 Type: Stage/Area

Base Flow: 0.00 cfs
 Initial Stage: 70.50 ft
 Warning Stage: 71.50 ft

Stage [ft]	Area [ac]	Area [ft2]
69.30	0.0100	436
71.50	0.0100	436

Comment: Elevations set as the overtopping elevation and the lowest channel elevation

Channel Link: L-0340C	Upstream	Downstream
Scenario: Existing	Invert: 67.20 ft	Invert: 65.20 ft
From Node: NZA-0480	Manning's N: 0.0420	Manning's N: 0.0420
To Node: NZA-0470	Geometry: Trapezoidal	Geometry: Trapezoidal
Link Count: 1	Max Depth: 1.20 ft	Max Depth: 1.20 ft
Flow Direction: Both	Extrapolation: Normal	Extrapolation: Normal
Damping: 0.0000 ft	Bottom Width: 2.00 ft	Bottom Width: 2.00 ft
Length: 562.03 ft	Left Slope: 11.700 (h:v)	Left Slope: 11.700 (h:v)
Contraction Coef: 0.00	Right Slope: 11.700 (h:v)	Right Slope: 11.700 (h:v)
Expansion Coef: 0.00	Bottom Clip	
Entr Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Exit Loss Coef: 0.00	Op Table:	Op Table:
Bend Loss Coef: 0.00	Ref Node:	Ref Node:
Bend Location: 0.00 dec	Manning's N: 0.0000	Manning's N: 0.0000
Energy Switch: Energy	Top Clip	
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000

Comment:

Channel Link: L-0360C	Upstream	Downstream
Scenario: Existing	Invert: 71.00 ft	Invert: 70.50 ft
From Node: NZA-0600	Manning's N: 0.0420	Manning's N: 0.0420
To Node: NZA-0440	Geometry: Trapezoidal	Geometry: Trapezoidal
Link Count: 1	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Flow Direction: Both	Extrapolation: Normal	Extrapolation: Normal
Damping: 0.0000 ft	Bottom Width: 5.00 ft	Bottom Width: 5.00 ft
Length: 450.00 ft	Left Slope: 12.700 (h:v)	Left Slope: 12.700 (h:v)
Contraction Coef: 0.00	Right Slope: 12.700 (h:v)	Right Slope: 12.700 (h:v)
Expansion Coef: 0.00	Bottom Clip	
Entr Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Exit Loss Coef: 0.00	Op Table:	Op Table:
Bend Loss Coef: 0.00	Ref Node:	Ref Node:
Bend Location: 0.00 dec	Manning's N: 0.0000	Manning's N: 0.0000

Energy Switch: Energy	Top Clip	
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000
Comment:		

Channel Link: L-0380C	Upstream	Downstream
Scenario: Existing	Invert: 64.30 ft	Invert: 63.30 ft
From Node: NZA-0590	Manning's N: 0.0420	Manning's N: 0.0420
To Node: Corner Lake	Geometry: Trapezoidal	Geometry: Trapezoidal
Wetland	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Link Count: 1	Extrapolation: Normal	Extrapolation: Normal
Flow Direction: Both	Bottom Width: 10.00 ft	Bottom Width: 10.00 ft
Damping: 0.0000 ft	Left Slope: 3.000 (h:v)	Left Slope: 3.000 (h:v)
Length: 258.13 ft	Right Slope: 3.000 (h:v)	Right Slope: 3.000 (h:v)
Contraction Coef: 0.00	Bottom Clip	
Expansion Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Entr Loss Coef: 0.00	Op Table:	Op Table:
Exit Loss Coef: 0.00	Ref Node:	Ref Node:
Bend Loss Coef: 0.00	Manning's N: 0.0000	Manning's N: 0.0000
Bend Location: 0.00 dec	Top Clip	
Energy Switch: Energy	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000
Comment: Assumed channel, elevations from LiDAR		

Channel Link: L-0630C	Upstream	Downstream
Scenario: Existing	Invert: 71.00 ft	Invert: 69.30 ft
From Node: NZA-0710	Manning's N: 0.0420	Manning's N: 0.0420
To Node: Basin 1 Catch Basin	Geometry: Trapezoidal	Geometry: Trapezoidal
Link Count: 1	Max Depth: 1.00 ft	Max Depth: 1.00 ft
Flow Direction: Both	Extrapolation: Normal	Extrapolation: Normal
Damping: 0.0000 ft	Bottom Width: 3.00 ft	Bottom Width: 3.00 ft
Length: 135.16 ft	Left Slope: 7.000 (h:v)	Left Slope: 7.000 (h:v)
Contraction Coef: 0.00	Right Slope: 7.000 (h:v)	Right Slope: 7.000 (h:v)
Expansion Coef: 0.00	Bottom Clip	
Entr Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Exit Loss Coef: 0.00	Op Table:	Op Table:
Bend Loss Coef: 0.00	Ref Node:	Ref Node:
Bend Location: 0.00 dec	Manning's N: 0.0000	Manning's N: 0.0000
Energy Switch: Energy	Top Clip	
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:

Ref Node: Manning's N: 0.0000 Ref Node: Manning's N: 0.0000

Comment:

Channel Link: Trapezoidal channel 2	Upstream	Downstream
Scenario: Existing	Invert: 69.50 ft	Invert: 69.60 ft
From Node: NZA-0310	Manning's N: 0.0420	Manning's N: 0.0420
To Node: NZA-0320	Geometry: Trapezoidal	Geometry: Trapezoidal
Link Count: 1	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Flow Direction: Both	Extrapolation: Normal	Extrapolation: Normal
Damping: 0.0000 ft	Bottom Width: 8.00 ft	Bottom Width: 8.00 ft
Length: 422.16 ft	Left Slope: 8.800 (h:v)	Left Slope: 8.800 (h:v)
Contraction Coef: 0.00	Right Slope: 8.800 (h:v)	Right Slope: 8.800 (h:v)
Expansion Coef: 0.00	Bottom Clip	
Entr Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Exit Loss Coef: 0.00	Op Table:	Op Table:
Bend Loss Coef: 0.00	Ref Node:	Ref Node:
Bend Location: 0.00 dec	Manning's N: 0.0000	Manning's N: 0.0000
Energy Switch: Energy	Top Clip	
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000

Comment: Max channel depth is 1.5 ft for mannings value

Channel Link: Trapezoidal channel 1	Upstream	Downstream
Scenario: Existing	Invert: 70.50 ft	Invert: 70.00 ft
From Node: NZA-0440	Manning's N: 0.0600	Manning's N: 0.0600
To Node: NZA-0300	Geometry: Trapezoidal	Geometry: Trapezoidal
Link Count: 1	Max Depth: 0.70 ft	Max Depth: 0.70 ft
Flow Direction: Both	Extrapolation: Normal	Extrapolation: Normal
Damping: 0.0000 ft	Bottom Width: 5.00 ft	Bottom Width: 5.00 ft
Length: 567.92 ft	Left Slope: 15.000 (h:v)	Left Slope: 15.000 (h:v)
Contraction Coef: 0.00	Right Slope: 15.000 (h:v)	Right Slope: 15.000 (h:v)
Expansion Coef: 0.00	Bottom Clip	
Entr Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Exit Loss Coef: 0.00	Op Table:	Op Table:
Bend Loss Coef: 0.00	Ref Node:	Ref Node:
Bend Location: 0.00 dec	Manning's N: 0.0000	Manning's N: 0.0000
Energy Switch: Energy	Top Clip	
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000

Comment:

Channel Link: Trapezoidal channel 3		Upstream	Downstream
Scenario:	Existing	Invert: 69.20 ft	Invert: 68.90 ft
From Node:	NZA-0330	Manning's N: 0.0420	Manning's N: 0.0420
To Node:	NZA-0340	Geometry: Trapezoidal	Geometry: Trapezoidal
Link Count:	1	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Flow Direction:	Both	Extrapolation: Normal	Extrapolation: Normal
Damping:	0.0000 ft	Bottom Width: 20.00 ft	Bottom Width: 20.00 ft
Length:	263.27 ft	Left Slope: 11.300 (h:v)	Left Slope: 11.300 (h:v)
Contraction Coef:	0.00	Right Slope: 11.300 (h:v)	Right Slope: 11.300 (h:v)
Expansion Coef:	0.00	Bottom Clip	
Entr Loss Coef:	0.00	Default: 0.00 ft	Default: 0.00 ft
Exit Loss Coef:	0.00	Op Table:	Op Table:
Bend Loss Coef:	0.00	Ref Node:	Ref Node:
Bend Location:	0.00 dec	Manning's N: 0.0000	Manning's N: 0.0000
Energy Switch:	Energy	Top Clip	
		Default: 0.00 ft	Default: 0.00 ft
		Op Table:	Op Table:
		Ref Node:	Ref Node:
		Manning's N: 0.0000	Manning's N: 0.0000

Comment: Max channel depth is 1.5 for mannings value

Channel Link: Triangular 1		Upstream	Downstream
Scenario:	Existing	Invert: 70.10 ft	Invert: 70.10 ft
From Node:	NZA-0430	Manning's N: 0.0600	Manning's N: 0.0600
To Node:	NZA-0600	Geometry: Trapezoidal	Geometry: Trapezoidal
Link Count:	1	Max Depth: 1.30 ft	Max Depth: 1.30 ft
Flow Direction:	Both	Extrapolation: Normal	Extrapolation: Normal
Damping:	0.0000 ft	Bottom Width: 0.01 ft	Bottom Width: 0.01 ft
Length:	239.10 ft	Left Slope: 5.800 (h:v)	Left Slope: 5.800 (h:v)
Contraction Coef:	0.00	Right Slope: 5.800 (h:v)	Right Slope: 5.800 (h:v)
Expansion Coef:	0.00	Bottom Clip	
Entr Loss Coef:	0.00	Default: 0.00 ft	Default: 0.00 ft
Exit Loss Coef:	0.00	Op Table:	Op Table:
Bend Loss Coef:	0.00	Ref Node:	Ref Node:
Bend Location:	0.00 dec	Manning's N: 0.0000	Manning's N: 0.0000
Energy Switch:	Energy	Top Clip	
		Default: 0.00 ft	Default: 0.00 ft
		Op Table:	Op Table:
		Ref Node:	Ref Node:
		Manning's N: 0.0000	Manning's N: 0.0000

Comment: No triangular option available

Channel Link: Triangular channel 2		Upstream	Downstream
Scenario:	Existing	Invert: 69.10 ft	Invert: 67.30 ft
From Node:	NZA-0350	Manning's N: 0.0420	Manning's N: 0.0420

To Node:	NZA-0450	Geometry: Trapezoidal	Geometry: Trapezoidal
Link Count:	1	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Flow Direction:	Both	Extrapolation: Normal	Extrapolation: Normal
Damping:	0.0000 ft	Bottom Width: 0.01 ft	Bottom Width: 0.01 ft
Length:	954.39 ft	Left Slope: 9.200 (h:v)	Left Slope: 9.200 (h:v)
Contraction Coef:	0.00	Right Slope: 9.200 (h:v)	Right Slope: 9.200 (h:v)
Expansion Coef:	0.00	Bottom Clip	
Entr Loss Coef:	0.00	Default: 0.00 ft	Default: 0.00 ft
Exit Loss Coef:	0.00	Op Table:	Op Table:
Bend Loss Coef:	0.00	Ref Node:	Ref Node:
Bend Location:	0.00 dec	Manning's N: 0.0000	Manning's N: 0.0000
Energy Switch:	Energy	Top Clip	
		Default: 0.00 ft	Default: 0.00 ft
		Op Table:	Op Table:
		Ref Node:	Ref Node:
		Manning's N: 0.0000	Manning's N: 0.0000

Comment: Max depth is 1.5 ft for mannings value, no triangle option

Pipe Link: 18" RCP		Upstream	Downstream
Scenario:	Existing	Invert: 66.96 ft	Invert: 66.56 ft
From Node:	Basin 1 Catch Basin	Manning's N: 0.0120	Manning's N: 0.0120
To Node:	SR50 East	Geometry: Circular	Geometry: Circular
Link Count:	1	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Flow Direction:	Both	Bottom Clip	
Damping:	0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length:	155.76 ft	Op Table:	Op Table:
FHWA Code:	0	Ref Node:	Ref Node:
Entr Loss Coef:	0.50	Manning's N: 0.0000	Manning's N: 0.0000
Exit Loss Coef:	0.50	Top Clip	
Bend Loss Coef:	0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location:	0.00 dec	Op Table:	Op Table:
Energy Switch:	Energy	Ref Node:	Ref Node:
		Manning's N: 0.0000	Manning's N: 0.0000

Comment: Assumed up/downstream inverts, slope matches the ground slope at the grate tops

Pipe Link: 18" RCP1		Upstream	Downstream
Scenario:	Existing	Invert: 69.62 ft	Invert: 69.49 ft
From Node:	Basin 1 drop inlet	Manning's N: 0.0120	Manning's N: 0.0120
To Node:	Manhole 1	Geometry: Circular	Geometry: Circular
Link Count:	1	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Flow Direction:	Both	Bottom Clip	
Damping:	0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length:	26.00 ft	Op Table:	Op Table:
FHWA Code:	0	Ref Node:	Ref Node:
Entr Loss Coef:	0.50	Manning's N: 0.0000	Manning's N: 0.0000

Exit Loss Coef: 0.50	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000
Comment: No upstream invert located, assume dhite pipe had a 0.5% negative slope.		

Pipe Link: 18" RCP2		
Scenario: Existing	Upstream Invert: 68.94 ft	Downstream Invert: 67.30 ft
From Node: Manhole 1	Manning's N: 0.0120	Manning's N: 0.0120
To Node: SR50 West	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 267.18 ft	Op Table:	Op Table:
FHWA Code: 0	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0000	Manning's N: 0.0000
Exit Loss Coef: 0.50	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000
Comment:		

Pipe Link: Connecting 36" RCP		
Scenario: Existing	Upstream Invert: 61.00 ft	Downstream Invert: 60.85 ft
From Node: Schoolview Way	Manning's N: 0.0120	Manning's N: 0.0120
Ponds (location of proposed Pond 2A modification)	Geometry: Circular	Geometry: Circular
	Max Depth: 3.00 ft	Max Depth: 3.00 ft
To Node: Corner School Pond 2	Bottom Clip	
Link Count: 1	Default: 0.00 ft	Default: 0.00 ft
Flow Direction: Both	Op Table:	Op Table:
Damping: 0.0000 ft	Ref Node:	Ref Node:
Length: 145.00 ft	Manning's N: 0.0000	Manning's N: 0.0000
FHWA Code: 0	Top Clip	
Entr Loss Coef: 0.50	Default: 0.00 ft	Default: 0.00 ft
Exit Loss Coef: 0.50	Op Table:	Op Table:
Bend Loss Coef: 0.00	Ref Node:	Ref Node:
Bend Location: 0.00 dec	Manning's N: 0.0000	Manning's N: 0.0000
Energy Switch: Momentum		
Comment:		

Pipe Link: Connecting 48" PVC		Upstream	Downstream
Scenario:	Existing	Invert: 61.00 ft	Invert: 60.85 ft
From Node:	Schoolview Way	Manning's N: 0.0090	Manning's N: 0.0090
	Ponds (location of proposed Pond 2A modification)	Geometry: Circular	Geometry: Circular
		Max Depth: 4.00 ft	Max Depth: 4.00 ft
		Bottom Clip	
To Node:	Corner School Pond 2	Default: 0.00 ft	Default: 0.00 ft
		Op Table:	Op Table:
Link Count:	1	Ref Node:	Ref Node:
Flow Direction:	Both	Manning's N: 0.0000	Manning's N: 0.0000
Damping:	0.0000 ft	Top Clip	
Length:	152.00 ft	Default: 0.00 ft	Default: 0.00 ft
FHWA Code:	0	Op Table:	Op Table:
Entr Loss Coef:	0.50	Ref Node:	Ref Node:
Exit Loss Coef:	0.50	Manning's N: 0.0000	Manning's N: 0.0000
Bend Loss Coef:	0.00		
Bend Location:	0.00 dec		
Energy Switch:	Energy		
Comment:			

Pipe Link: L-0170P		Upstream	Downstream
Scenario:	Existing	Invert: 69.60 ft	Invert: 69.20 ft
From Node:	NZA-0320	Manning's N: 0.0120	Manning's N: 0.0120
To Node:	NZA-0330	Geometry: Circular	Geometry: Circular
Link Count:	1	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Flow Direction:	Both	Bottom Clip	
Damping:	0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length:	176.41 ft	Op Table:	Op Table:
FHWA Code:	0	Ref Node:	Ref Node:
Entr Loss Coef:	0.50	Manning's N: 0.0000	Manning's N: 0.0000
Exit Loss Coef:	0.50	Top Clip	
Bend Loss Coef:	0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location:	0.00 dec	Op Table:	Op Table:
Energy Switch:	Energy	Ref Node:	Ref Node:
		Manning's N: 0.0000	Manning's N: 0.0000
Comment: Size assumed, elevations from channel elevations			

Pipe Link: L-0200P		Upstream	Downstream
Scenario:	Existing	Invert: 68.90 ft	Invert: 69.10 ft
From Node:	NZA-0340	Manning's N: 0.0120	Manning's N: 0.0120
To Node:	NZA-0350	Geometry: Circular	Geometry: Circular
Link Count:	1	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Flow Direction:	Both	Bottom Clip	
Damping:	0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length:	23.00 ft	Op Table:	Op Table:

FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	0.50	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment: Assumed size, elevations form channel elevations

Pipe Link: L-0330P	Upstream	Downstream
Scenario: Existing	Invert: 62.00 ft	Invert: 62.00 ft
From Node: NZA-0470	Manning's N: 0.0120	Manning's N: 0.0120
To Node: NZA-0590	Geometry: Circular	
Link Count: 1	Max Depth: 4.00 ft	Max Depth: 4.00 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 63.00 ft	Op Table:	Op Table:
FHWA Code: 0	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0000	Manning's N: 0.0000
Exit Loss Coef: 0.50	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000

Comment: Assumed size, elevations based on LIDAR

Weir Link: L-0460W	Bottom Clip	
Scenario: Existing	Default: 0.00 ft	
From Node: Basin 1 Catch Basin	Op Table:	
To Node: SR50 East	Ref Node:	
Link Count: 1	Top Clip	
Flow Direction: Both	Default: 0.00 ft	
Damping: 0.0000 ft	Op Table:	
Weir Type: Gravel Road Vertical	Ref Node:	
Geometry Type: Rectangular	Discharge Coefficients	
Invert: 69.30 ft	Weir Default: 2.800	
Control Elevation: 69.30 ft	Weir Table:	
Max Depth: 99.00 ft	Orifice Default: 0.600	
Max Width: 20.00 ft	Orifice Table:	
Fillet: 0.00 ft		

Comment:

Weir Link: L-0490W	
Scenario: Existing	Bottom Clip
From Node: NZA-0320	Default: 0.00 ft
To Node: NZA-0330	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Gravel Road Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 72.00 ft	Discharge Coefficients
Control Elevation: 72.00 ft	Weir Default: 2.800
Max Depth: 99.00 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:
Comment:	

Weir Link: L-0500W	
Scenario: Existing	Bottom Clip
From Node: NZA-0340	Default: 0.00 ft
To Node: NZA-0350	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Gravel Road Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 69.30 ft	Discharge Coefficients
Control Elevation: 69.30 ft	Weir Default: 2.800
Max Depth: 99.00 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:
Comment:	

Weir Link: L-0520W	
Scenario: Existing	Bottom Clip
From Node: NZA-0470	Default: 0.00 ft
To Node: NZA-0590	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Gravel Road Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 68.42 ft	Discharge Coefficients
Control Elevation: 68.42 ft	Weir Default: 2.800
Max Depth: 99.00 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600

Fillet: 0.00 ft

Orifice Table:

Comment:

Weir Link: L-0610W

Scenario:	Existing	Bottom Clip
From Node:	Manhole 1	Default: 0.00 ft
To Node:	SR50 West	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	70.10 ft	Discharge Coefficients
Control Elevation:	70.10 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-0640W

Scenario:	Existing	Bottom Clip
From Node:	NZA-0430	Default: 0.00 ft
To Node:	NZA-0710	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	71.50 ft	Discharge Coefficients
Control Elevation:	71.50 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Modifications (Detailed)

Existing Project: C:\Users\sdcollins\Johnson, Mirmiran Thompson\20-01459-001 - Chuluota Road RCA Y20-830 - 05 - Working Files\ICPR\Chuluota\Project.i4p

Existing Scenario: Existing

Proposed Project: C:\Users\sdcollins\Johnson, Mirmiran Thompson\20-01459-001 - Chuluota Road RCA Y20-830 - 05 - Working Files\ICPR\Chuluota\Project.i4p

Proposed Scenario: Proposed - 1 Primary

Simple Basin: Basin 1A

Field	Existing	Proposed
Node	Basin 1 drop inlet	Basin 1 drop inlet
Hydrograph Method	NRCS Unit Hydrograph	NRCS Unit Hydrograph
Infiltration Method	Curve Number	Curve Number
Time of Concentration	10.0000 min	10.0000 min
Max Allowable Q	0.00 cfs	0.00 cfs
Time Shift	0.0000 hr	0.0000 hr
Unit Hydrograph	UH256	UH256
Peaking Factor	256.0 dec	256.0 dec
Area	0.8200 ac	0.8200 ac
Curve Number	89.4 dec	94.3 dec
% Impervious	0.00 pct	0.00 pct
% DCIA	0.00 pct	0.00 pct
% Direct	0.0000 pct	0.0000 pct
Rainfall Name		

Field	Comment
Existing	
Proposed	

Simple Basin: Basin 1B

Field	Existing	Proposed
Node	NZA-0710	Basin 1 Catch Basin
Hydrograph Method	NRCS Unit Hydrograph	NRCS Unit Hydrograph
Infiltration Method	Curve Number	Curve Number
Time of Concentration	10.0000 min	10.0000 min
Max Allowable Q	0.00 cfs	0.00 cfs
Time Shift	0.0000 hr	0.0000 hr
Unit Hydrograph	UH256	UH256
Peaking Factor	256.0 dec	256.0 dec
Area	0.1400 ac	0.1400 ac
Curve Number	91.6 dec	98.0 dec

Field	Existing	Proposed
% Impervious	0.00 pct	0.00 pct
% DCIA	0.00 pct	0.00 pct
% Direct	0.0000 pct	0.0000 pct
Rainfall Name		

Field	Comment
Existing	
Proposed	

Simple Basin: Basin 2A

Field	Existing	Proposed
Node	NZA-0290	NZA-0290
Hydrograph Method	NRCS Unit Hydrograph	NRCS Unit Hydrograph
Infiltration Method	Curve Number	Curve Number
Time of Concentration	10.0000 min	10.0000 min
Max Allowable Q	0.00 cfs	0.00 cfs
Time Shift	0.0000 hr	0.0000 hr
Unit Hydrograph	UH256	UH256
Peaking Factor	256.0 dec	256.0 dec
Area	1.6000 ac	1.6000 ac
Curve Number	89.8 dec	95.4 dec
% Impervious	0.00 pct	0.00 pct
% DCIA	0.00 pct	0.00 pct
% Direct	0.0000 pct	0.0000 pct
Rainfall Name		

Field	Comment
Existing	
Proposed	

Simple Basin: Basin 2B

Field	Existing	Proposed
Node	NZA-0430	NZA-0600
Hydrograph Method	NRCS Unit Hydrograph	NRCS Unit Hydrograph
Infiltration Method	Curve Number	Curve Number
Time of Concentration	10.0000 min	10.0000 min
Max Allowable Q	0.00 cfs	0.00 cfs
Time Shift	0.0000 hr	0.0000 hr
Unit Hydrograph	UH256	UH256
Peaking Factor	256.0 dec	256.0 dec

Field	Existing	Proposed
Area	7.5200 ac	7.5200 ac
Curve Number	87.9 dec	92.7 dec
% Impervious	0.00 pct	0.00 pct
% DCIA	0.00 pct	0.00 pct
% Direct	0.0000 pct	0.0000 pct
Rainfall Name		

Field	Comment
Existing	
Proposed	

Simple Basin: Basin 3

Field	Existing	Proposed
Node	NZA-0490	NZA-0490
Hydrograph Method	NRCS Unit Hydrograph	NRCS Unit Hydrograph
Infiltration Method	Curve Number	Curve Number
Time of Concentration	10.0000 min	10.0000 min
Max Allowable Q	0.00 cfs	0.00 cfs
Time Shift	0.0000 hr	0.0000 hr
Unit Hydrograph	UH256	UH256
Peaking Factor	256.0 dec	256.0 dec
Area	13.7500 ac	13.7500 ac
Curve Number	86.9 dec	91.1 dec
% Impervious	0.00 pct	0.00 pct
% DCIA	0.00 pct	0.00 pct
% Direct	0.0000 pct	0.0000 pct
Rainfall Name		

Field	Comment
Existing	
Proposed	

Simple Basin: Basin 4-200

Field	Existing	Proposed
Node	NZA-0530	NZA-0530
Hydrograph Method	NRCS Unit Hydrograph	NRCS Unit Hydrograph
Infiltration Method	Curve Number	Curve Number
Time of Concentration	10.0000 min	10.0000 min
Max Allowable Q	0.00 cfs	0.00 cfs
Time Shift	0.0000 hr	0.0000 hr

Field	Existing	Proposed
Unit Hydrograph	UH256	UH256
Peaking Factor	256.0 dec	256.0 dec
Area	0.1200 ac	0.1200 ac
Curve Number	58.7 dec	83.3 dec
% Impervious	0.00 pct	0.00 pct
% DCIA	0.00 pct	0.00 pct
% Direct	0.0000 pct	0.0000 pct
Rainfall Name		

Field	Comment
Existing	
Proposed	

Simple Basin: Basin 4-300

Field	Existing	Proposed
Node	Existing Cypress Dome	Existing Cypress Dome
Hydrograph Method	NRCS Unit Hydrograph	NRCS Unit Hydrograph
Infiltration Method	Curve Number	Curve Number
Time of Concentration	10.0000 min	10.0000 min
Max Allowable Q	0.00 cfs	0.00 cfs
Time Shift	0.0000 hr	0.0000 hr
Unit Hydrograph	UH256	UH256
Peaking Factor	256.0 dec	256.0 dec
Area	1.1300 ac	1.1300 ac
Curve Number	90.5 dec	97.7 dec
% Impervious	0.00 pct	0.00 pct
% DCIA	0.00 pct	0.00 pct
% Direct	0.0000 pct	0.0000 pct
Rainfall Name		

Field	Comment
Existing	
Proposed	

Simple Basin: Basin 4-400

Field	Existing	Proposed
Node	NZA-0570	NZA-0570
Hydrograph Method	NRCS Unit Hydrograph	NRCS Unit Hydrograph
Infiltration Method	Curve Number	Curve Number

Field	Existing	Proposed
Time of Concentration	10.0000 min	10.0000 min
Max Allowable Q	0.00 cfs	0.00 cfs
Time Shift	0.0000 hr	0.0000 hr
Unit Hydrograph	UH256	UH256
Peaking Factor	256.0 dec	256.0 dec
Area	2.8500 ac	2.8500 ac
Curve Number	83.4 dec	87.9 dec
% Impervious	0.00 pct	0.00 pct
% DCIA	0.00 pct	0.00 pct
% Direct	0.0000 pct	0.0000 pct
Rainfall Name		

Field	Comment
Existing	
Proposed	

Simple Basin: Corner Lake Pond Area

Field	Existing	Proposed
Node	Schoolview Way Ponds (location of proposed Pond 2A modification)	Schoolview Way Ponds (location of proposed Pond 2A modification)
Hydrograph Method	NRCS Unit Hydrograph	NRCS Unit Hydrograph
Infiltration Method	Curve Number	Curve Number
Time of Concentration	10.0000 min	10.0000 min
Max Allowable Q	0.00 cfs	0.00 cfs
Time Shift	0.0000 hr	0.0000 hr
Unit Hydrograph	UH256	UH256
Peaking Factor	256.0 dec	256.0 dec
Area	3.5600 ac	3.5600 ac
Curve Number	65.2 dec	68.8 dec
% Impervious	0.00 pct	0.00 pct
% DCIA	0.00 pct	0.00 pct
% Direct	0.0000 pct	0.0000 pct
Rainfall Name		

Field	Comment
Existing	
Proposed	

Simple Basin: Corner School Dr Proposed Intersection Area

Field	Existing	Proposed
Node	Schoolview Way Ponds (location of proposed Pond 2A modification)	Schoolview Way Ponds (location of proposed Pond 2A modification)
Hydrograph Method	NRCS Unit Hydrograph	NRCS Unit Hydrograph
Infiltration Method	Curve Number	Curve Number
Time of Concentration	10.0000 min	10.0000 min
Max Allowable Q	0.00 cfs	0.00 cfs
Time Shift	0.0000 hr	0.0000 hr
Unit Hydrograph	UH256	UH256
Peaking Factor	256.0 dec	256.0 dec
Area	0.3700 ac	0.3700 ac
Curve Number	80.0 dec	95.6 dec
% Impervious	0.00 pct	0.00 pct
% DCIA	0.00 pct	0.00 pct
% Direct	0.0000 pct	0.0000 pct
Rainfall Name		

Field	Comment
Existing	
Proposed	

Simple Basin: Corner School ERP27857-1 DA-2

Field	Existing	Proposed
Node	Corner School Pond 2	Schoolview Way Ponds (location of proposed Pond 2A modification)
Hydrograph Method	NRCS Unit Hydrograph	NRCS Unit Hydrograph
Infiltration Method	Curve Number	Curve Number
Time of Concentration	10.0000 min	10.0000 min
Max Allowable Q	0.00 cfs	0.00 cfs
Time Shift	0.0000 hr	0.0000 hr
Unit Hydrograph	UH256	UH256
Peaking Factor	256.0 dec	256.0 dec
Area	16.4000 ac	16.4000 ac
Curve Number	87.5 dec	87.5 dec
% Impervious	0.00 pct	0.00 pct
% DCIA	0.00 pct	0.00 pct
% Direct	0.0000 pct	0.0000 pct
Rainfall Name		

Field	Comment

Existing	
Proposed	

Simple Basin: Corner School ERP27857-1 DA-3

Field	Existing	Proposed
Node	Schoolview Way Ponds (location of proposed Pond 2A modification)	Corner School Pond 2
Hydrograph Method	NRCS Unit Hydrograph	NRCS Unit Hydrograph
Infiltration Method	Curve Number	Curve Number
Time of Concentration	10.0000 min	10.0000 min
Max Allowable Q	0.00 cfs	0.00 cfs
Time Shift	0.0000 hr	0.0000 hr
Unit Hydrograph	UH256	UH256
Peaking Factor	256.0 dec	256.0 dec
Area	4.3100 ac	4.3100 ac
Curve Number	85.9 dec	85.9 dec
% Impervious	0.00 pct	0.00 pct
% DCIA	0.00 pct	0.00 pct
% Direct	0.0000 pct	0.0000 pct
Rainfall Name		

Field	Comment
Existing	
Proposed	

Simple Basin: Proposed Pond 3A

Field	Existing	Proposed
Node	Corner Lake Wetland	Pond 3A
Hydrograph Method	NRCS Unit Hydrograph	NRCS Unit Hydrograph
Infiltration Method	Curve Number	Curve Number
Time of Concentration	20.0000 min	10.0000 min
Max Allowable Q	0.00 cfs	0.00 cfs
Time Shift	0.0000 hr	0.0000 hr
Unit Hydrograph	UH256	UH256
Peaking Factor	256.0 dec	256.0 dec
Area	1.1000 ac	1.1000 ac
Curve Number	77.0 dec	100.0 dec
% Impervious	0.00 pct	0.00 pct
% DCIA	0.00 pct	0.00 pct

Field	Existing	Proposed
% Direct	0.0000 pct	0.0000 pct
Rainfall Name		

Field	Comment
Existing	Assumed Tc of flow through the woods
Proposed	

Simple Basin: Proposed Pond 4A

Field	Existing	Proposed
Node	NZA-0550	Pond 4A
Hydrograph Method	NRCS Unit Hydrograph	NRCS Unit Hydrograph
Infiltration Method	Curve Number	Curve Number
Time of Concentration	111.0000 min	10.0000 min
Max Allowable Q	0.00 cfs	0.00 cfs
Time Shift	0.0000 hr	0.0000 hr
Unit Hydrograph	UH256	UH256
Peaking Factor	256.0 dec	256.0 dec
Area	0.4600 ac	0.4600 ac
Curve Number	80.0 dec	100.0 dec
% Impervious	0.00 pct	0.00 pct
% DCIA	0.00 pct	0.00 pct
% Direct	0.0000 pct	0.0000 pct
Rainfall Name		

Field	Comment
Existing	Tc estimated as similar to Basin 4-300 Offsite
Proposed	

Node (Stage/Area): Basin 1 Catch Basin

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	66.96 ft	65.00 ft
Warning Stage	69.30 ft	69.61 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	Assumed the height was the same as the other catch basin across Chuluota Rd.
Proposed	Assumed lower elevation

Point

Field	Existing	Proposed
Stage	66.96 ft	64.00 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	69.30 ft	70.40 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): Basin 1 drop inlet

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	69.62 ft	66.00 ft
Warning Stage	69.72 ft	69.61 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	Upper elevation from LIDAR
Proposed	Upper elevation from LIDAR

Point

Field	Existing	Proposed
Stage	69.62 ft	66.00 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	69.72 ft	70.40 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): Manhole 1

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	68.49 ft	65.00 ft
Warning Stage	71.87 ft	69.61 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	
Proposed	

Point

Field	Existing	Proposed
Stage	68.49 ft	65.00 ft
Area	0.0100 ac	0.0100 ac

Field	Existing	Proposed
Stage	71.87 ft	70.40 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0290

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	70.00 ft	66.50 ft
Warning Stage	72.00 ft	68.70 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	
Proposed	Assumed lower elevation

Point

Field	Existing	Proposed
Stage	70.00 ft	61.50 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	72.00 ft	70.40 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0300

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	70.00 ft	65.00 ft
Warning Stage	71.00 ft	68.70 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	
Proposed	Assumed lower elevation

Point

Field	Existing	Proposed
Stage	70.00 ft	62.00 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	71.00 ft	70.40 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0320

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	69.60 ft	67.60 ft
Warning Stage	72.00 ft	70.40 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	
Proposed	

Point

Field	Existing	Proposed
Stage	69.60 ft	67.60 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	72.00 ft	70.40 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0430

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	70.10 ft	65.00 ft
Warning Stage	71.40 ft	69.61 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	
Proposed	Assumed lower elevation

Point

Field	Existing	Proposed
Stage	70.10 ft	63.70 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	71.40 ft	70.40 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0440

Field	Existing	Proposed
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Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	70.00 ft	65.00 ft
Warning Stage	70.70 ft	68.70 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	
Proposed	Assumed lower elevation

Point

Field	Existing	Proposed
Stage	70.00 ft	63.00 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	70.70 ft	70.40 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0450

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	67.00 ft	65.60 ft
Warning Stage	67.30 ft	70.00 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	Assumed elevation invert, other based on the channel elevation
Proposed	

Point

Field	Existing	Proposed
Stage	67.00 ft	65.60 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	67.30 ft	70.00 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0470

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	65.20 ft	67.00 ft

Field	Existing	Proposed
Warning Stage	68.42 ft	70.40 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	Based on LIDAR
Proposed	Assumed elevation

Point

Field	Existing	Proposed
Stage	65.20 ft	63.40 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	68.42 ft	70.40 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0480

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	66.90 ft	67.00 ft
Warning Stage	69.60 ft	70.40 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	
Proposed	

Point

Field	Existing	Proposed
Stage	66.90 ft	64.00 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	69.60 ft	70.40 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0490

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	66.90 ft	67.00 ft
Warning Stage	69.60 ft	68.10 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	
Proposed	

Point

Field	Existing	Proposed
Stage	66.90 ft	64.60 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	69.60 ft	70.40 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0530

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	69.00 ft	67.00 ft
Warning Stage	70.00 ft	72.40 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	Assumed elevations
Proposed	Assumed elevations

Point

Field	Existing	Proposed
Stage	69.00 ft	67.00 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	70.00 ft	72.40 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0540

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	69.00 ft	67.00 ft
Warning Stage	71.00 ft	72.40 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	Assumed elevations

Proposed	Assumed elevations
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Point

Field	Existing	Proposed
Stage	69.00 ft	67.00 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	71.00 ft	72.40 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0550

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	61.00 ft	65.00 ft
Warning Stage	74.00 ft	72.40 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	Approximated from plans
Proposed	Assumed elevation

Point

Field	Existing	Proposed
Stage	61.00 ft	65.00 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	74.00 ft	74.00 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0570

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	70.10 ft	68.10 ft
Warning Stage	70.90 ft	70.60 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	Elevation of the inlet to the right and the grate top
Proposed	

Point

Field	Existing	Proposed
Stage	70.10 ft	70.10 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	70.90 ft	70.90 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0600

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	70.50 ft	65.00 ft
Warning Stage	72.00 ft	68.70 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	
Proposed	Assumed lower elevation

Point

Field	Existing	Proposed
Stage	70.50 ft	63.50 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	72.00 ft	70.40 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): Schoolview Way Ponds (location of proposed Pond 2A modification)

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	66.00 ft	66.50 ft
Warning Stage	70.50 ft	71.00 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	
Proposed	

Point

Field	Existing	Proposed
Stage	66.50 ft	66.50 ft

Field	Existing	Proposed
Area	1.6000 ac	1.7300 ac
Field	Existing	Proposed
Stage	68.00 ft	68.00 ft
Area	1.9000 ac	1.9500 ac
Field	Existing	Proposed
Stage	69.50 ft	69.50 ft
Area	2.3200 ac	2.2800 ac
Field	Existing	Proposed
Stage	70.50 ft	70.50 ft
Area	2.7200 ac	2.4500 ac
Field	Existing	Proposed
Stage	<missing record>	72.00 ft
Area	<missing record>	2.7100 ac

Link (Pipe): L-0160P

Field	Existing	Proposed
From Node	NZA-0300	NZA-0300
To Node	NZA-0310	NZA-0290
Link Count	1	1
Flow Direction	Both	Both
Damping	0.0000 ft	0.0000 ft
Length	15.18 ft	91.00 ft
FHWA Code	0	0
Entr Loss Coef	0.50 dec	0.50 dec
Exit Loss Coef	0.50 dec	0.50 dec
Bend Loss Coef	0.00 dec	0.00 dec
Bend Location	0.00 dec	0.00 dec
Energy Switch	Energy	Energy

Field	Upstream Existing	Upstream Proposed	Downstream Existing	Downstream Proposed
Invert	70.00 ft	62.00 ft	69.50 ft	61.50 ft
Manning's N	0.0120 dec	0.0120 dec	0.0120 dec	0.0120 dec
Geometry	Circular	Circular	Circular	Circular
Max Depth	1.50 ft	2.00 ft	1.50 ft	2.00 ft
Max Width	<N/A>	<N/A>	<N/A>	<N/A>
Fillet	<N/A>	<N/A>	<N/A>	<N/A>
Cross Section	<N/A>	<N/A>	<N/A>	<N/A>
Bottom Clip	0.00 ft	0.00 ft	0.00 ft	0.00 ft
Bottom Clip Table				
Bottom Clip Node				
Bottom Clip Manning's N	0.0000 dec	0.0000 dec	0.0000 dec	0.0000 dec
Top Clip	0.00 ft	0.00 ft	0.00 ft	0.00 ft
Top Clip Table				
Top Clip Node				
Top Clip Manning's N	0.0000 dec	0.0000 dec	0.0000 dec	0.0000 dec

Field	Comment
Existing	Assumed size, elevations based on the channel elevations
Proposed	Assumed size, elevations

Link (Pipe): L-0240P

Field	Existing	Proposed
From Node	NZA-0490	NZA-0490
To Node	NZA-0480	NZA-0480
Link Count	1	1
Flow Direction	Both	Both
Damping	0.0000 ft	0.0000 ft
Length	144.06 ft	144.06 ft
FHWA Code	0	0
Entr Loss Coef	0.50 dec	0.50 dec
Exit Loss Coef	0.50 dec	0.50 dec
Bend Loss Coef	0.00 dec	0.00 dec
Bend Location	0.00 dec	0.00 dec
Energy Switch	Energy	Energy

Field	Upstream Existing	Upstream Proposed	Downstream Existing	Downstream Proposed
Invert	67.10 ft	64.60 ft	66.90 ft	64.00 ft
Manning's N	0.0120 dec	0.0120 dec	0.0120 dec	0.0120 dec
Geometry	Circular	Circular	Circular	Circular
Max Depth	2.00 ft	3.00 ft	2.00 ft	3.00 ft
Max Width	<N/A>	<N/A>	<N/A>	<N/A>
Fillet	<N/A>	<N/A>	<N/A>	<N/A>
Cross Section	<N/A>	<N/A>	<N/A>	<N/A>
Bottom Clip	0.00 ft	0.00 ft	0.00 ft	0.00 ft
Bottom Clip Table				
Bottom Clip Node				
Bottom Clip Manning's N	0.0000 dec	0.0000 dec	0.0000 dec	0.0000 dec
Top Clip	0.00 ft	0.00 ft	0.00 ft	0.00 ft
Top Clip Table				
Top Clip Node				
Top Clip Manning's N	0.0000 dec	0.0000 dec	0.0000 dec	0.0000 dec

Field	Comment
Existing	Assumed size, elevations based on LiDAR
Proposed	Assumed size and lower elevation

Link (Pipe): L-0260P

Field	Existing	Proposed
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Field	Existing	Proposed
From Node	Existing Cypress Dome	Existing Cypress Dome
To Node	NZA-0570	NZA-0570
Link Count	1	1
Flow Direction	Both	Both
Damping	0.0000 ft	0.0000 ft
Length	85.87 ft	85.87 ft
FHWA Code	0	0
Entr Loss Coef	0.50 dec	0.50 dec
Exit Loss Coef	0.50 dec	0.50 dec
Bend Loss Coef	0.00 dec	0.00 dec
Bend Location	0.00 dec	0.00 dec
Energy Switch	Energy	Energy

Field	Upstream Existing	Upstream Proposed	Downstream Existing	Downstream Proposed
Invert	68.69 ft	68.69 ft	67.00 ft	67.00 ft
Manning's N	0.0120 dec	0.0120 dec	0.0120 dec	0.0120 dec
Geometry	Circular	Circular	Circular	Circular
Max Depth	2.00 ft	2.00 ft	2.00 ft	2.00 ft
Max Width	<N/A>	<N/A>	<N/A>	<N/A>
Fillet	<N/A>	<N/A>	<N/A>	<N/A>
Cross Section	<N/A>	<N/A>	<N/A>	<N/A>
Bottom Clip	0.00 ft	0.00 ft	0.00 ft	0.00 ft
Bottom Clip Table				
Bottom Clip Node				
Bottom Clip Manning's N	0.0000 dec	0.0000 dec	0.0000 dec	0.0000 dec
Top Clip	0.00 ft	0.00 ft	0.00 ft	0.00 ft
Top Clip Table				
Top Clip Node				
Top Clip Manning's N	0.0000 dec	0.0000 dec	0.0000 dec	0.0000 dec

Field	Comment
Existing	elevations from the LiDAR
Proposed	Assumed size, elevations from the LiDAR

Link (Pipe): L-0300P

Field	Existing	Proposed
From Node	NZA-0540	NZA-0540
To Node	NZA-0550	NZA-0550
Link Count	1	1
Flow Direction	Both	Both
Damping	0.0000 ft	0.0000 ft
Length	116.86 ft	116.00 ft
FHWA Code	0	0
Entr Loss Coef	0.50 dec	0.50 dec

Field	Existing	Proposed
Exit Loss Coef	0.50 dec	0.50 dec
Bend Loss Coef	0.00 dec	0.00 dec
Bend Location	0.00 dec	0.00 dec
Energy Switch	Energy	Energy

Field	Upstream Existing	Upstream Proposed	Downstream Existing	Downstream Proposed
Invert	70.00 ft	70.00 ft	66.85 ft	66.85 ft
Manning's N	0.0120 dec	0.0120 dec	0.0120 dec	0.0120 dec
Geometry	Circular	Circular	Circular	Circular
Max Depth	1.50 ft	1.50 ft	1.50 ft	1.50 ft
Max Width	<N/A>	<N/A>	<N/A>	<N/A>
Fillet	<N/A>	<N/A>	<N/A>	<N/A>
Cross Section	<N/A>	<N/A>	<N/A>	<N/A>
Bottom Clip	0.00 ft	0.00 ft	0.00 ft	0.00 ft
Bottom Clip Table				
Bottom Clip Node				
Bottom Clip Manning's N	0.0000 dec	0.0000 dec	0.0000 dec	0.0000 dec
Top Clip	0.00 ft	0.00 ft	0.00 ft	0.00 ft
Top Clip Table				
Top Clip Node				
Top Clip Manning's N	0.0000 dec	0.0000 dec	0.0000 dec	0.0000 dec

Field	Comment
Existing	Assumed size and elevations
Proposed	Assumed size and elevations

Link (Pipe): L-0310P

Field	Existing	Proposed
From Node	NZA-0570	NZA-0570
To Node	NZA-0550	NZA-0550
Link Count	1	1
Flow Direction	Both	Both
Damping	0.0000 ft	0.0000 ft
Length	488.77 ft	488.00 ft
FHWA Code	0	0
Entr Loss Coef	0.50 dec	0.50 dec
Exit Loss Coef	0.50 dec	0.50 dec
Bend Loss Coef	0.00 dec	0.00 dec
Bend Location	0.00 dec	0.00 dec
Energy Switch	Energy	Energy

Field	Upstream Existing	Upstream Proposed	Downstream Existing	Downstream Proposed
Invert	67.00 ft	67.00 ft	65.00 ft	65.00 ft
Manning's N	0.0120 dec	0.0120 dec	0.0120 dec	0.0120 dec
Geometry	Circular	Circular	Circular	Circular

Field	Upstream Existing	Upstream Proposed	Downstream Existing	Downstream Proposed
Max Depth	2.50 ft	2.50 ft	2.50 ft	2.50 ft
Max Width	<N/A>	<N/A>	<N/A>	<N/A>
Fillet	<N/A>	<N/A>	<N/A>	<N/A>
Cross Section	<N/A>	<N/A>	<N/A>	<N/A>
Bottom Clip	0.00 ft	0.00 ft	0.00 ft	0.00 ft
Bottom Clip Table				
Bottom Clip Node				
Bottom Clip Manning's N	0.0000 dec	0.0000 dec	0.0000 dec	0.0000 dec
Top Clip	0.00 ft	0.00 ft	0.00 ft	0.00 ft
Top Clip Table				
Top Clip Node				
Top Clip Manning's N	0.0000 dec	0.0000 dec	0.0000 dec	0.0000 dec

Field	Comment
Existing	
Proposed	

Link (Pipe): L-0320P

Field	Existing	Proposed
From Node	NZA-0530	NZA-0530
To Node	NZA-0550	NZA-0550
Link Count	1	1
Flow Direction	Both	Both
Damping	0.0000 ft	0.0000 ft
Length	141.92 ft	105.00 ft
FHWA Code	0	0
Entr Loss Coef	0.50 dec	0.50 dec
Exit Loss Coef	0.50 dec	0.50 dec
Bend Loss Coef	0.00 dec	0.00 dec
Bend Location	0.00 dec	0.00 dec
Energy Switch	Energy	Energy

Field	Upstream Existing	Upstream Proposed	Downstream Existing	Downstream Proposed
Invert	60.96 ft	60.96 ft	60.78 ft	60.78 ft
Manning's N	0.0120 dec	0.0120 dec	0.0120 dec	0.0120 dec
Geometry	Circular	Circular	Circular	Circular
Max Depth	1.50 ft	2.00 ft	1.50 ft	2.00 ft
Max Width	<N/A>	<N/A>	<N/A>	<N/A>
Fillet	<N/A>	<N/A>	<N/A>	<N/A>
Cross Section	<N/A>	<N/A>	<N/A>	<N/A>
Bottom Clip	0.00 ft	0.00 ft	0.00 ft	0.00 ft
Bottom Clip Table				
Bottom Clip Node				
Bottom Clip Manning's N	0.0000 dec	0.0000 dec	0.0000 dec	0.0000 dec
Top Clip	0.00 ft	0.00 ft	0.00 ft	0.00 ft

Field	Upstream Existing	Upstream Proposed	Downstream Existing	Downstream Proposed
Top Clip Table				
Top Clip Node				
Top Clip Manning's N	0.0000 dec	0.0000 dec	0.0000 dec	0.0000 dec

Field	Comment
Existing	Assumed size and elevations
Proposed	Assumed size and elevations

Link (Pipe): L-0370P

Field	Existing	Proposed
From Node	NZA-0550	NZA-0550
To Node	Lake Pickett Rd Stormdrain	NZA-0770
Link Count	1	1
Flow Direction	Both	Both
Damping	0.0000 ft	0.0000 ft
Length	900.00 ft	900.00 ft
FHWA Code	0	0
Entr Loss Coef	0.50 dec	0.50 dec
Exit Loss Coef	0.50 dec	0.50 dec
Bend Loss Coef	0.00 dec	0.00 dec
Bend Location	0.00 dec	0.00 dec
Energy Switch	Energy	Energy

Field	Upstream Existing	Upstream Proposed	Downstream Existing	Downstream Proposed
Invert	60.78 ft	60.78 ft	59.97 ft	59.97 ft
Manning's N	0.0120 dec	0.0120 dec	0.0120 dec	0.0120 dec
Geometry	Circular	Circular	Circular	Circular
Max Depth	3.00 ft	3.00 ft	3.00 ft	3.00 ft
Max Width	<N/A>	<N/A>	<N/A>	<N/A>
Fillet	<N/A>	<N/A>	<N/A>	<N/A>
Cross Section	<N/A>	<N/A>	<N/A>	<N/A>
Bottom Clip	0.00 ft	0.00 ft	0.00 ft	0.00 ft
Bottom Clip Table				
Bottom Clip Node				
Bottom Clip Manning's N	0.0000 dec	0.0000 dec	0.0000 dec	0.0000 dec
Top Clip	0.00 ft	0.00 ft	0.00 ft	0.00 ft
Top Clip Table				
Top Clip Node				
Top Clip Manning's N	0.0000 dec	0.0000 dec	0.0000 dec	0.0000 dec

Field	Comment
Existing	
Proposed	Assumed size

Link (Pipe): L-0400P

Field	Existing	Proposed
From Node	NZA-0290	NZA-0290
To Node	Schoolview Way Ponds (location of proposed Pond 2A modification)	Schoolview Way Ponds (location of proposed Pond 2A modification)
Link Count	1	1
Flow Direction	Both	Both
Damping	0.0000 ft	0.0000 ft
Length	82.33 ft	82.33 ft
FHWA Code	0	0
Entr Loss Coef	0.50 dec	0.50 dec
Exit Loss Coef	0.50 dec	0.50 dec
Bend Loss Coef	0.00 dec	0.00 dec
Bend Location	0.00 dec	0.00 dec
Energy Switch	Energy	Energy

Field	Upstream Existing	Upstream Proposed	Downstream Existing	Downstream Proposed
Invert	70.00 ft	61.50 ft	66.00 ft	61.00 ft
Manning's N	0.0120 dec	0.0120 dec	0.0120 dec	0.0120 dec
Geometry	Circular	Circular	Circular	Circular
Max Depth	1.50 ft	2.00 ft	1.50 ft	2.00 ft
Max Width	<N/A>	<N/A>	<N/A>	<N/A>
Fillet	<N/A>	<N/A>	<N/A>	<N/A>
Cross Section	<N/A>	<N/A>	<N/A>	<N/A>
Bottom Clip	0.00 ft	0.00 ft	0.00 ft	0.00 ft
Bottom Clip Table				
Bottom Clip Node				
Bottom Clip Manning's N	0.0000 dec	0.0000 dec	0.0000 dec	0.0000 dec
Top Clip	0.00 ft	0.00 ft	0.00 ft	0.00 ft
Top Clip Table				
Top Clip Node				
Top Clip Manning's N	0.0000 dec	0.0000 dec	0.0000 dec	0.0000 dec

Field	Comment
Existing	Assumed size, elevations based on grate and pond elevation
Proposed	Assumed size, elevations

Link (Weir): L-0480W

Field	Existing	Proposed
From Node	NZA-0300	NZA-0300
To Node	NZA-0310	NZA-0290
Link Count	1	1
Flow Direction	Both	Both

Field	Existing	Proposed
Damping	0.0000 ft	0.0000 ft
Weir Type	Gravel Road, Vertical	Gravel Road, Vertical
Geometry	Rectangular	Rectangular
Invert	71.00 ft	70.30 ft
Control Elevation	71.00 ft	70.30 ft
Cross Section	<N/A>	<N/A>
Extrapolation Method	<N/A>	<N/A>
Max Depth	99.00 ft	99.00 ft
Max Width	20.00 ft	20.00 ft
Fillet	0.00 ft	0.00 ft
Bottom Width	<N/A>	<N/A>
Left Slope	<N/A>	<N/A>
Right Slope	<N/A>	<N/A>
Bottom Clip	0.00 ft	0.00 ft
Top Clip	0.00 ft	0.00 ft
Weir Discharge Coef	2.800 sqrt(f)ps	2.800 sqrt(f)ps
Orifice Discharge Coef	0.600 dec	0.600 dec
Bottom Clip Table		
Top Clip Table		
Weir Discharge Coef Table		
Orifice Discharge Coef Table		
Bottom Clip Node		
Top Clip Node		

Field	Comment
Existing	
Proposed	

Link (Weir): L-0550W

Field	Existing	Proposed
From Node	NZA-0570	NZA-0570
To Node	NZA-0550	NZA-0550
Link Count	1	1
Flow Direction	Both	Both
Damping	0.0000 ft	0.0000 ft
Weir Type	Gravel Road, Vertical	Gravel Road, Vertical
Geometry	Rectangular	Rectangular
Invert	70.90 ft	72.40 ft
Control Elevation	70.90 ft	72.40 ft
Cross Section	<N/A>	<N/A>
Extrapolation Method	<N/A>	<N/A>
Max Depth	99.00 ft	99.00 ft
Max Width	20.00 ft	20.00 ft
Fillet	0.00 ft	0.00 ft
Bottom Width	<N/A>	<N/A>

Field	Existing	Proposed
Left Slope	<N/A>	<N/A>
Right Slope	<N/A>	<N/A>
Bottom Clip	0.00 ft	0.00 ft
Top Clip	0.00 ft	0.00 ft
Weir Discharge Coef	2.800 sqrt(f)ps	2.800 sqrt(f)ps
Orifice Discharge Coef	0.600 dec	0.600 dec
Bottom Clip Table		
Top Clip Table		
Weir Discharge Coef Table		
Orifice Discharge Coef Table		
Bottom Clip Node		
Top Clip Node		

Field	Comment
Existing	
Proposed	

Link (Weir): L-0580W

Field	Existing	Proposed
From Node	NZA-0550	NZA-0550
To Node	Lake Pickett Rd Stormdrain	NZA-0770
Link Count	1	1
Flow Direction	Both	Both
Damping	0.0000 ft	0.0000 ft
Weir Type	Gravel Road, Vertical	Gravel Road, Vertical
Geometry	Rectangular	Rectangular
Invert	71.40 ft	71.40 ft
Control Elevation	71.40 ft	71.40 ft
Cross Section	<N/A>	<N/A>
Extrapolation Method	<N/A>	<N/A>
Max Depth	99.00 ft	99.00 ft
Max Width	20.00 ft	20.00 ft
Fillet	0.00 ft	0.00 ft
Bottom Width	<N/A>	<N/A>
Left Slope	<N/A>	<N/A>
Right Slope	<N/A>	<N/A>
Bottom Clip	0.00 ft	0.00 ft
Top Clip	0.00 ft	0.00 ft
Weir Discharge Coef	2.800 sqrt(f)ps	2.800 sqrt(f)ps
Orifice Discharge Coef	0.600 dec	0.600 dec
Bottom Clip Table		
Top Clip Table		
Weir Discharge Coef Table		
Orifice Discharge Coef Table		

Field	Existing	Proposed
Bottom Clip Node		
Top Clip Node		

Field	Comment
Existing	
Proposed	

Link (Weir): Schoolview Way Overland

Field	Existing	Proposed
From Node	NZA-0290	NZA-0290
To Node	Schoolview Way Ponds (location of proposed Pond 2A modification)	Schoolview Way Ponds (location of proposed Pond 2A modification)
Link Count	1	1
Flow Direction	Both	Both
Damping	0.0000 ft	0.0000 ft
Weir Type	Gravel Road, Vertical	Gravel Road, Vertical
Geometry	Rectangular	Rectangular
Invert	71.40 ft	69.70 ft
Control Elevation	71.40 ft	69.70 ft
Cross Section	<N/A>	<N/A>
Extrapolation Method	<N/A>	<N/A>
Max Depth	99.00 ft	99.00 ft
Max Width	20.00 ft	20.00 ft
Fillet	0.00 ft	0.00 ft
Bottom Width	<N/A>	<N/A>
Left Slope	<N/A>	<N/A>
Right Slope	<N/A>	<N/A>
Bottom Clip	0.00 ft	0.00 ft
Top Clip	0.00 ft	0.00 ft
Weir Discharge Coef	2.800 sqrt(f)ps	2.800 sqrt(f)ps
Orifice Discharge Coef	0.600 dec	0.600 dec
Bottom Clip Table		
Top Clip Table		
Weir Discharge Coef Table		
Orifice Discharge Coef Table		
Bottom Clip Node		
Top Clip Node		

Field	Comment
Existing	
Proposed	

Simulation: Hotstart

General

Field	Existing	Proposed
Run Mode	Normal	Normal
Hot Start Simulation	<N/A>	<N/A>
Start Time - Year	0	0
Start Time - Month	0	0
Start Time - Day	0	0
Start Time - Hour	0.0000 hr	0.0000 hr
End Time - Year	0	0
End Time - Month	0	0
End Time - Day	0	0
End Time - Hour	24.0000 hr	2.0000 hr
Hot Start Time - Year	<N/A>	<N/A>
Hot Start Time - Month	<N/A>	<N/A>
Hot Start Time - Day	<N/A>	<N/A>
Hot Start Time - Hour	<N/A>	<N/A>
Min Calculation Time - Hydrology	60.0000 sec	60.0000 sec
Min Calculation Time - Surface Hydraulics	0.1000 sec	0.1000 sec
Min Calculation Time - GW	900.0000 sec	900.0000 sec
Max Calculation Time - Surface Hydraulics	30.0000 sec	30.0000 sec

Field	Comment
Existing	
Proposed	

Output Time Increments

Output Time Increments - Hydrology

Field	Existing	Proposed
Year	0	0
Month	0	0
Day	0	0
Hour	0.0000 hr	0.0000 hr
Time Increment	15.0000 min	15.0000 min

Output Time Increments - Surface Hydraulics

Field	Existing	Proposed
Year	0	0
Month	0	0
Day	0	0
Hour	0.0000 hr	0.0000 hr
Time Increment	15.0000 min	15.0000 min

Output Time Increments - Groundwater

Field	Existing	Proposed
Year	0	0
Month	0	0
Day	0	0
Hour	0.0000 hr	0.0000 hr
Time Increment	60.0000 min	60.0000 min

Field	Existing	Proposed
Save Restart	False	False

Resources & Lookup Tables

Field	Existing	Proposed
Rainfall Set		
Reference ET Set		
Unit Hydrograph Set		
Boundary Stage Set		
External Hydrograph Set		
Curve Number Set		
Green-Ampt Set		
Vertical Layers Set		
Impervious Set		
Roughness Set		
Crop Coef Set		
Fillable Porosity Set		
Conductivity Set		
Leakage Set		

Tolerances & Options

Field	Existing	Proposed
Time Marching	SAOR	SAOR
Max Iterations	6	6
Over-Relaxation Weighting Factor	0.5 dec	0.5 dec
dZ Tolerance	0.0010 ft	0.0010 ft
Max dZ	1.0000 ft	1.0000 ft
Link Optimizer Tolerance	0.0001 ft	0.0001 ft
Edge Length Option	Automatic	Automatic
Edge Length Factor	<N/A>	<N/A>
Default Damping (2D)	0.0050 ft	0.0050 ft
Min Node Surface Area (2D)	100 ft2	100 ft2
Energy Switch (2D)	Energy	Energy
Initial Abstraction Recovery Time	24.0000 hr	24.0000 hr

Field	Existing	Proposed
Include ET for Manual Basins	False	False
Manual Basin Rainfall Option	Global	Global
OF Region Rainfall Option	Global	Global
Rainfall Name	~ORANGE	~ORANGE
Rainfall Amount	0.01 in	0.01 in
Storm Duration	24.0000 hr	24.0000 hr
Default Damping (1D)	0.0050 ft	0.0050 ft
Min Node Surface Area (1D)	100 ft2	100 ft2
Energy Switch (1D)	Energy	Energy

Scenario Difference Summary

Existing Project: C:\Users\sdcollins\Johnson, Mirmiran Thompson\20-01459-001 - Chuluota Road RCA Y20-830 - 05 - Working Files\ICPR\Chuluota\Project.i4p
 Existing Scenario: Existing
 Proposed Project: C:\Users\sdcollins\Johnson, Mirmiran Thompson\20-01459-001 - Chuluota Road RCA Y20-830 - 05 - Working Files\ICPR\Chuluota\Project.i4p
 Proposed Scenario: Proposed - 2 Alternate

Additions

Data Type (Additions)	Count
Node (Stage Area)	10
Link (Pipe)	20
Link (Weir)	15
Link (Drop Structure)	4

Node (Stage Area) (Additions)
NZA-0750
NZA-0820
NZA-0850
NZA-0880
NZA-0920
NZA-0930
Pond 1A
Pond 2B
Pond 3B
Pond 4B

Link (Pipe) (Additions)
L-0250P
L-0780P
L-0800P
L-0820P
L-0830P
L-0880P
L-0890P
L-0900P
L-0920P
L-0990P
L-1000P
L-1080P
L-1100P
L-1120P
L-1130P
L-1140P
L-1220P
L-1310P
L-1330P
L-1340P

Link (Weir) (Additions)
L-0790W
L-0810W
L-0850W
L-0860W
L-0870W
L-0930W
L-0940W
L-0950W
L-1010W
L-1020W
L-1090W
L-1110W
L-1150W
L-1180W
L-1260W

Link (Drop Structure) (Additions)
L-1170DS
L-1230DS
L-1270DS
L-1290DS

Deletions

Data Type (Deletions)	Count
Simple Basin	2
Node (Stage Area)	5
Link (Channel)	9
Link (Pipe)	10
Link (Weir)	10

Simple Basin (Deletions)
Proposed Pond 3A
Proposed Pond 4A

Node (Stage Area) (Deletions)
Existing Wetland Buffer
NZA-0310
NZA-0350
NZA-0590
NZA-0710

Link (Channel) (Deletions)
L-0340C
L-0360C
L-0380C
L-0630C
Trapezoidal channel 2
Trapezoidal channel 1

Link (Channel) (Deletions)
Trapezoidal channel 3
Triangular 1
Triangular channel 2

Link (Pipe) (Deletions)
18" RCP
18" RCP1
18" RCP2
L-0160P
L-0200P
L-0310P
L-0320P
L-0330P
L-0400P
L-0660P

Link (Weir) (Deletions)
L-0460W
L-0480W
L-0500W
L-0520W
L-0550W
L-0610W
L-0640W
L-0670W
L-0680W
Schoolview Way Overland

Modifications

Data Type (Modifications)	Count
Simple Basin	12
Node (Stage Area)	20
Link (Pipe)	6
Simulation	1

Simple Basin (Modifications)
Basin 1A
Basin 1B
Basin 2A
Basin 2B
Basin 3
Basin 4-200
Basin 4-300
Basin 4-300 Offsite
Basin 4-400
Proposed Pond 1A
Proposed Pond 2B
Proposed Pond 3B

Node (Stage Area) (Modifications)
Basin 1 Catch Basin
Basin 1 drop inlet
Manhole 1
NZA-0290
NZA-0300
NZA-0320
NZA-0330
NZA-0340
NZA-0430
NZA-0440
NZA-0450
NZA-0470
NZA-0480
NZA-0490
NZA-0530
NZA-0540
NZA-0550
NZA-0570
NZA-0600
Schoolview Way Ponds (location of proposed Pond 2A modification)

Link (Pipe) (Modifications)
Connecting 36" RCP
L-0170P
L-0240P
L-0260P
L-0300P
L-0650P

Simulation (Modifications)
Hotstart

Duplicates

Data Type (Duplicates)	Count
<N/A>	0

Additions (Detailed)

Proposed Project: C:\Users\sdcollins\Johnson, Mirmiran Thompson\20-01459-001 - Chuluota Road RCA Y20-830 - 05 - Working Files\ICPR\Chuluota\Project.i4p
 Proposed Scenario: Proposed - 2 Alternate

Node: NZA-0750

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 63.60 ft
 Warning Stage: 70.40 ft

Stage [ft]	Area [ac]	Area [ft2]
63.60	0.0100	436
72.00	0.0100	436

Comment: Assumed elevations

Node: NZA-0820

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 68.00 ft
 Warning Stage: 71.40 ft

Stage [ft]	Area [ac]	Area [ft2]
66.00	0.0100	436
73.20	0.0100	436

Comment:

Node: NZA-0850

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 67.50 ft
 Warning Stage: 71.40 ft

Stage [ft]	Area [ac]	Area [ft2]
67.50	0.0100	436
73.00	0.0100	436

Comment:

Node: NZA-0880

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 65.60 ft
 Warning Stage: 70.00 ft

Stage [ft]	Area [ac]	Area [ft2]
65.60	0.0100	436
70.00	0.0100	436

Comment:

Node: NZA-0920

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 0.00 ft
 Warning Stage: 0.00 ft

Comment:

Node: NZA-0930

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 0.00 ft
 Warning Stage: 0.00 ft

Comment:

Node: Pond 1A

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 68.00 ft

Warning Stage: 72.00 ft

Stage [ft]	Area [ac]	Area [ft2]
67.20	0.0700	3049
73.00	0.4000	17424

Comment:

Node: Pond 2B

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 68.00 ft
 Warning Stage: 70.70 ft

Stage [ft]	Area [ac]	Area [ft2]
68.00	1.0400	45302
71.70	1.4000	60984

Comment:

Node: Pond 3B

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 65.00 ft
 Warning Stage: 70.00 ft

Stage [ft]	Area [ac]	Area [ft2]
65.00	0.4100	17860
71.00	0.7800	33977

Comment:

Node: Pond 4B

Scenario: Proposed - 2 Alternate
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 68.00 ft
 Warning Stage: 72.00 ft

Stage [ft]	Area [ac]	Area [ft2]
68.00	0.2500	10890
73.00	0.5000	21780

Comment:

Pipe Link: L-0250P		Upstream	Downstream
Scenario:	Proposed - 2	Invert: 67.62 ft	Invert: 66.90 ft
	Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	Basin 1 drop inlet	Geometry: Circular	Geometry: Circular
To Node:	Manhole 1	Max Depth: 4.00 ft	Max Depth: 4.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	26.00 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000

Comment:

Pipe Link: L-0780P		Upstream	Downstream
Scenario:	Proposed - 2	Invert: 66.70 ft	Invert: 66.50 ft
	Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	Basin 1 Catch Basin	Geometry: Circular	Geometry: Circular
To Node:	NZA-0430	Max Depth: 4.00 ft	Max Depth: 4.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	200.00 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000

Comment: Assumed pipe size

Pipe Link: L-0800P		Upstream	Downstream
Scenario:	Proposed - 2	Invert: 66.90 ft	Invert: 66.70 ft

	Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	Manhole 1	Geometry: Circular	Geometry: Circular
To Node:	Basin 1 Catch Basin	Max Depth: 4.00 ft	Max Depth: 4.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	139.10 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment: Assumed size and elevations			

Pipe Link: L-0820P		Upstream	Downstream
Scenario:	Proposed - 2	Invert: 65.60 ft	Invert: 64.60 ft
	Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0440	Geometry: Circular	Geometry: Circular
To Node:	NZA-0300	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	990.57 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment: Assumed size and elevations			

Pipe Link: L-0830P		Upstream	Downstream
Scenario:	Proposed - 2	Invert: 66.20 ft	Invert: 65.60 ft
	Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0600	Geometry: Circular	Geometry: Circular
To Node:	NZA-0440	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	455.41 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:

Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment: Assumed size					

Pipe Link: L-0880P		Upstream	Downstream
Scenario:	Proposed - 2	Invert: 67.00 ft	Invert: 67.60 ft
	Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0300	Geometry: Circular	Geometry: Circular
To Node:	NZA-0320	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	437.33 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment: assumed size			

Pipe Link: L-0890P		Upstream	Downstream
Scenario:	Proposed - 2	Invert: 67.20 ft	Invert: 66.90 ft
	Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0330	Geometry: Circular	Geometry: Circular
To Node:	NZA-0340	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	263.27 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment: Assumed size			

Pipe Link: L-0900P		Upstream	Downstream
Scenario:	Proposed - 2	Invert: 66.90 ft	Invert: 65.60 ft
	Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0340	Geometry: Circular	Geometry: Circular

To Node:	NZA-0880	Max Depth:	3.00 ft	Max Depth:	3.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	974.33 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment: Assumed size					

Pipe Link:	L-0920P	Upstream		Downstream	
Scenario:	Proposed - 2	Invert:	62.60 ft	Invert:	62.30 ft
	Alternate	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	NZA-0750	Geometry: Circular		Geometry: Circular	
To Node:	Pond 3B	Max Depth:	4.00 ft	Max Depth:	4.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	551.07 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link:	L-0990P	Upstream		Downstream	
Scenario:	Proposed - 2	Invert:	65.00 ft	Invert:	64.40 ft
	Alternate	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	NZA-0480	Geometry: Circular		Geometry: Circular	
To Node:	NZA-0470	Max Depth:	3.00 ft	Max Depth:	3.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	562.03 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment: Assumed size and elevation

Pipe Link: L-1000P		Upstream	Downstream
Scenario:	Proposed - 2	Invert: 64.40 ft	Invert: 63.60 ft
	Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0470	Geometry: Circular	Geometry: Circular
To Node:	NZA-0750	Max Depth: 4.00 ft	Max Depth: 4.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	763.00 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000

Comment: Assumed size and elevation

Pipe Link: L-1080P		Upstream	Downstream
Scenario:	Proposed - 2	Invert: 65.60 ft	Invert: 65.00 ft
	Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0880	Geometry: Circular	Geometry: Circular
To Node:	Pond 2B	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	150.97 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000

Comment:

Pipe Link: L-1100P		Upstream	Downstream
Scenario:	Proposed - 2	Invert: 65.00 ft	Invert: 64.60 ft
	Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0290	Geometry: Circular	Geometry: Circular
To Node:	NZA-0300	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Link Count:	1	Bottom Clip	

Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000	Op Table:		Op Table:	
Length:	90.47 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: L-1120P		Upstream		Downstream	
Scenario:	Proposed - 2	Invert:	66.50 ft	Invert:	66.00 ft
	Alternate	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	NZA-0430	Geometry: Circular		Geometry: Circular	
To Node:	Pond 1A	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000	Op Table:		Op Table:	
Length:	124.92 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: L-1130P		Upstream		Downstream	
Scenario:	Proposed - 2	Invert:	67.00 ft	Invert:	66.00 ft
	Alternate	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	NZA-0570	Geometry: Circular		Geometry: Circular	
To Node:	NZA-0820	Max Depth:	3.00 ft	Max Depth:	3.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000	Op Table:		Op Table:	
Length:	850.83 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: L-1140P		Upstream	Downstream
Scenario:	Proposed - 2	Invert: 66.00 ft	Invert: 65.00 ft
	Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0820	Geometry: Circular	Geometry: Circular
To Node:	Pond 4B	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	128.88 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment:			

Pipe Link: L-1220P		Upstream	Downstream
Scenario:	Proposed - 2	Invert: 67.50 ft	Invert: 66.80 ft
	Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	NZA-0850	Geometry: Circular	Geometry: Circular
To Node:	NZA-0550	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	1270.69 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment:			

Pipe Link: L-1310P		Upstream	Downstream
Scenario:	Proposed - 2	Invert: 0.00 ft	Invert: 0.00 ft
	Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node:	Basin 1 drop inlet	Geometry: Circular	Geometry: Circular
To Node:	NZA-0920	Max Depth: 4.00 ft	Max Depth: 4.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	None	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	611.06 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	

Exit Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Pipe Link: L-1330P		Upstream	Downstream		
Scenario:	Proposed - 2	Invert:	0.00 ft	Invert:	0.00 ft
	Alternate	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	NZA-0880	Geometry:	Circular	Geometry:	Circular
To Node:	NZA-0750	Max Depth:	4.00 ft	Max Depth:	4.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	None	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	1956.21 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Pipe Link: L-1340P		Upstream	Downstream		
Scenario:	Proposed - 2	Invert:	0.00 ft	Invert:	0.00 ft
	Alternate	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	NZA-0930	Geometry:	Circular	Geometry:	Circular
To Node:	NZA-0490	Max Depth:	3.00 ft	Max Depth:	3.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	None	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	1560.19 ft	Ref Node:		Ref Node:	
FHWA Code:	0	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: L-0790W	Scenario:	Proposed - 2 Alternate	Bottom Clip
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From Node:	Basin 1 Catch Basin	
To Node:	NZA-0430	Default: 0.00 ft
Link Count:	1	Op Table:
Flow Direction:	Both	Ref Node:
Damping:	0.0000 ft	Top Clip
Weir Type:	Gravel Road Vertical	Default: 0.00 ft
Geometry Type:	Rectangular	Op Table:
Invert:	71.50 ft	Ref Node:
Control Elevation:	71.50 ft	Discharge Coefficients
Max Depth:	99.00 ft	Weir Default: 2.800
Max Width:	20.00 ft	Weir Table:
Fillet:	0.00 ft	Orifice Default: 0.600
		Orifice Table:

Comment:

Weir Link: L-0810W

Scenario:	Proposed - 2 Alternate	Bottom Clip
From Node:	Manhole 1	Default: 0.00 ft
To Node:	Basin 1 Catch Basin	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	70.30 ft	Discharge Coefficients
Control Elevation:	70.30 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-0850W

Scenario:	Proposed - 2 Alternate	Bottom Clip
From Node:	NZA-0430	Default: 0.00 ft
To Node:	NZA-0600	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	71.00 ft	Discharge Coefficients
Control Elevation:	71.00 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-0860W

Scenario:	Proposed - 2 Alternate	Bottom Clip
From Node:	NZA-0600	Default: 0.00 ft
To Node:	NZA-0440	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	70.10 ft	Discharge Coefficients
Control Elevation:	70.10 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-0870W

Scenario:	Proposed - 2 Alternate	Bottom Clip
From Node:	NZA-0440	Default: 0.00 ft
To Node:	NZA-0300	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	70.10 ft	Discharge Coefficients
Control Elevation:	70.10 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-0930W

Scenario:	Proposed - 2 Alternate	Bottom Clip
From Node:	NZA-0300	Default: 0.00 ft
To Node:	NZA-0320	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:

Geometry Type:	Rectangular	
Invert:	70.10 ft	Ref Node:
Control Elevation:	70.10 ft	Discharge Coefficients
Max Depth:	99.00 ft	Weir Default: 2.800
Max Width:	20.00 ft	Weir Table:
Fillet:	0.00 ft	Orifice Default: 0.600
		Orifice Table:

Comment:

Weir Link: L-0940W

Scenario:	Proposed - 2 Alternate	Bottom Clip
From Node:	NZA-0330	Default: 0.00 ft
To Node:	NZA-0340	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	70.10 ft	Discharge Coefficients
Control Elevation:	70.10 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-0950W

Scenario:	Proposed - 2 Alternate	Bottom Clip
From Node:	NZA-0340	Default: 0.00 ft
To Node:	NZA-0880	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	70.10 ft	Discharge Coefficients
Control Elevation:	70.10 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-1010W

Scenario:	Proposed - 2 Alternate	
From Node:	NZA-0480	Bottom Clip
To Node:	NZA-0470	Default: 0.00 ft
Link Count:	1	Op Table:
Flow Direction:	Both	Ref Node:
Damping:	0.0000 ft	Top Clip
Weir Type:	Gravel Road Vertical	Default: 0.00 ft
Geometry Type:	Rectangular	Op Table:
Invert:	70.40 ft	Ref Node:
Control Elevation:	70.40 ft	Discharge Coefficients
Max Depth:	99.00 ft	Weir Default: 2.800
Max Width:	20.00 ft	Weir Table:
Fillet:	0.00 ft	Orifice Default: 0.600
		Orifice Table:

Comment:

Weir Link: L-1020W

Scenario:	Proposed - 2 Alternate	
From Node:	NZA-0470	Bottom Clip
To Node:	NZA-0750	Default: 0.00 ft
Link Count:	1	Op Table:
Flow Direction:	Both	Ref Node:
Damping:	0.0000 ft	Top Clip
Weir Type:	Gravel Road Vertical	Default: 0.00 ft
Geometry Type:	Rectangular	Op Table:
Invert:	70.40 ft	Ref Node:
Control Elevation:	70.40 ft	Discharge Coefficients
Max Depth:	99.00 ft	Weir Default: 2.800
Max Width:	20.00 ft	Weir Table:
Fillet:	0.00 ft	Orifice Default: 0.600
		Orifice Table:

Comment:

Weir Link: L-1090W

Scenario:	Proposed - 2 Alternate	
From Node:	NZA-0880	Bottom Clip
To Node:	Pond 2B	Default: 0.00 ft
Link Count:	1	Op Table:
Flow Direction:	Both	Ref Node:
Damping:	0.0000 ft	Top Clip
Weir Type:	Gravel Road Vertical	Default: 0.00 ft
Geometry Type:	Rectangular	Op Table:
Invert:	71.70 ft	Ref Node:
Control Elevation:	71.70 ft	Discharge Coefficients
Max Depth:	99.00 ft	Weir Default: 2.800
Max Width:	20.00 ft	Weir Table:
		Orifice Default: 0.600

Fillet: 0.00 ft

Orifice Table:

Comment:

Weir Link: L-1110W

Scenario:	Proposed - 2 Alternate	Bottom Clip
From Node:	NZA-0290	Default: 0.00 ft
To Node:	NZA-0300	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	71.70 ft	Discharge Coefficients
Control Elevation:	71.70 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-1150W

Scenario:	Proposed - 2 Alternate	Bottom Clip
From Node:	NZA-0570	Default: 0.00 ft
To Node:	NZA-0820	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	71.40 ft	Discharge Coefficients
Control Elevation:	71.40 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-1180W

Scenario:	Proposed - 2 Alternate	Bottom Clip
From Node:	Pond 2B	Default: 0.00 ft
To Node:	NZA-0830	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip

Damping:	0.0000 ft	
Weir Type:	Paved Road Vertical	Default: 0.00 ft
Geometry Type:	Rectangular	Op Table:
Invert:	70.00 ft	Ref Node:
Control Elevation:	70.00 ft	Discharge Coefficients
Max Depth:	99.00 ft	Weir Default: 2.800
Max Width:	20.00 ft	Weir Table:
Fillet:	0.00 ft	Orifice Default: 0.600
		Orifice Table:

Comment:

Weir Link: L-1260W

Scenario:	Proposed - 2 Alternate	Bottom Clip
From Node:	NZA-0850	Default: 0.00 ft
To Node:	NZA-0550	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	71.40 ft	Discharge Coefficients
Control Elevation:	71.40 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Drop Structure Link: L-1170DS

	Upstream Pipe	Downstream Pipe
Scenario:	Proposed - 2	Invert: 66.80 ft
	Alternate	Invert: 66.40 ft
From Node:	Pond 2B	Manning's N: 0.0120
		Manning's N: 0.0120
To Node:	NZA-0830	Geometry: Circular
		Geometry: Circular
Link Count:	1	Max Depth: 1.50 ft
		Max Depth: 1.50 ft
Flow Direction:	Both	Bottom Clip
Solution:	Combine	Default: 0.00 ft
Increments:	0	Default: 0.00 ft
Pipe Count:	1	Op Table:
		Op Table:
Damping:	0.0000 ft	Ref Node:
		Ref Node:
Length:	194.11 ft	Manning's N: 0.0000
		Manning's N: 0.0000
FHWA Code:	0	Top Clip
Entr Loss Coef:	0.50	Default: 0.00 ft
		Default: 0.00 ft
Exit Loss Coef:	0.50	Op Table:
		Op Table:
Bend Loss Coef:	0.00	Ref Node:
		Ref Node:
Bend Location:	0.00 dec	Manning's N: 0.0000
Energy Switch:	Energy	Manning's N: 0.0000

Pipe Comment:

Weir Component	
Weir: 1	Bottom Clip
Weir Count: 1	Default: 0.00 ft
Weir Flow Direction: Both	Op Table:
Damping: 0.0000 ft	Ref Node:
Weir Type: Sharp Crested Vertical	Top Clip
Geometry Type: V-Notch Up	Default: 0.00 ft
Invert: 69.15 ft	Op Table:
Control Elevation: 69.15 ft	Ref Node:
Max Depth: 1.00 ft	Discharge Coefficients
Max Width: 1.50 ft	Weir Default: 3.200
	Weir Table:
	Orifice Default: 0.600
	Orifice Table:

Weir Comment: Minimum water quality elevation of 68.7' required

Weir Component	
Weir: 2	Bottom Clip
Weir Count: 1	Default: 0.00 ft
Weir Flow Direction: Both	Op Table:
Damping: 0.0000 ft	Ref Node:
Weir Type: Sharp Crested Vertical	Top Clip
Geometry Type: Circular	Default: 0.00 ft
Invert: 68.00 ft	Op Table:
Control Elevation: 68.00 ft	Ref Node:
Max Depth: 0.33 ft	Discharge Coefficients
	Weir Default: 3.200
	Weir Table:
	Orifice Default: 0.600
	Orifice Table:

Weir Comment:

Drop Structure Comment:

Drop Structure Link: L-1230DS	Upstream Pipe	Downstream Pipe
Scenario: Proposed - 2	Invert: 67.70 ft	Invert: 67.50 ft
Alternate	Manning's N: 0.0120	Manning's N: 0.0120
From Node: Pond 4B	Geometry: Circular	Geometry: Circular
To Node: NZA-0850	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Link Count: 1	Bottom Clip	
Flow Direction: Both	Default: 0.00 ft	Default: 0.00 ft
Solution: Combine	Op Table:	Op Table:
Increments: 0	Ref Node:	Ref Node:
Pipe Count: 1	Manning's N: 0.0000	Manning's N: 0.0000
Damping: 0.0000 ft	Top Clip	

Length:	147.59 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	0	Op Table:		Op Table:	
Entr Loss Coef:	0.50	Ref Node:		Ref Node:	
Exit Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Bend Loss Coef:	0.00				
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component	
Weir:	1
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	V-Notch Up
Invert:	69.50 ft
Control Elevation:	69.50 ft
Max Depth:	1.50 ft
Max Width:	1.00 ft

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: Minimum elevation is 69.5 for water quality

Weir Component	
Weir:	2
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Circular
Invert:	68.00 ft
Control Elevation:	68.00 ft
Max Depth:	0.33 ft

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Drop Structure Comment:

Drop Structure Link: L-1270DS		
Scenario:	Proposed - 2	
Alternate		
From Node:	Pond 1A	
Upstream Pipe		Downstream Pipe
Invert:	66.70 ft	Invert: 66.30 ft
Manning's N:	0.0120	Manning's N: 0.0120
Geometry:	Circular	Geometry: Circular

To Node:	SR50 East	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Solution:	Combine	Op Table:		Op Table:	
Increments:	0	Ref Node:		Ref Node:	
Pipe Count:	1	Manning's N:	0.0000	Manning's N:	0.0000
Damping:	0.0000 ft	Top Clip			
Length:	361.52 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	0	Op Table:		Op Table:	
Entr Loss Coef:	0.50	Ref Node:		Ref Node:	
Exit Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Bend Loss Coef:	0.00				
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component	
Weir:	1
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	V-Notch Up
Invert:	67.20 ft
Control Elevation:	67.20 ft
Max Depth:	1.80 ft
Max Width:	0.80 ft

Weir Comment: Minimum water quality elevation of 69.0'

Drop Structure Comment:

Drop Structure Link:	L-1290DS	Upstream Pipe	Downstream Pipe
Scenario:	Proposed - 2	Invert:	64.50 ft
Alternate:		Manning's N:	0.0120
From Node:	Pond 3B	Geometry:	Circular
To Node:	Corner Lake wetland	Max Depth:	2.00 ft
Link Count:	1	Bottom Clip	
Flow Direction:	Both	Default:	0.00 ft
Solution:	Combine	Op Table:	
Increments:	0	Ref Node:	
Pipe Count:	1	Manning's N:	0.0000
Damping:	0.0000 ft	Top Clip	
Length:	274.59 ft	Default:	0.00 ft
		Op Table:	

FHWA Code:	0	Ref Node:	Ref Node:
Entr Loss Coef:	0.50	Manning's N:	0.0000
Exit Loss Coef:	0.50	Manning's N:	0.0000
Bend Loss Coef:	0.00		
Bend Location:	0.00 dec		
Energy Switch:	Energy		

Pipe Comment:

Weir Component	
Weir:	1
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Circular
Invert:	65.00 ft
Control Elevation:	65.00 ft
Max Depth:	0.50 ft

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: Assumed

Weir Component	
Weir:	2
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Rectangular
Invert:	67.50 ft
Control Elevation:	67.50 ft
Max Depth:	1.00 ft
Max Width:	3.00 ft
Fillet:	0.00 ft

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: Minimum of 67.5' for water quality

Drop Structure Comment:

Deletions (Detailed)

Existing Project: C:\Users\sdcollins\Johnson, Mirmiran Thompson\20-01459-001 - Chuluota Road RCA Y20-830 - 05 - Working Files\ICPR\Chuluota\Project.i4p
 Existing Scenario: Existing

Simple Basin: Proposed Pond 3A

Scenario: Existing
 Node: Corner Lake Wetland
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 20.0000 min
 Max Allowable Q: 0.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: UH256
 Peaking Factor: 256.0
 Area: 1.1000 ac
 Curve Number: 77.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment: Assumed Tc of flow through the woods

Simple Basin: Proposed Pond 4A

Scenario: Existing
 Node: NZA-0550
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 111.0000 min
 Max Allowable Q: 0.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: UH256
 Peaking Factor: 256.0
 Area: 0.4600 ac
 Curve Number: 80.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment: Tc estimated as similar to Basin 4-300 Offsite

Node: Existing Wetland Buffer

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 63.72 ft
 Warning Stage: 69.07 ft

Stage [ft]	Area [ac]	Area [ft2]
66.82	0.1220	5314
67.32	0.3860	16814
69.32	2.6820	116828
70.00	2.6820	116828

Comment:

Node: NZA-0310

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 69.50 ft
 Warning Stage: 71.50 ft

Stage [ft]	Area [ac]	Area [ft2]
69.50	0.0100	436
71.50	0.0100	436

Comment:

Node: NZA-0350

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 67.30 ft
 Warning Stage: 70.30 ft

Stage [ft]	Area [ac]	Area [ft2]
67.30	0.0100	436
70.30	0.0100	436

Comment:

Node: NZA-0590

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 64.30 ft
 Warning Stage: 68.42 ft

Stage [ft]	Area [ac]	Area [ft2]
64.30	0.0100	436
68.42	0.0100	436

Comment:

Node: NZA-0710

Scenario: Existing
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 70.50 ft
 Warning Stage: 71.50 ft

Stage [ft]	Area [ac]	Area [ft2]
69.30	0.0100	436
71.50	0.0100	436

Comment: Elevations set as the overtopping elevation and the lowest channel elevation

Channel Link: L-0340C

Scenario: Existing
 From Node: NZA-0480
 To Node: NZA-0470
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Length: 562.03 ft
 Contraction Coef: 0.00
 Expansion Coef: 0.00
 Entr Loss Coef: 0.00
 Exit Loss Coef: 0.00
 Bend Loss Coef: 0.00
 Bend Location: 0.00 dec
 Energy Switch: Energy

	Upstream	Downstream
Invert:	67.20 ft	65.20 ft
Manning's N:	0.0420	0.0420
Geometry:	Trapezoidal	Trapezoidal
Max Depth:	1.20 ft	1.20 ft
Extrapolation:	Normal	Normal
Bottom Width:	2.00 ft	2.00 ft
Left Slope:	11.700 (h:v)	11.700 (h:v)
Right Slope:	11.700 (h:v)	11.700 (h:v)
Bottom Clip		
Default:	0.00 ft	0.00 ft
Op Table:		
Ref Node:		
Manning's N:	0.0000	0.0000
Top Clip		
Default:	0.00 ft	0.00 ft
Op Table:		
Ref Node:		
Manning's N:	0.0000	0.0000

Comment:

Channel Link: L-0360C		Upstream	Downstream
Scenario:	Existing	Invert: 71.00 ft	Invert: 70.50 ft
From Node:	NZA-0600	Manning's N: 0.0420	Manning's N: 0.0420
To Node:	NZA-0440	Geometry: Trapezoidal	Geometry: Trapezoidal
Link Count:	1	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Flow Direction:	Both	Extrapolation: Normal	Extrapolation: Normal
Damping:	0.0000 ft	Bottom Width: 5.00 ft	Bottom Width: 5.00 ft
Length:	450.00 ft	Left Slope: 12.700 (h:v)	Left Slope: 12.700 (h:v)
Contraction Coef:	0.00	Right Slope: 12.700 (h:v)	Right Slope: 12.700 (h:v)
Expansion Coef:	0.00	Bottom Clip	
Entr Loss Coef:	0.00	Default: 0.00 ft	Default: 0.00 ft
Exit Loss Coef:	0.00	Op Table:	Op Table:
Bend Loss Coef:	0.00	Ref Node:	Ref Node:
Bend Location:	0.00 dec	Manning's N: 0.0000	Manning's N: 0.0000
Energy Switch:	Energy	Top Clip	
		Default: 0.00 ft	Default: 0.00 ft
		Op Table:	Op Table:
		Ref Node:	Ref Node:
		Manning's N: 0.0000	Manning's N: 0.0000

Comment:

Channel Link: L-0380C		Upstream	Downstream
Scenario:	Existing	Invert: 64.30 ft	Invert: 63.30 ft
From Node:	NZA-0590	Manning's N: 0.0420	Manning's N: 0.0420
To Node:	Corner Lake Wetland	Geometry: Trapezoidal	Geometry: Trapezoidal
Link Count:	1	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Flow Direction:	Both	Extrapolation: Normal	Extrapolation: Normal
Damping:	0.0000 ft	Bottom Width: 10.00 ft	Bottom Width: 10.00 ft
Length:	258.13 ft	Left Slope: 3.000 (h:v)	Left Slope: 3.000 (h:v)
Contraction Coef:	0.00	Right Slope: 3.000 (h:v)	Right Slope: 3.000 (h:v)
Expansion Coef:	0.00	Bottom Clip	
Entr Loss Coef:	0.00	Default: 0.00 ft	Default: 0.00 ft
Exit Loss Coef:	0.00	Op Table:	Op Table:
Bend Loss Coef:	0.00	Ref Node:	Ref Node:
Bend Location:	0.00 dec	Manning's N: 0.0000	Manning's N: 0.0000
Energy Switch:	Energy	Top Clip	
		Default: 0.00 ft	Default: 0.00 ft
		Op Table:	Op Table:
		Ref Node:	Ref Node:
		Manning's N: 0.0000	Manning's N: 0.0000

Comment: Assumed channel, elevations from LiDAR

Channel Link: L-0630C		Upstream	Downstream
Scenario:	Existing	Invert: 71.00 ft	Invert: 69.30 ft
From Node:	NZA-0710	Manning's N: 0.0420	Manning's N: 0.0420

To Node:	Basin 1 Catch Basin	Geometry: Trapezoidal	Geometry: Trapezoidal
Link Count:	1	Max Depth: 1.00 ft	Max Depth: 1.00 ft
Flow Direction:	Both	Extrapolation: Normal	Extrapolation: Normal
Damping:	0.0000 ft	Bottom Width: 3.00 ft	Bottom Width: 3.00 ft
Length:	135.16 ft	Left Slope: 7.000 (h:v)	Left Slope: 7.000 (h:v)
Contraction Coef:	0.00	Right Slope: 7.000 (h:v)	Right Slope: 7.000 (h:v)
Expansion Coef:	0.00	Bottom Clip	
Entr Loss Coef:	0.00	Default: 0.00 ft	Default: 0.00 ft
Exit Loss Coef:	0.00	Op Table:	Op Table:
Bend Loss Coef:	0.00	Ref Node:	Ref Node:
Bend Location:	0.00 dec	Manning's N: 0.0000	Manning's N: 0.0000
Energy Switch:	Energy	Top Clip	
		Default: 0.00 ft	Default: 0.00 ft
		Op Table:	Op Table:
		Ref Node:	Ref Node:
		Manning's N: 0.0000	Manning's N: 0.0000

Comment:

Channel Link:	Trapazoidal channel 2	Upstream	Downstream
Scenario:	Existing	Invert: 69.50 ft	Invert: 69.60 ft
From Node:	NZA-0310	Manning's N: 0.0420	Manning's N: 0.0420
To Node:	NZA-0320	Geometry: Trapezoidal	Geometry: Trapezoidal
Link Count:	1	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Flow Direction:	Both	Extrapolation: Normal	Extrapolation: Normal
Damping:	0.0000 ft	Bottom Width: 8.00 ft	Bottom Width: 8.00 ft
Length:	422.16 ft	Left Slope: 8.800 (h:v)	Left Slope: 8.800 (h:v)
Contraction Coef:	0.00	Right Slope: 8.800 (h:v)	Right Slope: 8.800 (h:v)
Expansion Coef:	0.00	Bottom Clip	
Entr Loss Coef:	0.00	Default: 0.00 ft	Default: 0.00 ft
Exit Loss Coef:	0.00	Op Table:	Op Table:
Bend Loss Coef:	0.00	Ref Node:	Ref Node:
Bend Location:	0.00 dec	Manning's N: 0.0000	Manning's N: 0.0000
Energy Switch:	Energy	Top Clip	
		Default: 0.00 ft	Default: 0.00 ft
		Op Table:	Op Table:
		Ref Node:	Ref Node:
		Manning's N: 0.0000	Manning's N: 0.0000

Comment: Max channel depth is 1.5 ft for mannings value

Channel Link:	Trapezoidal channel 1	Upstream	Downstream
Scenario:	Existing	Invert: 70.50 ft	Invert: 70.00 ft
From Node:	NZA-0440	Manning's N: 0.0600	Manning's N: 0.0600
To Node:	NZA-0300	Geometry: Trapezoidal	Geometry: Trapezoidal
Link Count:	1	Max Depth: 0.70 ft	Max Depth: 0.70 ft
Flow Direction:	Both	Extrapolation: Normal	Extrapolation: Normal

Damping:	0.0000 ft	Bottom Width:	5.00 ft	Bottom Width:	5.00 ft
Length:	567.92 ft	Left Slope:	15.000 (h:v)	Left Slope:	15.000 (h:v)
Contraction Coef:	0.00	Right Slope:	15.000 (h:v)	Right Slope:	15.000 (h:v)
Expansion Coef:	0.00	Bottom Clip			
Entr Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Exit Loss Coef:	0.00	Op Table:		Op Table:	
Bend Loss Coef:	0.00	Ref Node:		Ref Node:	
Bend Location:	0.00 dec	Manning's N:	0.0000	Manning's N:	0.0000
Energy Switch:	Energy	Top Clip			
		Default:	0.00 ft	Default:	0.00 ft
		Op Table:		Op Table:	
		Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Channel Link: Trapezoidal channel 3	Upstream	Downstream
Scenario: Existing	Invert: 69.20 ft	Invert: 68.90 ft
From Node: NZA-0330	Manning's N: 0.0420	Manning's N: 0.0420
To Node: NZA-0340	Geometry: Trapezoidal	Geometry: Trapezoidal
Link Count: 1	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Flow Direction: Both	Extrapolation: Normal	Extrapolation: Normal
Damping: 0.0000 ft	Bottom Width: 20.00 ft	Bottom Width: 20.00 ft
Length: 263.27 ft	Left Slope: 11.300 (h:v)	Left Slope: 11.300 (h:v)
Contraction Coef: 0.00	Right Slope: 11.300 (h:v)	Right Slope: 11.300 (h:v)
Expansion Coef: 0.00	Bottom Clip	
Entr Loss Coef: 0.00	Default:	0.00 ft
Exit Loss Coef: 0.00	Op Table:	
Bend Loss Coef: 0.00	Ref Node:	
Bend Location: 0.00 dec	Manning's N:	0.0000
Energy Switch: Energy	Top Clip	
	Default:	0.00 ft
	Op Table:	
	Ref Node:	
	Manning's N:	0.0000

Comment: Max channel depth is 1.5 for mannings value

Channel Link: Triangular 1	Upstream	Downstream
Scenario: Existing	Invert: 70.10 ft	Invert: 70.10 ft
From Node: NZA-0430	Manning's N: 0.0600	Manning's N: 0.0600
To Node: NZA-0600	Geometry: Trapezoidal	Geometry: Trapezoidal
Link Count: 1	Max Depth: 1.30 ft	Max Depth: 1.30 ft
Flow Direction: Both	Extrapolation: Normal	Extrapolation: Normal
Damping: 0.0000 ft	Bottom Width: 0.01 ft	Bottom Width: 0.01 ft
Length: 239.10 ft	Left Slope: 5.800 (h:v)	Left Slope: 5.800 (h:v)
Contraction Coef: 0.00	Right Slope: 5.800 (h:v)	Right Slope: 5.800 (h:v)

Expansion Coef: 0.00	Bottom Clip	
Entr Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Exit Loss Coef: 0.00	Op Table:	Op Table:
Bend Loss Coef: 0.00	Ref Node:	Ref Node:
Bend Location: 0.00 dec	Manning's N: 0.0000	Manning's N: 0.0000
Energy Switch: Energy	Top Clip	
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000

Comment: No triangular option available

Channel Link: Triangular channel 2	Upstream	Downstream
Scenario: Existing	Invert: 69.10 ft	Invert: 67.30 ft
From Node: NZA-0350	Manning's N: 0.0420	Manning's N: 0.0420
To Node: NZA-0450	Geometry: Trapezoidal	Geometry: Trapezoidal
Link Count: 1	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Flow Direction: Both	Extrapolation: Normal	Extrapolation: Normal
Damping: 0.0000 ft	Bottom Width: 0.01 ft	Bottom Width: 0.01 ft
Length: 954.39 ft	Left Slope: 9.200 (h:v)	Left Slope: 9.200 (h:v)
Contraction Coef: 0.00	Right Slope: 9.200 (h:v)	Right Slope: 9.200 (h:v)
Expansion Coef: 0.00	Bottom Clip	
Entr Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Exit Loss Coef: 0.00	Op Table:	Op Table:
Bend Loss Coef: 0.00	Ref Node:	Ref Node:
Bend Location: 0.00 dec	Manning's N: 0.0000	Manning's N: 0.0000
Energy Switch: Energy	Top Clip	
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000

Comment: Max depth is 1.5 ft for mannings value, no triangle option

Pipe Link: 18" RCP	Upstream	Downstream
Scenario: Existing	Invert: 66.96 ft	Invert: 66.56 ft
From Node: Basin 1 Catch Basin	Manning's N: 0.0120	Manning's N: 0.0120
To Node: SR50 East	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 155.76 ft	Op Table:	Op Table:
FHWA Code: 0	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0000	Manning's N: 0.0000
Exit Loss Coef: 0.50	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft

Bend Location:	0.00 dec	Op Table:	Op Table:
Energy Switch:	Energy	Ref Node:	Ref Node:
		Manning's N:	Manning's N:
		0.0000	0.0000

Comment: Assumed up/downstream inverts, slope matches the ground slope at the grate tops

Pipe Link: 18" RCP1	Upstream	Downstream
Scenario: Existing	Invert: 69.62 ft	Invert: 69.49 ft
From Node: Basin 1 drop inlet	Manning's N: 0.0120	Manning's N: 0.0120
To Node: Manhole 1	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 26.00 ft	Op Table:	Op Table:
FHWA Code: 0	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0000	Manning's N: 0.0000
Exit Loss Coef: 0.50	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000

Comment: No upstream invert located, assume dhthe pipe had a 0.5% negative slope.

Pipe Link: 18" RCP2	Upstream	Downstream
Scenario: Existing	Invert: 68.94 ft	Invert: 67.30 ft
From Node: Manhole 1	Manning's N: 0.0120	Manning's N: 0.0120
To Node: SR50 West	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 267.18 ft	Op Table:	Op Table:
FHWA Code: 0	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0000	Manning's N: 0.0000
Exit Loss Coef: 0.50	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000

Comment:

Pipe Link: L-0160P	Upstream	Downstream
Scenario: Existing	Invert: 70.00 ft	Invert: 69.50 ft
From Node: NZA-0300	Manning's N: 0.0120	Manning's N: 0.0120

To Node:	NZA-0310	Geometry: Circular	Geometry: Circular
Link Count:	1	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Flow Direction:	Both	Bottom Clip	
Damping:	0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length:	15.18 ft	Op Table:	Op Table:
FHWA Code:	0	Ref Node:	Ref Node:
Entr Loss Coef:	0.50	Manning's N: 0.0000	Manning's N: 0.0000
Exit Loss Coef:	0.50	Top Clip	
Bend Loss Coef:	0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location:	0.00 dec	Op Table:	Op Table:
Energy Switch:	Energy	Ref Node:	Ref Node:
		Manning's N: 0.0000	Manning's N: 0.0000
Comment: Assumed size, elevations based on the channel elevations			

Pipe Link: L-0200P		Upstream	Downstream
Scenario:	Existing	Invert: 68.90 ft	Invert: 69.10 ft
From Node:	NZA-0340	Manning's N: 0.0120	Manning's N: 0.0120
To Node:	NZA-0350	Geometry: Circular	Geometry: Circular
Link Count:	1	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Flow Direction:	Both	Bottom Clip	
Damping:	0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length:	23.00 ft	Op Table:	Op Table:
FHWA Code:	0	Ref Node:	Ref Node:
Entr Loss Coef:	0.50	Manning's N: 0.0000	Manning's N: 0.0000
Exit Loss Coef:	0.50	Top Clip	
Bend Loss Coef:	0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location:	0.00 dec	Op Table:	Op Table:
Energy Switch:	Energy	Ref Node:	Ref Node:
		Manning's N: 0.0000	Manning's N: 0.0000
Comment: Assumed size, elevations form channel elevations			

Pipe Link: L-0310P		Upstream	Downstream
Scenario:	Existing	Invert: 67.00 ft	Invert: 65.00 ft
From Node:	NZA-0570	Manning's N: 0.0120	Manning's N: 0.0120
To Node:	NZA-0550	Geometry: Circular	Geometry: Circular
Link Count:	1	Max Depth: 2.50 ft	Max Depth: 2.50 ft
Flow Direction:	Both	Bottom Clip	
Damping:	0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length:	488.77 ft	Op Table:	Op Table:
FHWA Code:	0	Ref Node:	Ref Node:
Entr Loss Coef:	0.50	Manning's N: 0.0000	Manning's N: 0.0000
Exit Loss Coef:	0.50	Top Clip	
Bend Loss Coef:	0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location:	0.00 dec	Op Table:	Op Table:
Energy Switch:	Energy	Ref Node:	Ref Node:

Manning's N: 0.0000 Manning's N: 0.0000

Comment:

Pipe Link: L-0320P	Upstream	Downstream
Scenario: Existing	Invert: 60.96 ft	Invert: 60.78 ft
From Node: NZA-0530	Manning's N: 0.0120	Manning's N: 0.0120
To Node: NZA-0550	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 141.92 ft	Op Table:	Op Table:
FHWA Code: 0	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0000	Manning's N: 0.0000
Exit Loss Coef: 0.50	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000

Comment: Assumed size and elevations

Pipe Link: L-0330P	Upstream	Downstream
Scenario: Existing	Invert: 62.00 ft	Invert: 62.00 ft
From Node: NZA-0470	Manning's N: 0.0120	Manning's N: 0.0120
To Node: NZA-0590	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 4.00 ft	Max Depth: 4.00 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 63.00 ft	Op Table:	Op Table:
FHWA Code: 0	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0000	Manning's N: 0.0000
Exit Loss Coef: 0.50	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000

Comment: Assumed size, elevations based on LIDAR

Pipe Link: L-0400P	Upstream	Downstream
Scenario: Existing	Invert: 70.00 ft	Invert: 66.00 ft
From Node: NZA-0290	Manning's N: 0.0120	Manning's N: 0.0120
To Node: Schoolview Way	Geometry: Circular	Geometry: Circular
Ponds (location of	Max Depth: 1.50 ft	Max Depth: 1.50 ft

	proposed Pond 2A modification)	Bottom Clip	
Link Count:	1	Default: 0.00 ft	Default: 0.00 ft
Flow Direction:	Both	Op Table:	Op Table:
Damping:	0.0000 ft	Ref Node:	Ref Node:
Length:	82.33 ft	Manning's N: 0.0000	Manning's N: 0.0000
		Top Clip	
FHWA Code:	0	Default: 0.00 ft	Default: 0.00 ft
Entr Loss Coef:	0.50	Op Table:	Op Table:
Exit Loss Coef:	0.50	Ref Node:	Ref Node:
Bend Loss Coef:	0.00	Manning's N: 0.0000	Manning's N: 0.0000
Bend Location:	0.00 dec		
Energy Switch:	Energy		
Comment: Assumed size, elevations based on grate and pond elevation			

Pipe Link: L-0660P		Upstream	Downstream
Scenario:	Existing	Invert: 63.72 ft	Invert: 63.69 ft
From Node:	Existing Wetland Buffer	Manning's N: 0.0120	Manning's N: 0.0120
To Node:	NZA-0830	Geometry: Circular	Geometry: Circular
Link Count:	1	Max Depth: 2.50 ft	Max Depth: 2.50 ft
		Bottom Clip	
Flow Direction:	Both	Default: 0.00 ft	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:	Op Table:
Length:	158.00 ft	Ref Node:	Ref Node:
FHWA Code:	0	Manning's N: 0.0000	Manning's N: 0.0000
Entr Loss Coef:	0.50	Top Clip	
Exit Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Bend Loss Coef:	0.00	Op Table:	Op Table:
Bend Location:	0.00 dec	Ref Node:	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000	Manning's N: 0.0000
Comment:			

Weir Link: L-0460W		Bottom Clip	
Scenario:	Existing	Default: 0.00 ft	
From Node:	Basin 1 Catch Basin	Op Table:	
To Node:	SR50 East	Ref Node:	
Link Count:	1	Top Clip	
Flow Direction:	Both	Default: 0.00 ft	
Damping:	0.0000 ft	Op Table:	
Weir Type:	Gravel Road Vertical	Ref Node:	
Geometry Type:	Rectangular	Discharge Coefficients	
Invert:	69.30 ft	Weir Default: 2.800	
Control Elevation:	69.30 ft	Weir Table:	
Max Depth:	99.00 ft	Orifice Default: 0.600	
Max Width:	20.00 ft	Orifice Table:	
Fillet:	0.00 ft		

Comment:

Weir Link: L-0480W

Scenario:	Existing	Bottom Clip
From Node:	NZA-0300	Default: 0.00 ft
To Node:	NZA-0310	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	71.00 ft	Discharge Coefficients
Control Elevation:	71.00 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-0500W

Scenario:	Existing	Bottom Clip
From Node:	NZA-0340	Default: 0.00 ft
To Node:	NZA-0350	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	69.30 ft	Discharge Coefficients
Control Elevation:	69.30 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-0520W

Scenario:	Existing	Bottom Clip
From Node:	NZA-0470	Default: 0.00 ft
To Node:	NZA-0590	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:

Geometry Type:	Rectangular	
Invert:	68.42 ft	Ref Node:
Control Elevation:	68.42 ft	Discharge Coefficients
Max Depth:	99.00 ft	Weir Default: 2.800
Max Width:	20.00 ft	Weir Table:
Fillet:	0.00 ft	Orifice Default: 0.600
		Orifice Table:

Comment:

Weir Link: L-0550W

Scenario:	Existing	Bottom Clip
From Node:	NZA-0570	Default: 0.00 ft
To Node:	NZA-0550	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	70.90 ft	Discharge Coefficients
Control Elevation:	70.90 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-0610W

Scenario:	Existing	Bottom Clip
From Node:	Manhole 1	Default: 0.00 ft
To Node:	SR50 West	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Gravel Road Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	70.10 ft	Discharge Coefficients
Control Elevation:	70.10 ft	Weir Default: 2.800
Max Depth:	99.00 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Weir Link: L-0640W

Scenario:	Existing	
From Node:	NZA-0430	Bottom Clip
To Node:	NZA-0710	Default: 0.00 ft
Link Count:	1	Op Table:
Flow Direction:	Both	Ref Node:
Damping:	0.0000 ft	Top Clip
Weir Type:	Gravel Road Vertical	Default: 0.00 ft
Geometry Type:	Rectangular	Op Table:
Invert:	71.50 ft	Ref Node:
Control Elevation:	71.50 ft	Discharge Coefficients
Max Depth:	99.00 ft	Weir Default: 2.800
Max Width:	20.00 ft	Weir Table:
Fillet:	0.00 ft	Orifice Default: 0.600
		Orifice Table:

Comment:

Weir Link: L-0670W

Scenario:	Existing	
From Node:	NZA-0450	Bottom Clip
To Node:	Existing Wetland Buffer	Default: 0.00 ft
Link Count:	1	Op Table:
Flow Direction:	Both	Ref Node:
Damping:	0.0000 ft	Top Clip
Weir Type:	Gravel Road Vertical	Default: 0.00 ft
Geometry Type:	Rectangular	Op Table:
Invert:	70.00 ft	Ref Node:
Control Elevation:	70.00 ft	Discharge Coefficients
Max Depth:	99.00 ft	Weir Default: 2.800
Max Width:	20.00 ft	Weir Table:
Fillet:	0.00 ft	Orifice Default: 0.600
		Orifice Table:

Comment:

Weir Link: L-0680W

Scenario:	Existing	
From Node:	Existing Wetland Buffer	Bottom Clip
To Node:	NZA-0830	Default: 0.00 ft
Link Count:	1	Op Table:
Flow Direction:	Both	Ref Node:
Damping:	0.0000 ft	Top Clip
Weir Type:	Gravel Road Vertical	Default: 0.00 ft
Geometry Type:	Rectangular	Op Table:
Invert:	70.00 ft	Ref Node:
Control Elevation:	70.00 ft	Discharge Coefficients
Max Depth:	99.00 ft	Weir Default: 2.800
Max Width:	20.00 ft	Weir Table:
		Orifice Default: 0.600

Fillet: 0.00 ft

Orifice Table:

Comment:

Weir Link: Schoolview Way Overland

Scenario: Existing	Bottom Clip
From Node: NZA-0290	Default: 0.00 ft
To Node: Schoolview Way Ponds (location of proposed Pond 2A modification)	Op Table:
	Ref Node:
	Top Clip
Link Count: 1	Default: 0.00 ft
Flow Direction: Both	Op Table:
Damping: 0.0000 ft	Ref Node:
Weir Type: Gravel Road Vertical	Discharge Coefficients
Geometry Type: Rectangular	Weir Default: 2.800
Invert: 71.40 ft	Weir Table:
Control Elevation: 71.40 ft	Orifice Default: 0.600
Max Depth: 99.00 ft	Orifice Table:
Max Width: 20.00 ft	
Fillet: 0.00 ft	

Comment:

Modifications (Detailed)

Existing Project: C:\Users\sdcollins\Johnson, Mirmiran Thompson\20-01459-001 - Chuluota Road RCA Y20-830 - 05 - Working Files\ICPR\Chuluota\Project.i4p

Existing Scenario: Existing

Proposed Project: C:\Users\sdcollins\Johnson, Mirmiran Thompson\20-01459-001 - Chuluota Road RCA Y20-830 - 05 - Working Files\ICPR\Chuluota\Project.i4p

Proposed Scenario: Proposed - 2 Alternate

Simple Basin: Basin 1A

Field	Existing	Proposed
Node	Basin 1 drop inlet	Basin 1 drop inlet
Hydrograph Method	NRCS Unit Hydrograph	NRCS Unit Hydrograph
Infiltration Method	Curve Number	Curve Number
Time of Concentration	10.0000 min	10.0000 min
Max Allowable Q	0.00 cfs	0.00 cfs
Time Shift	0.0000 hr	0.0000 hr
Unit Hydrograph	UH256	UH256
Peaking Factor	256.0 dec	256.0 dec
Area	0.8200 ac	0.8200 ac
Curve Number	89.4 dec	94.3 dec
% Impervious	0.00 pct	0.00 pct
% DCIA	0.00 pct	0.00 pct
% Direct	0.0000 pct	0.0000 pct
Rainfall Name		

Field	Comment
Existing	
Proposed	

Simple Basin: Basin 1B

Field	Existing	Proposed
Node	NZA-0710	Basin 1 Catch Basin
Hydrograph Method	NRCS Unit Hydrograph	NRCS Unit Hydrograph
Infiltration Method	Curve Number	Curve Number
Time of Concentration	10.0000 min	10.0000 min
Max Allowable Q	0.00 cfs	0.00 cfs
Time Shift	0.0000 hr	0.0000 hr
Unit Hydrograph	UH256	UH256
Peaking Factor	256.0 dec	256.0 dec
Area	0.1400 ac	0.1400 ac
Curve Number	91.6 dec	98.0 dec

Field	Existing	Proposed
% Impervious	0.00 pct	0.00 pct
% DCIA	0.00 pct	0.00 pct
% Direct	0.0000 pct	0.0000 pct
Rainfall Name		

Field	Comment
Existing	
Proposed	

Simple Basin: Basin 2A

Field	Existing	Proposed
Node	NZA-0290	NZA-0290
Hydrograph Method	NRCS Unit Hydrograph	NRCS Unit Hydrograph
Infiltration Method	Curve Number	Curve Number
Time of Concentration	10.0000 min	10.0000 min
Max Allowable Q	0.00 cfs	0.00 cfs
Time Shift	0.0000 hr	0.0000 hr
Unit Hydrograph	UH256	UH256
Peaking Factor	256.0 dec	256.0 dec
Area	1.6000 ac	1.6000 ac
Curve Number	89.8 dec	95.4 dec
% Impervious	0.00 pct	0.00 pct
% DCIA	0.00 pct	0.00 pct
% Direct	0.0000 pct	0.0000 pct
Rainfall Name		

Field	Comment
Existing	
Proposed	

Simple Basin: Basin 2B

Field	Existing	Proposed
Node	NZA-0430	NZA-0600
Hydrograph Method	NRCS Unit Hydrograph	NRCS Unit Hydrograph
Infiltration Method	Curve Number	Curve Number
Time of Concentration	10.0000 min	10.0000 min
Max Allowable Q	0.00 cfs	0.00 cfs
Time Shift	0.0000 hr	0.0000 hr
Unit Hydrograph	UH256	UH256
Peaking Factor	256.0 dec	256.0 dec

Field	Existing	Proposed
Area	7.5200 ac	7.5200 ac
Curve Number	87.9 dec	92.7 dec
% Impervious	0.00 pct	0.00 pct
% DCIA	0.00 pct	0.00 pct
% Direct	0.0000 pct	0.0000 pct
Rainfall Name		

Field	Comment
Existing	
Proposed	

Simple Basin: Basin 3

Field	Existing	Proposed
Node	NZA-0490	NZA-0490
Hydrograph Method	NRCS Unit Hydrograph	NRCS Unit Hydrograph
Infiltration Method	Curve Number	Curve Number
Time of Concentration	10.0000 min	10.0000 min
Max Allowable Q	0.00 cfs	0.00 cfs
Time Shift	0.0000 hr	0.0000 hr
Unit Hydrograph	UH256	UH256
Peaking Factor	256.0 dec	256.0 dec
Area	13.7500 ac	13.7500 ac
Curve Number	86.9 dec	91.1 dec
% Impervious	0.00 pct	0.00 pct
% DCIA	0.00 pct	0.00 pct
% Direct	0.0000 pct	0.0000 pct
Rainfall Name		

Field	Comment
Existing	
Proposed	

Simple Basin: Basin 4-200

Field	Existing	Proposed
Node	NZA-0530	NZA-0530
Hydrograph Method	NRCS Unit Hydrograph	NRCS Unit Hydrograph
Infiltration Method	Curve Number	Curve Number
Time of Concentration	10.0000 min	10.0000 min
Max Allowable Q	0.00 cfs	0.00 cfs
Time Shift	0.0000 hr	0.0000 hr

Field	Existing	Proposed
Unit Hydrograph	UH256	UH256
Peaking Factor	256.0 dec	256.0 dec
Area	0.1200 ac	0.1200 ac
Curve Number	58.7 dec	83.3 dec
% Impervious	0.00 pct	0.00 pct
% DCIA	0.00 pct	0.00 pct
% Direct	0.0000 pct	0.0000 pct
Rainfall Name		

Field	Comment
Existing	
Proposed	

Simple Basin: Basin 4-300

Field	Existing	Proposed
Node	Existing Cypress Dome	Existing Cypress Dome
Hydrograph Method	NRCS Unit Hydrograph	NRCS Unit Hydrograph
Infiltration Method	Curve Number	Curve Number
Time of Concentration	10.0000 min	10.0000 min
Max Allowable Q	0.00 cfs	0.00 cfs
Time Shift	0.0000 hr	0.0000 hr
Unit Hydrograph	UH256	UH256
Peaking Factor	256.0 dec	256.0 dec
Area	1.1300 ac	1.1300 ac
Curve Number	90.5 dec	97.7 dec
% Impervious	0.00 pct	0.00 pct
% DCIA	0.00 pct	0.00 pct
% Direct	0.0000 pct	0.0000 pct
Rainfall Name		

Field	Comment
Existing	
Proposed	

Simple Basin: Basin 4-300 Offsite

Field	Existing	Proposed
Node	Existing Cypress Dome	Existing Cypress Dome
Hydrograph Method	NRCS Unit Hydrograph	NRCS Unit Hydrograph

Field	Existing	Proposed
Infiltration Method	Curve Number	Curve Number
Time of Concentration	111.0000 min	111.0000 min
Max Allowable Q	0.00 cfs	0.00 cfs
Time Shift	0.0000 hr	0.0000 hr
Unit Hydrograph	UH256	UH256
Peaking Factor	256.0 dec	256.0 dec
Area	32.4400 ac	32.4400 ac
Curve Number	61.7 dec	62.5 dec
% Impervious	0.00 pct	0.00 pct
% DCIA	0.00 pct	0.00 pct
% Direct	0.0000 pct	0.0000 pct
Rainfall Name		

Field	Comment
Existing	
Proposed	

Simple Basin: Basin 4-400

Field	Existing	Proposed
Node	NZA-0570	NZA-0570
Hydrograph Method	NRCS Unit Hydrograph	NRCS Unit Hydrograph
Infiltration Method	Curve Number	Curve Number
Time of Concentration	10.0000 min	10.0000 min
Max Allowable Q	0.00 cfs	0.00 cfs
Time Shift	0.0000 hr	0.0000 hr
Unit Hydrograph	UH256	UH256
Peaking Factor	256.0 dec	256.0 dec
Area	2.8500 ac	2.8500 ac
Curve Number	83.4 dec	87.9 dec
% Impervious	0.00 pct	0.00 pct
% DCIA	0.00 pct	0.00 pct
% Direct	0.0000 pct	0.0000 pct
Rainfall Name		

Field	Comment
Existing	
Proposed	

Simple Basin: Proposed Pond 1A

Field	Existing	Proposed
Node	NZA-0710	Pond 1A

Field	Existing	Proposed
Hydrograph Method	NRCS Unit Hydrograph	NRCS Unit Hydrograph
Infiltration Method	Curve Number	Curve Number
Time of Concentration	20.0000 min	10.0000 min
Max Allowable Q	0.00 cfs	0.00 cfs
Time Shift	0.0000 hr	0.0000 hr
Unit Hydrograph	UH256	UH256
Peaking Factor	256.0 dec	256.0 dec
Area	0.4000 ac	0.4000 ac
Curve Number	77.0 dec	100.0 dec
% Impervious	0.00 pct	0.00 pct
% DCIA	0.00 pct	0.00 pct
% Direct	0.0000 pct	0.0000 pct
Rainfall Name		

Field	Comment
Existing	Assumed Tc of flow through the woods
Proposed	

Simple Basin: Proposed Pond 2B

Field	Existing	Proposed
Node	Existing Wetland Buffer	Pond 2B
Hydrograph Method	NRCS Unit Hydrograph	NRCS Unit Hydrograph
Infiltration Method	Curve Number	Curve Number
Time of Concentration	20.0000 min	10.0000 min
Max Allowable Q	0.00 cfs	0.00 cfs
Time Shift	0.0000 hr	0.0000 hr
Unit Hydrograph	UH256	UH256
Peaking Factor	256.0 dec	256.0 dec
Area	1.3000 ac	1.3000 ac
Curve Number	77.0 dec	100.0 dec
% Impervious	0.00 pct	0.00 pct
% DCIA	0.00 pct	0.00 pct
% Direct	0.0000 pct	0.0000 pct
Rainfall Name		

Field	Comment
Existing	Assumed Tc of flow through the woods
Proposed	

Simple Basin: Proposed Pond 3B

Field	Existing	Proposed
Node	Corner Lake Wetland	Pond 3B
Hydrograph Method	NRCS Unit Hydrograph	NRCS Unit Hydrograph
Infiltration Method	Curve Number	Curve Number
Time of Concentration	20.0000 min	10.0000 min
Max Allowable Q	0.00 cfs	0.00 cfs
Time Shift	0.0000 hr	0.0000 hr
Unit Hydrograph	UH256	UH256
Peaking Factor	256.0 dec	256.0 dec
Area	0.7200 ac	0.7200 ac
Curve Number	77.0 dec	100.0 dec
% Impervious	0.00 pct	0.00 pct
% DCIA	0.00 pct	0.00 pct
% Direct	0.0000 pct	0.0000 pct
Rainfall Name		

Field	Comment
Existing	Assumed Tc of flow through the woods
Proposed	

Node (Stage/Area): Basin 1 Catch Basin

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	66.96 ft	66.70 ft
Warning Stage	69.30 ft	69.61 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	Assumed the height was the same as the other catch basin across Chuluota Rd.
Proposed	Assumed lower elevation

Point

Field	Existing	Proposed
Stage	66.96 ft	66.70 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	69.30 ft	69.30 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): Basin 1 drop inlet

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	69.62 ft	67.62 ft
Warning Stage	69.72 ft	69.61 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	Upper elevation from LIDAR
Proposed	

Point

Field	Existing	Proposed
Stage	69.62 ft	67.62 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	69.72 ft	69.72 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): Manhole 1

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	68.49 ft	66.90 ft
Warning Stage	71.87 ft	69.61 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	
Proposed	

Point

Field	Existing	Proposed
Stage	68.49 ft	66.90 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	71.87 ft	71.87 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0290

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	70.00 ft	65.00 ft

Field	Existing	Proposed
Warning Stage	72.00 ft	70.10 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	
Proposed	Assumed lower elevation

Point

Field	Existing	Proposed
Stage	70.00 ft	65.00 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	72.00 ft	72.70 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0300

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	70.00 ft	64.60 ft
Warning Stage	71.00 ft	70.10 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	
Proposed	

Point

Field	Existing	Proposed
Stage	70.00 ft	64.60 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	71.00 ft	72.70 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0320

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	69.60 ft	67.60 ft
Warning Stage	72.00 ft	70.10 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	
Proposed	

Point

Field	Existing	Proposed
Stage	69.60 ft	67.60 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	72.00 ft	72.00 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0330

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	69.20 ft	67.20 ft
Warning Stage	71.20 ft	70.10 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	
Proposed	

Point

Field	Existing	Proposed
Stage	69.20 ft	67.20 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	71.20 ft	71.10 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0340

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	68.90 ft	66.90 ft
Warning Stage	69.30 ft	70.10 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	

Proposed	
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Point

Field	Existing	Proposed
Stage	68.90 ft	66.90 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	69.30 ft	71.00 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0430

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	70.10 ft	66.50 ft
Warning Stage	71.40 ft	69.61 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	
Proposed	Assumed lower elevation

Point

Field	Existing	Proposed
Stage	70.10 ft	66.50 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	71.40 ft	72.80 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0440

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	70.00 ft	65.60 ft
Warning Stage	70.70 ft	70.10 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	
Proposed	Assumed lower elevation

Point

Field	Existing	Proposed
Stage	70.00 ft	65.60 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	70.70 ft	70.70 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0450

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	67.00 ft	65.60 ft
Warning Stage	67.30 ft	70.60 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	Assumed elevation invert, other based on the channel elevation
Proposed	Assumed elevation invert

Point

Field	Existing	Proposed
Stage	67.00 ft	65.60 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	67.30 ft	70.00 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0470

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	65.20 ft	65.30 ft
Warning Stage	68.42 ft	70.40 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	Based on LIDAR
Proposed	Assumed elevation

Point

Field	Existing	Proposed
Stage	65.20 ft	66.40 ft

Field	Existing	Proposed
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	68.42 ft	68.50 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0480

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	66.90 ft	65.00 ft
Warning Stage	69.60 ft	70.40 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	
Proposed	

Point

Field	Existing	Proposed
Stage	66.90 ft	65.00 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	69.60 ft	72.00 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0490

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	66.90 ft	65.20 ft
Warning Stage	69.60 ft	70.40 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	
Proposed	

Point

Field	Existing	Proposed
Stage	66.90 ft	65.20 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed

Field	Existing	Proposed
Stage	69.60 ft	72.00 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0530

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	69.00 ft	69.00 ft
Warning Stage	70.00 ft	71.40 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	Assumed elevations
Proposed	Assumed elevations

Point

Field	Existing	Proposed
Stage	69.00 ft	69.00 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	70.00 ft	73.00 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0540

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	69.00 ft	69.00 ft
Warning Stage	71.00 ft	71.40 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	Assumed elevations
Proposed	Assumed elevations

Point

Field	Existing	Proposed
Stage	69.00 ft	69.00 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	71.00 ft	71.00 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0550

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	61.00 ft	65.00 ft
Warning Stage	74.00 ft	71.40 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	Approximated from plans
Proposed	Assumed elevation

Point

Field	Existing	Proposed
Stage	61.00 ft	65.00 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	74.00 ft	74.00 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0570

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	70.10 ft	68.10 ft
Warning Stage	70.90 ft	71.40 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	Elevation of the inlet to the right and the grate top
Proposed	

Point

Field	Existing	Proposed
Stage	70.10 ft	66.00 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	70.90 ft	73.00 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): NZA-0600

Field	Existing	Proposed
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Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	70.50 ft	66.20 ft
Warning Stage	72.00 ft	70.10 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	
Proposed	Assumed lower elevation

Point

Field	Existing	Proposed
Stage	70.50 ft	66.20 ft
Area	0.0100 ac	0.0100 ac
Field	Existing	Proposed
Stage	72.00 ft	73.00 ft
Area	0.0100 ac	0.0100 ac

Node (Stage/Area): Schoolview Way Ponds (location of proposed Pond 2A modification)

Field	Existing	Proposed
Base Flow	0.00 cfs	0.00 cfs
Initial Stage	66.00 ft	66.50 ft
Warning Stage	70.50 ft	69.50 ft
Boundary Stage	<N/A>	<N/A>

Field	Comment
Existing	
Proposed	

Point

Field	Existing	Proposed
Stage	66.50 ft	66.50 ft
Area	1.6000 ac	1.6000 ac
Field	Existing	Proposed
Stage	68.00 ft	68.00 ft
Area	1.9000 ac	1.9000 ac
Field	Existing	Proposed
Stage	69.50 ft	69.50 ft
Area	2.3200 ac	2.3200 ac
Field	Existing	Proposed
Stage	70.50 ft	70.50 ft
Area	2.7200 ac	2.7200 ac

Link (Pipe): Connecting 36" RCP

Field	Existing	Proposed
From Node	Schoolview Way Ponds (location of proposed Pond 2A modification)	Schoolview Way Ponds (location of proposed Pond 2A modification)
To Node	Corner School Pond 2	Corner School Pond 2
Link Count	1	1
Flow Direction	Both	Both
Damping	0.0000 ft	0.0000 ft
Length	145.00 ft	145.00 ft
FHWA Code	0	0
Entr Loss Coef	0.50 dec	0.50 dec
Exit Loss Coef	0.50 dec	0.50 dec
Bend Loss Coef	0.00 dec	0.00 dec
Bend Location	0.00 dec	0.00 dec
Energy Switch	Momentum	Energy

Field	Upstream Existing	Upstream Proposed	Downstream Existing	Downstream Proposed
Invert	61.00 ft	61.00 ft	60.85 ft	60.85 ft
Manning's N	0.0120 dec	0.0120 dec	0.0120 dec	0.0120 dec
Geometry	Circular	Circular	Circular	Circular
Max Depth	3.00 ft	3.00 ft	3.00 ft	3.00 ft
Max Width	<N/A>	<N/A>	<N/A>	<N/A>
Fillet	<N/A>	<N/A>	<N/A>	<N/A>
Cross Section	<N/A>	<N/A>	<N/A>	<N/A>
Bottom Clip	0.00 ft	0.00 ft	0.00 ft	0.00 ft
Bottom Clip Table				
Bottom Clip Node				
Bottom Clip Manning's N	0.0000 dec	0.0000 dec	0.0000 dec	0.0000 dec
Top Clip	0.00 ft	0.00 ft	0.00 ft	0.00 ft
Top Clip Table				
Top Clip Node				
Top Clip Manning's N	0.0000 dec	0.0000 dec	0.0000 dec	0.0000 dec

Field	Comment
Existing	
Proposed	

Link (Pipe): L-0170P

Field	Existing	Proposed
From Node	NZA-0320	NZA-0320
To Node	NZA-0330	NZA-0330
Link Count	1	1
Flow Direction	Both	Both

Field	Existing	Proposed
Damping	0.0000 ft	0.0000 ft
Length	176.41 ft	176.41 ft
FHWA Code	0	0
Entr Loss Coef	0.50 dec	0.50 dec
Exit Loss Coef	0.50 dec	0.50 dec
Bend Loss Coef	0.00 dec	0.00 dec
Bend Location	0.00 dec	0.00 dec
Energy Switch	Energy	Energy

Field	Upstream Existing	Upstream Proposed	Downstream Existing	Downstream Proposed
Invert	69.60 ft	67.60 ft	69.20 ft	67.20 ft
Manning's N	0.0120 dec	0.0120 dec	0.0120 dec	0.0120 dec
Geometry	Circular	Circular	Circular	Circular
Max Depth	2.00 ft	3.00 ft	2.00 ft	3.00 ft
Max Width	<N/A>	<N/A>	<N/A>	<N/A>
Fillet	<N/A>	<N/A>	<N/A>	<N/A>
Cross Section	<N/A>	<N/A>	<N/A>	<N/A>
Bottom Clip	0.00 ft	0.00 ft	0.00 ft	0.00 ft
Bottom Clip Table				
Bottom Clip Node				
Bottom Clip Manning's N	0.0000 dec	0.0000 dec	0.0000 dec	0.0000 dec
Top Clip	0.00 ft	0.00 ft	0.00 ft	0.00 ft
Top Clip Table				
Top Clip Node				
Top Clip Manning's N	0.0000 dec	0.0000 dec	0.0000 dec	0.0000 dec

Field	Comment
Existing	Size assumed, elevations from channel elevations
Proposed	Size assumed, elevations from channel elevations

Link (Pipe): L-0240P

Field	Existing	Proposed
From Node	NZA-0490	NZA-0490
To Node	NZA-0480	NZA-0480
Link Count	1	1
Flow Direction	Both	Both
Damping	0.0000 ft	0.0000 ft
Length	144.06 ft	144.06 ft
FHWA Code	0	0
Entr Loss Coef	0.50 dec	0.50 dec
Exit Loss Coef	0.50 dec	0.50 dec
Bend Loss Coef	0.00 dec	0.00 dec
Bend Location	0.00 dec	0.00 dec
Energy Switch	Energy	Energy

Field	Upstream Existing	Upstream Proposed	Downstream Existing	Downstream Proposed
Invert	67.10 ft	65.20 ft	66.90 ft	65.00 ft
Manning's N	0.0120 dec	0.0120 dec	0.0120 dec	0.0120 dec
Geometry	Circular	Circular	Circular	Circular
Max Depth	2.00 ft	3.00 ft	2.00 ft	3.00 ft
Max Width	<N/A>	<N/A>	<N/A>	<N/A>
Fillet	<N/A>	<N/A>	<N/A>	<N/A>
Cross Section	<N/A>	<N/A>	<N/A>	<N/A>
Bottom Clip	0.00 ft	0.00 ft	0.00 ft	0.00 ft
Bottom Clip Table				
Bottom Clip Node				
Bottom Clip Manning's N	0.0000 dec	0.0000 dec	0.0000 dec	0.0000 dec
Top Clip	0.00 ft	0.00 ft	0.00 ft	0.00 ft
Top Clip Table				
Top Clip Node				
Top Clip Manning's N	0.0000 dec	0.0000 dec	0.0000 dec	0.0000 dec

Field	Comment
Existing	Assumed size, elevations based on LIDAR
Proposed	Assumed size and lower elevation

Link (Pipe): L-0260P

Field	Existing	Proposed
From Node	Existing Cypress Dome	Existing Cypress Dome
To Node	NZA-0570	NZA-0570
Link Count	1	1
Flow Direction	Both	Both
Damping	0.0000 ft	0.0000 ft
Length	85.87 ft	85.87 ft
FHWA Code	0	0
Entr Loss Coef	0.50 dec	0.50 dec
Exit Loss Coef	0.50 dec	0.50 dec
Bend Loss Coef	0.00 dec	0.00 dec
Bend Location	0.00 dec	0.00 dec
Energy Switch	Energy	Energy

Field	Upstream Existing	Upstream Proposed	Downstream Existing	Downstream Proposed
Invert	68.69 ft	68.69 ft	67.00 ft	67.00 ft
Manning's N	0.0120 dec	0.0120 dec	0.0120 dec	0.0120 dec
Geometry	Circular	Circular	Circular	Circular
Max Depth	2.00 ft	2.00 ft	2.00 ft	2.00 ft
Max Width	<N/A>	<N/A>	<N/A>	<N/A>
Fillet	<N/A>	<N/A>	<N/A>	<N/A>
Cross Section	<N/A>	<N/A>	<N/A>	<N/A>
Bottom Clip	0.00 ft	0.00 ft	0.00 ft	0.00 ft

Field	Upstream Existing	Upstream Proposed	Downstream Existing	Downstream Proposed
Bottom Clip Table				
Bottom Clip Node				
Bottom Clip Manning's N	0.0000 dec	0.0000 dec	0.0000 dec	0.0000 dec
Top Clip	0.00 ft	0.00 ft	0.00 ft	0.00 ft
Top Clip Table				
Top Clip Node				
Top Clip Manning's N	0.0000 dec	0.0000 dec	0.0000 dec	0.0000 dec

Field	Comment
Existing	elevations from the LiDAR
Proposed	Assumed size, elevations from the LiDAR

Link (Pipe): L-0300P

Field	Existing	Proposed
From Node	NZA-0540	NZA-0540
To Node	NZA-0550	NZA-0550
Link Count	1	1
Flow Direction	Both	Both
Damping	0.0000 ft	0.0000 ft
Length	116.86 ft	116.00 ft
FHWA Code	0	0
Entr Loss Coef	0.50 dec	0.50 dec
Exit Loss Coef	0.50 dec	0.50 dec
Bend Loss Coef	0.00 dec	0.00 dec
Bend Location	0.00 dec	0.00 dec
Energy Switch	Energy	Energy

Field	Upstream Existing	Upstream Proposed	Downstream Existing	Downstream Proposed
Invert	70.00 ft	70.00 ft	66.85 ft	66.85 ft
Manning's N	0.0120 dec	0.0120 dec	0.0120 dec	0.0120 dec
Geometry	Circular	Circular	Circular	Circular
Max Depth	1.50 ft	1.50 ft	1.50 ft	1.50 ft
Max Width	<N/A>	<N/A>	<N/A>	<N/A>
Fillet	<N/A>	<N/A>	<N/A>	<N/A>
Cross Section	<N/A>	<N/A>	<N/A>	<N/A>
Bottom Clip	0.00 ft	0.00 ft	0.00 ft	0.00 ft
Bottom Clip Table				
Bottom Clip Node				
Bottom Clip Manning's N	0.0000 dec	0.0000 dec	0.0000 dec	0.0000 dec
Top Clip	0.00 ft	0.00 ft	0.00 ft	0.00 ft
Top Clip Table				
Top Clip Node				
Top Clip Manning's N	0.0000 dec	0.0000 dec	0.0000 dec	0.0000 dec

Field	Comment
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Existing	Assumed size and elevations
Proposed	Assumed size and elevations

Link (Pipe): L-0650P

Field	Existing	Proposed
From Node	NZA-0450	NZA-0450
To Node	Existing Wetland Buffer	NZA-0830
Link Count	1	1
Flow Direction	Both	Both
Damping	0.0000 ft	0.0000 ft
Length	129.00 ft	129.00 ft
FHWA Code	0	0
Entr Loss Coef	0.50 dec	0.50 dec
Exit Loss Coef	0.50 dec	0.50 dec
Bend Loss Coef	0.00 dec	0.00 dec
Bend Location	0.00 dec	0.00 dec
Energy Switch	Energy	Energy

Field	Upstream Existing	Upstream Proposed	Downstream Existing	Downstream Proposed
Invert	64.61 ft	64.61 ft	64.05 ft	64.05 ft
Manning's N	0.0120 dec	0.0120 dec	0.0120 dec	0.0120 dec
Geometry	Circular	Circular	Circular	Circular
Max Depth	2.50 ft	2.50 ft	2.50 ft	2.50 ft
Max Width	<N/A>	<N/A>	<N/A>	<N/A>
Fillet	<N/A>	<N/A>	<N/A>	<N/A>
Cross Section	<N/A>	<N/A>	<N/A>	<N/A>
Bottom Clip	0.00 ft	0.00 ft	0.00 ft	0.00 ft
Bottom Clip Table				
Bottom Clip Node				
Bottom Clip Manning's N	0.0000 dec	0.0000 dec	0.0000 dec	0.0000 dec
Top Clip	0.00 ft	0.00 ft	0.00 ft	0.00 ft
Top Clip Table				
Top Clip Node				
Top Clip Manning's N	0.0000 dec	0.0000 dec	0.0000 dec	0.0000 dec

Field	Comment
Existing	
Proposed	

Simulation: Hotstart

General

Field	Existing	Proposed
Run Mode	Normal	Normal
Hot Start Simulation	<N/A>	<N/A>
Start Time - Year	0	0
Start Time - Month	0	0
Start Time - Day	0	0
Start Time - Hour	0.0000 hr	0.0000 hr
End Time - Year	0	0
End Time - Month	0	0
End Time - Day	0	0
End Time - Hour	24.0000 hr	2.0000 hr
Hot Start Time - Year	<N/A>	<N/A>
Hot Start Time - Month	<N/A>	<N/A>
Hot Start Time - Day	<N/A>	<N/A>
Hot Start Time - Hour	<N/A>	<N/A>
Min Calculation Time - Hydrology	60.0000 sec	60.0000 sec
Min Calculation Time - Surface Hydraulics	0.1000 sec	0.1000 sec
Min Calculation Time - GW	900.0000 sec	900.0000 sec
Max Calculation Time - Surface Hydraulics	30.0000 sec	30.0000 sec

Field	Comment
Existing	
Proposed	

Output Time Increments

Output Time Increments - Hydrology

Field	Existing	Proposed
Year	0	0
Month	0	0
Day	0	0
Hour	0.0000 hr	0.0000 hr
Time Increment	15.0000 min	15.0000 min

Output Time Increments - Surface Hydraulics

Field	Existing	Proposed
Year	0	0
Month	0	0
Day	0	0
Hour	0.0000 hr	0.0000 hr
Time Increment	15.0000 min	15.0000 min

Output Time Increments - Groundwater

Field	Existing	Proposed
-------	----------	----------

Field	Existing	Proposed
Year	0	0
Month	0	0
Day	0	0
Hour	0.0000 hr	0.0000 hr
Time Increment	60.0000 min	60.0000 min

Field	Existing	Proposed
Save Restart	False	False

Resources & Lookup Tables

Field	Existing	Proposed
Rainfall Set		
Reference ET Set		
Unit Hydrograph Set		
Boundary Stage Set		
External Hydrograph Set		
Curve Number Set		
Green-Ampt Set		
Vertical Layers Set		
Impervious Set		
Roughness Set		
Crop Coef Set		
Fillable Porosity Set		
Conductivity Set		
Leakage Set		

Tolerances & Options

Field	Existing	Proposed
Time Marching	SAOR	SAOR
Max Iterations	6	6
Over-Relaxation Weighting Factor	0.5 dec	0.5 dec
dZ Tolerance	0.0010 ft	0.0010 ft
Max dZ	1.0000 ft	1.0000 ft
Link Optimizer Tolerance	0.0001 ft	0.0001 ft
Edge Length Option	Automatic	Automatic
Edge Length Factor	<N/A>	<N/A>
Default Damping (2D)	0.0050 ft	0.0050 ft
Min Node Surface Area (2D)	100 ft ²	100 ft ²
Energy Switch (2D)	Energy	Energy
Initial Abstraction Recovery Time	24.0000 hr	24.0000 hr
Include ET for Manual Basins	False	False
Manual Basin Rainfall Option	Global	Global
OF Region Rainfall Option	Global	Global

Field	Existing	Proposed
Rainfall Name	~ORANGE	~ORANGE
Rainfall Amount	0.01 in	0.01 in
Storm Duration	24.0000 hr	24.0000 hr
Default Damping (1D)	0.0050 ft	0.0050 ft
Min Node Surface Area (1D)	100 ft2	100 ft2
Energy Switch (1D)	Energy	Energy

Appendix C – Floodplain Encroachment Calculations

Based on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps

(FIRM's) dated September 25, 2009, portions of the study area are located within Zone A (100 Year) floodplain. There are no Zone AE floodplains within the study area. The Zone A floodplains occur:

- East of Chuluota Road across from Corner Lake Middle School. This Zone A floodplain is isolated.
- North and South of Cypress Lake Glen Boulevard. This Zone A floodplain ultimately drains to Lake Pickett.

The seasonal high water at the locations of the floodplain compensatory ponds FC1 & FC2 are 68.9 ft and 66.6 ft respectively. These SHW heights offer the greater than the 1 ac-ft required for each pond site. Thus, both FC1 & FC2 would provide adequate flood compensatory storage.

Net Fill			
Station to Station			Volume (Ac-Ft)
22+00.00	TO	26+00.00	0.02915519
73+00.00	TO	90+00.00	0.76937557
Total			0.79853076

Net Fill - Sta. 22+00 to 26+00					
Station	Xsect Area (SF)	Average End Area (SF)	Length (FT)	Volume (CF)	Volume (Ac-Ft)
22+00.00	0.07	3.44	100	344	0.007897
23+00.00	6.81	5.8625	100	586.25	0.013458
24+00.00	4.915	2.9275	100	292.75	0.006721
25+00.00	0.94	0.47	100	47	0.001079
26+00.00	0.00	0.00	100	0	0
Total Flood Compensation Required between			22+00.00	26+00.00	0.029155

Net Fill - Sta. 73+00 to 90+00					
Station	Xsect Area (SF)	Average End Area (SF)	Length (FT)	Volume (CF)	Volume (Ac-Ft)
73+00.00	0	8.08	100	808.00	0.018549
74+00.00	16.16	32.1325	100	3213.25	0.073766
75+00.00	48.105	38.895	100	3889.50	0.089291
76+00.00	29.685	28.9275	100	2892.75	0.066408
77+00.00	28.17	24.6	100	2460.00	0.056474
78+00.00	21.03	16.1725	100	1617.25	0.037127
79+00.00	11.315	17.5675	100	1756.75	0.040329
80+00.00	23.82	1.4025	100	140.25	0.00322
81+00.00	-21.015	3.685	100	368.50	0.00846
82+00.00	28.385	30.06	100	3006.00	0.069008
83+00.00	31.735	27.975	100	2797.50	0.064222
84+00.00	24.215	17.285	100	1728.50	0.039681
85+00.00	10.355	9.5325	100	953.25	0.021884
86+00.00	8.71	16.665	100	1666.50	0.038258
87+00.00	24.62	20.98	100	2098.00	0.048163
88+00.00	17.34	20.9425	100	2094.25	0.048077
89+00.00	24.545	16.255	100	1625.50	0.037316
90+00.00	7.965	3.9825	100	398.25	0.009143
Total Flood Compensation Required between			73+00.00	90+00.00	0.769376

Proposed Flood Comp Pond Sta. 22+00 to 26+00

Description	Stage (ft)	Pond Area (ac)	Total Volume (ac.ft.)	Height	Inc. Vol (ac-ft)	Cum. Vol (ac-ft)
DHW	70.00	0.03				0.00
			0.03	0.50	0.02	
	70.50	0.04				0.02
			0.03	0.50	0.02	
Top of Bank	71.00	0.05				0.03
Total (ac-ft)						0.034
Total Flood Compensation Required between (ac-ft)						0.029
Total (ac-ft)						0.005

Proposed Flood Comp Pond Sta. 73+00 to 90+00

Description	Stage (ft)	Pond Area (ac)	Total Volume (ac.ft.)	Height	Inc. Vol (ac-ft)	Cum. Vol (ac-ft)
DHW	70.00	0.75				0.00
			0.78	0.50	0.39	
	70.50	0.81				0.39
			0.78	0.50	0.39	
Top of Bank	71.00	0.85				0.78
Total (ac-ft)						0.782
Total Flood Compensation						0.769
Total (ac-ft)						0.012

Appendix D – Environmental Report

**ROADWAY CONCEPTUAL ANALYSIS
ECOLOGICAL SUMMARY REPORT**

**Chuluota Road
from Colonial Drive to Lake Pickett Road
Orange County Project Number: Y20-830-CH**

Prepared For:

Orange County Public Works Department
4200 South John Young Parkway
Orlando, Florida

On behalf of

Johnson, Mirmiran & Thompson
615 Crescent Executive Court, Suite 106
Lake Mary, Florida 32746

Prepared By:

MSE Group, LLC
5858 South Semoran Boulevard
Orlando, Florida 32822

May 2022

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List of Acronyms and Abbreviations

AJD	Approved Jurisdictional Determination
BA	Biological Assessment
BE	Biological Evaluation
BRP	Biodiversity Resource Priorities
CFA	Core Foraging Area
CFR	Code of Federal Regulations
CLEAR	Conservation Lands, Easements, and Recreation
CLIP	Critical Lands and Waters Identification Project
CWA	Clean Water Act
E	Endangered
EPA	Environmental Protection Agency
ERP	Environmental Resource Permit
ESA	Endangered Species Act
ESR	Ecological Summary Report
FAC	Florida Administrative Code
FDACS	Florida Department of Agriculture and Consumer Services
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FL-SOLARIS	Florida State Owned Lands and Records Information System
FLUCFCS	Florida Land Use, Cover, and Forms Classification System
FNAI	Florida Natural Areas Inventory
FS	Florida Statute
FWC	Florida Fish and Wildlife Conservation Commission
FWS	U.S. Fish and Wildlife Service
GP	General Permit
ISMP	Imperiled Species Management Plan
MB	Mitigation Bank
MSE	MSE Group, LLC
NMFS	National Marine Fisheries Service
NRCS	Natural Resources Conservation Service
NWP	Nationwide Permit
NWPR	Navigable Waters Protection Rule
OCEPD	Orange County Environmental Protection Division
OCPW	Orange County Public Works
RCA	Roadway Conceptual Analysis
RCW	Red-Cockaded Woodpecker
RHA	Rivers and Harbors Act of 1899
RHPZ	Riparian Habitat Protection Zone
ROW	Right-of-Way
SFH	Suitable Foraging Habitat
SJRWMD	St. Johns River Water Management District
SP	Standard Permit
SR	State Road

List of Acronyms and Abbreviations (Cont'd.)

SSC	Species of Special Concern
SW	Surface Water
T	Threatened
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USC	U.S. Code
USGS	U.S. Geological Survey
WL	Wetland

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Executive Summary

An Ecological Summary Report (ESR) has been prepared as part of a Roadway Conceptual Analysis (RCA) study for Chuluota Road, from Colonial Drive (SR 50) to Lake Pickett Road (study corridor). This ESR documents ecological features located within the study corridor, such as wetland and/or other surface water communities and the occurrence or potential for occurrence of federally and/ or state-protected wildlife species and their habitat, and the likelihood of involvement of such features during project implementation.

Riparian Habitat Protection Zone

The Chuluota Road study corridor lies within the Econlockhatchee River Drainage Basin and includes the Riparian Habitat Protection Zones (RHPZ) of the Econlockhatchee River and its tributaries. Wetlands contiguous with Econlockhatchee River and its tributaries and the uplands within 50 feet of the wetland limits are classified as RHPZ. Some wetland systems within the Chuluota Road RCA study corridor meet RHPZ wetlands criteria via connection with Silcox Branch and Mill Branch, both named tributaries of Econlockhatchee River.

Wetlands and Other Surface Waters

Current ecological conditions within the study corridor were evaluated to determine the potential for adverse wetland impacts, other surface water impacts, and RHPZ upland impacts to the one alignment and eight stormwater management pond locations. Wetlands and/or other surface waters were aerially interpreted and verified through ground-truthing activities; these features should be delineated during the final design and permitting phase.

A summary of impacts, by type, roadway, and stormwater pond location, is provided in **Table 1**.

Table 1: Approximate Wetland and Other Surface Water Impacts Associated with Chuluota Road RCA

Wetland/Other Surface Water ID	FLUCFCS Code	Proposed Alignment Impact (ac)*	Proposed Pond ID	Proposed Pond Impact (ac)*	RHPZ Uplands (ac)*
WL-1	6170	0.33			
WL-2	6170				
WL-3	6410	0.16			
WL-7	6210		Pond 3A	0.73	1.09
WL-7	6210		Pond 3B	0.11	0.18
WL-8	6300		Pond 2B	0.97	
WL-9	6250		Pond 1B	1.22	0.07
SW-1	5130	2.73			
Upland			FC Pond 1	0.05	
TOTAL		3.22		3.08	1.34

* Impact acreages are based on approximate limits through aerial interpretation and limited ground-truthing activities.

Wetlands and other surface waters are regulated by federal, state, and local government policies. Impacts to jurisdictional wetlands and other surface waters will require coordination with regulatory agencies during the design and permitting phase and may require mitigation to offset adverse impacts. Mitigation credits, including RHPZ credits, are available through the Orange County owned TM-Econ Mitigation Bank Phase IV mitigation bank (MB) (summary of currently available mitigation is provided in **Table 2**).

Table 2: Summary of Available Mitigation Credits from TM-Econ MB Phase IV for Chuluota Road RCA.

MB	Bank Service Area	*Credits Available
TM-Econ MB Phase IV, Orange County	(18) St. Johns River (Canaveral Marshes to Wekiva), (19) Econlockhatchee River Nested, (23) Lake Jesup, part of (20) Southern St. Johns River, Boggy Creek, Lake Hart, Lake Myrtle, and East Lake Toho	227.84 State (Includes RHPZ credits) 371.836 Federal

*Based on coordination with OCEPD personnel on May 3, 2022.

Threatened and Endangered Species

A desktop review of readily available public databases was conducted to evaluate the occurrence or potential for occurrence of federally and/or state-protected wildlife species, followed by visual observations conducted via pedestrian transects throughout suitable habitat. Wildlife observations included direct (visual observation of species, scat, nests, etc.) and audible detection. A summary of protected wildlife species with potential for involvement is provided in **Table 3**.

Table 3: Summary of Federally and/or State-Protected Wildlife Species with Potential Involvement During Project Implementation

Scientific Name	Common Name	Protection Status	Findings
Reptiles			
<i>Gopher polyphemus</i>	Gopher tortoise	ST	Although no burrows were observed within suitable habitat, the area is not precluded from gopher tortoises entering the property and establishing burrows. During final design, and prior to construction, a survey in accordance with the Florida Fish and Wildlife Conservation Commission's (FWC) survey protocol is recommended.
Birds			
<i>Polyborus plancus audubonii</i>	Audubon's Crested Caracara	FT	No crested caracaras were observed during site review, and it is anticipated that the proposed roadway improvements will not adversely affect the crested caracara; however, additional surveys may be necessary based on final design.
<i>Antigone canadensis pratensis</i>	Florida sandhill crane	ST	Suitable habitat is present for foraging and nesting within and adjacent to the study corridor. It is recommended that, following FWC's survey, a survey protocol be conducted between December and August for active nest sites. If no nest sites are detected, additional coordination with FWC is not required.

Protection Status Key: ST = State-Designated Threatened, FT = Federally Designated Threatened

Data Source: U.S. Fish and Wildlife Service (FWS) ECOS (FWS 2021);

Florida's endangered species, and threatened species (FWC 2021)

The Florida Department of Agriculture and Consumer Services (FDACS) regulates the economic use of plant species identified as endangered, threatened, or commercially exploited. A desktop review of readily available public databases of known federally and/or state-protected, or commercially exploited flora was conducted for the study corridor, followed by ground-truthing. One commercially exploited plant was identified within the study corridor:

- Saw palmetto (*Serenoa repens*)

No federally and/or state-protected plant species were identified during the ground-truth activities. FDACS does not regulate disturbance of plant species from construction activities; therefore, the presence of these plants within the study corridor will not require coordination with regulatory agencies.

Wildlife Crossings

The potential of incorporating wildlife crossings within the Chuluota Road study corridor was evaluated using several criteria, including current ecological conditions, proximity of existing conservation lands, biodiversity matrix, and proposed future development. An evaluation was conducted for one potential wildlife crossing locations along the study corridor:

- Wildlife Crossing 1 – South of Cypress Lake Glen Boulevard

Based on the wildlife known to inhabit this area, a wildlife crossing is not justified due to the lack of sustainable natural communities and a continuous corridor for wildlife movement. A wildlife crossing in this location may be reconsidered in the future, should plans to develop the area west of Chuluota Road become necessary.

DRAFT

1.0 Introduction

Orange County is conducting a Roadway Conceptual Analysis (RCA) study on Chuluota Road (study corridor) from Colonial Drive (SR 50) to Lake Pickett Road, consisting of approximately 1.9 miles in length (**Figures 1 and 2**). This RCA has been initiated to assess and recommend roadway enhancements that will improve safety and traffic flow within the area. The study considers the social and environmental impacts of adding travel lanes and improving other features, including drainage conveyance and treatment, a segment of pedestrian trail (East Orange Trail), sidewalk, raised medians, lighting, landscaping, and intersections.

This Ecological Summary Report (ESR) documents ecological features within the study corridor, such as wetland and/or other surface water communities and the occurrence or potential for occurrence of federally and/or state-protected wildlife species and their habitat, and the likelihood of such features' involvement during project implementation.

2.0 Methodology

MSE biologists conducted a desktop review followed by ground-truthing activities along the study corridor. Our assessment identified and documented the presence of natural habitats, including jurisdictional wetlands and/or other surface waters; wildlife species categorized as endangered (E), threatened (T), or species of special concern (SSC) by state and federal regulations; and such species' preferred habitats. This assessment included review and analysis of the following:

- Public records, databases, handbooks, and manuals
 - Audubon Florida EagleWatch Public Nest App Database (AEW)
 - Florida Fish and Wildlife Conservation Commission (FWC) Wildlife Databases
 - Florida Department of Environmental Protection (FDEP) Map Direct
 - FDEP Statewide Land Use Database
 - Florida Natural Areas Inventory (FNAI) Rare Species and Communities Database
 - FNAI Critical Lands and Water Identification Project (CLIP)
 - U.S. Fish and Wildlife Service (FWS) Information for Planning and Consultation (IPaC)
 - St. Johns River Water Management District (SJRWMD)
 - FWS National Wetland Inventory (NWI)
 - U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual
 - U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey
 - U.S. Geological Survey (USGS) Quadrangle Topographic Map (**Figures 3-1 and 3-2**).
 - Historical aerials
- Physical settings conditions (topography, soils) within the study corridor
- Vegetative communities, including wetlands and other surface waters, within the study corridor
- Evaluation of sustainable habitat for federally and/or state-protected flora and fauna
- Review of potential wildlife crossing locations
- Review of existing permits in the corridor, permitting needs of the project, and mitigation options

2.1 Wetlands and Other Surface Waters

The jurisdictional extent of wetlands and other surface water systems were identified in general accordance with USACE's 1987 *Corps of Engineers Wetlands Delineation Manual* (Technical Report Y-87-1) and

November 2010 *Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Atlantic Gulf Coastal Plan Region*, and with the State of Florida’s *Delineation of the Landward Extent of Wetlands and Surface Waters* (Chapter 62-340, Florida Administrative Code [FAC]) (State of Florida 1994). If wetland boundaries differed between the two methods, the more “wetland inclusive” extent was used to designate that wetland system’s boundary. The landward extent of other surface water systems was recognized to be at the top-of-bank for ditches with side slopes of 1-foot vertical to 4-feet horizontal or steeper, or using the seasonal high for swales with side slopes flatter than 1-foot vertical to 4-feet horizontal. Wetlands and other surface waters observed were classified using FDEP land use type data and the FWS classification system as described in their *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin, et al. December 1979).

Wetland and/or other surface waters were aerially interpreted through available GIS databases (topographic quadrangle maps, land use data, NCRS soil survey data) and verified through ground-truthing activities. Ground-truthing activities were conducted along the study corridor in February 2022 and evaluated the following items:

- Onsite vegetative communities
- Jurisdictional wetlands and/or other surface waters

In the field, wetlands (WL) and other surface waters (SW) were generally identified from south to north along the north-bound travel lane and from north to south along the south-bound travel lane. The proposed location of the stormwater management systems was classified following the nomenclature associated with the Chuluota Road RCA study, and each was evaluated for wetlands, other surface waters, and vegetative communities.

2.2 Protected Wildlife Species and Their Habitat

Database queries were conducted to evaluate the occurrence or potential for occurrence of wildlife species identified as T, E, or SSC by governing regulatory agencies, followed by ground-truth activities in February 2022. Pedestrian transects for the occurrence or potential for occurrence of federally and/or state-protected wildlife species were conducted within the study corridor. Wildlife observations included direct (visual observation of species, scat, nests, etc.) and audible detection.

3.0 General Site Conditions

3.1 Soils

The USDA NRCS Soil Survey is a comprehensive published source of information that supplies near-surface soil and depth-to-groundwater conditions. The NRCS Soil Survey of Orange County, Florida, was available and reviewed for data of near-surface soil conditions (i.e., soil unit types) within the study corridor (**Figures 4-1 and 4-2**). Soils identified within the study corridor are listed in **Table 4**.

Table 4: NRCS Soil Data Identified within the Chuluota Road RCA Study Corridor.

Map Unit	Soil Name	Hydric Status	Depth to Water Table	Drainage
2	Archbold fine sand, 0 to 5% slopes	No	42 to 60 inches	Very poorly drained
3	Basinger fine sand, frequently ponded, 0 to 1% slopes	Yes	Surface (0 inches)	Poorly drained
34	Pomello fine sand, 0 to 5% slopes	No	24 to 42 inches	Moderately well drained
37	St. Johns fine sand	No	6 to 12 inches	Poorly drained

Map Unit	Soil Name	Hydric Status	Depth to Water Table	Drainage
40	Samsula Muck, frequently ponded, 0 to 2% slopes	Yes	Surface (0 inches)	Very poorly drained
42	Sanibel Muck	Yes	Surface (0 inches)	Very poorly drained
44	Smyrna-Smyrna, wet, fine sand, 0 to 2% slopes	No	6 to 18 inches	Poorly drained
53	Wauberg fine sand	Yes	0 to 6 inches	Poorly drained
54	Zolfo fine sand, 0 to 2% slopes	No	18 to 42 inches	Somewhat poorly drained

Source: NRCS Web Soil Survey (NRCS 2019)

3.2 Land Use

FDEP's statewide land use database (FDEP 2020a) was used to characterize land use types within the study corridor. During the following ground-truth activities, land use types were field verified and revised, if necessary, based on physical observations (**Figures 5-1** and **5-2**). The dominant land uses, which consist of residential, commercial, institutional, and undeveloped, forested, and non-forested lands, are described below.

3.2.1 Uplands – Developed

FLUCFCS 1200 – Medium Density, >2 – 5 dwelling units/acre – This land use best describes single-family residential areas located north of Long Boat Lane, west of Chuluota Road.

FLUCFCS 1300 – High Density, 6 or more dwelling units/acre – This land use best describes the single-family residential areas located east and west of Chuluota Road within the study corridor.

FLUCFCS 1400 – Commercial and Services – This land use type consist of commercial businesses located within the south end of the study corridor, east and west of Chuluota Road. Review of Google Earth indicates that this area consists of gas stations and a strip mall with a variety of business.

FLUCFCS 1700 – Institutional – This land use type best identifies two public schools within the study corridor:

- Corner Lake Middle School – located west of Chuluota Road, north of East Colonial Drive.
- Columbia Elementary – located east of Chuluota Road, south of Cypress Lake Glen Boulevard.

FLUCFCS 2500 – Specialty Farms – This land use best characterizes the horse farm located west of Chuluota Road and south of Lake Pickett Road.

FLUCFCS 8140 – Roads and Highways – This land use type includes Chuluota Road, East Colonial Drive (SR 50), Lake Pickett Road, and side roads located within the study corridor.

3.2.2 Uplands – Undeveloped

FLUCFCS 1900 – Open Land – This land use type best describes an undeveloped area located east of Chuluota Road, north of Colonial Drive.

FLUCFCS 2110 – Improved Pastures – This land use best characterizes the undeveloped, open land located within the north portion of the study corridor. This land use is comprised of scattered live oak (*Quercus* spp.) and maintained bahiagrass (*Paspalum notatum*).

FLUCFCS 4110 – Pine Flatwoods – This land use describes the following undeveloped forested areas:

- East of Chuluota Road, and south of Cypress Lake Glen Boulevard.
- West of Chuluota Road, and north of Corner Lake Drive.
- West of Chuluota Road and south of Long Boat Lane.

3.2.3 Wetlands and Other Surface Waters

The NWI and FDEP's Statewide Land Use databases were reviewed for jurisdictional wetlands and/or other surface waters within the study corridor. Each wetland and/or other surface water was field verified, and their dominant vegetative species were recorded. Wetlands were then classified using Florida Land Use Cover and Forms Classification (FLUCFCS) codes to FLUCFCS Level III for specific identification of habitat. Wetland systems and other surface waters were identified from south to north along the north-bound travel lane, and north to south along the south-bound travel lane (**Figures 6-1** and **6-2**). The wetland and surface water systems delineated are discussed below:

FLUCFCS 5130 – Streams and Waterways (Upland-Cut) – This land use type best describes an upland-cut surface water system within the study corridor. Designated as SW-1, this system is located east of Chuluota Road between Cypress Lake Glen Boulevard's north and south access. SW-1 is vegetatively comprised of bahiagrass (*Paspalum notatum*), scattered Carolina willow (*Salix caroliniana*), Virginia chain fern (*Woodwardia virginica*), swamp fern (*Blechnum serrulatum*), pennywort (*Hydrocotyle* spp.), cattail (*Typha* spp.), and greenbrier (*Smilax* spp.).

FLUCFCS 5300 – Reservoirs – This land use type best classifies stormwater management ponds located adjacent to the study corridor and designated SW 2, 2a, 3 through 6, and 10 through 16 in **Figures 6-1** and **6-2**.

FLUCFCS 6170 – Mixed Wetland Hardwoods – This land use type best describes WL-1, located south of Cypress Lake Glenn Boulevard, east of Chuluota Road. This system is vegetatively comprised of a canopy of Cypress (*Taxodium* spp.), sweet bay (*Magnolia virginiana*), wax myrtle (*Myrica cerifera*), red bay (*Persea borbonia*), southern magnolia (*Magnolia grandiflora*), pines (*Pinus* spp.), Virginia chain fern, swamp fern, and greenbrier. This wetland system was placed under conservation easement (OR Book 07308, Page 2152) in support of the Cypress Lakes subdivision.

FLUCFCS 6210 – Cypress – This land use type best describes wetlands WL-2, WL-4, WL-5, and WL-6, which are located east of Chuluota Road. These systems are vegetatively comprised of cypress, pines, wax myrtle, Australian pine (*Casuarina* spp.), sweet bay, dahoon holly, camphor tree (*Cinnamomum camphora*), Brazilian pepper (*Schinus terebinthifolia*), saltbush (*Baccharis halimifolia*), swamp fern, pennywort, and greenbrier.

FLUCFCS 6300 – Wetland Forested Mixed – This land use type best characterizes wetlands WL-7, WL-8, and WL-9. These systems are vegetatively comprised of loblolly bay (*Gordonia lasianthus*), swamp bay (*Persea palustris*), red bay, sweet bay, laurel oak (*Quercus laurifolia*), slash pine (*Pinus elliotii*), pond pine (*Pinus serotina*), red maple (*Acer rubrum*), cypress, dahoon holly (*Illex cassine*), camphor tree, wax myrtle, primrose willow (*Ludwigia peruviana*), cogon grass (*Imperata cylindrica*), elderberry (*Sambucus nigra*), Virginia chain fern, swamp fern, arrowhead (*Sagittaria* spp.), grapevine (*Vitis rotundifolia*), and greenbrier. Wetlands 7 and 8 were placed under a conservation easement (OR Book 6409, Page 5387) in support of the Corner Lake development, and a portion of

WL-9 was placed under conservation easement (OR Book 06808, Page 2737) in support of the Corner Lake Kash-n-Karry development.

FLUCFCS 6410 – Freshwater Marshes – This land use best describes wetland WL-3, located north of Cypress Lake Glen Boulevard and east of Chuluota Road. This system is vegetatively compromised of scattered sweet bay, cypress, primrose willow, and wax myrtle with waterlily (*Nymphaea* spp.), pennywort, rush (*Juncus* spp.), and open water.

4.0 Protected Flora

FNAI is a non-profit conservation organization that maintains a database of recorded occurrences of rare habitat types and imperiled plant and wildlife species. FNAI classifies imperiled species on a 5-tiered rarity ranking system, both globally and state-wide, and also includes federal and state protection statuses for such species. FNAI is not a regulatory or law enforcement agency; however, FNAI's database was consulted for this study due to their comprehensive records of species occurrence.

The Florida Department of Agriculture and Consumer Services (FDACS) lists and regulates the economic use of flora identified as endangered, threatened, or commercially exploited. Typical economic uses include gathering live wild plants for resale as ornaments or harvesting of plant material (e.g., saw palmetto berries) for resale. Incidental destruction of rare flora caused by land clearing associated with construction or agriculture is not regulated or prohibited by FDACS.

The FNAI and FDACS lists of protected and commercially exploited flora were reviewed for species known to occur within Orange County, Florida, and the potential for such species to inhabit the study corridor. Protected flora species are those categorized by FWS and/or FWC as T, E, or exploited, thereby receiving a level of protection because of their status. The potential occurrence of protected flora species identified within the study corridor is based on the type of vegetative communities present. The probability of each species occurring within the study corridor is ranked using the following requirements:

1. **No** – indicates no suitable habitat is present. Suitable habitat is defined as intact natural land that is typically used by the species under consideration.
2. **Low** – indicates that marginally suitable habitat may exist within the study corridor, but the species was not observed during field observations. "Marginal" describes natural land that has been altered from its native state due to human activity, ecological succession, or conversion; however, the species under consideration could still inhabit the area.
3. **Moderate** – indicates that suitable habitat exists within the study corridor, but the species was not observed during field observations.
4. **High** – indicates that suitable habitat exists within the study corridor and the species of interest was observed during field observations.

Table 5 lists the federally and/or state-protected flora species known to occur in Orange County, Florida, and their potential for occurrence within the study corridor.

Table 5: Federally and/or State-Protected Flora Known to Occur within Orange County, Florida, and Potential for Occurrence within the Chuluota Road RCA

Scientific Name	Common Name	FWS Status	FWC Status	Occurrence Potential	Habitat
<i>Bonamia grandiflora</i>	Florida bonamia	T	E	No	Openings or disturbed areas in white sand scrub on central Florida ridges, with scrub oaks, sand pine, and lichens
<i>Calopogon multiflorus</i>	Many-flowered grass-pink	--	T	No	Dry to moist flatwoods with longleaf pine, wiregrass, and saw palmetto
<i>Centrosema arenicola</i>	Sand butterfly pea	--	E	Low	Sandhill, scrubby flatwoods, and dry upland woods
<i>Clitoria fragrans</i>	Scrub pigeonwing	T	E	Low	Turkey oak barrens with wire grass, bluejack and turkey oak; also scrub and scrubby high pine
<i>Coelorachis tuberculosa</i>	Piedmont jointgrass	--	T	Low	Ephemeral ponds and margins of sandhill upland lakes or depression marshes with sandy peat or sandy muck-peat
<i>Coleataenia abscissa</i>	Cutthroatgrass	--	E	Low	Wet flatwoods, prairies, and seepage areas
<i>Deeringothamnus pulchellus</i>	Beautiful pawpaw	E	E	Low	Open slash or longleaf pine flatwoods with wiregrass and dwarf live oak understory
<i>Eriogonum longifolium</i> var. <i>gnaphalifolium</i>	Scrub buckwheat	T	E	No	Sandhill, oak-hickory scrub on yellow sands, high pineland between scrub and sandhill, turkey oak barrens
<i>Illicium parviflorum</i>	Star anise	--	E	No	Banks of spring-run or seepage streams, bottomland forest, hydric hammock, and baygall dominated by red maple and sweet bay
<i>Lechea cernua</i>	Nodding pinweed	--	T	Low	Open, unshaded white sands of scrub and scrubby flatwoods; often associated with Florida rosemary (<i>Ceratiola ericoides</i>)
<i>Lechea divaricata</i>	Pine pinweed	--	E	Low	Scrub and scrubby flatwoods
<i>Lupinus aridorum</i>	Scrub lupine	E	E	No	Openings in sand pine and rosemary scrub
<i>Lythrum flagellare</i>	Florida loosestrife	--	E	Low	Seasonally inundated areas, such as wet prairies, floodplain marshes, and roadside ditches, in mucky or peat muck soils
<i>Matelea floridana</i>	Florida spiny-pod	--	E	No	Sandhill, upland pine, and dry hammock
<i>Najas filifolia</i>	Narrowleaf naiad	--	T	Low	Floating annual plant, prefers dark water less than 2 meters deep
<i>Nemastylis floridana</i>	Celestial lily	--	E	Low	Wet flatwoods (often in cabbage palm flatwoods variant), prairies, marshes, and cabbage palm hammock edges

Scientific Name	Common Name	FWS Status	FWC Status	Occurrence Potential	Habitat
<i>Nolina atopocarpa</i>	Florida beargrass	--	T	Low	In grassy areas of mesic and wet flatwoods
<i>Nolina brittoniana</i>	Britton's beargrass	E	E	Low	Scrub, sandhill, scrubby flatwoods, and xeric hammock
<i>Ophioglossum palmatum</i>	Hand fern	--	E	No	Old leaf bases of cabbage palms in maritime hammocks and wet hammocks
<i>Paronychia chartacea</i>	Paper-like nailwort	T	E	No	Sandy openings around sandhill upland lakes and karst ponds; Lake Wales Ridge scrub
<i>Pecluma plumula</i>	Plume polypody	--	E	Low	Wet hammocks and swamps; epiphytes on live oaks
<i>Pecluma ptilota</i>	Comp polypody	--	E	Low	Rockland hammocks, strand swamps, and wet woods at the base of trees and fallen logs
<i>Platanthera integra</i>	Yellow fringeless orchid	--	E	Low	Open wet prairies, wet flatwoods, bogs, and seepage slopes
<i>Polygonum dentoceras</i>	Small's jointweed	E	E	No	Open, sandy areas within scrub, mostly white sand
<i>Prunus geniculata</i>	Scrub plum	E	E	No	Sandhill and oak scrub
<i>Orthochilus ecristatus</i>	Giant orchid	--	T	Low	Sandhill, scrub, pine flatwoods, and pine rocklands
<i>Salix floridana</i>	Florida willow	--	E	Low	Wet, mucky soils in bottomland forests, floodplains, hydric hammocks, swamps, edges of spring-runs, and streams
<i>Schizachyrium niveum</i>	Pinescrub bluestem	--	E	No	White sand patches in rosemary scrub; also, sand pine scrub and oak scrub
<i>Stylisma abdita</i>	Scrub stylisma	--	E	No	Dry sandy soils in scrub and sandhills
<i>Warea amplexifolia</i>	Clasping warea	E	E	No	Limited to sunny openings with exposed sand in longleaf pine/turkey oak/wiregrass sandhills
<i>Zephyranthes simpsonii</i>	Redmargin zephyrlily	--	T	Moderate	Wet flatwoods and meadows; ditches and wet pasturelands
Commercially Exploited					
<i>Encyclia tampensis</i>	Butterfly orchid	--	--	Moderate	Epiphytic perennial in mesic hammocks, hardwood swamps, and mangrove forests; found on old live oaks, bald cypress, mangroves, and pond apples
<i>Epidendrum conopseum</i>	Green-fly orchid	--	--	Moderate	On trees in moist hammocks, cypress, and hardwood swamps
<i>Lycopodiella cernua</i>	Staghorn clubmoss	--	--	Moderate	damp areas, on ground, in full sun to shade

Scientific Name	Common Name	FWS Status	FWC Status	Occurrence Potential	Habitat
<i>Osmunda cinnamomea</i>	Cinnamon fern	--	--	Moderate	Swamps and wetlands
<i>Osmunda regalis</i>	Royal fern	--	--	Moderate	Swamps and wetlands
<i>Rhapidophyllum hystrix</i>	Needle palm	--	--	No	Moist-wet sites, seepage slopes, regularly but shallowly inundated floodplains, seepage swamps (especially associated with springs), hydric seepage slopes, and at times, some of the adjacent non-hydric slope, hydric hammock, moist upland bluffs adjacent to rivers
<i>Serenoa repens</i>	Saw palmetto	--	--	High	Wet to dry flatwoods and hammocks

E = Endangered, T = Threatened, SSC= Species of Special Concern, T S/A = Threatened Similar in Appearance

Data Source: FNAI Tracking List Orange County, Florida (FNAI 2022) Plants Institute for Systematic Botany (Wunderlin 2021); Florida Department of Agriculture (FDA) Endangered, Threatened, and Commercially Exploited Species (Florida Department of Agriculture and Consumer Services 2020-2021);

5.0 Federally and State-Protected Wildlife Species

Literature reviews and database queries were conducted to identify federally and/or state-protected wildlife species known to occur in Orange County, Florida, and the potential occurrence of such species to inhabit the study corridor. Federally and/or state-protected wildlife species are those categorized by FWS and/or FWC as T, E, or SSC, thereby receiving a level of protection due to their listed status. The potential occurrence of protected wildlife species within the study corridor is based on the and the type and quality of vegetative communities present. The probability of each wildlife species occurring within the study corridor is ranked using the following requirements:

1. **No** – Indicates no suitable habitat is present. Suitable habitat is defined as intact natural land that is typically used by a species under consideration.
2. **Low** – Indicates marginally suitable habitat may exist within the study corridor, but the species was not observed during field observations. “Marginal” describes natural land that a species under consideration could inhabit but that has been altered from its native state due to human activity, ecological succession, or conversion.
3. **Moderate** – Indicates suitable habitat exists within the study corridor, but the species was not observed during field observations.
4. **High** – Indicates suitable habitat exists within the study corridor, and the species of interest was observed during field observations.

Table 6 provides a summary of federally and/or state-protected species known to occur in Orange County, Florida, and their potential for occurrence within the study corridor. Protected wildlife species that have moderate or high potentials to occur within the study corridor are discussed in detail in the following paragraphs, as are species whose consultation areas fall within the study corridor.

Table 6: Federally- and/or State-Protected Wildlife Species Known to Occur in Orange County, Florida, and the Potential for Occurrence within the Chuluota Road RCA.

Scientific Name	Common Name	Protection Status	Occurrence Potential	Consultation Area	Habitat
Fish					
<i>Pteronotropis welaka</i>	Bluenose shiner	ST	No	--	Quiet backwaters and pools of blackwater streams; rivers and spring runs, usually with thick vegetation nearby
Reptiles					
<i>Alligator mississippiensis</i>	American alligator	FT(S/A)	Moderate	--	Various aquatic habitats
<i>Drymarchon corais couperi</i>	Eastern indigo snake	FT	Low	--	Wide variety of habitats
<i>Gopherus polyphemus</i>	Gopher tortoise	ST	Moderate	--	Sandhills, scrub, hammocks, dry prairies, flatwoods, and mixed forests
<i>Pituophis melanoleucus mugitus</i>	Florida pine snake	ST	Low	--	Sandhills, scrubby flatwoods, xeric hammocks, and ruderal areas
<i>Lampropeltis extenuate</i>	Short-tailed snake	ST	Low	--	Longleaf pine and xeric oak sandhills
<i>Plestiodon reynoldsi</i>	Sand Skink	FT	No	No	Rosemary scrub, scrubby flatwoods, sand pine, and oak scrub
Birds					
<i>Haliaeetus leucocephalus</i>	*Bald eagle	--	Low	--	Forested areas adjacent to bodies of water
<i>Polyborus plancus audubonii</i>	Audubon's Crested Caracara	FT	Low	Yes	Open country, dry prairie, and ruderal areas
<i>Laterallus jamaicensis</i>	Eastern black rail	FT	Low	--	Salt and freshwater marshes
<i>Rostrhamus sociabilis</i>	Everglade snail kite	FE	Moderate	Yes	Freshwater marshes, vegetated fringes of shallow lakes and ponds
<i>Athene cunicularia floridana</i>	Florida burrowing owl	ST	Low	--	Sparsely vegetated sandhills, dry prairies, and ruderal areas
<i>Antigone canadensis pratensis</i>	Florida sandhill crane	ST	High	--	Shallow wetlands, freshwater marshes, and wet prairies
<i>Aphelocoma coerulescens</i>	Florida scrub-jay	FT	Low	Yes	Scrub and scrubby flatwoods
<i>Egretta caerulea</i>	Little blue heron	ST	Moderate	--	Marshes, ponds, and rivers
<i>Picoides borealis</i>	Red-cockaded woodpecker	FE	Low	Yes	Open, mature pine flatwoods
<i>Egretta tricolor</i>	Tricolored heron	ST	Moderate	--	Marshes, ponds, and rivers
<i>Platalea ajaja</i>	Roseate spoonbill	ST	No	--	Coastal mangroves, Brazilian pepper on man-made dredge spoil islands, and willow heads of freshwater

Scientific Name	Common Name	Protection Status	Occurrence Potential	Consultation Area	Habitat
<i>Mycteria americana</i>	Wood stork	FT	Moderate	--	Fresh and brackish forested wetlands, swamps, ponds, and marshes

Occurrence Potential = No, Low, Moderate, High

Consultation Area = Identified within consultation area as depicted by FWS and/or FWC GIS Data

Code Key: FE = Federally Designated Endangered, ST = State-Designated Threatened, FT = Federally Designated Threatened, FT S/A = Federal Designated Threatened due to Similar in Appearance

Data Source: FWS ECOS (FWS 2021); FNAI (FNAI 2022)

Florida's endangered species, and threatened species (FWC 2021)

*Protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act

5.1 Bald Eagle

Although the bald eagle (*Haliaeetus leucocephalus*) is delisted, the species remains protected through the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. Florida has one of the densest concentrations of nesting bald eagles in the lower 48 states, with several clustered around significant lake, river, and coastal systems throughout the state (FWC 1999-2021). Bald eagles typically nest and roost in forested habitats that consist of mature canopy trees along habitat edges, allowing an unobstructed view of surrounding areas. Daytime roosts are often found in the highest trees and adjacent to shorelines. High-quality foraging habitat for bald eagles has a diversity and abundance of prey, access to shallow water, and tall trees or structures (FWC 1999-2021).

The AEW Program monitors nest sites during nesting season. Data provided on the AEW website is updated through the 2020–2021 nesting season (Audubon Society 2021). MSE biologists queried the AEW database for known bald eagle nest sites within a 1-mile radius of the study corridor. One bald eagle nest, nest ID OR074, was identified approximately 0.5 mile west of Chuluota Road (**Figure 7**). This nest has not been monitored, and its status is unknown at this time.

No nest sites were observed during site reviews. It is anticipated that the proposed project will not adversely impact the bald eagle or nesting trees. It is recommended that the database for documented bald eagle nest sites be queried, and a site review be conducted during the design and permitting phase of this project to verify nesting statuses at that time.

5.2 Federally Protected Wildlife Species

5.2.1 American Alligator

FWS considers the American alligator (*Alligator mississippiensis*) threatened due to similarity in appearance to the federally endangered American crocodile (*Crocodylus acutus*). The American alligator inhabits fresh and brackish marshes, ponds, lakes, rivers, swamps, bayous, and large spring runs; it is found in salt marsh and estuarine habitats in some parts of the state (Scott 2004). Alligators play a vital role in creating and maintaining microhabitats (gator holes), which can offer refuge to a host of species in water source habitats. A nest consists of a mound of compacted earth and vegetation, usually 4–7 feet in diameter, with nesting season occurring in the spring (Scott 2004). The alligator has a wide variety of food sources, including fish, ducks, wading birds, raccoons, and turtles.

The American alligator is known to inhabit a wide variety of aquatic habitats, including stormwater management ponds. Although this species was not observed during ground-truth activities, there is potential for the species to cross between wetland systems under Chuluota Road through drainage culverts.

The proposed roadway improvements include widening travel lanes throughout the study corridor and maintaining hydrologic connections (culverts) to systems located east and west of Chuluota Road, thus

allowing the movement of this species. Roadway improvements within this study area are not likely to adversely affect this species or its habitat.

5.2.2 Audubon's Crested Caracara

FWS lists the crested caracara (*Polyborus plancus audubonii*) as threatened. This species is typically found in dry or wet prairies with scattered cabbage palms and improved/unimproved pasturelands (FWS 2019a). Nest sites are typically found in the tallest cabbage palm in the area or other structures free of dense vegetation. Caracara birds are opportunistic feeders, with their diets consisting of insects, fish, snakes, turtles, birds, and mammals (rabbits, skunks, prairie dogs).

The study corridor lies within the northern limits of FWS's consultation area for this species (**Figure 8**) and supports suitable habitat within the northern limits of the corridor. Although suitable habitat consisting of improved pastures and scattered cabbage palms is present, this species was not observed during site reviews. If proposed impacts to cabbage palms are identified during final design, FWS may request that a formal survey be conducted using FWS's "Recommended Management Practices and Survey Protocols for Audubon's Crested Caracaras (*Caracara cheriway audubonii*) in Florida" (FWS 2001). Surveys should be conducted between January and March, when nesting is at its peak and adults are likely to be feeding nestlings, or between March and April, when chicks have fledged the nest and adults are active.

No crested caracaras were observed during site review, and it is anticipated that the proposed roadway improvements will not adversely affect the crested caracara; however, additional surveys may be necessary based on final design.

5.2.3 Florida Scrub-Jay

FWS lists the Florida scrub-jay (*Aphelocoma coerulescens*) as threatened. This species is typically found in sand pine, xeric oak scrub, and scrubby flatwoods with sandy soils and fire-dominated habitat types. The scrub-jay's diet consists mainly of acorns, arthropods, berries, seeds, and a wide variety of insects (Woolfenden and Fitzpatrick 1996).

The study corridor lies within the consultation area for the Florida scrub-jay (**Figure 9**); however, no suitable habitat is present within the study corridor. It is anticipated that this species will not be adversely impacted, and a formal survey following FWS's protocol is not anticipated for this species.

5.2.4 Red-Cockaded Woodpecker

FWS lists the red-cockaded woodpecker (RCW) (*Picoides borealis*) as endangered. The RCW is known to inhabit mature pine forests to bore out cavities in living pines (FWS 2020). Cavity trees can be in clusters of trees found on an average of 10 acres. The size of the RCW's territory is dependent upon habitat suitability. The RCW's diet consists primarily of insects (egg, larval, and adult stages) found on or in pine trees. Large, older pine trees are preferred, as the RCW's foraging method includes flaking away bark and probing under bark (FWS 2020).

Although the study corridor lies within the RCW consultation area (**Figure 10**), no suitable habitat was identified during site reviews. It is anticipated that this species will not be adversely impacted, and formal surveys will likely not be needed.

5.2.5 Snail Kite

FWS lists the snail kite (*Rostrhamus sociabilis plumbeus*) as endangered. The snail kite is found near extensive, open freshwater marshes and lakes with shallow water and a low density of emergent vegetation of natural and artificial systems (FWS 1986). The apple snail (*Pomacea paludosa*) is the snail

kite's primary food source, making the snail kite's survival dependent on the hydrology and water quality of watersheds associated with the Everglades, Lake Okeechobee, Kissimmee Valley, and the upper St. Johns River (FWS 1986).

The study corridor lies within the FWS consultation area for this species; however, it is outside of the FWS designated "critical habitat" (**Figure 11**). Neither the snail kite nor apple snails were observed within the study corridor. If stormwater pond locations or alignments shift during the final design, it is recommended that a site review be conducted for the species. It is anticipated that the proposed project will not adversely impact the snail kite or its habitat.

5.2.6 Wood Stork

FWS lists the wood stork (*Mycteria americana*) as threatened. This species is typically found in freshwater marshes, swamps, lagoons, ponds, flooded fields, depressions in marshes, and brackish wetlands. The core foraging areas (CFA) for this species include areas of very shallow water, generally 6–10 inches in depth, where there is an abundance of small fishes and other aquatic life. These small fishes may include mosquitofish, sailfin mollies, flagfish, and several species of sunfish. Wood storks may also prey on frogs, salamanders, snakes, crayfish, insects, and baby alligators (Scott 2004). Suitable foraging habitat is defined in "The Corps of Engineers, Jacksonville District, U.S. Fish and Wildlife Service, Jacksonville Ecological Services Field Office, and State of Florida Effect Determination Key for the Wood Stork in Central and North Peninsular Florida" (USACE, FWS, FWC 2018) as "any area containing patches of relatively open (25% aquatic vegetation), calm water, and having a permanent or seasonal water depth between 2 and 15 inches."

FWS has identified a 15-mile radius CFA around known wood stork colonies. This CFA is deemed essential for reproductive success. The study corridor is within the 15-mile CFA of two wood stork colonies (**Figure 12**):

- **Lake Mary Jane** last active 2019 (FWS 2010-2019), located approximately 12.7 miles south.
- **Orlando Wetland Park** last active 2018 (FWS 2010-2019), located approximately 8.9 miles east.

Impacts to suitable foraging habitat are not anticipated to result from the proposed project. Using the "Effect Determination Key for the Wood Stork in Central and North Peninsular Florida" (USACE, FWS, FWC 2018) to evaluate the project's effect on the wood stork, the following were concluded:

- The project corridor is more than 2,500 feet from a colony.
- The proposed work will not affect suitable foraging habitat.

Because of this, the proposed project received a determination of "no effect" (**Attachment A**).

5.3 State-Protected Wildlife Species

5.3.1 Gopher Tortoise

FWC lists the gopher tortoise (*Gopherus polyphemus*) as threatened. The gopher tortoise inhabits subterranean burrows in dry upland habitats, such as longleaf pine sandhills, xeric oak hammocks, scrub, pine flatwoods, dry prairies, and coastal dunes. Gopher tortoises can also be found in pastures, ruderal fields, and grassy roadsides. To be suitable for gopher tortoises, the habitat must have well-drained sandy soils for digging burrows, herbaceous plants, and open sunny areas for nesting and basking.

Periodic natural fires play an important role in maintaining tortoise habitat by opening the canopy and promoting growth of herbaceous plants used for forage. If natural fires are suppressed, the habitat becomes

unsuitable for gopher tortoises (Cox, Inkley and Kautz December 1987). Gopher tortoise burrows are an important habitat to many native species. It is estimated that 39 invertebrates and 42 vertebrate species use gopher tortoise burrows to some degree (Cox, Inkley and Kautz December 1987). Of those species, protected species that frequently inhabit gopher tortoise burrows include the Florida pine snake, eastern indigo snake, and burrowing owl. This commensal relationship warranted field investigation for such species within the study corridor.

Although suitable habitat for the gopher tortoise was found within the northern limits of the corridor, no burrows were identified during the site review; however, this area is not precluded from gopher tortoises entering the property and establishing burrows. During final design, and prior to construction activities, it is recommended that a survey for gopher tortoise burrows be conducted in accordance with FWC's "Gopher Tortoise Permitting Guidelines" (FWC 2008/Revised Effective July 2020). Should gopher tortoise burrows be identified, coordination with FWC will be required.

5.3.2 Florida Sandhill Crane

FWC lists the Florida sandhill crane (*Antigone canadensis pratensis*) as threatened. The Florida sandhill crane is a non-migratory bird found in freshwater marshes, prairies, and pastures. Florida sandhill cranes tend to avoid areas with taller vegetation or dense forest canopies and prefer habitat with short vegetation (e.g., less than 20 inches high in uplands) (FWC 2019). The sandhill crane is often found foraging in a variety of open habitats, including roadsides. Their diet consists of berries, seeds, insects, mice, small birds, snakes, lizards, and frogs. Shallow freshwater marshes with an average water depth of 4–13 inches are critical for nesting and roosting (FWC 2019). Additionally, uplands adjacent to nesting marshes are important for young until they are able to fly (FWC 2019).

Suitable foraging and nesting habitat was found within the study corridor, and the species was observed foraging within uplands and wetlands adjacent to Chuluota Road, but no active nest sites were observed. FWC recommends conducting a survey following the Florida Sandhill Crane Survey Protocol (**Attachment B**) between December and August for active nest sites. If no active nests are detected, no additional coordination with FWC is required. The Florida sandhill crane was observed foraging within the right-of-way and WL-3 during site reviews.

5.3.3 Wading Birds

FWC lists the little blue heron (*Egretta caerulea*) and tricolored heron (*Egretta tricolor*) as threatened. These species are typically found in marshes, ponds, lakes, meadows, mudflats, lagoons, streams, mangrove lagoons, and other bodies of shallow water. Their diet consists of various types of fish, amphibians, and invertebrates. Nesting generally occurs in both coastal and freshwater environments in swamps and mangrove forests. They share nesting sites with other wading birds to form rookery colonies (Rodgers, Jr., Kale, II and Smith 1996).

These species were not observed during ground-truth activities. Measures to mitigate impacts to wetlands can be designed to provide additional benefits to wetland dependent species potentially impacted by this project.

5.4 Non-Protected Wildlife Species

In addition to federally and/or state-protected wildlife, the study corridor supports habitat for non-protected species. Wildlife species observed during site reviews include the following: great egret (*Ardea alba*), red-shoulder hawk (*Buteo lineatus*), brown anole (*Anolis sagrei*), mockingbird (*Mimus polyglottos*), and black vulture (*Coragyps atratus*). Areas within the study corridor may provide resting, nesting, and foraging

opportunities for wetland dependent wildlife species and migratory birds.

6.0 Regulatory Requirements

Federal, state, and local government agencies are charged with protecting jurisdictional wetlands and surface waters, and protected wildlife species, and their habitats. A discussion of each agency's general requirements in protecting such features is provided below.

6.1 Federal Requirements

6.1.1 U.S. Army Corps of Engineers

The Department of the Army, through its regulatory division, regulates the discharge of dredge or fill material into waters of the United States (WOTUS) under Section 404 of the Clean Water Act (CWA), and in navigable waters of the United States under Sections 9 and 10 of the Rivers and Harbors Act of 1899 (RHA) (USACE n.d.). The term "navigable waters of the United States" is defined to include all waters that are subject to the ebb and flow of the tide, and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce (33 Code of Federal Regulations, Part 329, n.d.). Since 1970, the USACE and U.S. Environmental Protection Agency (EPA) have defined wetlands under the CWA as "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" and "wetlands [that] generally include swamps, marshes, bogs, and similar areas" (EPA n.d.).

On June 22, 2020, the Navigable Waters Protection Rule (NWPR) became effective codifying the definition of "water of the United States" under the CWA. The NWPR includes four categories of jurisdictional waters and provides specific exclusions for many water features that traditionally had been regulated (Federal Register Vol. 85, No 77, April 21, 2020). In this final rule, "waters of the United States" include the following:

1. Territorial seas and traditional navigable waters
2. Perennial and intermittent tributaries that contribute surface flow to such waters
3. Certain lakes, ponds, and impoundments of jurisdictional waters (dams)
4. Wetlands adjacent to other jurisdictional waters

On August 30, 2021, the U.S. District Court for the District of Arizona ordered the June 22, 2020, definition of waters of the United States vacated and remanded the NWPR. With this ruling in place, the EPA and USACE have halted the implementation of the NWPR and are interpreting waters of the United States consistent with the pre-2015 regulatory regime until further notice (EPA 2021a). The term "waters of the U.S." pre-2015 means (EPA 2021b):

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide
2. All interstate waters including interstate wetlands
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce including any such waters:
 - a. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or

- b. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - c. Which are used or could be used for industrial purposes by industries in interstate commerce
4. All impoundments of waters otherwise defined as waters of the United States under this definition
 5. Tributaries of waters identified in paragraphs (1) through (4) of this section
 6. The territorial sea
 7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (s)(1) through (6) of this section
 8. Waters of the United States do not include
 - o prior converted cropland
 - o waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition)

To determine if a wetland system meets jurisdiction under the USACE rules and regulations, an applicant may submit for an Approved Jurisdictional Determination (AJD). USACE will review wetland and/or other surface water systems within limits of a project and verify presence/absence of waters of the United States under the NWPR. If federal jurisdiction is determined, impacts to wetland systems would require coordination with USACE to obtain one of the following three types of permits (USACE Jacksonville n.d.):

- **Nationwide Permits (NWP)** – NWPs are used to allow filling of wetlands and other jurisdictional waterbodies in situations where impacts to systems will have minimal adverse environmental effect. NWPs allow certain categorical activities to take place so long as the activity does not exceed impact thresholds.
 - o **NWP 14 – Linear Transportation Projects** – This permit is available for projects such as roadways, highways, railways, trails, airport runways, and taxiways. For issuance of an NWP-14, a project must have 0.5-acre or less of impacts to USACE-regulated waters, for non-tidal waters.
- **General Permits (GP)** – GPs are issued on a nationwide or regional basis for a category of activities that are substantially similar in nature and cause only minimal individual and cumulative impacts. GPs are reviewed every 5 years and have been developed to reduce the burden of the regulatory program on the public and ensure timely issuance of permits.
- **Standard Permits (SP)** – SPs are required when the proposed project does not meet the criteria of a GP or NWP. SPs require a 21-day comment period under public notice.

In addition to direct wetland impacts, USACE considers secondary impacts (lighting, noise, trash) that may result from the upland activity. During the design phase, wetlands and other surface water systems will need to be delineated in accordance with federal regulations to accurately determine impacts. Unavoidable direct and secondary impacts to “waters of the United States” may be offset through appropriate mitigation.

During final design and permitting, it will be necessary to review federal regulations at that time to determine the appropriate regulatory agency under which this project will be jurisdictional.

6.1.2 Federal Delegation

In December 2020, the Environmental Protection Agency (EPA) approved the Florida Department of Environmental Protection’s (FDEP) application to adopt the federal 404 program, known as the “State

404 Program”. State assumption over the 404 program intends to streamline permitting procedures, in which both federal and state permits are required for impacts to jurisdictional wetland and surface waters.

FDEP, under Chapter 62-331, assumed jurisdiction over dredging and filling in waters of the US regulated by the State (Section 373.4145, FS) effective December 22, 2020. Section 404 of the CWA allows for authorization of activities within certain waters (state-assumed waters) to be issued by FDEP. State-assumed waters are all waters of the US that are not retained USACE. Retained Waters are “those waters which are presently used or are susceptible to use in their natural condition or by reasonable improvement to transport interstate or foreign commerce shoreward to their ordinary high-water mark, including all waters which are subject to the ebb and flow of the tide shoreward to their mean high-water mark, including wetlands adjacent thereto. The Corps will retain responsibility for permitting for the discharge of dredged or fill material in those waters identified in the Retained Waters List, as well as all waters subject to the ebb and flow of the tide shoreward to their mean high-water mark that are not specifically listed in the Retained Waters List, including wetlands adjacent thereto landward to the administrative boundary. The administrative boundary demarcating the adjacent wetlands over which jurisdiction is retained by the USACE is a 300-foot guideline established from the ordinary high-water mark or mean high tide line of the retained water” (FDEP 2020).

If impacts to state-assumed wetland systems are proposed, coordination with FDEP would be necessary to obtain the necessary permit; however, regulations should be reviewed during final design and permitting to determine which agency will review the project under federal regulations.

During the design phase, wetlands and other surface water systems will need to be delineated in accordance with federal regulations to accurately determine impacts. Unavoidable direct and secondary impacts to “waters of the United States” may be offset through appropriate mitigation.

6.1.3 U.S. Fish and Wildlife Service

FWS regulates protected wildlife species under the Endangered Species Act (ESA) of 1973. FWS typically becomes involved during the wetland permitting process through a Section 7 Consultation with USACE. In accordance with the Fish and Wildlife Coordination Act (16 USC 661-666c), consultation with FWS and FWC is necessary when “waters of any stream or other body of water are proposed or authorized to be impounded, diverted,...or otherwise controlled or modified” under a federal permit.

Section 10 of the ESA is designed to regulate a wide range of activities affecting endangered or threatened organisms and their habitats (protected resources). With some exceptions, the ESA prohibits activities affecting these protected species and their habitats unless authorized by a permit from FWS or the National Marine Fisheries Service (NMFS). Permitted activities are designed to be consistent with the conservation of the species and this action is undertaken when USACE permitting is not required.

During consultation with FWS, the agency will evaluate the project and provide one of the following determinations for each species identified within the project area:

- **No effect** – USACE has determined that the project will not adversely impact the species and no further coordination with FWS is required.
- **May affect** – USACE has determined that the proposed project may impact a protected resource. USACE will consult with FWS to take either of the following actions:
 - Request concurrence with “may affect, but not likely to adversely affect.”
 - Request initiation of formal consultation for determinations of “may affect, likely to adversely affect.”

Both requests should include written analysis explaining the determination in the form of a Biological Assessment (BA) or a Biological Evaluation (BE) (FWS 2016).

Desktop analysis and site reviews did not identify critical foraging, resting, or nesting habitat within the study corridor for federally protected wildlife; therefore, coordination with FWS is not anticipated. If proposed pond locations or alignments shift during final design, additional site reviews and surveys may be warranted.

6.2 State Requirements

6.2.1 St. Johns River Water Management District

The state of Florida defines wetlands as “those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and under normal circumstances, do support, a prevalence of vegetation typically adapted for life in saturated soils” (Chapter 62-340.200 FAC). SJRWMD regulates impacts to wetlands and/or other surface waters, pursuant to Part IV Chapter 373 of the Florida Statute (FS), and in accordance with Chapter 62-330 FAC for area of the Chuluota Road RCA. SJRWMD requires an Environmental Resource Permit (ERP) that authorizes activities in a manner that prevents flooding, manages surface water, and protects water quality, wetlands, and other surface waters.

6.2.1.1 Direct Impacts, Elimination and Reduction of Impacts

As part of the permit process, SJRWMD rules and regulations require the applicant to evaluate the elimination or reduction of impacts to wetland and/or other surface water systems. When reviewing an application, SJRWMD considers the following:

- The degree of impact to the wetland and other surface water functions caused by a proposed activity.
- Whether the impact to these functions can be mitigated.
- The practicability of design modification that could eliminate or reduce impacts to these functions, including alignment alternatives for a proposed linear system.

6.2.1.2 Secondary Impacts

Pursuant to Section 10.1.1(f) of the ERP Applicant’s Handbook (AH) (General and Environmental) Volume 1 (December 22, 2022), an applicant must ensure that a regulated activity will not cause adverse secondary impacts to the water resources. Secondary impact criterion consists of the following four parts in which an applicant must provide reasonable assurance that secondary impacts from construction, alteration, and intended or reasonable expected uses of a proposed project (Section 10.2.7 AH V1):

- will not cause violations of water quality standards or adverse impacts to the functions of wetlands or other surface waters
- will not adversely impact the ecological value of uplands to federal and/or state protected aquatic and wetland dependent wildlife species for enabling existing nesting or denning by these species (excluding areas needed for foraging or wildlife corridors)
- will not impact any significant historical or archeological resource
- will not cause adverse impacts in later phases that are very closely linked and casually related to the intended project

6.2.1.3 Cumulative Impacts

Pursuant to Section 10.1.1(g) of SJRWMD’s ERP AH, an applicant must provide reasonable assurance that a regulated activity will not cause unacceptable cumulative impacts to wetlands and other surface waters within the same drainage basin. Cumulative impacts to water quality are evaluated by criterion set in Section 10.1.1(C), and by evaluating impacts to functions identified in Section 10.2.2 ERP AH. If an

applicant proposes to mitigate impacts within the same drainage basin as the impacts, and if the mitigation fully offsets these impacts, then SJRWMD will consider the regulated activity to have no unacceptable cumulative impacts on wetlands and other surface waters, and the condition for issuance in section 10.1.1(g) will be satisfied.

6.2.1.4 Riparian Habitat Protection Zone

Section 13.4.3 of SJRWMD's ERP AH states wetlands abutting the Econlockhatchee River, and its tributaries support an abundance and diversity of aquatic and wetland dependent wildlife and uplands associated with these wetlands provide protection and important habitat for these wildlife species. Section 13.4.3(a)(2) identifies uplands within 50 feet landward of the landward extent of wetlands associated with Econlockhatchee River and its' tributaries as Riparian Habitat Protection Zones (RHPZ). An applicant must provide reasonable assurance that construction, alteration, operation, maintenance, removal, or abandonment of a system within the RHPZ will not adversely affect the abundance, diversity, food source or habitat of aquatic or wetland dependent species. Section 13.4.3(a)(1), AH, identifies wetlands contiguous with Econlockhatchee River and tributaries as RHPZ. Uplands 50-feet landward of wetland systems considered contiguous to tributaries of Econlockhatchee River, as identified in the AH are considered RHPZ and require mitigation to offset impacts.

6.2.1.5 Mitigation

Adverse impacts remaining following design modifications to reduce and eliminate impacts may be offset through mitigation. Mitigation is not required for regulated activities in isolated wetlands, less than 0.5-acre in size, unless the system is used by protected wildlife species; located in an area of critical concern pursuant to Chapter 380, F.S.; or the wetland, or several isolated wetlands, are of more than minimal value to fish and wildlife. Pursuant to 10.2.2.2 alterations to wholly owned ponds constructed entirely in uplands, and less than 1-acre in size, and drainage ditches constructed in uplands will not require mitigation, unless these systems are found to provide significant habitat for protected wildlife species. Secondary impacts will not be considered adverse if an upland buffer, with a minimum of 15ft and average of 25ft, is provided around wetlands systems that will remain.

Direct and secondary wetland and RHPZ upland impacts may be offset through available mitigation options (e.g., preservation, creation, mitigation banking, etc). During the final design and permitting of the proposed project, wetlands and other surface water limits should be delineated in accordance with current regulations to accurately identify impacts. Mitigation to offset adverse wetland and/or other surface water impacts after reasonable attempts to reduce and/or eliminate impacts has been met, can be done through the purchase of mitigation credits from an approved mitigation bank. Mitigation credits to offset impacts to RHPZ wetlands and uplands must come from an approved bank with RHPZ credits.

6.2.2 Florida Fish and Wildlife Conservation Commission

Under Article IV Section 9 of the Florida Constitution, FWC has the authority to "exercise regulatory and executive powers of the state with respect to wildlife animal life and freshwater aquatic life" (FWC 2016, Ammended 2018). State-protected wildlife species, prohibitions, and permits are identified in Chapter 68A-27 FAC. FWC maintains Florida's Imperiled Species Management Plan 2016-2026 (FWC 2016, Ammended 2018), which is designed to conserve 57 fish and wildlife species over the next 10 years. FWC's Species Conservation Planning Section issue permits authorizing impacts to Florida's protected land-dwelling wildlife. Protected wildlife species are those identified as endangered, threatened, or species of special concern, as well as migratory birds and other species protected by state rules. Species Conservation Measures and Permitting Guidelines have been developed for 26 species to assist in

determining permit needs and minimizing impacts to wildlife. The guidelines are intended to provide clear information on requirements established in the FAC related to intentional and incidental take permitting, and guidance on species range, survey methodology, and recommended practices (FWC 2016, Draft Guidelines for 2021).

Desktop analysis and site review of the study corridor did not identify critical foraging, resting, or nesting state protected wildlife species; however, during final design and permitting it is recommended that the project corridor be re-evaluated for state protected wildlife species such as the gopher tortoise, as it may move into the area. Coordination with FWC should be based on surveys conducted at that time.

6.3 Local Government

6.3.1 Orange County Environmental Protection Division

The Orange County Environmental Protection Division (OCEPD) is a local government agency that regulates wetlands pursuant to Article X – Wetland Conservations Areas Section 15 (Orange County Government 2019). This ordinance classifies wetland systems by size, hydrologic connection, and use of the system by protected wildlife species. All wetland systems within unincorporated Orange County, Florida, are classified using the following criteria:

- Class I – System has a hydrologic connection to natural surface water bodies, or lake littoral zone; is 40 acres or larger in size; or provides critical habitat to federal- and/or state-protected wildlife species
- Class II – System consists of isolated wetlands or formerly isolated wetlands that have been altered to have a direct connection to other surface water drainage, and the system is greater than or equal to 5 acres or is not otherwise classified as a Class I wetland
- Class III – System is isolated wetland less than 5 acres and does not qualify as a Class I or Class II system

Class I wetland systems receive the greatest protection and may be impacted only when no alternative exists for the reasonable use of the land where there is an overriding public benefit. Class II wetland systems may be impacted except when contrary to public interest. Class III wetland systems may be impacted in every case.

OCEPD evaluates secondary impacts like that of SJRWMD with a 15-foot minimum, 25-foot average width into a system. In addition, direct and secondary impacts may be offset through appropriate mitigation.

7.0 Potential Impacts to Wetlands, Surface Waters, Wildlife, and Their Habitat

7.1 Potential Wetland and/or Other Surface Water and RHPZ Upland Impacts

Current ecological conditions within the study corridor were evaluated to determine the potential for adverse wetland and/or other surface water impacts, and RHPZ upland impacts associated with one alignment and 8 stormwater management pond locations. The potential for adverse impacts wetlands, surface waters, RHPZ, flora and fauna are described below.

7.1.1 Direct Impacts

This RCA corridor lies within the Econlockhatchee River Drainage Basin and includes RHPZ of the Econlockhatchee River and its tributaries (**Figure 13**). Section 13.4.3(a)(1), AH, identifies wetlands contiguous with Econlockhatchee River and tributaries and 50-foot landward of the wetland limits as RHPZ. Some wetland systems located within the Chuluota Road RCA study corridor are considered RHPZ wetlands via connection with Silcox Branch and Mill Branch, named tributaries of the

Econlockhatchee River. Impacts to wetland systems associated with roadway alignment and stormwater pond locations are identified in **Table 7** and depicted in **Figure 14-1** and **Figure 14-2**.

Table 7: Approximate Wetland and Other Surface Water Impacts Associated with Chuluota Road RCA

Wetland/Other Surface Water ID	FLUCFCS Code	Proposed Alignment Impact (ac)*	Proposed Pond ID	Proposed Pond Impact (ac)*	RHPZ Uplands (ac)*
WL-1	6170	0.33			
WL-2	6170				
WL-3	6410	0.16			
WL-7	6210		Pond 3A	0.73	1.09
WL-7	6210		Pond 3B	0.11	0.18
WL-8	6300		Pond 2B	0.97**	
WL-9	6250		Pond 1B	1.22**	0.07
SW-1	5130	2.73***			
Upland			FC Pond 1	0.05**	
TOTAL		3.22		3.08	1.34

* Impact acreages are based on approximate limits through aerial interpretation and limited ground-truthing activities.

** Impacts to a system or upland area under a recorded conservation easement. Additional mitigation is likely required to offset the mitigation value that was offset by the easement.

*** Upland-cut surface waters would not be jurisdictional unless inhabited by protected wildlife species.

7.1.2 Secondary Impacts

Federal, state, and local regulatory agencies with jurisdiction over the proposed wetland impacts evaluate potential secondary impacts to wetlands and wildlife during the permitting process. Secondary impacts from construction may include lighting, collisions with wildlife from vehicles, and impacts to water quality.

Generally, secondary impacts to the habitat function of wetlands will not be considered adverse if buffers, with a minimum width of 15 feet and an average width of 25 feet, are provided adjacent to the wetlands that will remain. Buffers must be maintained in their natural/undisturbed condition, provided the construction or use of these features does not adversely impact wetlands. Wetlands or other surface waters cannot be filled to create upland buffers.

Secondary impacts associated with stormwater pond locations and roadway alignment will need to be evaluated during the final design phase to ensure the proposed hydroperiod of the stormwater management system does not adversely affect the hydrology of an adjacent wetland systems.

7.1.3 Cumulative Impacts

SJRWMD requires an applicant to provide reasonable assurance that construction activities will not cause unacceptable cumulative impacts to wetlands and other surface waters in the same drainage basin as the proposed activities. During review, SJRWMD takes into consideration any potential future projects that may have environmental impacts, which, without the current project, would not otherwise be constructed.

If an applicant proposes to mitigate these adverse impacts within the same drainage basin as impacts, and if mitigation fully offsets these impacts, then the proposed construction will be considered to have no unacceptable cumulative impacts to wetlands and other surface waters. This section of Chuluota Road lies within the Econlockhatchee River Nested Basin; therefore, mitigation may be required within this basin to offset cumulative impacts.

7.1.4 Avoidance and Minimization

The proposed construction and widening of Chuluota Road will improve the level of service and enhance safety for the general public. Due to State and County roadway criteria, improvements to Chuluota Road may provide little opportunity to avoid and/or minimize adverse wetland impacts within the existing ROW. When evaluating practicable design modification to reduce or eliminate wetland impacts, regulatory agencies may not require avoidance and minimization when the following events occur:

- The ecological value the functions provide is low, and the proposed mitigation will provide greater long-term ecological value
- Proposed mitigation all or part of a plan that provides regional ecological value and provides greater long-term ecological value than the area of wetland or other surface water proposed for impacts

It is anticipated that jurisdictional wetland and/or other surface water systems within the Chuluota Road RCA study corridor will be avoided and/or minimized to the greatest extent practical while maintaining safety and function. Further avoidance and minimization efforts of wetlands should be evaluated during the final design.

7.1.5 Potential Impacts to Federally- and/or State-Protected Wildlife Species

The potential impact to federally- and/or state-protected wildlife species will be evaluated based upon occurrence determinations for Orange County, Florida, as shown in **Table 3**, and site reviews. Review of current ecological conditions within the study corridor found suitable habitat for wetland dependent species including wading birds, and the American alligator; however, impacts to wetland systems are not anticipated to adversely affect these species. Site reviews should be conducted during final design and permitting of this project to verify the presence or absence of federally and/or state protected wildlife species. If such species are observed within the corridor, coordination with FWS and/or FWC may be warranted.

8.0 Mitigation Assessments

Federal, state, and local government agencies with regulatory authority over wetlands and/or other surface waters generally require mitigation to offset unavoidable impacts as a condition of the permit. Mitigation requirements are based on a compilation of wetland parameters, including quality, type, function, and size. Impacts to wetlands and/or other surface waters will be avoided and minimized to the maximum extent possible while maintaining safe and sound engineering and construction practices. Primarily, avoidance and minimization efforts will be related to the proposed stormwater management pond locations.

A mitigation plan that adequately offsets adverse impacts should be developed and implemented during the permitting phase. Adverse wetland impacts that may result from the construction of this project will be mitigated, satisfying the requirements of Part IV, Chapter 373, FS and 33 U.S. Code (USC) 1344. Compensatory mitigation for this project will be completed through the use of mitigation banks and/or any other mitigation options that satisfy regulatory agency requirements.

Mitigation bank service areas and mitigation credit availability for Econlockhatchee River Nested Basins include Lake X Ranch, TM-Econ Phase I-III, and TM-Econ Phase IV. Orange County owned TM-Econ Phase IV is available for use, and the preferred option for required mitigation. **Table 8** provides a summary of TM-Econ Phase IV's service areas and available credits.

Table 8: Summary of Available Mitigation Credits from TM-Econ MB Phase IV for Chuluota Road RCA.

MB	Bank Service Area	*Credits Available
TM-Econ MB Phase IV, Orange County	(18) St. Johns River (Canaveral Marshes to Wekiva), (19) Econlockhatchee River Nested, (23) Lake Jesup, part of (20) Southern St. Johns River, Boggy Creek, Lake Hart, Lake Myrtle, and East Lake Toho	227.84 State (Includes RHPZ credits) 371.836 Federal

*Based on coordination with OCEPD personnel on May 3, 2022.

9.0 Wildlife Crossing

As part of the RCA ecological evaluation, the opportunity of implementing wildlife crossings within the study corridor was evaluated. Wildlife crossings are typically associated with linear projects when natural habitat is located on both sides of a proposed crossing and that habitat is protected from site conversion by having a preservation or conservation status. These crossings allow for terrestrial wildlife to move uninterrupted and safely through a roadway corridor.

9.1 Evaluation Criteria

The study corridor was analyzed for opportunities of implementing wildlife crossings. The analysis included a review of the following:

- Biodiversity Resource Priorities (BRP)
- Identification and location of conservation lands and/or public lands
- Current and future development plans

The CLIP was developed between FNAI, University of Florida GeoPlan Center and Center for Landscape Conservation Planning, and FWC. CLIP is a collection of spatial data that identifies statewide opportunities for protecting biodiversity, landscapes, and water resources in Florida. CLIP is available for use as a resource planning tool for state, regional, and local agencies in natural resource protection by providing a broad picture of natural resources to support conservation opportunities (NatureServe 2021). CLIP is organized into a set of core natural resource data layers that are combined into five resource categories, with the first three making up the Aggregated CLIP Model:

- Biodiversity
- Landscape
- Surface Water
- Groundwater
- Marine

The biodiversity matrix combines the following four core data included into the Biodiversity Resources Priorities (BRP) layer (Oetting, Hoctor and Volk 2016) :

- **Strategic Habitat Conservation Areas** – This identifies suitable habitat for one or more rare or vulnerable vertebrate species. Those species likely require this area in order to maintain viable populations in Florida for the foreseeable future. Highest priorities indicate the rarest or most vulnerable species, but all priority levels have conservation value. Priority is ranked from 1 (highest) to 5 (lowest)
- **Potential Habitat Richness** – This identifies suitable habitat for one or more rare or vulnerable vertebrate species. “Richness” refers to the number of species overlapping at any location and ranges from 1 to 13. This data layer was created by FWC to identify additional habitat areas important for conservation, beyond those areas identified in the Strategic Habitat Conservation Areas analysis

- **Rare Species Habitat Conservation Priorities** – This identifies suitable habitat for one or more rare or vulnerable species that are known to occur in the vicinity. Highest priorities could indicate a single species with very high conservation need, or multiple species with high conservation need. All priorities reflect rare species with conservation need. This layer includes occurrence-based habitat for 281 species with a high conservation need including plants, invertebrates, and vertebrates. This layer prioritizes places on the landscape that would protect both the greatest number of rare species and those species with the greatest conservation need. Priority is ranked from 1 (highest) to 6 (lowest)
- **Priority Natural Communities** – A given location features one of 12 priority natural community types: upland glades, pine rocklands, seepage slopes, scrub, sandhill, sandhill upland lakes, rockland hammock, coastal uplands, imperiled coastal lakes, dry prairie, upland pine, pine flatwoods, upland hardwood forest, or coastal wetlands. These natural communities are prioritized by a combination of their global status rank and landscape. Priority is ranked from 1 (highest) to 4 (lowest)

The BPR layer is based upon a location meeting one of the four core data layers to meet that priority class criteria. If a location meets more criteria, then the priority is moved higher for that location.

Based on a desktop review of the BPR data (**Figure 15**) areas within this RCA received a ranking between 2 and 5. Areas throughout the study corridor have been bisected through land development (e.g., roads, residential areas, commercial), suggesting a wildlife crossing location may not be feasible.

9.1.1 Conservation Lands

FDEP maintains GIS data available to the public through FDEP Map Direct. The Florida State Owned Lands and Records Information System (FL-SOLARIS) was implemented to maintain a database of property “owned, leased, rented, or otherwise occupied” by any state government agency. In 2017 FL-SOLARIS provided Conservation Lands, Easements, and Recreation (CLEAR), which contains conservation easements for federal, municipal, county, and special districts, as well as other entities as specified in 253.87, FS. This data is refreshed every 5 years (FDEP 2018).

Review of FDEP’s Map Direct FL-SOLARIS CLEAR data identifies several conservation areas within the study corridor (**Figure 16-1** and **16-2**).

9.1.2 Current Corridor Condition

Chuluota Road is currently a two-lane road with sidewalks and maintained ROW. This corridor of Chuluota Road includes residential, commercial, and institutional development, stormwater management areas, and areas of natural, undeveloped forested uplands and wetlands land use types. Undeveloped lands are located east and west of Chuluota Road but are bisected by development and roadways. Continuous uninterrupted natural habitat is not present within the study corridor.

9.1.3 Future Corridor Condition

The Chuluota Road study corridor is largely developed, with undeveloped parcels located at the north limit currently in agriculture (cattle ranch) use and one parcel located at the southern limits. This parcel is identified for construction of an access roadway. Current environmental resource permits or applications identified through SJRWMD include the following (**Figure 17**):

- **Cypress Lakes Phase I (Parcel P)** – Individual Permit No. 21001-14 – Issued May 12, 2021, expires May 12, 2026.

- **Yardco 0 – E Colonial** – Individual Permit 166225 – Issued March 30, 2021, expires March 30, 2026.

9.2 Selection of Potential Wildlife Crossing Locations

Two critical evaluation criteria are reviewed when determining the implementation and placement of wildlife crossings:

- The presence of natural habitat on both sides of the roadway that is protected from site alteration.
- The ability to construct a fence to guide wildlife to that crossing.

Therefore, if a potential wildlife crossing location currently has natural habitat on both sides of the roadway, is under private ownership, and the property owner prohibits the construction of a fence, or reserves the right to move or remove the wildlife fence in the future, the long-term viability of the location is greatly diminished.

Applying the above criteria, review of biodiversity data for the study corridor, existing natural habitat, and site reviews, one potential wildlife crossing location was evaluated south of Cypress Lake Glen Boulevard (**Figure 18**).

9.3 Application of Evaluation Criteria to Potential Wildlife Crossing Locations

Wildlife Crossing Location 1 – This location has natural habitat consisting of forested uplands and wetlands on both sides of the roadway, with the east parcel under conservation. The property located west of Chuluota Road is privately owned. Discussions with the current owners of this parcel indicate they plan to develop a portion of the site; however, this area was not identified as part of the development. In addition, the following items were noted at this location:

- **BPR** – This area is identified with a ranking of 4 west of and 3 east of Chuluota Road.
- **Conservation** – FL-SOLARIS CLEAR data indicates land under conservation easement is located east of the study corridor, with the remainder of the location not under conservation.
- **Current and Future Land Use** – This location consists of undeveloped of forested uplands and wetlands located on both sides of Chuluota Road; however, the eastern boundary of conservation area is bordered by existing development.

9.4 Wildlife Crossing Summary

Wildlife Crossing Location 1 – Based on the information and analysis presented above, and wildlife known to inhabit this area, a wildlife crossing is not justified due to the lack of sustainable natural communities and a continuous corridor for wildlife movement. A wildlife crossing in this location may be reconsidered in the future should plans to develop the area west of Chuluota Road.

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Figures



Legend

- Chuluota Road RCA Study Corridor
- Preferred Pond
- Flood Compensation Pond
- Alternate Pond

Service Layer Credits: ESRI Street Map
Study Corridor/Pond Locations (JMT 2022)

0 600 1,200 Feet

DRN: LMO APR: KJT

DATE: 2.28.2022 OCPN: Y20-830-CH

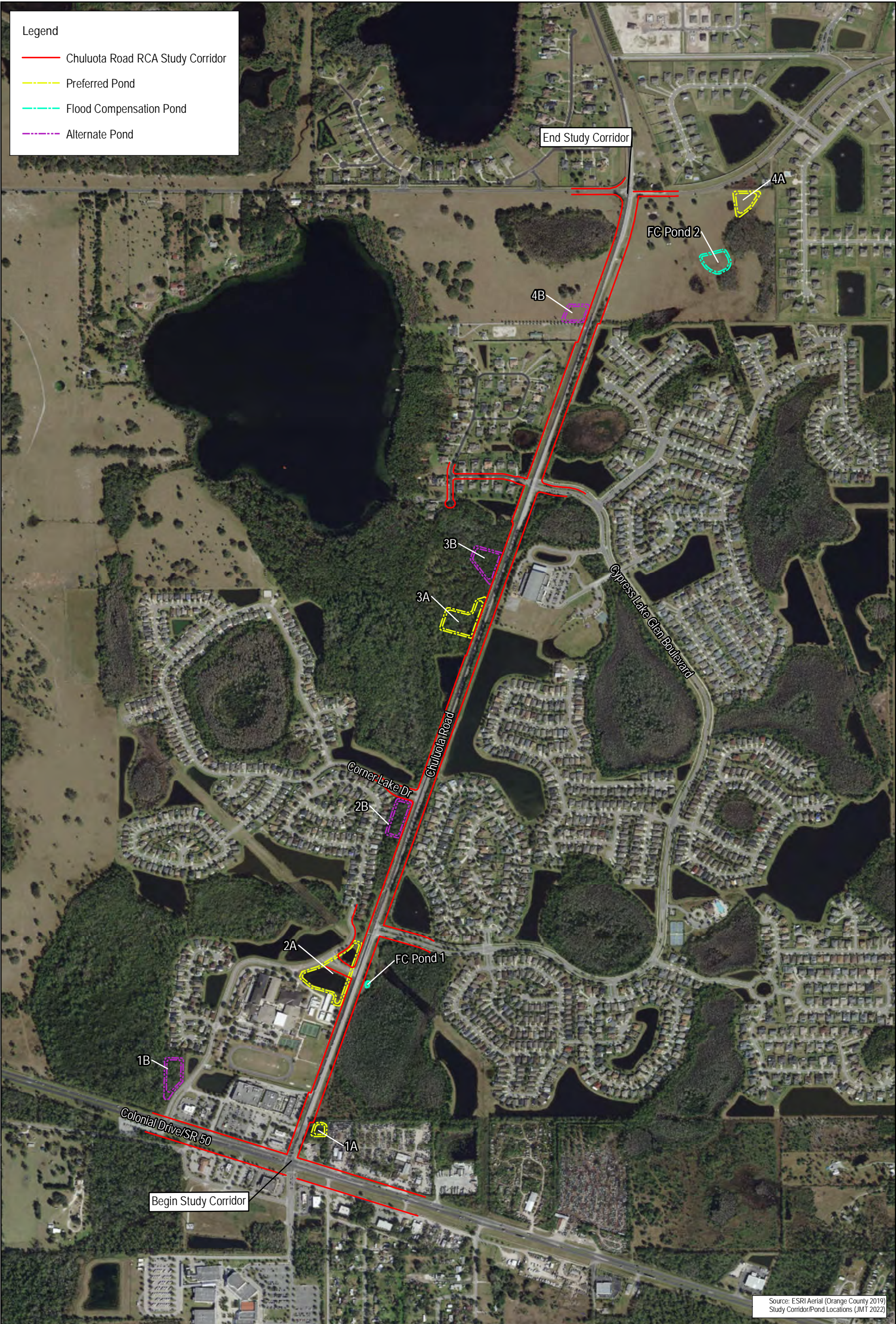
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Chuluota Road RCA
from Colonial Drive to Lake Pickett Road
Location Map
Orange County, Florida

ORANGE COUNTY FLORIDA

Figure No. 1
MSE Group, LLC

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Legend

- Chuluota Road RCA Study Corridor
- Preferred Pond
- Flood Compensation Pond
- Alternate Pond

Source: ESRI Aerial (Orange County 2019)
Study Corridor/Pond Locations (JMT 2022)

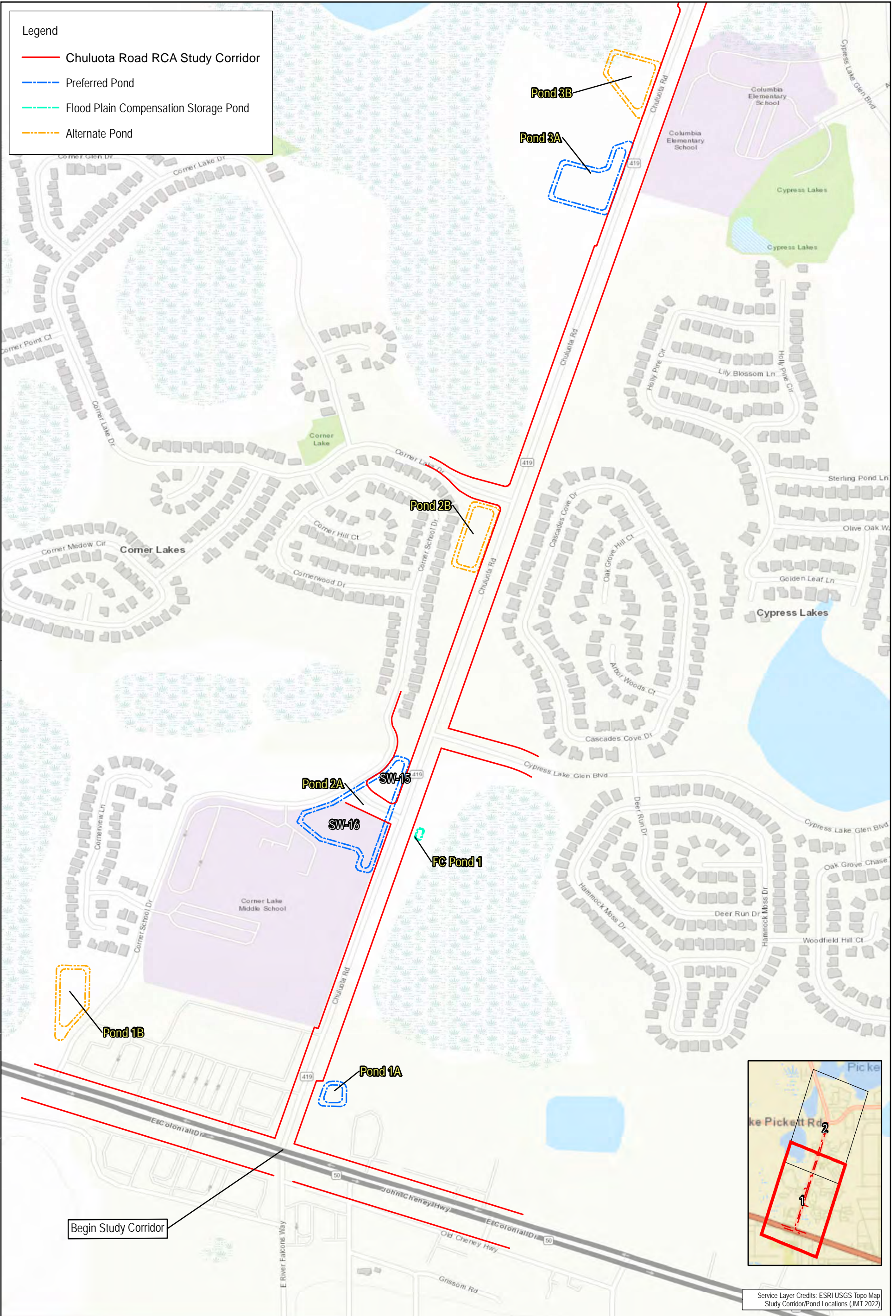
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DATE: 2.28.2022	OCPN: Y20-380-CH

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Chuluota Road RCA
from Colonial Drive to Lake Pickett Road
Aerial Map
Orange County, Florida

Figure No. 2

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Legend

- Chuluota Road RCA Study Corridor
- - - Preferred Pond
- - - Flood Plain Compensation Storage Pond
- - - Alternate Pond



Service Layer Credits: ESRI USGS Topo Map Study Corridor/Pond Locations (JMT 2022)

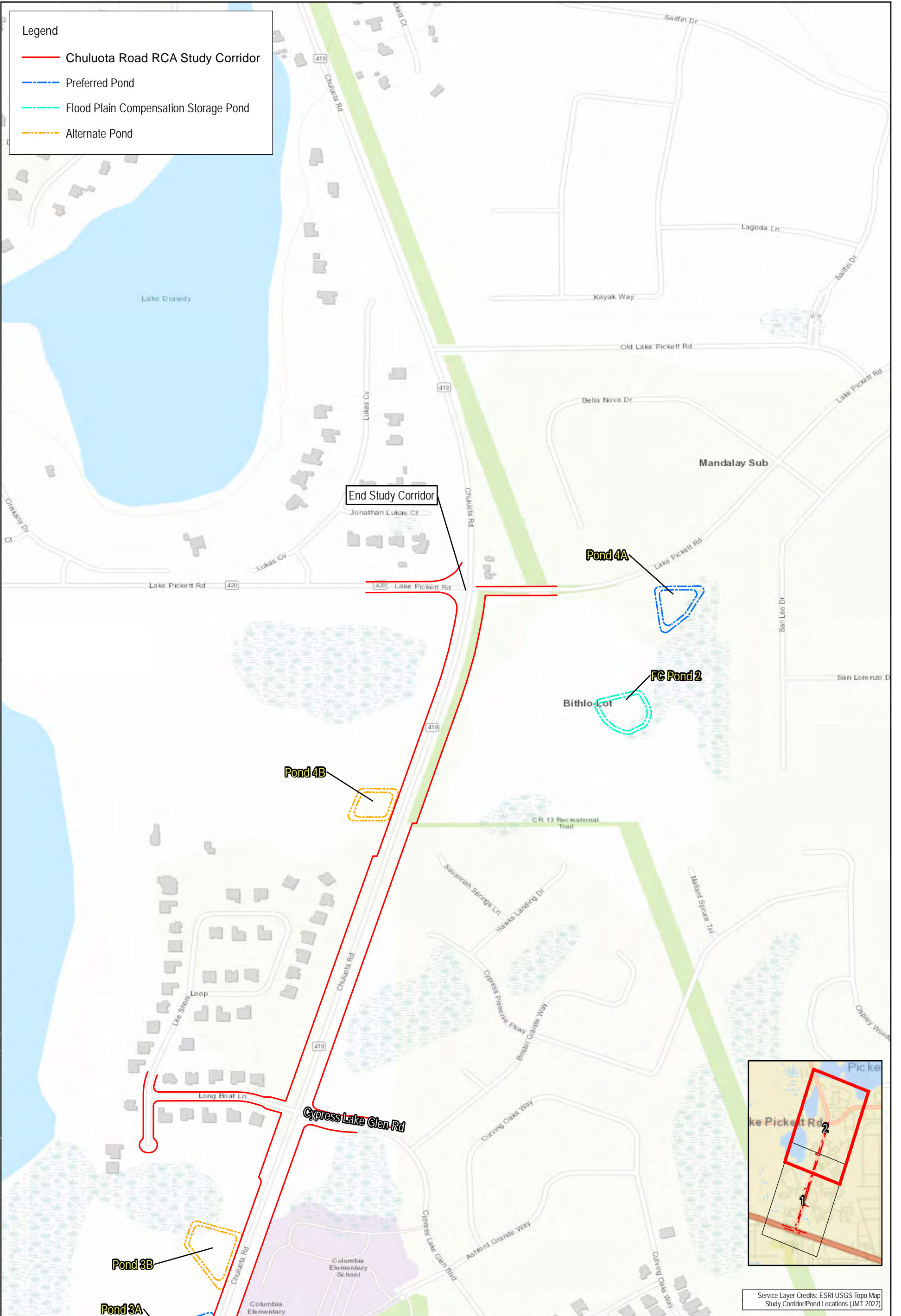
DRN: LMO	APR: KJT
DATE: 2.28.2022	OCPN: Y20-380-CH

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Chuluota Road RCA
from Colonial Drive to Lake Pickett Road
USGS Topographic Quadrangle Map
Orange County, Florida

Figure No. 3-1
MSE Group, LLC

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Legend

- Chuluota Road RCA Study Corridor
- - - Preferred Pond
- - - Flood Plain Compensation Storage Pond
- - - Alternate Pond

End Study Corridor

Pond 4A

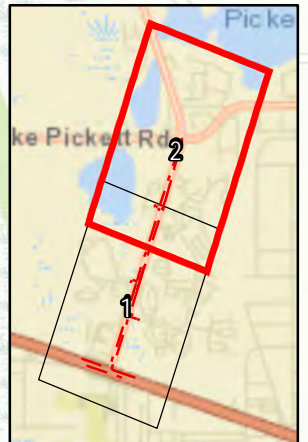
FC Pond 2

Bithlo Lot

Pond 4B

Pond 3B

Pond 3A



Service Layer Credits: ESRI USGS Topo Map Study Corridor/Pond Locations (JMT 2022)

DRN: LMO	APR: KJT
DATE: 2.28.2022	OCPN: Y20-380-CH

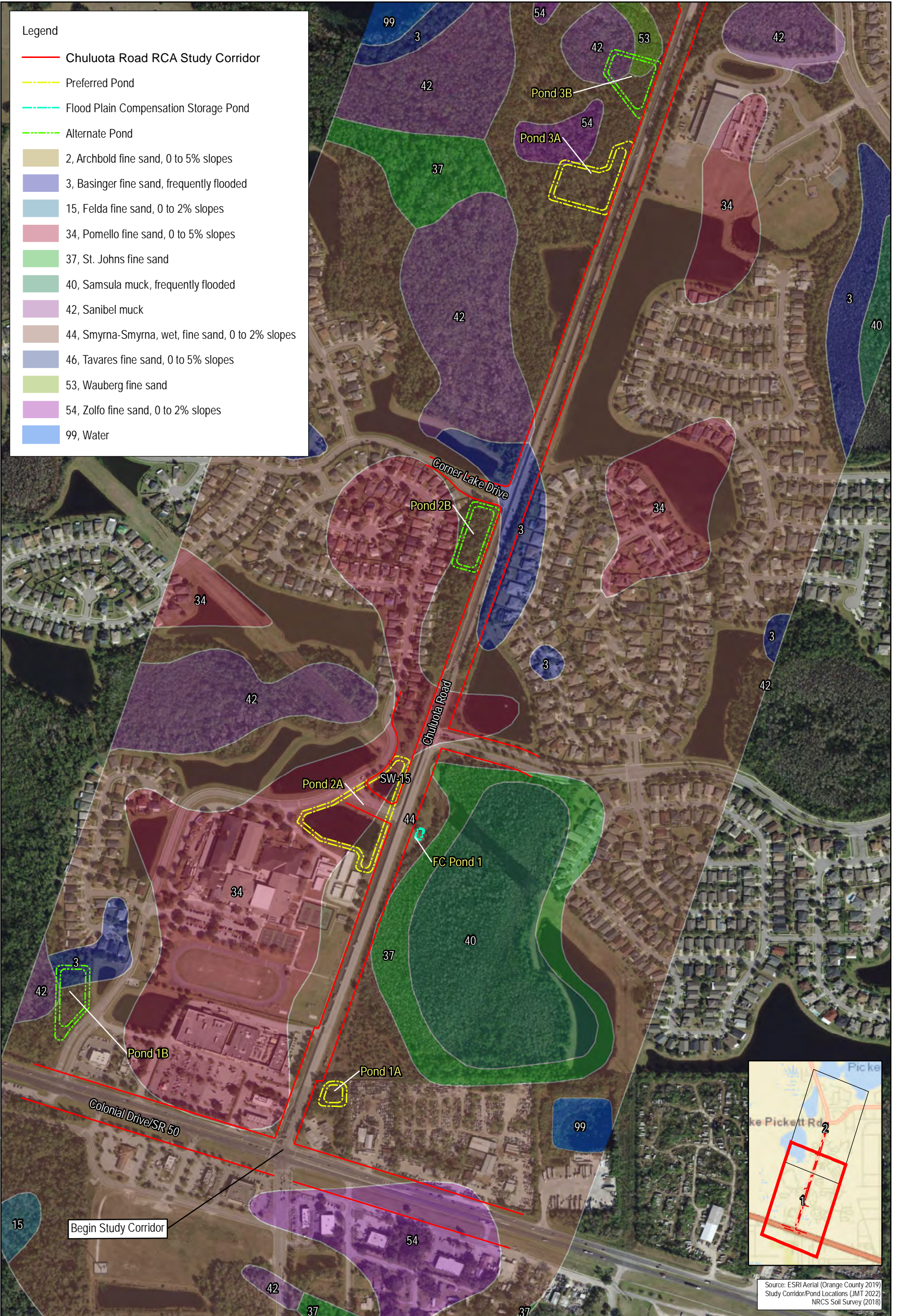
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Chuluota Road RCA
from Colonial Drive to Lake Pickett Road
USGS Topographic Quadrangle Map
Orange County, Florida



Figure No. 3-2

Document Path: T:\GIS\Client Files\1555 - JMT\1555-001 Chuluota Road RCA\MapX\and Shapes\Files\Figure 3 - Chuluota RCA USGS Topo Map.mxd



Legend

- Chuluota Road RCA Study Corridor
- Preferred Pond
- Flood Plain Compensation Storage Pond
- Alternate Pond
- 2, Archbold fine sand, 0 to 5% slopes
- 3, Basinger fine sand, frequently flooded
- 15, Felda fine sand, 0 to 2% slopes
- 34, Pomello fine sand, 0 to 5% slopes
- 37, St. Johns fine sand
- 40, Samsula muck, frequently flooded
- 42, Sanibel muck
- 44, Smyrna-Smyrna, wet, fine sand, 0 to 2% slopes
- 46, Tavares fine sand, 0 to 5% slopes
- 53, Wauberg fine sand
- 54, Zolfo fine sand, 0 to 2% slopes
- 99, Water

Document Path: TIGIS: Client Files\1555...JMT\1555-001 Chuluota Road RCA\MXD and Shapefiles\Figure 4 - Chuluota RCA\NCRS Soil Survey Map.mxd



Source: ESRI Aerial (Orange County 2019)
Study Corridor/Pond Locations (JMT 2022)
NCRS Soil Survey (2018)

DRN: LMO	APR: KJT
DATE: 2.28.2022	OCNP: Y20-380-CH

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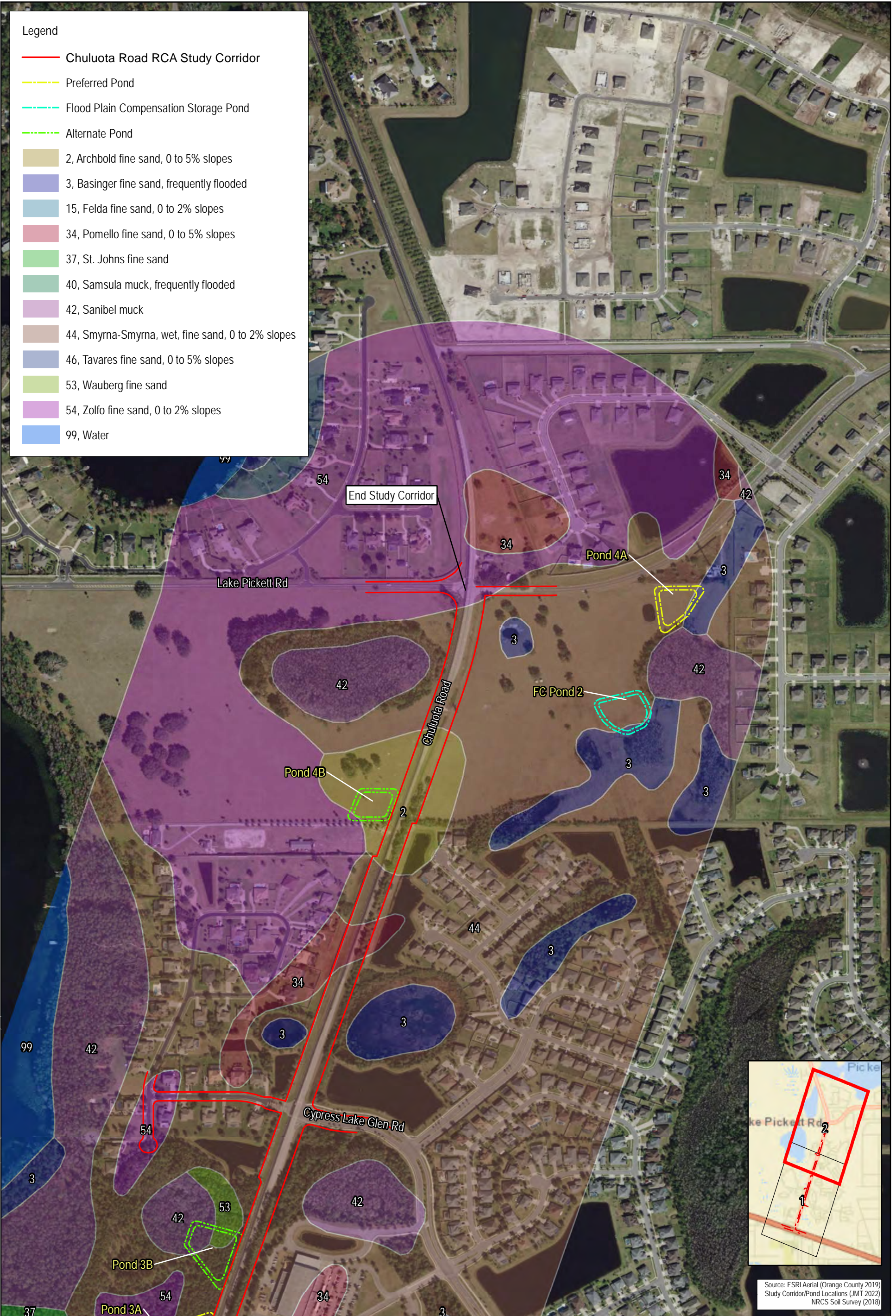
Chuluota Road RCA
from Colonial Drive to Lake Pickett Road
NCRS Soil Survey Map
Orange County, Florida

Figure No. 4-1

MSE Group, LLC

Legend

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- 99, Water



Document Path: T:\GIS\ Client Files\1555...JMT\1555-001 Chuluota Road RCA\MXD and Shapefiles\Figure 4 - Chuluota RCA NRCS Soil Survey Map.mxd

Source: ESRI Aerial (Orange County 2019)
Study Corridor/Pond Locations (JMT 2022)
NRCS Soil Survey (2018)

DRN: LMO	APR: KJT
DATE: 2.28.2022	OCNP: Y20-380-CH

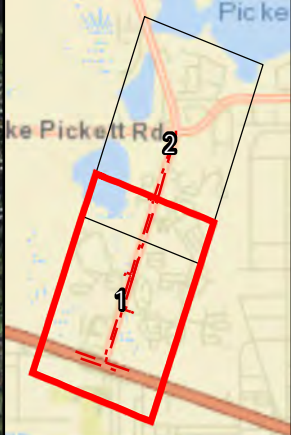
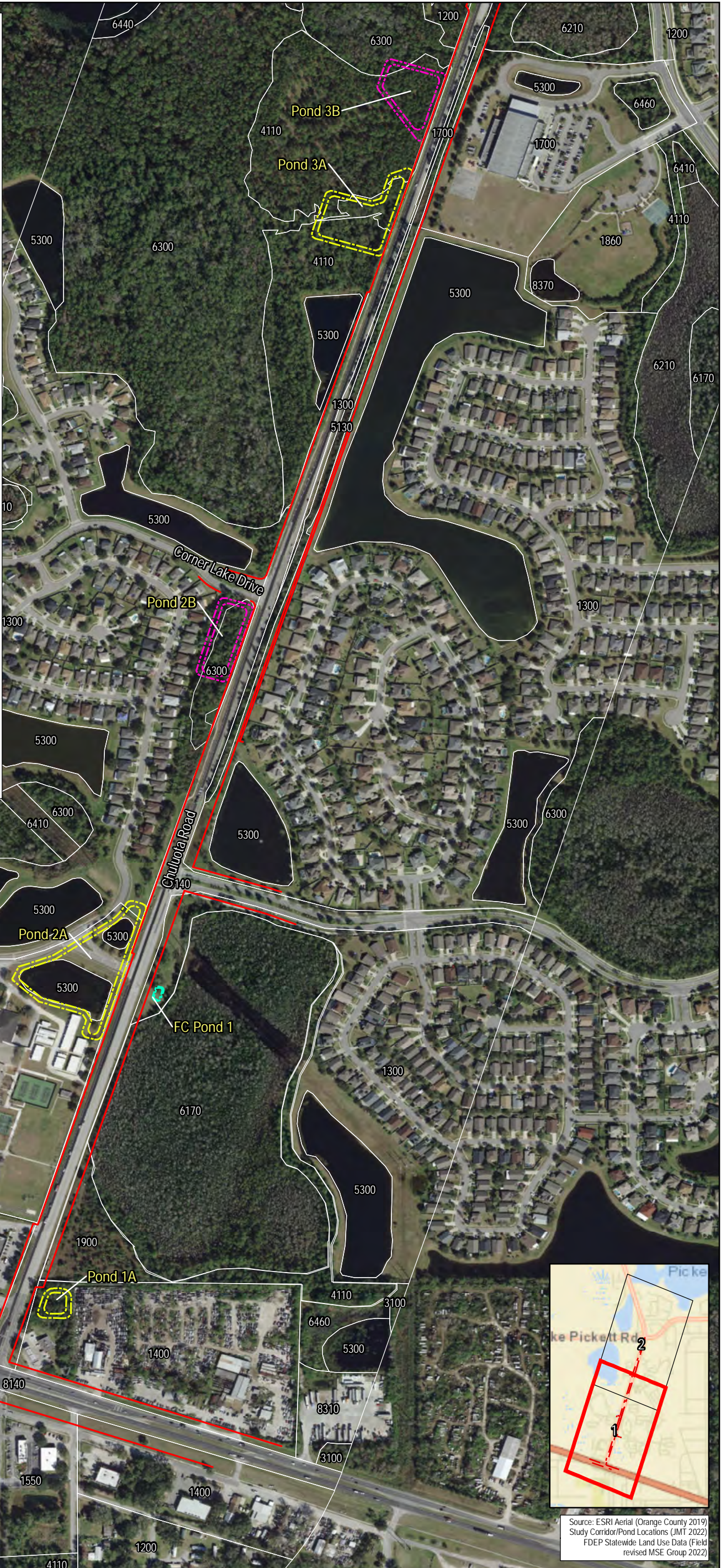
DRAFT

Chuluota Road RCA
from Colonial Drive to Lake Pickett Road
NRCS Soil Survey Map
Orange County, Florida

Figure No. 4-2
MSE Group, LLC

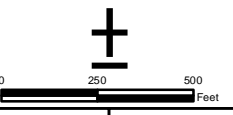
Legend

- Chuluota Road RCA Study Corridor
 - - - Preferred Pond
 - - - Flood Plain Compensation Storage Pond
 - - - Alternate Pond
- Land Use Type
- 1200: Medium Density, 2->5 dwelling units/acre
 - 1300: High Density, 6 or more dwelling units/acre
 - 1400: Commercial and Services
 - 1490: Commercial and Services Under Construction
 - 1550: Other Light Industrial
 - 1700: Institutional
 - 1860: Community Recreational Facilities
 - 1900: Open Land (Urban)
 - 3100: Herbaceous (Dry Prairie)
 - 4110: Pine Flatwoods
 - 5120: Streams and Waterways (Upland-cut ditch)
 - 5200: Lakes
 - 5300: Reservoirs
 - 6170: Mixed Wetland Hardwoods
 - 6210: Cypress
 - 6300: Wetland Forested Mixed
 - 6410: Freshwater Marshes
 - 6440: Emergent Aquatic Vegetation
 - 6460: Mixed Scrub-shrub Wetland
 - 8140: Roads and Highways
 - 8310: Electric Power Facilities
 - 8370: Surface Water Collection Features



Source: ESRI Aerial (Orange County 2019)
 Study Corridor/Pond Locations (JMT 2022)
 FDEP Statewide Land Use Data (Field revised MSE Group 2022)

Begin Study Corridor



DRN: LMO	APR: KJT
DATE: 2.28.2022	OCN: Y20-380-CH

DRAFT

Chuluota Road RCA
 from Colonial Drive to Lake Pickett Road
 Land Use Map
 Orange County, Florida



Document Path: T:\GIS\Client Files\1555 - JMT1555-001 Chuluota Road RCA\MapDocs and Shapefiles\Figure 5 - Chuluota Road RCA Land Use Map.mxd



Legend

- Chuluota Road RCA Study Corridor
 - - - Preferred Pond
 - - - Flood Plain Compensation Storage Pond
 - - - Alternate Pond
- Land Use Type
- 1100: Low Density, <2 dwelling units/acre
 - 1180: Residential, rural - one unit on 2 or more acres
 - 1200: Medium Density, 2->5 dwelling units/acre
 - 1700: Institutional
 - 1860: Community Recreational Facilities
 - 2110: Improved Pastures
 - 2210: Citrus Groves
 - 4110: Pine Flatwoods
 - 5120: Streams and Waterways (Upland-cut ditch)
 - 5130: Streams and Waterways (Wetland-cut ditch)
 - 5200: Lakes
 - 5300: Reservoirs
 - 6210: Cypress
 - 6250: Hydric Pine Flatwoods
 - 6300: Wetland Forested Mixed
 - 6410: Freshwater Marshes
 - 6440: Emergent Aquatic Vegetation
 - 6460: Mixed Scrub-shrub Wetland
 - 8140: Roads and Highways

Document Path: T:\GIS\Client Files\1955 - JMT1955-001 Chuluota Road RCA\MD and Shapefiles\Figure 5 - Chuluota RCA Land Use Map.mxd



Source: ESRI Aerial (Orange County 2019)
 Study Corridor/Pond Locations (JMT 2022)
 FDEP Statewide Land Use Data (Field revised MSE Group 2022)

DRN: LMO	APR: KJT
DATE: 2.28.2022	OCN: Y20-380-CH

DRAFT

Chuluota Road RCA
 from Colonial Drive to Lake Pickett Road
 Land Use Map
 Orange County, Florida

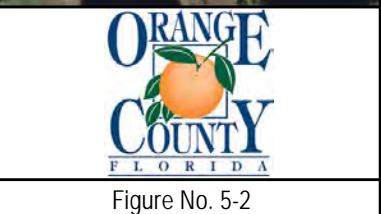
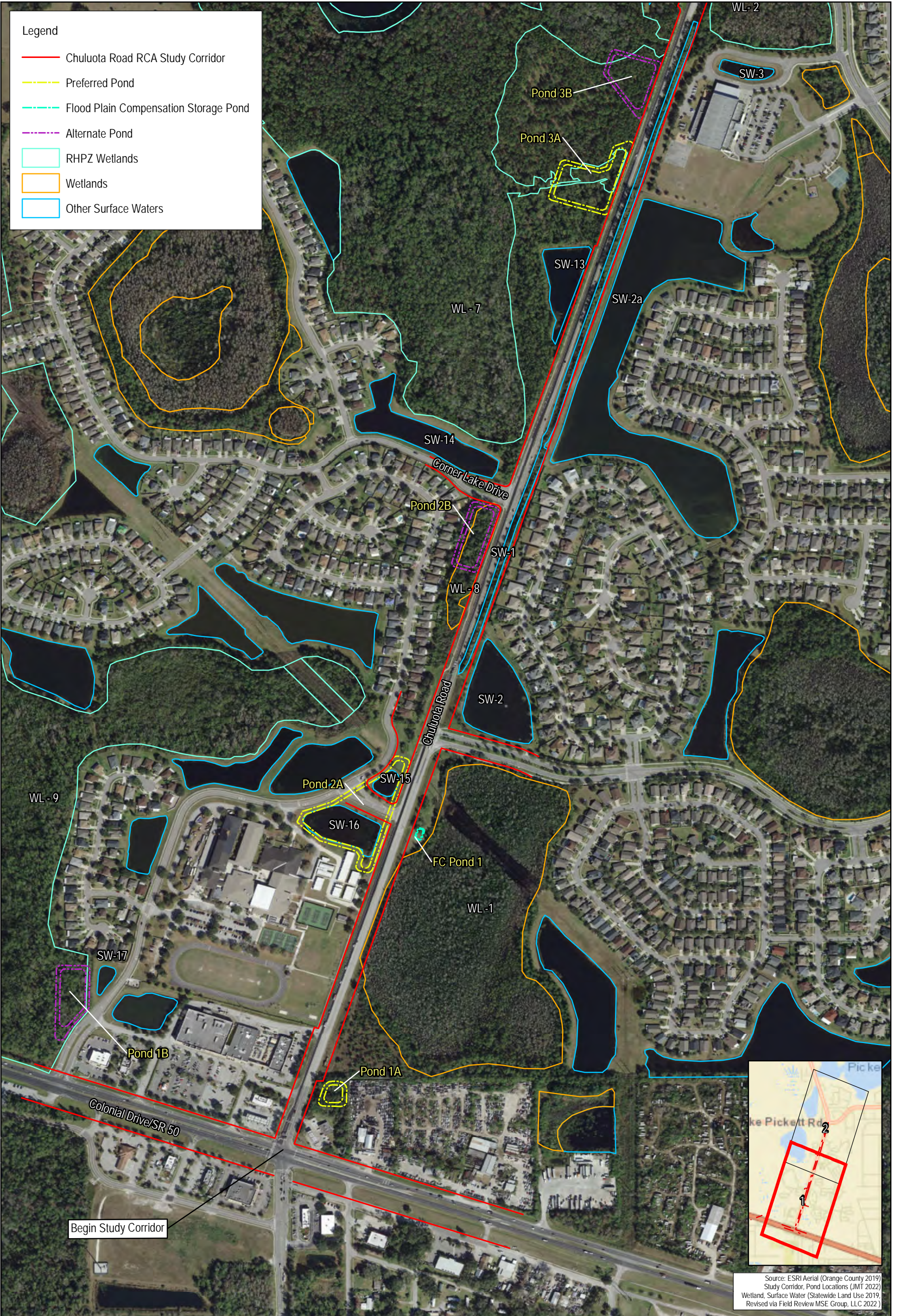


Figure No. 5-2
 MSE Group, LLC



Legend

- Chuluota Road RCA Study Corridor
- Preferred Pond
- - - Flood Plain Compensation Storage Pond
- - - Alternate Pond
- RHPZ Wetlands
- Wetlands
- Other Surface Waters



Source: ESRI Aerial (Orange County 2019)
 Study Corridor, Pond Locations (JMT 2022)
 Wetland, Surface Water (Statewide Land Use 2019,
 Revised via Field Review MSE Group, LLC 2022)

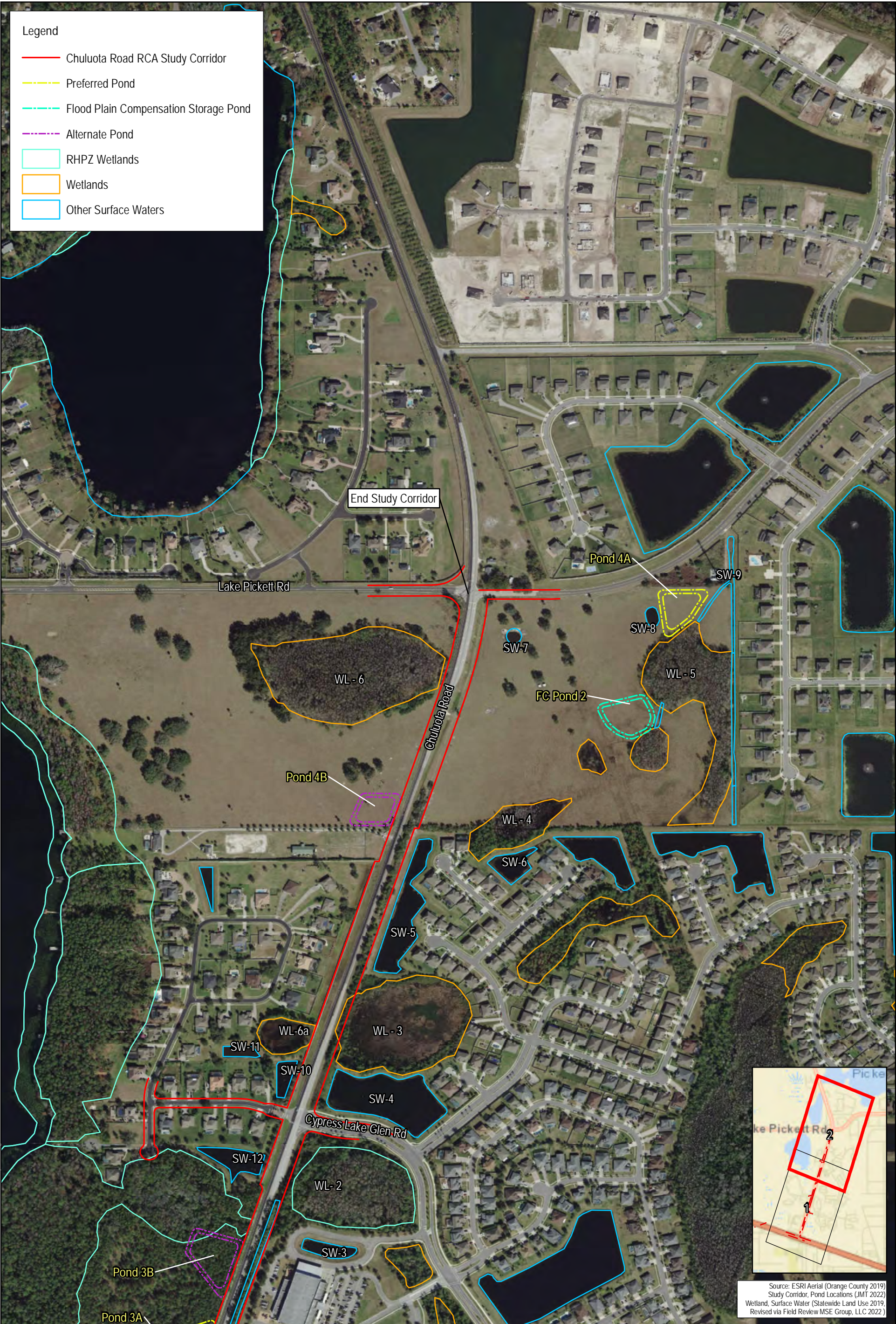
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DRN: LMO APR: KJT
 DATE: 4.5.2022 OCPN: Y20-380-CH

Chuluota Road RCA
 from Colonial Drive to Lake Pickett Road
 Wetlands and Other Surface Water Map
 Orange County, Florida

Figure No. 6-1
 MSE Group, LLC

Document Path: T:\GIS\Client Files\1955...JMT1955-001 Chuluota Road RCA\MapDocs\MapDocs\Figure 6- Chuluota RCA Wetland and Other Surface Waters.mxd



Legend

- Chuluota Road RCA Study Corridor
- Preferred Pond
- Flood Plain Compensation Storage Pond
- Alternate Pond
- RHPZ Wetlands
- Wetlands
- Other Surface Waters

End Study Corridor

Lake Pickett Rd

Pond 4A

SW-9

WL - 6

SW-7

SW-8

WL - 5

FC Pond 2

Pond 4B

WL - 4

SW-6

SW-5

WL-6a

WL - 3

SW-11

SW-10

SW-4

Cypress Lake Glen Rd

SW-12

WL - 2

SW-3

Pond 3B

Pond 3A



Source: ESRI Aerial (Orange County 2019)
 Study Corridor, Pond Locations (JMT 2022)
 Wetland, Surface Water (Statewide Land Use 2019,
 Revised via Field Review MSE Group, LLC 2022)

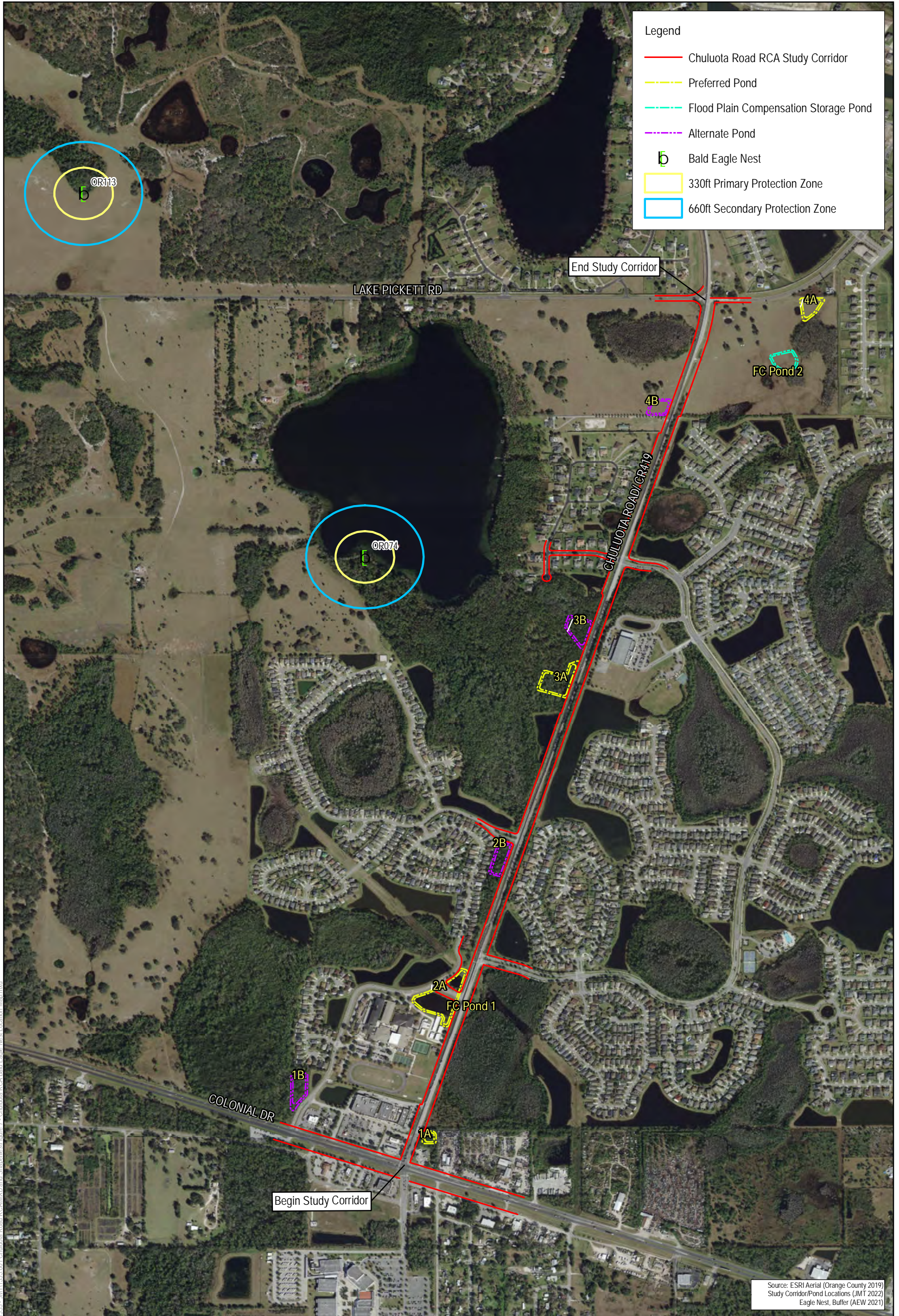
DRN: LMO	APR: KJT
DATE: 4.5.2022	OCPN: Y20-380-CH

DRAFT

Chuluota Road RCA
 from Colonial Drive to Lake Pickett Road
 Wetlands and Other Surface Water Map
 Orange County, Florida

Figure No. 6-2
 MSE Group, LLC

Document Path: T:\GIS\Client Files\1555 - JMT\1555-001 Chuluota Road RCA\MXD and Shapefiles\Figure 6- Chuluota RCA Wetland and Other Surface Waters.mxd



Legend

- Chuluota Road RCA Study Corridor
- Preferred Pond
- Flood Plain Compensation Storage Pond
- Alternate Pond
- b Bald Eagle Nest
- 330ft Primary Protection Zone
- 660ft Secondary Protection Zone

Document Path: T:\GIS\Client Files\1955...JMT\1955-001 Chuluota Road RCA\MXD and Shapefiles\Figure 7 - Chuluota RCA Bald Eagle Nest Location Map.mxd

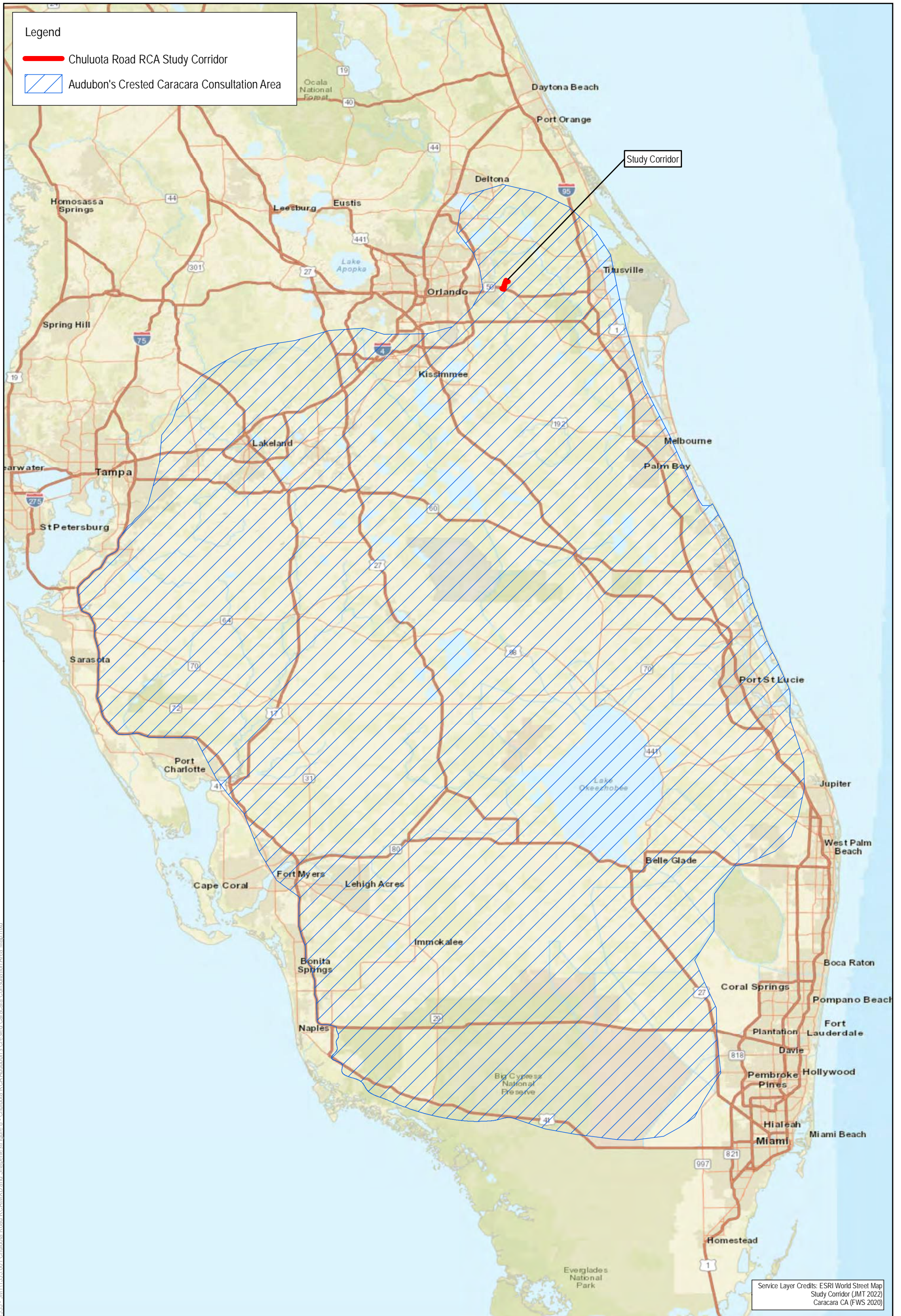
Source: ESRI Aerial (Orange County 2019)
 Study Corridor/Pond Locations (JMT 2022)
 Eagle Nest, Buffer (AEW 2021)

DRN: LMO	APR: KJT
DATE: 2.28.2022	OCPN: Y20-380-CH

DRAFT

Chuluota Road RCA
 from Colonial Drive to Lake Pickett Road
 Bald Eagle Nest Location Map
 Orange County, Florida

Figure No. 7
 MSE Group, LLC



Legend

- Chuluota Road RCA Study Corridor
- Audubon's Crested Caracara Consultation Area

Study Corridor

Service Layer Credits: ESRI World Street Map
Study Corridor (JMT 2022)
Caracara CA (FWS 2020)

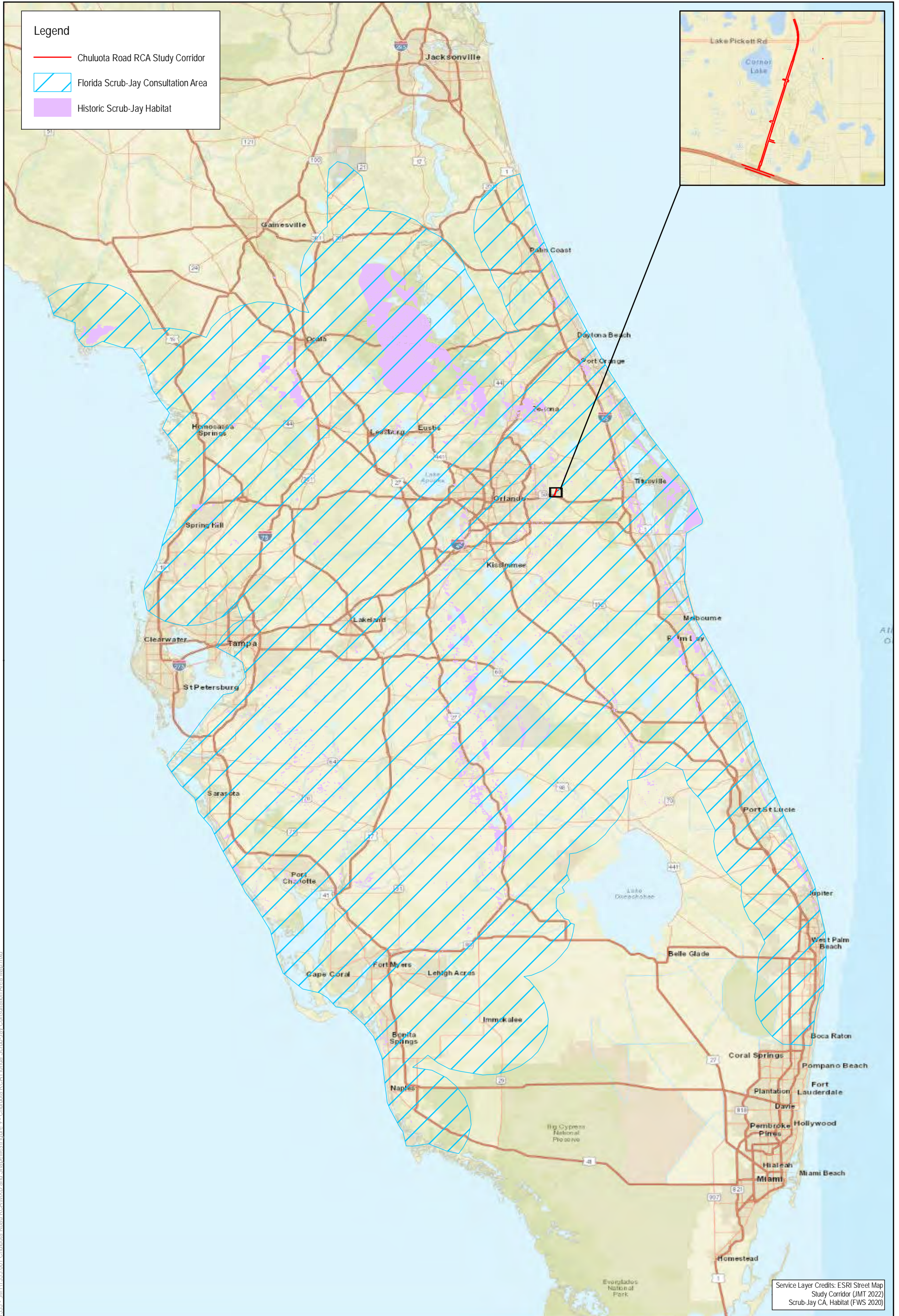
Document Path: T:\GIS\Client Files\1555... JMT\1555-001 Chuluota Road RCA\MXD and Shapefiles\Figure 8 - Chuluota RCA\Audubon's Crested Caracara Consultation Area Map.mxd

DRN: LMO	APR: KJT
DATE: 3.4.2022	OCPN: Y20-830-CH


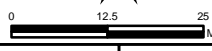
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Chuluota Road RCA
from Colonial Drive to Lake Pickett Road
Audubon's Crested Caracara Consultation Area Map
Orange County, Florida

Figure No. 8



Document Path: T:\GIS\ Client Files\1555 - JMT\1555_001 Chuluota Road RCA\MXD and Shapefiles\Figure 9 - Chuluota RCA Florida Scrub-Jay Consultation Area Map.mxd

	
	
DRN: LMO	APR: KJT
DATE: 3.6.2022	OCPN: Y20-830-CH

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Chuluota Road RCA
 from Colonial Drive to Lake Pickett Road
 Florida Scrub-Jay Consultation Area Map
 Orange County, Florida



Figure No. 9
 MSE Group, LLC



Legend

- Chuluota Road RCA Study Corridor
- Red-Cockaded Woodpecker Consultation Area

Study Corridor

Service Layer Credits: ESRI Street Map
 Study Corridor (JMT 2021)
 RCW CA (FWS 2020)

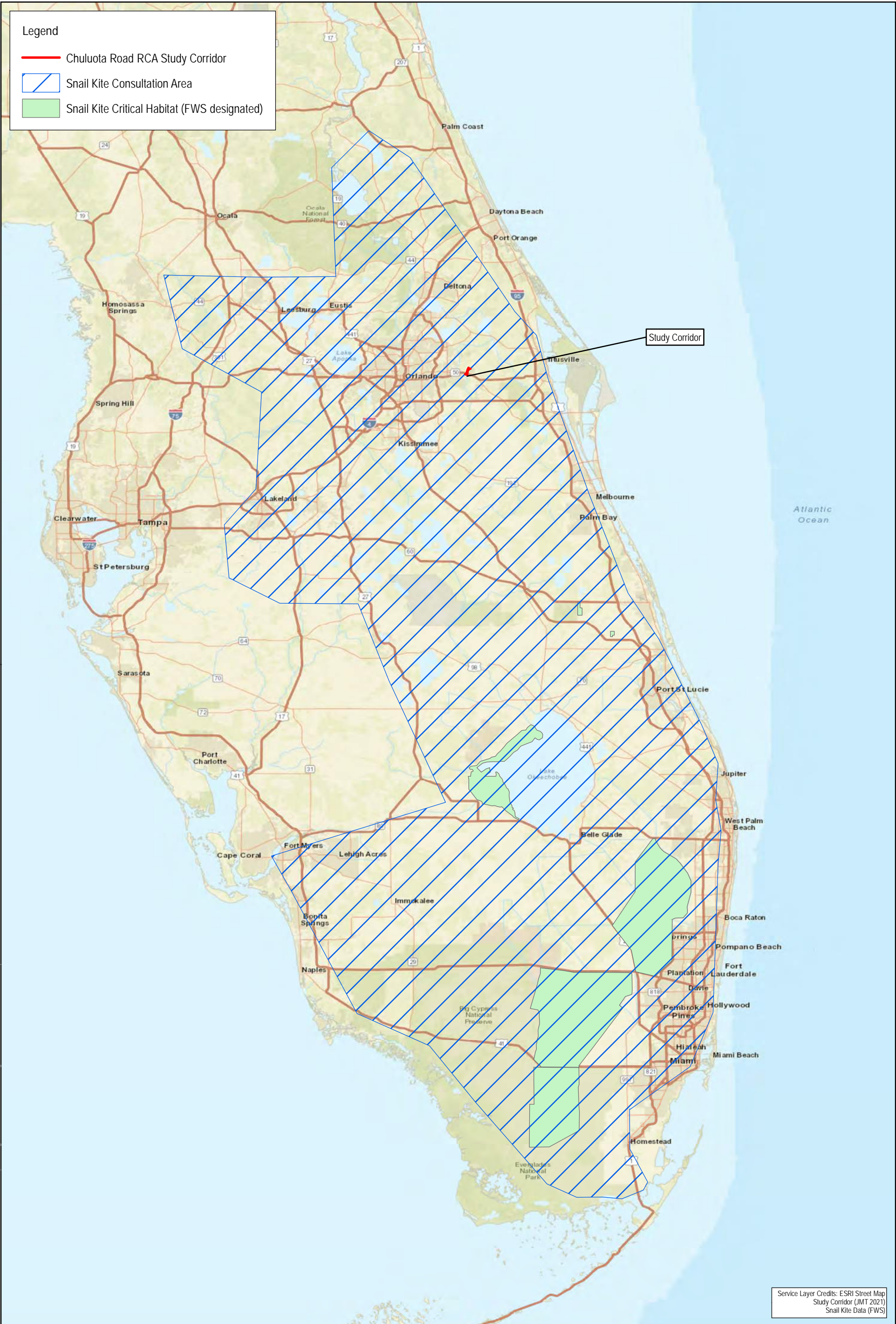
Document Path: T:\GIS\Client Files\1555 - JMT\1555_001 Chuluota Road RCA\MapMXD and Shapefiles\Figure 10 - Chuluota RCA Red-Cockaded Woodpecker Map.mxd

DRN: LMO	APR: KJT
DATE: 2.28.2022	OCPN: Y20-830-CH

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Chuluota Road RCA
 from Colonial Drive to Lake Pickett Road
 Red-Cockaded Woodpecker Consultation Area Map
 Orange County, Florida

Figure No. 10

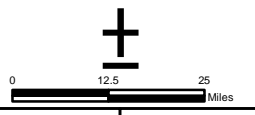


Legend

- Chuluota Road RCA Study Corridor
- Snail Kite Consultation Area
- Snail Kite Critical Habitat (FWS designated)

Study Corridor

Service Layer Credits: ESRI Street Map
Study Corridor (JMT 2021)
Snail Kite Data (FWS)



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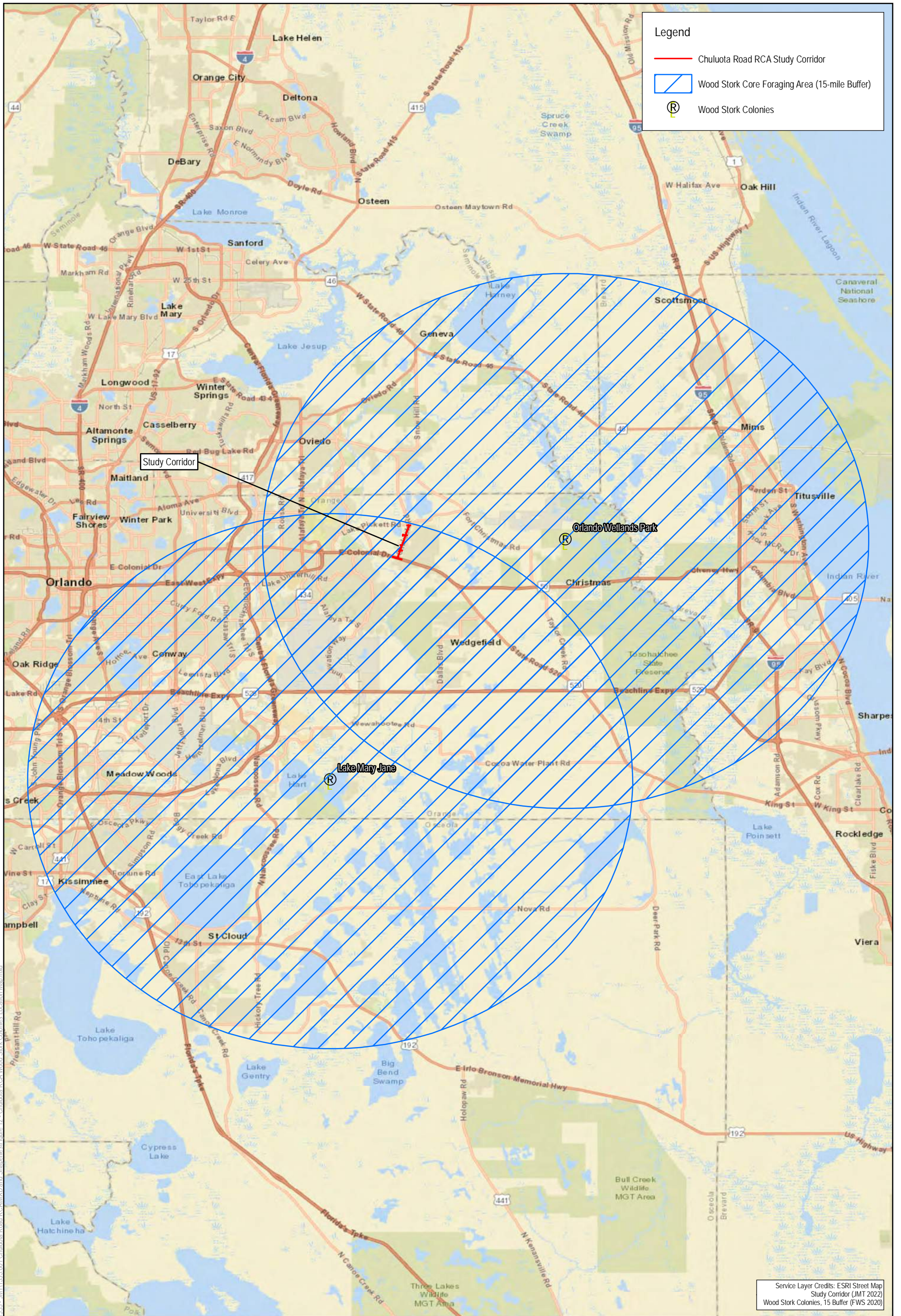
Chuluota Road RCA
from Colonial Drive to Lake Pickett Road
Snail Kite Consultation Area Map
Orange County, Florida



DRN: LMO	APR: KJT
DATE: 2.28.2022	OCPN: Y20-830-CH

Figure No. 11
MSE Group, LLC

Document Path: T:\GIS\Client Files\1555..._JMT\1555_001 Chuluota Road RCA\AMXD and Shapefiles\Figure 11 - Chuluota RCA, Everglades - Snail Kite Consultation Area Map.mxd



Legend

- Chuluota Road RCA Study Corridor
- Wood Stork Core Foraging Area (15-mile Buffer)
- R Wood Stork Colonies

Study Corridor

Service Layer Credits: ESRI Street Map
Study Corridor (JMT 2022)
Wood Stork Colonies, 15 Buffer (FWS 2020)

Document Path: T:\GIS\Client Files\15555..._JMT\15555-001 Chuluota Road RCA\MapX and Shapefiles\Figure 12 - Chuluota RCA Wood Stork Colonies Location Map.mxd

DRN: LMO	APR: KJT
DATE: 2.28.2022	OCPN: Y20-830-CH

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Chuluota Road RCA
from Colonial Drive to Lake Pickett Road
Wood Stork Colonies and Core Foraging Area Location Map
Orange County, Florida

Figure No. 12
MSE Group, LLC



Legend

- Chuluota Road RCA Study Corridor
- Preferred Pond Sites

Biodiversity

- Priority 5
- Priority 4
- Priority 3
- Priority 2



Source: ESRI Aerial (Orange County 2019)
 Study Corridor/Pond Locations (JMT 2022)
 Biodiversity (FNAI CLIP 4.0)

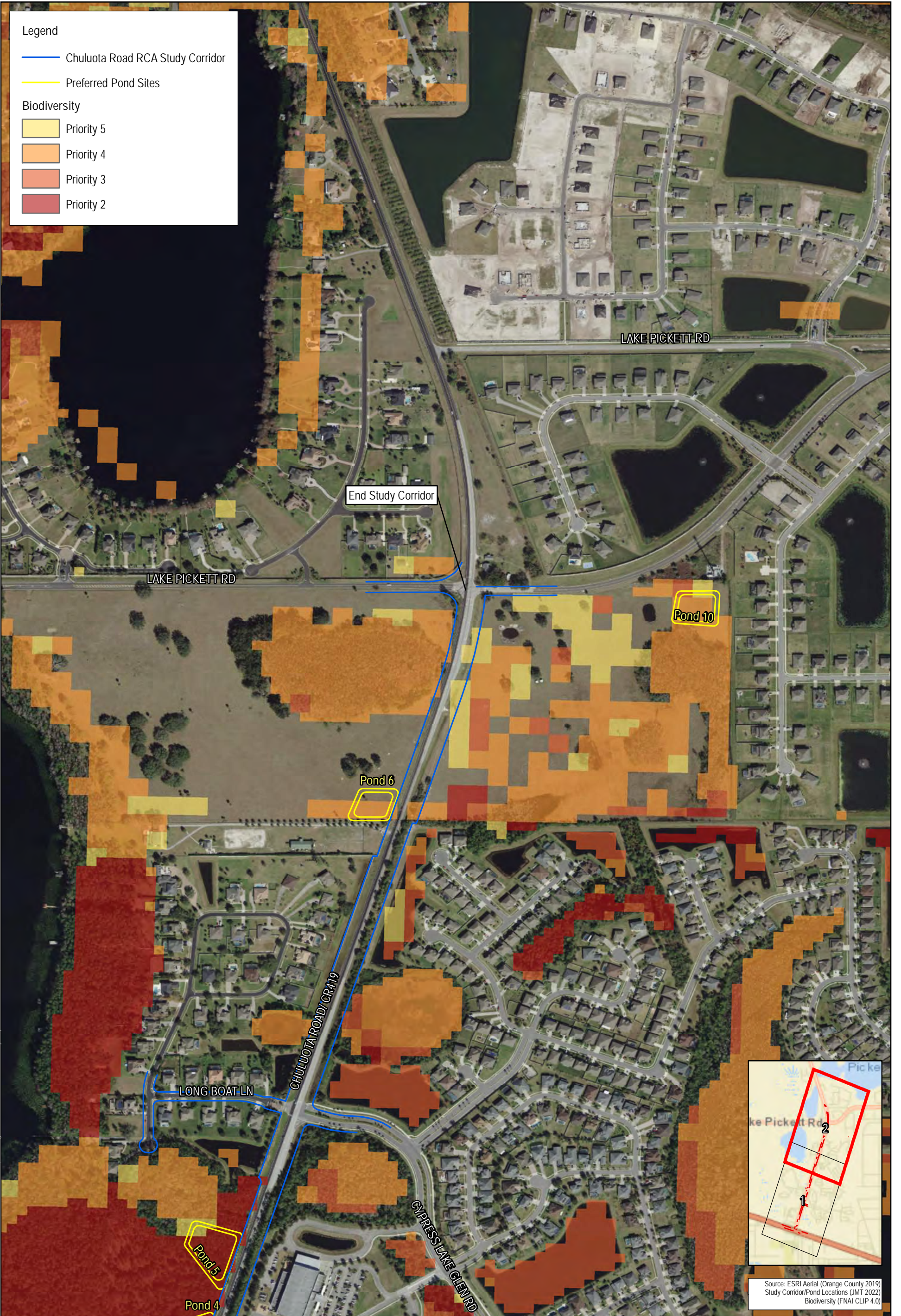
DRN: LMO	APR: KJT
DATE: 2.28.2022	OCPN: Y20-380-CH

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Chuluota Road RCA
 from Colonial Drive to Lake Pickett Road
 Biodiversity Map
 Orange County, Florida

Figure No. 13-1
 MSE Group, LLC

Document Path: T:\GIS\Client Files\1955-JMT1955-001 Chuluota Road RCA\MapX\MXD and Shapefiles\Figure 13 - Chuluota RCA Biodiversity Map.mxd

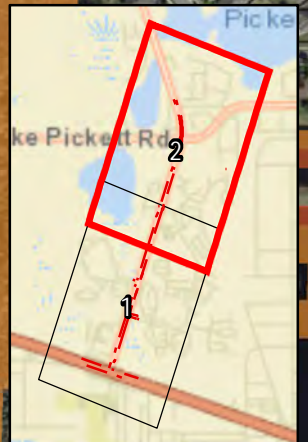


Legend

- Chuluota Road RCA Study Corridor
- Preferred Pond Sites

Biodiversity

- Priority 5
- Priority 4
- Priority 3
- Priority 2



Source: ESRI Aerial (Orange County 2019)
 Study Corridor/Pond Locations (JMT 2022)
 Biodiversity (FNAI CLIP 4.0)

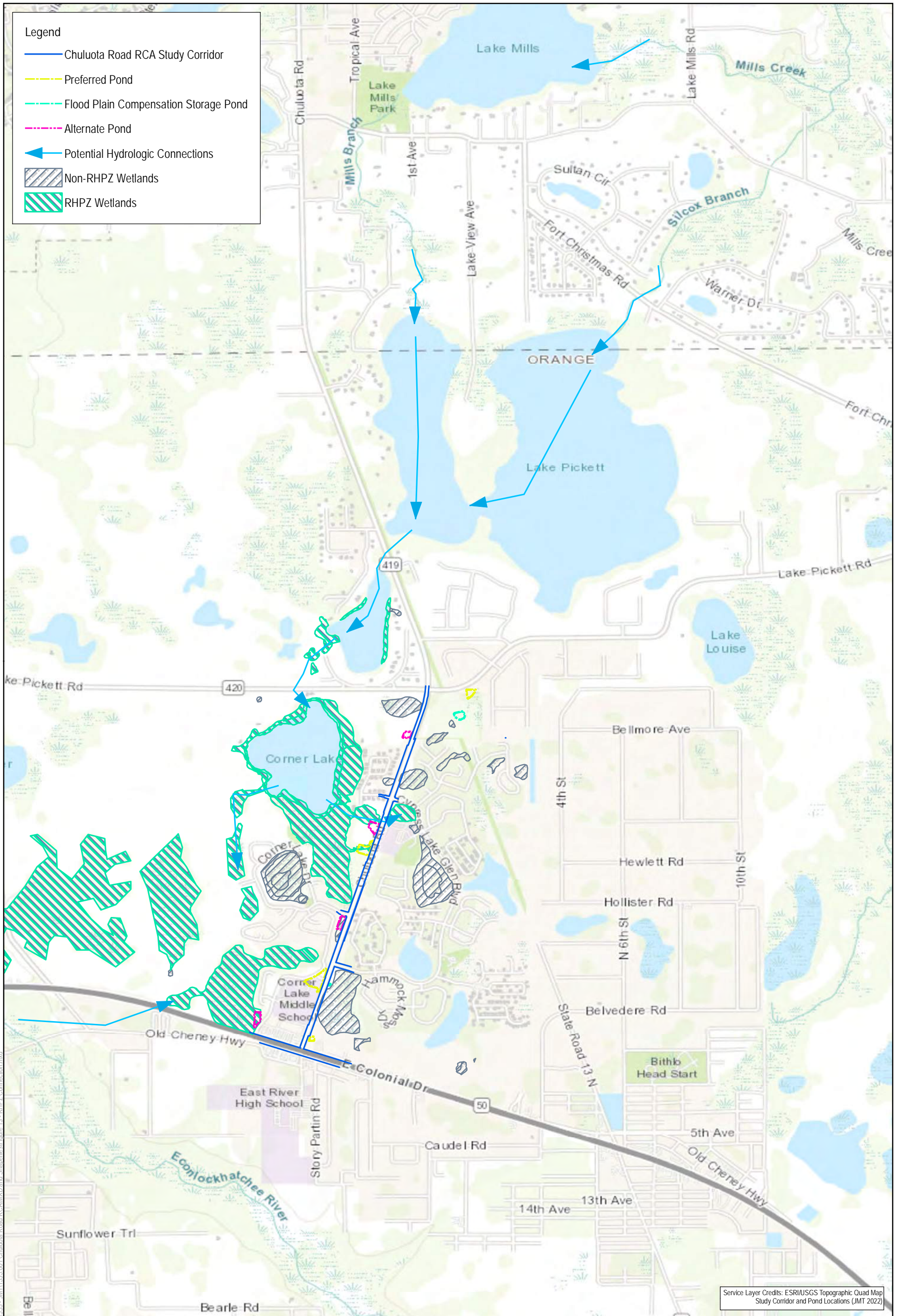
DRN: LMO	APR: KJT
DATE: 2.28.2022	OCPN: Y20-380-CH

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Chuluota Road RCA
 from Colonial Drive to Lake Pickett Road
 Biodiversity Map
 Orange County, Florida

Figure No. 13-2
 MSE Group, LLC

Document Path: T:\GIS\Client Files\1555...JMT1555_001 Chuluota Road RCA\MapX\MapX and Shapefiles\Figure 13-2 Chuluota RCA Biodiversity Map.mxd



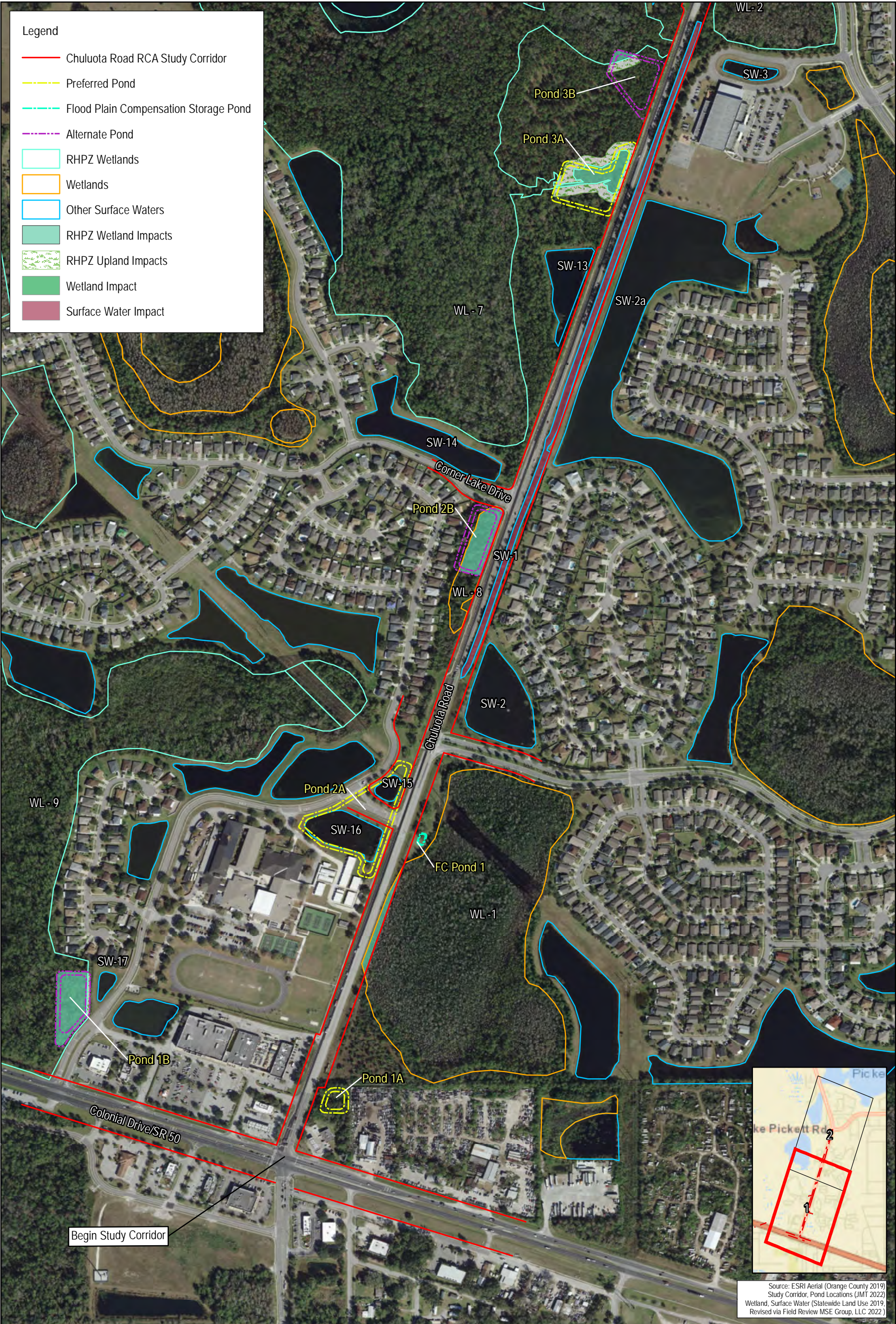
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DRN: KJT	APR: MLP
DATE: 5.4.2022	OCN: Y20-830

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Chuluota Road RCA
from Colonial Drive to Lake Pickett Road
Potential Hydrologic Connections Map
Orange County, Florida

Figure No. 13
MSE Group, LLC



Legend

- Chuluota Road RCA Study Corridor
- Preferred Pond
- Flood Plain Compensation Storage Pond
- Alternate Pond
- RHPZ Wetlands
- Wetlands
- Other Surface Waters
- RHPZ Wetland Impacts
- RHPZ Upland Impacts
- Wetland Impact
- Surface Water Impact



Source: ESRI Aerial (Orange County 2019)
 Study Corridor, Pond Locations (JMT 2022)
 Wetland, Surface Water (Statewide Land Use 2019,
 Revised via Field Review MSE Group, LLC 2022)

0 250 500 Feet

DRN: LMO APR: KJT

DATE: 2.28.2022 OCPN: Y20-380-CH

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Chuluota Road RCA
 from Colonial Drive to Lake Pickett Road
 Wetlands and Other Surface Water Impacts Map
 Orange County, Florida

Figure No. 14-1



Legend

- Chuluota Road RCA Study Corridor
- Preferred Pond
- Flood Plain Compensation Storage Pond
- Alternate Pond
- RHPZ Wetlands
- Wetlands
- Other Surface Waters
- RHPZ Wetland Impacts
- RHPZ Upland Impacts
- Wetland Impact
- Surface Water Impact

Document Path: T:\GIS - Client Files\1555 - JMT1555-001 Chuluota Road RCA\MXD and Shapefiles\Figure 14 - Wetland and Other Surface Water Impacts.mxd



Source: ESRI Aerial (Orange County 2019)
 Study Corridor, Pond Locations (JMT 2022)
 Wetland, Surface Water (Statewide Land Use 2019,
 Revised via Field Review MSE Group, LLC 2022)

DRN: LMO	APR: KJT
DATE: 2.28.2022	OCPN: Y20-380-CH

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Chuluota Road RCA
 from Colonial Drive to Lake Pickett Road
 Wetlands and Other Surface Water Impacts Map
 Orange County, Florida

Figure No. 14-2
 MSE Group, LLC



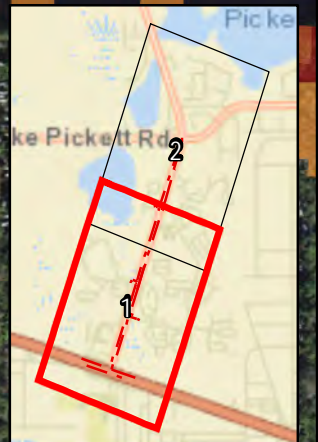
Legend

- Chuluota Road RCA Study Corridor
- Preferred Pond
- Flood Plain Compensation Storage Pond
- Alternate Pond

Biodiversity

- Priority 1 - Highest
- Priority 2
- Priority 3
- Priority 4

Document Path: TIGIS - Client Files\1555 - JMT\1555-001 Chuluota Road RCA\MapX and Shapefiles\Figure 15 - Chuluota RCA Biodiversity Map.mxd



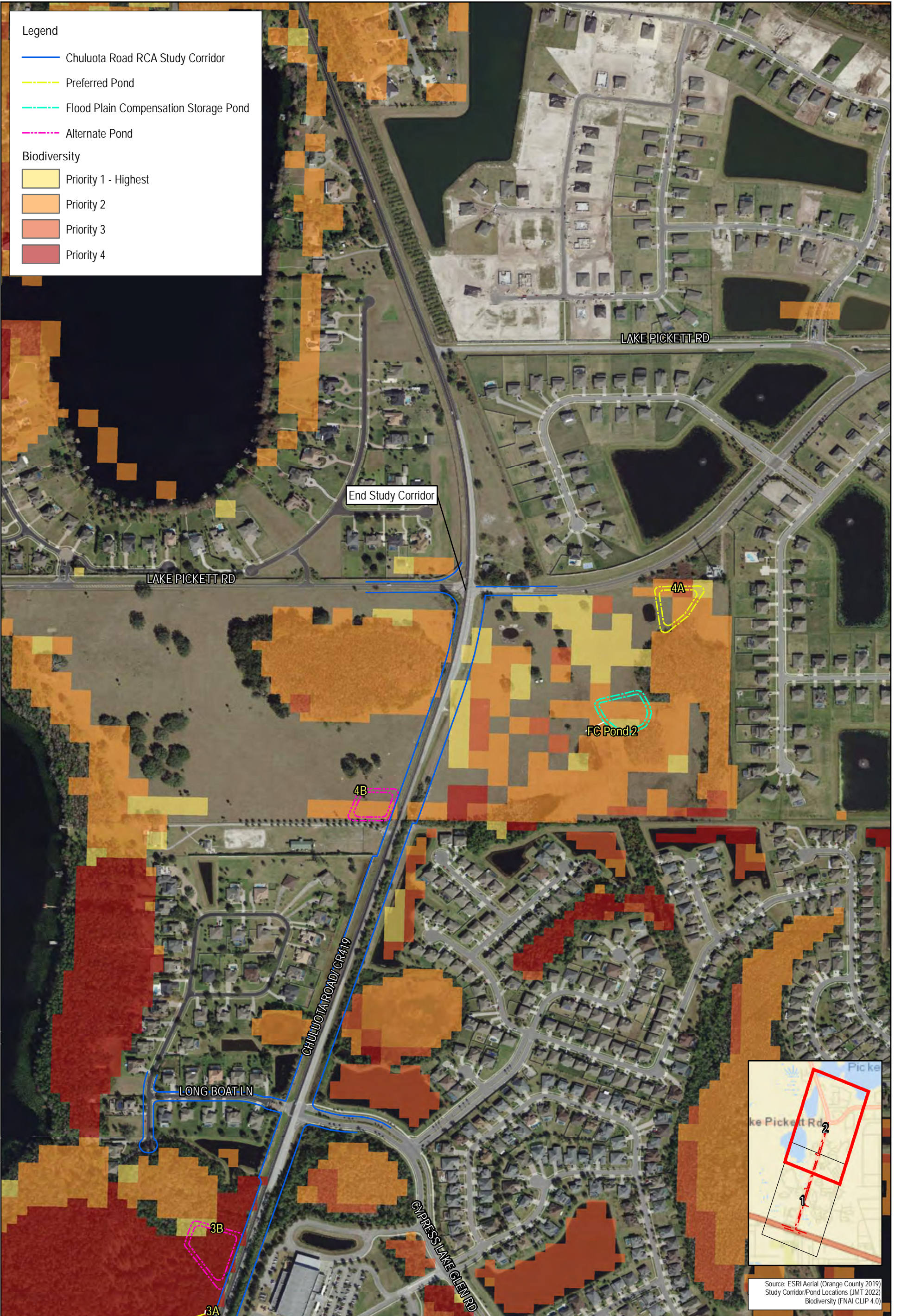
Source: ESRI Aerial (Orange County 2019)
 Study Corridor/Pond Locations (JMT 2022)
 Biodiversity (FNAI CLIP 4.0)

DRN: LMO	APR: KJT
DATE: 2.28.2022	OCN: Y20-380-CH

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Chuluota Road RCA
 from Colonial Drive to Lake Pickett Road
 Biodiversity Map
 Orange County, Florida

Figure No. 15-1
 MSE Group, LLC



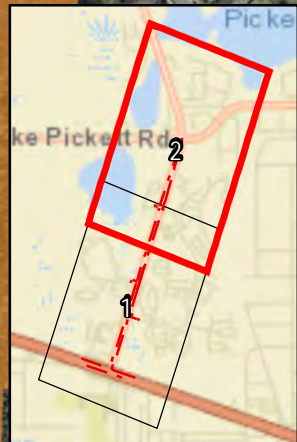
Legend

- Chuluota Road RCA Study Corridor
- Preferred Pond
- Flood Plain Compensation Storage Pond
- Alternate Pond

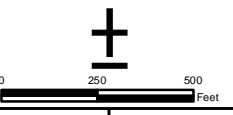
Biodiversity

- Priority 1 - Highest
- Priority 2
- Priority 3
- Priority 4

Document Path: T:\GIS\Client Files\1555...JMT\1555-001 Chuluota Road RCA\MXD and Shapefiles\Figure 15 - Chuluota RCA Biodiversity Map.mxd



Source: ESRI Aerial (Orange County 2019)
Study Corridor/Pond Locations (JMT 2022)
Biodiversity (FNAI CLIP 4.0)



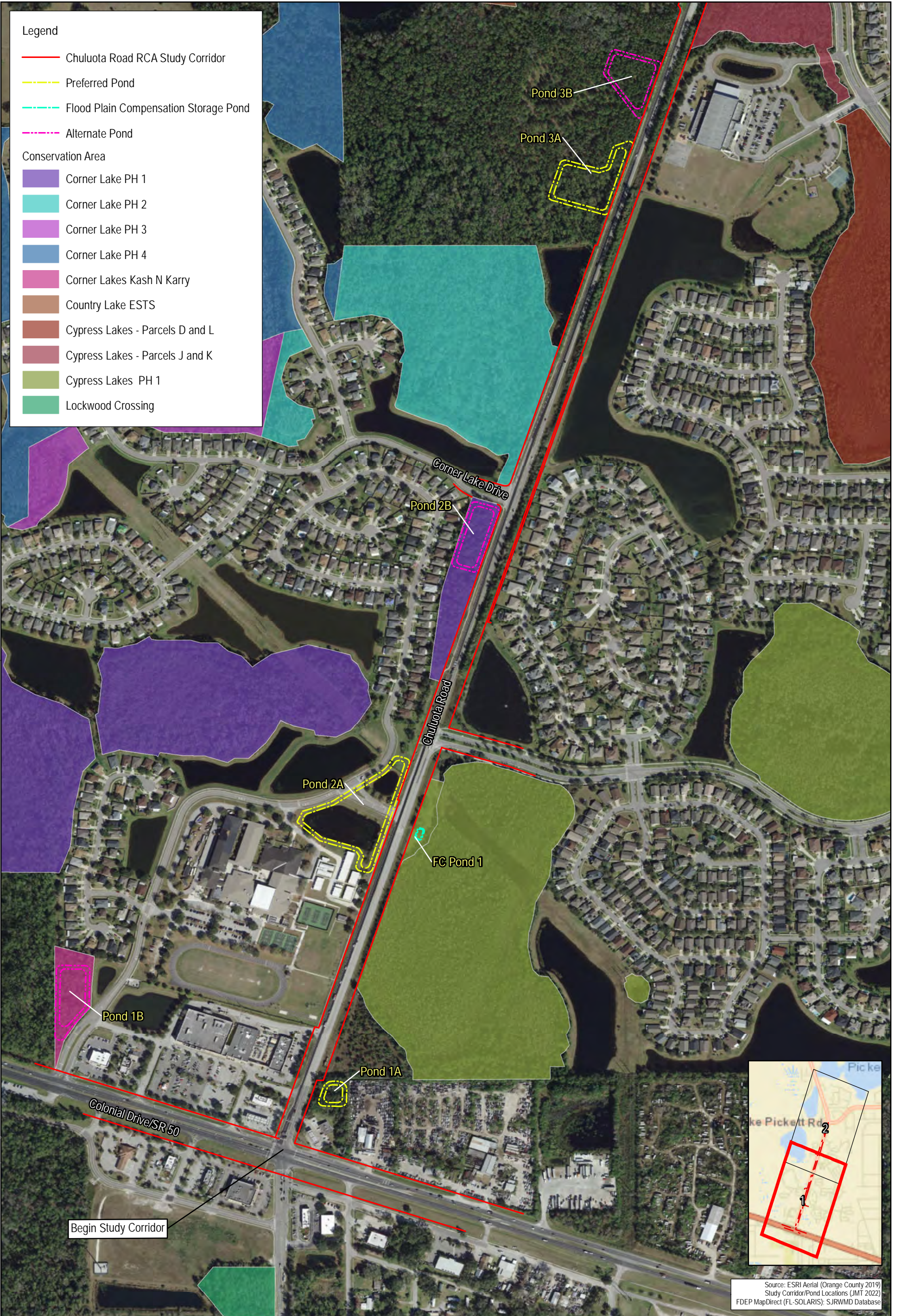
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DATE: 2.28.2022	OCN: Y20-380-CH

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Chuluota Road RCA
from Colonial Drive to Lake Pickett Road
Biodiversity Map
Orange County, Florida



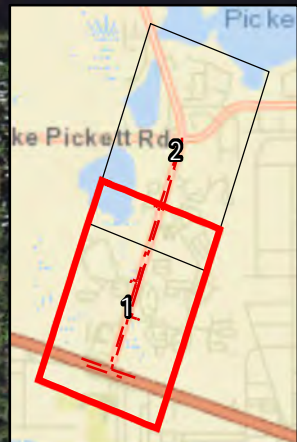
Figure No. 15-2
MSE Group, LLC



Legend

- Chuluota Road RCA Study Corridor
 - Preferred Pond
 - Flood Plain Compensation Storage Pond
 - Alternate Pond
- Conservation Area
- Corner Lake PH 1
 - Corner Lake PH 2
 - Corner Lake PH 3
 - Corner Lake PH 4
 - Corner Lakes Kash N Karry
 - Country Lake ESTS
 - Cypress Lakes - Parcels D and L
 - Cypress Lakes - Parcels J and K
 - Cypress Lakes PH 1
 - Lockwood Crossing

Begin Study Corridor



Source: ESRI Aerial (Orange County 2019)
 Study Corridor/Pond Locations (JMT 2022)
 FDEP MapDirect (FL-SOLARIS); SJRWMD Database

DRN: LMO	APR: KJT
DATE: 2.28.2022	OCPN: Y20-380-CH

DRAFT

Chuluota Road RCA
 from Colonial Drive to Lake Pickett Road
 Conservation Areas Map
 Orange County, Florida

Figure No. 16-1
 MSE Group, LLC

Document Path: T:\GIS\Client Files\1655 - JMT\1655-001 Chuluota Road RCA\Map\16-1 Chuluota RCA Conservation Lands Map.mxd



- Legend**
- Chuluota Road RCA Study Corridor
 - - - Preferred Pond
 - - - Flood Plain Compensation Storage Pond
 - - - Alternate Pond
- Conservation Area**
- Country Lake ESTS
 - Cypress Lakes - Parcels D and L
 - Cypress Lakes - Parcels H and I
 - Cypress Lakes - Parcels J and K
 - ESTS at Lake Picket PH 1
 - Lake Drawdy Reserve
 - Lake Drawdy Reserve Conservation Easment
 - Lukas ESTS

End Study Corridor

Lake Pickett Rd

Pond 4A

FC Pond 2

Pond 4B

Chuluota Road

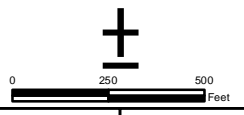
Cypress Lake Glen Rd

Pond 3B

Pond 3A



Source: ESRI Aerial (Orange County 2019)
Study Corridor/Pond Locations (JMT 2022)
FDEP MapDirect (FL-SOLARIS); SJRWMD Database



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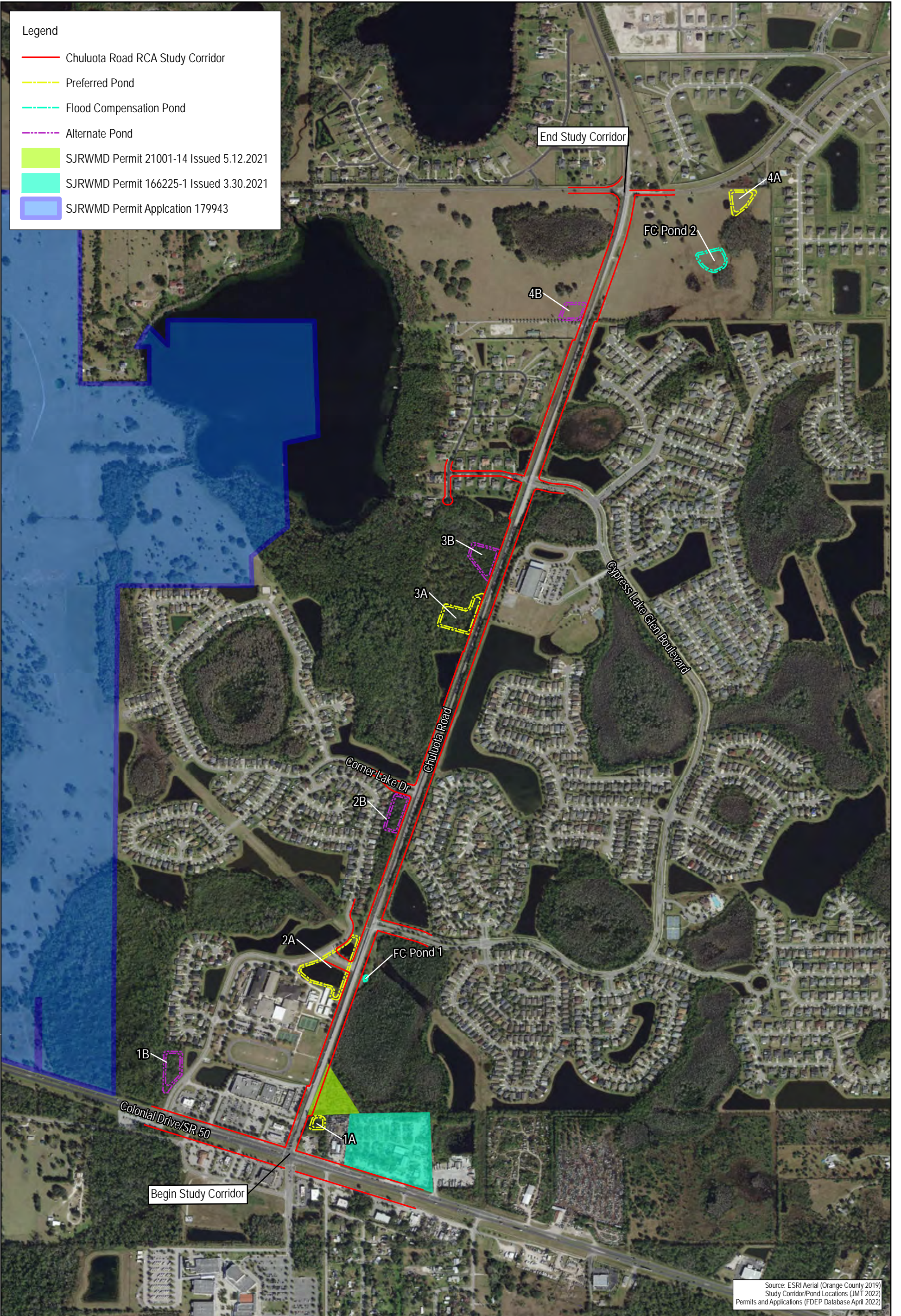
Chuluota Road RCA
from Colonial Drive to Lake Pickett Road
Conservation Areas Map
Orange County, Florida



DRN: LMO APR: KJT
DATE: 2.28.2022 OCPN: Y20-380-CH

Figure No. 16-2
MSE Group, LLC

Document Path: T:\GIS\Client Files\1655 - JMT\1655_001 Chuluota Road RCA\Map\16-2 Chuluota RCA Conservation Lands Map.mxd



Legend

- Chuluota Road RCA Study Corridor
- Preferred Pond
- Flood Compensation Pond
- Alternate Pond
- SJRWMD Permit 21001-14 Issued 5.12.2021
- SJRWMD Permit 166225-1 Issued 3.30.2021
- SJRWMD Permit Application 179943

Source: ESRI Aerial (Orange County 2019)
 Study Corridor/Pond Locations (JMT 2022)
 Permits and Applications (FDEP Database April 2022)

DRN: LMO	APR: KJT
DATE: 2.28.2022	OCPN: Y20-380-CH

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Chuluota Road RCA
 from Colonial Drive to Lake Pickett Road
 Future Development Map
 Orange County, Florida

ORANGE COUNTY
FLORIDA

Figure No. 17
 MSE Group, LLC

Document Path: T:\GIS - Client Files\1555 - JMT\1555-001 Chuluota Road RCA\MXD and Shapefiles\Figure 17 - Chuluota RCA Future Development Map.mxd



Legend

- Chuluota Road RCA Study Corridor
- Preferred Pond
- Flood Compensation Pond
- Alternate Pond
- Potential Wildlife Crossing Area

Conservation Area

- Corner Lake PH 1
- Corner Lake PH 2
- Corner Lake PH 3
- Corner Lake PH 4
- Corner Lakes Kash N Karry
- Country Lake ESTS
- Cypress Lakes - Parcels D and L
- Cypress Lakes - Parcels J and K
- Cypress Lakes PH 1
- Lockwood Crossing

Biodiversity

- Priority 1 - Highest
- Priority 2
- Priority 3
- Priority 4



Source: ESRI Aerial (Orange County 2019)
 Study Corridor/Pond Locations (JMT 2022)
 Conservation Area (FDEP Map Direct)
 SJRWMD Permit Search (FDEP 2022)
 Biodiversity Data (FNAI CLIP 4.0)

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 Feet

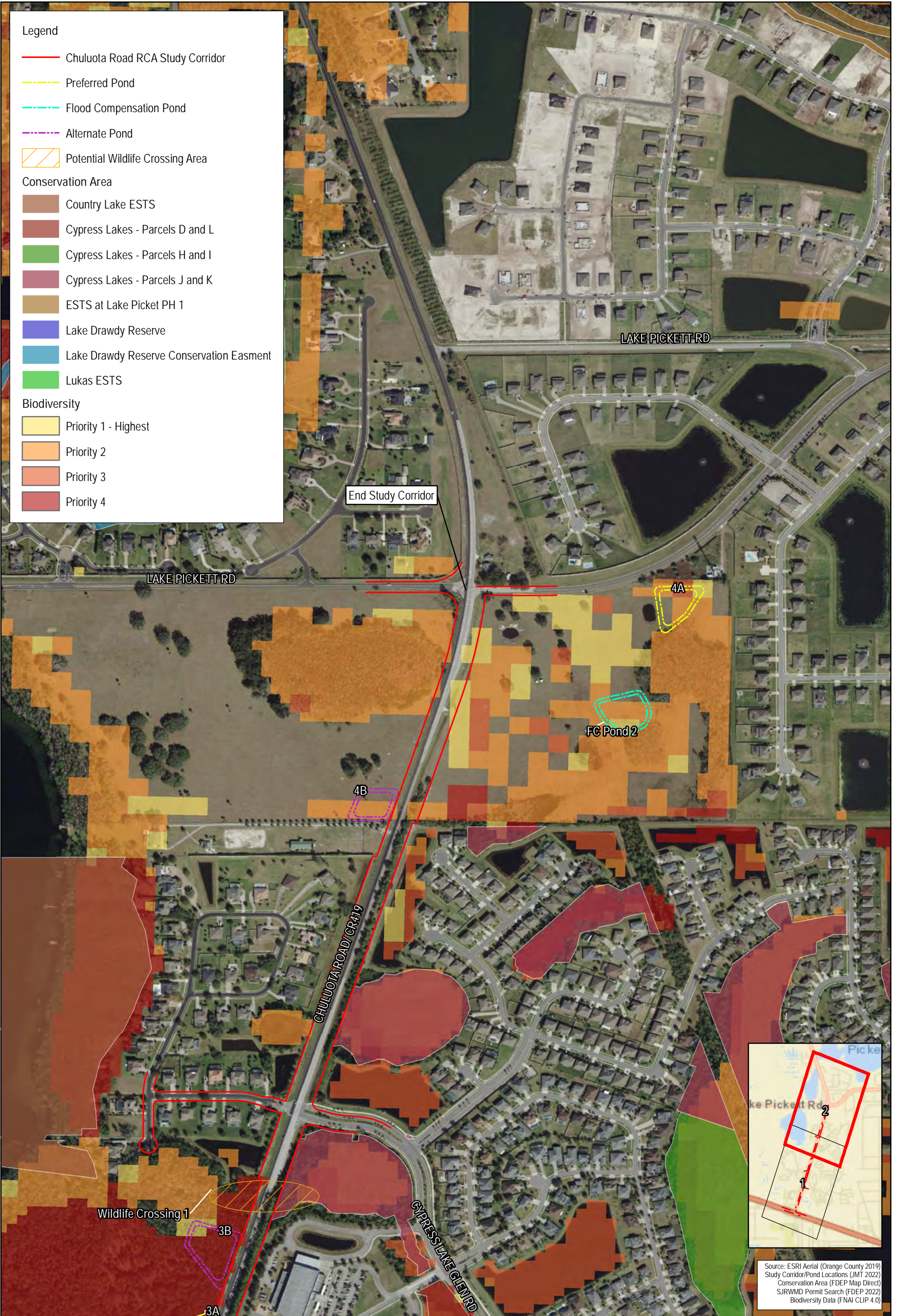
DRN: LMO APR: KJT
 DATE: 2.28.2022 OCPN: Y20-380-CH

DRAFT

Chuluota Road RCA
 from Colonial Drive to Lake Pickett Road
 Wildlife Crossing Considerations Map
 Orange County, Florida

Figure No. 18-1
 MSE Group, LLC

Document Path: T:\GIS\Client Files\1855 - JMT\1855_001 Chuluota Road RCA\Map\18-1 Chuluota RCA Wildlife Crossing Review.mxd



Legend

- Chuluota Road RCA Study Corridor
- Preferred Pond
- Flood Compensation Pond
- Alternate Pond
- Potential Wildlife Crossing Area
- Conservation Area**
- Country Lake ESTS
- Cypress Lakes - Parcels D and L
- Cypress Lakes - Parcels H and I
- Cypress Lakes - Parcels J and K
- ESTS at Lake Pickett PH 1
- Lake Drawdy Reserve
- Lake Drawdy Reserve Conservation Easment
- Lukas ESTS
- Biodiversity**
- Priority 1 - Highest
- Priority 2
- Priority 3
- Priority 4

End Study Corridor

LAKE PICKETT RD

LAKE PICKETT RD

4A

FC Pond 2

4B

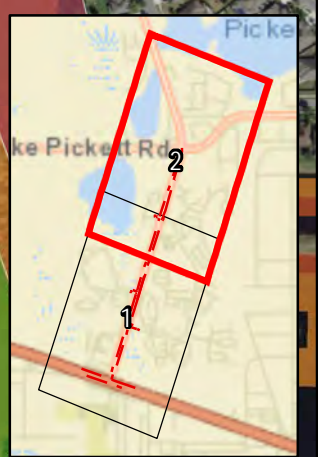
CHULUOTA ROAD (CR419)

CYPRESS LAKE GLEN RD

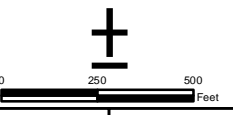
Wildlife Crossing 1

3B

3A



Source: ESRI Aerial (Orange County 2019)
 Study Corridor/Pond Locations (JMT 2022)
 Conservation Area (FDEP Map Direct)
 SJRWMD Permit Search (FDEP 2022)
 Biodiversity Data (FNAI CLIP 4.0)



DRAFT

Chuluota Road RCA
 from Colonial Drive to Lake Pickett Road
 Wildlife Crossing Considerations Map
 Orange County, Florida



DRN: LMO APR: KJT
 DATE: 2.28.2022 OCPN: Y20-380-CH

Document Path: T:\GIS\Client Files\1855 - JMT\1855-001 Chuluota Road RCA\Map\18-2 Chuluota RCA Wildlife Crossing Review.mxd

Appendix A – Woodstork Determination Key

**THE CORPS OF ENGINEERS, JACKSONVILLE DISTRICT, U. S. FISH AND
WILDLIFE SERVICE, JACKSONVILLE ECOLOGICAL SERVICES FIELD
OFFICE AND STATE OF FLORIDA EFFECT DETERMINATION KEY FOR
THE WOOD STORK IN CENTRAL AND NORTH PENINSULAR FLORIDA
September 2008**

Purpose and Background

The purpose of this document is to provide a tool to improve the timing and consistency of review of Federal and State permit applications and Federal civil works projects, for potential effects of these projects on the endangered wood stork (*Mycteria americana*) within the Jacksonville Ecological Services Field Office (JAFL) geographic area of responsibility (GAR see below). The key is designed primarily for Corps Project Managers in the Regulatory and Planning Divisions and the Florida Department of Environmental Protection or its authorized designee, or Water Management Districts. The tool consists of the following dichotomous key and reference material. The key is intended to be used to evaluate permit applications and Corps' civil works projects for impacts potentially affecting wood storks or their wetland habitats. At certain steps in the key, the user is referred to graphics depicting known wood stork nesting colonies and their core foraging areas (CFA), footnotes, and other support documents. The graphics and supporting documents may be downloaded from the Corps' web page at <http://www.saj.usace.army.mil/permit> or at the JAFL web site at <http://www.fws.gov/northflorida/WoodStorks>. We intend to utilize the most recent information for both the graphics and supporting information; so should this information be updated, we will modify it accordingly. **Note: This information is provided as an aid to project review and analysis, and is not intended to substitute for a comprehensive biological assessment of potential project impacts. Such assessments are site-specific and usually generated by the project applicant or, in the case of civil works projects, by the Corps or project co-sponsor.**

Explanatory footnotes provided in the key must be closely followed whenever encountered.

Scope of the key

This key should only be used in the review of permit applications for effects determinations on wood storks within the JAFL GAR, and not for other listed species. Counties within the JAFL GAR include Alachua, Baker, Bradford, Brevard, Citrus, Clay, Columbia, Dixie, Duval, Flagler, Gilchrist, Hamilton, Hernando, Hillsborough, Lafayette, Lake, Levy, Madison, Manatee, Marion, Nassau, Orange, Pasco, Pinellas, Putnam, St. Johns, Seminole, Sumter, Suwannee, Taylor, Union, and Volusia.

The final effect determination will be based on project location and description, the potential effects to wood storks, and any measures (for example project components, special permit conditions) that avoid or minimize direct, indirect, and/or cumulative

impacts to wood storks and/or suitable wood stork foraging habitat. Projects that key to a “no effect” determination do not require additional consultation or coordination with the JAFL. Projects that key to “NLAA” also do not need further consultation; however, the JAFL staff will assist the Corps if requested, to answer questions regarding the appropriateness of mitigation options. Projects that key to a “may affect” determination equate to “likely to adversely affect” situations, and those projects should not be processed under the SPGP or any other programmatic general permit. For all “may affect” determinations, Corps Project Managers should request the JAFL to initiate formal consultation on the Wood stork.

Summary of General Wood Stork Nesting and Foraging Habitat Information

The wood stork is primarily associated with freshwater and estuarine habitats that are used for nesting, roosting, and foraging. Wood storks typically nest colonially in medium to tall trees that occur in stands located either in swamps or on islands surrounded by relatively broad expanses of open water (Ogden 1991; Rodgers et al. 1996). Successful breeding sites are those that have limited human disturbance and low exposure to land based predators. Nesting sites protected from land-based predators are characterized as those surrounded by large expanses of open water or where the nest trees are inundated at the onset of nesting and remain inundated throughout most of the breeding cycle. These colonies have water depths between 0.9 and 1.5 meters (3 and 5 feet) during the breeding season.

In addition to limited human disturbance and land-based predation, successful nesting depends on the availability of suitable foraging habitat. Such habitat generally results from a combination of average or above-average rainfall during the summer rainy season, and an absence of unusually rainy or cold weather during the winter-spring breeding season (Kahl 1964; Rodgers et al. 1987). This pattern produces widespread and prolonged flooding of summer marshes that tends to maximize production of freshwater fishes, followed by steady drying that concentrate fish during the season when storks nest (Kahl 1964). Successful nesting colonies are those that have a large number of foraging sites. To maintain a wide range of foraging opportunities, a variety of wetland habitats exhibiting short and long hydroperiods should be present. In terms of wood stork foraging, the Service (1999) describes a short hydroperiod as one where a wetland fluctuates between wet and dry in 1 to 5-month cycles, and a long hydroperiod where the wet period is greater than five consecutive months. Wood storks during the wet season generally feed in the shallow water of short-hydroperiod wetlands and in coastal habitats during low tide. During the dry season, foraging shifts to longer hydroperiod interior wetlands as they progressively dry down (though usually retaining some surface water throughout the dry season).

Because of their specialized feeding behavior, wood storks forage most effectively in shallow-water areas with highly concentrated prey. Typical foraging sites for the wood stork include freshwater marshes, depressions in cypress heads, swamp sloughs, managed impoundments, stock ponds, shallow-seasonally flooded roadside or agricultural ditches, and narrow tidal creeks or shallow tidal pools. Good foraging conditions are characterized by water that is relatively calm, open, and having water depths between 5 and 15 inches (5 and 38 cm). Preferred foraging habitat includes wetlands exhibiting a mosaic of submerged and/or emergent aquatic vegetation, and shallow, open-water areas subject to hydrologic

regimes ranging from dry to wet. The vegetative component provides nursery habitat for small fish, frogs, and other aquatic prey, and the shallow, open-water areas provide sites for concentration of the prey during daily or seasonal low water periods.

WOOD STORK KEY

Although designed primarily for use by Corps Project Managers in the Regulatory and Planning Divisions, and State Regulatory agencies or their designees, project permit applicants and co-sponsors of civil works projects may find this key and its supporting documents useful in identifying potential project impacts to wood storks, and planning how best to avoid, minimize, or compensate for any identified adverse effects.

- A. Project within 2,500 feet of an active colony site¹.....*May affect*
Project more than 2,500 feet from a colony site.....go to B
- B. Project does not affect suitable foraging habitat² (SFH).....*no effect*
Project impacts SFH².....go to C
- C. Project impacts to SFH are less than or equal to 0.5 acre³.....*NLAA*⁴
Project impacts to SFH are greater than or equal to 0.5 acre.....go to D
- D. Project impacts to SFH not within a Core Foraging Area⁵ (see attached map) of a colony site, and no wood storks have been documented foraging on site.....*NLAA*⁴
Project impacts to SFH are within the CFA of a colony site, or wood storks have been documented foraging on a project site outside the CFAgo to E
- E. Project provides SFH compensation within the Service Area of a Service-approved wetland mitigation bank or wood stork conservation bank preferably within the CFA, or consists of SFH compensation within the CFA consisting of enhancement, restoration or creation in a project phased approach that provides an amount of habitat and foraging function equivalent to that of impacted SFH (see *Wood Stork Foraging Habitat Assessment Procedure*⁶ for guidance), is not contrary to the Service's *Habitat Management Guidelines For The Wood Stork In The Southeast Region* and in accordance with the CWA section 404(b)(1) guidelines.....*NLAA*⁴
Project does not satisfy these elements.....*May affect*

¹ An active nesting site is defined as a site currently supporting breeding pairs of wood storks, or has supported breeding wood storks at least once during the preceding 10-year period.

² Suitable foraging habitat (SFH) is described as any area containing patches of relatively open (< 25% aquatic vegetation), calm water, and having a permanent or seasonal water depth between 2 and 15 inches (5 to 38 cm). SFH supports and concentrates, or is capable of supporting and concentrating small fish, frogs, and other aquatic prey. Examples of SFH include, but are not limited to, freshwater marshes and stock ponds, shallow, seasonally flooded roadside or agricultural ditches, narrow tidal creeks or shallow tidal pools, managed impoundments, and depressions in cypress heads and swamp sloughs. See above *Summary of General Wood Stork Nesting and Foraging Habitat Information*.

³ On an individual basis, projects that impact less than 0.5 acre of SFH generally will not have a measurable effect on wood storks, although we request the Corps to require mitigation for these losses when appropriate. Wood Storks are a wide ranging species, and individually, habitat change from impacts to less than 0.5 acre of SFH is not likely to adversely affect wood storks. However, collectively they may have an effect and therefore regular monitoring and reporting of these effects are important.

⁴ Upon Corps receipt of a general concurrence issued by the JAFL through the Programmatic Concurrence on this key, "NLAA" determinations for projects made pursuant to this key require no further consultation with the JAFL.

⁵ The U.S. Fish and Wildlife Service (Service) has identified core foraging area (CFA) around all known wood stork nesting colonies that is important for reproductive success. In Central Florida, CFAs include suitable foraging habitat (SFH) within a 15-mile radius of the nest colony; CFAs in North Florida include SFH within a 13-mile radius of a colony. The referenced map provides locations of known colonies and their CFAs throughout Florida documented as active within the last 10 years. The Service believes loss of suitable foraging wetlands within these CFAs may reduce foraging opportunities for the wood stork.

⁶This draft document, *Wood Stork Foraging Habitat Assessment Procedure*, by Passarella and Associates, Incorporated, may serve as further guidance in ascertaining wetland foraging value to wood storks and compensating for impacts to wood stork foraging habitat.

Monitoring and Reporting Effects

For the Service to monitor cumulative effects, it is important for the Corps to monitor the number of permits and provide information to the Service regarding the number of permits issued that were determined "may affect, not likely to adversely affect." It is requested that information on date, Corps identification number, project acreage, project wetland acreage, and latitude and longitude in decimal degrees be sent to the Service quarterly.

Literature Cited

Kahl, M.P., Jr. 1964. Food ecology of the wood stork (*Mycteria americana*) in Florida. *Ecological Monographs* 34:97-117.

Ogden, J.C. 1991. Nesting by wood storks in natural, altered, and artificial wetlands in central and northern Florida. *Colonial Waterbirds* 14:39-45.

Rodgers, J.A. Jr., A.S. Wenner, and S.T. Schwikert. 1987. Population dynamics of wood storks in northern and central Florida, USA. *Colonial Waterbirds* 10:151-156.

Rodgers, J.A., Jr., S.T. Schwikert, and A. Shapiro-Wenner. 1996. Nesting habitat of wood storks in north and central Florida, USA. *Colonial Waterbirds* 19:1-21.

U.S. Fish and Wildlife Service. 1999. South Florida multi-species recovery plan. Fish and Wildlife Service; Atlanta, Georgia. Available from:
<http://verobeach.fws.gov/Programs/Recovery/vbms5.html>.

Appendix B – Florida Sandhill Crane Survey Protocol

Appendix E – Geotechnical Report



**Roadway Soil Survey Report
Chuluota Road Roadway Conceptual
Analysis - From East Colonial Road
(SR 50) to Lake Pickett Road
Orange County, Florida
Contract No. Y20-830-CH
NADIC Project No.: R20027**

Prepared for:

**JMT
615 Crescent Executive Court, Suite 106
Lake Mary, FL 32746**

Prepared by:

**Nadic Engineering Services, Inc.
601 N. Hart Blvd
Orlando, Florida 32818
407-521-4771**

Consultants in: Civil · Environmental · Geotechnical Engineering
Offices in: Orlando · Miami

April 8, 2022

Johnson, Mirmiran & Thompson, Inc. (JMT)

615 Crescent Executive Court, Suite 106
Lake Mary, FL 32746

Attention: Mr. Greg T. Smith, P.E.

Re: Preliminary Roadway Soil Survey
Chuluota Road Roadway Conceptual Analysis (RCA)
(From East Colonial Drive (SR 50) to Lake Pickett Road)
Orange County, Florida
Orange County Project No.: Y20-830-CH
NADIC Project No. PR.GEO-RD20027

Dear Mr. Smith:

Nadic Engineering Services, Inc. (NADIC) is pleased to submit this Preliminary Roadway Soil Survey for the above referenced project. The purpose of this exploration was to evaluate soil and groundwater conditions along Chuluota Road for Chuluota Road Roadway Conceptual Analysis (RCA). This Soil Survey was authorized through a subconsultant agreement between JMT and **NADIC**. This report presents the results of our limited field and laboratory investigations and includes our recommendations regarding the geotechnical engineering aspects of the project.

NADIC appreciates the opportunity to be of service to JMT and Orange County Public Works Department on this project. We look forward to a continued association. Please contact us if you have any questions, or if we may be of further assistance to you as this project proceeds.

Sincerely,
NADIC ENGINEERING SERVICES, INC.
Engineering Business No. 8214



Maria Bridges, M.Sc., EI
Staff Engineer



Godwin N. Nnadi, Ph.D., P.E.
Principal Engineer
FL Registration No. 50637

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Appendix B

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Sheets 2 through 5	Report of Borings

Appendix C

Selected Laboratory Test Graphs

1.0 PROJECT LOCATION AND DESCRIPTION

Chuluota Road is an existing two-lane Minor Arterial roadway extending through a suburban area in Orange County to a sparsely developed area in Seminole County. Orange County is proposing to widen Chuluota Road from East Colonial Drive (SR 50) to Lake Pickett Road. The Chuluota Road Roadway Conceptual Analysis (RCA) is to identify the potential improvements needed to address the current and future traffic demands of Chuluota Road corridor. The approximate length of the study is about 1.9 miles.

The Roadway Conceptual Analysis (RCA) is to identify the potential improvements needed to address the current and future traffic demands of Chuluota Road corridor. The approximate length of ...

The project elements include the following: (1) Plan for completion of pedestrian and bike facilities on both sides of the road, and to accommodate the East Orange Trail. (2) Preliminary engineering and environmental analysis of approximately 10,032 feet of an existing two-lane urban Minor Arterial roadway from SR 50 to Lake Pickett Road and (3) Evaluate ten (10) retention pond locations with five (5) as preferred and the other five (5) alternative pond sites.

The project site is generally located within Sections 9, 16, 20 and 21, Township 22 South, Range 32 East, in Oviedo SW and Bithlo, Florida. A vicinity map showing the proposed roadway improvements is presented on the attached **Figure 1** in the **Appendix A**.

This report presents the findings of our subsurface exploration program and an evaluation of the soil and groundwater conditions encountered along the roadway corridor and proposed pond areas.

2.0 REVIEW OF AVAILABLE PUBLISHED DATA

2.1 General

To obtain general information on soil and groundwater conditions along the project alignment, NADIC reviewed available data including aerial maps, United States Geological Survey (USGS) Quadrangle Topographic Maps and the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey for Orange County, and other published sources. A summary of this information is presented below in the following report sections.

2.2 USGS Topographic Map

The “Oviedo, SW” and “Bithlo, FL” USGS topographic maps issued in 2021, in the vicinity of the Chuluota Road were reviewed. The project corridor is shown on an excerpt of the USGS topographic map and presented on **Figure 2** in **Appendix A**. The map shows the ground surface elevation in the project vicinity to range from approximately +65 to +75 feet, North American Vertical Datum of 1988 (NAVD-88).

2.3 USDA, NRCS Soil Survey

The Orange County Soil Survey published by the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) is a comprehensive publishes source of information regarding near-surface soil and surficial groundwater depth. The NRCS Orange County Soil Survey was reviewed for information regarding near-surface soil conditions within the study corridor.

The Orange County soil survey identified the following six (6) primary mapping soil units within the limits of the project corridor.

Table 1: USDA/NRCS Soil Survey Summary

Map Unit Symbol	USDA Soil Name	AASHTO* Group	Seasonal High Groundwater Depth in Natural Conditions (feet)	Hydrologic Soil Group
2	Archbold	A-3	3.5 – 6.0	A
3	Basinger fine sand, depressional, 0 to 1 percent slopes	A-3, A-2-4	Ponded	A/D
34	Pomello fine sand, 0 to 5 percent slope	A-3, A-2-4	2.0-3.5	A
37	St. Johns fine sand	A-3, A-2-4	0-1.0	B/D
44	Smyrna-Smyrna, wet, fine sand, 0 to 2 percent slopes	A-3, A-2-4	0-1.0	A/D
54	Zolfo fine sand, 0 to 2 percent slopes	A-3, A-2-4	2.0-3.5	A

*AASHTO: American Association of State Highway and Transportation Officials.

Refer to **Figures 3A** and **3B** in **Appendix A** for a reproduction of the USDA NRCS Orange County Soil Survey map for the project area. The NRCS Soil Survey generally identifies these soil types with poorly to moderately well drained soil, with permeability ranging from poorly to very high. The NRCS Soil Survey predicts the groundwater levels for these soil types to range from the natural ground surface to 72 inches below the natural ground surface.

Information from the NRCS Soil Survey is very general and may be outdated due to recent developments in the project site vicinity. Therefore, it may not reflect the actual soil and groundwater conditions, particularly where development has modified the natural soil conditions or surface and near surface drainage.

3.0 FIELD EXPLORATION PROGRAM AND METHODS

3.1 Field Exploration Program

The subsurface exploration for this preliminary evaluation consisted of 34 auger borings to a depth of five (5) feet each and 17 Standard Penetration Test (SPT) borings to a depth of 20 feet, at 200-foot interval as requested by Orange County. The borings were established in the unpaved areas along the northbound and southbound shoulder of Chuluota Road. A total of nine (9) SPT borings were completed for the stormwater ponds to a depth of 15 feet each below existing grade; one boring for each proposed pond locations. Due to lack of access and wetland conditions, borings were not drilled in Pond Sites 3, 4, 5 and 11.

The location of the borings was determined by NADIC based on information provided by JMT. All borings were staked in the field by a representative of NADIC with the aid of a Global Positioning System (GPS) device.

Upon completion and after groundwater measurements, all borings were backfilled for safety. Boring approximate locations are shown on **Figures 4A** through **4C** in the **Appendix A**.

The results of the exploration program in the form of soil profiles are shown on **Sheet 2** through **5** in **Appendix B**.

3.2 Field Exploration Methods

3.2.1 Hand Auger Borings

Hand auger borings were performed to a general depth of five (5) feet below the existing grade by manually twisting and advancing a bucket auger, three-inch diameter, six-inch long into the ground in four (4) to six (6) inch increments. These borings were performed in general accordance with the American Society of Testing and Materials (ASTM) Test Designation D-1452. As each soil type was revealed, representative samples were placed in air-tight bags and returned to our laboratory for further visual examination and classification by a geotechnical engineer.

Groundwater levels were measured in the borings upon completion and 24 hours later; each borehole was sealed with native soils.

3.2.2 Standard Penetration Test Borings

The SPT borings performed were conducted in general conformance with the American Standard Testing Method (ASTM) test designation D-1586. The borings were advanced by the rotary wash method with bentonite based mud as the circulating fluid to stabilize the borehole. The SPT borings were generally performed continuously from the ground surface to 10.5 feet and at 5-foot depth intervals thereafter. After seating the sampler six inches, the number of successive blows required to drive the sampler 12 inches into the soil constitutes the test result commonly referred to as the “N” value. Adjacent to the SPT boring profiles are the “N” values. The “N” value has been empirically correlated with various soil properties and is considered indicative of the relative density of cohesionless soils and the consistency of cohesive soils. All recovered samples were

visually classified in the field with representative portions of the samples placed in airtight jars and transported to our office for review by a Geotechnical Engineer for confirmation of the field classification and laboratory testing.

Groundwater levels were measured in the borings and upon completion, each borehole was sealed with native soils.

4.0 GENERAL SUBSURFACE CONDITIONS

4.1 General Subsoil Conditions

The soils encountered along the project alignment are shown on **Sheet 2** through **5** in the **Appendix B**. The soil survey encountered three (3) generalized soil strata within the project limits to the maximum depth explored in the boring. The soils encountered in the borings are classified using the AASHTO Soil Classification System (i.e. A-3, A-2-4, etc.). Soil classification and stratification are based on visual examination, interpretation of the boring logs by a geotechnical engineer and laboratory results of selected soil samples. The soil profiles indicate subsurface conditions encountered only at the specific boring locations at the time of the field exploration.

4.2 Roadway Boring Results

The soil borings along the roadway alignment encountered three (3) generalized soil strata within the project limits to the maximum depth explored in the borings. The soil strata encountered as well as soil descriptions, AASHTO classifications and FDOT 505 Embankment Soil Utilization designations are summarized below:

Stratum	Soil Description	AASHTO Soil Classification	FDOT Index 120-001 Classification
1	Brown to gray fine SAND, with silt/clay, occasionally with roots, limerock and shell fragments	A-3	Select (S)
2	Brown to gray silty SAND, occasionally with roots and organics	A-2-4	Select (S)
3	Dark brown to dark gray organic silty SAND to organic sandy SILT, occasionally with roots	A-8	Muck (M)

The above subsurface condition is only general descriptions. For further details at individual boring locations, refer to the Report of Roadway Borings on **Sheet 2** through **4** in **Appendix B**.

4.3 Pond Boring Results

The Pond Sites investigated are designated as Pond 1, 2, 6, 7, 8, 9, 10, 12 and 13. Based on limited soil borings completed in the proposed pond locations, two (2) generalized soil strata encountered

to the maximum depth explored in the borings. The soil strata encountered as well as soil descriptions, AASHTO classifications and FDOT 505 Embankment Soil Utilization designations are summarized below:

Stratum	Soil Description	AASHTO Soil Classification	FDOT Index 120-001 Classification
1	Brown to gray fine SAND, with silt/clay, occasionally with roots, limerock and shell fragments	A-3	Select (S)
2	Brown to gray silty SAND, occasionally with roots and organics	A-2-4	Select (S)

The above subsurface conditions are only general descriptions. For details refer to the boring profiles on **Sheet 5** in **Appendix B**.

4.4 Groundwater

Groundwater levels measured in the open borings during our roadway exploration indicate that the groundwater table ranged from about one (1) foot to six (6) feet below existing grade at the time of our exploration September 2021 and March 2022. Both encountered and estimated seasonal groundwater levels are shown adjacent to the boring profiles, where applicable (see **Sheet 2** through **5** in the **Appendix B**). Groundwater conditions will vary with environmental variations and seasonal conditions, such as the frequency and magnitude of rainfall patterns, as well as man-made influences, such as swales, drainage ponds, underdrains, and areas of covered soil (roadways, sidewalks, etc.).

For the purposes of this report, estimated seasonal high groundwater levels are defined as groundwater levels that are anticipated at the end of the wet season of a “normal rainfall year” under current site conditions. “Normal rainfall year” is defined as a year in which rainfall quantity and distribution were at or near historical rainfall averages. The estimated seasonal high groundwater levels presented next to the boring profiles (**Sheet 2** through **5** in the **Appendix B**) are based on the soil stratigraphy, measured groundwater levels, USDA/NRCS information, review of roadway plans, and past experience with similar soil conditions. In general, the estimated seasonal high groundwater level is not intended to define a limit or ensure future seasonal fluctuations in groundwater levels will not exceed the estimated levels. Post-development groundwater levels could exceed the seasonal high groundwater level estimates as a result of a series of rainfall events, changed conditions at the site which alter surface water drainage characteristics, or variations in the duration, intensity, or total volume of rainfall.

5.0 LABORATORY TESTING

Representative soil samples were retrieved from the borings and returned to NADIC's laboratory for further visual classification, stratification and selective soil testing. The roadway boring samples

were classified and stratified in general accordance with the American Association of State Highway and Transportation officials (AASHTO) Soil Classification System. Results of all roadway laboratory tests are summarized on the Roadway Soil Survey Sheet (**Sheet 1**) in **Appendix B** and on **Table 2** in the **Appendix A**.

6.0 PRELIMINARY EVALUATION AND RECOMMENDATIONS

6.1 General

The evaluation and recommendations contained in this preliminary roadway soil survey report are based in part on the data obtained from a limited number of soil samples and groundwater measurements obtained from widely spaced borings. One boring was completed in each of the nine (9) pond sites. The exploration methods used indicate subsurface conditions at specific boring locations, only at the time they were performed and to the depths penetrated. Borings cannot be relied upon to accurately reflect the variations that usually exist between boring locations and these variations may not become evident until construction. If variations from the conditions described in this report become evident during the course of construction, or project characteristics described in this report change, **NADIC** should be retained to re-evaluate the conclusions and recommendations contained in this report in light of such changes.

7.0 REPORT LIMITATIONS

Our professional services have been performed; our findings and recommendations obtained and prepared in accordance with generally accepted geotechnical engineering principles and practices. **NADIC** is not responsible for the conclusions, opinions or recommendations made by others based on these data.

The scope of the investigation was intended to evaluate soil conditions within the influence of the proposed roadway improvements. The analyses and recommendations submitted in this report are based upon the anticipated location and data obtained from the soil borings performed at the locations indicated and does not reflect any variations which may occur among these borings. If any variations become evident during the course of construction, a re-evaluation of the recommendations contained in this report will be necessary after **NADIC** has had an opportunity to observe the characteristics of the conditions encountered.

The scope of services, included herein, did not include any environmental assessment for the presence or absence of hazardous or toxic materials in the soil, surface water, groundwater, and air, on the site, below and around the site. Any statements in this report or on the boring logs regarding odors, colors, unusual or suspicious items and conditions are strictly for the information of the client.

APPENDIX A

Figure 1

Vicinity Map

Figure 2

USGS Topographic Map

Figures 3A & 3B

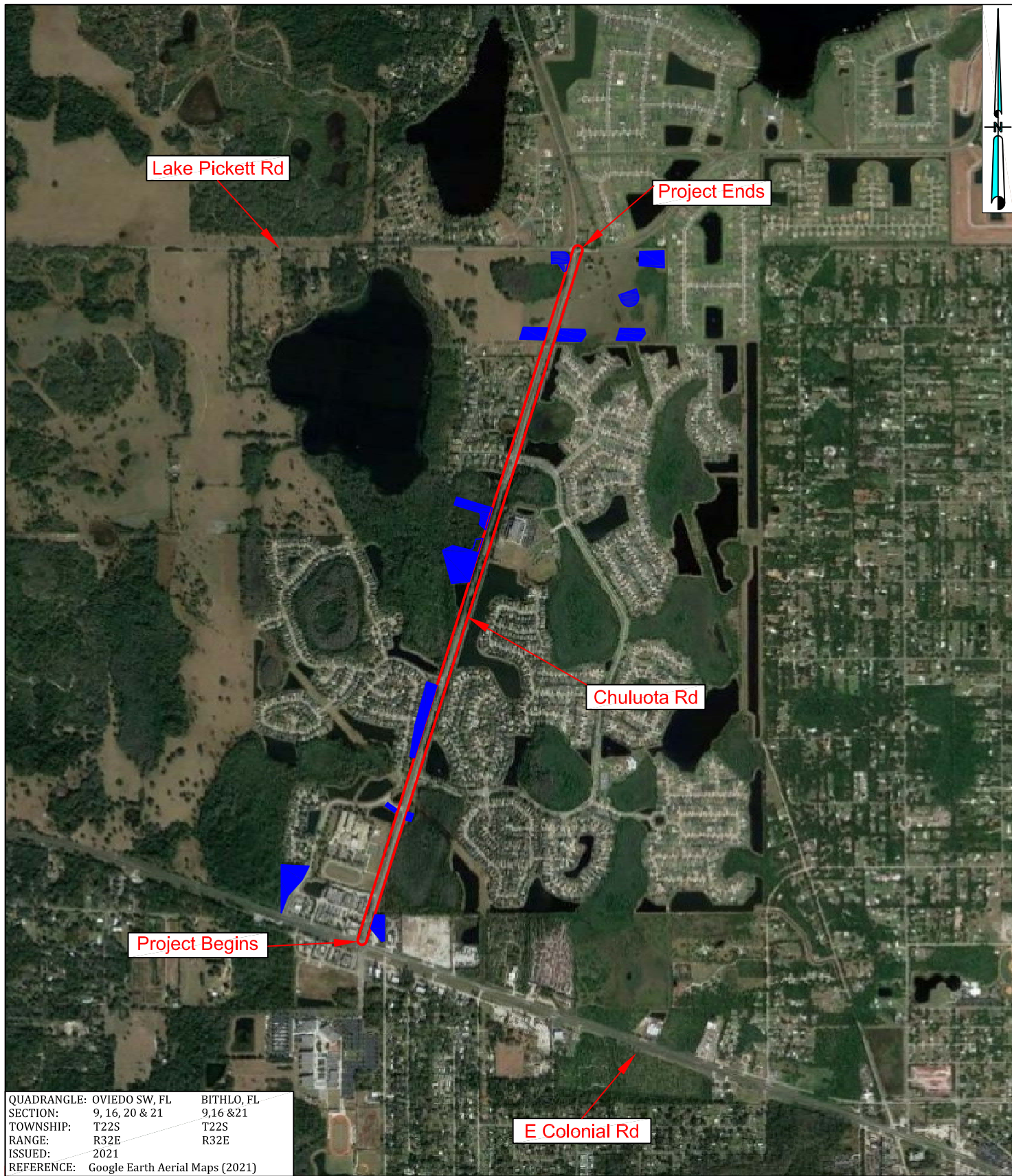
USDA/NRCS Soils Map

Figures 4A through 4C

Boring Location Map

Table 2

**Summary of Laboratory
Test Results**




QUADRANGLE: OVIEDO SW, FL BITHLO, FL
 SECTION: 9, 16, 20 & 21 9,16 &21
 TOWNSHIP: T22S T22S
 RANGE: R32E R32E
 ISSUED: 2021
 REFERENCE: Google Earth Aerial Maps (2021)

NOT TO SCALE

▭ Approximate Project Location
 ▭ Proposed Pond Locations

REVISIONS			NAMES	DATES
DATES	BY	DESCRIPTION	DRAWN BY: MB	04-07-2022
			CHECKED BY: GNN	04-07-2022
			DESIGNED BY: N/A	N/A
			CHECKED BY: N/A	N/A
			APPROVED BY:	

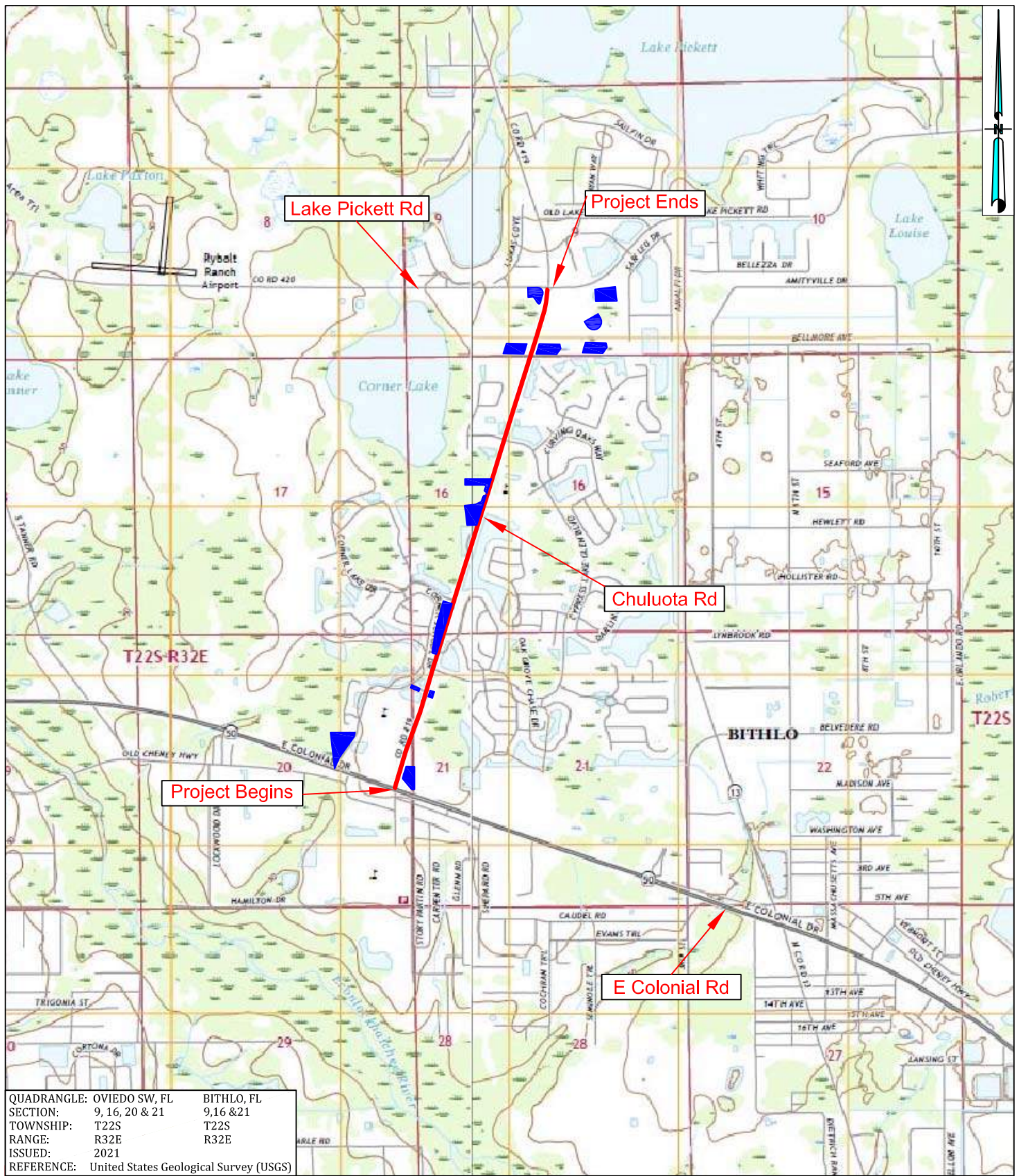


GODWIN N. NNADI, Ph.D., P.E.
 FL REGISTRATION NO. 50637
 NADIC ENGINEERING SERVICES, INC.
 601 N. HART BOULEVARD
 ORLANDO, FL 32818
 PH (407) 521-4771 FAX (407) 521-4772
 CERTIFICATE OF AUTHORIZATION NO. 8214



ORANGE COUNTY, FLORIDA	
COUNTY	CONTRACT No.
ORANGE	Y20-830-CH

FIGURE 1
VICINITY MAP
PROJECT NAME:
CHULOUTA ROAD ROADWAY CONCEPTUAL ANALYSIS (RCA)



NOT TO SCALE

□ Approximate Project Location ■ Proposed Pond Locations

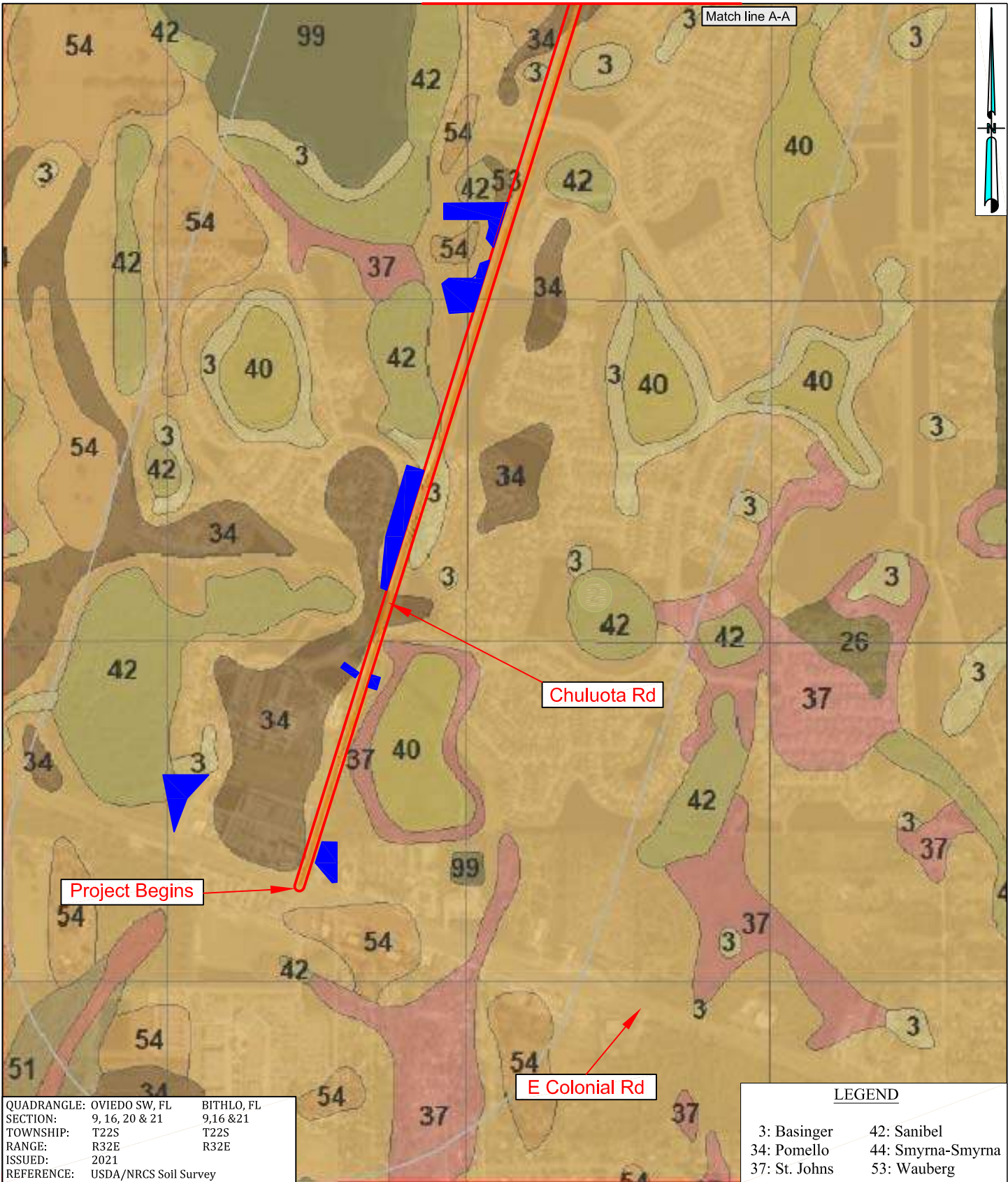
REVISIONS			NAMES	DATES
DATES	BY	DESCRIPTION	DRAWN BY: MB	04-07-2022
			CHECKED BY: GNN	04-07-2022
			DESIGNED BY: N/A	N/A
			CHECKED BY: N/A	N/A
			APPROVED BY:	

NADIC
 GODWIN N. NNADI, Ph.D., P.E.
 FL REGISTRATION NO. 50637
 NADIC ENGINEERING SERVICES, INC.
 601 N. HART BOULEVARD
 ORLANDO, FL 32818
 PH (407) 521-4771 FAX (407) 521-4772
 CERTIFICATE OF AUTHORIZATION NO. 8214



ORANGE COUNTY, FLORIDA
 COUNTY CONTRACT No.
 ORANGE Y20-830-CH

FIGURE 2
 USGS QUADRANGLE MAP
 PROJECT NAME:
 CHULOUTA ROAD
 ROADWAY CONCEPTUAL
 ANALYSIS (RCA)




QUADRANGLE: OVIEDO SW, FL BITHLO, FL
 SECTION: 9, 16, 20 & 21 9, 16 & 21
 TOWNSHIP: T22S T22S
 RANGE: R32E R32E
 ISSUED: 2021
 REFERENCE: USDA/NRCS Soil Survey

LEGEND	
3: Basinger	42: Sanibel
34: Pomello	44: Smyrna-Smyrna
37: St. Johns	53: Wauberg

NOT TO SCALE

□ Approximate Project Location
 □ Proposed Pond Locations

REVISIONS			NAMES	DATES
DATES	BY	DESCRIPTION	DRAWN BY: MB	04-07-2022
			CHECKED BY: GNN	04-07-2022
			DESIGNED BY: N/A	N/A
			CHECKED BY: N/A	N/A
			APPROVED BY:	

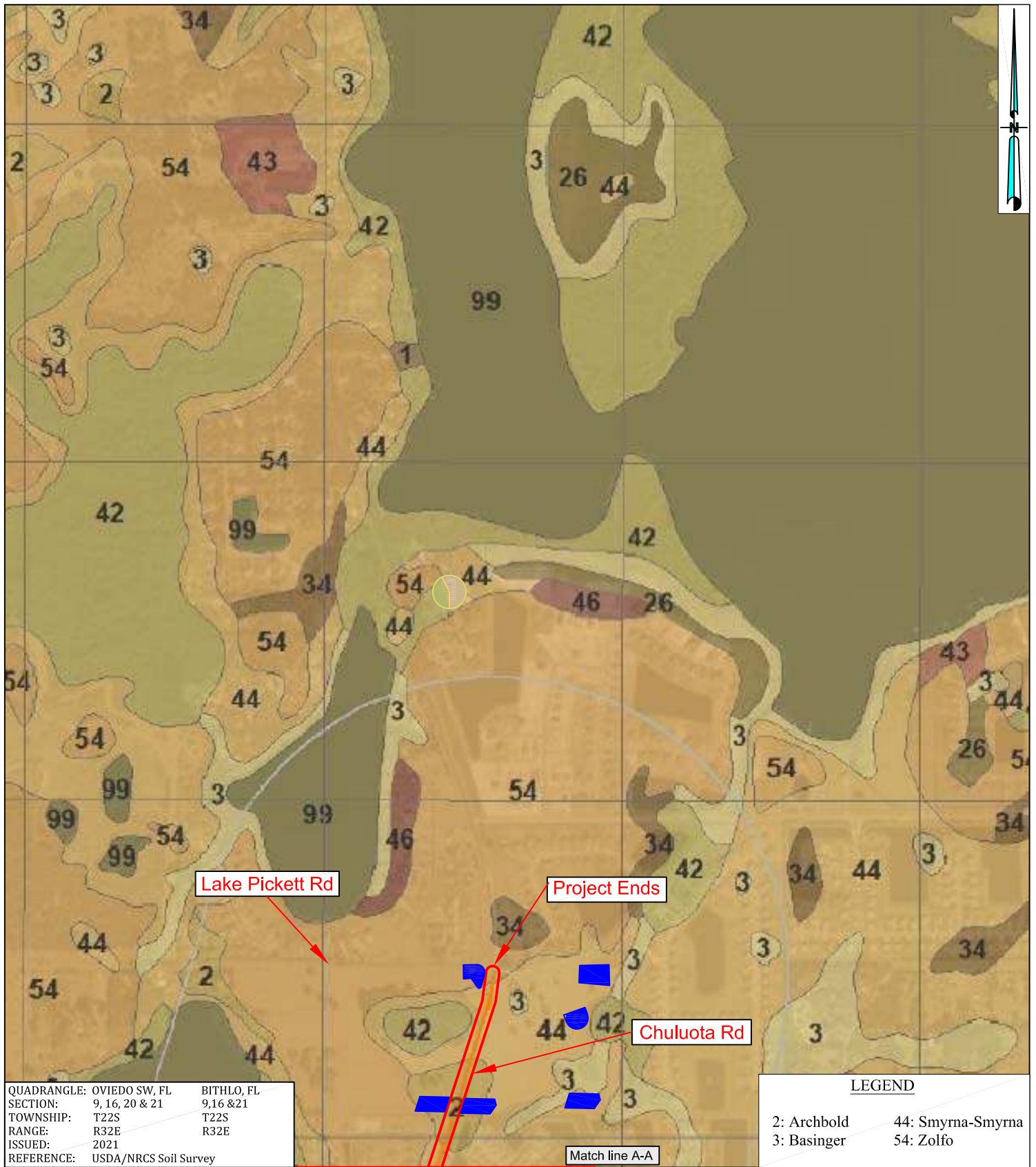


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 601 N. HART BOULEVARD
 ORLANDO, FL 32818
 PH (407) 521-4771 FAX (407) 521-4772
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ORANGE COUNTY, FLORIDA	
COUNTY	CONTRACT No.
ORANGE	Y20-830-CH

FIGURE 3A
 USDA/NRCS SOIL SURVEY MAP
 PROJECT NAME:
 CHULOOTA ROAD ROADWAY CONCEPTUAL ANALYSIS (RCA)



NOT TO SCALE

□ Approximate Project Location □ Proposed Pond Locations

REVISIONS			NAMES	DATES
DATES	BY	DESCRIPTION	DRAWN BY: MB	04-07-2022
			CHECKED BY: GNN	04-07-2022
			DESIGNED BY: N/A	N/A
			CHECKED BY: N/A	N/A
			APPROVED BY:	

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ORANGE COUNTY, FLORIDA	
COUNTY	CONTRACT No.
ORANGE	Y20-830-CH

FIGURE 3B
 USDA/NRCS SOIL SURVEY MAP
 PROJECT NAME:
 CHULOUTA ROAD ROADWAY CONCEPTUAL ANALYSIS (RCA)

\\nadiserver\share\New Z Drive\Engineering\Geotechnical\Orlando\Roadway (RD)\2020\PR.GEO-RD20027 - Chuluota Road\Project Working Files\Autocad



QUADRANGLE: OVIEDO SW, FL BITHLO, FL
 SECTION: 9, 16, 20 & 21 9, 16 & 21
 TOWNSHIP: T22S T22S
 RANGE: R32E R32E
 ISSUED: 2021
 REFERENCE: Google Earth Aerial Maps (2021)

NOT TO SCALE

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

NAMES	DATES
Drawn by: MB	04-07-2022
Checked by: GNN	04-07-2022
Designed by: N/A	N/A
Checked by: N/A	N/A
Approved by: GNN	

ENGINEER OF RECORD:
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 601 N. HART BOULEVARD
 ORLANDO FL, 32818
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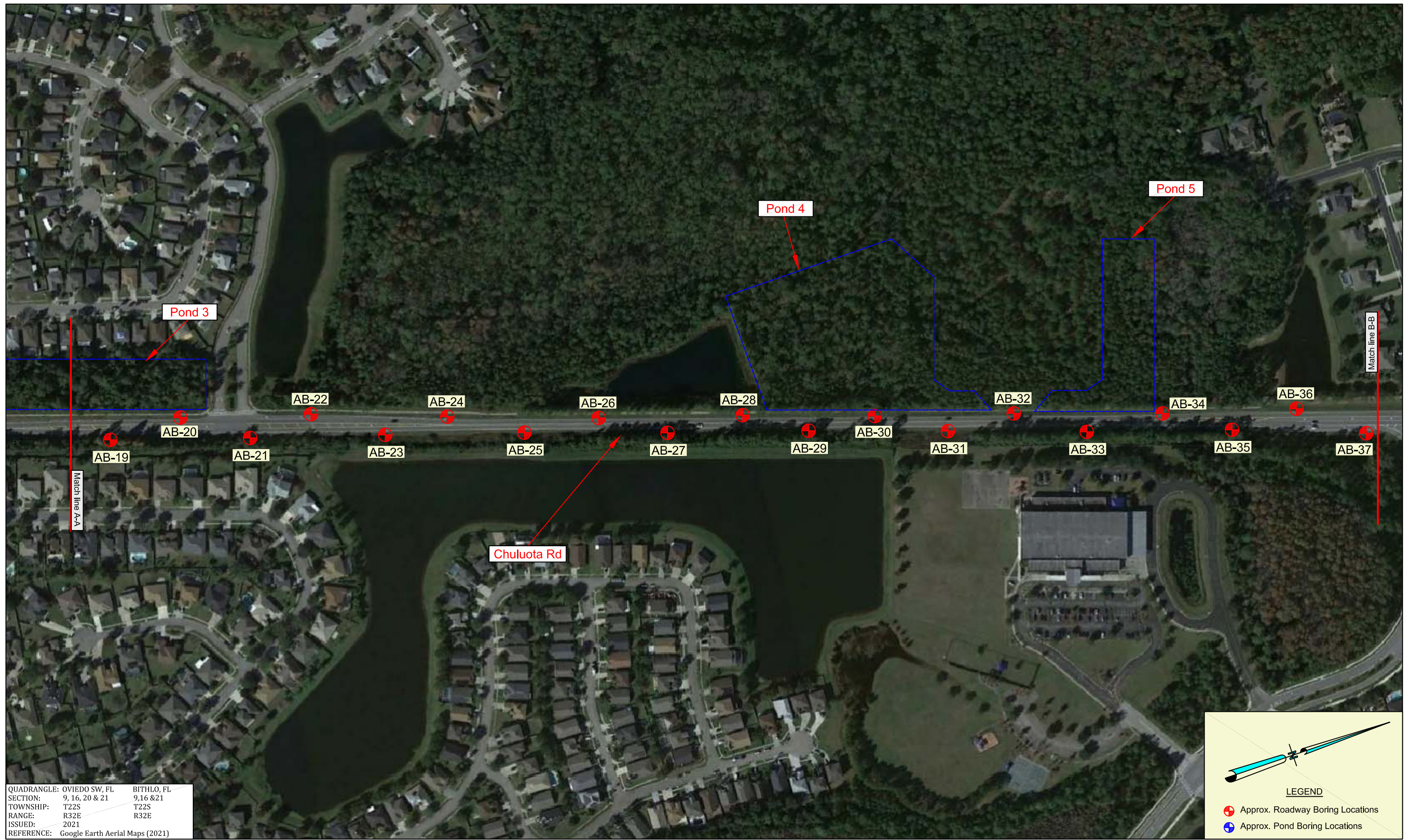


ORANGE COUNTY, FLORIDA		
ROAD NAME	COUNTY	PROJECT NO.
CHULUOTA RD	ORANGE	Y20-830-CH

TITLE: BORING LOCATION MAP
PROJECT NAME: CHULUOTA RD ROADWAY CONCEPTUAL ANALYSIS (RCA)

FIGURE NO. 4A

\\nadservershare\New Z Drive\Engineering\Geotechnical\Orlando\Roadway (RD)\2020\PR.GEO-RD20027 - Chuluota Road\Project Working File\Autocad



QUADRANGLE: OVIEDO SW, FL BITHLO, FL
 SECTION: 9, 16, 20 & 21 9,16 &21
 TOWNSHIP: T22S T22S
 RANGE: R32E R32E
 ISSUED: 2021
 REFERENCE: Google Earth Aerial Maps (2021)

NOT TO SCALE

REVISIONS					
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NAMES	DATES
Drawn by: MB	04-07-2022
Checked by: GNN	04-07-2022
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 ORLANDO FL, 32818
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ORANGE COUNTY, FLORIDA		
ROAD NAME	COUNTY	PROJECT NO.
CHULUOTA RD	ORANGE	Y20-830-CH

TITLE:
 BORING LOCATION MAP

PROJECT NAME:
 CHULUOTA RD ROADWAY CONCEPTUAL ANALYSIS (RCA)

FIGURE NO.
4B

\\nadservershare\New Z Drive\Engineering\Geotechnical\Orlando\Roadway (RD)\2020\PR.GEO-RD20027 - Chuluota Road\Project Working File\Autocad



NOT TO SCALE

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

NAMES	DATES
Drawn by: MB	04-07-2022
Checked by: GNN	04-07-2022
Designed by: N/A	N/A
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Approved by: GNN	

ENGINEER OF RECORD:
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 601 N. HART BOULEVARD
 ORLANDO FL, 32818
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ORANGE COUNTY, FLORIDA		
ROAD NAME	COUNTY	PROJECT NO.
CHULUOTA RD	ORANGE	Y20-830-CH

TITLE: BORING LOCATION MAP
PROJECT NAME: CHULUOTA RD ROADWAY CONCEPTUAL ANALYSIS (RCA)

FIGURE NO. 4C

QUADRANGLE: OVIEDO SW, FL BITHLO, FL
 SECTION: 9, 16, 20 & 21 9, 16 & 21
 TOWNSHIP: T22S T22S
 RANGE: R32E R32E
 ISSUED: 2021
 REFERENCE: Google Earth Aerial Maps (2021)

**TABLE 2
 SUMMARY OF LABORATORY TEST RESULTS**

Boring No.	Approx. Latitude	Approx. Longitude	Sample Depth (ft.)	Stratum No.	Moisture Content (%)	Organic Content (%)	Sieve Analysis (Cumulative Percent Passing)							AASHTO* Classification
							#4	#10	#20	#40	#60	#100	#200	
ROADWAY														
AB-2	28°33'41.1"N	81° 7'46.3"W	3	1	19	-	100	100	100	98	92	36	6	A-3
AB-3	28°33'42.7"N	81° 7'44.9"W	4.5	1	25	-	100	100	100	98	92	35	7	A-3
AB-6	28°33'48.2"N	81° 7'43.6"W	3	1	27	-	100	100	100	98	91	35	9	A-3
AB-7	28°33'49.8"N	81° 7'42.2"W	3	1	20	-	100	100	100	98	91	38	9	A-3
AB-24	28°34'20.7"N	81° 7'31.9"W	3	1	14	-	100	100	100	98	89	33	8	A-3
AB-27	28°34'26.1"N	81° 7'29.4"W	1	1	19	-	98	98	98	95	85	31	7	A-3
AB-32	28°34'35.4"N	81° 7'26.7"W	3	1	14	-	100	100	100	98	89	30	8	A-3
AB-36	28°34'42.8"N	81° 7'24.1"W	3	1	30	-	100	100	100	98	89	34	9	A-3
AB-43	28°34'55.1"N	81° 7'19.1"W	1	1	17	-	100	100	100	98	88	29	4	A-3
AB-46	28°35'0.7"N	81° 7'17.7"W	3	1	22	-	100	100	100	98	89	27	4	A-3
AB-49	28°35'6.1"N	81° 7'15.2"W	3	1	22	-	100	100	100	98	88	30	6	A-3
AB-10	28°33'55.3"N	81° 7'41.0"W	5	2	28	-	100	100	100	98	91	41	19	A-2-4
AB-13	28°34'0.4"N	81° 7'38.3"W	3	2	29	1	100	100	100	99	92	37	11	A-2-4
AB-16	28°34'6.2"N	81° 7'37.1"W	3	2	22	-	100	100	100	99	89	37	11	A-2-4
AB-28	28°34'28.1"N	81° 7'29.3"W	3	2	17	-	100	100	99	97	87	36	12	A-2-4
AB-31	28°34'33.4"N	81° 7'26.8"W	5	2	25	-	100	100	100	98	91	46	26	A-2-4
AB-33	28°34'37.1"N	81° 7'25.5"W	4.5	2	25	-	100	100	100	99	92	44	24	A-2-4
AB-39	28°34'47.9"N	81° 7'21.5"W	3	2	22	-	100	100	100	98	90	34	13	A-2-4
AB-40	28°34'49.9"N	81° 7'21.7"W	3	2	23	-	100	100	100	98	89	32	11	A-2-4
AB-19	28°34'11.6"N	81° 7'34.6"W	5	3	127	12	100	100	100	98	93	61	47	A-8
AB-21	28°34'15.2"N	81° 7'33.2"W	3	3	86	11	100	100	100	98	89	40	18	A-8

*American Association of State Highway and Transportation Officials

JMT

Chuluota Road RCA Soil Survey
NADIC Project No. PR.GEO-RD20027

April 8, 2022

TABLE 2 SUMMARY OF LABORATORY TEST RESULTS CONTINUED														
Boring No.	Approx. Latitude	Approx. Longitude	Sample Depth (ft.)	Stratum No.	Moisture Content (%)	Organic Content (%)	Sieve Analysis (Cumulative Percent Passing)							AASHTO* Classification
							#4	#10	#20	#40	#60	#100	#200	
PONDS														
P-6	28°35'2.8"N	81° 7'18.5"W	14	1	22	-	100	100	100	99	90	30	7	A-3
P-1	28°33'39.6"N	81° 7'44.0"W	9	2	29	-	100	100	100	98	93	45	16	A-2-4
P-2	28°33'56.2"N	81° 7'38.6"W	5	2	27	-	100	100	100	98	90	34	11	A-2-4
P-8	28°35'7.8"N	81° 7'3.4"W	1	2	38	3	100	100	100	98	89	42	24	A-2-4
P-10	28°35'13.2"N	81° 7'9.5"W	9	2	25	-	100	100	100	99	96	67	19	A-2-4
P-12	28°33'57.5"N	81° 7'41.8"W	3	2	17	-	100	100	100	99	91	37	12	A-2-4

*American Association of State Highway and Transportation Officials

APPENDIX B

Sheet 1

Roadway Soil Survey

Sheets 2 through 5

Report of Borings

NADIC ENGINEERING SERVICES, INC

ROADWAY CROSS SECTION OF SOIL SURVEY

REPORT OF TESTS

PROJECT No.: PR.GEO-RD20027
 PROJECT DESCRIPTION: CHULUOTA ROAD ROADWAY CONCEPTUAL ANALYSIS (RCA)
 SUBMITTED BY: NADIC

QUADRANGLE: OVIEDO SW, BITHLO, FLORIDA, FLORIDA
 SECTION: 9,16,20 & 21, 9,16 & 21
 TOWNSHIP: 22 SOUTH, 22 SOUTH
 RANGE: 32 EAST, 32 EAST
 SURVEY BEGINS: -
 SURVEY ENDS: -
 DATE REPORTED: MARCH, 2022

STRATUM NO.	ORGANIC CONTENT		MOISTURE CONTENT		SIEVE ANALYSIS RESULTS					ATTERBERG LIMITS (%)			AASHTO GROUP	DESCRIPTION	CORROSION TEST RESULTS					SUBSTRUCTURE ENVIRONMENTAL CLASSIFICATION			
	No. OF TESTS	% ORGANIC	No. OF TESTS	% MOISTURE CONTENT	% PASSING 10 MESH	% PASSING 40 MESH	% PASSING 60 MESH	% PASSING 100 MESH	% PASSING 200 MESH	No. OF TESTS	LIQUID LIMIT	PLASTICITY INDEX			No. OF TESTS	pH	RESISTIVITY OHM-CM	CHLORIDES PPM	SULFATE PPM	CONCRETE	STEEL		
1	-	-	12	14-30	12 (FULL)	98-100	95-99	85-92	27-38	4-9	-	-	-	A-3	BROWN TO GRAY FINE SAND TO FINE SAND WITH SILT/CLAY, OCCASIONALLY WITH ROOTS, LIMEROCK AND SHELL FRAGMENTS	-	-	-	-	-	-	-	-
2	2	1-3	13	17-38	13 (FULL)	100	97-99	87-96	32-67	11-26	-	-	-	A-2-4	BROWN TO GRAY SILTY SAND, OCASIONALLY WITH ROOTS AND ORGANICS	-	-	-	-	-	-	-	-
3	2	11-12	2	86-127	2 (FULL)	100	98	89-93	40-61	18-47	-	-	-	A-8	DARK BROWN TO DARK GRAY ORGANIC SILTY SAND TO ORGANIC SANDY SILT, OCCASIONALLY WITH ROOTS	-	-	-	-	-	-	-	-

NOTES:

- (1) STRATA BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL STRATA AT EACH TEST HOLE LOCATION ONLY. ANY STRATUM CONNECTING LINES SHOWN ARE FOR ESTIMATING EARTHWORK ONLY AND DO NOT INDICATE ACTUAL STRATUM LIMITS. SUBSURFACE VARIATIONS BETWEEN BORINGS SHOULD BE ANTICIPATED AS INDICATED IN FDOT SECTION 2-4. FOR FURTHER DETAILS SEE FDOT STANDARD SPECIFICATIONS SECTION 120-3.
- (2) SOIL PARAMETER NOT TESTED DENOTED AS "-" ABOVE.
- (3) ▼ INDICATES WATER TABLE WHERE ENCOUNTERED AT THE TIME OF SURVEY.
 GNE INDICATES GROUNDWATER LEVEL NOT ENCOUNTERED AT THE TIME OF SURVEY.
 ∇ INDICATES ESTIMATED SEASONAL HIGH WATER LEVEL.
- (4) REMOVAL OF PLASTIC AND HIGH PLASTIC MATERIAL OCCURING WITHIN THE ROADWAY SHALL BE ACCOMPLISHED IN ACCORDANCE WITH FDOT STANDARD INDEX No. 120-002 UNLESS OTHERWISE STATED IN THE PLANS. THE MATERIAL UTILIZED IN EMBANKMENT CONSTRUCTION SHALL BE IN ACCORDANCE WITH FDOT STANDARD INDEX No. 120-001.
- (5) STRATUM 1 AND 2 SHALL BE TREATED AS SELECT (S) MATERIALS PER FDOT STANDARD INDEX No. 120-001.
- (6) STRATUM 3 SHALL BE TREATED AS MUCK (M) MATERIAL PER FDOT INDEX No. 120-001.

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

NAMES	DATES
Drawn by: MB	03-24-2022
Checked by: GNN	03-24-2022
Designed by: N/A	N/A
Checked by: N/A	N/A
Approved by: GNN	

ENGINEER OF RECORD:
 NADIC ENGINEERING SERVICES, INC.
 601 N. HART BOULEVARD
 ORLANDO FL, 32818
 GODWIN N. NNADI, P.E. NO. 50637

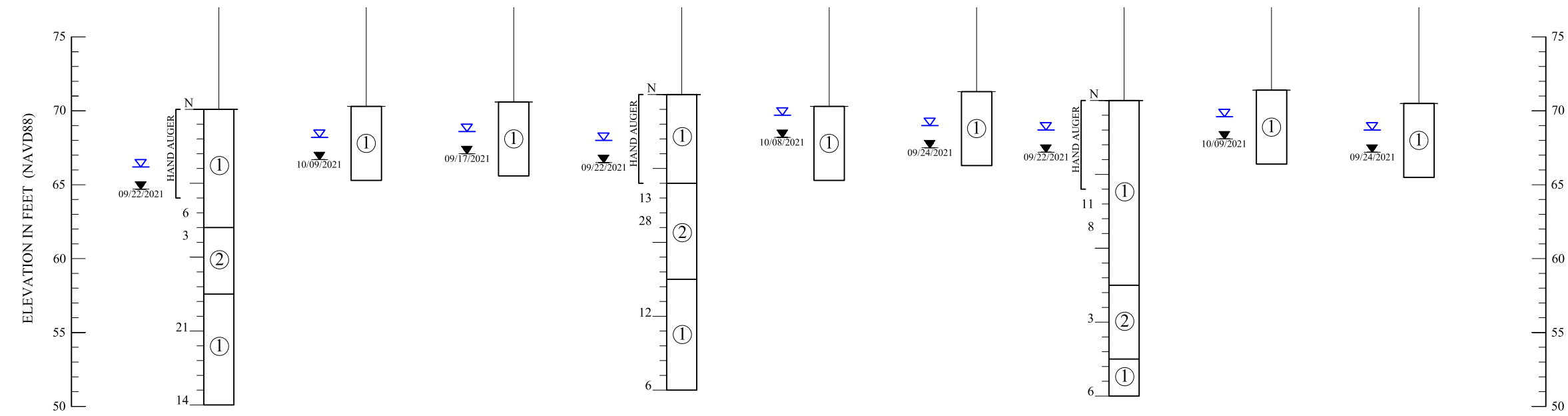


ORANGE COUNTY, FLORIDA		
ROAD NAME	COUNTY	CONTRACT NO.
CHULUOTA ROAD	ORANGE	Y20-830-CH

SHEET TITLE: REPORT OF ROADWAY SOIL SURVEY	
PROJECT NAME: CHULUOTA ROAD ROADWAY CONCEPTUAL ANALYSIS (RCA)	SHEET NO.

\\nadicserver\share\New Z Drive\Engineering\Geotechnical\Orlando\Roadway (RD)\2020\PR.GEO-RD20027 - Chuluota Road\Project Working File\Autocad

Boring No.:	AB-1	AB-2	AB-3	AB-4	AB-5	AB-6	AB-7	AB-8	AB-9
Approximate Latitude:	28°33'39.2"N	28°33'41.1"N	28°33'42.7"N	28°33'44.7"N	28°33'46.2"N	28°33'48.2"N	28°33'49.8"N	28°33'51.8"N	28°33'53.3"N
Approximate Longitude:	81°7'46.0"W	81°7'46.3"W	81°7'44.9"W	81°7'44.9"W	81°7'43.5"W	81°7'43.6"W	81°7'42.2"W	81°7'42.3"W	81°7'40.9"W
Approximate Elevation:	70.1'	70.3'	70.6'	71.1'	70.3'	71.3'	70.7'	71.4'	70.5'
Date Drilled:	09-22-2021	09-17-2021	09-17-2021	09-22-2021	09-17-2021	09-24-2021	09-22-2021	09-24-2021	09-24-2021



- LEGEND**
- ① Brown to gray fine SAND to fine SAND with silt/clay, occasionally with roots, limerock and shell fragments, (A-3)
 - ② Brown to gray silty SAND, occasionally with roots and organics, (A-2-4)
 - ▼ Groundwater level encountered on date shown
 - ▽ Estimated seasonal high groundwater level
 - (A-3) A.A.S.H.T.O.: Soil classification group symbol as determined by visual examination

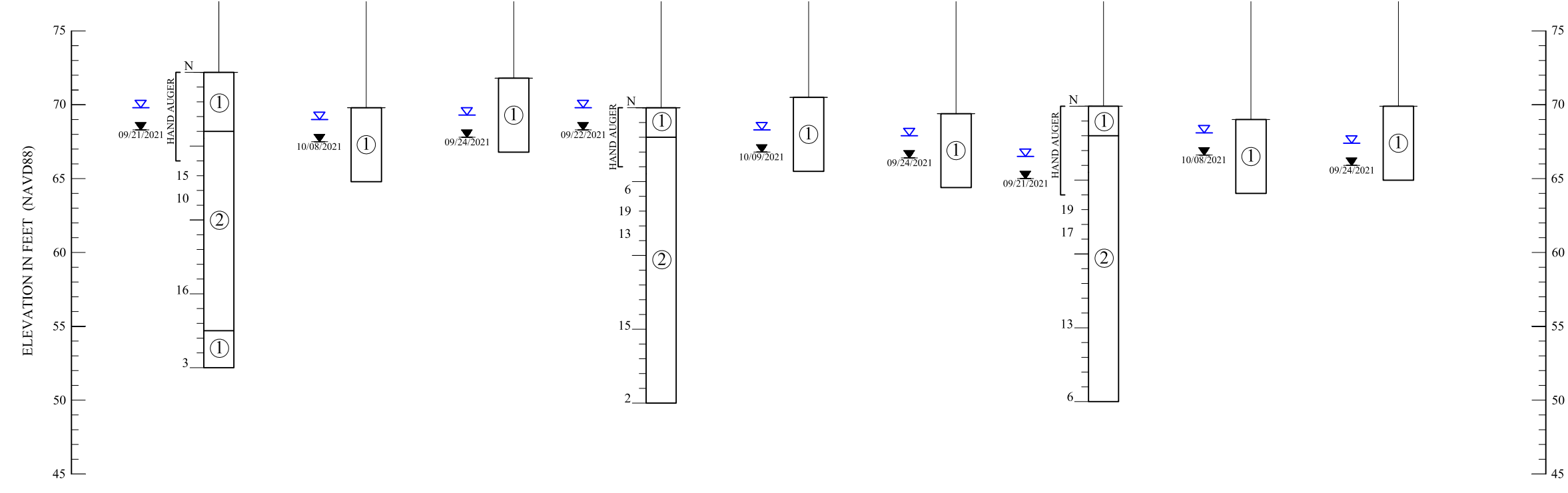
Standard Penetration Test Data

N Standard penetration resistance in blows per foot (18" spoon ASTM D-1586)

Spoon Inside Diameter 1 3/8 in.
Spoon Outside Diameter 2 in.
ASTM Standard Automatic Hammer
Hammer Weight 140 lbs.

- NOTES**
- Standard Penetration Test borings were performed in accordance with ASTM D-1586. Standard Penetration Resistance are shown on the borings at the test depths in blows per foot unless otherwise noticed
 - Subsurface conditions shown on the boring do not represent conditions between boring locations. Actual conditions between the borings may vary from those shown.
 - Unified Soil Classifications shown on the boring are based on visual examination and limited laboratory testing

Boring No.:	AB-10	AB-11	AB-12	AB-13	AB-14	AB-15	AB-16	AB-17	AB-18
Approximate Latitude:	28°33'55.3"N	28°33'56.9"N	28°33'58.9"N	28°34'0.4"N	28°34'2.4"N	28°34'4.0"N	28°34'6.2"N	28°34'8.0"N	28°34'9.9"N
Approximate Longitude:	81°7'41.0"W	81°7'39.6"W	81°7'39.8"W	81°7'38.3"W	81°7'38.5"W	81°7'37.2"W	81°7'37.1"W	81°7'35.9"W	81°7'35.8"W
Approximate Elevation:	72.2'	69.8'	71.8'	69.8'	70.5'	69.8'	69.9'	69.0'	69.9'
Date Drilled:	09-21-2021	09-24-2021	09-24-2021	09-22-2021	09-24-2021	09-24-2021	09-21-2021	09-24-2021	09-24-2021



GRANULAR MATERIALS	
RELATIVE DENSITY	SPT (BLOWS/FT.)
Very loose	Less than 3
Loose	3-7
Medium Dense	7-21
Dense	21-35
Very Dense	Greater than 35

SILTS AND CLAYS	
CONSISTENCY	SPT (BLOWS/FT.)
Very soft	Less than 1
Soft	1-3
Firm	3-6
Stiff	6-11
Very Stiff	11-21
Hard	Greater than 21

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

NAMES	DATES
Drawn by: MB	03-24-2022
Checked by: GNN	03-24-2022
Designed by: N/A	N/A
Checked by: N/A	N/A
Approved by: GNN	

ENGINEER OF RECORD:
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 601 N. HART BOULEVARD
 ORLANDO FL, 32818
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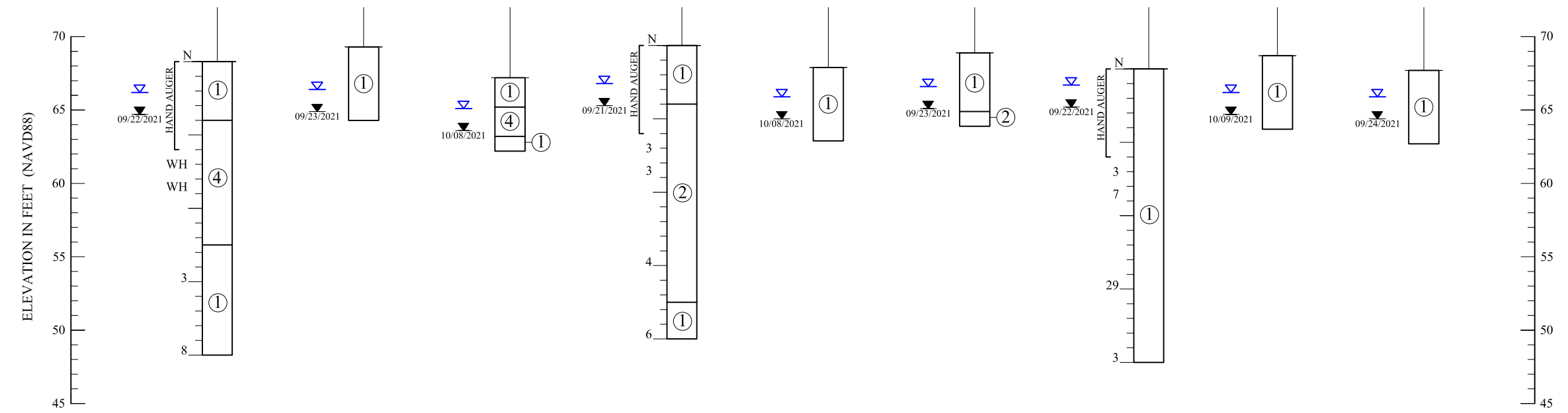
ORANGE COUNTY, FLORIDA		
ROAD NAME	COUNTY	CONTRACT NO.
CHULUOTA ROAD	ORANGE	Y20-830-CH

SHEET TITLE:	
REPORT OF ROADWAY BORINGS	
PROJECT NAME:	SHEET NO.
CHULUOTA ROAD ROADWAY CONCEPTUAL ANALYSIS (RCA)	

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

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Boring No.:	AB-19	AB-20	AB-21	AB-22	AB-23	AB-24	AB-25	AB-26	AB-27
Approximate Latitude:	28°34'11.6"N	28°34'13.6"N	28°34'15.2"N	28°34'17.1"N	28°34'18.7"N	28°34'20.7"N	28°34'22.4"N	28°34'24.4"N	28°34'26.1"N
Approximate Longitude:	81°7'34.6"W	81°7'34.5"W	81°7'33.2"W	81°7'33.3"W	81°7'32.0"W	81°7'31.9"W	81°7'30.8"W	81°7'30.6"W	81°7'29.4"W
Approximate Elevation:	68.3'	69.3'	67.2'	69.4'	67.9'	68.9'	67.8'	68.7'	67.7'
Date Drilled:	09-22-2021	09-23-2021	09-24-2021	09-21-2021	09-24-2021	09-23-2021	09-22-2021	09-23-2021	09-24-2021



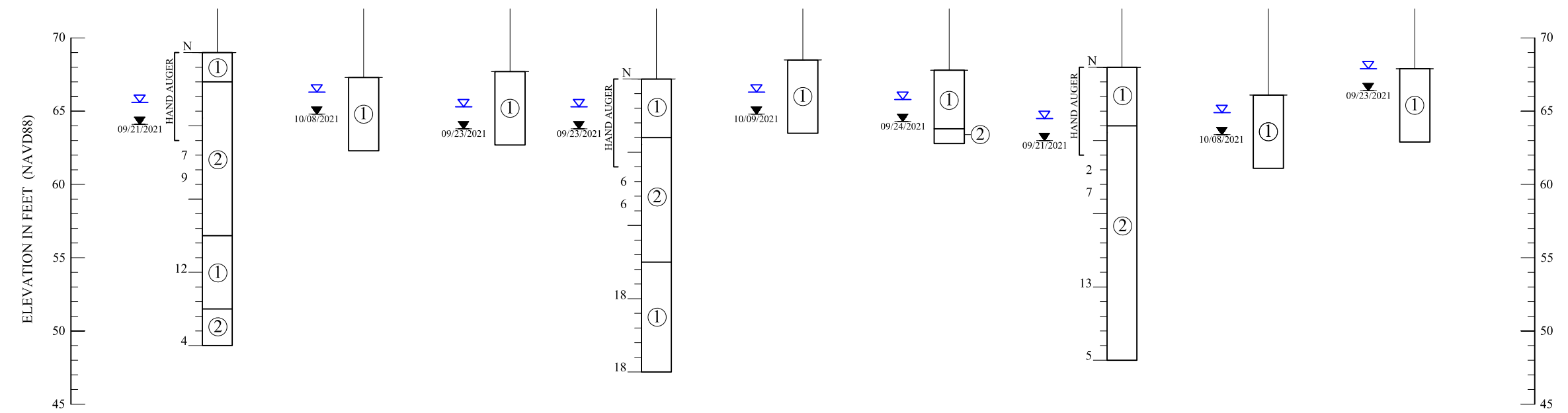
LEGEND

- ① Brown to gray fine SAND to fine SAND with silt/clay, occasionally with roots, limerock and shell fragments, (A-3)
- ② Brown to gray silty SAND, occasionally with roots and organics, (A-2-4)
- ③ Dark brown to dark gray organic silty SAND to organic sandy SILT, occasionally with roots, (A-8)
- ▼ Groundwater level encountered on date shown
- ▽ Estimated seasonal high groundwater level
- (A-3) A.A.S.H.T.O.: Soil classification group symbol as determined by visual examination
- WH Weight of hammer

Standard Penetration Test Data

N Standard penetration resistance in blows per foot (18" spoon ASTM D-1586)
 Spoon Inside Diameter 1 3/8 in.
 Spoon Outside Diameter 2 in.
 ASTM Standard Automatic Hammer
 Hammer Weight 140 lbs.

Boring No.:	AB-28	AB-29	AB-30	AB-31	AB-32	AB-33	AB-34	AB-35	AB-36
Approximate Latitude:	28°34'28.1"N	28°34'29.8"N	28°34'31.7"N	28°34'33.4"N	28°34'35.4"N	28°34'37.1"N	28°34'39.1"N	28°34'40.8"N	28°34'42.8"N
Approximate Longitude:	81°7'29.3"W	81°7'28.1"W	81°7'28.0"W	81°7'26.8"W	81°7'26.7"W	81°7'25.5"W	81°7'25.4"W	81°7'24.2"W	81°7'24.1"W
Approximate Elevation:	69.0'	67.3'	68.7'	67.2'	68.5'	67.8'	68.0'	66.1'	67.9'
Date Drilled:	09-21-2021	09-24-2021	09-23-2021	09-23-2021	09-23-2021	09-24-2021	09-21-2021	09-24-2021	09-23-2021



- NOTES**
- Standard Penetration Test borings were performed in accordance with ASTM D-1586. Standard Penetration Resistance are shown on the borings at the test depths in blows per foot unless otherwise noticed
 - Subsurface conditions shown on the boring do not represent conditions between boring locations. Actual conditions between the borings may vary from those shown.
 - Unified Soil Classifications shown on the boring are based on visual examination and limited laboratory testing

GRANULAR MATERIALS	
RELATIVE DENSITY	SPT (BLOWS/FT.)
Very loose	Less than 3
Loose	3-7
Medium Dense	7-21
Dense	21-35
Very Dense	Greater than 35

SILTS AND CLAYS	
CONSISTENCY	SPT (BLOWS/FT.)
Very soft	Less than 1
Soft	1-3
Firm	3-6
Stiff	6-11
Very Stiff	11-21
Hard	Greater than 21

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

NAMES	DATES
Drawn by: MB	03-24-2022
Checked by: GNN	03-24-2022
Designed by: N/A	N/A
Checked by: N/A	N/A
Approved by: GNN	

ENGINEER OF RECORD:
NADIC ENGINEERING SERVICES, INC.
 601 N. HART BOULEVARD
 ORLANDO FL, 32818
 GODWIN N. NNADI, P.E. NO. 50637

ORANGE COUNTY, FLORIDA

ROAD NAME	COUNTY	CONTRACT NO.
CHULUOTA ROAD	ORANGE	Y20-830-CH

SHEET TITLE:
REPORT OF ROADWAY BORINGS

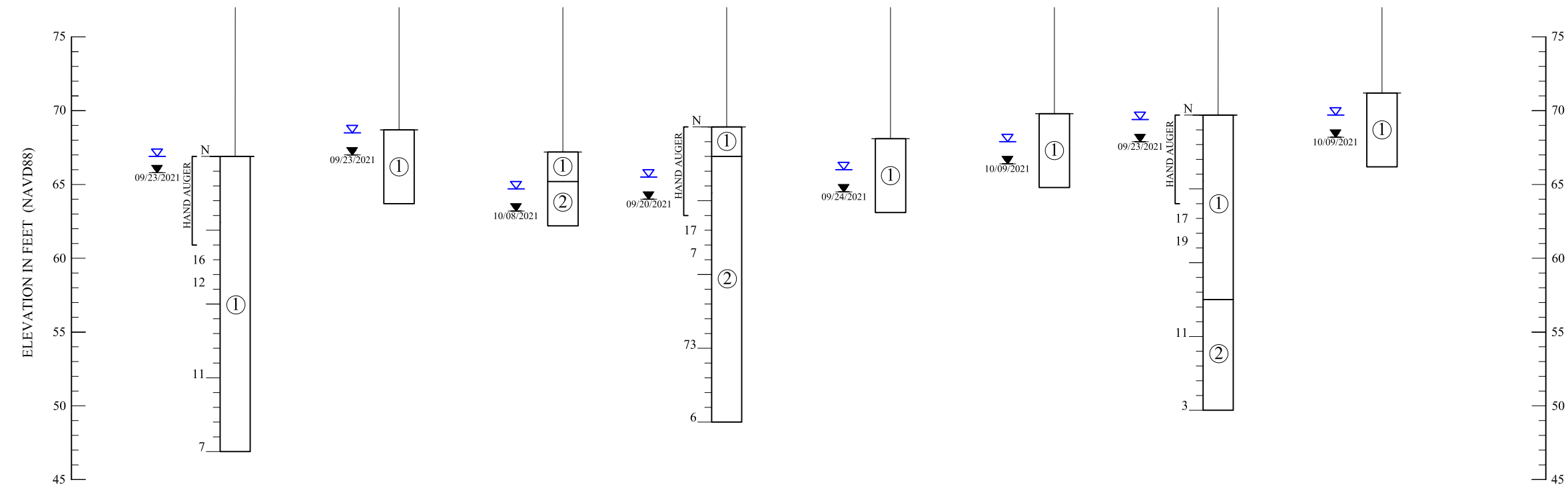
PROJECT NAME:
CHULUOTA ROAD ROADWAY CONCEPTUAL ANALYSIS (RCA)

SHEET NO. _____

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

\\nadicserver\share\New Z Drive\Engineering\Geotechnical\Orlando\Roadway (RD)\2020\PR.GEO-RD20027 - Chuluota Road\Project Working File\Autocad

Boring No.:	AB-37	AB-38	AB-39	AB-40	AB-41	AB-42	AB-43	AB-44
Approximate Latitude:	28°34'44.3"N	28°34'46.4"N	28°34'47.9"N	28°34'49.9"N	28°34'51.5"N	28°34'53.5"N	28°34'55.1"N	28°34'57.1"N
Approximate Longitude:	81°7'22.7"W	81°7'22.9"W	81°7'21.5"W	81°7'21.7"W	81°7'20.3"W	81°7'20.3"W	81°7'19.0"W	81°7'19.0"W
Approximate Elevation:	66.9'	68.7'	67.2'	68.9'	68.1'	69.8'	69.7'	71.2'
Date Drilled:	09-23-2021	09-23-2021	09-24-2021	09-20-2021	09-24-2021	09-23-2021	09-23-2021	09-17-2021



LEGEND

- ① Brown to gray fine SAND to fine SAND with silt/clay, occasionally with roots, limerock and shell fragments, (A-3)
- ② Brown to gray silty SAND, occasionally with roots and organics, (A-2-4)
- ▼ Groundwater level encountered on date shown
- ▽ Estimated seasonal high groundwater level
- (A-3) A.A.S.H.T.O.: Soil classification group symbol as determined by visual examination

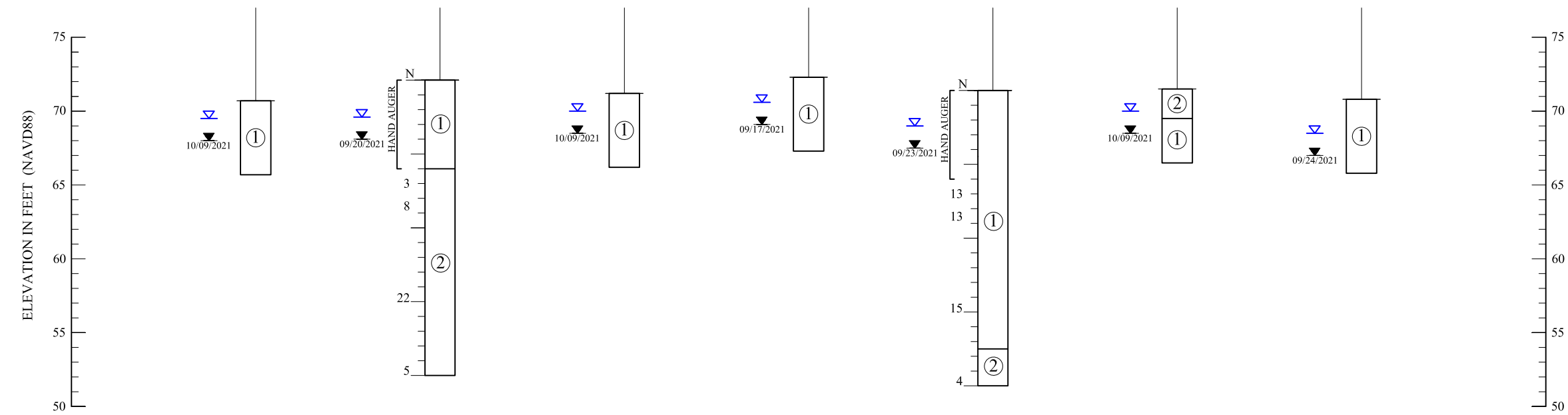
Standard Penetration Test Data

N Standard penetration resistance in blows per foot (18" spoon ASTM D-1586)

Spoon Inside Diameter 1 3/8 in.
Spoon Outside Diameter 2 in.
ASTM Standard Automatic Hammer
Hammer Weight 140 lbs.

- NOTES**
- Standard Penetration Test borings were performed in accordance with ASTM D-1586. Standard Penetration Resistance are shown on the borings at the test depths in blows per foot unless otherwise noticed
 - Subsurface conditions shown on the boring do not represent conditions between boring locations. Actual conditions between the borings may vary from those shown.
 - Unified Soil Classifications shown on the boring are based on visual examination and limited laboratory testing

Boring No.:	AB-45	AB-46	AB-47	AB-48	AB-49	AB-50	AB-51
Approximate Latitude:	28°34'58.7"N	28°35'0.7"N	28°35'2.4"N	28°35'4.4"N	28°35'6.1"N	28°35'8.1"N	28°35'9.7"N
Approximate Longitude:	81°7'17.7"W	81°7'17.7"W	81°7'16.5"W	81°7'16.4"W	81°7'15.2"W	81°7'15.1"W	81°7'13.8"W
Approximate Elevation:	70.7'	72.1'	71.2'	72.3'	71.4'	71.5'	70.8'
Date Drilled:	09-24-2021	09-20-2021	09-24-2021	09-17-2021	09-23-2021	09-17-2021	09-24-2021



GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FT.)
Very loose	Less than 3
Loose	3-7
Medium Dense	7-21
Dense	21-35
Very Dense	Greater than 35

SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FT.)
Very soft	Less than 1
Soft	1-3
Firm	3-6
Stiff	6-11
Very Stiff	11-21
Hard	Greater than 21

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

NAMES	DATES
Drawn by: MB	03-24-2022
Checked by: GNN	03-24-2022
Designed by: N/A	N/A
Checked by: N/A	N/A
Approved by: GNN	

ENGINEER OF RECORD:
NADIC ENGINEERING SERVICES, INC.
601 N. HART BOULEVARD
ORLANDO FL, 32818
GODWIN N. NNADI, P.E. NO. 50637

ORANGE COUNTY, FLORIDA

ROAD NAME	COUNTY	CONTRACT NO.
CHULUOTA ROAD	ORANGE	Y20-830-CH

SHEET TITLE:
REPORT OF ROADWAY BORINGS

PROJECT NAME:
CHULUOTA ROAD ROADWAY CONCEPTUAL ANALYSIS (RCA)

SHEET NO.:

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

\\nadicserver\share\New Z Drive\Engineering\Geotechnical\Orlando\Roadway (RD)\2020\PR.GEO-RD20027 - Chuluota Road\Project Working File\Autocad



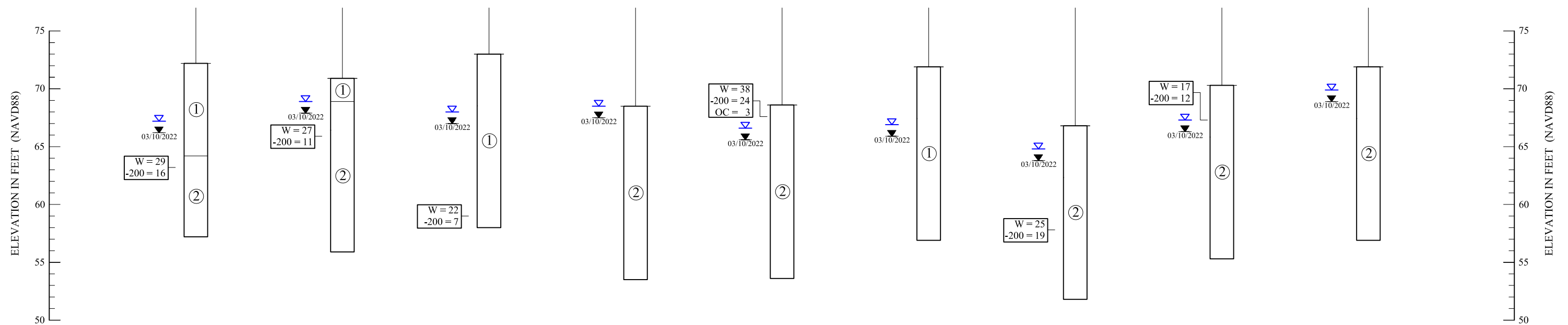
NOT TO SCALE

APPROXIMATE BORING LOCATIONS

LEGEND

- ① Brown to gray fine SAND to fine SAND with silt/clay, occasionally with roots, limerock and shell fragments, (A-3)
 - ② Brown to gray silty SAND, occasionally with roots and organics, (A-2-4)
- | | |
|--------|---|
| W = | Natural Moisture Content (%) (FM 1-T265) |
| -200 = | Percent Passing No. 200 US Standard Sieve (%) (FM-T088) |
| OC = | Liquid Limit (%) (FM 1-T089) |
- ▼_{03/10/2022} Groundwater level encountered on date shown
 - ▽ Estimated seasonal high groundwater level
 - (A-3) A.A.S.H.T.O.: Soil classification group symbol as determined by visual examination

Boring No.:	P-1	P-2	P-6	P-7	P-8	P-9	P-10	P-12	P-13
Approximate Latitude:	28°33'39.6"N	28°33'56.2"N	28°35'2.8"N	28°35'2.8"N	28°35'7.8"N	28°35'13.6"N	28°35'13.2"N	28°33'57.5"N	28°33'57.2"N
Approximate Longitude:	81°7'44.0"W	81°7'38.6"W	81°7'18.5"W	81°7'13.1"W	81°7'3.4"W	81°7'14.9"W	81°7'9.5"W	81°7'41.8"W	81°7'41.9"W
Elevation:	72.2'	70.9'	73.0'	68.5'	68.6'	71.9'	66.8'	70.3'	71.9'
Date Drilled:	03-10-2022	03-10-2022	03-10-2022	03-10-2022	03-10-2022	03-10-2022	03-10-2022	03-10-2022	03-10-2022



REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

NAMES	DATES
Drawn by: MB	04-07-2022
Checked by: GNN	04-07-2022
Designed by: N/A	N/A
Checked by: N/A	N/A
Approved by: GNN	

NADIC ENGINEERING

ENGINEER OF RECORD:
NADIC ENGINEERING SERVICES, INC.
 601 N. HART BOULEVARD
 ORLANDO FL, 32818
 GODWIN N. NNADI, P.E. NO. 50637



ORANGE COUNTY, FLORIDA		
ROAD NAME	COUNTY	CONTRACT NO.
CHULUOTA ROAD	ORANGE	Y20-830-CH

SHEET TITLE: REPORT OF POND BORINGS	
PROJECT NAME: CHULUOTA ROAD ROADWAY CONCEPTUAL ANALYSIS (RCA)	
SHEET NO.	

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

APPENDIX C

Selected Laboratory Test Graphs



SIEVE ANALYSIS REPORT

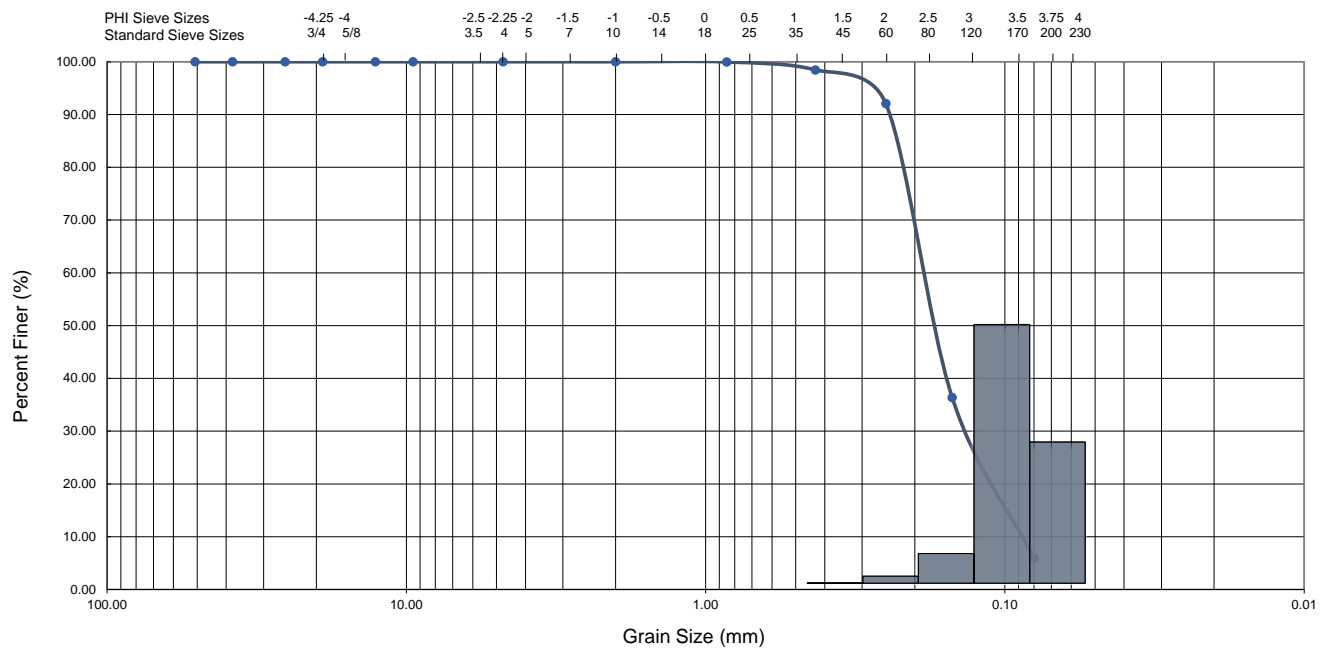
Project Name : Chuluota Rd
 Clients Contract No.: JMT
 Nadic Project No.: PR.GEO-RD20027

Sample ID: AB-2 (2-4')
 Test Date: 9/29/2021

Analyzed By: NADIC
 Engineer: MB
 Date: 10/6/2021

Sieve Size	Sieve Size (Phi)	Sieve Size (mm)	Grams Retained	% Weight Retained	Cum. Grams Retained	Cumulative % Wt RET	Cum % Wt PASS
2	-5.67	50.80	0.00	0.00	0.00	0.00	100.00
1 1/2"	-5.25	38.10	0.00	0.00	0.00	0.00	100.00
1	-4.67	25.40	0.00	0.00	0.00	0.00	100.00
3/4"	-4.25	19.05	0.00	0.00	0.00	0.00	100.00
1/2"	-3.67	12.70	0.00	0.00	0.00	0.00	100.00
3/8"	-3.25	9.50	0.00	0.00	0.00	0.00	100.00
4	-2.25	4.75	0.00	0.00	0.00	0.00	100.00
10	-1.00	2.00	0.00	0.00	0.00	0.00	100.00
20	0.23	0.85	0.12	0.04	0.12	0.04	99.96
40	1.22	0.43	5.16	1.51	5.28	1.55	98.45
60	2.00	0.25	21.85	6.40	27.13	7.94	92.06
100	2.74	0.15	190.27	55.70	217.40	63.64	36.36
200	3.64	0.08	103.87	30.41	321.27	94.05	5.95
PAN			0.25		321.52	YES	0.00

Wet Wt:	Dry Wt:	Wash Wt:	Pan Ret:	Sieve Loss %:	Pass 200 %:	Moisture %	Munsell Color:
405.86	341.61	321.52	0.25	0.000	5.95	19	----



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Mean	Median	Skew	Kurt	S.Deviation	Grain Size	Coefficients	Classification:
2.67 (Phi)	2.55 (Phi)	0.29	1.02	0.29 (Phi)	D ₁₀ = 0.087 D ₅₀ = 0.17	C _u = D ₆₀ /D ₁₀ C _u = 2.07	AASHTO: A-3
0.16 (mm)	0.17 (mm)			0.82 (mm)	D ₃₀ = 0.14 D ₆₀ = 0.18	C _c = (D ₃₀) ² / (D ₁₀ * D ₆₀) C _c = 1.25	



SIEVE ANALYSIS REPORT

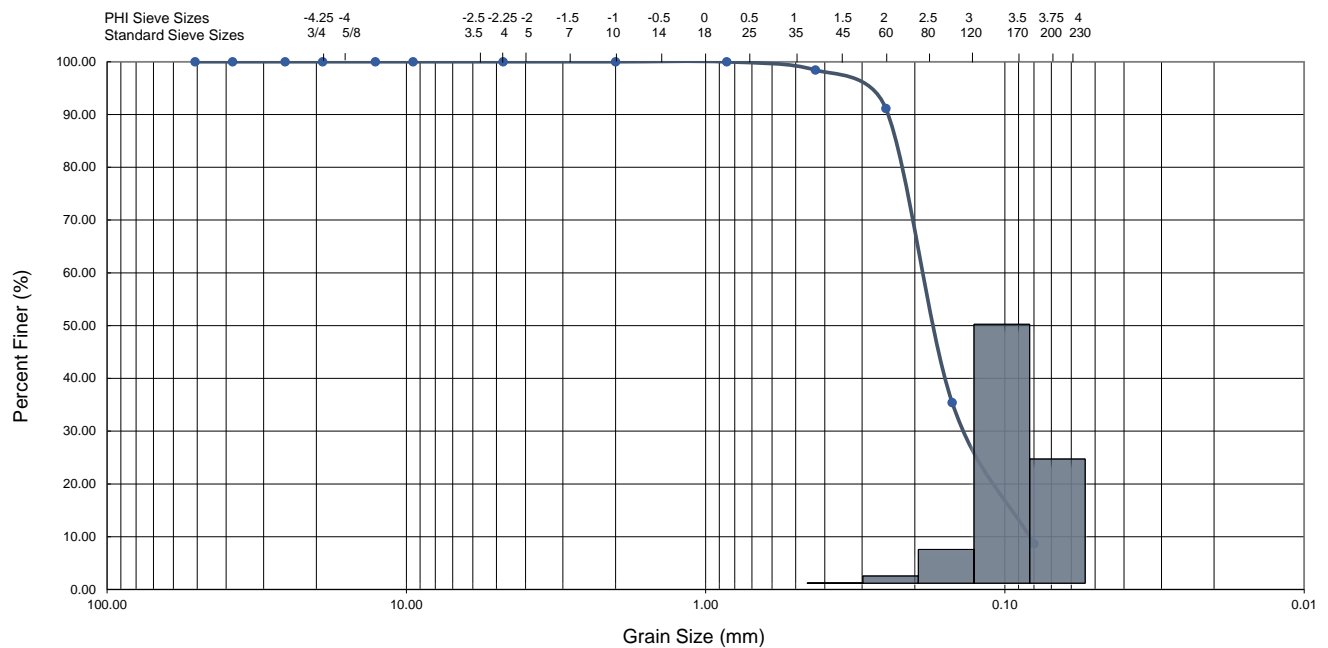
Project Name : Chuluota Rd
 Clients Contract No.: JMT
 Nadic Project No.: PR.GEO-RD20027

Sample ID: AB-6 (2-4')
 Test Date: 9/29/2021

Analyzed By: NADIC
 Engineer: MB
 Date: 10/6/2021

Sieve Size	Sieve Size (Phi)	Sieve Size (mm)	Grams Retained	% Weight Retained	Cum. Grams Retained	Cumulative % Wt RET	Cum % Wt PASS
2	-5.67	50.80	0.00	0.00	0.00	0.00	100.00
1 1/2"	-5.25	38.10	0.00	0.00	0.00	0.00	100.00
1	-4.67	25.40	0.00	0.00	0.00	0.00	100.00
3/4"	-4.25	19.05	0.00	0.00	0.00	0.00	100.00
1/2"	-3.67	12.70	0.00	0.00	0.00	0.00	100.00
3/8"	-3.25	9.50	0.00	0.00	0.00	0.00	100.00
4	-2.25	4.75	0.00	0.00	0.00	0.00	100.00
10	-1.00	2.00	0.00	0.00	0.00	0.00	100.00
20	0.23	0.85	0.05	0.03	0.05	0.03	99.97
40	1.22	0.43	2.90	1.55	2.95	1.58	98.42
60	2.00	0.25	13.64	7.28	16.59	8.86	91.14
100	2.74	0.15	104.39	55.74	120.98	64.60	35.40
200	3.64	0.08	50.04	26.72	171.02	91.32	8.68
PAN			0.30		171.32	YES	0.00

Wet Wt:	Dry Wt:	Wash Wt:	Pan Ret:	Sieve Loss %:	Pass 200 %:	Moisture %	Munsell Color:
237.96	187.27	171.32	0.30	0.000	8.68	27	----



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Mean	Median	Skew	Kurt	S.Deviation	Grain Size	Coefficients	Classification:
2.68 (Phi)	2.52 (Phi)	0.34	1.07	0.31 (Phi)	D ₁₀ = 0.082 D ₅₀ = 0.16	C _u = D ₆₀ /D ₁₀ C _u = 2.20	AASHTO: A-3
0.16 (mm)	0.17 (mm)			0.81 (mm)	D ₃₀ = 0.14 D ₆₀ = 0.18	C _c = (D ₃₀) ² / (D ₁₀ * D ₆₀) C _c = 1.33	



SIEVE ANALYSIS REPORT

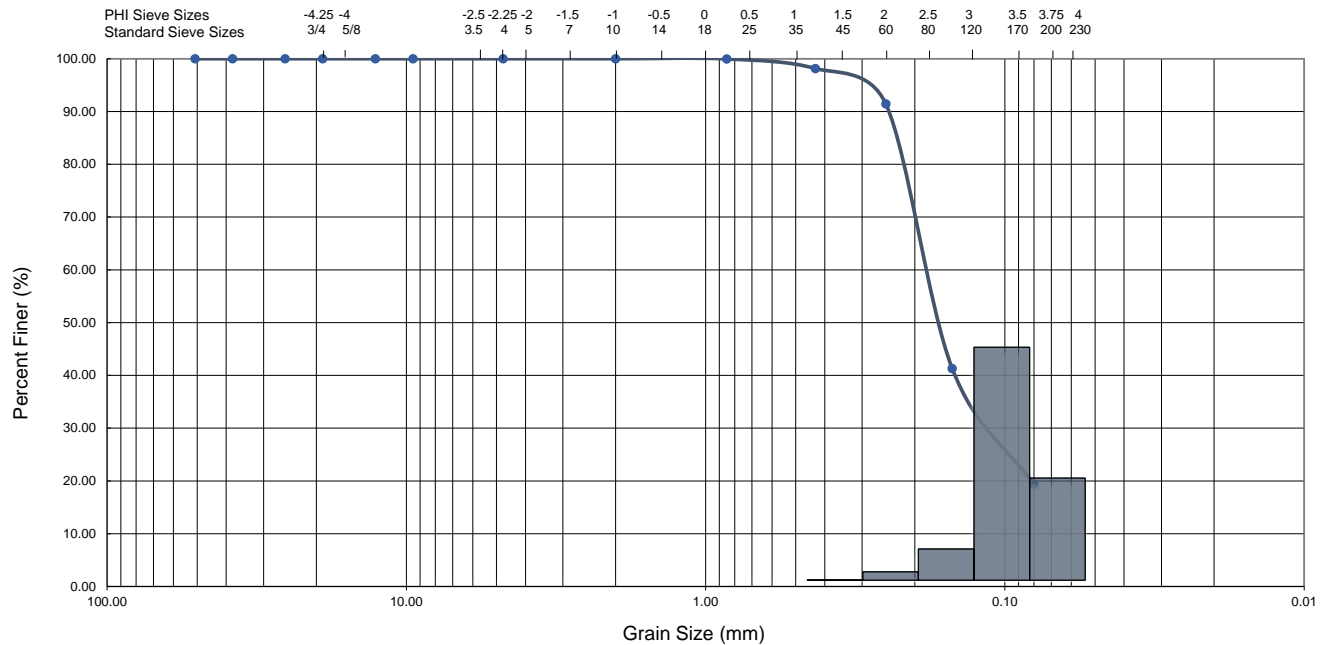
Project Name : Chuluota Rd
 Clients Contract No.: JMT
 Nadic Project No.: PR.GEO-RD20027

Sample ID: AB-10 (4-6')
 Test Date: 9/29/2021

Analyzed By: NADIC
 Engineer: MB
 Date: 10/6/2021

Sieve Size	Sieve Size (Phi)	Sieve Size (mm)	Grams Retained	% Weight Retained	Cum. Grams Retained	Cumulative % Wt RET	Cum % Wt PASS
2	-5.67	50.80	0.00	0.00	0.00	0.00	100.00
1 1/2"	-5.25	38.10	0.00	0.00	0.00	0.00	100.00
1	-4.67	25.40	0.00	0.00	0.00	0.00	100.00
3/4"	-4.25	19.05	0.00	0.00	0.00	0.00	100.00
1/2"	-3.67	12.70	0.00	0.00	0.00	0.00	100.00
3/8"	-3.25	9.50	0.00	0.00	0.00	0.00	100.00
4	-2.25	4.75	0.00	0.00	0.00	0.00	100.00
10	-1.00	2.00	0.00	0.00	0.00	0.00	100.00
20	0.23	0.85	0.05	0.04	0.05	0.04	99.96
40	1.22	0.43	2.43	1.82	2.48	1.85	98.15
60	2.00	0.25	8.98	6.71	11.46	8.56	91.44
100	2.74	0.15	67.10	50.13	78.56	58.70	41.30
200	3.64	0.08	29.43	21.99	107.99	80.69	19.31
PAN			0.19		108.18	YES	0.00

Wet Wt:	Dry Wt:	Wash Wt:	Pan Ret:	Sieve Loss %:	Pass 200 %:	Moisture %	Munsell Color:
171.45	133.84	108.18	0.19	0.000	19.31	28	----



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Mean	Median	Skew	Kurt	S.Deviation	Grain Size	Coefficients	Classification:
2.85 (Phi)	2.59 (Phi)	0.42	0.91	0.41 (Phi)	D ₁₀ = D ₃₀ = 0.12	C _u = D ₆₀ /D ₁₀ C _c = (D ₃₀) ² /(D ₁₀ *D ₆₀)	AASHTO: A-2-4
0.14 (mm)	0.17 (mm)			0.75 (mm)	D ₅₀ = 0.16 D ₆₀ = 0.18	Cu = Cc =	



SIEVE ANALYSIS REPORT

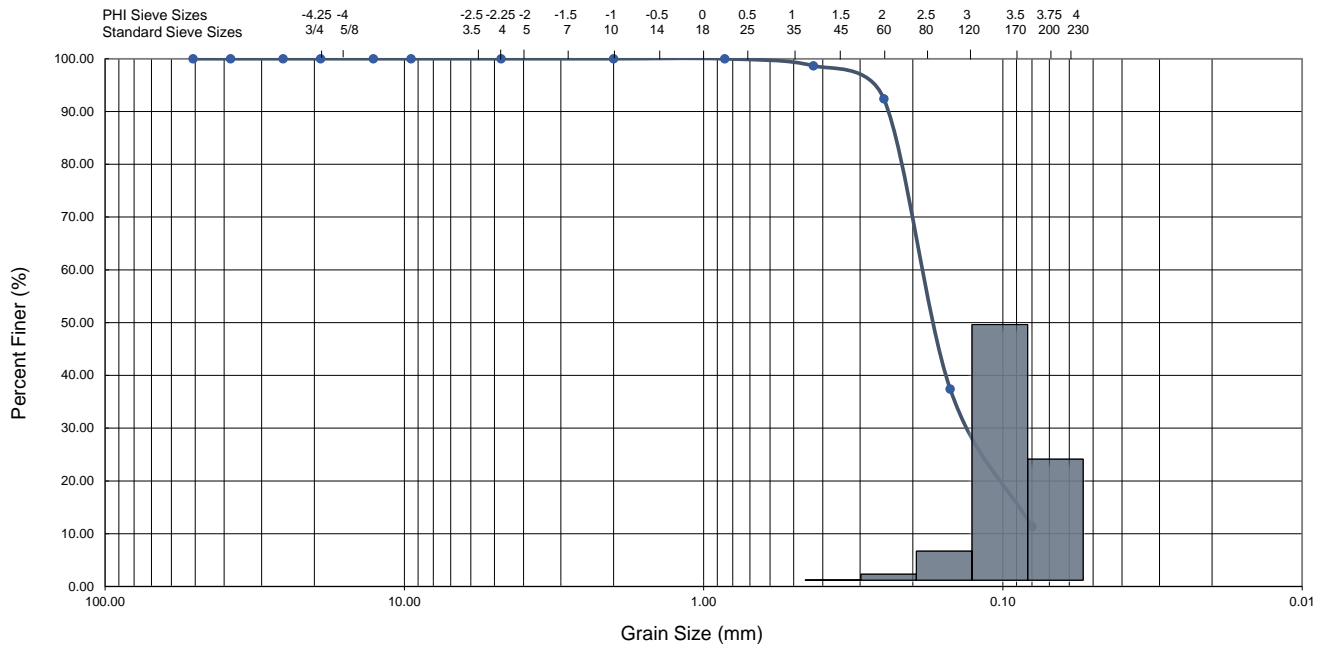
Project Name : Chuluota Rd
 Clients Contract No.: JMT
 Nadic Project No.: PR.GEO-RD20027

Sample ID: AB-13 (2-4')
 Test Date: 9/29/2021

Analyzed By: NADIC
 Engineer: MB
 Date: 10/6/2021

Sieve Size	Sieve Size (Phi)	Sieve Size (mm)	Grams Retained	% Weight Retained	Cum. Grams Retained	Cumulative % Wt RET	Cum % Wt PASS
2	-5.67	50.80	0.00	0.00	0.00	0.00	100.00
1 1/2"	-5.25	38.10	0.00	0.00	0.00	0.00	100.00
1	-4.67	25.40	0.00	0.00	0.00	0.00	100.00
3/4"	-4.25	19.05	0.00	0.00	0.00	0.00	100.00
1/2"	-3.67	12.70	0.00	0.00	0.00	0.00	100.00
3/8"	-3.25	9.50	0.00	0.00	0.00	0.00	100.00
4	-2.25	4.75	0.00	0.00	0.00	0.00	100.00
10	-1.00	2.00	0.00	0.00	0.00	0.00	100.00
20	0.23	0.85	0.05	0.02	0.05	0.02	99.98
40	1.22	0.43	3.32	1.31	3.37	1.33	98.67
60	2.00	0.25	15.87	6.26	19.24	7.59	92.41
100	2.74	0.15	139.38	55.00	158.62	62.60	37.40
200	3.64	0.08	66.04	26.06	224.66	88.66	11.34
PAN			0.32		224.98	YES	0.00

Wet Wt:	Dry Wt:	Wash Wt:	Pan Ret:	Sieve Loss %:	Pass 200 %:	Moisture %	Munsell Color:
326.72	253.40	224.98	0.32	0.000	11.34	29	----



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Mean	Median	Skew	Kurt	S.Deviation	Grain Size	Coefficients	Classification:
2.73 (Phi)	2.56 (Phi)	0.36	0.98	0.34 (Phi)	D ₁₀ = 0.17 D ₃₀ = 0.13	C _u = D ₆₀ /D ₁₀ C _c = (D ₃₀) ² /(D ₁₀ *D ₆₀)	AASHTO: A-2-4
0.15 (mm)	0.17 (mm)			0.79 (mm)	D ₅₀ = 0.17 D ₆₀ = 0.18	Cu = Cc =	



SIEVE ANALYSIS REPORT

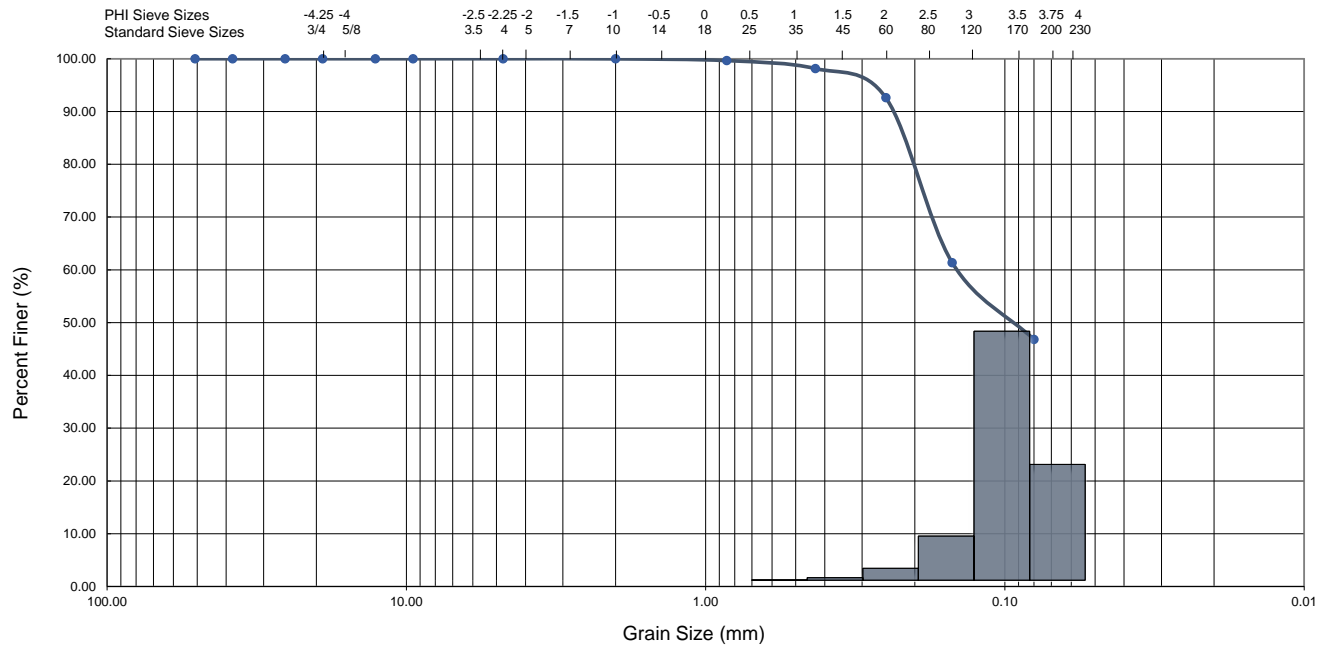
Project Name : Chuluota Rd
 Clients Contract No.: JMT
 Nadic Project No.: PR.GEO-RD20027

Sample ID: AB-19 (4-6')
 Test Date: 9/29/2021

Analyzed By: NADIC
 Engineer: MB
 Date: 10/6/2021

Sieve Size	Sieve Size (Phi)	Sieve Size (mm)	Grams Retained	% Weight Retained	Cum. Grams Retained	Cumulative % Wt RET	Cum % Wt PASS
2	-5.67	50.80	0.00	0.00	0.00	0.00	100.00
1 1/2"	-5.25	38.10	0.00	0.00	0.00	0.00	100.00
1	-4.67	25.40	0.00	0.00	0.00	0.00	100.00
3/4"	-4.25	19.05	0.00	0.00	0.00	0.00	100.00
1/2"	-3.67	12.70	0.00	0.00	0.00	0.00	100.00
3/8"	-3.25	9.50	0.00	0.00	0.00	0.00	100.00
4	-2.25	4.75	0.00	0.00	0.00	0.00	100.00
10	-1.00	2.00	0.02	0.02	0.02	0.02	99.98
20	0.23	0.85	0.27	0.33	0.29	0.35	99.65
40	1.22	0.43	1.23	1.50	1.52	1.86	98.14
60	2.00	0.25	4.52	5.53	6.04	7.39	92.61
100	2.74	0.15	25.55	31.25	31.59	38.64	61.36
200	3.64	0.08	11.89	14.54	43.48	53.19	46.81
PAN			0.10		43.58	YES	0.00

Wet Wt:	Dry Wt:	Wash Wt:	Pan Ret:	Sieve Loss %:	Pass 200 %:	Moisture %	Munsell Color:
185.74	81.75	43.58	0.10	0.000	46.81	127	----



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Mean	Median	Skew	Kurt	S.Deviation	Grain Size	Coefficients	Classification:
1.88 (Phi)	3.42 (Phi)	2.37	0.32	-0.56 (Phi)	D ₁₀ = D ₃₀ =	D ₅₀ = 0.09 D ₆₀ = 0.14 C _u = C _c = (D ₃₀) ² / (D ₁₀ * D ₆₀)	AASHTO: A-8



SIEVE ANALYSIS REPORT

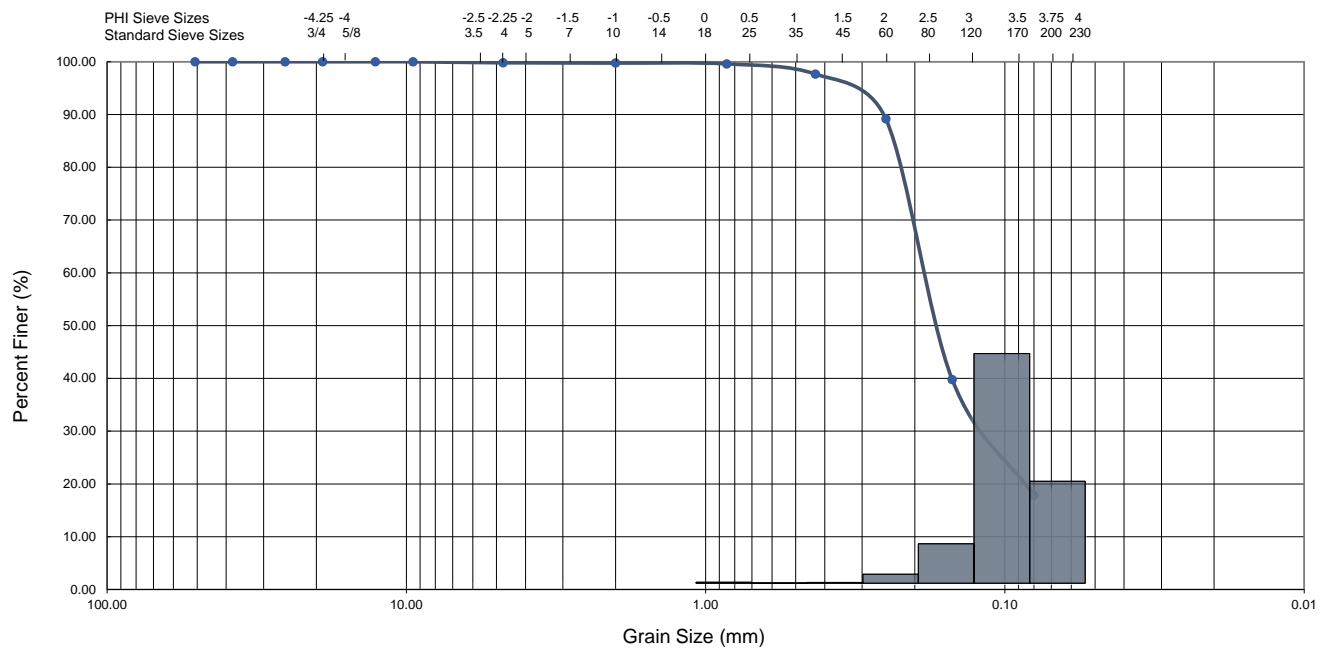
Project Name : Chuluota Rd
 Clients Contract No.: JMT
 Nadic Project No.: PR.GEO-RD20027

Sample ID: AB-21 (2-4')
 Test Date: 9/29/2021

Analyzed By: NADIC
 Engineer: MB
 Date: 10/6/2021

Sieve Size	Sieve Size (Phi)	Sieve Size (mm)	Grams Retained	% Weight Retained	Cum. Grams Retained	Cumulative % Wt RET	Cum % Wt PASS
2	-5.67	50.80	0.00	0.00	0.00	0.00	100.00
1 1/2"	-5.25	38.10	0.00	0.00	0.00	0.00	100.00
1	-4.67	25.40	0.00	0.00	0.00	0.00	100.00
3/4"	-4.25	19.05	0.00	0.00	0.00	0.00	100.00
1/2"	-3.67	12.70	0.00	0.00	0.00	0.00	100.00
3/8"	-3.25	9.50	0.00	0.00	0.00	0.00	100.00
4	-2.25	4.75	0.25	0.19	0.25	0.19	99.81
10	-1.00	2.00	0.07	0.05	0.32	0.25	99.75
20	0.23	0.85	0.20	0.15	0.52	0.40	99.60
40	1.22	0.43	2.51	1.94	3.03	2.34	97.66
60	2.00	0.25	11.00	8.48	14.03	10.82	89.18
100	2.74	0.15	64.08	49.41	78.11	60.23	39.77
200	3.64	0.08	28.46	21.95	106.57	82.18	17.82
PAN			0.11		106.68	YES	0.00

Wet Wt:	Dry Wt:	Wash Wt:	Pan Ret:	Sieve Loss %:	Pass 200 %:	Moisture %	Munsell Color:
174.52	129.68	106.68	0.11	0.000	17.82	35	----



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Mean	Median	Skew	Kurt	S.Deviation	Grain Size	Coefficients	Classification:
2.80 (Phi)	2.56 (Phi)	0.38	1.01	0.41 (Phi)	D ₁₀ = 0.17 D ₃₀ = 0.12	C _u = D ₆₀ /D ₁₀ C _c = (D ₃₀) ² /(D ₁₀ *D ₆₀)	AASHTO: A-8
0.14 (mm)	0.17 (mm)			0.76 (mm)	D ₅₀ = 0.17 D ₆₀ = 0.18	Cu = Cc =	



SIEVE ANALYSIS REPORT

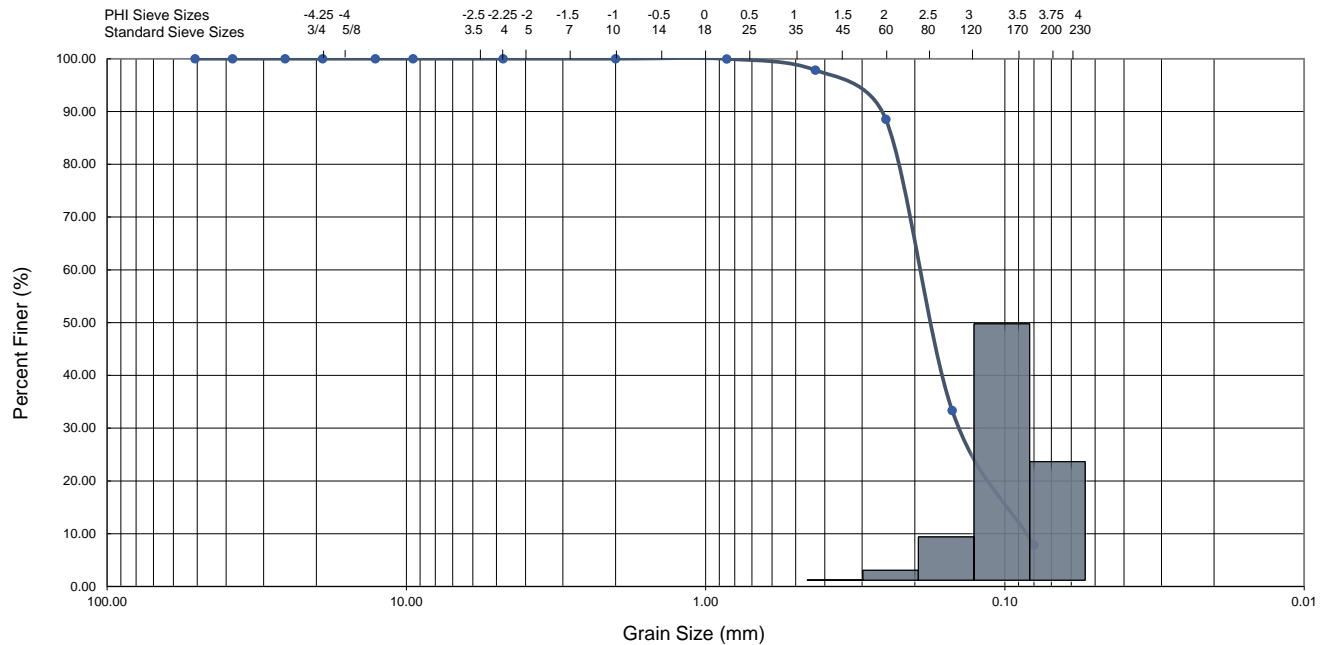
Project Name : Chuluota Rd
 Clients Contract No.: JMT
 Nadic Project No.: PR.GEO-RD20027

Sample ID: AB-24 (2-4')
 Test Date: 9/29/2021

Analyzed By: NADIC
 Engineer: MB
 Date: 10/6/2021

Sieve Size	Sieve Size (Phi)	Sieve Size (mm)	Grams Retained	% Weight Retained	Cum. Grams Retained	Cumulative % Wt RET	Cum % Wt PASS
2	-5.67	50.80	0.00	0.00	0.00	0.00	100.00
1 1/2"	-5.25	38.10	0.00	0.00	0.00	0.00	100.00
1	-4.67	25.40	0.00	0.00	0.00	0.00	100.00
3/4"	-4.25	19.05	0.00	0.00	0.00	0.00	100.00
1/2"	-3.67	12.70	0.00	0.00	0.00	0.00	100.00
3/8"	-3.25	9.50	0.00	0.00	0.00	0.00	100.00
4	-2.25	4.75	0.00	0.00	0.00	0.00	100.00
10	-1.00	2.00	0.00	0.00	0.00	0.00	100.00
20	0.23	0.85	0.06	0.03	0.06	0.03	99.97
40	1.22	0.43	3.82	2.13	3.88	2.16	97.84
60	2.00	0.25	16.73	9.33	20.61	11.49	88.51
100	2.74	0.15	98.99	55.18	119.60	66.66	33.34
200	3.64	0.08	45.75	25.50	165.35	92.16	7.84
PAN			0.20		165.55	YES	0.00

Wet Wt:	Dry Wt:	Wash Wt:	Pan Ret:	Sieve Loss %:	Pass 200 %:	Moisture %	Munsell Color:
203.70	179.41	165.55	0.20	0.000	7.84	14	----



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Mean	Median	Skew	Kurt	S.Deviation	Grain Size	Coefficients	Classification:
2.63 (Phi)	2.50 (Phi)	0.26	1.18	0.31 (Phi)	D ₁₀ = 0.084 D ₅₀ = 0.18	C _u = D ₆₀ /D ₁₀ C _u = 2.26	AASHTO: A-3
0.16 (mm)	0.18 (mm)			0.81 (mm)	D ₃₀ = 0.15 D ₆₀ = 0.19	C _c = (D ₃₀) ² / (D ₁₀ * D ₆₀) C _c = 1.41	

SIEVE ANALYSIS REPORT

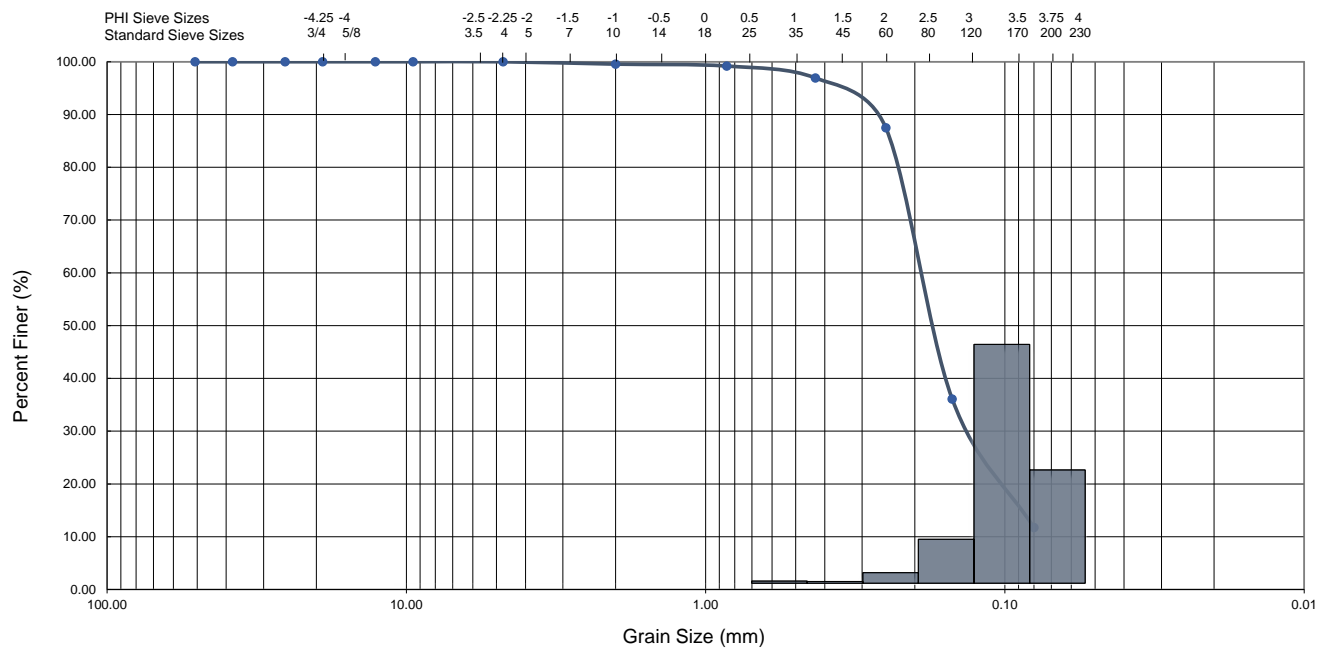
Project Name : Chuluota Rd
 Clients Contract No.: JMT
 Nadic Project No.: PR.GEO-RD20027

Sample ID: AB-28 (2-4')
 Test Date: 10/6/2021

Analyzed By: NADIC
 Engineer: MB
 Date: 10/6/2021

Sieve Size	Sieve Size (Phi)	Sieve Size (mm)	Grams Retained	% Weight Retained	Cum. Grams Retained	Cumulative % Wt RET	Cum % Wt PASS
2	-5.67	50.80	0.00	0.00	0.00	0.00	100.00
1 1/2"	-5.25	38.10	0.00	0.00	0.00	0.00	100.00
1	-4.67	25.40	0.00	0.00	0.00	0.00	100.00
3/4"	-4.25	19.05	0.00	0.00	0.00	0.00	100.00
1/2"	-3.67	12.70	0.00	0.00	0.00	0.00	100.00
3/8"	-3.25	9.50	0.00	0.00	0.00	0.00	100.00
4	-2.25	4.75	0.00	0.00	0.00	0.00	100.00
10	-1.00	2.00	0.69	0.45	0.69	0.45	99.55
20	0.23	0.85	0.55	0.36	1.24	0.81	99.19
40	1.22	0.43	3.45	2.26	4.69	3.08	96.92
60	2.00	0.25	14.40	9.44	19.09	12.52	87.48
100	2.74	0.15	78.36	51.39	97.45	63.91	36.09
200	3.64	0.08	37.16	24.37	134.61	88.28	11.72
PAN			0.09		134.70	YES	0.00

Wet Wt:	Dry Wt:	Wash Wt:	Pan Ret:	Sieve Loss %:	Pass 200 %:	Moisture %	Munsell Color:
177.98	152.48	134.7	0.09	0.000	11.72	17	----



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Mean	Median	Skew	Kurt	S.Deviation	Grain Size	Coefficients	Classification:
2.70 (Phi)	2.51 (Phi)	0.29	1.14	0.35 (Phi)	D ₁₀ = 0.17 D ₃₀ = 0.14	C _u = D ₆₀ /D ₁₀ C _c = (D ₃₀) ² /(D ₁₀ *D ₆₀)	AASHTO: A-2-4
0.15 (mm)	0.18 (mm)			0.78 (mm)	D ₆₀ = 0.19	Cu = Cc =	



SIEVE ANALYSIS REPORT

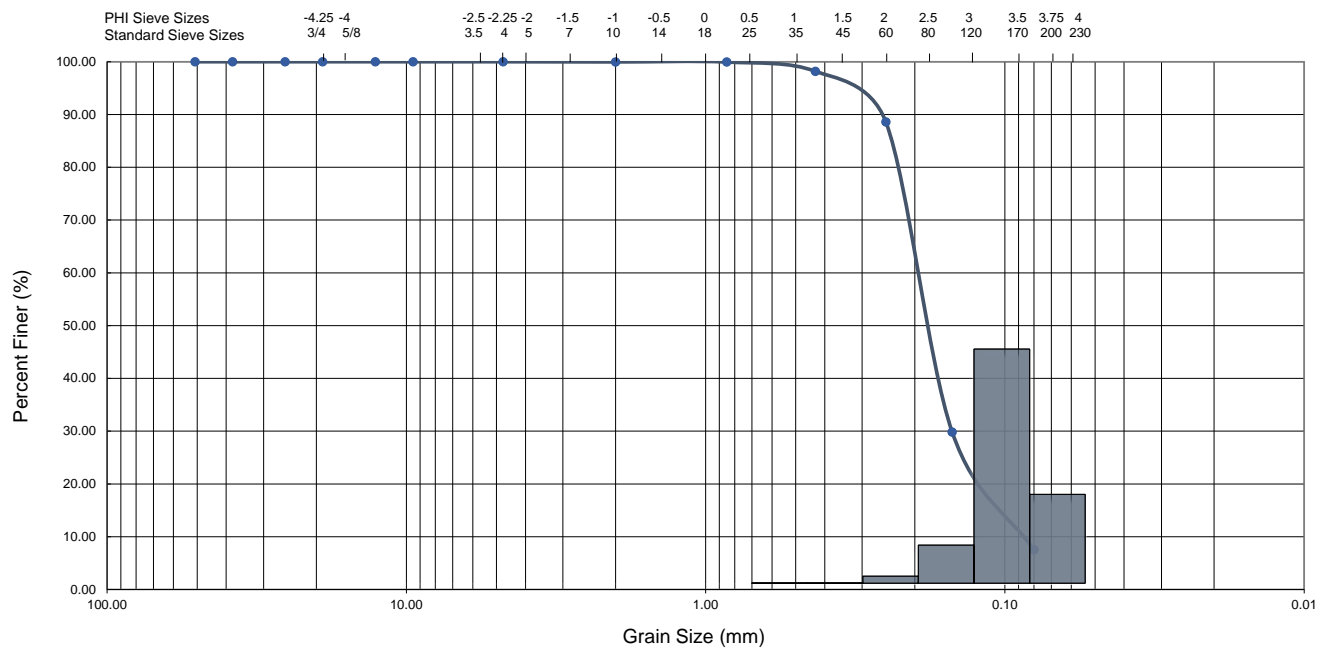
Project Name : Chuluota Rd
 Clients Contract No.: JMT
 Nadic Project No.: PR.GEO-RD20027

Sample ID: AB-32 (2-4')
 Test Date: 10/6/2021

Analyzed By: NADIC
 Engineer: MB
 Date: 10/6/2021

Sieve Size	Sieve Size (Phi)	Sieve Size (mm)	Grams Retained	% Weight Retained	Cum. Grams Retained	Cumulative % Wt RET	Cum % Wt PASS
2	-5.67	50.80	0.00	0.00	0.00	0.00	100.00
1 1/2"	-5.25	38.10	0.00	0.00	0.00	0.00	100.00
1	-4.67	25.40	0.00	0.00	0.00	0.00	100.00
3/4"	-4.25	19.05	0.00	0.00	0.00	0.00	100.00
1/2"	-3.67	12.70	0.00	0.00	0.00	0.00	100.00
3/8"	-3.25	9.50	0.00	0.00	0.00	0.00	100.00
4	-2.25	4.75	0.00	0.00	0.00	0.00	100.00
10	-1.00	2.00	0.09	0.03	0.09	0.03	99.97
20	0.23	0.85	0.06	0.02	0.15	0.06	99.94
40	1.22	0.43	4.59	1.76	4.74	1.82	98.18
60	2.00	0.25	25.00	9.58	29.74	11.40	88.60
100	2.74	0.15	153.43	58.79	183.17	70.19	29.81
200	3.64	0.08	58.21	22.31	241.38	92.50	7.50
PAN			0.26		241.64	YES	0.00

Wet Wt:	Dry Wt:	Wash Wt:	Pan Ret:	Sieve Loss %:	Pass 200 %:	Moisture %	Munsell Color:
298.33	260.96	241.64	0.26	0.000	7.50	14	----



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Mean	Median	Skew	Kurt	S.Deviation	Grain Size	Coefficients	Classification:
2.60 (Phi)	2.48 (Phi)	0.28	1.29	0.28 (Phi)	D ₁₀ = 0.086 D ₅₀ = 0.18	C _u = D ₆₀ /D ₁₀ C _u = 2.21	AASHTO: A-3
0.17 (mm)	0.18 (mm)			0.82 (mm)	D ₃₀ = 0.15 D ₆₀ = 0.19	C _c = (D ₃₀) ² / (D ₁₀ * D ₆₀) C _c = 1.38	

SIEVE ANALYSIS REPORT

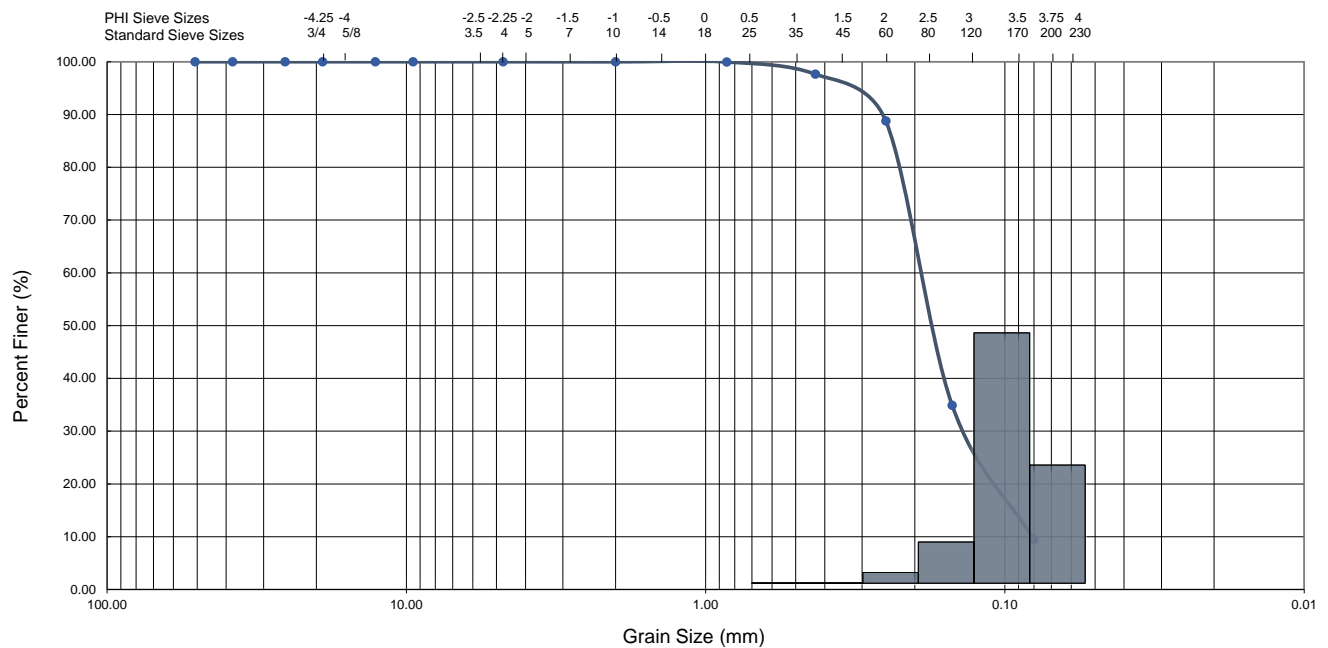
Project Name : Chuluota Rd
 Clients Contract No.: JMT
 Nadic Project No.: PR.GEO-RD20027

Sample ID: AB-36 (2-4')
 Test Date: 10/6/2021

Analyzed By: NADIC
 Engineer: MB
 Date: 10/6/2021

Sieve Size	Sieve Size (Phi)	Sieve Size (mm)	Grams Retained	% Weight Retained	Cum. Grams Retained	Cumulative % Wt RET	Cum % Wt PASS
2	-5.67	50.80	0.00	0.00	0.00	0.00	100.00
1 1/2"	-5.25	38.10	0.00	0.00	0.00	0.00	100.00
1	-4.67	25.40	0.00	0.00	0.00	0.00	100.00
3/4"	-4.25	19.05	0.00	0.00	0.00	0.00	100.00
1/2"	-3.67	12.70	0.00	0.00	0.00	0.00	100.00
3/8"	-3.25	9.50	0.00	0.00	0.00	0.00	100.00
4	-2.25	4.75	0.00	0.00	0.00	0.00	100.00
10	-1.00	2.00	0.03	0.01	0.03	0.01	99.99
20	0.23	0.85	0.07	0.03	0.10	0.04	99.96
40	1.22	0.43	5.17	2.31	5.27	2.36	97.64
60	2.00	0.25	19.83	8.87	25.10	11.23	88.77
100	2.74	0.15	120.47	53.89	145.57	65.12	34.88
200	3.64	0.08	56.82	25.42	202.39	90.54	9.46
PAN			0.13		202.52	YES	0.00

Wet Wt:	Dry Wt:	Wash Wt:	Pan Ret:	Sieve Loss %:	Pass 200 %:	Moisture %	Munsell Color:
290.69	223.54	202.52	0.13	0.000	9.46	30	----



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Mean	Median	Skew	Kurt	S.Deviation	Grain Size	Coefficients	Classification:
2.67 (Phi)	2.51 (Phi)	0.29	1.13	0.33 (Phi)	D ₁₀ = 0.08 D ₅₀ = 0.18	C _u = D ₆₀ /D ₁₀ C _u = 2.38	AASHTO: A-3
0.16 (mm)	0.18 (mm)			0.80 (mm)	D ₃₀ = 0.15 D ₆₀ = 0.19	C _c = (D ₃₀) ² / (D ₁₀ * D ₆₀) C _c = 1.48	



SIEVE ANALYSIS REPORT

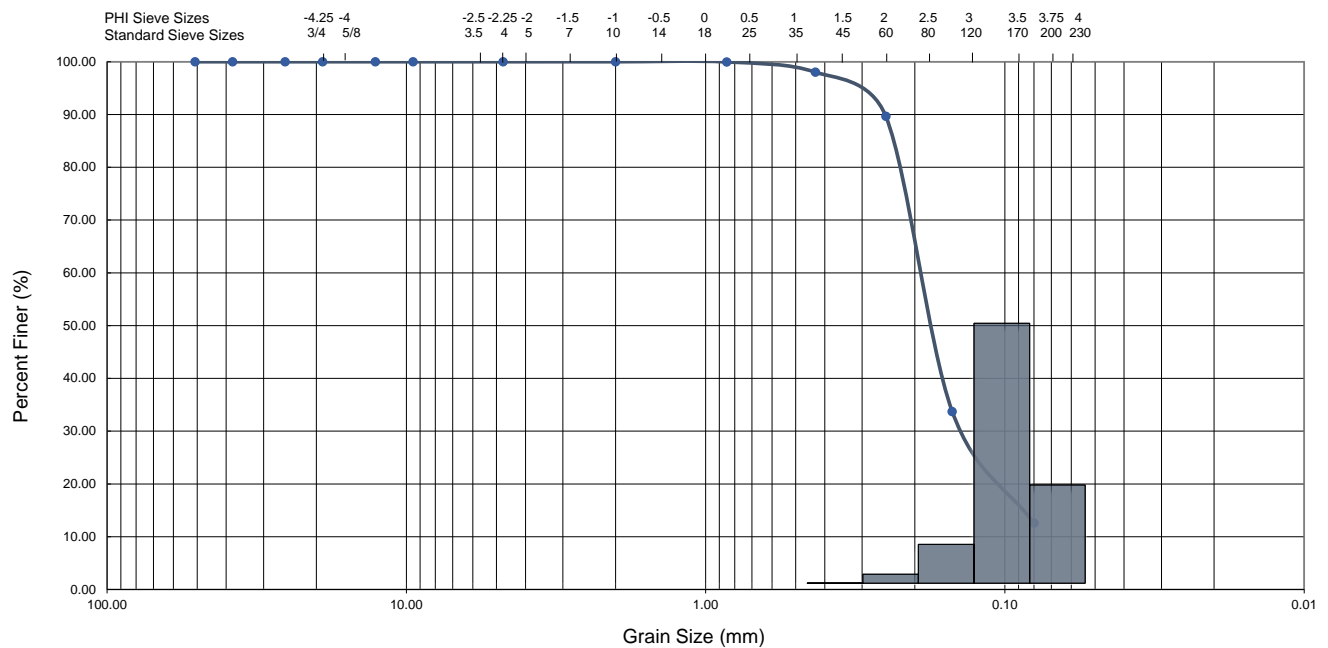
Project Name : Chuluota Rd
 Clients Contract No.: JMT
 Nadic Project No.: PR.GEO-RD20027

Sample ID: AB-39 (2-4')
 Test Date: 10/6/2021

Analyzed By: NADIC
 Engineer: MB
 Date: 10/6/2021

Sieve Size	Sieve Size (Phi)	Sieve Size (mm)	Grams Retained	% Weight Retained	Cum. Grams Retained	Cumulative % Wt RET	Cum % Wt PASS
2	-5.67	50.80	0.00	0.00	0.00	0.00	100.00
1 1/2"	-5.25	38.10	0.00	0.00	0.00	0.00	100.00
1	-4.67	25.40	0.00	0.00	0.00	0.00	100.00
3/4"	-4.25	19.05	0.00	0.00	0.00	0.00	100.00
1/2"	-3.67	12.70	0.00	0.00	0.00	0.00	100.00
3/8"	-3.25	9.50	0.00	0.00	0.00	0.00	100.00
4	-2.25	4.75	0.00	0.00	0.00	0.00	100.00
10	-1.00	2.00	0.00	0.00	0.00	0.00	100.00
20	0.23	0.85	0.10	0.04	0.10	0.04	99.96
40	1.22	0.43	5.14	1.94	5.24	1.98	98.02
60	2.00	0.25	22.13	8.37	27.37	10.35	89.65
100	2.74	0.15	147.89	55.92	175.26	66.27	33.73
200	3.64	0.08	55.95	21.16	231.21	87.43	12.57
PAN			0.22		231.43	YES	0.00

Wet Wt:	Dry Wt:	Wash Wt:	Pan Ret:	Sieve Loss %:	Pass 200 %:	Moisture %	Munsell Color:
322.62	264.46	231.43	0.22	0.000	12.57	22	----



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Mean	Median	Skew	Kurt	S.Deviation	Grain Size	Coefficients	Classification:
2.70 (Phi)	2.50 (Phi)	0.38	1.19	0.35 (Phi)	D ₁₀ = 0.18 D ₃₀ = 0.14	C _u = D ₆₀ /D ₁₀ C _c = (D ₃₀) ² /(D ₁₀ *D ₆₀)	AASHTO: A-2-4
0.15 (mm)	0.18 (mm)			0.79 (mm)	D ₅₀ = 0.18 D ₆₀ = 0.19	Cu = Cc =	



SIEVE ANALYSIS REPORT

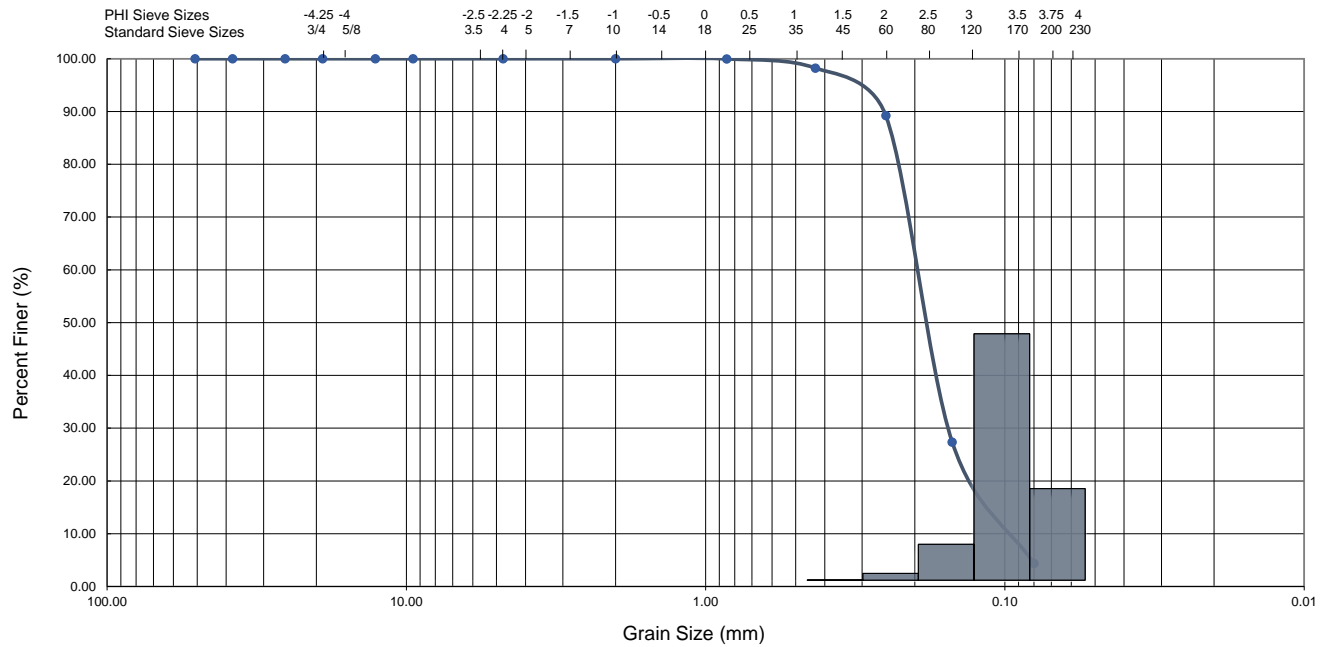
Project Name : Chuluota Rd
 Clients Contract No.: JMT
 Nadic Project No.: PR.GEO-RD20027

Sample ID: AB-46 (2-4')
 Test Date: 10/6/2021

Analyzed By: NADIC
 Engineer: MB
 Date: 10/6/2021

Sieve Size	Sieve Size (Phi)	Sieve Size (mm)	Grams Retained	% Weight Retained	Cum. Grams Retained	Cumulative % Wt RET	Cum % Wt PASS
2	-5.67	50.80	0.00	0.00	0.00	0.00	100.00
1 1/2"	-5.25	38.10	0.00	0.00	0.00	0.00	100.00
1	-4.67	25.40	0.00	0.00	0.00	0.00	100.00
3/4"	-4.25	19.05	0.00	0.00	0.00	0.00	100.00
1/2"	-3.67	12.70	0.00	0.00	0.00	0.00	100.00
3/8"	-3.25	9.50	0.00	0.00	0.00	0.00	100.00
4	-2.25	4.75	0.00	0.00	0.00	0.00	100.00
10	-1.00	2.00	0.00	0.00	0.00	0.00	100.00
20	0.23	0.85	0.07	0.03	0.07	0.03	99.97
40	1.22	0.43	4.13	1.74	4.20	1.77	98.23
60	2.00	0.25	21.41	9.02	25.61	10.79	89.21
100	2.74	0.15	146.88	61.86	172.49	72.65	27.35
200	3.64	0.08	54.60	23.00	227.09	95.64	4.36
PAN			0.12		227.21	YES	0.00

Wet Wt:	Dry Wt:	Wash Wt:	Pan Ret:	Sieve Loss %:	Pass 200 %:	Moisture %	Munsell Color:
288.82	237.44	227.21	0.12	0.000	4.36	22	----



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Mean	Median	Skew	Kurt	S.Deviation	Grain Size	Coefficients	Classification:
2.54 (Phi)	2.45 (Phi)	0.25	1.30	0.25 (Phi)	D ₁₀ = 0.1 D ₅₀ = 0.18	C _u = D ₆₀ /D ₁₀ C _u = 2	AASHTO: A-3
0.17 (mm)	0.18 (mm)			0.84 (mm)	D ₃₀ = 0.14 D ₆₀ = 0.2	C _c = (D ₃₀) ² / (D ₁₀ * D ₆₀) C _c = 0.98	

SIEVE ANALYSIS REPORT

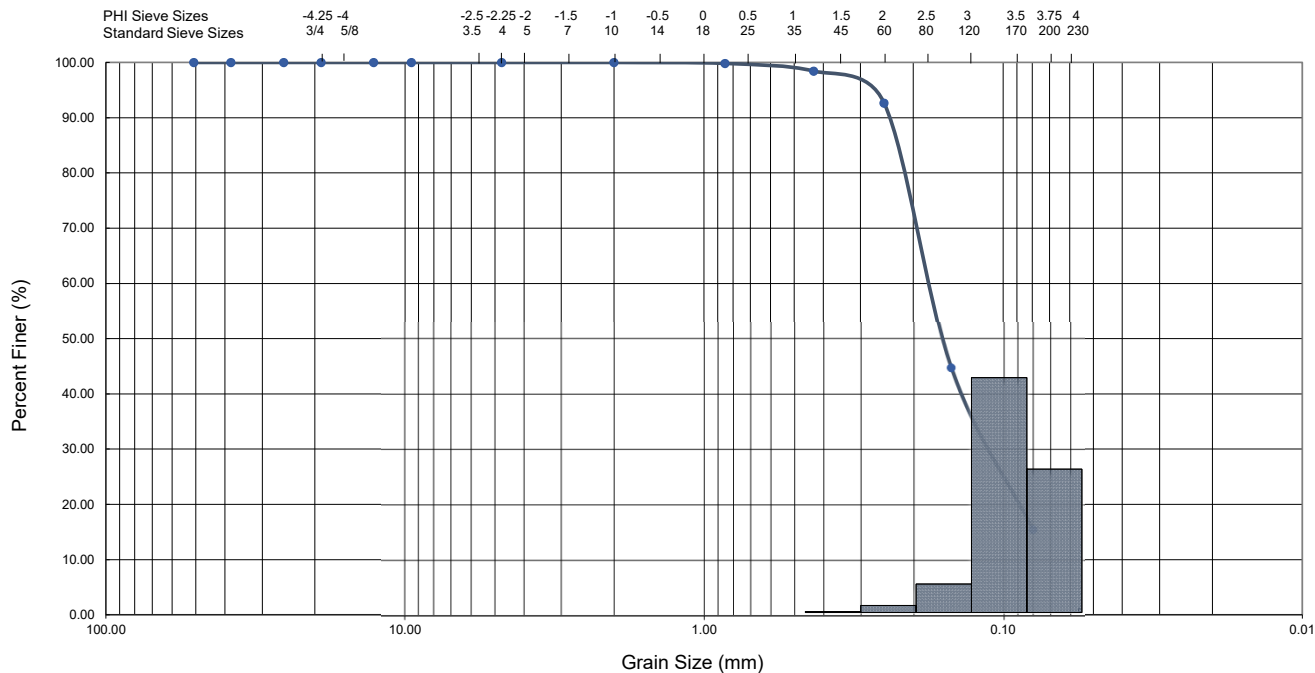
Project Name : Chuluota Rd
 Clients Contract No.: JMT
 Nadic Project No.: PR.GEO-RD20027

Sample ID: P-1 (8-10')
 Test Date: 3/11/2022

Analyzed By: NADIC
 Engineer: MB
 Date: 3/16/2022

Sieve Size	Sieve Size (Phi)	Sieve Size (mm)	Grams Retained	% Weight Retained	Cum. Grams Retained	Cumulative % Wt RET	Cum % Wt PASS
2	-5.67	50.80	0.00	0.00	0.00	0.00	100.00
1 1/2"	-5.25	38.10	0.00	0.00	0.00	0.00	100.00
1	-4.67	25.40	0.00	0.00	0.00	0.00	100.00
3/4"	-4.25	19.05	0.00	0.00	0.00	0.00	100.00
1/2"	-3.67	12.70	0.00	0.00	0.00	0.00	100.00
3/8"	-3.25	9.50	0.00	0.00	0.00	0.00	100.00
4	-2.25	4.75	0.00	0.00	0.00	0.00	100.00
10	-1.00	2.00	0.00	0.00	0.00	0.00	100.00
20	0.23	0.85	0.54	0.17	0.54	0.17	99.83
40	1.22	0.43	4.40	1.40	4.94	1.57	98.43
60	2.00	0.25	18.13	5.78	23.07	7.36	92.64
100	2.74	0.15	150.30	47.92	173.37	55.27	44.73
200	3.64	0.08	91.68	29.23	265.05	84.50	15.50
PAN			0.55		265.60	YES	0.000

Wet Wt:	Dry Wt:	Wash Wt:	Pan Ret:	Sieve Loss %:	Pass 200 %:	Moisture %	Munsell Color:
404.54	313.66	265.6	0.55	0.000	15.50	29	----



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Mean	Median	Skew	Kurt	S.Deviation	Grain Size	Coefficients	Classification:
2.81 (Phi)	2.63 (Phi)	0.34	0.86	0.37 (Phi)	D ₁₀ = N/A	C _u = D ₆₀ /D ₁₀	AASHTO: A-2-4
0.14 (mm)	0.16 (mm)			0.78 (mm)	D ₃₀ = 0.102	C _c = (D ₃₀) ² / (D ₁₀ * D ₆₀)	
					D ₆₀ = 0.17	C _u = N/A	
						C _c = N/A	

SIEVE ANALYSIS REPORT

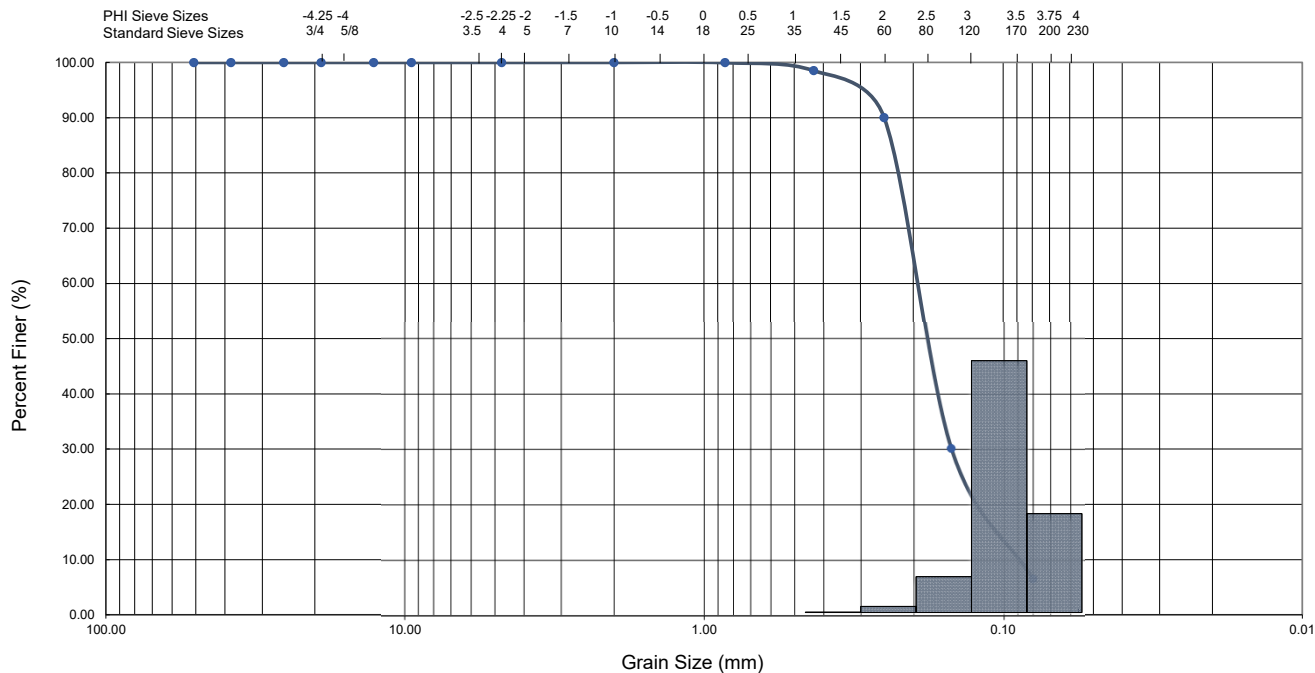
Project Name : Chuluota Rd
 Clients Contract No.: JMT
 Nadic Project No.: PR.GEO-RD20027

Sample ID: P-6 (13-15')
 Test Date: 3/11/2022

Analyzed By: NADIC
 Engineer: MB
 Date: 3/17/2022

Sieve Size	Sieve Size (Phi)	Sieve Size (mm)	Grams Retained	% Weight Retained	Cum. Grams Retained	Cumulative % Wt RET	Cum % Wt PASS
2	-5.67	50.80	0.00	0.00	0.00	0.00	100.00
1 1/2"	-5.25	38.10	0.00	0.00	0.00	0.00	100.00
1	-4.67	25.40	0.00	0.00	0.00	0.00	100.00
3/4"	-4.25	19.05	0.00	0.00	0.00	0.00	100.00
1/2"	-3.67	12.70	0.00	0.00	0.00	0.00	100.00
3/8"	-3.25	9.50	0.00	0.00	0.00	0.00	100.00
4	-2.25	4.75	0.00	0.00	0.00	0.00	100.00
10	-1.00	2.00	0.00	0.00	0.00	0.00	100.00
20	0.23	0.85	0.13	0.04	0.13	0.04	99.96
40	1.22	0.43	4.45	1.43	4.58	1.47	98.53
60	2.00	0.25	26.40	8.50	30.98	9.97	90.03
100	2.74	0.15	186.07	59.89	217.05	69.86	30.14
200	3.64	0.08	73.08	23.52	290.13	93.38	6.62
PAN			0.63		290.76	YES	0.000

Wet Wt:	Dry Wt:	Wash Wt:	Pan Ret:	Sieve Loss %:	Pass 200 %:	Moisture %	Munsell Color:
378.23	310.70	290.76	0.63	0.000	6.62	22	----



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Mean	Median	Skew	Kurt	S.Deviation	Grain Size	Coefficients	Classification:
2.60 (Phi)	2.48 (Phi)	0.30	1.25	0.28 (Phi)	D ₁₀ = 0.09	C _u = D ₆₀ /D ₁₀	AASHTO: A-3
0.16 (mm)	0.18 (mm)			0.83 (mm)	D ₃₀ = 0.15	D ₅₀ = 0.17	
					D ₆₀ = 0.19	C _u = 2.11	
						C _c = 1.32	

SIEVE ANALYSIS REPORT

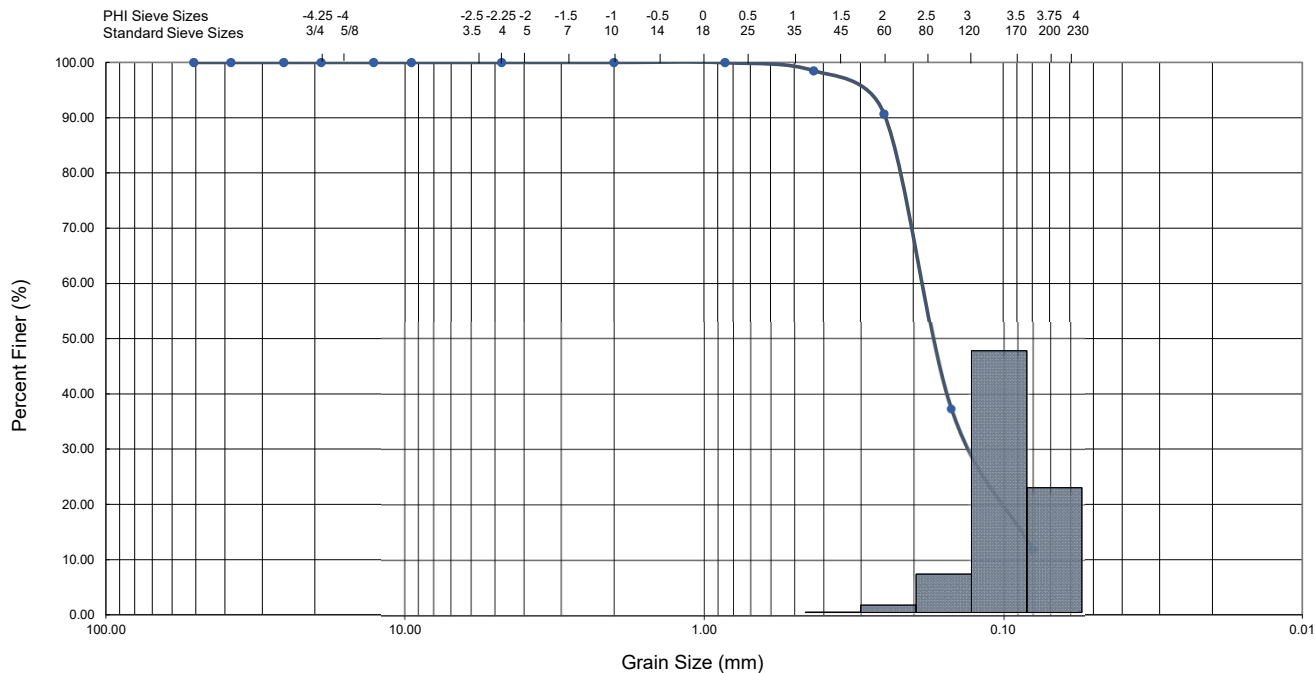
Project Name : Chuluota Rd
 Clients Contract No.: JMT
 Nadic Project No.: PR.GEO-RD20027

Sample ID: P-12 (2-4)
 Test Date: 3/11/2022

Analyzed By: NADIC
 Engineer: MB
 Date: 3/17/2022

Sieve Size	Sieve Size (Phi)	Sieve Size (mm)	Grams Retained	% Weight Retained	Cum. Grams Retained	Cumulative % Wt RET	Cum % Wt PASS
2	-5.67	50.80	0.00	0.00	0.00	0.00	100.00
1 1/2"	-5.25	38.10	0.00	0.00	0.00	0.00	100.00
1	-4.67	25.40	0.00	0.00	0.00	0.00	100.00
3/4"	-4.25	19.05	0.00	0.00	0.00	0.00	100.00
1/2"	-3.67	12.70	0.00	0.00	0.00	0.00	100.00
3/8"	-3.25	9.50	0.00	0.00	0.00	0.00	100.00
4	-2.25	4.75	0.00	0.00	0.00	0.00	100.00
10	-1.00	2.00	0.00	0.00	0.00	0.00	100.00
20	0.23	0.85	0.08	0.03	0.08	0.03	99.97
40	1.22	0.43	3.79	1.47	3.87	1.50	98.50
60	2.00	0.25	20.15	7.82	24.02	9.32	90.68
100	2.74	0.15	137.53	53.36	161.55	62.68	37.32
200	3.64	0.08	65.64	25.47	227.19	88.15	11.85
PAN			0.69		227.88	YES	0.000

Wet Wt:	Dry Wt:	Wash Wt:	Pan Ret:	Sieve Loss %:	Pass 200 %:	Moisture %	Munsell Color:
300.29	257.72	227.88	0.69	0.000	11.85	17	----



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Mean	Median	Skew	Kurt	S.Deviation	Grain Size	Coefficients	Classification:
2.73 (Phi)	2.55 (Phi)	0.34	1.01	0.34 (Phi)	D ₁₀ = N/A	C _u = D ₆₀ /D ₁₀	AASHTO: A-2-4
0.15 (mm)	0.17 (mm)			0.79 (mm)	D ₃₀ = 0.13	D ₅₀ = 0.17	

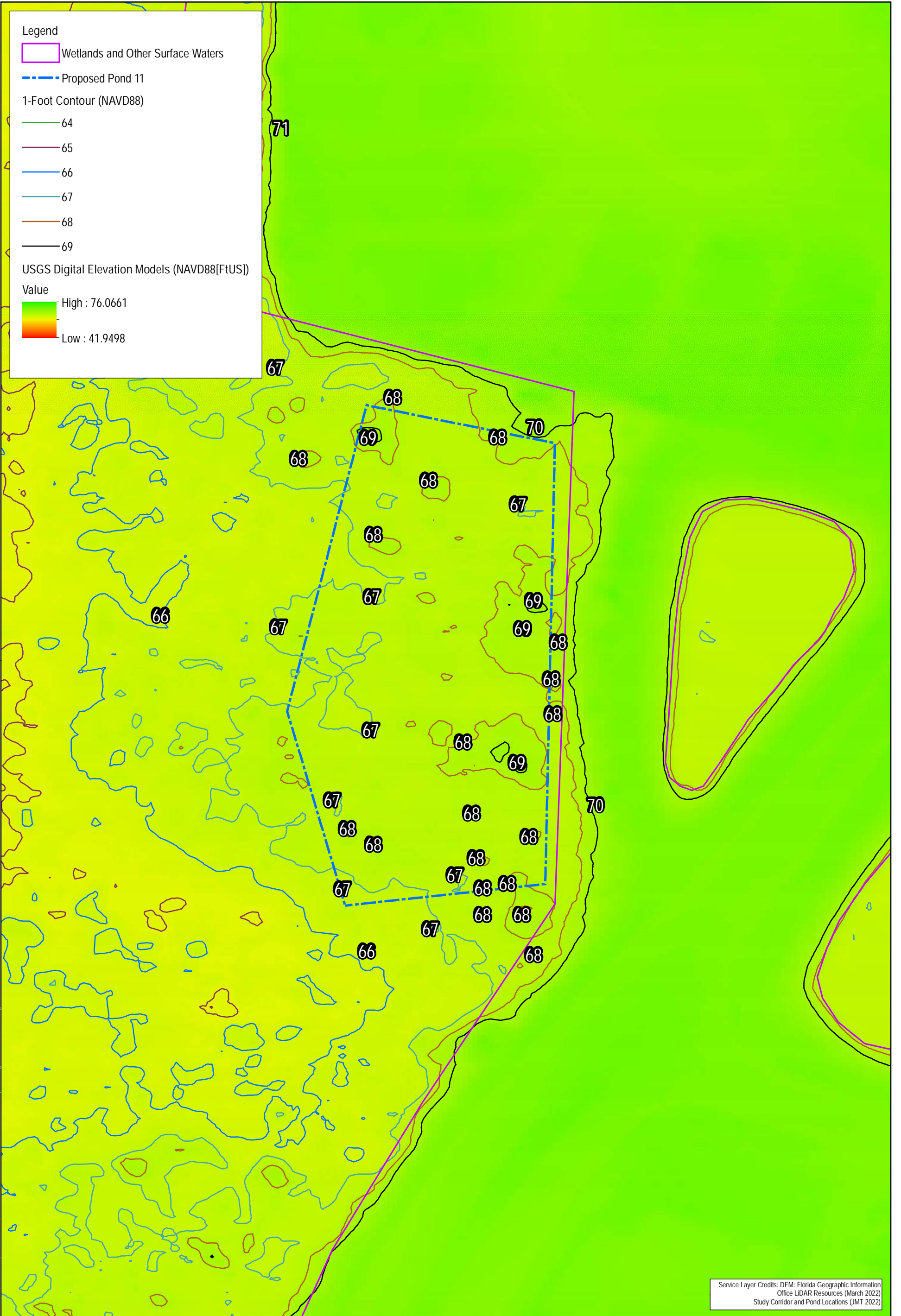
Seasonal High-Water Elevation

Chapter 62-340.200 of the Florida Administrative Code defines seasonal high-water elevation (SHWE) as the elevation to which the ground or surface water can be expected to rise in a normal wet season. Establishing the SHWE includes the use of biological indicators such as water stains, lichen lines, hummocks, adventitious roots, and buttressing found within a wetland or other surface water system.

In addition to biological indicators, the use of remote sensing data, including digital elevation model (DEM), can provide valuable information when evaluating the approximate SHWE of a wetland landscape feature. DEM is a representation of bare ground excluding trees, buildings, and any other surface objects, and are derived primarily from topographic maps and light detection/ranging (lidar) data.

For the Chuluota Road RCA, wetland landscape features within the study corridor were aerial interpreted and delineated by ground-truthing the areas located. Some wetland features within the study corridor were found to have a metes and bound wetland delineation readily available (such as proposed pond 3, 4, 5, and 11). That information was used within this study for wetland limits. Using remote sensing (DEM and LiDAR), the vertical elevation of the horizontal extent of wetland systems was used to approximate the SHWE for wetland features within proposed pond sites with wetland habitat present. Based on our review, the following estimated elevations were noted:

- Proposed Pond 3 – SHWE 67-68 NAVD88
- Proposed Pond 4 – SHWE 66-67 NAVD88
- Proposed Pond 5 – SHWE 64-65 NAVD88
- Proposed Pond 11 – SHWE 67-68 NAVD88



Legend

- Wetlands and Other Surface Waters
- Proposed Pond 11

1-Foot Contour (NAVD88)

- 64
- 65
- 66
- 67
- 68
- 69

USGS Digital Elevation Models (NAVD88[FtUS])

Value

High : 76.0661

Low : 41.9498

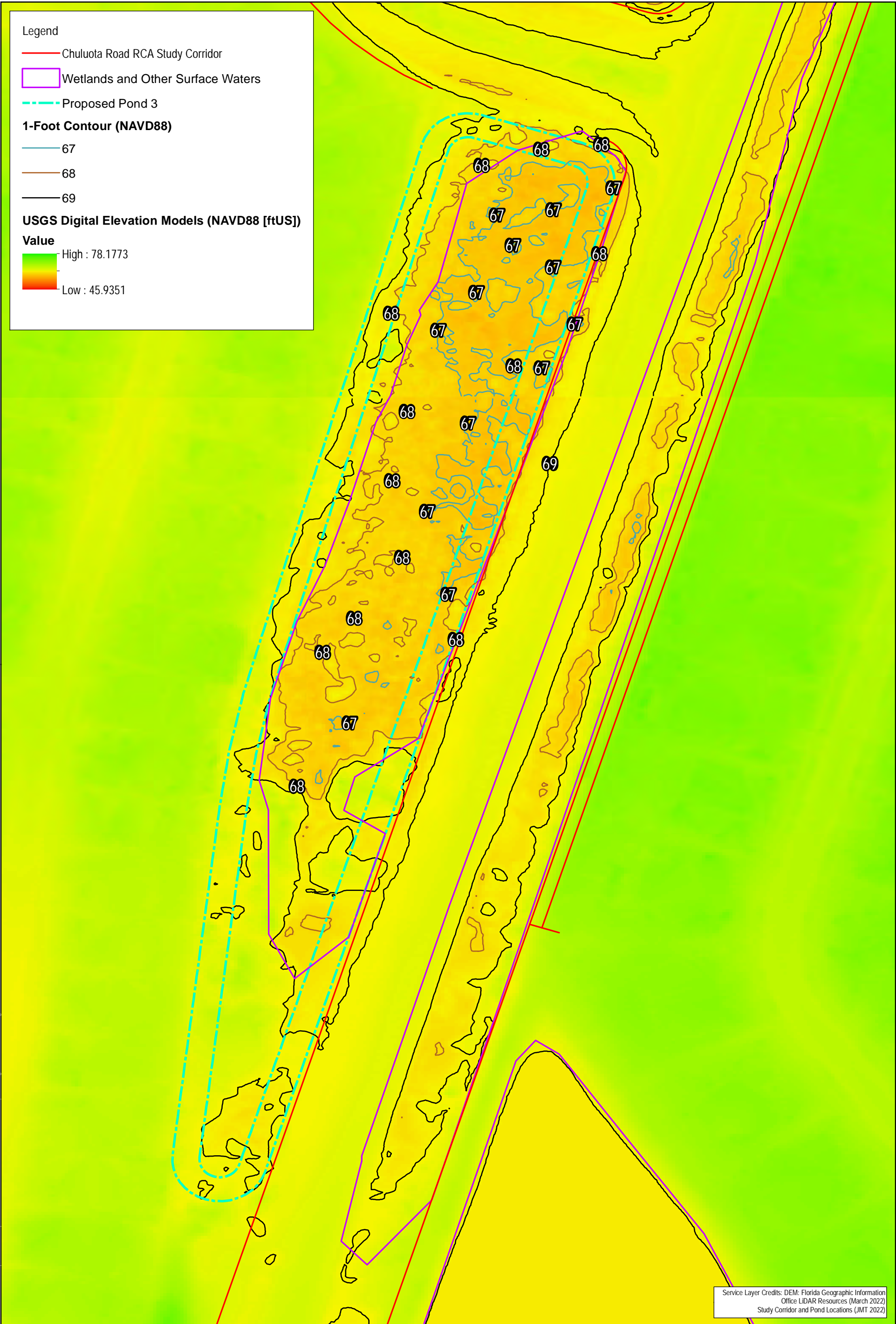
Service Layer Credits: DEM: Florida Geographic Information Office LIDAR Resources (March 2022)
Study Corridor and Pond Locations (JMT 2022)

DRN: KJT	APR: MLP
DATE: 3.2.2022	OCPN: Y20-830

Chuluota Road RCA
 from Colonial Drive to Lake Pickett Road
 Site Elevation Data - Proposed Pond 11
 Orange County, Florida

Figure No. 6a

Document Path: C:\Users\skleiman\OneDrive - MSE Group, LLC\Desktop\1555-001_Chuluota Road RCA\MXD and Shapefiles\Figure 6a - Seasonal High Water Elevation Pond 11.mxd



Document Path: C:\Users\slreinhart\OneDrive - MSE Group, LLC\Desktop\1555-001 Chuluota Road RCA\MXD and Shapefiles\Figure 6b - Seasonal High Water Elevation Pond 3.mxd

Service Layer Credits: DEM: Florida Geographic Information Office LIDAR Resources (March 2022)
Study Corridor and Pond Locations (JMT 2022)

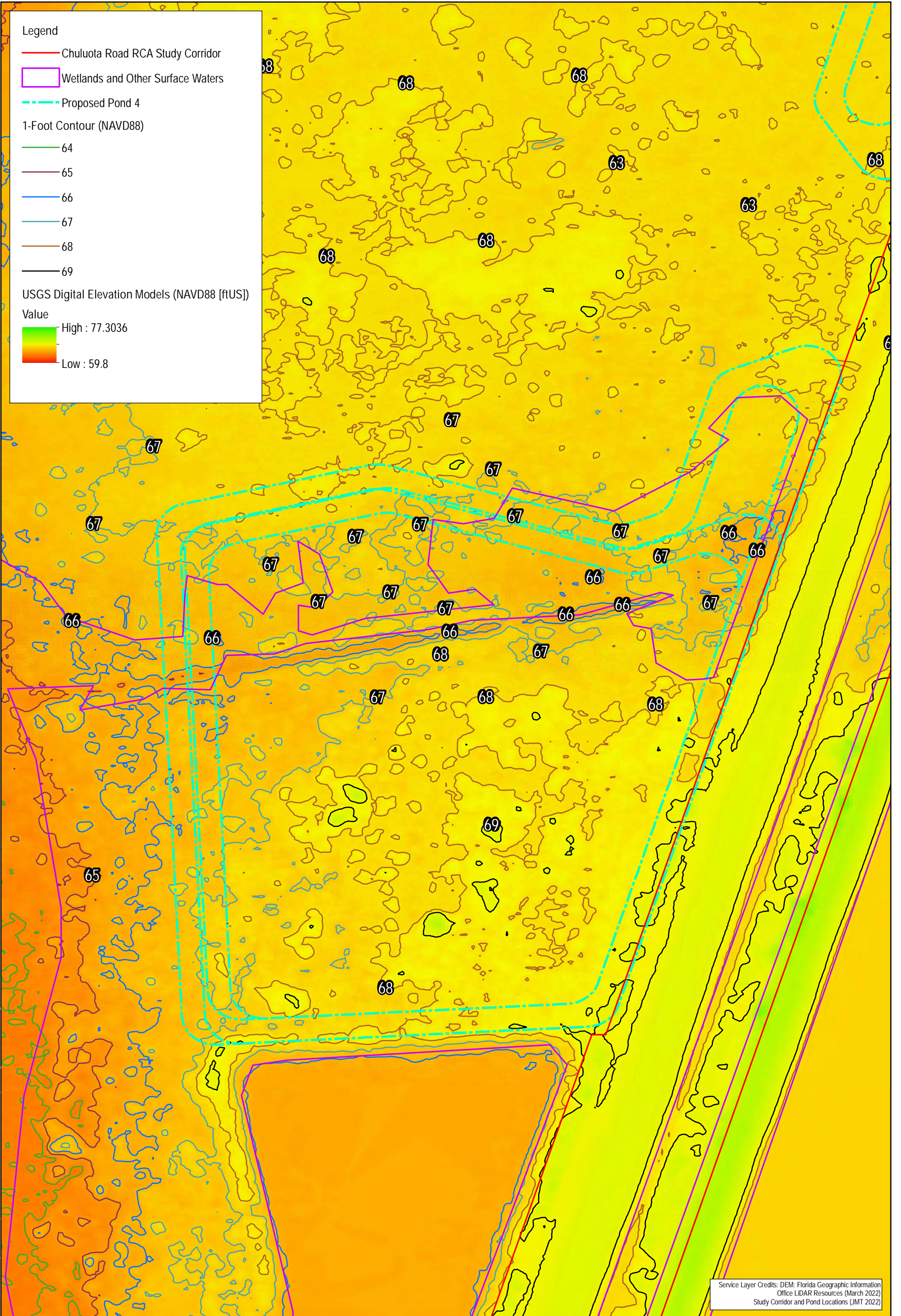
DRN: KJT	APR: MLP
DATE: 3.2.2022	OCPN: Y20-830

Chuluota Road RCA
 from Colonial Drive to Lake Pickett Road
 Site Elevation Data - Proposed Pond 3
 Orange County, Florida

ORANGE COUNTY
FLORIDA

Figure No. 6b

MSE Group, LLC



Document Path: C:\Users\kjetramah\OneDrive - MSE Group, LLC\Desktop\1558-001 Chuluota Road RCA\MapXD and Shapefiles\Figure 6c - Seasonal High Water Elevation Pond 4.mxd

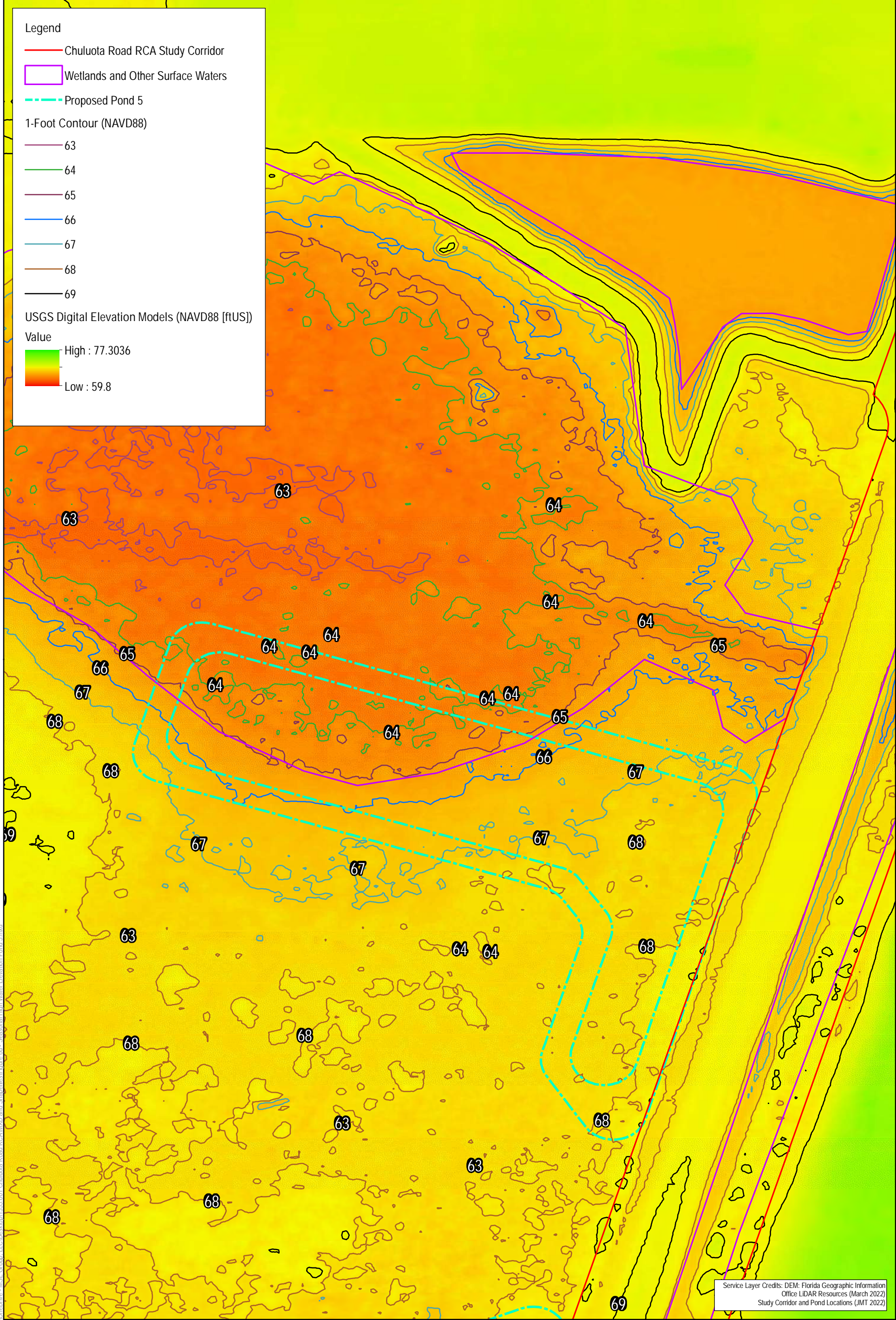
Service Layer Credits: DEM: Florida Geographic Information Office LIDAR Resources (March 2022)
 Study Corridor and Pond Locations (JMT 2022)

DRN: KJT	APR: MLP
DATE: 3.2.2022	OCPN: Y20-830

Chuluota Road RCA
 from Colonial Drive to Lake Pickett Road
 Site Elevation Data - Proposed Pond 4
 Orange County, Florida

ORANGE COUNTY
 FLORIDA

Figure No. 6c
 MSE Group, LLC



Document Path: C:\Users\stremah\OneDrive - MSE Group, LLC\Desktop\1555-001 Chuluota Road RCA\MapDocs and Shapefiles\Figure 6d - Seasonal High Water Elevation Pond 5.mxd

Service Layer Credits: DEM: Florida Geographic Information Office LIDAR Resources (March 2022)
 Study Corridor and Pond Locations (JMT 2022)

DRN: KJT	APR: MLP
DATE: 3.2.2022	OCPN: Y20-830

Chuluota Road RCA
 from Colonial Drive to Lake Pickett Road
 Site Elevation Data - Proposed Pond 5
 Orange County, Florida

ORANGE COUNTY
 FLORIDA

Figure No. 6d

Appendix F – Excerpts from Previous Permits and Studies

Lake Picket Road Realignment
Permit No. 101908-4
October 2011

Drainage Design Documentation & Calculations

Chuluota Road at
Lake Pickett Road
Intersection Improvements

GTC Engineering Corporation

98 South Semoran Blvd. - Orlando, FL 32807
Phone 407-380-0402 - Facsimile 407-380-0483



Prepared for:
**Orange County Public
Works**

RECEIVED
40-695-101908-4
OCT 18 2011

MAITLAND SVC. CNTR.

Prepared by:
GTC Engineering Corporation

October, 2011

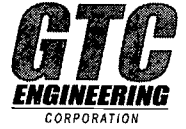
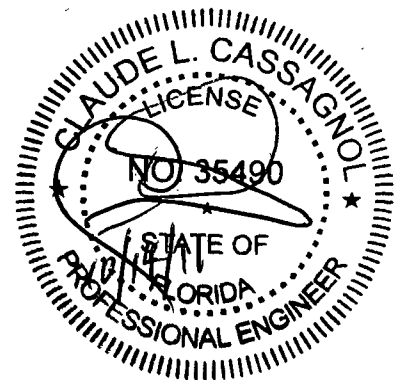


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Proposed Condition Design Data	C
Existing Condition ICPR Calculations	D
Proposed Condition ICPR Calculations	E
Backup Data for the Estates of Mandalay and Mandalay Subdivision from OCPW and SJRWMD	F
Backup Data for Cypress Lakes from SJRWMD	G
Original Permitted ICPR Calculations (Ver. 2.2)/Baseline ICPR Model (Ver. 3.0)	H



Appendix A
Project Description



PROJECT DESCRIPTION

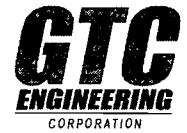
The purpose of this report is to document the drainage calculations for the proposed intersection improvements of Chuluota Road at Lake Pickett Road. The project is located in Orange County, Florida, in Section 9, Township 22 South and Range 32 East, and is in the Econlockhatchee River Basin. The proposed project will consist of adding left turn lanes in the north and southbound directions, and an additional right turn lane in the northbound direction only. A drainage system consisting of swales, one dry pond, and pipes is proposed along Chuluota Road. The ultimate discharge will be to the Estates of Mandalay pond system north of Lake Pickett Road. The Estates of Mandalay pond system is owned by Orange County.

The existing drainage in the vicinity of the project includes roadside swales which collect runoff from the right-of-way (see Appendix B for Existing Drainage Map). Basin 100 is located at the northwest corner of the intersection of Chuluota Road and Lake Pickett Road, and consists of right-of-way and pavement area from approximately 800 ft west of the intersection on Lake Pickett Road to approximately 700 feet north of the intersection on Chuluota Road. This basin discharges through a 12"x18" RCP under Lake Pickett Road to the south.

Basin 200 is located at the southwest corner of the intersection and consists of consists of right-of-way and pavement area from approximately 340 ft west of the intersection on Lake Pickett Road to approximately 130 feet south of the intersection on Chuluota Road. Basin 300 is located southwest of the intersection and consists of open pasture, a large wetland, and portions of Chuluota Road. Basin 400 is located to the east of Chuluota Road and consists of roadside swales, open pasture, and portions of Chuluota Road. The wetland in Basin 300 discharges to Basin 400 via a 24" RCP under Chuluota Road. Basin 200 discharges to a swale along the west side of Chuluota Road to the 24" RCP.

In 2007, Orange County approved the development of a subdivision east of the project site, known as The Estates of Mandalay/Mandalay Subdivision. This development also included the extension of Lake Pickett Road approximately 3300 feet to the east. Lake Pickett Road divides the development into two parts: The Estates of Mandalay on the north side of Lake Pickett Road, and Mandalay Subdivision on the south side. The development consists of four interconnected ponds (PONDA, PONDB, PONDC, and PONDD) which ultimately discharge to a ditch northeast of the site which drains to Lake Pickett.

The Mandalay pond system treats runoff from the property as well as offsite areas to the west of the development. Basin OFFSITE1 is located to the west of Mandalay Subdivision, and consists of pasture land and a wetland which discharges to a storm sewer system along the west property line of Mandalay Subdivision, discharging north to PONDB in the Estates of Mandalay. Basin OFFSITE2 is located to the west of the Estates of Mandalay, and consists of pasture land which drains to a storm sewer system along the west property line of the subdivision, discharging to PONDB.



Historically, Basins 100, 200, 300 and 400 drained via a ditch to the east towards the wetland in Basin OFFSITE1. Based on Orange County research, archive aerials and the USGS map for this area, the landowner of the southeast corner of the intersection appears to have filled in this ditch. The runoff from Basins 100 to 400 will now be routed to PONDB in the Estates of Mandalay.

As-built plans and calculations for the Estates of Mandalay and Mandalay Subdivision were obtained from Orange County Public Works. Orange County owns the ponds and drainage systems with the Estates of Mandalay and Mandalay Subdivision. The original ICPR calculations for the Mandalay routings used ICPR Version 2.2, and were recreated using a newer version of ICPR Version 3.0. A comparison of the two models shows the results for the two models are similar. See Appendix H for the original permitted ICPR calculations (Version 2.2) and the recreated ICPR calculations (Version 3.0). Table 1 shows the peak stages for the ponds in the Mandalay subdivisions for both versions of ICPR.

Table 1 - Permitted ICPR Peak Stage Comparison between Version 2.2 and Version 3.0 (ft NGVD29)

	Mean Annual		10 Yr/24 Hr		25 Yr/24 Hr		100 Yr/24 Hr	
	Ver. 2.2	Ver. 3.0	Ver. 2.2	Ver. 3.0	Ver. 2.2	Ver. 3.0	Ver. 2.2	Ver. 3.0
PONDA	64.25	64.34	64.27	64.40	64.28	64.42	64.33	64.47
PONDB	64.79	64.83	65.78	65.84	66.23	66.30	67.10	67.18
PONDC	64.71	64.76	65.51	65.59	65.90	65.99	66.74	66.84
PONDD	64.89	64.92	66.15	66.22	66.75	66.82	68.13	68.21

The original ICPR model for these subdivisions did not include Basin OFFSITE2 but inlets were provided along the property line. The Chuluota Road basins (100, 200, 300 and 400) were also not included but historically they drained to the wetland area in OFFSITE1. OFFSITE1 was included but the wetland storage was not included, and the area was modeled as draining directly to PONDB. The Mandalay calculations also show a boundary flow coming from the south from a wetland in the Cypress Lakes Subdivision into PONDD, but a modification to Cypress Lakes now brings that drainage to the south and no longer to PONDD. The drainage basins within Mandalay were updated to reflect the grading plans for basins PONDA and PONDB based on the asbuilt construction plans.

An existing condition ICPR model was created to account for these discrepancies and was used to compare with the proposed condition. Basin areas and CNs for the Estates of Mandalay and the Mandalay Subdivision were revised and Basins 100, 200, 300, 400 and OFFSITE2 were added to the system (see Appendix B for Existing Drainage Map and Existing Design Data). New Orange County aerial topography enabled a stage/storage to be calculated for the OFFSITE1 wetland.

The antenna station located on the south side of Lake Pickett Road to the west of the subdivision, originally part of the PONDB basin, is now its own basin (OFFSITE3) which drains to a swale that discharges via the storm sewer system along the west side of the subdivision to PONDB.



*Chuluota Road and Lake Pickett Road
Intersection Improvements
Orange County, Florida*



The offsite boundary flow to PONDD was deleted from the model. Additionally, all elevations from the original calculations were converted from NGVD29 to NAVD88 (-1.1 ft). See Appendix D for the existing condition ICPR model input and output information.

For the proposed condition, the existing condition model was revised to account for modifications to the Chuluota Road basins (see Appendix C for Proposed Basin Map and Proposed Design Data). Basin 400 was separated into seven basins (400A, 400B, 400C, 400D, 400E, S4 and S6) to model the proposed storm sewer system along the east side of Chuluota Road that will discharge to PONDB in the Estates of Mandalay subdivision.

The information for Basins 100, 200 and 300 was revised to account for the additional impervious due to the road widening. A small dry detention pond was designed at the northwest corner of the intersection to provide water quality treatment and attenuation for the runoff draining to that corner (Basin 100). This pond and Basin 200 will both discharge to the east to the proposed storm sewer system. See Appendix E for the proposed condition ICPR model input and output information.

Tables 2A and 2B show the comparison of the permitted, existing and proposed peak stages for the subdivision ponds and the wetland in Basin OFFSITE1 (OFF1WET). Table 3 shows the comparison between the permitted pre-development peak discharge rate for the subdivision and the proposed peak discharge rate from PONDA to the outfall ditch for the mean annual and the 25 year/24 hour storm events.

Table 2A - Peak Stage Comparison (ft NAVD88)

Node	Mean Annual			10 Year/24 Hour		
	Permitted*	Existing	Proposed	Permitted*	Existing	Proposed
10	--	71.37	71.44	--	71.22	71.53
30	--	70.28	70.20	--	70.78	70.59
PONDA	63.15	63.18	63.19	63.17	63.26	63.27
PONDB	63.69	63.88	63.94	64.68	64.68	65.35
PONDC	63.61	63.21	63.23	64.41	63.76	63.78
PONDD	63.79	63.22	63.23	65.05	63.82	63.84
OFF1WET	--	66.07	65.38	--	67.40	66.69

*Elevations converted to NAVD88 from NGVD29 (-1.1 ft)

Table 2B - Peak Stage Comparison (ft NAVD88)

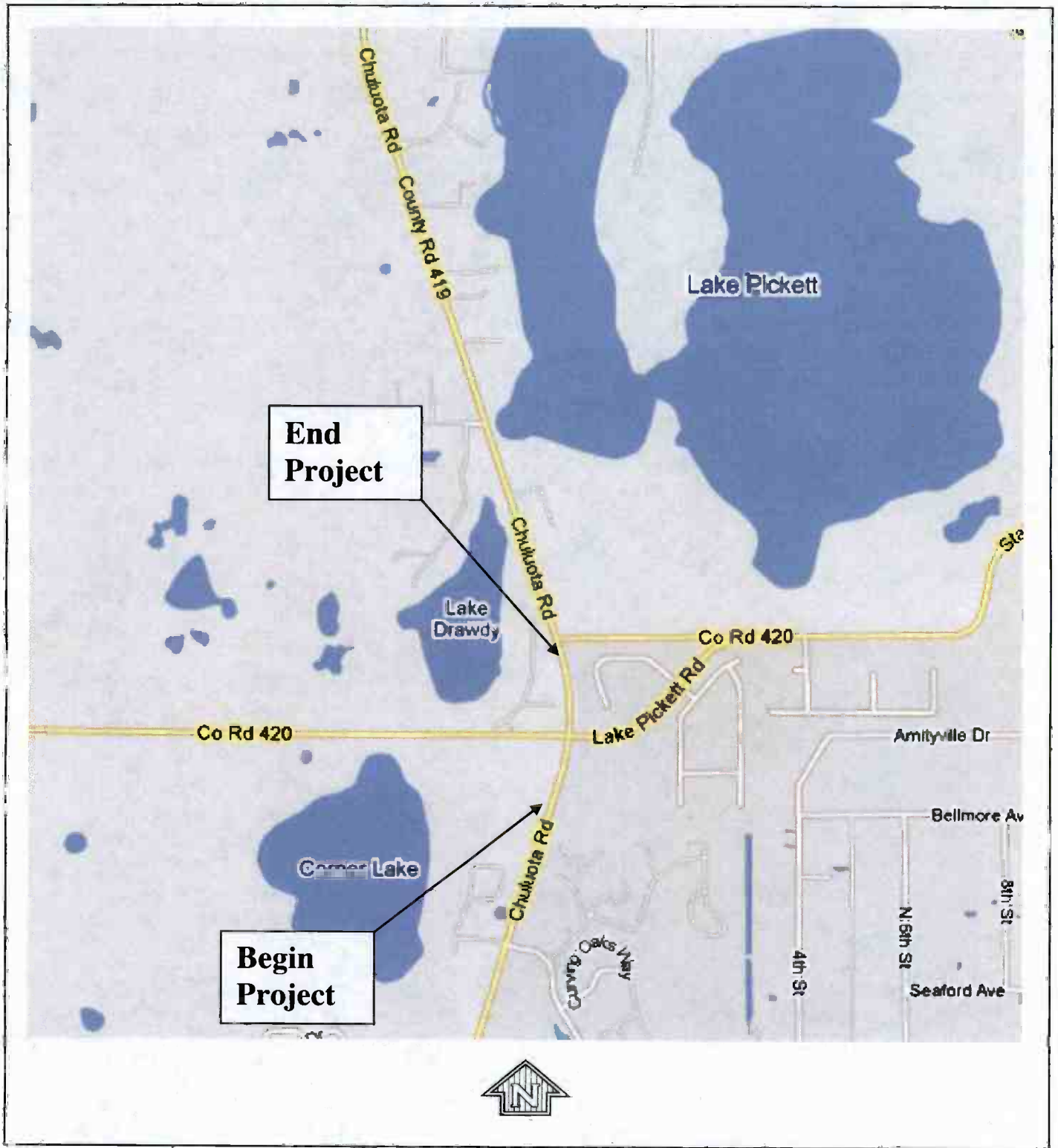
Node	25 Year/24 Hour			100 Year/24 Hour		
	Permitted*	Existing	Proposed	Permitted*	Existing	Proposed
10	--	71.32	71.59	--	71.63	71.68
30	--	70.98	70.75	--	71.32	71.04
PONDA	63.18	63.28	63.29	63.23	63.31	63.32
PONDB	65.13	64.94	65.76	66.00	65.43	66.49
PONDC	64.80	64.00	64.01	65.64	64.44	64.46
PONDD	65.65	64.08	64.09	67.03	64.57	64.59
OFF1WET	--	67.80	67.09	--	68.45	67.73

*Elevations converted to NAVD88 from NGVD29 (-1.1 ft)

Table 3 - Peak Discharge from PONDA to Outfall Ditch Comparison (cfs)

	Mean Annual	25 Yr/24 Hr
Permitted	68.6	130.5
Proposed	35.3	100.9

The calculations show that the improvements proposed for the intersection of Chuluota Road and Lake Pickett Road will not cause any adverse impacts to the downstream pond system in the Estates of Mandalay/Mandalay Subdivision development and that the stage in OFF1WET remains the same. Although PONDB shows an increase in peak stage, the stages are still less than the roadway elevations for that basin and are contained within the pond system and drainage system, both of which are owned by Orange County. The peak discharge rate to the outfall ditch in the proposed condition is less than the permitted rate for both the mean annual and 25 year/24 hour storm events.



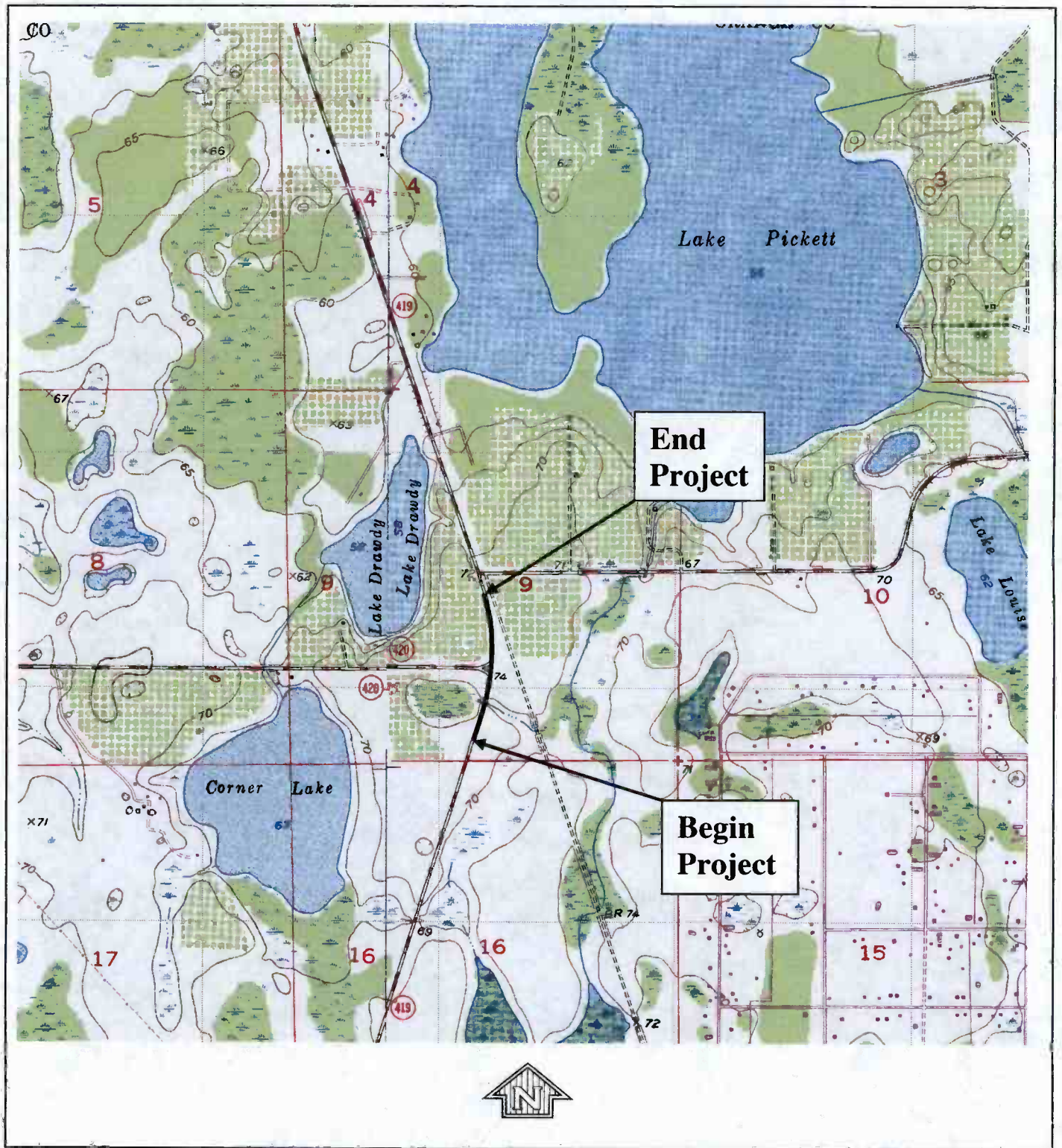
**GTC Engineering
Corporation**

98 South Semoran Boulevard
Orlando, FL 32807
407-380-0402

Figure 1 – Location Map

**Chuluota Road at Lake Pickett Road
Intersection Improvements**

Orange County, Florida

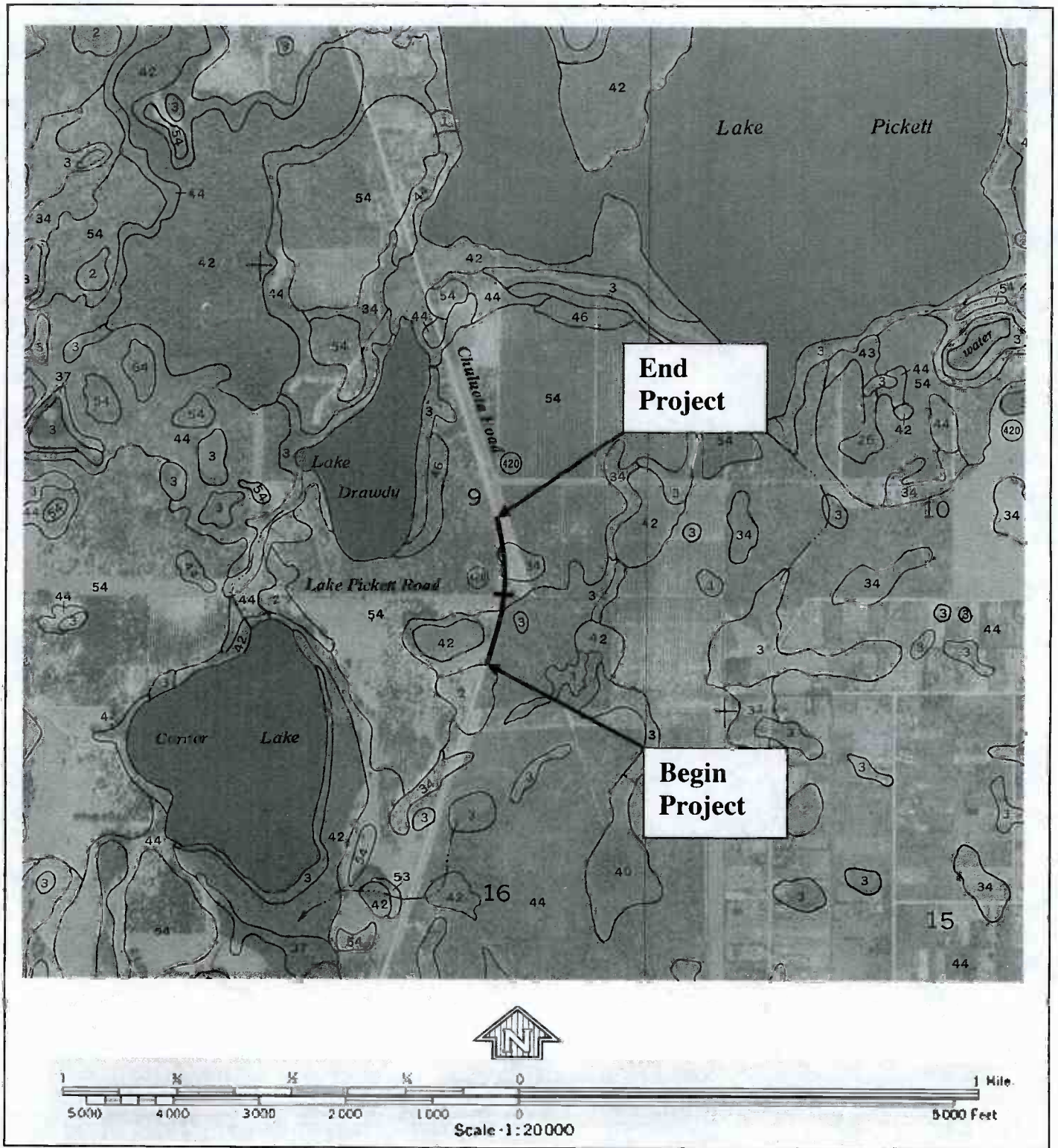


**GTC Engineering
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98 South Semoran Boulevard
Orlando, FL 32807
407-380-0402

**Figure 2 – USGS Quadrangle Map
Chuluota Road at Lake Pickett Road
Intersection Improvements**

Oviedo SW, FL – 1953, Photorevised 1980
Bithlo, FL – 1980
Scale 1"=2000'



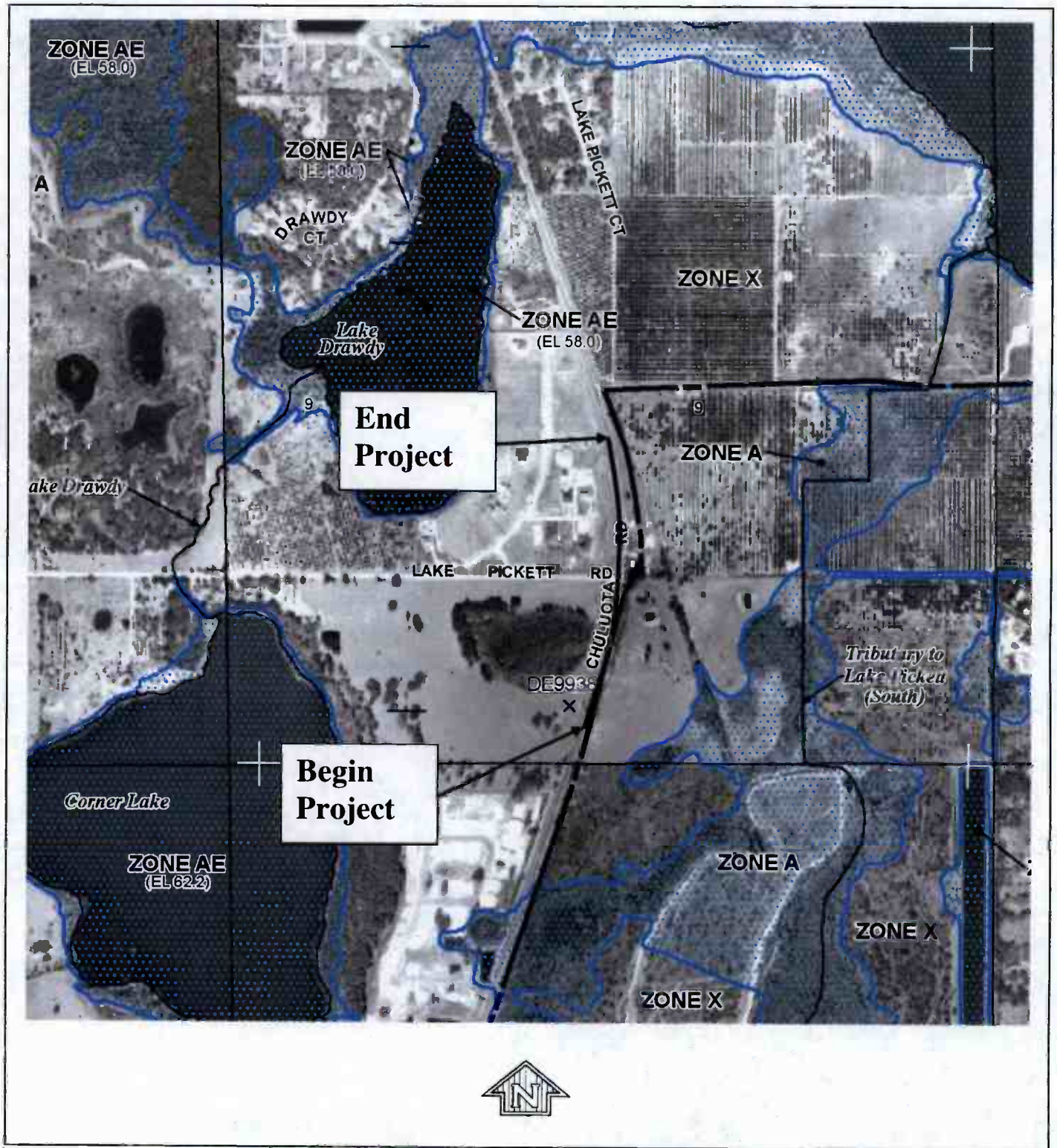
**GTC Engineering
Corporation**

98 South Semoran Boulevard
Orlando, FL 32807
407-380-0402

Figure 3 – SCS Soils Map

**Chuluota Road at Lake Pickett Road
Intersection Improvements**

Taken from "Soil Survey of Orange County, FL"
Issued August 1989 by USDA Soil Conservation Service



GTC Engineering Corporation

98 South Semoran Boulevard
 Orlando, FL 32807
 407-380-0402

Figure 4 – Flood Insurance Rate Map

Chuluota Road at Lake Pickett Road Intersection Improvements

Orange County, Florida and Incorporated Areas
 Map Numbers –12095C0285 F, 12095C0305 F
 Effective Date – September 25, 2009
 Scale 1"= 1000'

Appendix B

Existing Condition Design Data



Florida
 Orange County
EXISTING BASIN MAP
 Chuluota Road at Lake Pickett Road

GTC Engineering Corporation
 98 South Semoran Blvd, Orlando, FL 32807
 407-380-0402
 Certificate of Authorization
 Number 6758
 Claude L. Cassagnol, P.E.
 P.E. Number 35490

SCALE:
 1"=300'

BY: CNY
 DATE: 03-10-11
 JOB NUMBER: FLO-11-05
 SHEET: 1 of 1
 H:\Jobs\1000000012\06\mapa\ExistingBasinMap.dgn

GTC Engineering Corporation

PROJECT NAME: **Chuluota**

BY: CMY

DATE: 3/10/2011

BASIN DESIGNATION 100
 TYPE EVALUATION Existing
 BASIN SIZE 1.77 ACRES
 RAINFALL DEPTH 8.6 INCHES

LAND USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	PERCENT OR AREA	PRODUCT
Pervious, good Impervious	34, 54	C	74	1.05	77.70
			98	0.72	70.56
TOTAL				. 1.77	148.26

$$\text{WEIGHTED CN} = \frac{\text{PRODUCT}}{\text{AREA OR \%}} = 84$$

$$\text{SOIL STORAGE, S} = \frac{1000}{\text{CN}} - 10 = 1.9 \text{ INCHES}$$

$$\text{RUNOFF, R} = \frac{(P-0.2S)^2}{(P+0.8S)} = 6.6 \text{ INCHES}$$

$$\text{RUNOFF VOLUME, V} = \frac{R}{12} \times \text{AREA} = 0.98 \text{ ACRE-FT}$$

GTC Engineering Corporation

BASIN POND ANALYSIS, SJRWMD REQUIREMENTS

PROJ: Chuluota/Lake Pickett

BY: CMY

DATE: 3/10/11

Pond Volume

Basin 100 (Existing)
Pond 10

Elev (Feet)	Area (Acres)	Average Area (Acres)	Incre Depth (Feet)	Incre Storage (Acre-ft)	Cumulative Storage (Acre-ft)
70.44	0.00	0.00	0.00	0.00	0.00
71.50	0.02	0.01	1.06	0.01	0.01
72.00	0.21	0.12	0.50	0.06	0.07
73.00	0.25	0.23	1.00	0.23	0.30

GTC Engineering Corporation

TR-55, Time of concentration (Tc) or travel time (Tt)

Project Chuluota
 Location Orange County

By CMY Date 4/27/2011
 Checked _____ Date _____

Bold one: **Present** Developed Basin 100
 Bold one: **Tc** Tc through subarea _____

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet flow (Applicable to Tc only)

	Segment ID	1			
Surface description (table 3-1)		grass			
Manning's roughness coeff., n (table 3-1).....					
Flow length, L	ft				
Two-yr 24-hr rainfall, P2	in				
	Top elev	ft NGVD			
	Bot elev	ft NGVD			
Land slope, s	ft/ft				
Tt = $\frac{0.007(nL)^{0.48}}{(P2^{0.5})(s^{0.4})}$ Compute Tt	hr		+		= <input style="width: 50px;" type="text"/>

Shallow concentrated flow

	Segment ID	2			
Surface description (paved or unpaved)		Unpaved			
Flow length, L	ft	550			
	Top elev	ft NGVD			
	Bot elev	ft NGVD			
Watercourse slope, s	ft/ft	0.0009			
Average velocity, V (figure 3-1)	ft/s	0.5			
Tt = L/(3600 x V) Compute Tt	hr	0.31	+		= <input style="width: 50px; border: 1px solid black;" type="text" value="0.31"/>

Channel flow

	Segment ID				
Cross sectional area,	sq ft				
Wetted perimeter, Pw.....	ft				
Hydraulic radius, r = a/Pw	ft				
	Top elev	ft NGVD			
	Bot elev	ft NGVD			
Channel slope, s	ft/ft				
Manning's roughness coeff., n					
Velocity, V= 1.49 r^(2/3)(s^0.5) / n	ft/s				
Flow length, L	ft				
Tt = L/(3600 x V) Compute Tt	hr		+		= <input style="width: 50px;" type="text"/>

T Total, hours
 T Total, min

GTC Engineering Corporation

PROJECT NAME: Chuluota
 BY: CMY
 DATE: 3/10/2011

BASIN DESIGNATION 200
 TYPE EVALUATION Existing
 BASIN SIZE 0.54 ACRES
 RAINFALL DEPTH 8.6 INCHES

LAND USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	PERCENT OR AREA	PRODUCT
Pervious, good	44	B/D	80	0.06	4.80
Pervious, good	54	C	74	0.23	17.02
Impervious			98	0.25	24.50
TOTAL				0.54	46.32

$$\text{WEIGHTED CN} = \frac{\text{PRODUCT}}{\text{AREA OR \%}} = 86$$

$$\text{SOIL STORAGE, } S = \frac{1000}{\text{CN}} - 10 = 1.7 \text{ INCHES}$$

$$\text{RUNOFF, } R = \frac{(P-0.2S)^2}{(P+0.8S)} = 6.9 \text{ INCHES}$$

$$\text{RUNOFF VOLUME, } V = \frac{R}{12} \times \text{AREA} = 0.31 \text{ ACRE-FT}$$

GTC Engineering Corporation

TR-55, Time of concentration (Tc) or travel time (Tt)

Project Chuluota
 Location Orange County

By CMY Date 4/27/2011
 Checked _____ Date _____

Bold one: **Present** Developed Basin 200
 Bold one: **Tc** Tc through subarea _____

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet flow (Applicable to Tc only)

	Segment ID	1			
Surface description (table 3-1)		grass			
Manning's roughness coeff., n (table 3-1).....					
Flow length, L	ft				
Two-yr 24-hr rainfall, P2	in				
	Top elev	ft NGVD			
	Bot elev	ft NGVD			
Land slope, s	ft/ft				
Tt = $\frac{0.007(nL)^{0.5}}{(P2^{0.5})(s^{0.4})}$ Compute Tt	hr				

Shallow concentrated flow

	Segment ID	2			
Surface description (paved or unpaved)		Unpaved			
Flow length, L	ft	250			
	Top elev	ft NGVD	73.4		
	Bot elev	ft NGVD	71.0		
Watercourse slope, s	ft/ft	0.0096			
Average velocity, V (figure 3-1)	ft/s	1.6			
Tt = L/(3600 x V) Compute Tt	hr	0.04	+		= 0.04

Channel flow

	Segment ID				
Cross sectional area,	sq ft				
Wetted perimeter, Pw.....	ft				
Hydraulic radius, r = a/Pw	ft				
	Top elev	ft NGVD			
	Bot elev	ft NGVD			
Channel slope, s	ft/ft				
Manning's roughness coeff., n					
Velocity, V= 1.49 r^(2/3)(s^0.5) / n	ft/s				
Flow length, L	ft				
Tt = L/(3600 x V) Compute Tt	hr		+		=

T Total, hours 0.04
 T Total, min 2
 Use 10 min

GTC Engineering Corporation

PROJECT NAME: **Chuluota**

BY: **CMY**

DATE: **3/10/2011**

BASIN DESIGNATION	300
TYPE EVALUATION	Existing
BASIN SIZE	32.06 ACRES
RAINFALL DEPTH	8.6 INCHES

LAND USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	PERCENT OR AREA	PRODUCT
Pervious, Fair	2	A	49	5.07	248.43
Pervious, Fair	54	C	79	11.93	942.47
Pervious, Fair	42,44	B/D	84	5.57	467.88
Wetland @NWL	42	D	100	8.62	862.00
Impervious			98	0.87	85.26
TOTAL				32.06	2606.04

$$\text{WEIGHTED CN} = \frac{\text{PRODUCT}}{\text{AREA OR \%}} = 81$$

$$\text{SOIL STORAGE, S} = \frac{1000}{\text{CN}} - 10 = 2.3 \text{ INCHES}$$

$$\text{RUNOFF, R} = \frac{(P-0.2S)^2}{(P+0.8S)} = 6.3 \text{ INCHES}$$

$$\text{RUNOFF VOLUME, V} = \frac{R}{12} \times \text{AREA} = 16.95 \text{ ACRE-FT}$$

GTC Engineering Corporation

BASIN POND ANALYSIS, SJRWMD REQUIREMENTS

PROJ: **Chuluota/Lake Pickett**
 BY: CMY
 DATE: 3/10/11

Pond Volume

Basin 300
 Pond 30

Elev (Feet)	Area (Acres)	Average Area (Acres)	Incre Depth (Feet)	Incre Storage (Acre-ft)	Cumulative Storage (Acre-ft)
70.00	8.62	8.62	0.00	0.00	0.00
71.00	11.05	9.84	1.00	9.84	9.84

GTC Engineering Corporation

TR-55, Time of concentration (Tc) or travel time (Tt)

Project Chuluota By CMY Date 4/27/2011
 Location Orange County Checked _____ Date _____

Bold one: **Present** Developed Basin 300
 Bold one: **Tc** Tc through subarea _____

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet flow (Applicable to Tc only)

	Segment ID	1		2		
Surface description (table 3-1)		grass				
Manning's roughness coeff., n (table 3-1).....		0.24		0.24		
Flow length, L	ft	250		50		
Two-yr 24-hr rainfall, P2	in	4.9		4.9		
	Top elev	ft NGVD	73.3	73.0		
	Bot elev	ft NGVD	73.0	72.5		
Land slope, s	ft/ft	0.0012		0.0100		
Tt = $\frac{0.007(nL)^{0.5}}{(P2^{0.5})(s^{0.4})}$ Compute Tt	hr	1.23	+	0.15	=	1.38

Shallow concentrated flow

	Segment ID	3				
Surface description (paved or unpaved)		Unpaved				
Flow length, L	ft	130				
	Top elev	ft NGVD	72.5			
	Bot elev	ft NGVD	70.0			
Watercourse slope, s	ft/ft	0.0192				
Average velocity, V (figure 3-1)	ft/s	2.5				
Tt = L/(3600 x V) Compute Tt	hr	0.01	+		=	0.01

Channel flow

	Segment ID					
Cross sectional area,	sq ft					
Wetted perimeter, Pw.....	ft					
Hydraulic radius, r = a/Pw	ft					
	Top elev	ft NGVD				
	Bot elev	ft NGVD				
Channel slope, s	ft/ft					
Manning's roughness coeff., n						
Velocity, V= 1.49 r^(2/3)(s^0.5) / n	ft/s					
Flow length, L	ft					
Tt = L/(3600 x V) Compute Tt	hr		+		=	

T Total, hours 1.39
T Total, min 83

GTC Engineering Corporation

PROJECT NAME: **Chuluota**
 BY: **CMY**
 DATE: **3/10/2011**

BASIN DESIGNATION	400
TYPE EVALUATION	Existing
BASIN SIZE	9.26 ACRES
RAINFALL DEPTH	8.6 INCHES

LAND USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	PERCENT OR AREA	PRODUCT
Pervious, fair	2	A	49	1.29	63.21
Pervious, fair	3,44	B/D	84	5.12	430.08
Pervious, good	54	C	74	2.27	167.98
Impervious			98	0.58	56.84
TOTAL				9.26	718.11

$$\text{WEIGHTED CN} = \frac{\text{PRODUCT}}{\text{AREA OR \%}} = 78$$

$$\text{SOIL STORAGE, } S = \frac{1000}{\text{CN}} - 10 = 2.9 \text{ INCHES}$$

$$\text{RUNOFF, } R = \frac{(P-0.2S)^2}{(P+0.8S)} = 5.9 \text{ INCHES}$$

$$\text{RUNOFF VOLUME, } V = \frac{R}{12} \times \text{AREA} = 4.55 \text{ ACRE-FT}$$

Appendix C

Proposed Condition Design Data



Florida
 Orange County
PROPOSED BASIN MAP
 Chuluota Road at Lake Pickett Road

GTC Engineering Corporation
 98 South Semoran Blvd, Orlando, FL 32807
 407-380-0402
 Certificate of Authorization
 Number 6758
 Claude L. Cassagnol, P.E.
 P.E. Number 35490

SCALE:
 1"=300'

GTC Engineering Corporation

PROJECT NAME: **Chuluota**
 BY: **CMY**
 DATE: **3/10/2011**

BASIN DESIGNATION	100
TYPE EVALUATION	Post
BASIN SIZE	1.83 ACRES
RAINFALL DEPTH	8.6 INCHES

LAND USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	PERCENT OR AREA	PRODUCT
Pervious, good Impervious	34, 54	C	74	0.92	68.08
			98	0.91	89.18
TOTAL				1.83	157.26

$$\text{WEIGHTED CN} = \frac{\text{PRODUCT}}{\text{AREA OR \%}} = 86$$

$$\text{SOIL STORAGE, S} = \frac{1000}{\text{CN}} - 10 = 1.6 \text{ INCHES}$$

$$\text{RUNOFF, R} = \frac{(P-0.2S)^2}{(P+0.8S)} = 6.9 \text{ INCHES}$$

$$\text{RUNOFF VOLUME, V} = \frac{R}{12} \times \text{AREA} = 1.05 \text{ ACRE-FT}$$

GTC Engineering Corporation

BASIN POND ANALYSIS, SJRWMD REQUIREMENTS

PROJ: Chuluota/Lake Pickett
BY: CMY
DATE: 3/10/11

Pond Volume

Basin 100
Pond 10
Basin Area 1.83 Acres
Impervious Area 0.87 Acres

Retention Stage 71.00 ft
Actual Storage 0.13 Acre-ft
(+/- 0.9" over basin area)

Elev (Feet)	Area (Acres)	Average Area (Acres)	Incre Depth (Feet)	Incre Storage (Acre-ft)	Cumulative Storage (Acre-ft)
69.40	0.05	0.05	0.00	0.00	0.00
70.00	0.07	0.06	0.60	0.04	0.04
71.00	0.12	0.10	1.00	0.10	0.13
72.00	0.16	0.14	1.00	0.14	0.27

GTC Engineering Corporation

PROJECT NAME: **Chuluota**

BY: CLC

DATE: 3/10/2011

BASIN DESIGNATION 200
 TYPE EVALUATION Post
 BASIN SIZE 0.58 ACRES
 RAINFALL DEPTH 8.6 INCHES

LAND USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	PERCENT OR AREA	PRODUCT
Pervious, good	44	B/D	80	0.05	4.00
Pervious, good	54	C	74	0.22	16.28
Impervious			98	0.31	30.38
TOTAL				0.58	50.66

$$\text{WEIGHTED CN} = \frac{\text{PRODUCT}}{\text{AREA OR \%}} = 87$$

$$\text{SOIL STORAGE, } S = \frac{1000}{\text{CN}} - 10 = 1.4 \text{ INCHES}$$

$$\text{RUNOFF, } R = \frac{(P-0.2S)^2}{(P+0.8S)} = 7.1 \text{ INCHES}$$

$$\text{RUNOFF VOLUME, } V = \frac{R}{12} \times \text{AREA} = 0.34 \text{ ACRE-FT}$$

GTC Engineering Corporation

BASIN POND ANALYSIS, SJRWMD REQUIREMENTS

PROJ: Chuluota/Lake Pickett

BY: CMY

DATE: 3/10/11

Pond Volume

Basin 200
Pond 20

Elev (Feet)	Area (Acres)	Average Area (Acres)	Incre Depth (Feet)	Incre Storage (Acre-ft)	Cumulative Storage (Acre-ft)
69.08	0.00	0.00	0.00	0.00	0.00
70.00	0.01	0.01	0.92	0.00	0.00
71.00	0.05	0.03	1.00	0.03	0.03
72.00	0.09	0.07	1.00	0.07	0.10

GTC Engineering Corporation

PROJECT NAME: **Chuluota**
 BY: CLC
 DATE: 3/10/2011

BASIN DESIGNATION 300
 TYPE EVALUATION Post
 BASIN SIZE 32.23 ACRES
 RAINFALL DEPTH 8.6 INCHES

LAND USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	PERCENT OR AREA	PRODUCT
Pervious, Fair	2	A	49	5.07 %	248.43
Pervious, Fair	54	C	79	11.93	942.47
Pervious, Fair	42,44	B/D	84	5.42	455.28
Wetland @NWL	42	D	100	8.62	862.00
Impervious			98	1.19	116.62
TOTAL				32.23	2624.80

$$\text{WEIGHTED CN} = \frac{\text{PRODUCT}}{\text{AREA OR \%}} = 81$$

$$\text{SOIL STORAGE, S} = \frac{1000}{\text{CN}} - 10 = 2.3 \text{ INCHES}$$

$$\text{RUNOFF, R} = \frac{(P-0.2S)^2}{(P+0.8S)} = 6.4 \text{ INCHES}$$

$$\text{RUNOFF VOLUME, V} = \frac{R}{12} \times \text{AREA} = 17.09 \text{ ACRE-FT}$$

GTC Engineering Corporation

PROJECT NAME: **Chuluota**

BY: **CMY**

DATE: **4/27/2011**

BASIN DESIGNATION	400A
TYPE EVALUATION	Post
BASIN SIZE	2.21 ACRES
RAINFALL DEPTH	8.6 INCHES

LAND USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	PERCENT OR AREA	PRODUCT
Pervious, fair	2	A	49	1.29	63.21
Pervious, fair	3,44	D,B/D	84	0.70	58.80
Impervious			98	0.22	21.56
		TOTAL		2.21	143.57

$$\text{WEIGHTED CN} = \frac{\text{PRODUCT}}{\text{AREA OR \%}} = 65$$

$$\text{SOIL STORAGE, S} = \frac{1000}{\text{CN}} - 10 = 5.4 \text{ INCHES}$$

$$\text{RUNOFF, R} = \frac{(P-0.2S)^2}{(P+0.8S)} = 4.4 \text{ INCHES}$$

$$\text{RUNOFF VOLUME, V} = \frac{\text{R}}{12} \times \text{AREA} = 0.81 \text{ ACRE-FT}$$

GTC Engineering Corporation

BASIN POND ANALYSIS, SJRWMD REQUIREMENTS

PROJ: Chuluota/Lake Pickett

BY: CMY

DATE: 4/27/11

Pond Volume

Basin 400A
Pond 40A

Elev (Feet)	Area (Acres)	Average Area (Acres)	Incre Depth (Feet)	Incre Storage (Acre-ft)	Cumulative Storage (Acre-ft)
70.00	0.03	0.03	0.00	0.00	0.00
70.50	0.08	0.05	0.50	0.03	0.03
71.00	0.13	0.11	0.50	0.05	0.08
71.50	0.19	0.16	0.50	0.08	0.16

GTC Engineering Corporation

TR-55, Time of concentration (Tc) or travel time (Tt)

Project Chuluota
 Location Orange County

By CMY Date 4/27/2011
 Checked _____ Date _____

Bold one: Present **Developed** Basin 400A
 Bold one: **Tc** Tc through subarea _____

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet flow (Applicable to Tc only)

	Segment ID	1			
Surface description (table 3-1)		grass			
Manning's roughness coeff., n (table 3-1).....		0.24			
Flow length, L	ft	200			
Two-yr 24-hr rainfall, P2	in	4.9			
	Top elev	ft NGVD	73.0		
	Bot elev	ft NGVD	70.0		
Land slope, s	ft/ft	0.0150			
Tt = $\frac{0.007(nL)^{0.4}}{(P2^{0.5})(s^{0.4})}$ Compute Tt	hr	0.38	+		= 0.38

Shallow concentrated flow

	Segment ID	2			
Surface description (paved or unpaved)					
Flow length, L	ft				
	Top elev	ft NGVD			
	Bot elev	ft NGVD			
Watercourse slope, s	ft/ft				
Average velocity, V (figure 3-1)	ft/s				
Tt = L/(3600 x V) Compute Tt	hr		+		=

Channel flow

	Segment ID				
Cross sectional area,	sq ft				
Wetted perimeter, Pw.....	ft				
Hydraulic radius, r = a/Pw	ft				
	Top elev	ft NGVD			
	Bot elev	ft NGVD			
Channel slope, s	ft/ft				
Manning's roughness coeff., n					
Velocity, V= 1.49 r^(2/3)(s^0.5) / n	ft/s				
Flow length, L	ft				
Tt = L/(3600 x V) Compute Tt	hr		+		=

T Total, hours 0.38
T Total, min 23

GTC Engineering Corporation

PROJECT NAME: **Chuluota**
 BY: CMY
 DATE: 4/27/2011

BASIN DESIGNATION	400B
TYPE EVALUATION	Post
BASIN SIZE	4.06 ACRES
RAINFALL DEPTH	8.6 INCHES

LAND USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	PERCENT OR AREA	PRODUCT
Pervious, fair Impervious	3,44	D,B/D	84	3.98	334.32
			98	0.08	7.84
TOTAL				4.06	342.16

$$\text{WEIGHTED CN} = \frac{\text{PRODUCT}}{\text{AREA OR \%}} = 84$$

$$\text{SOIL STORAGE, S} = \frac{1000}{\text{CN}} - 10 = 1.9 \text{ INCHES}$$

$$\text{RUNOFF, R} = \frac{(P-0.2S)^2}{(P+0.8S)} = 6.7 \text{ INCHES}$$

$$\text{RUNOFF VOLUME, V} = \frac{R}{12} \times \text{AREA} = 2.27 \text{ ACRE-FT}$$

GTC Engineering Corporation

BASIN POND ANALYSIS, SJRWMD REQUIREMENTS

PROJ: Chuluota/Lake Pickett

BY: CMY

DATE: 4/27/11

Pond Volume

Basin 400B
Pond 40B

Elev (Feet)	Area (Acres)	Average Area (Acres)	Incre Depth (Feet)	Incre Storage (Acre-ft)	Cumulative Storage (Acre-ft)
68.12	0.00	0.00	0.00	0.00	0.00
69.50	0.03	0.02	1.38	0.02	0.02
70.00	0.12	0.08	0.50	0.04	0.06
70.50	0.41	0.27	0.50	0.13	0.19
71.00	1.02	0.72	0.50	0.36	0.55
71.50	1.92	1.47	0.50	0.74	1.28

GTC Engineering Corporation

TR-55, Time of concentration (Tc) or travel time (Tt)

Project Chuluota
 Location Orange County

By CMY Date 4/27/2011
 Checked _____ Date _____

Bold one: Present **Developed** Basin 400B
 Bold one: **Tc** Tc through subarea _____

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet flow (Applicable to Tc only)

	Segment ID	1		
Surface description (table 3-1)		grass		
Manning's roughness coeff., n (table 3-1).....		0.24		
Flow length, L	ft	250		
Two-yr 24-hr rainfall, P2	in	4.9		
	Top elev	ft NGVD	73.0	
	Bot elev	ft NGVD	71.6	
Land slope, s	ft/ft	0.0056		
Tt = $\frac{0.007(nL)^{0.8}}{(P2^{0.5})(s^{0.4})}$ Compute Tt	hr	0.67	+	= 0.67

Shallow concentrated flow

	Segment ID	2		
Surface description (paved or unpaved)		Unpaved		
Flow length, L	ft	171		
	Top elev	ft NGVD	71.6	
	Bot elev	ft NGVD	70.5	
Watercourse slope, s	ft/ft	0.0064		
Average velocity, V (figure 3-1)	ft/s	1.5		
Tt = L/(3600 x V) Compute Tt	hr	0.03	+	= 0.03

Channel flow

	Segment ID			
Cross sectional area,	sq ft			
Wetted perimeter, Pw.....	ft			
Hydraulic radius, r = a/Pw	ft			
	Top elev	ft NGVD		
	Bot elev	ft NGVD		
Channel slope, s	ft/ft			
Manning's roughness coeff., n				
Velocity, V= 1.49 r^(2/3)(s^0.5) / n	ft/s			
Flow length, L	ft			
Tt = L/(3600 x V) Compute Tt	hr		+	=

T Total, hours 0.7
T Total, min 42

GTC Engineering Corporation

PROJECT NAME: **Chuluota**
 BY: CLC
 DATE: 3/10/2011

BASIN DESIGNATION	400C
TYPE EVALUATION	Post
BASIN SIZE	0.67 ACRES
RAINFALL DEPTH	8.6 INCHES

LAND USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	PERCENT OR AREA	PRODUCT
Pervious, fair Impervious	3,44	D,B/D	84	0.65	54.60
			98	0.02	1.96
TOTAL				0.67	56.56

$$\text{WEIGHTED CN} = \frac{\text{PRODUCT}}{\text{AREA OR \%}} = 84$$

$$\text{SOIL STORAGE, S} = \frac{1000}{\text{CN}} - 10 = 1.8 \text{ INCHES}$$

$$\text{RUNOFF, R} = \frac{(P-0.2S)^2}{(P+0.8S)} = 6.7 \text{ INCHES}$$

$$\text{RUNOFF VOLUME, V} = \frac{R}{12} \times \text{AREA} = 0.38 \text{ ACRE-FT}$$

GTC Engineering Corporation

TR-55, Time of concentration (Tc) or travel time (Tt)

Project Chuluota By CMY Date 4/27/2011
 Location Orange County Checked _____ Date _____

Bold one: Present **Developed** Basin 400C
 Bold one: **Tc** Tc through subarea _____

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet flow (Applicable to Tc only)

	Segment ID	1			
Surface description (table 3-1)		grass			
Manning's roughness coeff., n (table 3-1).....		0.24			
Flow length, L	ft	170			
Two-yr 24-hr rainfall, P2	in	4.9			
Top elev	ft NGVD				
Bot elev	ft NGVD				
Land slope, s	ft/ft	0.0100			
Tt = $\frac{0.007(nL)^{0.5}}{(P2^{0.5})(s^{0.4})}$ Compute Tt		0.39	+		= 0.39

Shallow concentrated flow

	Segment ID				
Surface description (paved or unpaved)					
Flow length, L	ft				
Top elev	ft NGVD				
Bot elev	ft NGVD				
Watercourse slope, s	ft/ft				
Average velocity, V (figure 3-1)	ft/s				
Tt = L/(3600 x V) Compute Tt			+		=

Channel flow

	Segment ID				
Cross sectional area,	sq ft				
Wetted perimeter, Pw.....	ft				
Hydraulic radius, r = a/Pw	ft				
Top elev	ft NGVD				
Bot elev	ft NGVD				
Channel slope, s	ft/ft				
Manning's roughness coeff., n					
Velocity, V = $1.49 r^{2/3}(s^{0.5}) / n$	ft/s				
Flow length, L	ft				
Tt = L/(3600 x V) Compute Tt			+		=

T Total, hours	0.39
T Total, min	23

GTC Engineering Corporation

PROJECT NAME: **Chuluota**
 BY: CLC
 DATE: 3/10/2011

BASIN DESIGNATION	400D
TYPE EVALUATION	Post
BASIN SIZE	0.66 ACRES
RAINFALL DEPTH	8.6 INCHES

LAND USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	PERCENT OR AREA	PRODUCT
Pervious, fair	3,44	D,B/D	84	0.51	42.84
Pervious, good	54	C	74	0.13	9.62
Impervious			98	0.02	1.96
TOTAL				0.66	54.42

$$\text{WEIGHTED CN} = \frac{\text{PRODUCT}}{\text{AREA OR \%}} = 82$$

$$\text{SOIL STORAGE, } S = \frac{1000}{\text{CN}} - 10 = 2.1 \text{ INCHES}$$

$$\text{RUNOFF, } R = \frac{(P-0.2S)^2}{(P+0.8S)} = 6.5 \text{ INCHES}$$

$$\text{RUNOFF VOLUME, } V = \frac{R}{12} \times \text{AREA} = 0.36 \text{ ACRE-FT}$$

GTC Engineering Corporation

TR-55, Time of concentration (Tc) or travel time (Tt)

Project Chuluota By CMY Date 4/27/2011
 Location Orange County Checked _____ Date _____

Bold one: Present **Developed** Basin 400D
 Bold one: **Tc** Tc through subarea _____

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet flow (Applicable to Tc only)

	Segment ID	1			
Surface description (table 3-1)		grass			
Manning's roughness coeff., n (table 3-1).....		0.24			
Flow length, L	ft	150			
Two-yr 24-hr rainfall, P2	in	4.9			
	Top elev	ft NGVD			
	Bot elev	ft NGVD			
Land slope, s	ft/ft	0.0100			
		0.35	+		= 0.35

Tt = $\frac{0.007(nL)^{0.5}}{(P2^{0.5})(s^{0.4})}$ Compute Tt hr

Shallow concentrated flow

	Segment ID	2			
Surface description (paved or unpaved)		Unpaved			
Flow length, L	ft	100			
	Top elev	ft NGVD			
	Bot elev	ft NGVD			
Watercourse slope, s	ft/ft	0.0050			
Average velocity, V (figure 3-1)	ft/s	1.3			
		0.02	+		= 0.02

Tt = L/(3600 x V) Compute Tt hr

Channel flow

	Segment ID				
Cross sectional area,	sq ft				
Wetted perimeter, Pw.....	ft				
Hydraulic radius, r = a/Pw	ft				
	Top elev	ft NGVD			
	Bot elev	ft NGVD			
Channel slope, s	ft/ft				
Manning's roughness coeff., n					
Velocity, V= 1.49 r^(2/3)(s^0.5) / n	ft/s				
Flow length, L	ft				
			+		=

Tt = L/(3600 x V) Compute Tt hr

T Total, hours 0.37
 T Total, min 22

GTC Engineering Corporation

PROJECT NAME: **Chuluota**

BY: CLC

DATE: 3/10/2011

BASIN DESIGNATION 400E
TYPE EVALUATION Post
BASIN SIZE 1.00 ACRES
RAINFALL DEPTH 8.6 INCHES

LAND USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	PERCENT OR AREA	PRODUCT
Pervious, fair	3,44	D,B/D	84	0.31	26.04
Pervious, good	54	C	74	0.62	45.88
Impervious			98	0.07	6.86
			TOTAL	1.00	78.78

$$\text{WEIGHTED CN} = \frac{\text{PRODUCT}}{\text{AREA OR \%}} = 79$$

$$\text{SOIL STORAGE, } S = \frac{1000}{\text{CN}} - 10 = 2.7 \text{ INCHES}$$

$$\text{RUNOFF, } R = \frac{(P-0.2S)^2}{(P+0.8S)} = 6.0 \text{ INCHES}$$

$$\text{RUNOFF VOLUME, } V = \frac{R}{12} \times \text{AREA} = 0.50 \text{ ACRE-FT}$$

GTC Engineering Corporation

TR-55, Time of concentration (Tc) or travel time (Tt)

Project Chuluota
 Location Orange County

By CMY Date 4/27/2011
 Checked _____ Date _____

Bold one: Present **Developed** Basin 400E
 Bold one: **Tc** Tc through subarea _____

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet flow (Applicable to Tc only)

	Segment ID	1			
Surface description (table 3-1)		grass			
Manning's roughness coeff., n (table 3-1).....		0.24			
Flow length, L	ft	100			
Two-yr 24-hr rainfall, P2	in	4.9			
Top elev	ft NGVD				
Bot elev	ft NGVD				
Land slope, s	ft/ft	0.0100			
		0.25	+	0.25	=
Tt = $\frac{0.007(nL)^{0.8}}{(P^2)^{0.5}(s^{0.4})}$ Compute Tt	hr				0.25

Shallow concentrated flow

	Segment ID	2			
Surface description (paved or unpaved)		Unpaved			
Flow length, L	ft	150			
Top elev	ft NGVD				
Bot elev	ft NGVD				
Watercourse slope, s	ft/ft	0.0050			
Average velocity, V (figure 3-1)	ft/s	1.3			
		0.03	+	0.03	=
Tt = L/(3600 x V) Compute Tt	hr				0.03

Channel flow

	Segment ID				
Cross sectional area,	sq ft				
Wetted perimeter, Pw.....	ft				
Hydraulic radius, r = a/Pw	ft				
Top elev	ft NGVD				
Bot elev	ft NGVD				
Channel slope, s	ft/ft				
Manning's roughness coeff., n					
Velocity, V= 1.49 r^(2/3)(s^0.5) / n	ft/s				
Flow length, L	ft				
			+		=
Tt = L/(3600 x V) Compute Tt	hr				

T Total, hours 0.28
 T Total, min 17

GTC Engineering Corporation

PROJECT NAME: **Chuluota**
 BY: CMY
 DATE: 4/27/2011

BASIN DESIGNATION	S4
TYPE EVALUATION	Post
BASIN SIZE	0.27 ACRES
RAINFALL DEPTH	8.6 INCHES

LAND USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	PERCENT OR AREA	PRODUCT
Pervious, fair Impervious	3,44	D,B/D	84	0.23	19.32
			98	0.04	3.92
TOTAL				0.27	23.24

$$\text{WEIGHTED CN} = \frac{\text{PRODUCT}}{\text{AREA OR \%}} = 86$$

$$\text{SOIL STORAGE, S} = \frac{1000}{\text{CN}} - 10 = 1.6 \text{ INCHES}$$

$$\text{RUNOFF, R} = \frac{(P-0.2S)^2}{(P+0.8S)} = 6.9 \text{ INCHES}$$

$$\text{RUNOFF VOLUME, V} = \frac{R}{12} \times \text{AREA} = 0.16 \text{ ACRE-FT}$$

GTC Engineering Corporation

BASIN POND ANALYSIS, SJRWMD REQUIREMENTS

PROJ: Chuluota/Lake Pickett

BY: CMY

DATE: 4/27/11

Pond Volume

Basin S4
Pond S4

Elev (Feet)	Area (Acres)	Average Area (Acres)	Incre Depth (Feet)	Incre Storage (Acre-ft)	Cumulative Storage (Acre-ft)
55.00	0.001	0.00	0.00	0.00	0.00
70.92	0.001	0.00	15.92	0.02	0.02
71.52	0.06	0.03	0.60	0.02	0.03

GTC Engineering Corporation

TR-55, Time of concentration (Tc) or travel time (Tt)

Project Chuluota By CMY Date 4/27/2011
 Location Orange County Checked _____ Date _____

Bold one: Present **Developed** Basin S4
 Bold one: **Tc** Tc through subarea _____

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet flow (Applicable to Tc only)

	Segment ID				
Surface description (table 3-1)					
Manning's roughness coeff., n (table 3-1).....					
Flow length, L	ft				
Two-yr 24-hr rainfall, P2	in				
Top elev	ft NGVD				
Bot elev	ft NGVD				
Land slope, s	ft/ft				
Tt = $\frac{0.007(nL)^{0.8}}{(P2^{0.5})(s^{0.4})}$ Compute Tt	hr		+		=

Shallow concentrated flow

	Segment ID				
Surface description (paved or unpaved)	1				
Flow length, L	Unpaved				
Top elev	200				
Bot elev					
Watercourse slope, s	0.0050				
Average velocity, V (figure 3-1)	1.3				
Tt = L/(3600 x V) Compute Tt	hr	0.04	+		= 0.04

Channel flow

	Segment ID				
Cross sectional area,	sq ft				
Wetted perimeter, Pw.....	ft				
Hydraulic radius, r = a/Pw	ft				
Top elev	ft NGVD				
Bot elev	ft NGVD				
Channel slope, s	ft/ft				
Manning's roughness coeff., n					
Velocity, V= 1.49 r^(2/3)(s^0.5) / n	ft/s				
Flow length, L	ft				
Tt = L/(3600 x V) Compute Tt	hr		+		=

T Total, hours 0.04
 T Total, min 2
 use 10 min

GTC Engineering Corporation

PROJECT NAME: **Chuluota**

BY: CMY

DATE: 4/27/2011

BASIN DESIGNATION

S6

TYPE EVALUATION

Post

BASIN SIZE

0.12 ACRES

RAINFALL DEPTH

8.6 INCHES

LAND USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	PERCENT OR AREA	PRODUCT
Pervious, fair Impervious	3,44	D,B/D	84	0.10	8.40
			98	0.02	1.96
TOTAL				0.12	10.36

$$\text{WEIGHTED CN} = \frac{\text{PRODUCT}}{\text{AREA OR \%}} = 86$$

$$\text{SOIL STORAGE, S} = \frac{1000}{\text{CN}} - 10 = 1.6 \text{ INCHES}$$

$$\text{RUNOFF, R} = \frac{(P-0.2S)^2}{(P+0.8S)} = 7.0 \text{ INCHES}$$

$$\text{RUNOFF VOLUME, V} = \frac{R}{12} \times \text{AREA} = 0.07 \text{ ACRE-FT}$$

GTC Engineering Corporation

BASIN POND ANALYSIS, SJRWMD REQUIREMENTS

PROJ: **Chuluota/Lake Pickett**

BY: CMY

DATE: 4/27/11

Pond Volume

Basin S6
Pond S6

Elev (Feet)	Area (Acres)	Average Area (Acres)	Incre Depth (Feet)	Incre Storage (Acre-ft)	Cumulative Storage (Acre-ft)
55.00	0.001	0.00	0.00	0.00	0.00
71.92	0.001	0.00	16.92	0.02	0.02
73.92	0.044	0.02	2.00	0.05	0.06

GTC Engineering Corporation

TR-55, Time of concentration (Tc) or travel time (Tt)

Project Chuluota By CMY Date 4/27/2011
 Location Orange County Checked _____ Date _____

Bold one: Present **Developed** Basin S6
 Bold one: **Tc** Tc through subarea _____

NOTES: Space for as many as two segments per flow type can be used for each worksheet.
 Include a map, schematic, or description of flow segments.

Sheet flow (Applicable to Tc only)

	Segment ID				
Surface description (table 3-1)					
Manning's roughness coeff., n (table 3-1).....					
Flow length, L	ft				
Two-yr 24-hr rainfall, P2	in				
Top elev	ft NGVD				
Bot elev	ft NGVD				
Land slope, s	ft/ft				
Tt = $\frac{0.007(nL)^{0.48}}{(P2^{0.5})(s^{0.4})}$ Compute Tt	hr			+	= <input style="width: 50px;" type="text"/>

Shallow concentrated flow

	Segment ID				
Surface description (paved or unpaved)	1				
Flow length, L	Unpaved				
Top elev	150				
Bot elev					
Watercourse slope, s	0.0050				
Average velocity, V (figure 3-1)	1.3				
Tt = L/(3600 x V) Compute Tt	0.03			+	= <input style="width: 50px; border: 1px solid black;" type="text" value="0.03"/>

Channel flow

	Segment ID				
Cross sectional area,	sq ft				
Wetted perimeter, Pw.....	ft				
Hydraulic radius, r = a/Pw	ft				
Top elev	ft NGVD				
Bot elev	ft NGVD				
Channel slope, s	ft/ft				
Manning's roughness coeff., n					
Velocity, V= 1.49 r ^(2/3) (s ^{0.5}) / n	ft/s				
Flow length, L	ft				
Tt = L/(3600 x V) Compute Tt	hr			+	= <input style="width: 50px;" type="text"/>

T Total, hours
 T Total, min
 use 10 min

IMPERVIOUS AREA CALCULATIONS

PROJECT: **Chuluota/Lake Pickett**

CMY CMY

DATE: 4/27/11

BASIN: POSTB+Offsite Areas

Impervious Areas

Roads	1.01 Acres	includes curb/sidewalk
Lots/Driveways	3.12 Acres	25 lots (based on 5440 sq ft impervious)
Lake Pickett Road Impervious	2.94 Acres	from Estates of Mandalay Calculations
Basin 100 Impervious	0.91 Acres	
Basin 200 Impervious	0.31 Acres	Note: Impervious areas based on
Basin 300 Impervious	1.19 Acres	proposed design
Basins 400A-400E Impervious	0.41 Acres	
Basins S4 and S6 Impervious	0.06 Acres	
Total Impervious	9.95 Acres	
Pond	5.50 Acres	

Percent Impervious

Basin POSTB Area	28.55 Acres
Basin 100 Area	1.83 Acres
Basin 200 Area	0.58 Acres
Basin 300 Area	32.23 Acres
Basins 400A-400E Area	8.60 Acres
Basin S4 Area	0.27 Acres
Basin S6 Area	0.12 Acres
Basin OFFSITE1 Area	38.54 Acres
Basin OFFSITE2 Area	3.24 Acres
Basin OFFSITE3 Area	1.94 Acres
Total Drainage Area	115.90 Acres
Total Impervious	9.95 Acres
Total Pervious	100.45 Acres
Percent Impervious	8.6

Rational Coefficient

Pervious C	0.2
Impervious C	0.9 Pavement and lots
Impervious C	1.00 Pond
Weighted C =	$\frac{\text{Pervious C} \times \text{Pervious Area} + \text{Imp C} \times \text{Imp Area}}{\text{Total Site Area}}$
Weighted C =	0.30

GTC Engineering Corporation

BASIN POND ANALYSIS, SJRWMD REQUIREMENTS

PROJ: Chuluota/Lake Pickett

BY: CMY

DATE: 4/27/11

Pond Volume

Basin POSTB + Offsite Areas
Pond PONDB
Basin Area 115.90 Acres

Elev (Feet)	Area (Acres)	Average Area (Acres)	Incre Depth (Feet)	Incre Storage (Acre-ft)	Cumulative Storage (Acre-ft)
61.90	5.50	5.50	0.00	0.00	0.00
62.90	5.75	5.63	1.00	5.63	5.63
63.90	5.99	5.87	1.00	5.87	11.50
64.90	6.24	6.12	1.00	6.12	17.61
65.90	6.48	6.36	1.00	6.36	23.97
66.90	6.73	6.61	1.00	6.61	30.58

Information from Mandalay Subdivision Stormwater Calculations dated August 2006
by International Engineering Consultants, Inc. (Orange County Permit # 05-S-034)

Elevations converted from NGVD29 to NAVD88 (-1.1 ft)

Drainage Area includes Basins: POSTB, 100, 200, 300, 400A to 400E, S4, S6
OFFSITE1, OFFSITE2, and OFFSITE3

Basins 100, 200, 300, 400A to 400E, S4 and S6 are proposed condition.

GTC Engineering Corporation

BASIN POND ANALYSIS, SJRWMD REQUIREMENTS

PROJ: **Chuluota/Lake Pickett**

BY: **CMY**

DATE: **4/27/11**

Permanent Pool Calculations

Basin	POSTB + Offsite Areas
Pond	PONDB
Basin Area	115.90 Acres
Weighted C	0.30
Average Rainfall	32 inches (June-October)
Wet Season Duration	153 days

Elev (Feet)	Area (Acres)	Average Area (Acres)	Incre Depth (Feet)	Incre Storage (Acre-ft)	Cumulative Storage (Acre-ft)
49.90	4.15	-	-	-	0.00
50.90	4.24	4.20	1.00	4.20	4.20
51.90	4.33	4.29	1.00	4.29	8.48
52.90	4.41	4.37	1.00	4.37	12.85
53.90	4.50	4.46	1.00	4.46	17.31
54.90	4.58	4.54	1.00	4.54	21.85
55.90	4.67	4.63	1.00	4.63	26.47
56.90	4.75	4.71	1.00	4.71	31.18
57.90	4.84	4.80	1.00	4.80	35.98
58.90	4.93	4.89	1.00	4.89	40.86
59.90	5.01	4.97	1.00	4.97	45.83
60.90	5.26	5.14	1.00	5.14	50.97
61.90	5.50	5.38	1.00	5.38	56.35

Information from Mandalay Subdivision Stormwater Calculations dated August 2006 by International Engineering Consultants, Inc. (Orange County Permit # 05-S-034)

Permanent Pool Required =	12.73 Acre-ft
Including 50% Additional PPV =	19.09 Acre-ft
Permanent Pool Available =	56.35 Acre-ft

Average daily runoff volume (using 153 day rainfall period) =
 (Rational Coefficient)(Basin Area)(32"/153 days)(1'/12") =
 = 0.61 Acre-ft

Average groundwater inflow =	0.0000 Acre-ft
Total average daily runoff volume =	0.61 Acre-ft

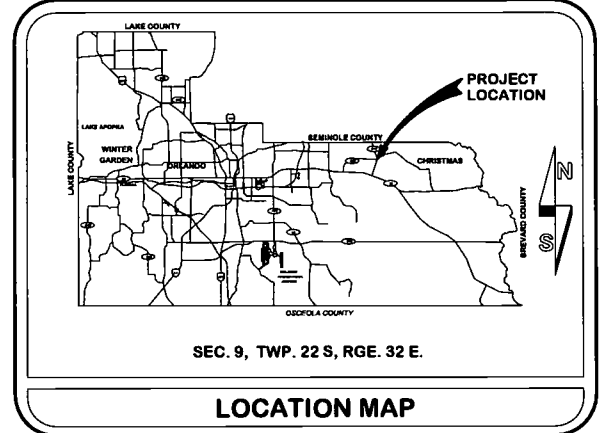
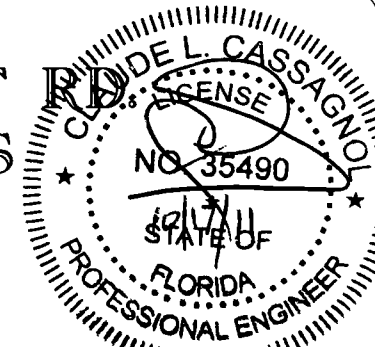
Residence Time = $\frac{\text{Permanent Pool Available}}{\text{Average daily runoff volume}} = 93.0 \text{ days}$

Min Residence Time = 14.0 days **O.K.**



CONSTRUCTION PLANS FOR CHULUOTA RD. AT LAKE PICKETT INTERSECTION IMPROVEMENTS

ORANGE COUNTY - DISTRICT NO. 5
PROJECT NO: 5128



TERESA JACOBS, COUNTY MAYOR

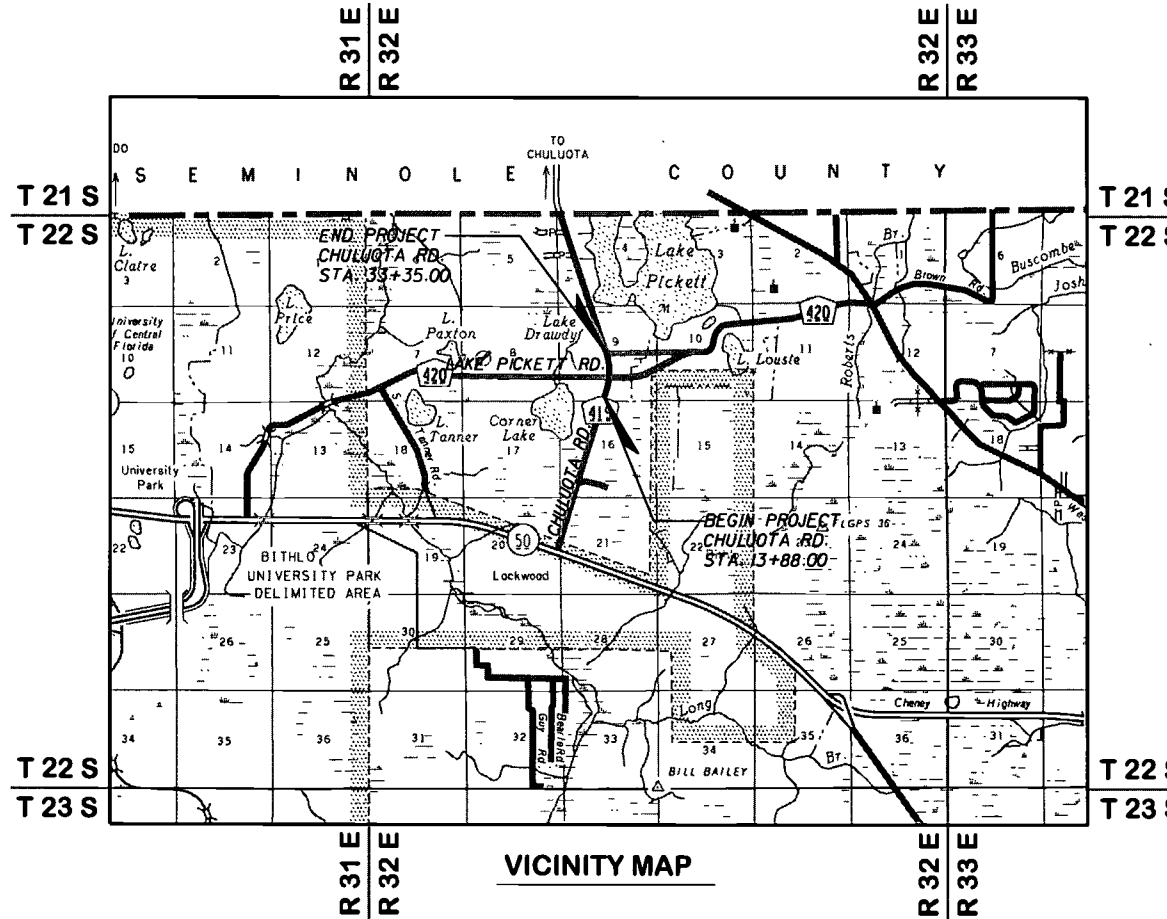
BOARD OF COUNTY COMMISSIONERS

- | | |
|-----------------------|------------|
| S. SCOTT BOYD | DISTRICT 1 |
| FREDERICK C. BRUMMER | DISTRICT 2 |
| LUI DAMIANI | DISTRICT 3 |
| JENNIFER THOMPSON | DISTRICT 4 |
| TED EDWARDS | DISTRICT 5 |
| TIFFANY MOORE RUSSELL | DISTRICT 6 |

MARK V. MASSARO, P.E., PUBLIC WORKS DIRECTOR

GOVERNING STANDARDS AND SPECIFICATIONS:
FLORIDA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS DATED 2010,
AND STANDARD SPECIFICATIONS FOR ROAD AND
BRIDGE CONSTRUCTION DATED 2010, AS AMENDED
BY CONTRACT DOCUMENTS.

NOTE: THE SCALE OF THESE PLANS MAY HAVE
CHANGED DUE TO REPRODUCTION.



LEGEND

- LIGHT POLE
- SIGN
- 4" GAS
- WATER VALVE
- WATER SERVICE
- FIRE HYDRANT
- 10" WM
- OVERHEAD ELECTRIC
- ELECTRIC POLE
- GUY WIRE
- SANITARY MANHOLE
- FIBER OPTIC DUCT RUN
- FIBER OPTIC BOX
- 15" FM
- 4' CHAIN LINK FENCE
- 6' WOOD FENCE
- ★ PALM TREE
- BUSH
- F.S.E. FILL SLOPE EASEMENT
- D.E. DRAINAGE EASEMENT
- ABND ABANDONED
- OS OUT OF SERVICE
- ▽ ESTIMATED SEASONAL HIGH WATER TABLE
- ▽ ENCOUNTERED GROUNDWATER TABLE (6/11/10)

INDEX OF SHEETS

SHEET	DESCRIPTION
1	COVER SHEET
2	GENERAL NOTES
3	STANDARD DRAWINGS AND DETAILS
4	SUMMARY OF PAY ITEMS
5-7	DRAINAGE MAP
8	TYPICAL SECTIONS
9	SUMMARY OF QUANTITIES
10	SUMMARY OF DRAINAGE STRUCTURES
11-17	PLAN AND PROFILE SHEETS
18	INTERSECTION DETAIL SHEET
19-23	DRAINAGE STRUCTURE SHEETS
24	POND DETAIL SHEET
25-27	ROADWAY SOIL SURVEY SHEETS
28-48	CROSS SECTIONS
49-54	EROSION CONTROL PLAN
* 55-61	UTILITY ADJUSTMENT PLAN
* 62-78	MAINTENANCE OF TRAFFIC
* S-1 TO S-5	SIGNING AND PAVEMENT MARKING PLANS
* T-1 TO T-5	SIGNALIZATION PLANS
SC-1 TO SC-8	SURVEY CONTROL SHEETS

* NOT NEEDED IN SJWMD SUBMITTAL

UTILITIES ENCOUNTERED

CITY OF ORLANDO-BUREAU OF WASTEWATER	407-246-3824
ATT DISTRIBUTION	407-273-5084
PROGRESS ENERGY	407-359-4447
ORANGE COUNTY UTILITIES	407-254-9706
COMCAST COMMUNICATIONS	407-849-3610

LENGTH OF PROJECT

	LINEAR FT.	MILES
CHULUOTA RD.	1,947.00	0.369
NET LENGTH OF PROJ.	1,947.00	0.369
EXCEPTIONS	0.00	0.000
GROSS LENGTH OF PROJ.	1,947.00	0.369

NOTE:
PLANS WERE PREPARED ACCORDING TO AVAILABLE INFORMATION TO ADEQUATELY ADDRESS CONDITIONS AS THEY EXISTED AT THE TIME OF PLANS PREPARATION. NEEDS, CONDITIONS AND OWNERSHIP OF PROPERTIES MAY HAVE CHANGED SINCE PROJECT DESIGN. THE COUNTY'S REPRESENTATIVE WILL ADDRESS CHANGES AND NEEDS WITH THE PROPERTY OWNER OR THEIR REPRESENTATIVES. CONTRACTOR SHALL WORK WITH THE COUNTY'S REPRESENTATIVE IN ADDRESSING AND MEETING NEEDS AND CONDITIONS THAT MAY HAVE CHANGED SINCE PLANS PREPARATION.

SOURCE OF BENCH MARK DATUM

ORANGE COUNTY BENCHMARK DESIGNATED: L-1294-004
ELEVATION: 72.180 (NAVD88)
DESCRIPTION: Recovered railroad spike in West face of power pole number B-251590, 300 ft +/- South of the centerline of North Lake Pickett Road and 40 ft +/- East of the centerline of State Road 419.

NGS BENCHMARK DESIGNATED: B-716-2008
ELEVATION: 71.771 (NAVD88)
DESCRIPTION: Recovered rod mark in covered box on the West side of State Road 419, 715 ft +/- South of Lake Pickett Road, stamped (B-716-2008).

CERTIFICATION TO PLANS

I HEREBY CERTIFY that the design for this project and the attached construction plans comply with the requirements of Section 336.045 of the Florida Statutes and are in substantial conformance with the standards contained in the edition of the "Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways" in effect on this date as adopted by the Florida Department of Transportation pursuant to Subsection 336.045(1) of the Florida Statutes.

DATE: 10/17/11 ENGINEER: CLAUDE L. CASSAGNOLO, P.E. REG. NO. 35490 State of Florida

RECEIVED OCT 18 2011
MAILTAND SVC. CNTR.
40-095-101902-4

GTC Engineering Corporation

98 South Semoran Blvd, Orlando, FL 32807
Phone Number - 407.380.0402

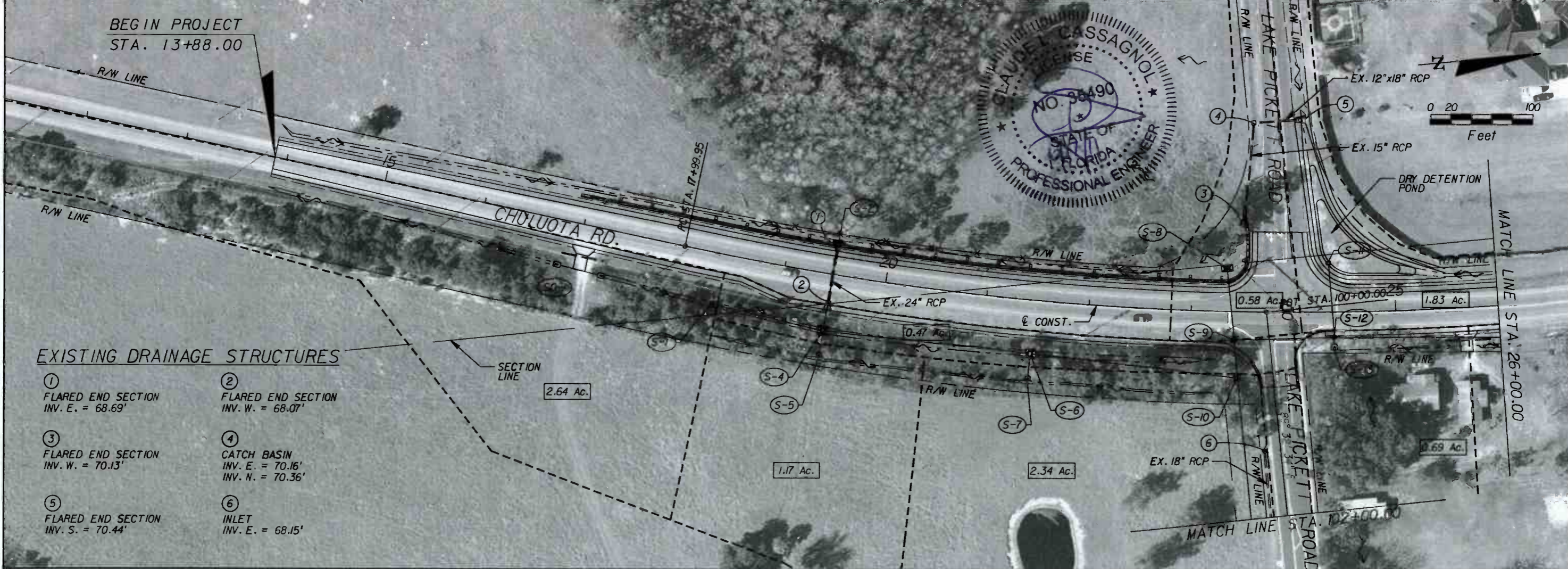
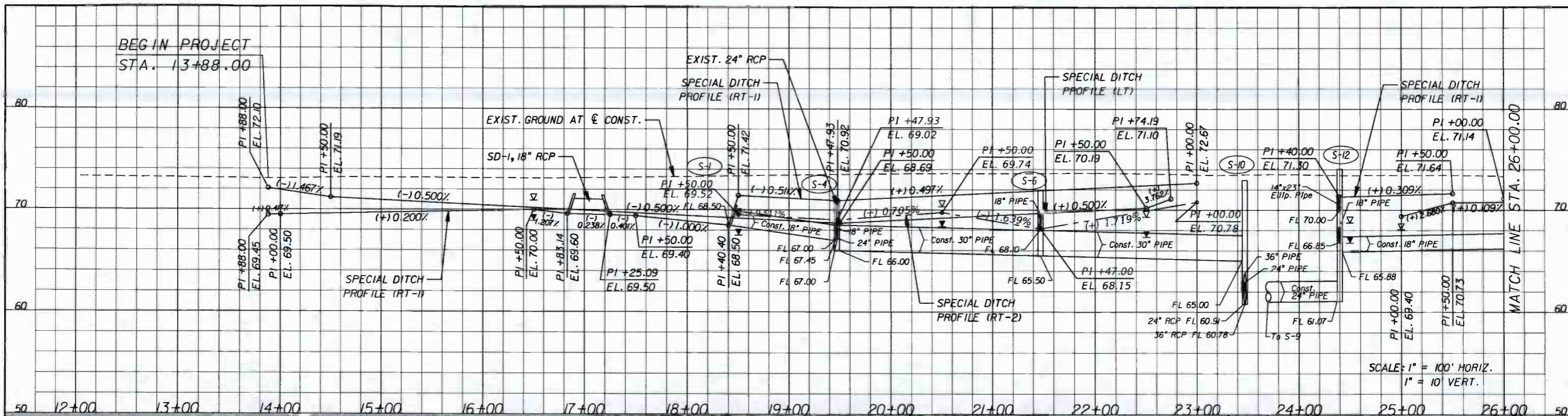
Certificate of Authorization Number 6758
Claude L. Cassagnol, P.E. P.E. Number 35490

REVISIONS	DATE	BY

DESIGNED BY: CLC/AM DATE: 06-23-2011
DRAWN BY: AM DATE: 06-23-2011
CHECKED BY: CLC DATE: 06-23-2011
APPROVED BY: CLC DATE: 06-23-2011
PROJECT NO: 5128

SHEET 1
OF 96

SJWMD SUBMITTAL
OCTOBER, 2011



EXISTING DRAINAGE STRUCTURES

- ① FLARED END SECTION
INV. E. = 68.69'
- ② FLARED END SECTION
INV. W. = 68.07'
- ③ FLARED END SECTION
INV. W. = 70.13'
- ④ CATCH BASIN
INV. E. = 70.16'
INV. N. = 70.36'
- ⑤ FLARED END SECTION
INV. S. = 70.44'
- ⑥ INLET
INV. E. = 68.15'

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

GTC Engineering Corporation
 98 South Semoran Blvd, Orlando, FL 32807
 Phone Number - 407.380.0402
 Certificate of Authorization Number 6758
 Claude L. Cassagnol, P.E.
 P.E. Number 35490

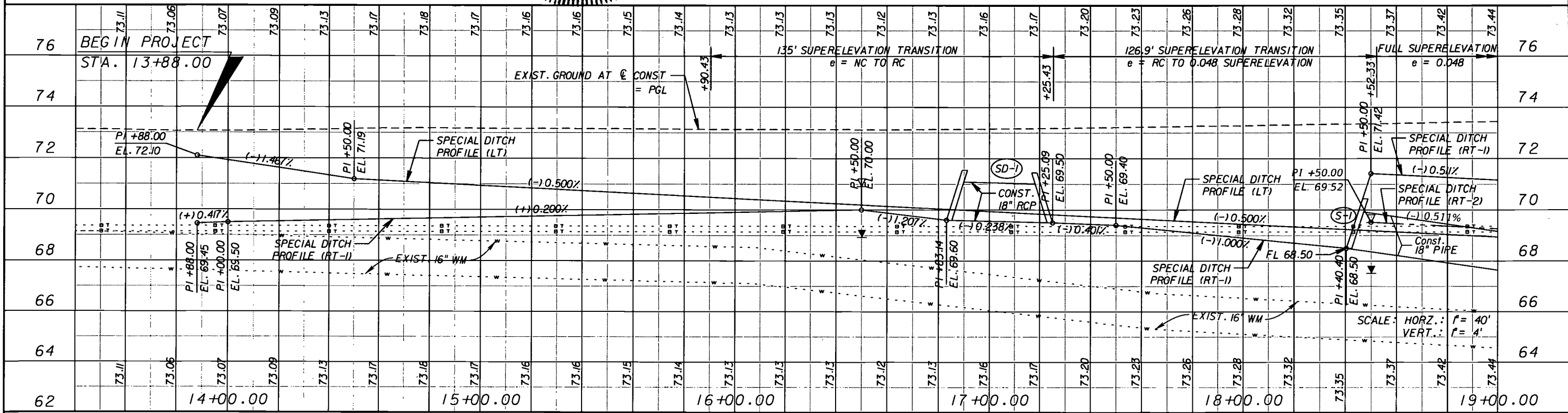
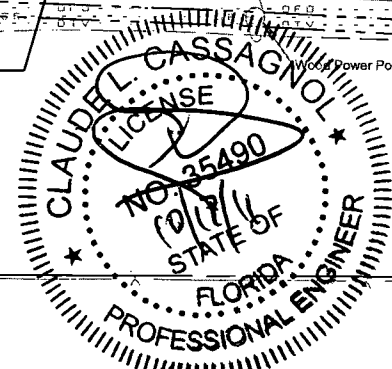
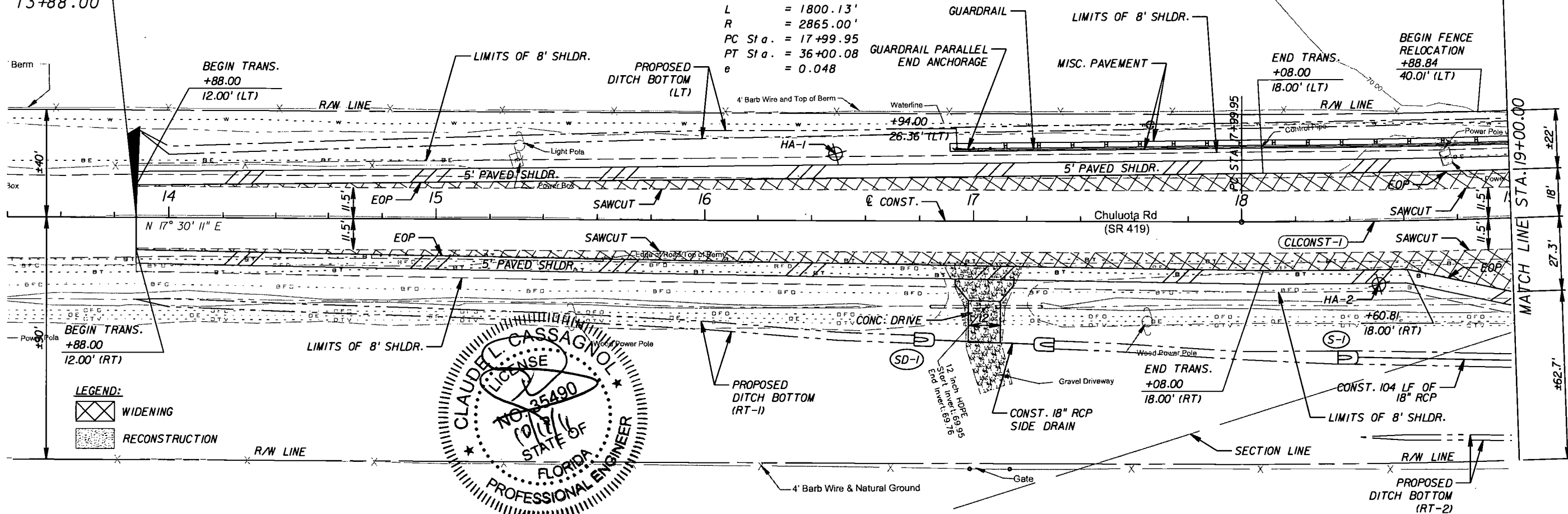
ORANGE COUNTY PUBLIC WORKS
 GTC PROJECT NO. FLO 11.05
 CHULUOTA RD. AND LAKE PICKETT RD. INT. IMPROVEMENTS
 OCPW CIP NO. 5128

DRAINAGE MAP
 SHEET NO. 5

FILE: H:\Jobs\00000001210\drainage\DRMPR001.DGN
 DATE: 10/14/2011 5:28:08 PM

BEGIN PROJECT
STA. 13+88.00

CLCONST-1
PI Sta. = 27+30.85
Delta = 36° 0' 0"
D = 1° 59' 59"
T = 930.89'
L = 1800.13'
R = 2865.00'
PC Sta. = 17+99.95
PT Sta. = 36+00.08
e = 0.048



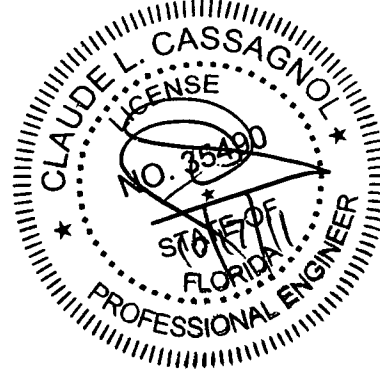
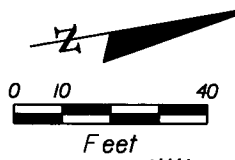
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

GTC Engineering Corporation
98 South Semoran Blvd, Orlando, FL 32807
Phone Number - 407.380.0402
Certificate of Authorization Number 6758
Claude L. Cassagnol, P.E.
P.E. Number 35490

ORANGE COUNTY PUBLIC WORKS
GTC PROJECT NO. FLO 11.05
CHULUOTA RD. AND LAKE PICKET RD. INT. IMPROVEMENTS
OCWP PROJECT NO. 5128

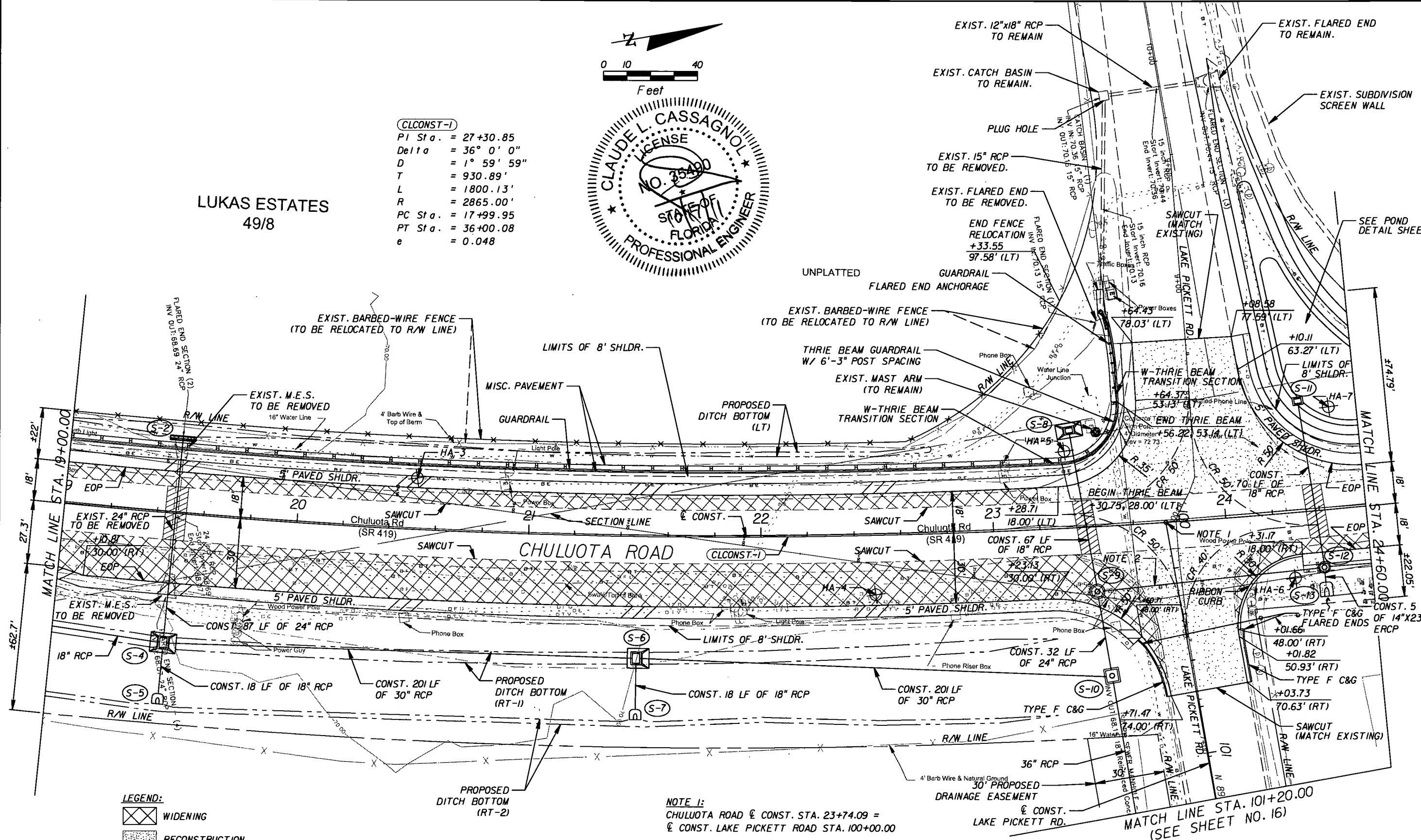
PLAN AND PROFILE
STA. 13+88.00 TO STA. 19+00.00
SHEET NO. 11

FILE: H:\Jobs\00000000210\roadway\PLPRRD01.dgn
DATE: 10/14/2011 5:29:19 PM



LUKAS ESTATES
49/8

CLCONST-1
 PI Sta. = 27+30.85
 Delta = 36° 0' 0"
 D = 1° 59' 59"
 T = 930.89'
 L = 1800.13'
 R = 2865.00'
 PC Sta. = 17+99.95
 PT Sta. = 36+00.08
 e = 0.048



LEGEND:
 WIDENING
 RECONSTRUCTION
 CONCRETE BASE REPLACEMENT (SEE DETAIL SHEET NO. 3)

NOTE 1:
 CHULUOTA ROAD @ CONST. STA. 23+74.09 =
 @ CONST. LAKE PICKETT ROAD STA. 100+00.00

NOTE 2:
 CONST. 94 LF OF 24" RCP

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

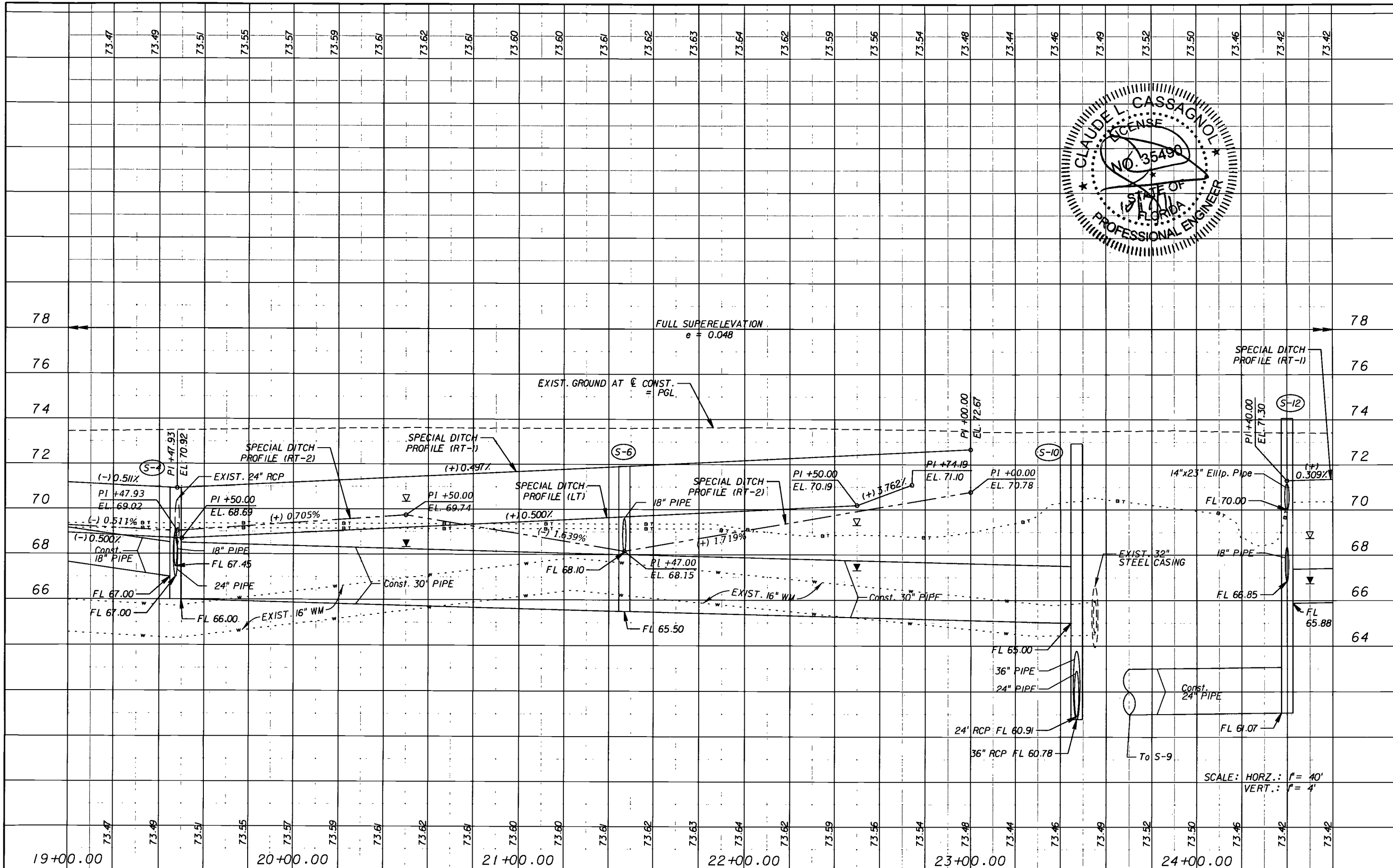
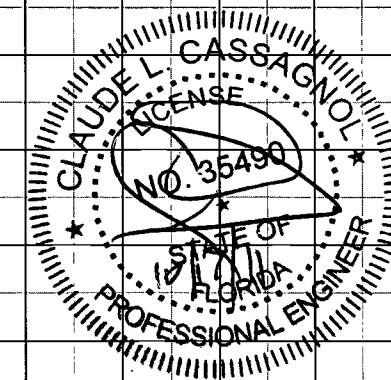
GTC Engineering Corporation
 98 South Semoran Blvd, Orlando, FL 32807
 Phone Number - 407.380.0402
 Certificate of Authorization Number 6758
 Claude L. Cassagnol, P.E.
 P.E. Number 35490

ORANGE COUNTY PUBLIC WORKS
 GTC PROJECT NO. FLO 11.05
 CHULUOTA RD. AND LAKE PICKETT RD. INT. IMPROVEMENTS
 OCPW PROJECT NO. 5128

PLAN AND PROFILE
 STA. 19+00.00 TO STA. 24+60.00

SHEET NO. 12

FILE: H:\Jobs\00000001\210\roadway\PLPRRD02.dgn
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REVISIONS	
DATE	DESCRIPTION

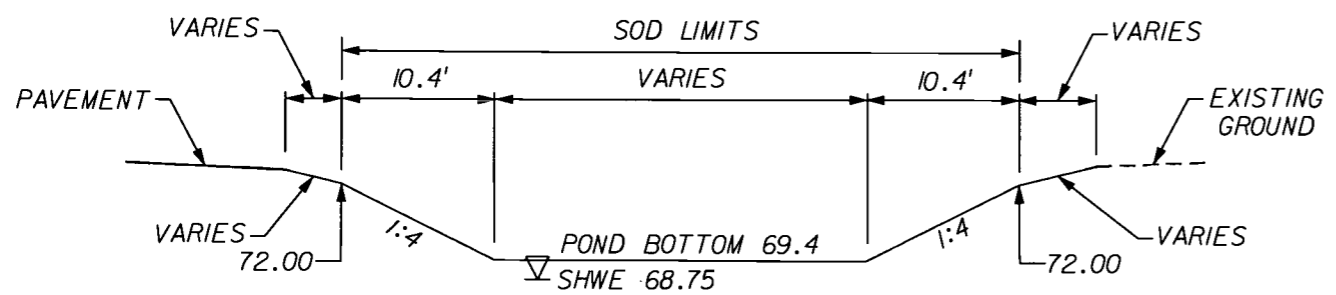
GTC Engineering Corporation
 98 South Semoran Blvd, Orlando, FL 32807
 Phone Number - 407.380.0402
 Certificate of Authorization Number 6758
 Claude L. Cassagnol, P.E.
 P.E. Number 35490

ORANGE COUNTY PUBLIC WORKS
 GTC PROJECT NO. FLO 11.05
 CHULUOTA RD. AND LAKE PICKET RD. INT. IMPROVEMENTS
 OCPW PROJECT NO. 5128

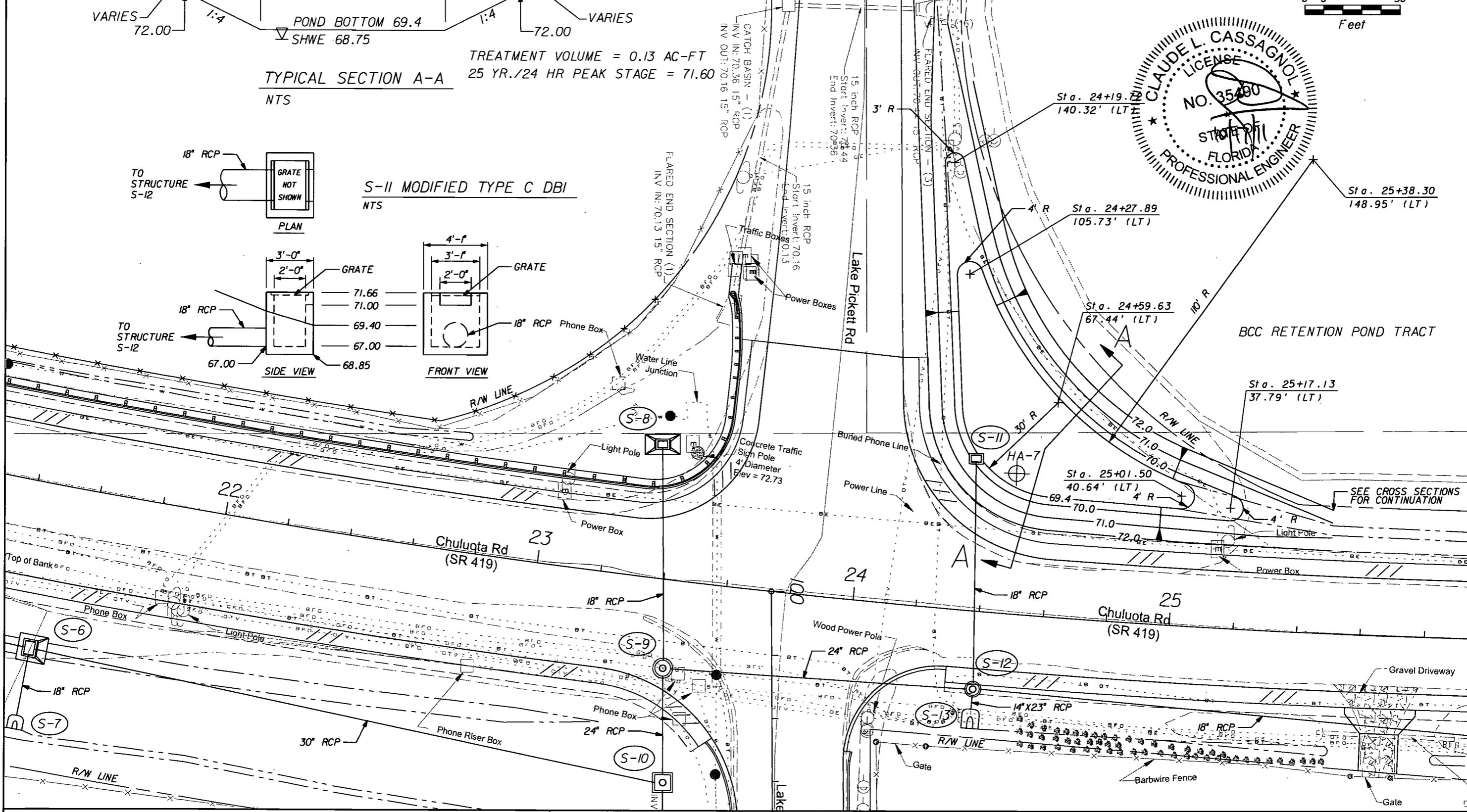
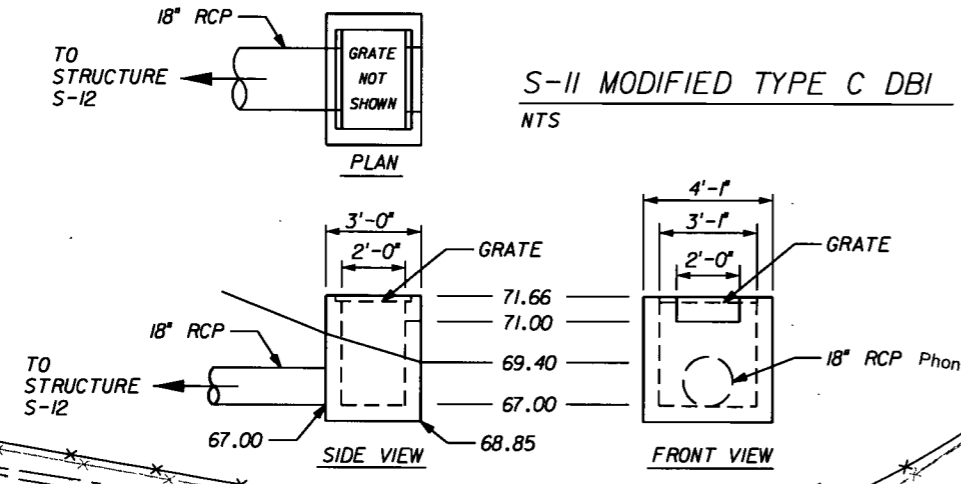
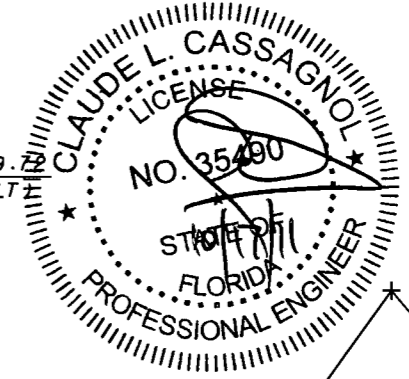
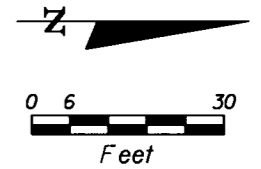
PLAN AND PROFILE
STA. 19+00.00 TO STA. 24+00.00

SHEET NO. 13

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TREATMENT VOLUME = 0.13 AC-FT
25 YR./24 HR PEAK STAGE = 71.60



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

GTC Engineering Corporation
98 South Semoran Blvd, Orlando, FL 32807
Phone Number - 407.380.0402
Certificate of Authorization Number 6758
Claude L. Cassagnol, P.E.
P.E. Number 35490

ORANGE COUNTY PUBLIC WORKS
GTC PROJECT NO. FLO 11.05
CHULUOTA RD. AND LAKE PICKETT RD. INT. IMPROVEMENTS
OCPW PROJECT NO. 5128

POND DETAIL SHEET
SHEET NO. 24

FILE: H:\Jobs\00000001210\drainage\PDPLRD02.DGN
DATE: 10/14/2011 5:29:57 PM

Lukas Estates Subdivision
Permit No. 57286-1
March 2000

CONSTRUCTION PLANS FOR LUKAS ESTATES

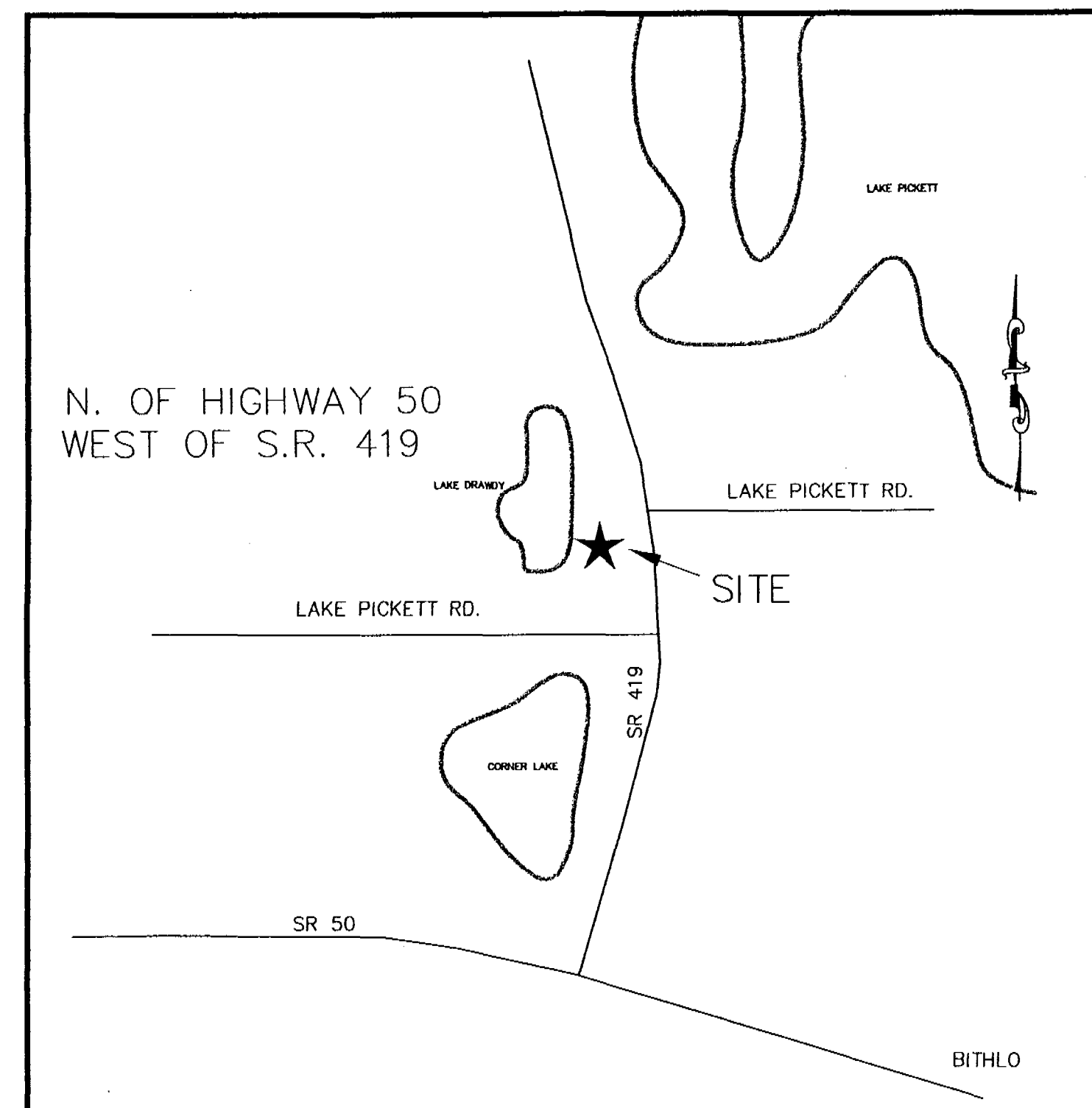
PREPARED FOR
JONATHAN S. LUKAS

OWNER / DEVELOPER
JONATHAN S. LUKAS, TRUSTEE
100 LAKE MILLS ISLAND POINT
CHULUOTA, FLORIDA 32766
TEL: (407) 365-3958

ENGINEER
SHOW ASSOCIATES, INC.
3319 BERRIDGE LANE
ORLANDO, FLORIDA 32812
TEL: (407) 381-4946

CIVIL ENGINEERING GROUP, INC.
132 E. COLONIAL DRIVE, SUITE 211
ORLANDO, FLORIDA, 32801
TEL: (407) 428-9200
FAX: (407) 428-9222

SURVEYOR
LAND TECH
77 GENEVA DRIVE
OVIEDO, FLORIDA 32765
TEL: (407) 365-1036



VICINITY MAP

MARCH 2000

INDEX OF DRAWINGS

No.	SHEET TITLE
C-1	COVER SHEET
C-2	LEGEND AND NOTES
C-3	MASTER DRAINAGE PLAN
C-4	EROSION CONTROL PLAN
C-5	LOT/ BLOCK GRADING PLAN
C-6	ROADWAY CONSTRUCTION PLANS
C-7	ROADWAY CONSTRUCTION PLANS
C-8	ROADWAY CONSTRUCTION PLANS
C-9	GENERAL CONSTRUCTION DETAILS
C-10	UNDERDRAIN DETAILS
C-11	PAVING AND DRAINAGE DETAILS
C-12	EROSION CONTROL NOTES AND DETAILS

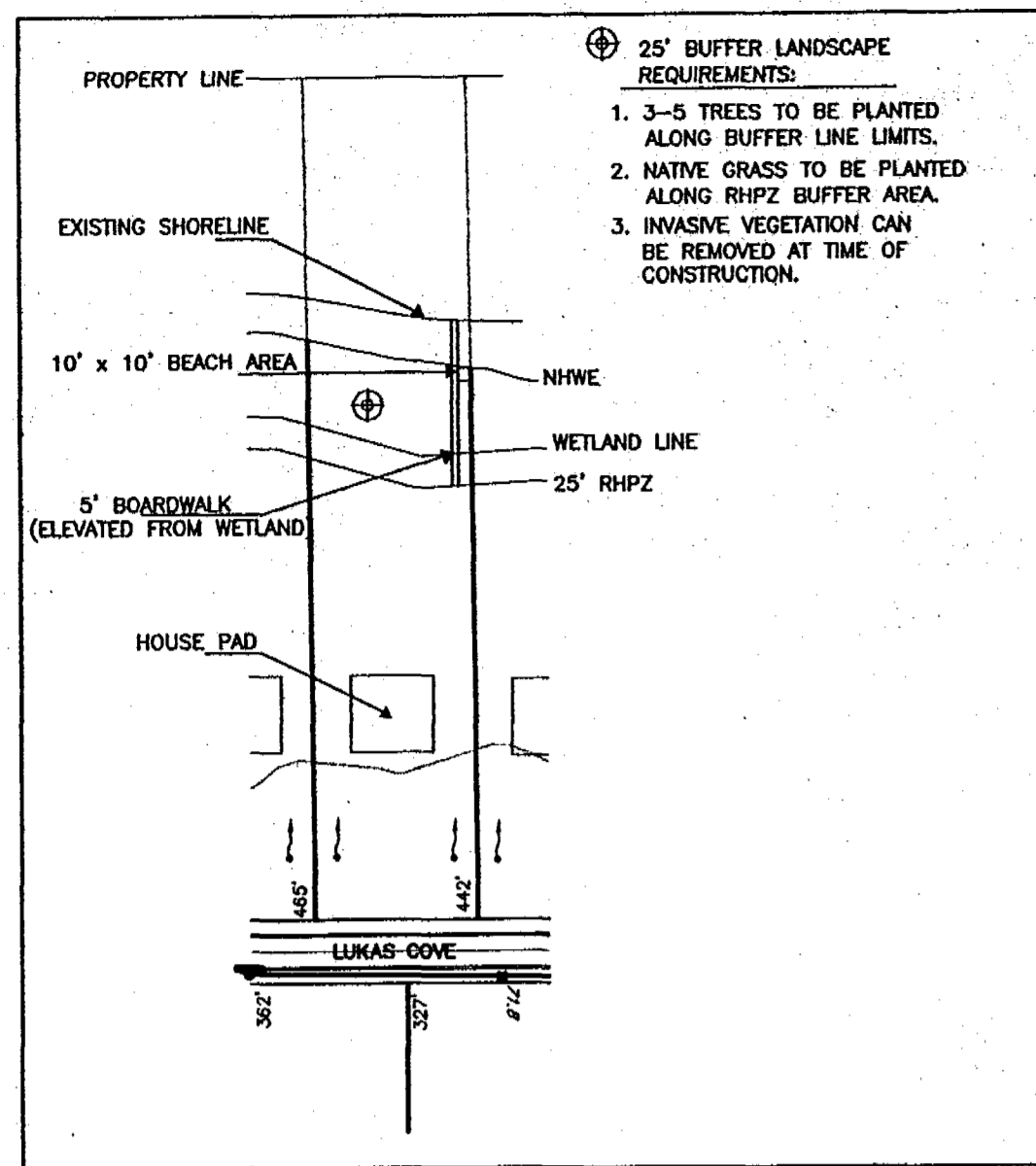
THESE CONSTRUCTION PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH THE ORANGE COUNTY DEVELOPMENT REGULATIONS AND SPECIFICATIONS, AND THE F.D.O.T. "MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION AND MAINTENANCE FOR STREETS AND HIGHWAYS".

RECEIVED
MAR 13 2000
40-015-52286
PDS
ORLANDO
SJR W/MP

SHOW
Associates Inc.

CEG Civil Engineering Group, Inc.

PROJECT NO. 98240.01

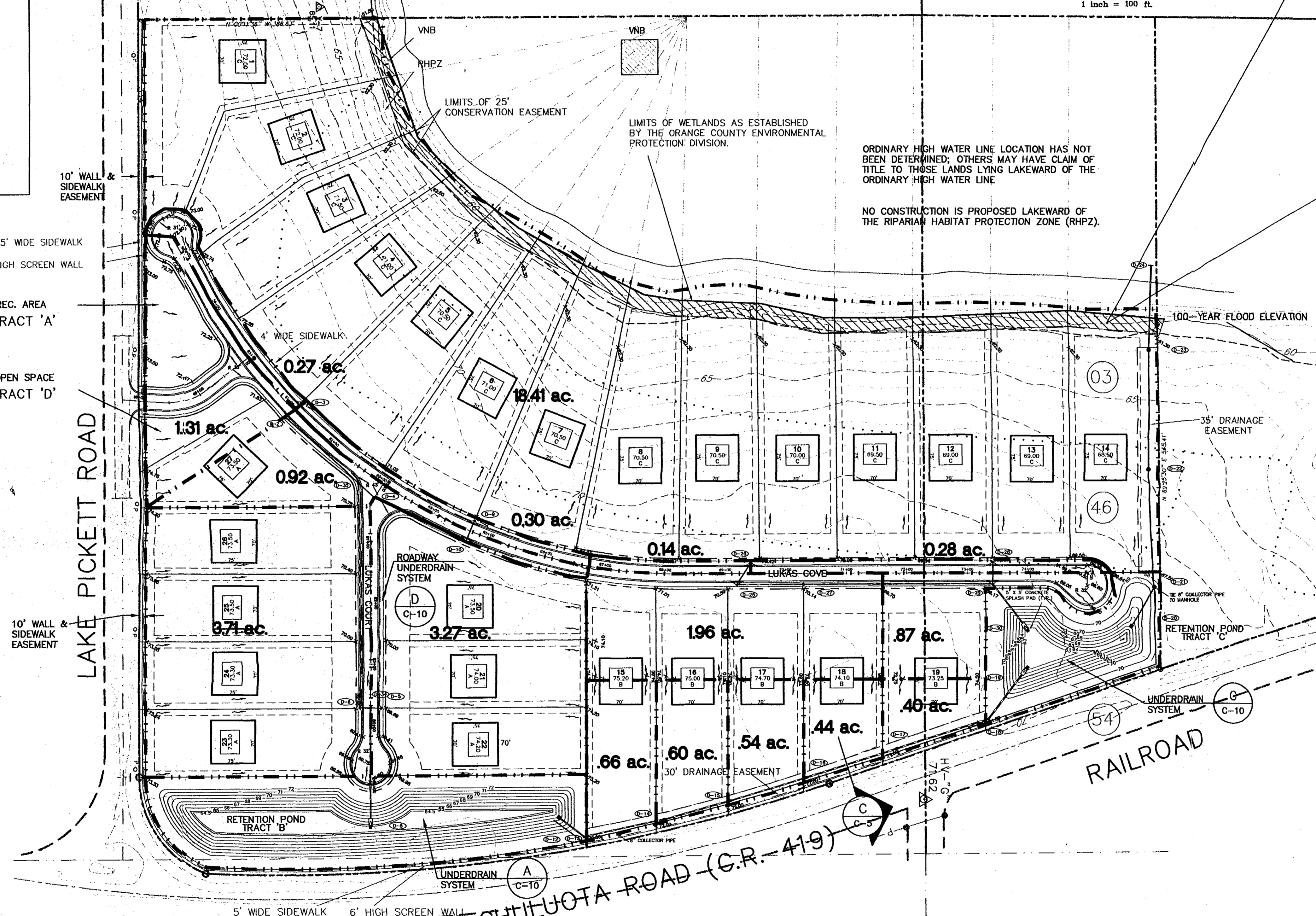
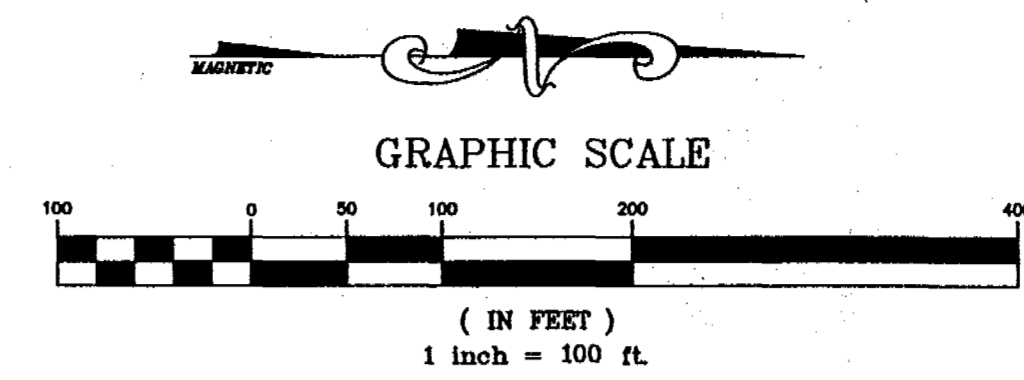


TYPICAL LAKEFRONT LOT DETAIL
A.1.2

- 25' BUFFER LANDSCAPE REQUIREMENTS:
1. 3-5 TREES TO BE PLANTED ALONG BUFFER LINE LIMITS.
 2. NATIVE GRASS TO BE PLANTED ALONG RIPAZ BUFFER AREA.
 3. INVASIVE VEGETATION CAN BE REMOVED AT TIME OF CONSTRUCTION.

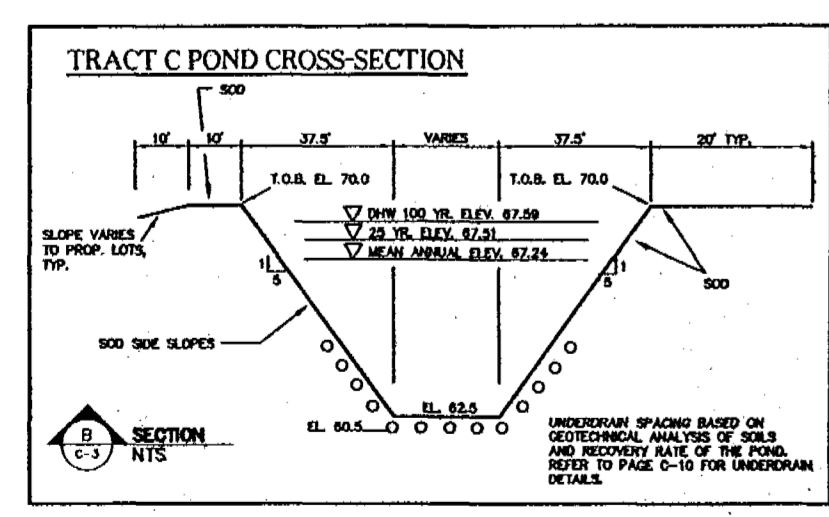
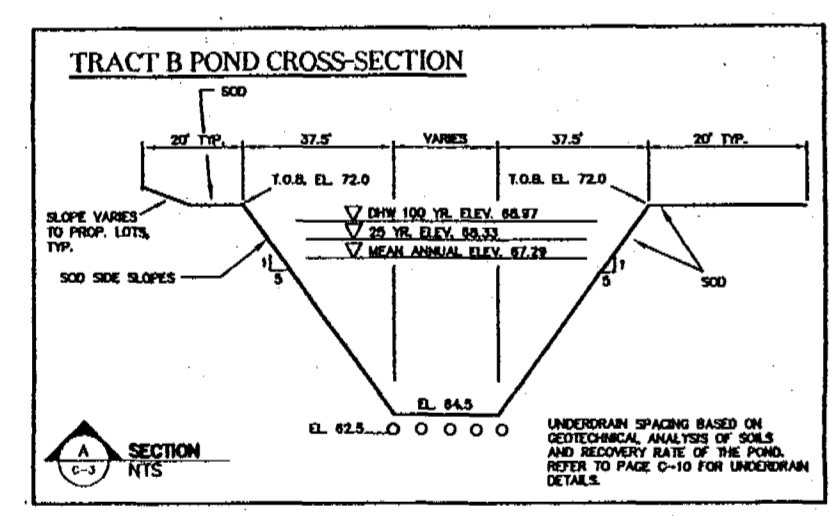
- 10' WALL & SIDEWALK EASEMENT
- 5' WIDE SIDEWALK
- 6' HIGH SCREEN WALL
- REC. AREA TRACT 'A'
- OPEN SPACE TRACT 'D'

LAKE DRAWDY
NHWE = 57.5
100 YR BFE = 61.00



ORDINARY HIGH WATER LINE LOCATION HAS NOT BEEN DETERMINED; OTHERS MAY HAVE CLAIM OF TITLE TO THOSE LANDS LYING LAKEWARD OF THE ORDINARY HIGH WATER LINE

NO CONSTRUCTION IS PROPOSED LAKEWARD OF THE RIPARIAN HABITAT PROTECTION ZONE (RHPZ).



SOILS LEGEND

- 3 - BASINGER FINE SAND
- 46 - TAVARES
- 54 - ZOLFO
- SOILS LIMITS

D-2 TYPE 2 INLET TOP=71.28 NE INV=67.85 NW INV=67.85	D-6 TYPE 2 INLET TOP=69.33 E INV=65.15 N INV=65.15 S INV=66.45 E INV=66.45	D-12 TYPE C CONTROL STRUCTURE TOP=67.00 SW INV=63.48 NE INV=64.50	D-16 TYPE C INLET TOP=70.50 SW INV=63.48 NE INV=63.48	D-21 TYPE P-8 MANHOLE TOP=70.10 SE INV=68.85	D-34 TYPE P-8 MANHOLE TOP=69.54 S INV=65.11 N INV=65.11
D-3 TYPE 2 INLET TOP=71.28 SE INV=67.95	D-8 MITERED END INV 64.50	D-13 TYPE P-8 MANHOLE TOP=72.00 SW INV=64.38 N INV=64.38	D-17 TYPE C INLET TOP=70.50 S INV=63.11 N INV=63.11	D-27 TYPE 2 INLET TOP=69.78 S INV=65.81 N INV=65.81	D-35 TYPE P-8 MANHOLE TOP=70.50 SW INV=66.24 NW INV=67.59 E INV=66.24
D-4 TYPE P-8 MANHOLE TOP=70.70 SE INV=66.35 NE INV=66.35	D-9 TYPE 2 INLET TOP=70.15 SE INV=67.10 NE INV=67.21 SW INV=67.21	D-14 TYPE C INLET TOP=71.00 S INV=64.06 N INV=64.06	D-18 TYPE P-8 MANHOLE TOP=71.00 S INV=62.74 N INV=62.74	D-22 TYPE P-8 MANHOLE TOP=68.00 E INV=56.04 W INV=56.04	D-28 TYPE 2 INLET TOP=68.79 E INV=65.00
D-5 TYPE 2 INLET TOP=69.33 S INV=65.47 E INV=66.45 S INV=66.45	D-10 TYPE 2 INLET TOP=70.15 SW INV=67.00 NW INV=67.00 NE INV=67.21 SW INV=67.21	D-15 TYPE C INLET TOP=71.00 S INV=63.79 N INV=63.79	D-19 MITERED END INV=62.50	D-23 TYPE P-8 MANHOLE TOP=62.00 E INV=55.04 W INV=55.04	D-29 TYPE P-8 MANHOLE TOP=68.79 W INV=64.25 S INV=64.25 E INV=64.25
		D-20 TYPE C CONTROL STRUCTURE TOP=67.10 NW INV=59.87		D-24 MITERED END INV=54.30	D-30 MITERED END INV=62.50

ALL IDEAS, ARRANGEMENTS AND PLANS INCORPORATED OR REPRESENTED BY THIS DRAWING ARE OWNED BY AND THE PROPERTY OF CIVIL ENGINEERING GROUP, INC. AND WERE CREATED, EVOLVED AND DEVELOPED FOR USE WITH THE SPECIFIC PROJECT REPRESENTED BY THIS DRAWING. ANY REUSE, REPRODUCTION, CHANGES OR ASSIGNMENTS ARE PROHIBITED WITHOUT THE WRITTEN PERMISSION OF CIVIL ENGINEERING GROUP, INC.

SHOW ASSOCIATES INC.
3313 Avenida Lina, Orlando, Florida 32812
Tel: (407) 381-8848

CEG
Civil Engineering Group, Inc.
132 East Colonial Drive, Suite 211, Orlando, Florida 32801
Tel: (407) 428-5500 Fax: (407) 428-5522

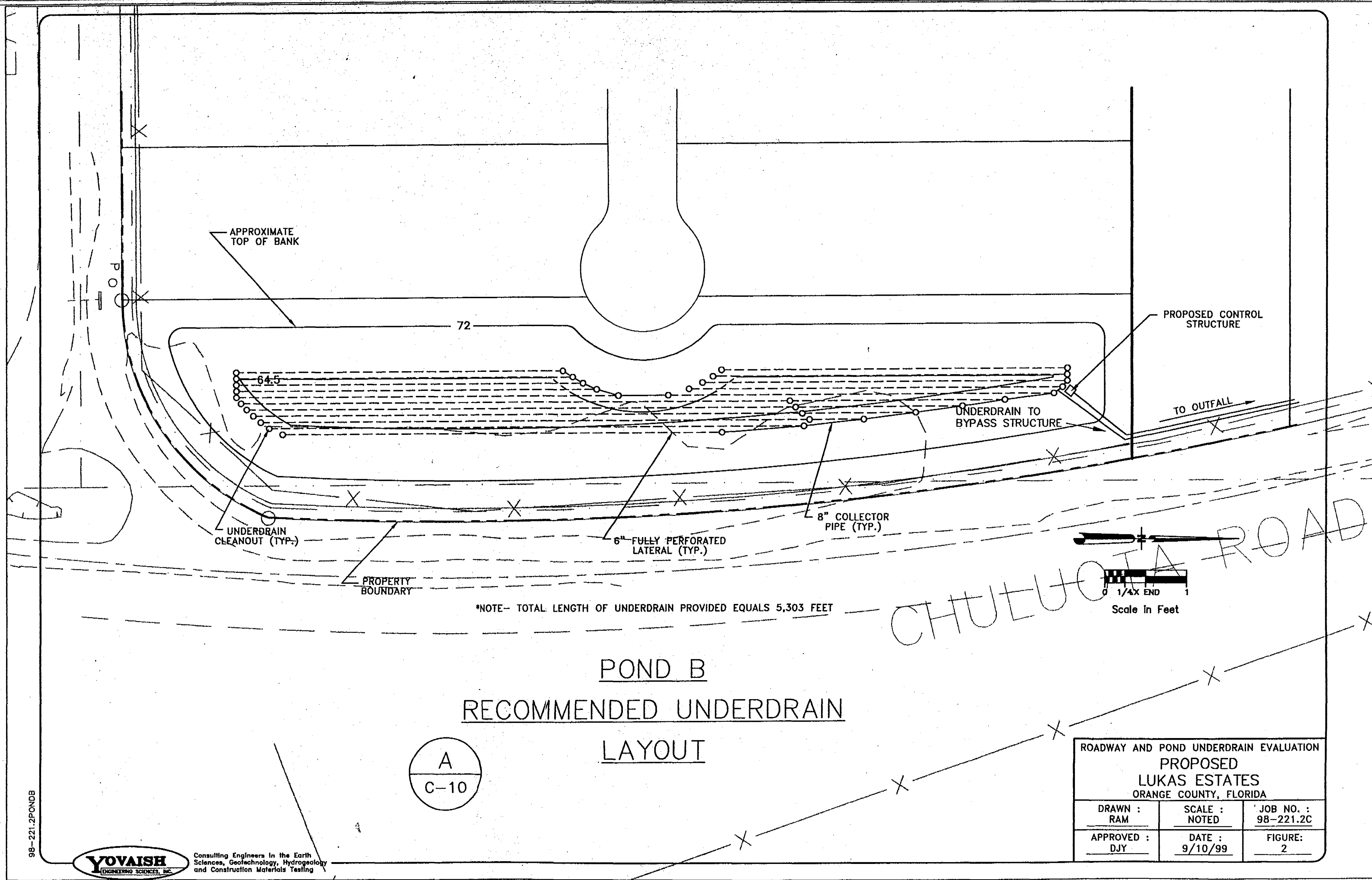
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EA	10/27/99	REVISED PER COUNTY COMMENTS ON 10/27
EA	02/11/00	REVISED PER COUNTY COMMENTS ON 12/09/99.
EA	02/22/00	REVISED PER SURVIMD REQUIREMENTS
EA	03/02/00	REVISED AS PER SURVIMD REQUIREMENTS

JONATHAN S. LUKAS
100 LAKE MILLS ISLAND POINT
CHULUOTA, FLORIDA 32766

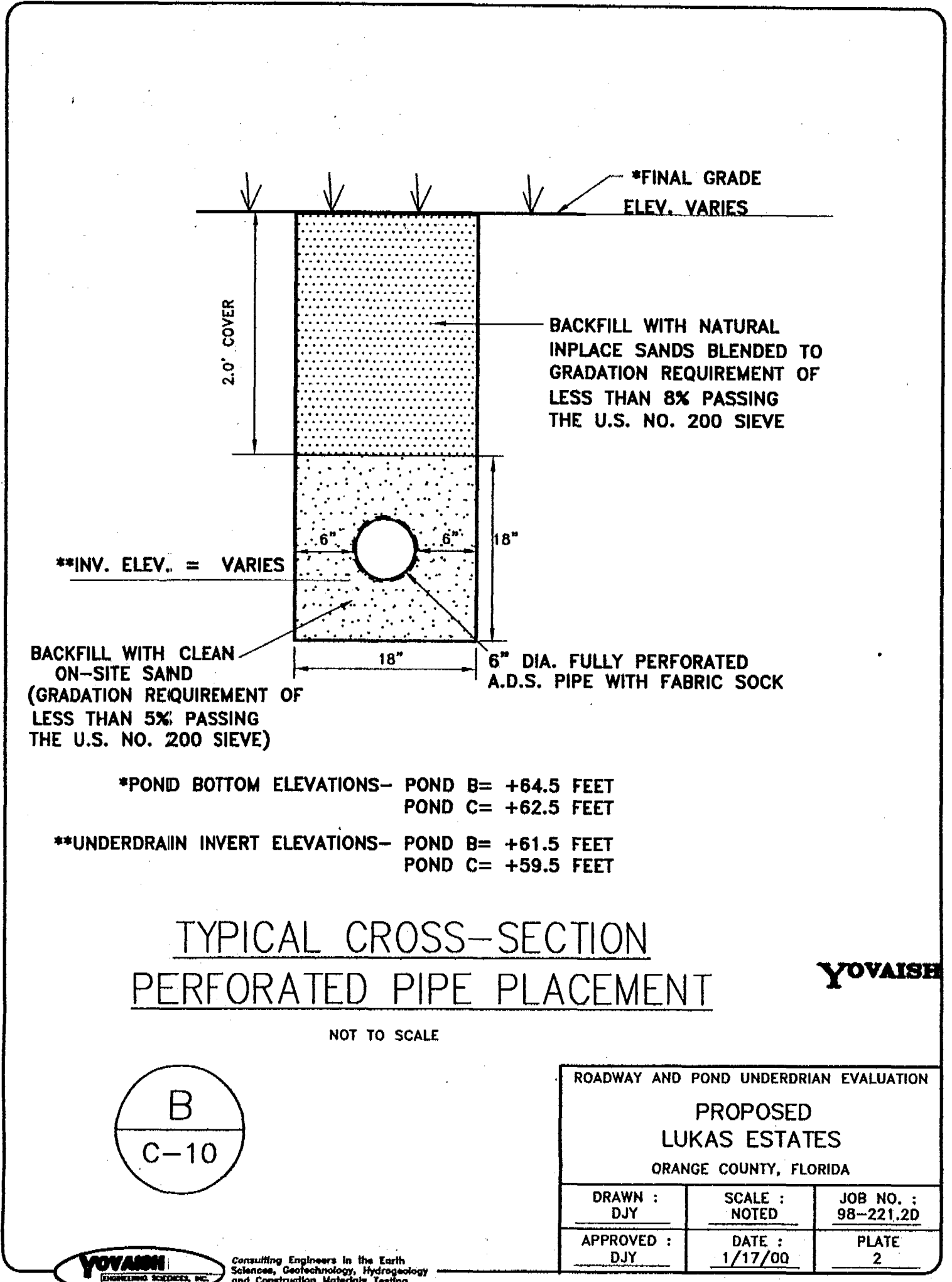
LUKAS ESTATES
SUBDIVISION PLANS
MASTER DRAINAGE PLAN

RECEIVED
MAR 13 2000
PDS ORLANDO SLR WMB

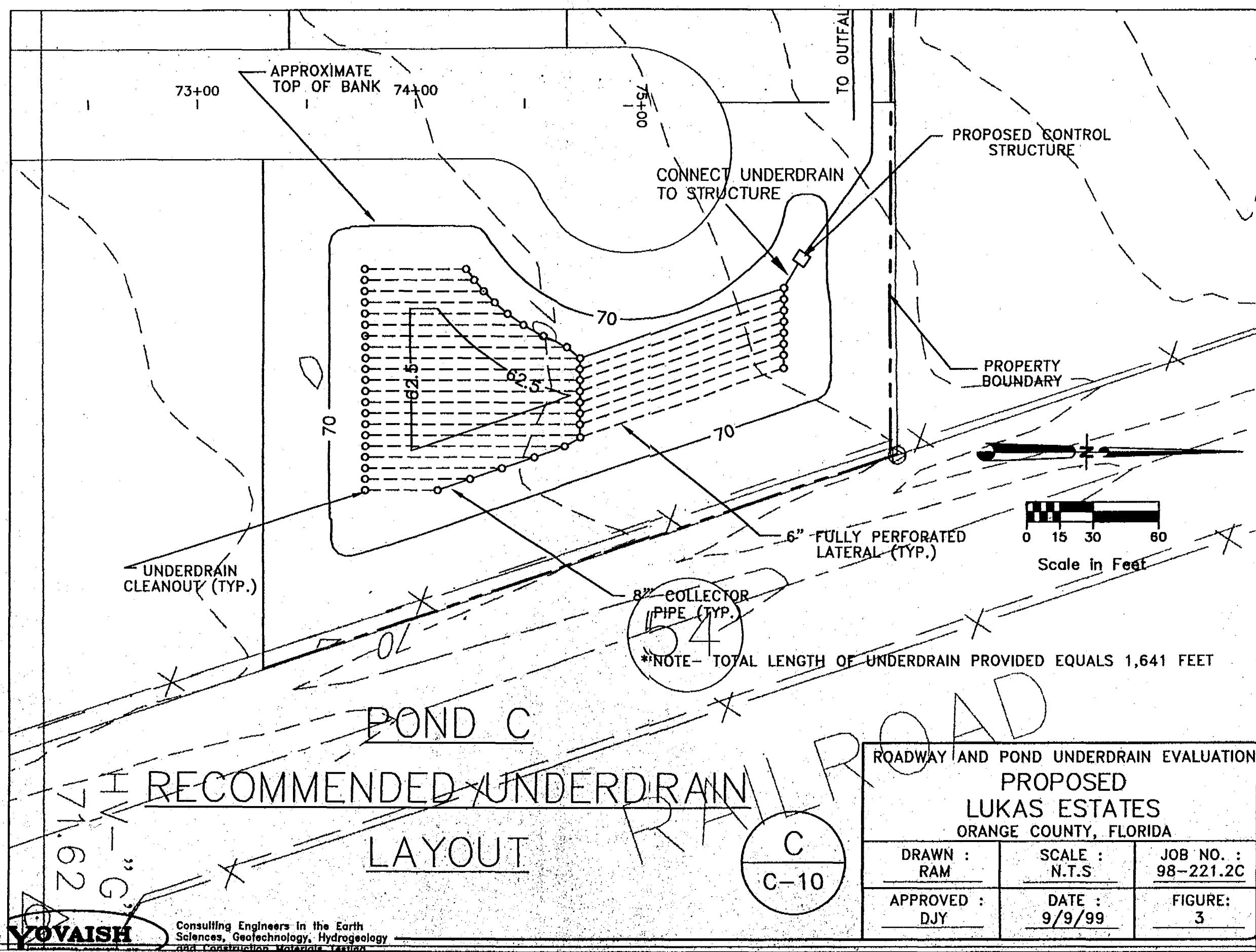
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JOB NO. SHEET
98240.01 C-3



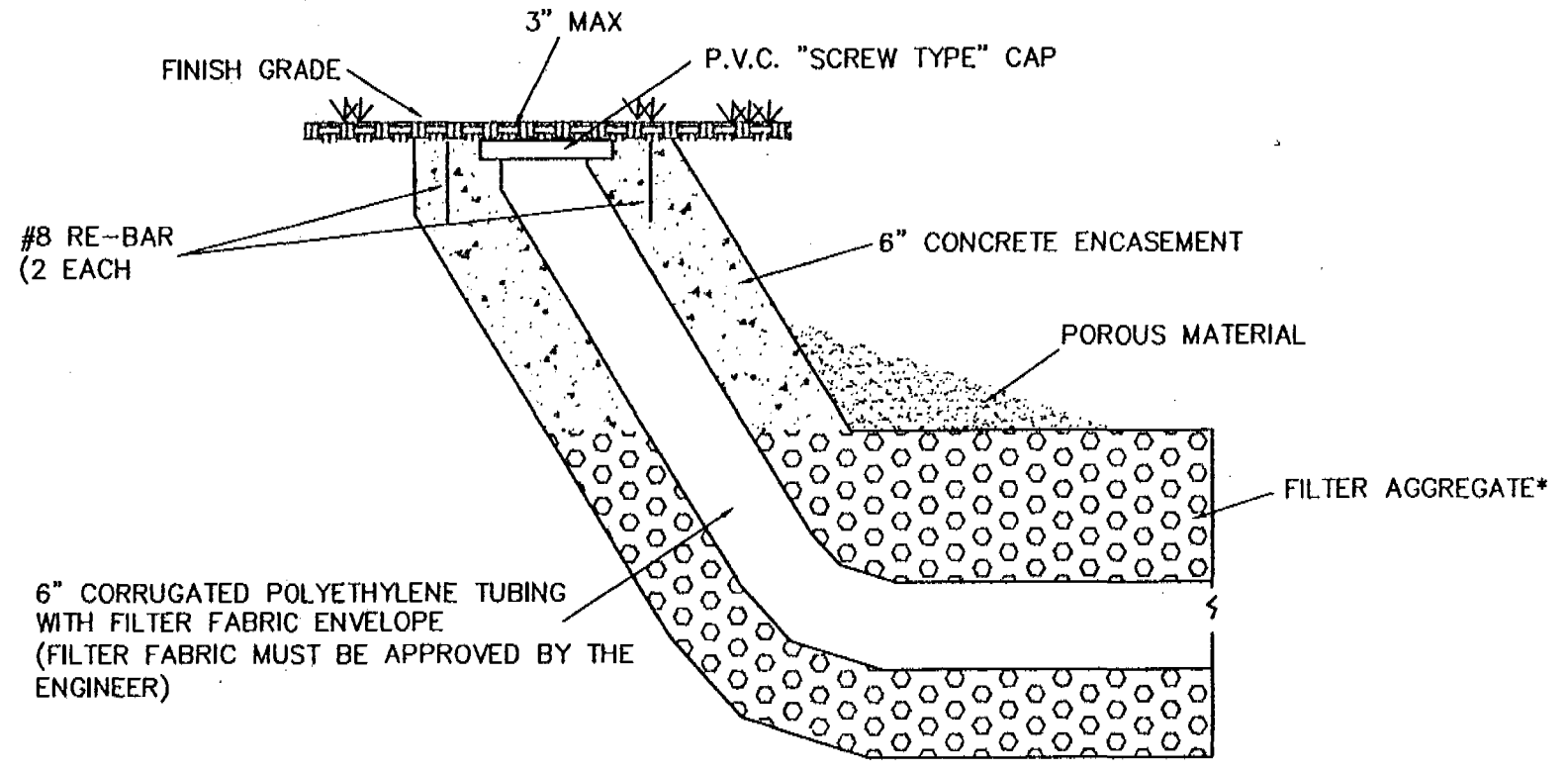
ROADWAY AND POND UNDERDRAIN EVALUATION		
PROPOSED LUKAS ESTATES		
ORANGE COUNTY, FLORIDA		
DRAWN : RAM	SCALE : NOTED	JOB NO. : 98-221.2C
APPROVED : DJY	DATE : 9/10/99	FIGURE : 2



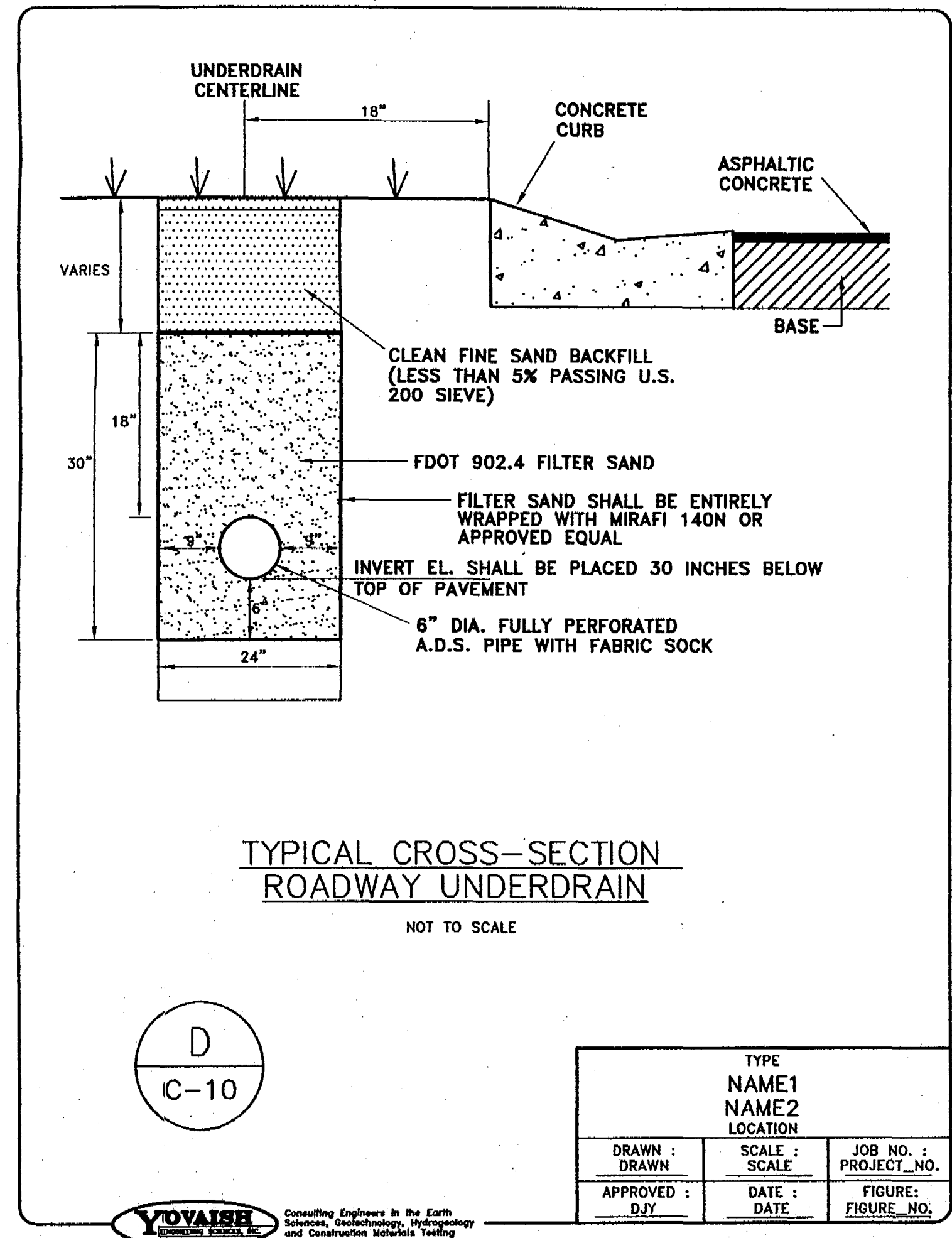
ROADWAY AND POND UNDERDRAIN EVALUATION		
PROPOSED LUKAS ESTATES		
ORANGE COUNTY, FLORIDA		
DRAWN : DJY	SCALE : NOTED	JOB NO. : 98-221.2D
APPROVED : DJY	DATE : 1/17/00	PLATE : 2



ROADWAY AND POND UNDERDRAIN EVALUATION		
PROPOSED LUKAS ESTATES		
ORANGE COUNTY, FLORIDA		
DRAWN : RAM	SCALE : N.T.S.	JOB NO. : 98-221.2C
APPROVED : DJY	DATE : 9/9/99	FIGURE : 3



- NOTES:
- 1) ALL UNDERDRAINS TO BE CONSTRUCTED USING 6" PERFORATED CORRUGATED POLYETHYLENE TUBING WITH FILTER FABRIC ENVELOPE.
 - 2) ADJUSTMENTS TO THE UNDERDRAINS DUE TO EXISTING UTILITY LOCATIONS MAY BE NECESSARY WITH THE PRIOR APPROVAL OF THE ORANGE COUNTY ENGINEERING DEPARTMENT.
 - 3) *FILTER AGGREGATE SHALL CONSIST OF HARD, DURABLE, CLEAN QUARTZ SAND.



TYPE NAME1		
LOCATION NAME2		
PROJECT NO.		
DRAWN : DJY	SCALE : NOTED	JOB NO. : 98-221.2D
APPROVED : DJY	DATE : 1/17/00	FIGURE : 2

SHOW ASSOCIATES INC. 3119 BARRINGER LANE, ORLANDO, FLORIDA 32812
 (407) 281-4444
CEG Civil Engineering Group, Inc.
 122 EAST 1ST STREET, SUITE 200, ORLANDO, FLORIDA 32801
 (407) 281-4444

DATE	DESCRIPTION
02/11/00	REVISED PER COUNTY COMMENTS ON 12/09/99.

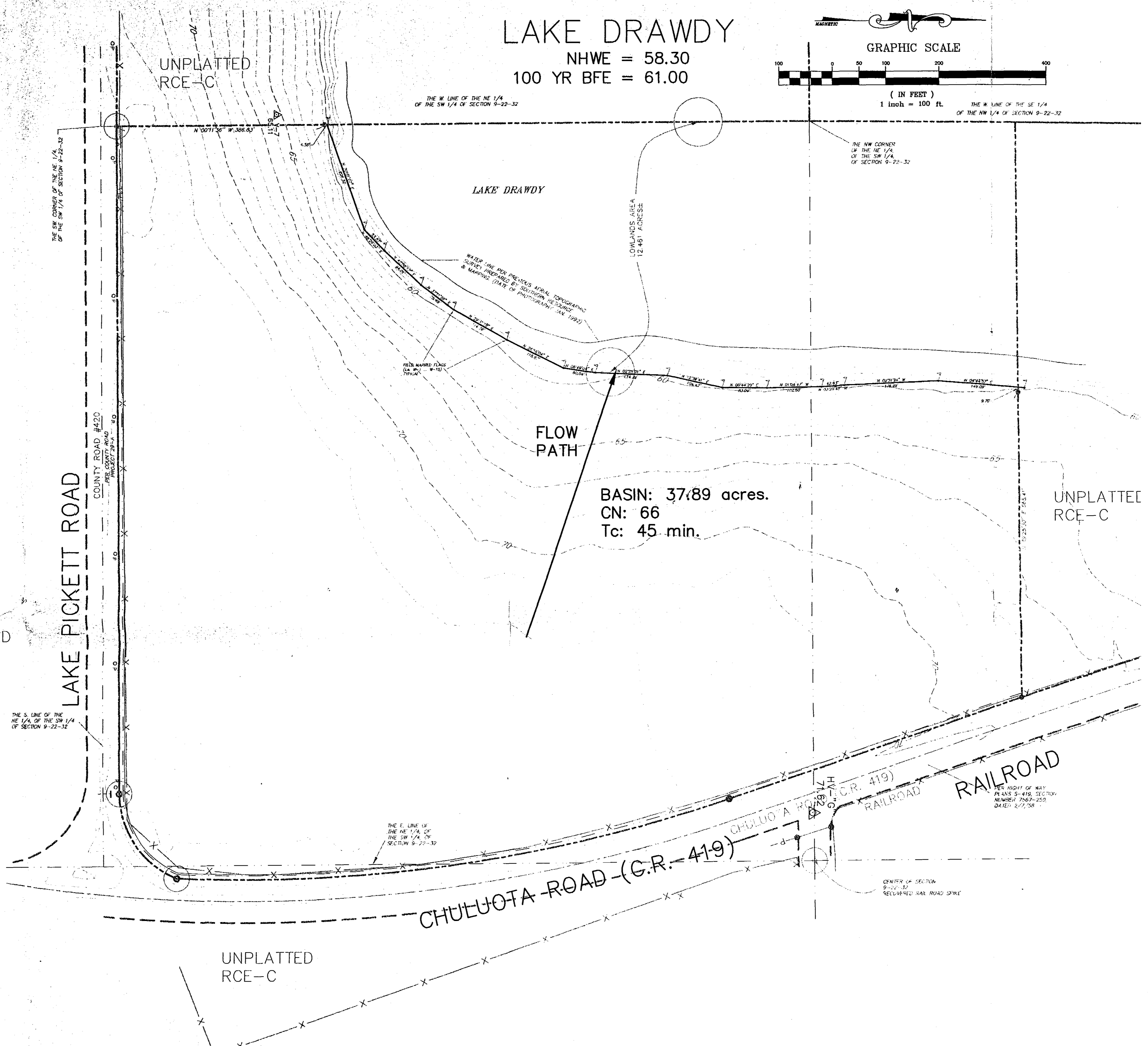
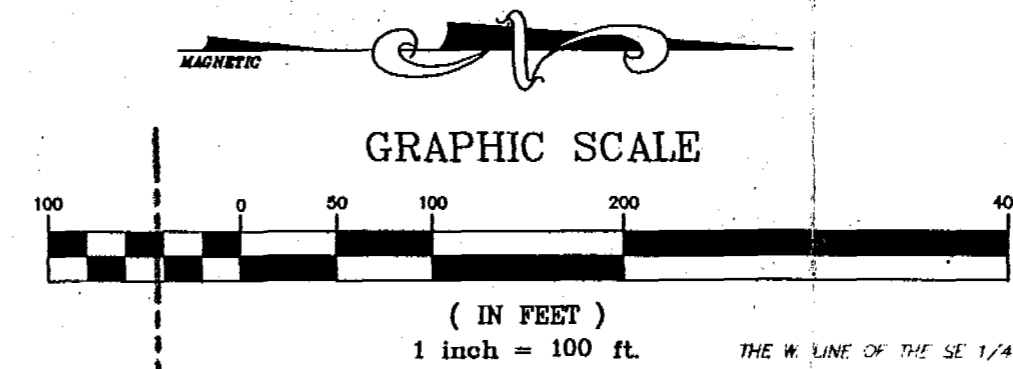
ROADWAY AND POND UNDERDRAIN EVALUATION
PROPOSED LUKAS ESTATES
 ORANGE COUNTY, FLORIDA
 DRAWN : DJY SCALE : NOTED JOB NO. : 98-221.2D
 APPROVED : DJY DATE : 1/17/00 PLATE : 2

JONATHAN S. LUKAS
 100 LAKE MILLS ISLAND POINT
 CHULUOTA, FLORIDA 32766

LUKAS ESTATES SUBDIVISION PLANS UNDERDRAIN DETAILS
 RECEIVED
 MAR 13 2000
 PDS ORLANDO SR WMD
 SCALE: AS-NOTED
 DATE: 10/15/99
 DESIGN: RW
 DRAWN: RM
 CHECKED: EA
 CADD: C-10
 JOB NO.: SHEET
 98240.01 C-10

LAKE DRAWDY

NHWE = 58.30
100 YR BFE = 61.00



BASIN: 37.89 acres.
CN: 66
Tc: 45 min.

UNPLATTED
A-2

RECEIVED
OCT 18 1999
40-095-572 86-1
PDS
ORLANDO
SJR WMD

SHOW ASSOCIATES Inc. 3318 SW 15th Ave, Ocala, Florida 32812 Tel: (352) 381-4846

CEG Civil Engineering Group, Inc. 132 East Colonial Drive, Suite 211, Ocala, Florida 32801 Tel: (352) 238-5000 Fax: (352) 238-5222

APP	DESCRIPTION	DATE	REVISIONS

PROJECT: LUKAS ESTATES
SUBDIVISION PLANS
PRE-DEVELOPMENT DRAINAGE PLAN

CLIENT: JONATHAN S. LUKAS
100 LAKE MILLS ISLAND POINT
CHULUOTA, FLORIDA 32766

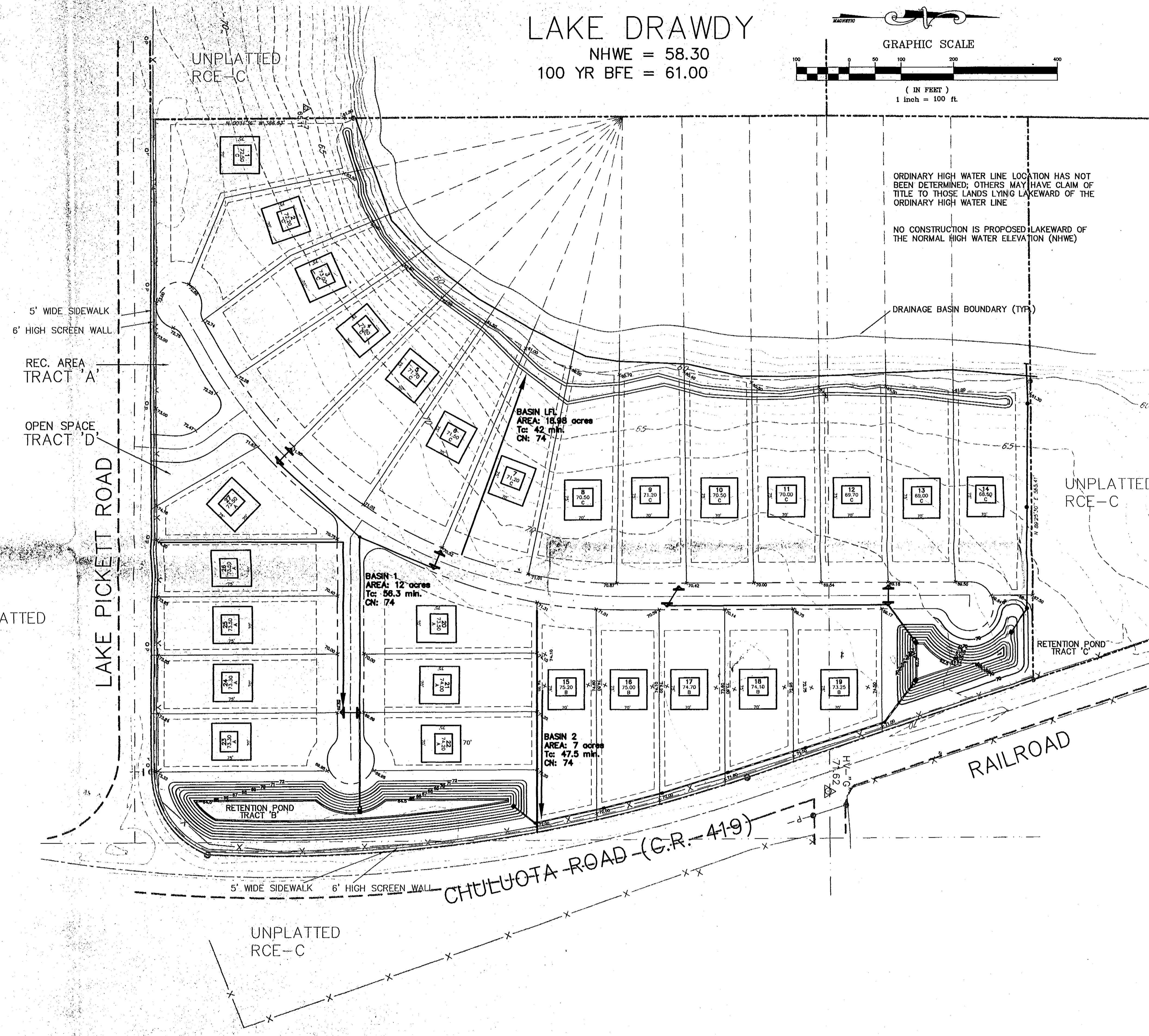
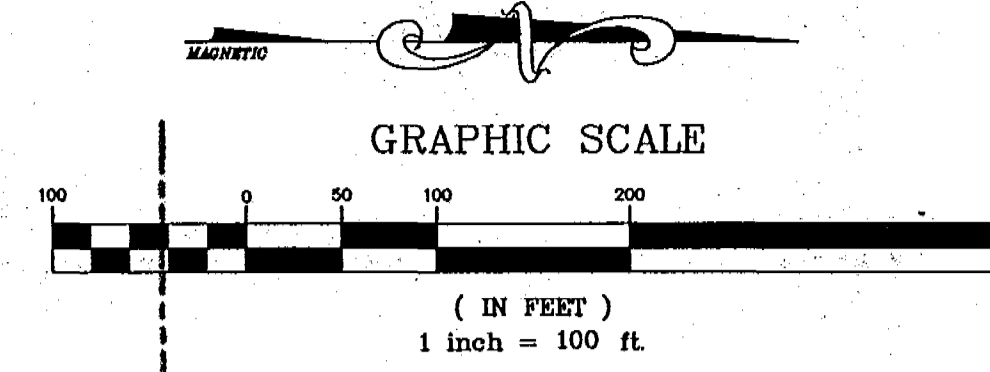
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DATE: 10/05/99
DESIGN: LRM
DRAWN: LRM
CHECKED: EA
CADD: PRE
JOB NO. 98240.01 SHEET PRE

DATE: OCT 18 1999

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LAKE DRAWDY

NHWE = 58.30
100 YR BFE = 61.00



ORDINARY HIGH WATER LINE LOCATION HAS NOT BEEN DETERMINED; OTHERS MAY HAVE CLAIM OF TITLE TO THOSE LANDS LYING LAKEWARD OF THE ORDINARY HIGH WATER LINE

NO CONSTRUCTION IS PROPOSED LAKEWARD OF THE NORMAL HIGH WATER ELEVATION (NHWE)

DRAINAGE BASIN BOUNDARY (TYP)

5' WIDE SIDEWALK
6' HIGH SCREEN WALL
REC. AREA TRACT 'A'
OPEN SPACE TRACT 'D'

UNPLATTED A-2

UNPLATTED RCE-C

RAILROAD

CHULUOTA ROAD (C.R. 419)

UNPLATTED RCE-C

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SHOW
Associates Inc.
3315 Barlow Lane, Orlando, Florida 32812
Tel: (407) 428-2222

CEG
Civil Engineering Group, Inc.
145 East Colonial Parkway, Suite 200
Orlando, Florida 32801
Tel: (407) 428-2222

REV	DATE	DESCRIPTION

JONATHAN S. LUKAS
100 LAKE MILLS ISLAND POINT
CHULUOTA, FLORIDA 32766

LUKAS ESTATES
SUBDIVISION PLANS
POST-DEVELOPMENT
DRAINAGE PLAN

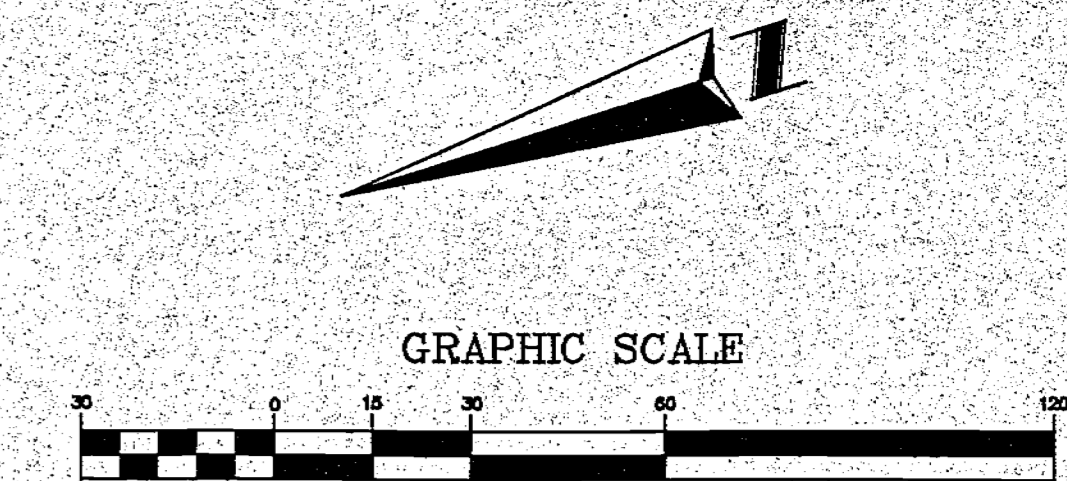
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CADD: POST
JOB NO. 98240.01 SHEET
POST

[Signature]
OCT 18 1999

Corner Lake Middle School
Permit No. 27857 - 1
November 1996

XREF: 861BASE.DWG
861BRD.DWG
CORNER.DWG

CHULUOTA ROAD (C.R. 419)



NOTE: THESE PLANS MAY HAVE BEEN PHOTOGRAPHICALLY REDUCED.

GENERAL NOTES

- ALL ON-SITE CONSTRUCTION SHALL CONFORM TO "RULES OF FLORIDA STATE BOARD OF EDUCATION, EDUCATIONAL FACILITIES, PUBLIC SCHOOLS AND COMMUNITY COLLEGES, CHAPTER 6A-2, FLORIDA ADMINISTRATIVE CODE 1989" OFF-SITE IMPROVEMENTS SHALL CONFORM TO THE ORANGE COUNTY PUBLIC UTILITIES MANUAL OF STANDARDS AND SPECIFICATIONS FOR WASTEWATER AND WATER MAIN CONSTRUCTION.
- ALL POND SIDE SLOPES AND DRY BOTTOMS ARE TO BE SODDED.
- ALL EARTHWORK OPERATIONS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
- THE CONTRACTOR SHALL REFERENCE AND RESTORE PROPERTY CORNERS AND LAND MARKERS DISTURBED DURING CONSTRUCTION, (UNDER THE DIRECTION OF A FLORIDA REGISTERED LAND SURVEYOR).
- THE LOCATION OF ALL EXISTING UTILITIES SHOWN ON THE PLAN HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE, AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE VARIOUS UTILITIES AND TO MAKE THE NECESSARY ARRANGEMENTS FOR FIELD VERIFICATION AND RELOCATION OF THE EXISTING UTILITIES. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN CROSSING ANY UNDERGROUND UTILITY TO ENSURE THE INTEGRITY OF THE SYSTEM.
- ALL PROPERTY AFFECTED BY THIS WORK SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTED UNLESS SPECIFICALLY EXEMPTED BY THE PLANS. THE COST FOR SUCH RESTORATION SHALL BE INCIDENTAL TO OTHER CONSTRUCTION AND NO EXTRA COMPENSATION WILL BE ALLOWED.
- WHEN TRENCH EXCAVATION EXCEEDS 5' DEPTH:
 - CONTRACTOR SHALL CONFORM TO OSHA STD. 29CFR. SECTION 1926.650 WHICH IS INCORPORATED IN FL. STATE 90-96
 - THE CONTRACTOR SHALL PROVIDE WRITTEN ASSURANCE OF COMPLIANCE WITH THIS LAW.
 - TRENCH SAFETY SYSTEM SHALL BE BY THE CONTRACTOR.
- THIS PROJECT IS LOCATED IN FLOOD ZONE C (NO HAZARD) AS INDICATED BY THE FEMA FIRM, PANEL #20179 0250-D MAP REVISED: DECEMBER 5, 1989
- FOR LIMITS AND SPECIFICATIONS OF SODDING FOR LANDSCAPING REFER TO LANDSCAPE PLANS.
- THE CONTRACTOR SHALL ENSURE THAT PERMITS FOR CONSTRUCTION ARE OBTAINED PRIOR TO STARTING WORK.
- ALL SIDEWALKS TO HAVE THICKENED EDGE:

(X)	(X)
-----	-----
- CONTRACTOR SHALL PLACE A TOP LAYER, 12" MINIMUM THICKNESS, OF CLEAN SAND FILL (LESS THAN 10% PASSING #200 SIEVE) AT THE FOLLOWING LOCATIONS:
 - ENTIRE INFIELD AREA OF TRACK FROM EDGE TO EDGE OF ASPHALT.
 - ENTIRE LIMITS OF BOTH SOFTBALL FIELDS.
- FILTER FABRIC BARRIERS ARE TO BE PLACED UNDER ALL INLET GRATES DURING CONSTRUCTION.

MATCH LINE - SEE SHEET C-8

LEGEND

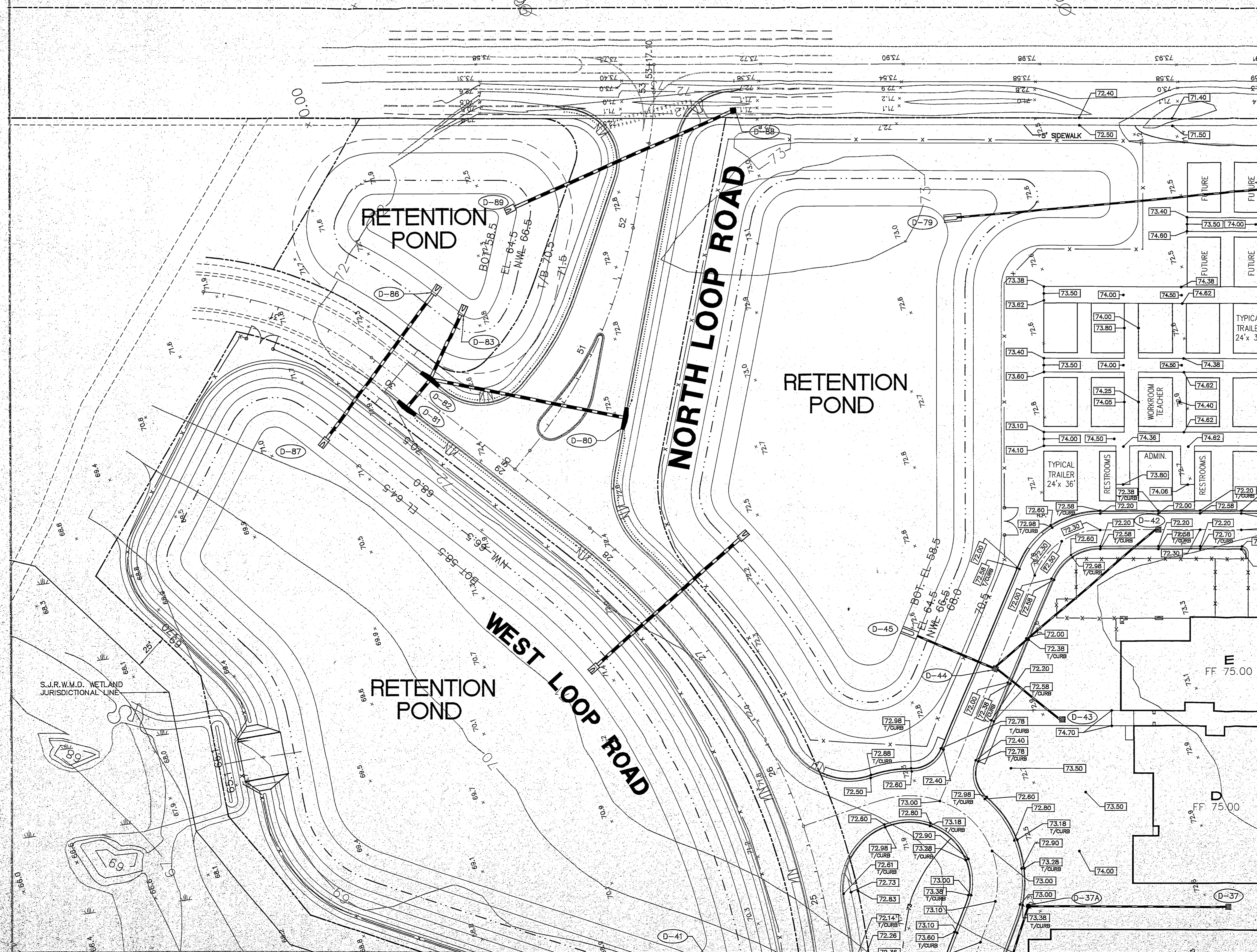
- EXISTING CONTOURS
- NEW CONTOURS
- SPOT ELEVATION
- STORM MANHOLE
- INLET WITH GRATE
- MITERED END SECTION DRAINAGE FLOW
- 6' CHAIN LINK FENCE
- NEW ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- CURB INLET
- CURB INLET WITH "J" BOTTOM
- STORM MANHOLE WITH "J" BOTTOM
- STORM INLET WITH "J" BOTTOM

Nov. Harris & Walls, Inc.
P.L.L.C.
1100 N. W. 10th St., Suite 100
Fort Lauderdale, FL 33304
TEL: 305-558-1100
FAX: 305-558-1101
WWW.NHW.COM

GRADING AND DRAINAGE PLAN

CORNER LAKE MIDDLE SCHOOL
for the School Board of
ORANGE COUNTY, FLORIDA

SCHENKEL SHULTZ
ARCHITECTURE INTERIOR DESIGN
200 E. Robinson Street, Suite 800
Orlando, Florida 32801
voice 407-675-3822
fax 407-675-3803



MATCH LINE - SEE SHEET C-9

REV	DATE	DESCRIPTION	BY

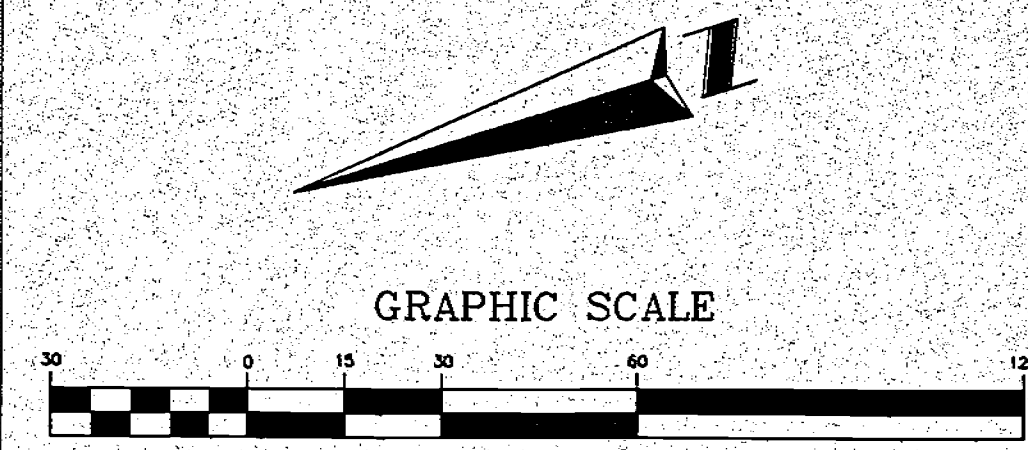
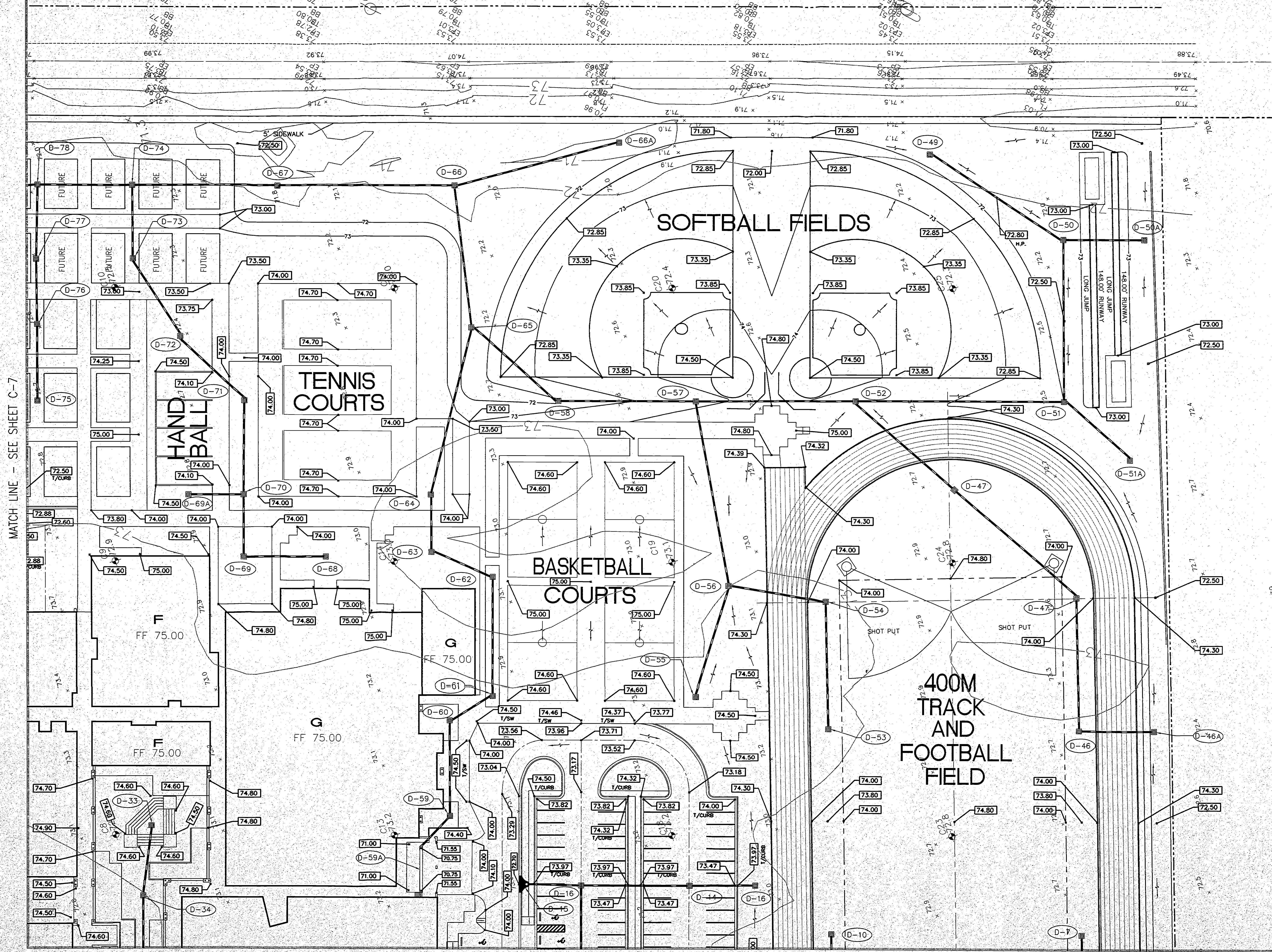
S.J.R.W.M.D. REVIEW SET -11/14/96

C-7

REVISIONS: T.M.M. PLOT NEW: PLOT

XREF: 861BASE.DWG
861BRD.DWG
CORNER.DWG

CHULUOTA ROAD (C.R. 419)



NOTE: THESE PLANS MAY HAVE BEEN PHOTOGRAPHICALLY REDUCED.

LEGEND

- EXISTING CONTOURS
- NEW CONTOURS
- SPOT ELEVATION
- STORM MANHOLE
- INLET WITH GRATE
- MITERED END SECTION
- DRAINAGE FLOW
- 6' CHAIN LINK FENCE
- NEW STD. ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- CURB INLET
- CURB INLET WITH "J" BOTTOM
- STORM MANHOLE WITH "J" BOTTOM
- STORM INLET WITH "J" BOTTOM
- NEW H.V.Y. ASPHALT PAVEMENT
- DRINKING FOUNTAIN (SEE ARCH. PLANS FOR DETAIL)
- CANOPY

SCHENKEL SHULTZ
ARCHITECTURE INTERIOR DESIGN
200 E. Robinson Street, Suite 300
Orlando, Florida, 32801
voice 407-872-8322
fax 407-872-8303

CORNER LAKE MIDDLE SCHOOL
for the School Board of
ORANGE COUNTY, FLORIDA

GRADING AND DRAINAGE PLAN

Ivey Harris & Wells Inc.
Civil Engineers
1111 S. Orange Ave., Suite 100
Orlando, Florida 32801
Phone: 407-872-8322
Fax: 407-872-8303

NOV 19 1996
DESIGNED BY: [Signature]
CHECKED BY: [Signature]
DATE: 11/19/96

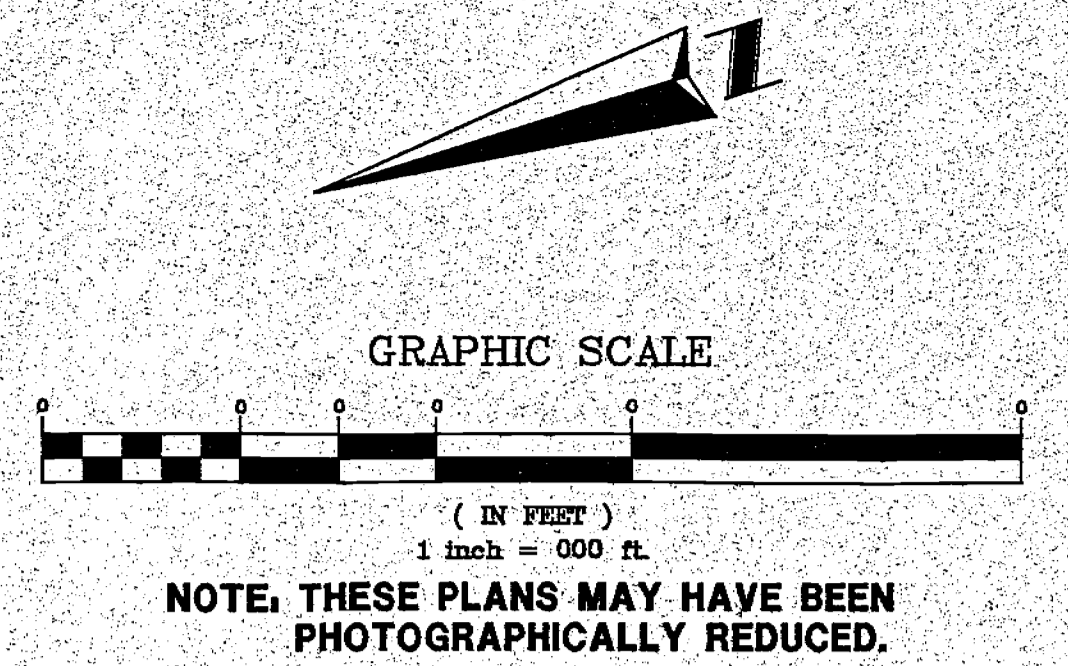
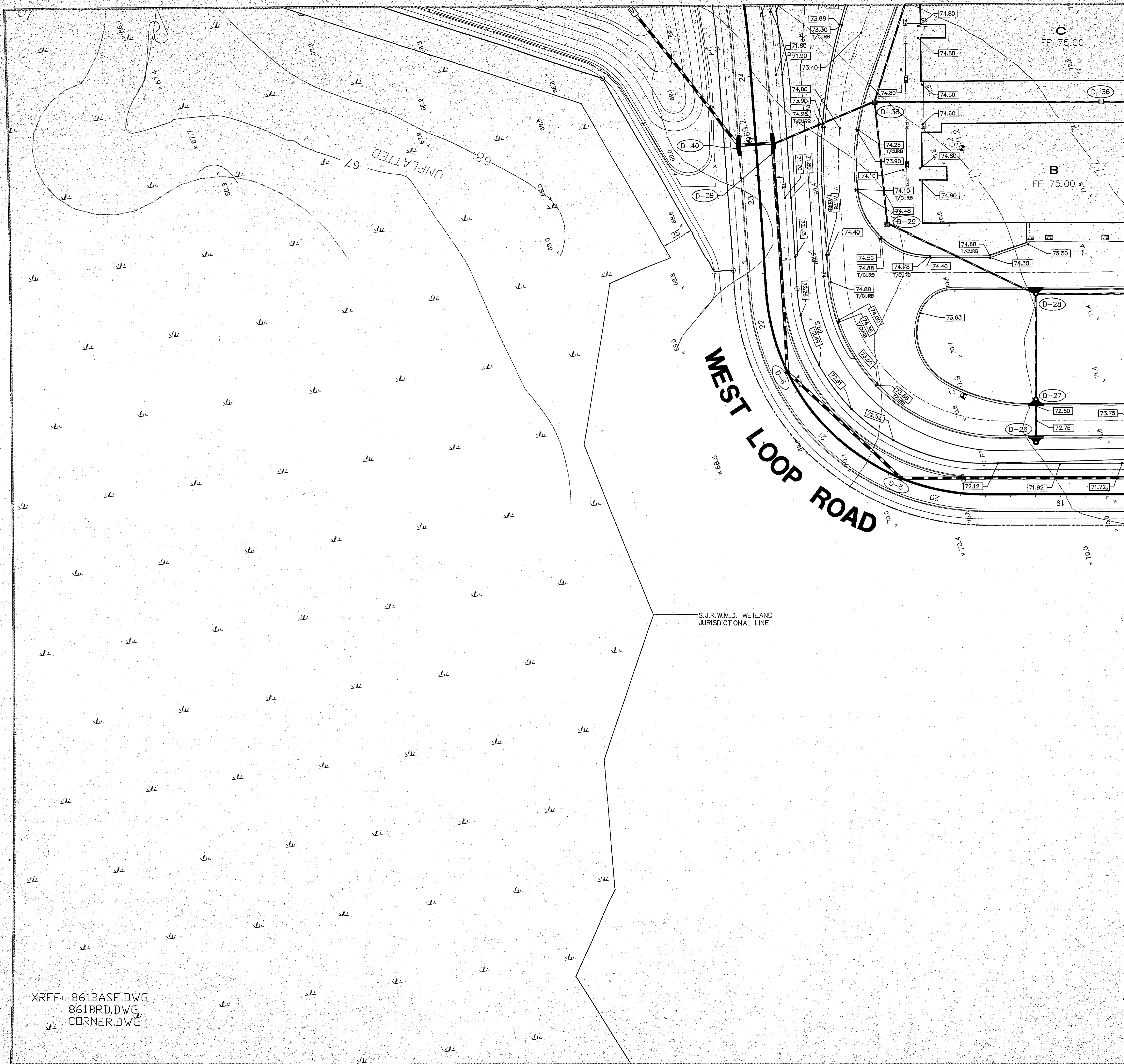
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REV	DATE	DESCRIPTION	BY

S.J.R.W.M.D. REVIEW SET -11/14/96

MATCH LINE - SEE SHEET C-7

MATCH LINE - SEE SHEET C-10



- LEGEND**
- EXISTING CONTOURS
 - NEW CONTOURS
 - SPOT ELEVATION
 - STORM MANHOLE
 - INLET WITH GRATE
 - MITERED END SECTION DRAINAGE FLOW
 - 6' CHAIN LINK FENCE
 - NEW STD. ASPHALT PAVEMENT
 - CONCRETE PAVEMENT
 - CURB INLET
 - CURB INLET WITH "J" BOTTOM
 - STORM MANHOLE WITH "J" BOTTOM
 - STORM INLET WITH "J" BOTTOM
 - NEW HVY. ASPHALT PAVEMENT
 - D.F. DRINKING FOUNTAIN (SEE ARCH. PLANS FOR DETAIL)
 - CANOPY

MATCH LINE - SEE SHEET C-10

XREF: 861BASE.DWG
861BRD.DWG
CORNER.DWG

REV	DATE	DESCRIPTION	BY

S.J.R.W.M.D. REVIEW SET -11/14/96

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ARCHITECTURE INTERIOR DESIGN
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voice 407-872-3322
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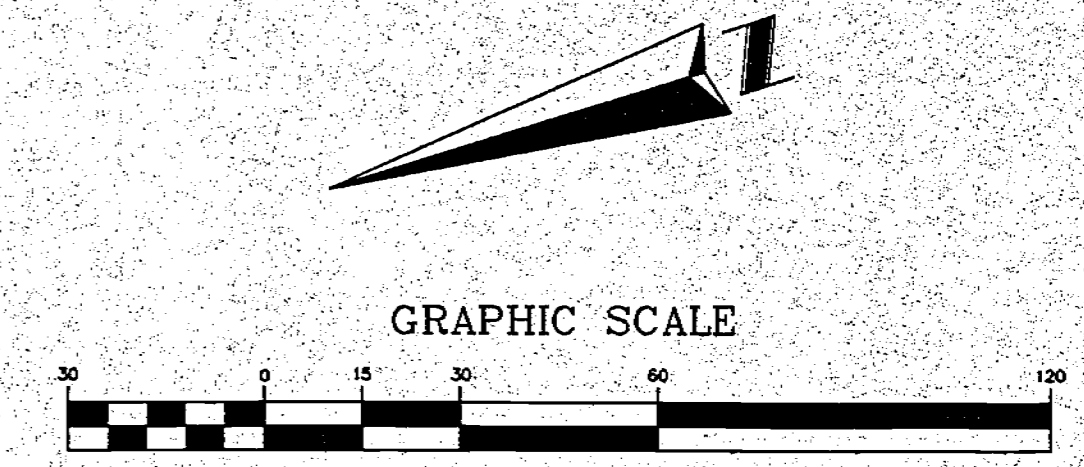
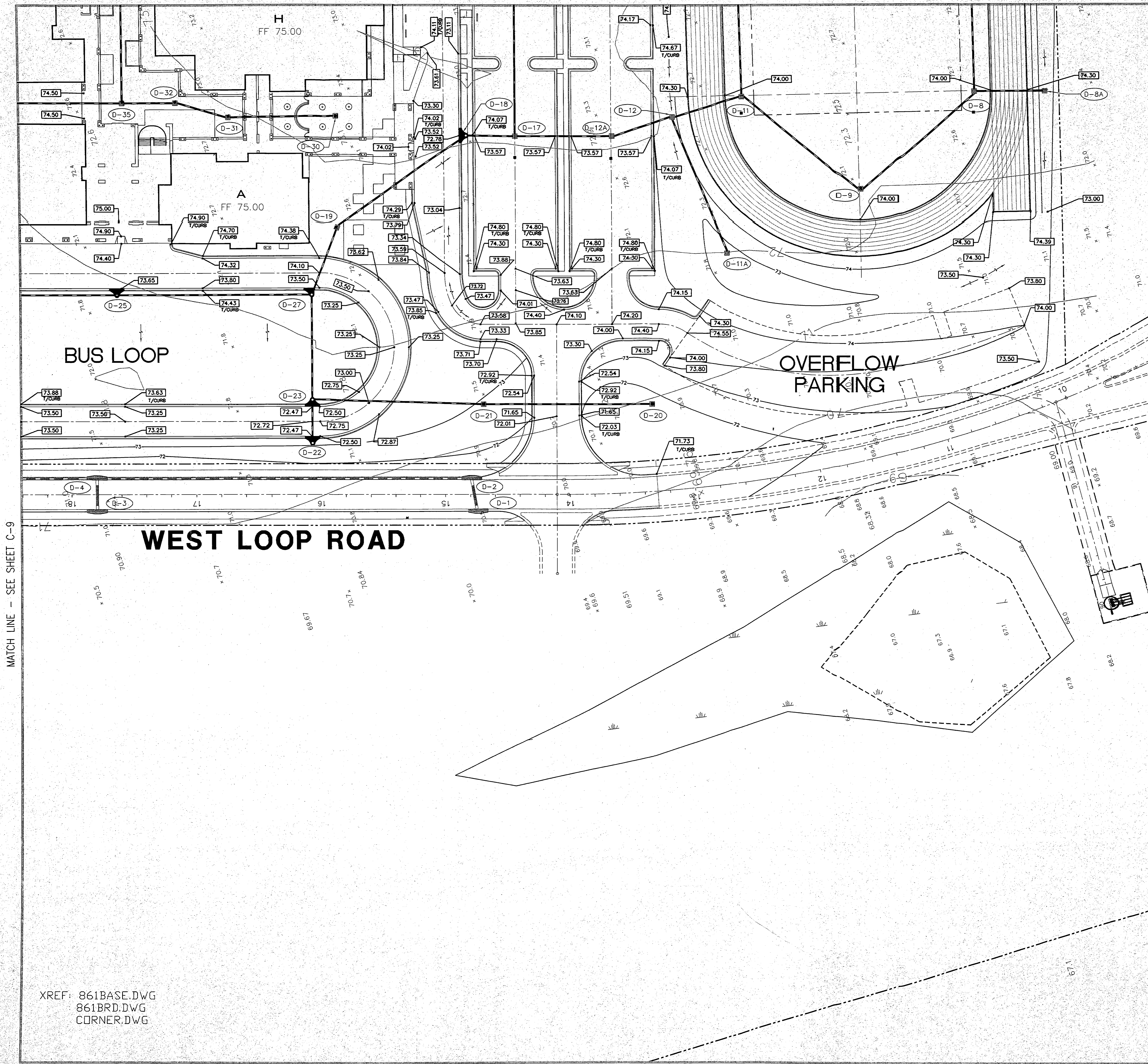
**CORNER LAKE
MIDDLE SCHOOL**
for the School Board of
ORANGE COUNTY, FLORIDA

GRADING AND DRAINAGE PLAN

NOV 19 1996
PDS
ORANGE COUNTY
S.J.R.W.M.D.

revision: 1
drawn: JH
checked: JH
date: 11/14/96
comm. no.: 86100

C-9



NOTE: THESE PLANS MAY HAVE BEEN PHOTOGRAPHICALLY REDUCED.

- LEGEND**
- - - - - EXISTING CONTOURS
 - — — — NEW CONTOURS
 - SPOT ELEVATION
 - ⊙ STORM MANHOLE
 - ⊙ INLET WITH GRATE
 - ⊙ MITERED END SECTION
 - DRAINAGE FLOW
 - ⊙ 6' CHAIN LINK FENCE
 - (X) NEW STD. ASPHALT PAVEMENT
 - (X) CONCRETE PAVEMENT
 - (X) CURB INLET
 - (X) CURB INLET WITH "J" BOTTOM
 - (X) STORM MANHOLE WITH "J" BOTTOM
 - (X) STORM INLET WITH "J" BOTTOM
 - (X) NEW HVY. ASPHALT PAVEMENT
 - D.F. DRINKING FOUNTAIN (SEE ARCH. PLANS FOR DETAIL)
 - (X) CANOPY

MATCH LINE - SEE SHEET C-9

XREF: 861BASE.DWG
861BRD.DWG
CORNER.DWG

SCHENKEL SHULTZ
ARCHITECTURE INTERIOR DESIGN
200 E. Robinson Street, Suite 300
Orlando, Florida 32801
voice 407-872-8322
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CORNER LAKE MIDDLE SCHOOL
for the School Board of
ORANGE COUNTY, FLORIDA

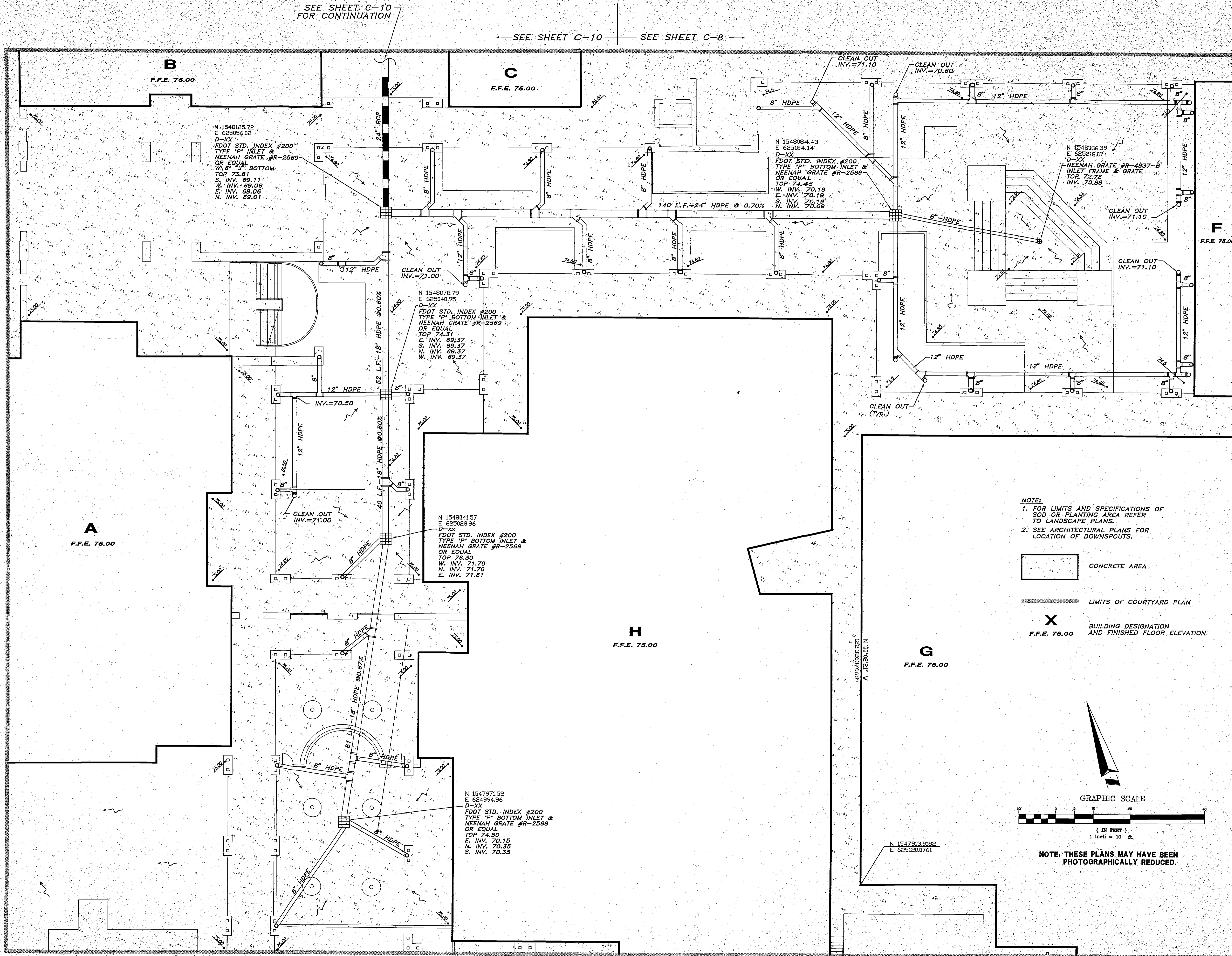
GRADING AND DRAINAGE PLAN

REVISED: 11/14/96
DRAWN: [Signature]
CHECKED: [Signature]
DATE: 11/14/96

REV	DATE	DESCRIPTION	BY

C-10

SEE SHEET C-10



SEE SHEET C-10 SEE SHEET C-8

SEE SHEET C-10 SEE SHEET C-8

- NOTE:
- FOR LIMITS AND SPECIFICATIONS OF SOIL OR PLANTING AREA REFER TO LANDSCAPE PLANS.
 - SEE ARCHITECTURAL PLANS FOR LOCATION OF DOWNSPOUTS.

CONCRETE AREA
 LIMITS OF COURTYARD PLAN
 BUILDING DESIGNATION AND FINISHED FLOOR ELEVATION

GRAPHIC SCALE
 (IN FEET)
 1 inch = 10 ft.
 NOTE: THESE PLANS MAY HAVE BEEN PHOTOGRAPHICALLY REDUCED.

SEE SHEET C-8

SCHENKELSHULTZ
 ARCHITECTURE INTERIOR DESIGN
 200 E. Robinson Street, Suite 300
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GRADING AND DRAINAGE PLAN - COURTYARD
CORNER LAKE MIDDLE SCHOOL
 for the School Board of
 ORANGE COUNTY, FLORIDA

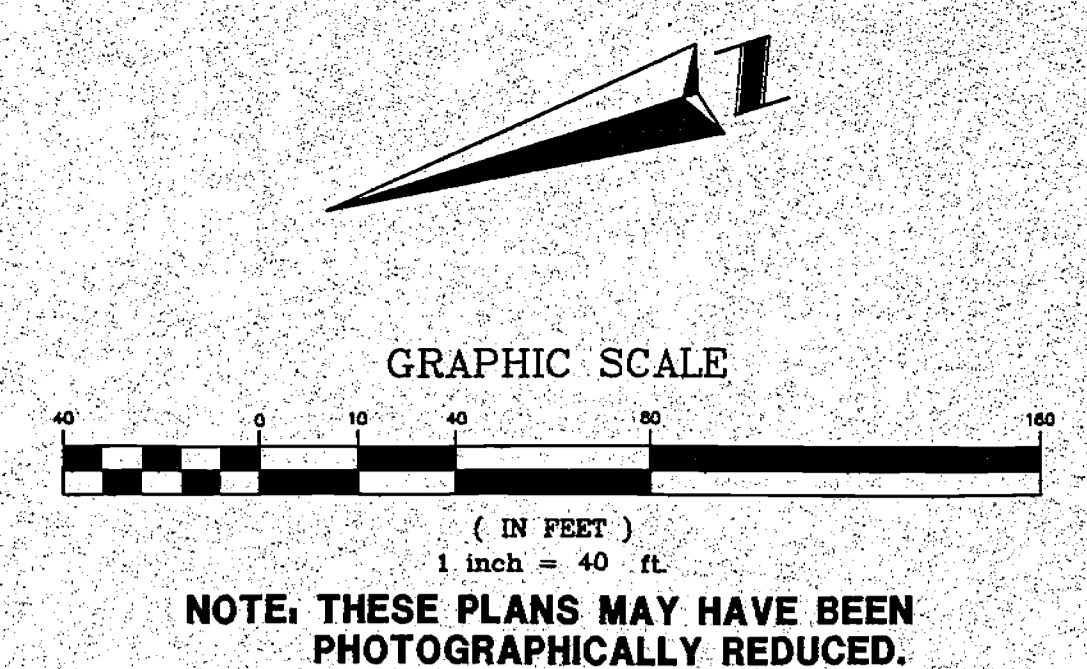
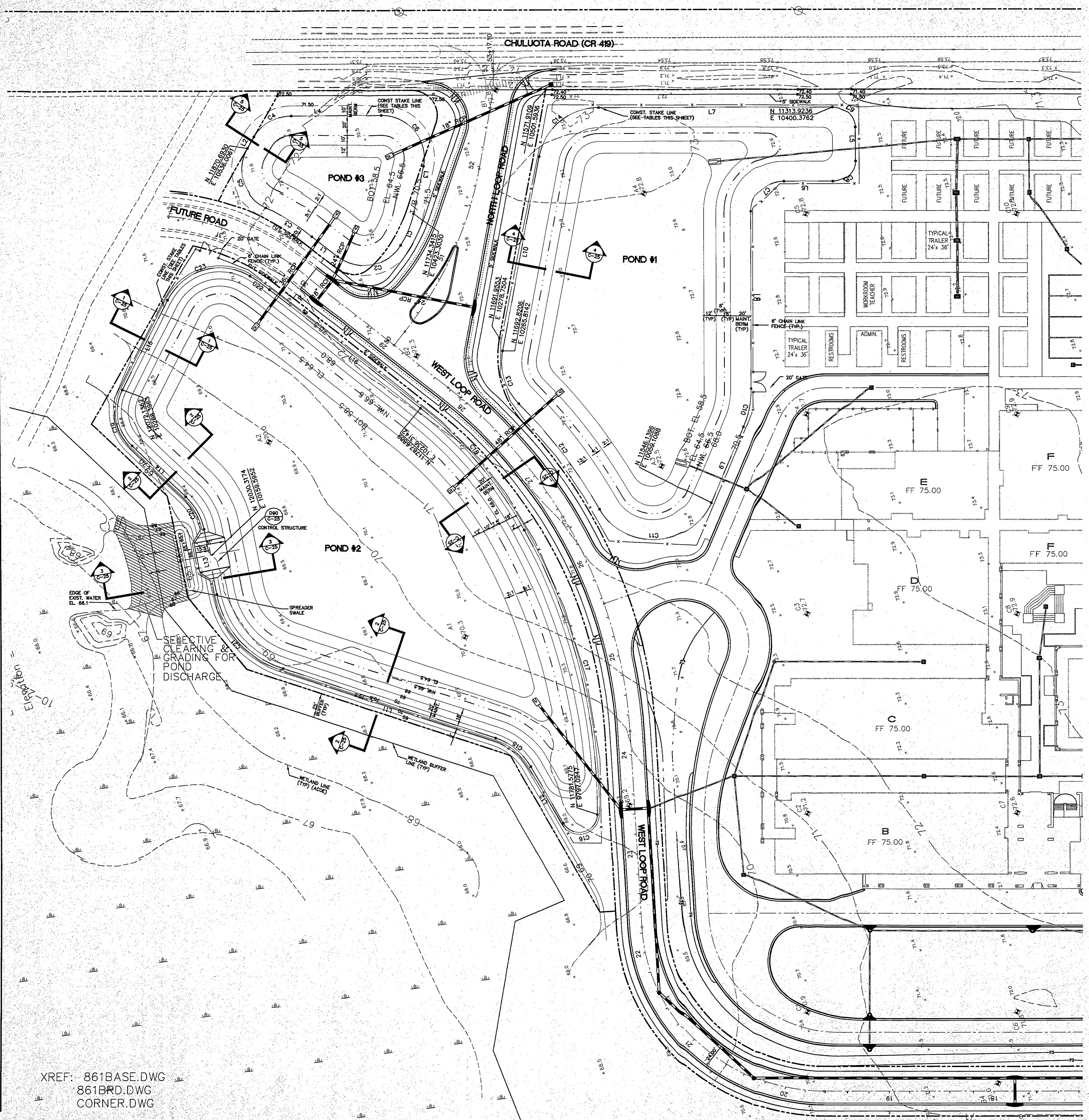
Ivey, Harris & Walls, Inc.
 LANDSCAPE ARCHITECTS
 1111 W. Colonial Drive, Suite 100
 Orlando, Florida 32801
 Phone: 407-875-9322
 Fax: 407-875-9303

NOV 19 1996
 PDS
 ON HAND
 SURVEY
 DATE: 11/6/96
 DRAWN: [Signature]
 CHECKED: [Signature]
 DATE: [Signature]
 SYSTEM: [Signature]

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F:\PROJ\86100\FINAL\861POND.DWG 11/6/96 PLOT VIEW - PLOT

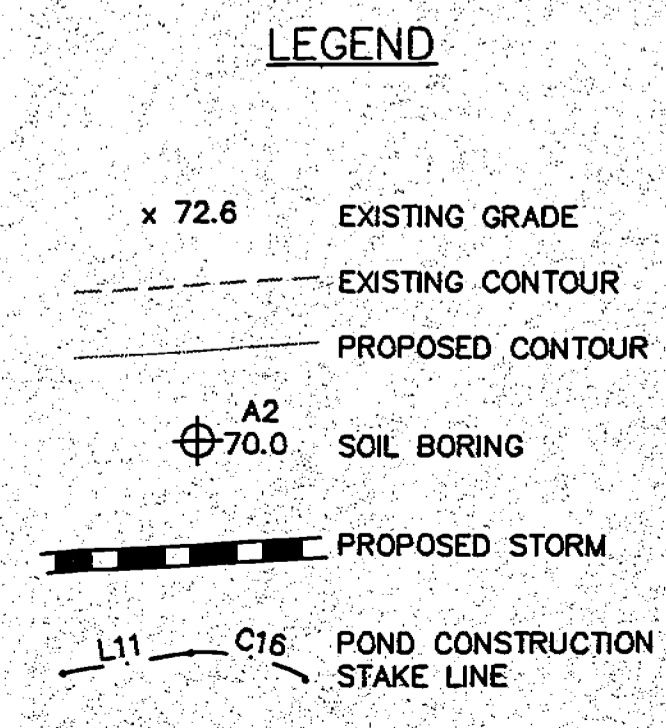
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861BRD.DWG
CORNER.DWG



NOTE: THESE PLANS MAY HAVE BEEN PHOTOGRAPHICALLY REDUCED.

LINE TABLE		
LINE	DIRECTION	DISTANCE
L1	N56°15'28"E	32.76'
L2	S42°35'14"E	13.37'
L3	N60°00'22"W	48.53'
L4	S17°41'52"W	89.43'
L5	S72°18'08"E	34.12'
L6	S17°41'52"W	48.24'
L7	N17°41'52"E	224.65'
L8	S72°18'08"E	177.19'
L9	S49°44'28"E	82.33'
L10	N61°41'20"W	197.81'
L11	S35°59'50"W	222.07'
L12	S78°35'18"W	65.02'
L13	N83°08'00"W	67.04'
L14	S61°36'52"W	73.63'
L15	N45°22'20"W	100.86'
L16	N56°15'28"E	191.16'

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	100.00'	34.47'	17.41'	34.30'	S50°07'56"E	19°44'52"
C2	42.50'	71.59'	47.63'	63.42'	S07°59'59"W	96°30'57"
C3	256.99'	53.72'	26.96'	53.63'	N50°16'08"E	11°58'40"
C4	42.50'	44.72'	24.68'	42.68'	N12°26'41"W	60°17'06"
C5	42.50'	69.08'	44.89'	61.72'	N89°09'13"W	93°07'58"
C6	42.50'	75.88'	52.78'	66.20'	N68°50'45"E	102°17'46"
C7	30.00'	47.12'	30.00'	42.43'	N27°18'08"W	90°00'00"
C8	20.00'	31.42'	20.00'	28.28'	S27°18'08"E	90°00'00"
C9	20.00'	31.42'	20.00'	28.28'	N62°41'52"E	90°00'00"
C10	100.00'	39.38'	19.95'	39.12'	S61°01'18"E	22°33'40"
C11	60.00'	134.21'	123.46'	107.93'	S14°20'20"W	128°09'36"
C12	510.00'	132.37'	66.56'	132.00'	N70°59'01"E	14°52'15"
C13	60.00'	57.35'	31.08'	55.19'	N89°04'13"W	54°45'47"
C14	60.00'	83.13'	49.80'	76.64'	N21°59'44"W	79°23'12"
C15	62.00'	46.09'	24.17'	45.03'	N57°17'34"E	42°35'28"
C16	18.00'	47.26'	68.18'	34.81'	S03°22'36"W	150°25'24"
C17	591.98'	297.30'	151.86'	294.19'	S86°13'20"E	28°46'29"
C18	398.00'	160.69'	81.45'	159.60'	N67°49'27"E	23°07'57"
C19	48.00'	61.17'	35.53'	57.11'	N81°52'44"W	73°00'48"
C20	62.00'	38.15'	19.70'	37.55'	N79°14'26"E	35°15'08"
C21	98.00'	104.11'	57.58'	99.29'	S66°25'55"W	60°52'10"
C22	188.99'	23.43'	11.73'	23.42'	N52°42'20"E	07°06'16"
C23	58.00'	95.69'	62.77'	85.20'	N01°53'26"E	94°31'33"



Mey, Harris & Wells, Inc.
Professional Engineer
11/19/96

STORMWATER POND-GEOMETRY AND GRADING

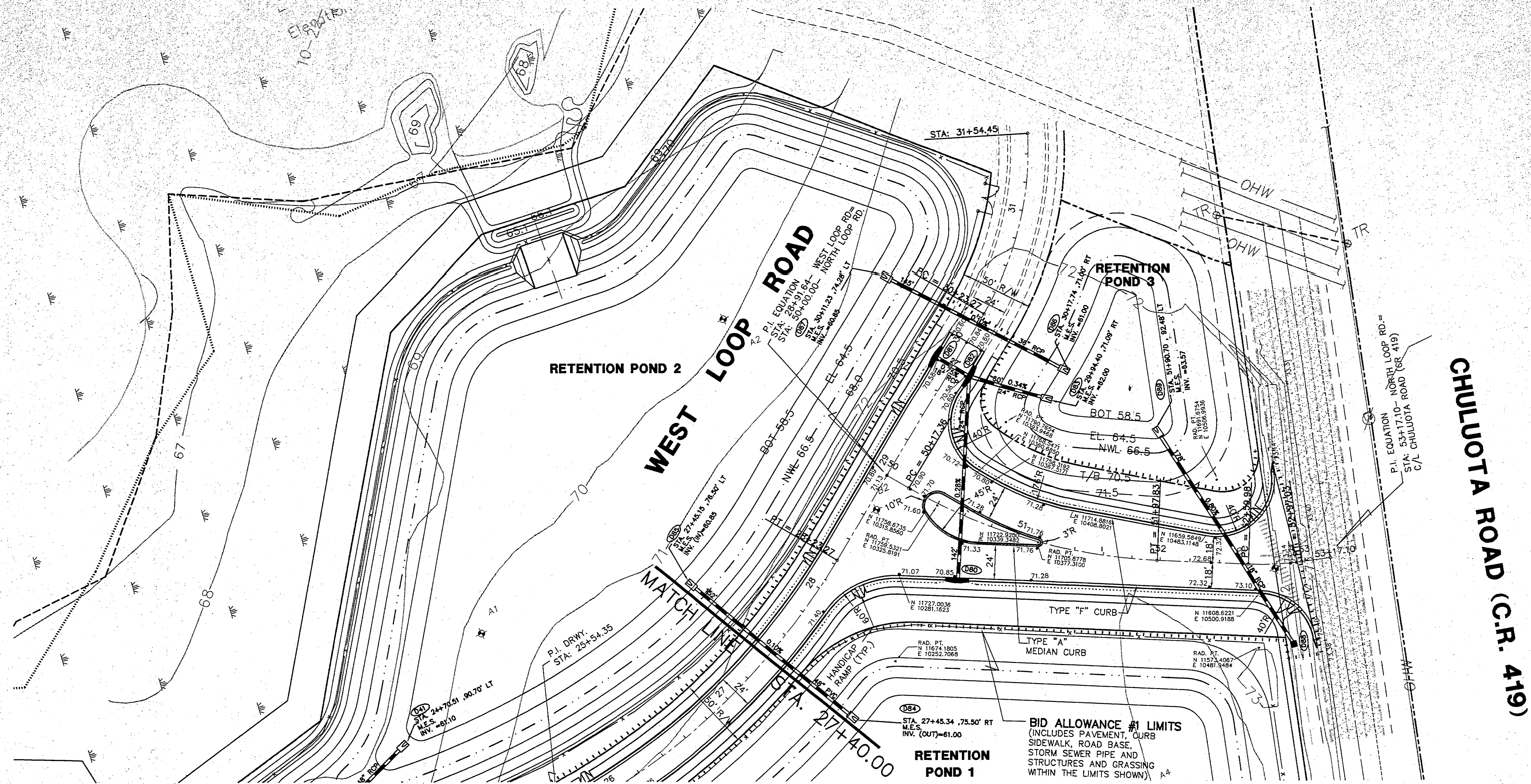
**CORNER LAKE
MIDDLE SCHOOL**
for the School Board of
ORANGE COUNTY, FLORIDA

SCHENKELSHULTZ
ARCHITECTURE INTERIOR DESIGN
200 E. Robinson Street, Suite 300
Orlando, Florida 32801
voice 407-872-3832
fax 407-872-3903

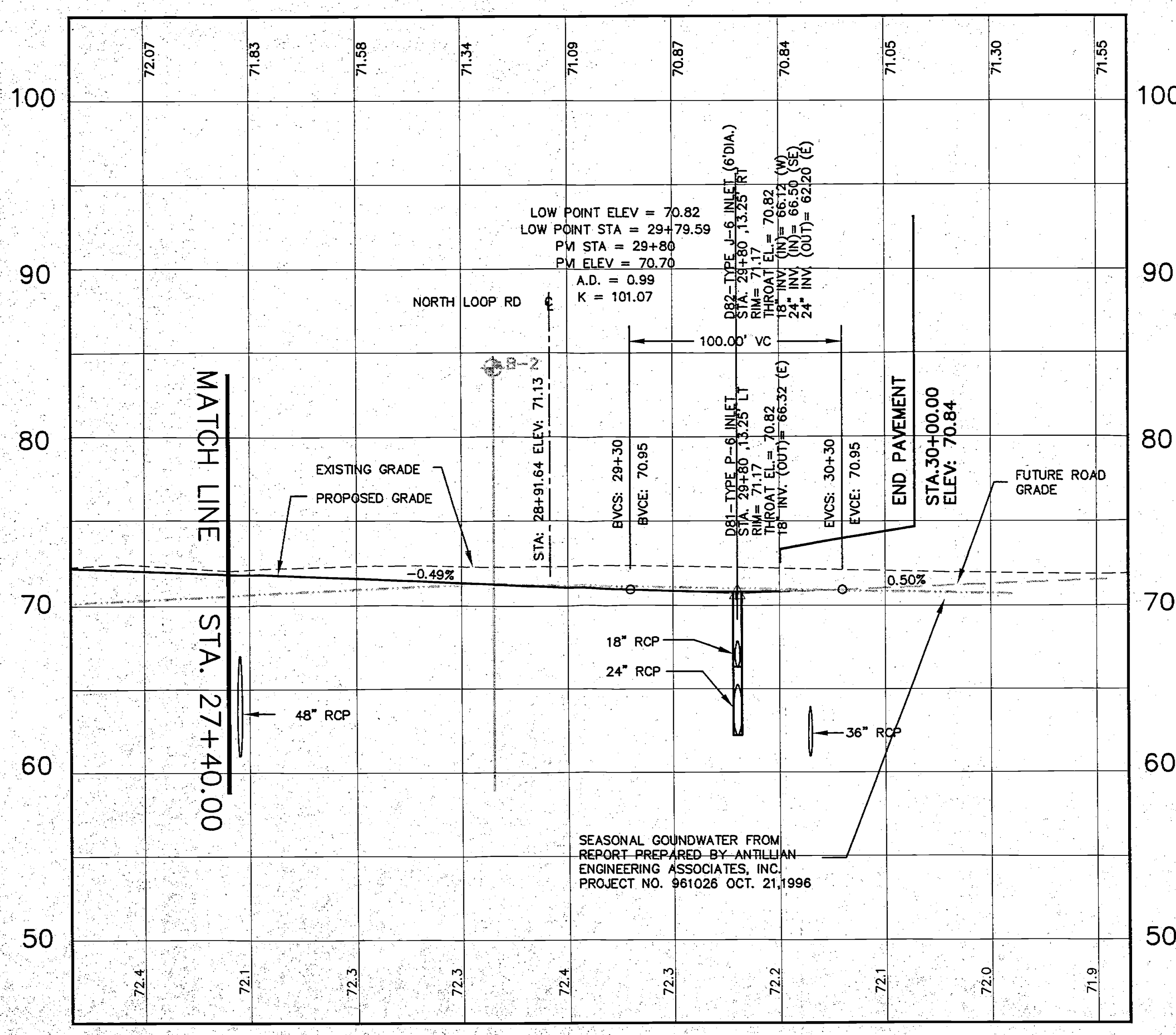
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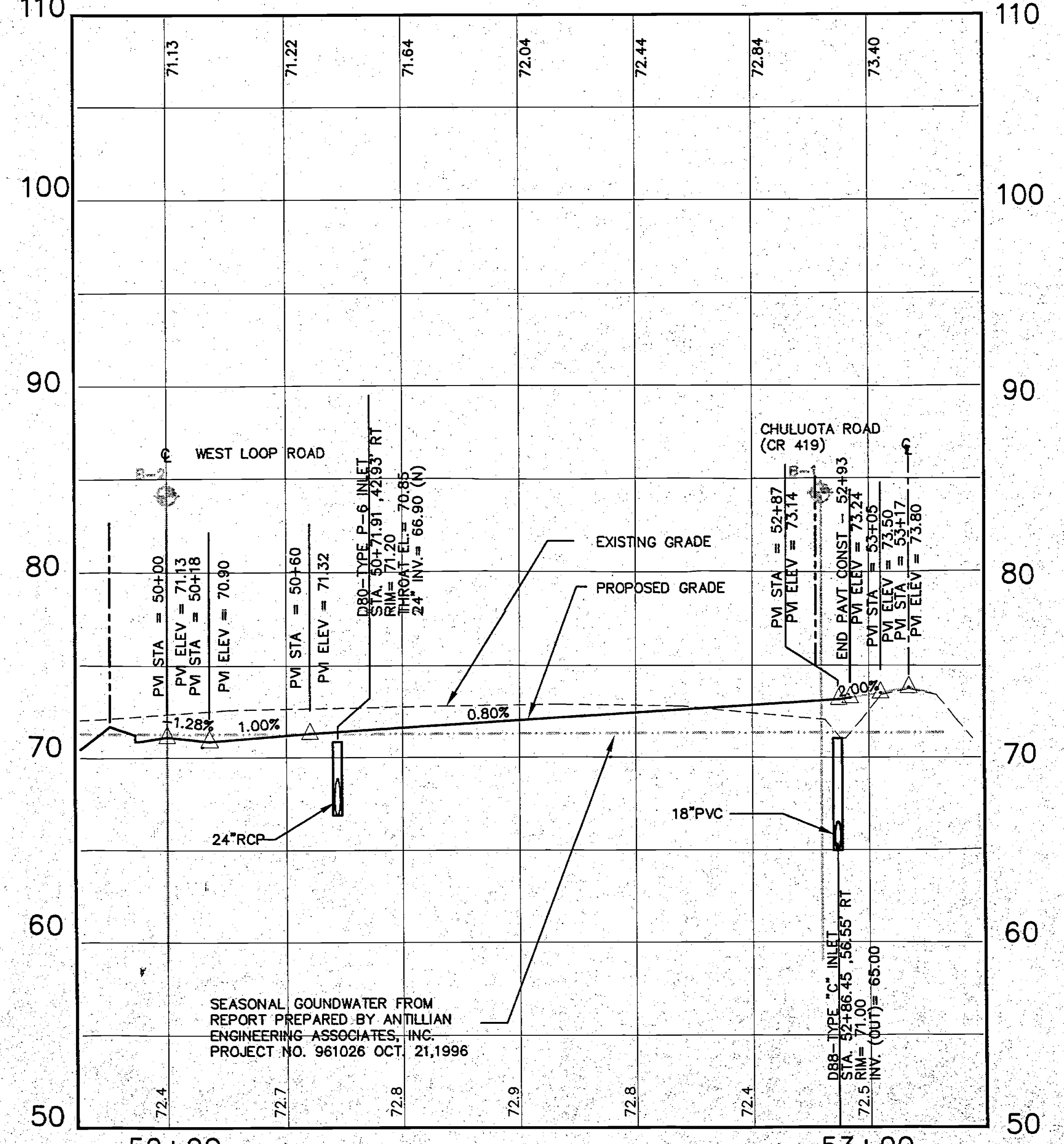
C-12



NORTH LOOP ROAD



WEST LOOP ROAD



NORTH LOOP ROAD

SCALE: 1"=40' HORIZ
1"=5' VERT

REV	DATE	DESCRIPTION	BY

S.J.R.W.M.D. REVIEW SET -11/14/96

F:\PROJ\86100\FINAL\861PFW.DWG PLOT VIEW_PLOT

XREF: 861BASE.DWG
861BRD.DWG
CORNER.DWG
861PRFW.DWG
861PRFN.DWG

LOOP ROAD PLAN/PROFILE - STA 27+40 TO 31+40 AND STA. 50+00 TO 53+17.10

CORNER LAKE MIDDLE SCHOOL
for the School Board of
ORANGE COUNTY, FLORIDA

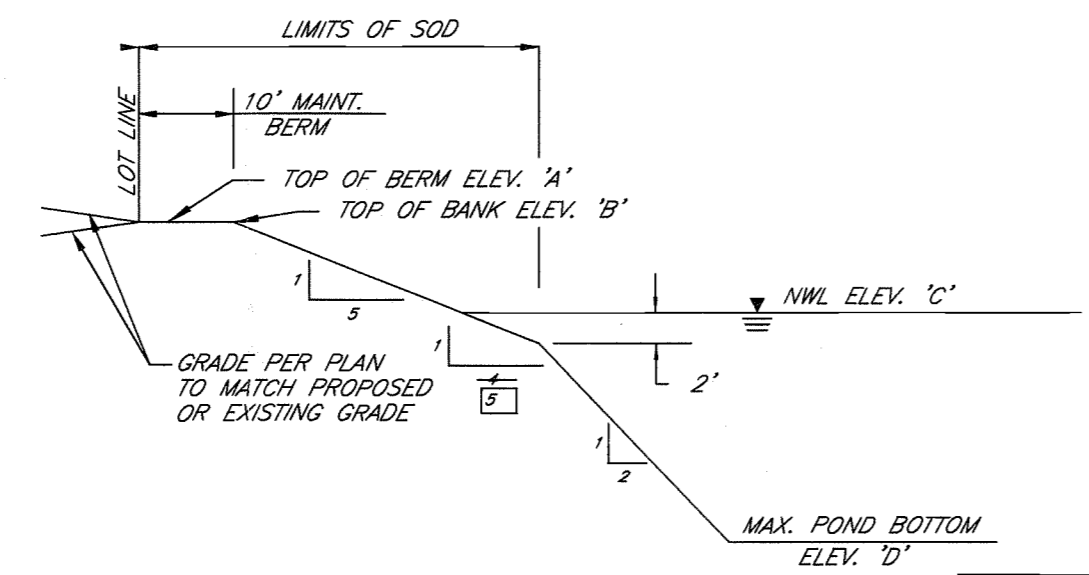
NOV 19 1996
POS AND/OR S&R MAP
drawn: JRS
checked: JRS
date: 11/6/96
count: 101, 58, 0

C-20

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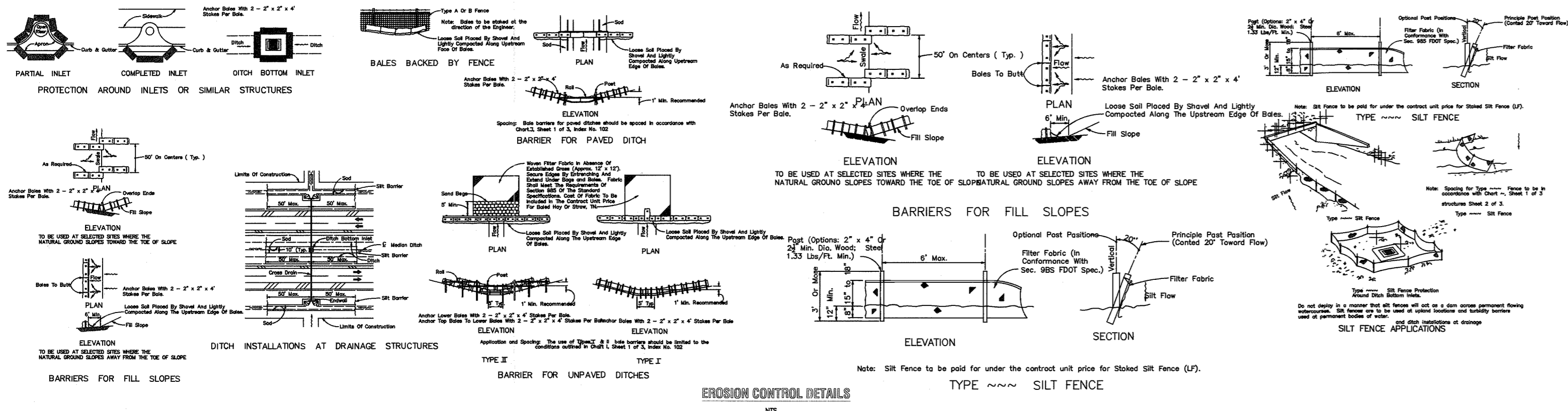
SCHENKEL SHULTZ
ARCHITECTURE INTERIOR DESIGN
200 E. Robinson Street, Suite 300
Orlando, Florida 32801
voice 407-872-3822
fax 407-872-3805

Corner Lake Plaza
Permit No. 63516 - 6
November 2004

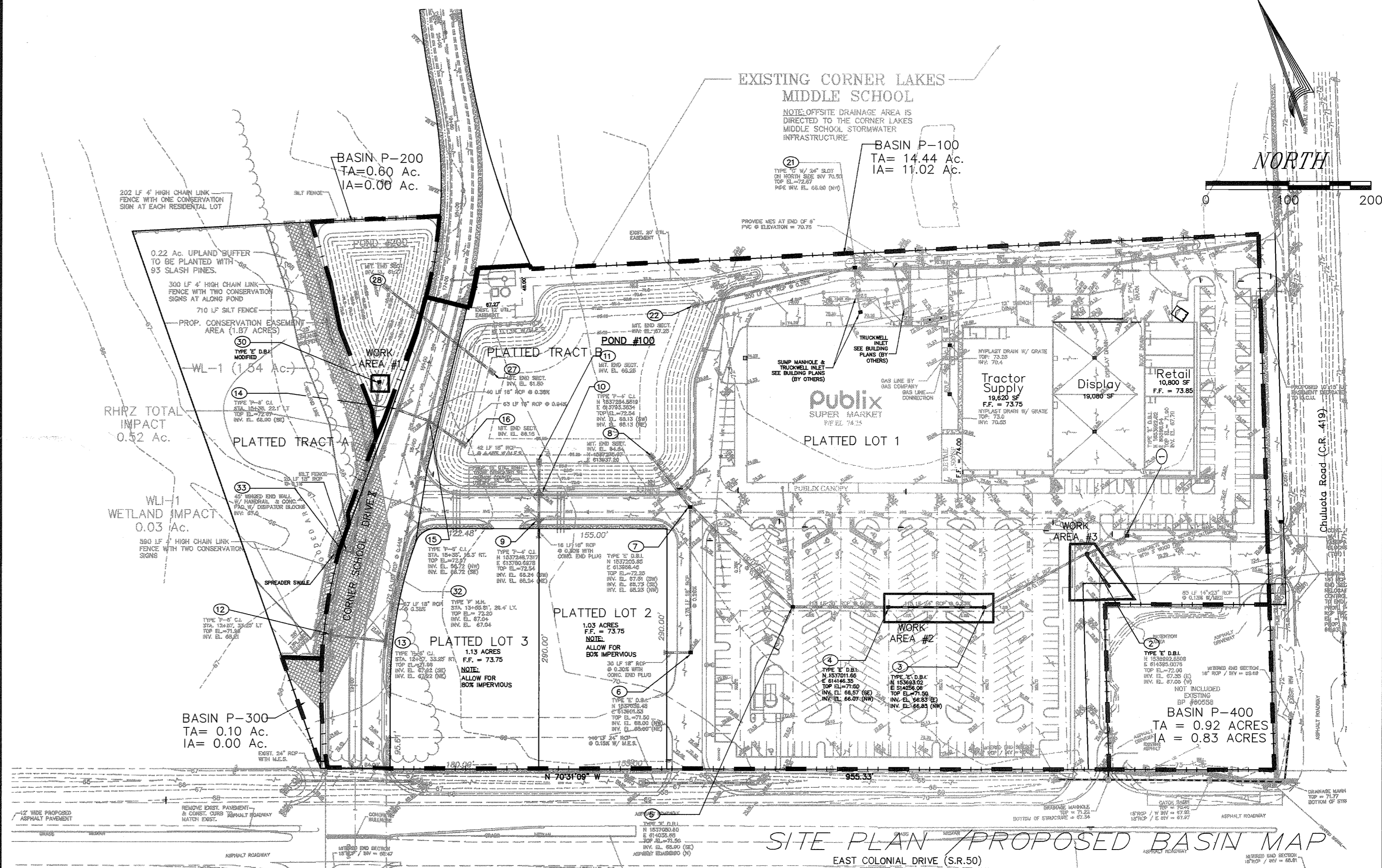


POND No.	ELEV. 'A'	ELEV. 'B'	ELEV. 'C'	ELEV. 'D'	STORM EVENTS									
					MEAN	10-24	25/24-S/R	25/24-OC	100/24					
100	PER PLAN	PER PLAN	67.25	55.25	70.31	70.45	71.16	71.37	71.75	71.95	72.1	72.33	72.56	72.8
200	PER PLAN	PER PLAN	67.25	59.25	70.27	70.46	71.02	71.27	71.58	71.71	71.88	72.06	72.29	72.49

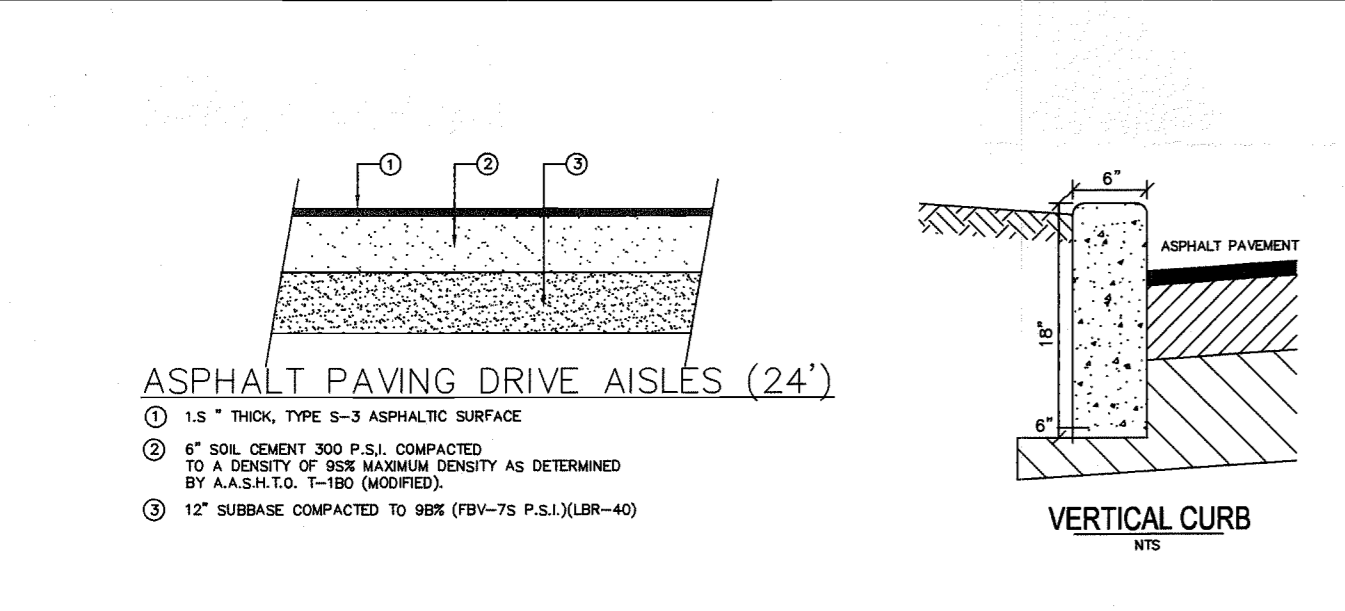
SECTION E-E (NTS)



EROSION CONTROL DETAILS

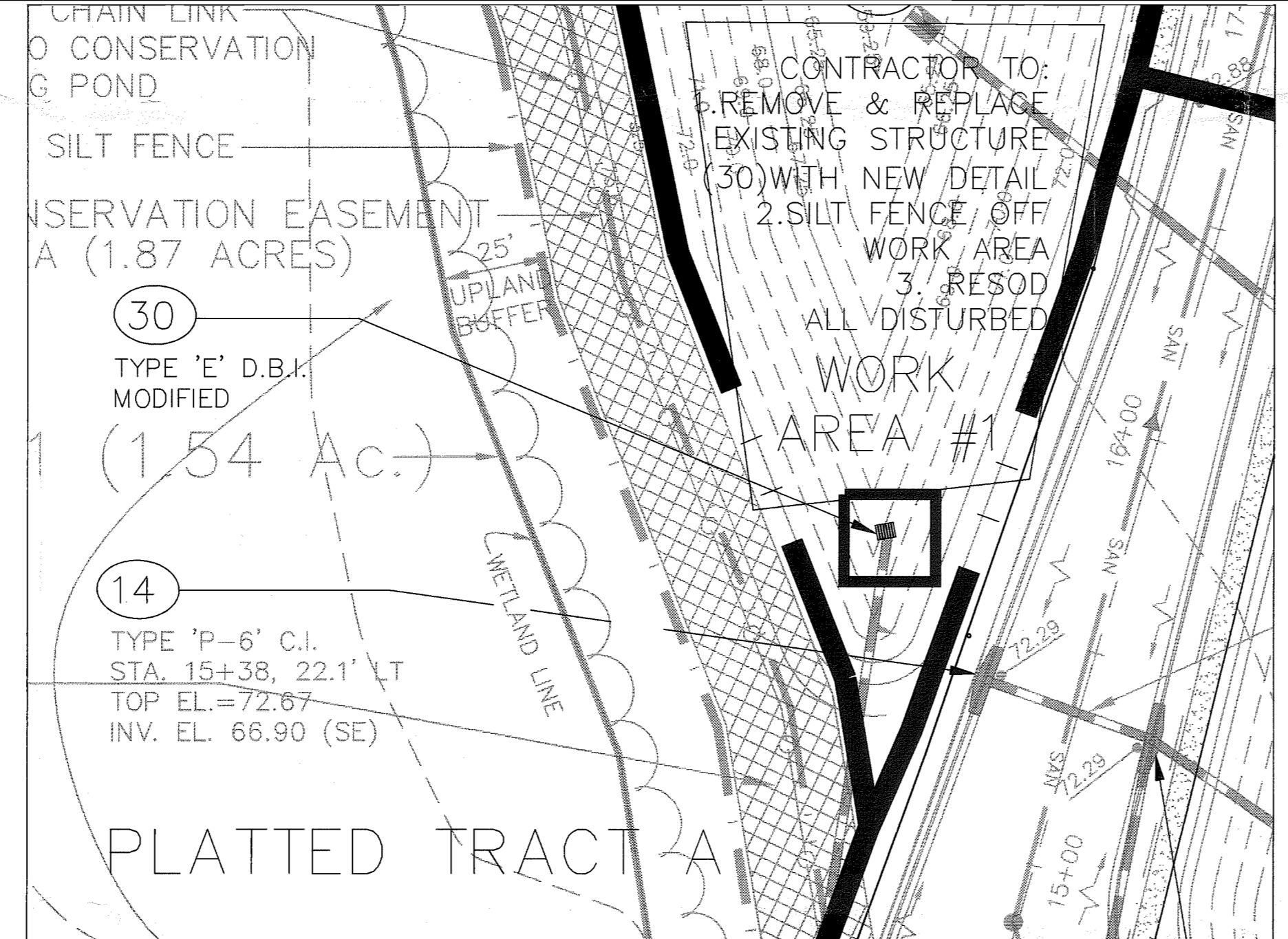


SITE PLAN / PROPOSED BASIN MAP

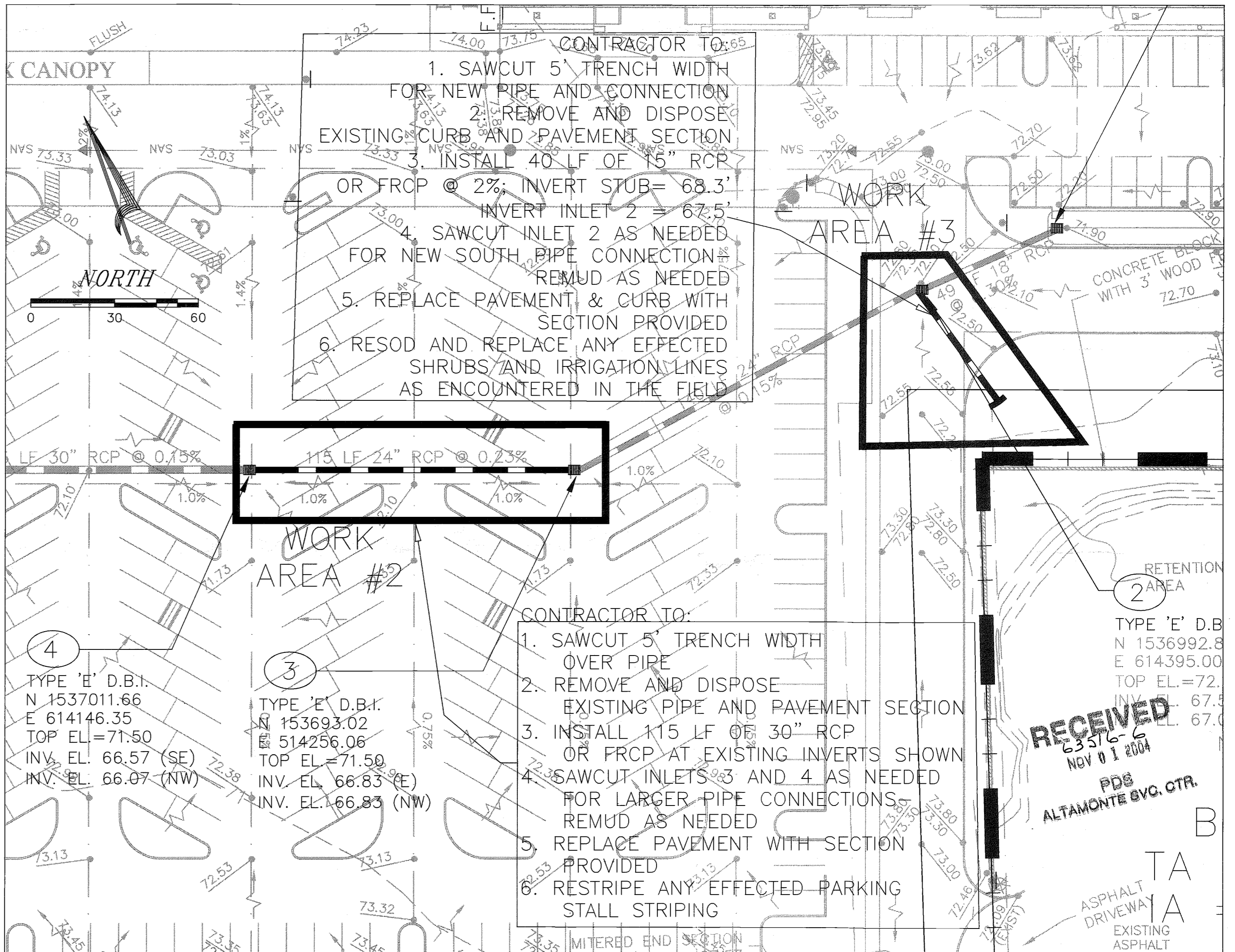


ASPHALT PAVING DRIVE AISLES (24')

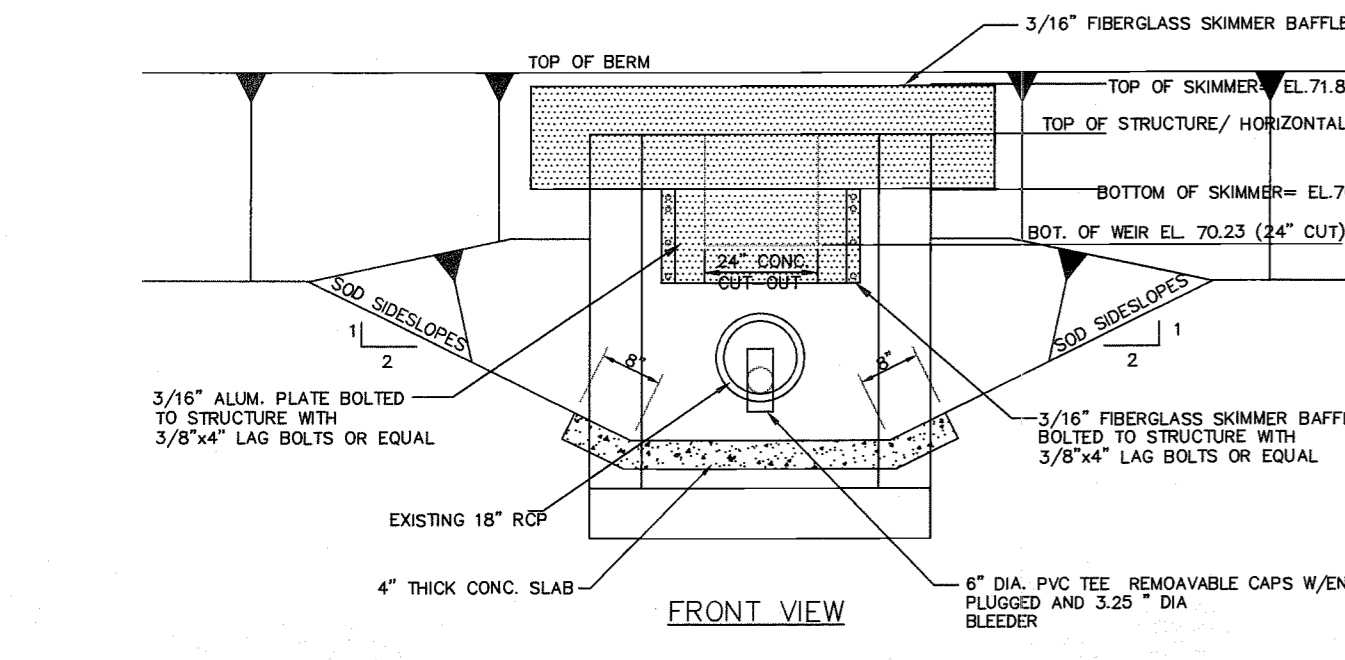
VERTICAL CURB



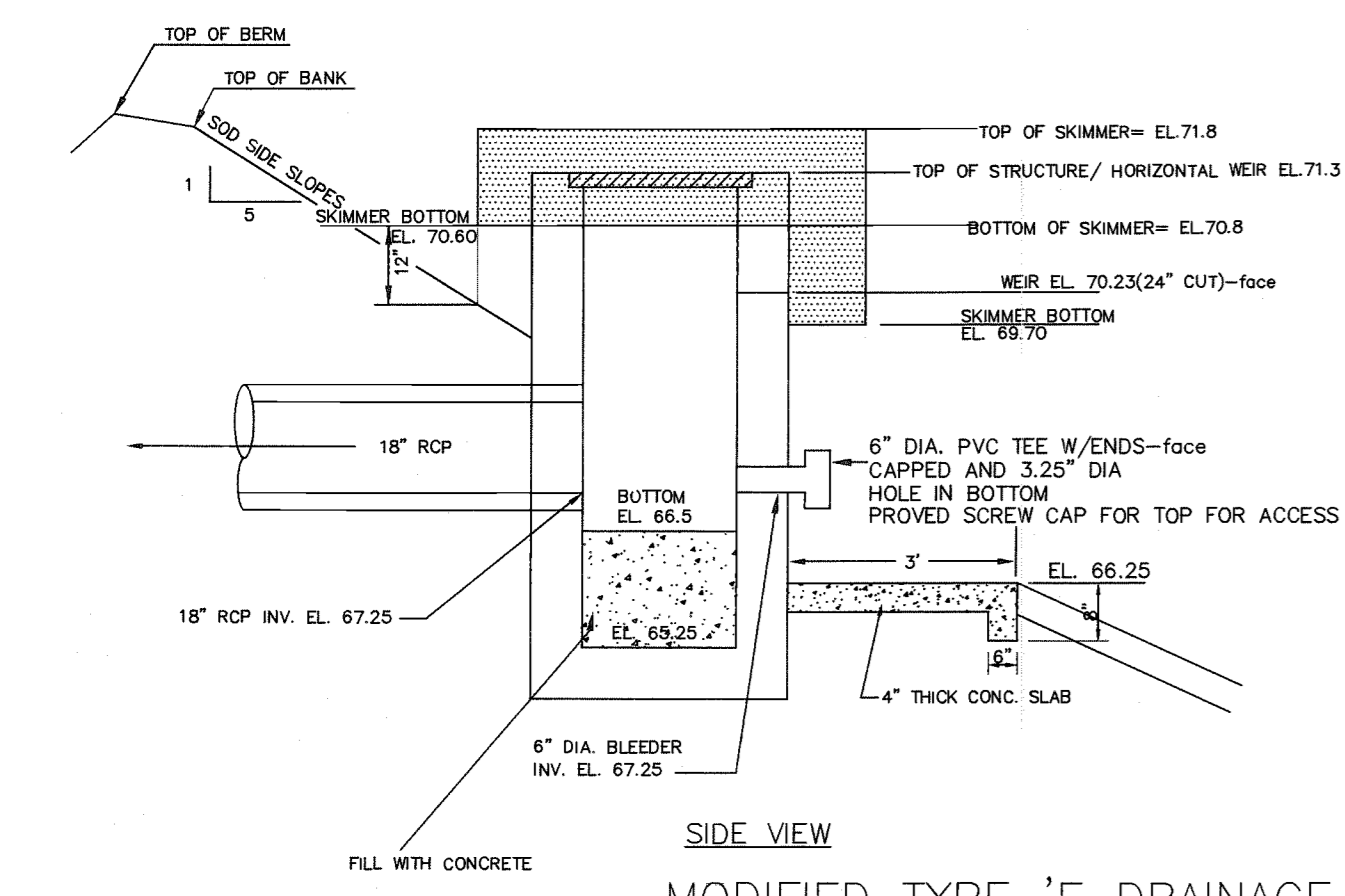
PLATTED TRACT A



PAVING, GRADING & DRAINAGE PLAN

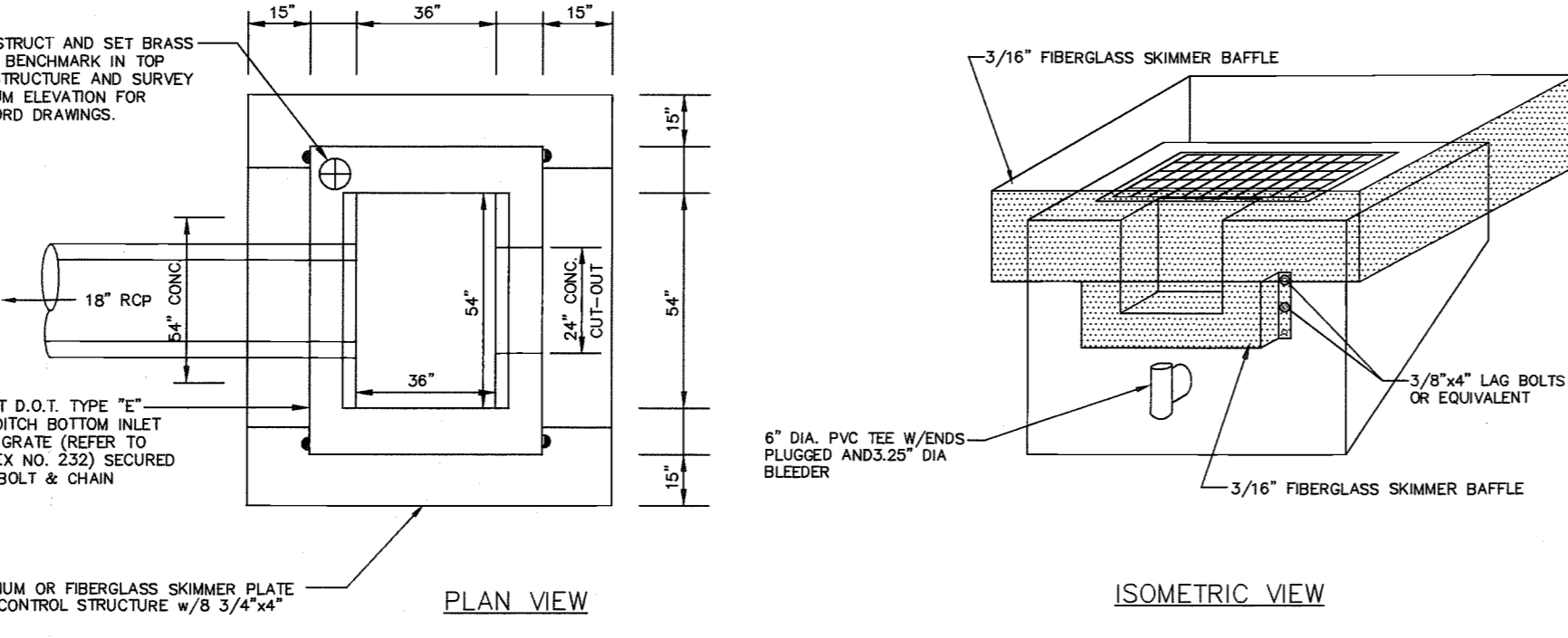


MODIFIED TYPE 'E' DRAINAGE CONTROL STRUCTURE



STRUCTURE #30

N.T.S.



ISOMETRIC VIEW

NO.	DATE	DESCRIPTION
1	10-28-04	REVISE DUTIAL FOR SIMPLIFICATION

Hudson Engineering, Inc.
 ASSOCIATES, INC.
 SITE ENGINEERING/LAND PLANNING
 P.O. Box 677742 Orlando, FL 32867-7742
 PH: (407) 342-8813 FAX: 321-415-0233
 Cert. of Auth. # 00009510
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CLP MOD PLAN FOR BP #60558 DRAINAGE
 CORNER LAKE PLAZA - BP DRN MOD
 MILLER GROUP
 SECTION 4, TOWNSHIP 26S, RANGE 30E
 ORANGE COUNTY, FLORIDA

INFORMATION COPY ONLY, UNLESS INDICATED WITH REGISTERED ENGINEER'S SEAL
 APPROVED BY

 B. TODD HUDSON, P.E.
 NO. 54033
 DATE 7-23-04
 PROJECT NO./FILE NAME 04-011-BASE
 DSN BTH
 DATE 7-23-04
 DRWN BTH
 SCALE AS NOTED
 CHKD BTH

Country Lake Estates
Permit No. 81542 - 9
June 2011

Drainage Modifications for Compliance
for
COUNTRY LAKE ESTATES
SJRWMD PERMIT 40-095-81542-9

Residential Subdivision
Orange County, Florida

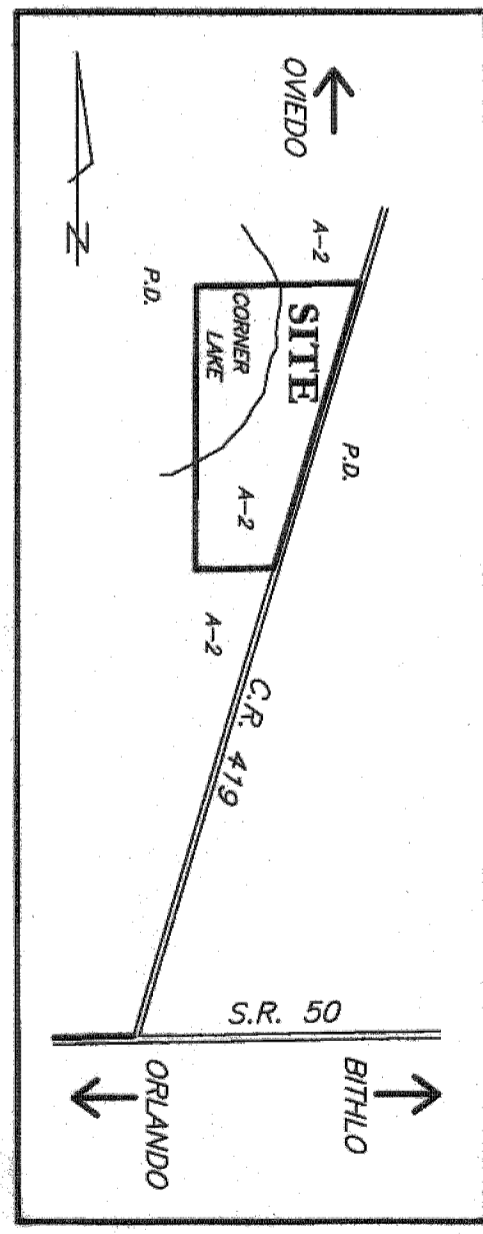
Revision Date: June 2011

HARLING LOCKLIN & ASSOCIATES, INC.
 Consulting Engineers Planners
 850 Courtland Street Orlando, Florida 32804
 Phone: 407-629-1061
 Fax: 407-629-2855
 E-mail: hharling@haringlocklin.com

<u>Sheet Index</u>	
1	Cover Sheet
2	Drainage Plan
3-6	Plan and Profile Sheets
7	Drainage Details

Country Lake Estates
Residential Subdivision

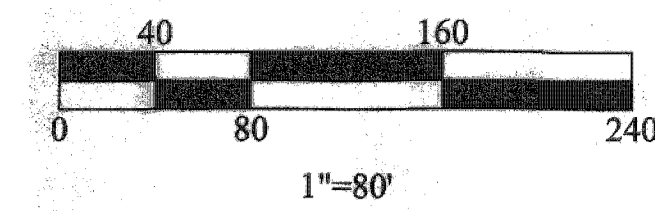
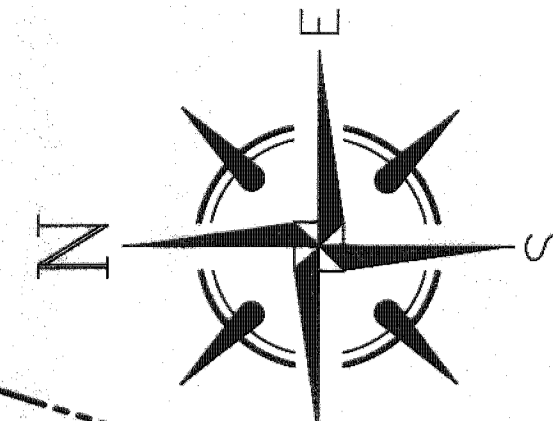
Prepared by:
HARLING LOCKLIN & ASSOCIATES, INC.
 Consulting Engineers Planners
 850 Courtland Street Orlando, Florida 32804
 Phone: 407-629-1061
 Fax: 407-629-2855
 E-mail: hharling@haringlocklin.com
 EB# 2910



Location Map
SEC. 16, TWP. 22, RNG. 32

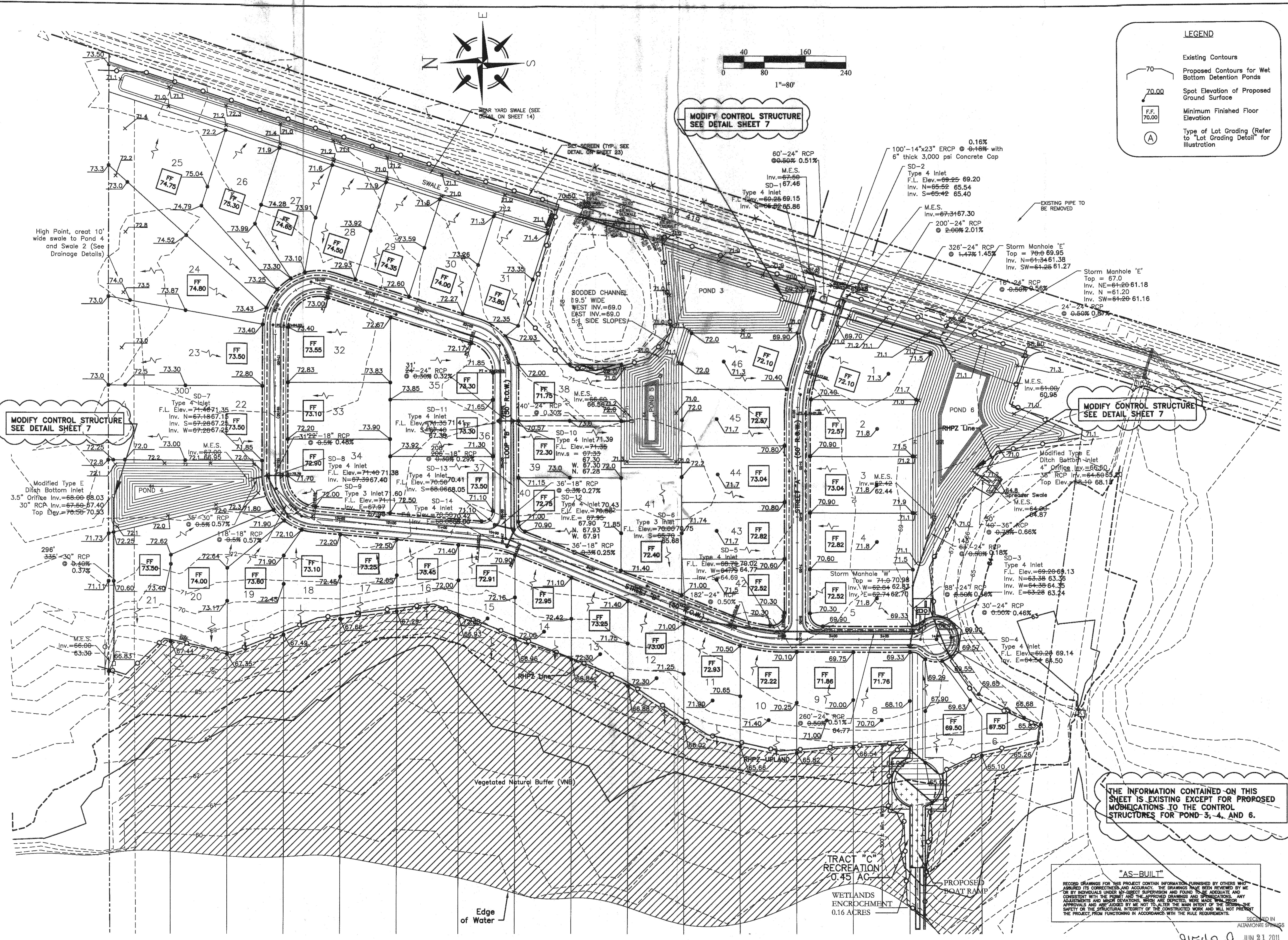
81542-9
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JUN 21 2011
ALTAMONTE

Date: March, 2011
 Job Number: 9022
 Engineer: [Signature]
 Project No. 11029
 Reg. No. 11029



LEGEND

- Existing Contours
- Proposed Contours for Wet Bottom Detention Ponds
- Spot Elevation of Proposed Ground Surface
- Minimum Finished Floor Elevation
- Type of Lot Grading (Refer to "Lot Grading Detail" for illustration)



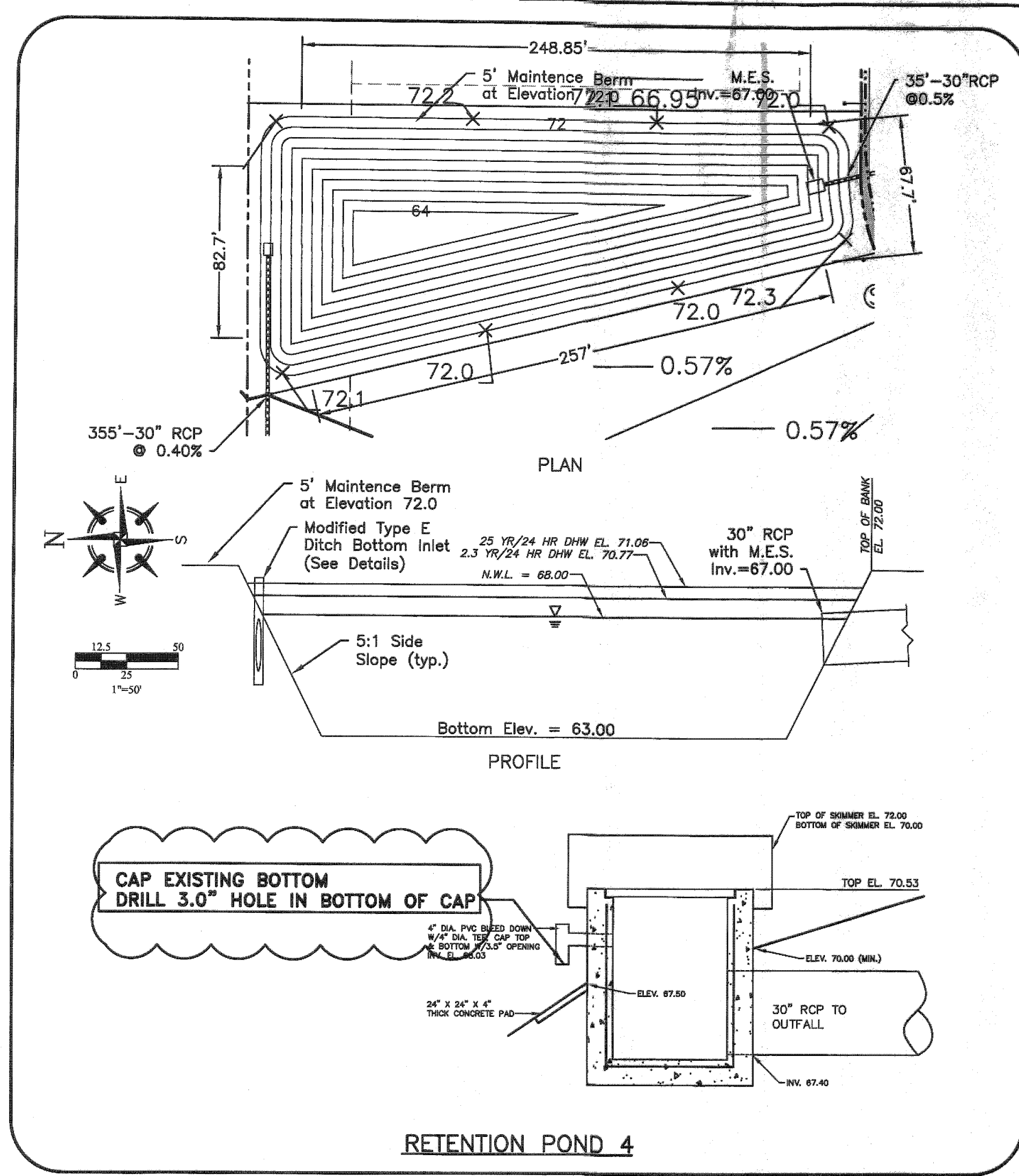
THE INFORMATION CONTAINED ON THIS SHEET IS EXISTING EXCEPT FOR PROPOSED MODIFICATIONS TO THE CONTROL STRUCTURES FOR POND 3, 4, AND 6.

"AS-BUILT"
 RECORD DRAWINGS FOR THIS PROJECT CONTAIN INFORMATION FURNISHED BY OTHERS WHO ASSURED ITS CORRECTNESS AND ACCURACY. THE DRAWINGS HAVE BEEN REVIEWED BY ME OR BY INDIVIDUALS UNDER MY DIRECT SUPERVISION AND FOUND TO BE ACCURATE AND CONSISTENT WITH THE PERMIT AND THE APPROVED DRAWINGS AND SPECIFICATIONS. ANY ADJUSTMENTS AND MODIFICATIONS WHICH ARE DEPICTED, WERE MADE WITH CARE AND APPROVAL AND ARE JUDGED BY ME NOT TO ALTER THE MAIN INTENT OF THE DESIGN, THE SAFETY OR THE STRUCTURAL INTEGRITY OF THE CONSTRUCTED WORK AND WILL NOT PREVENT THE PROJECT FROM FUNCTIONING IN ACCORDANCE WITH THE RULE REQUIREMENTS.

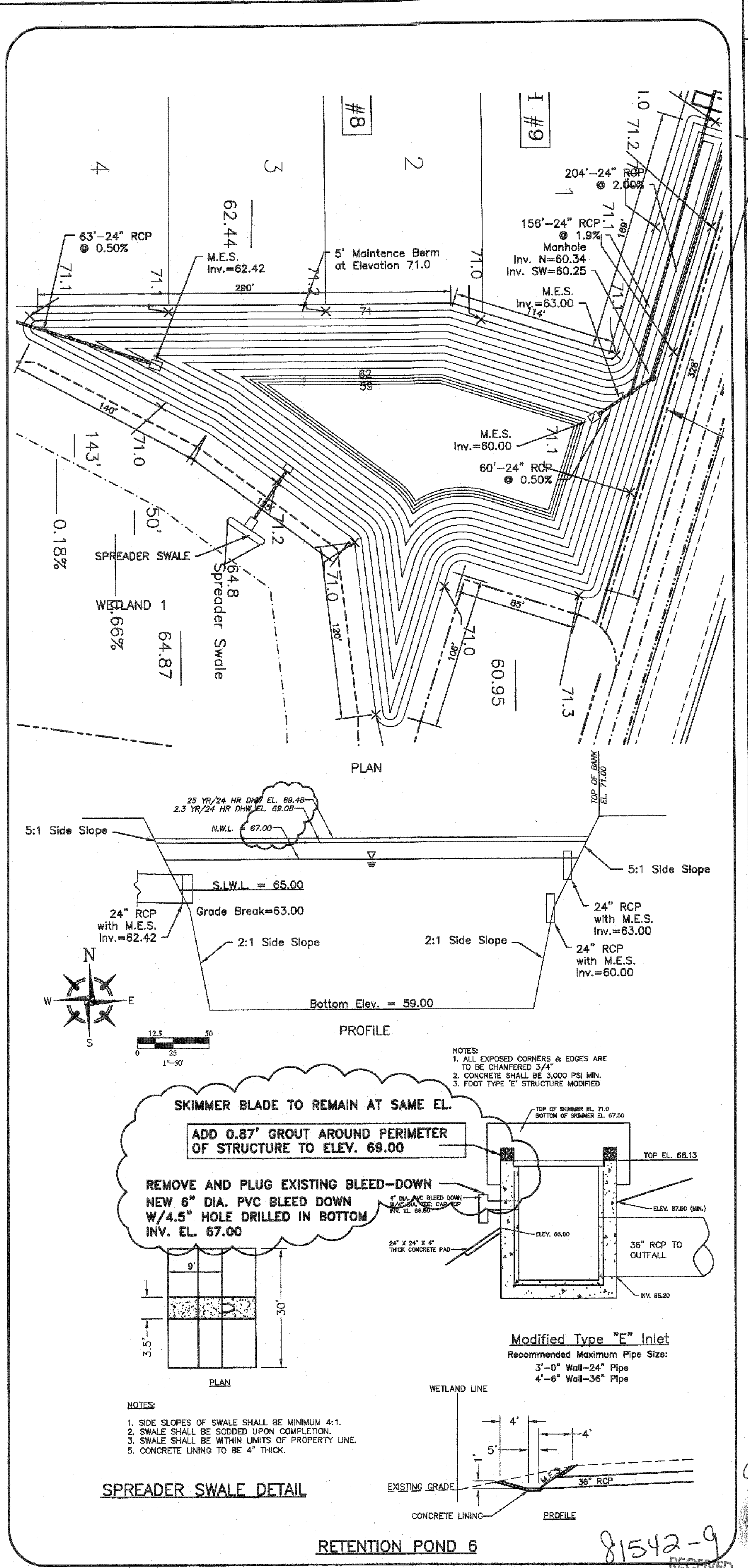
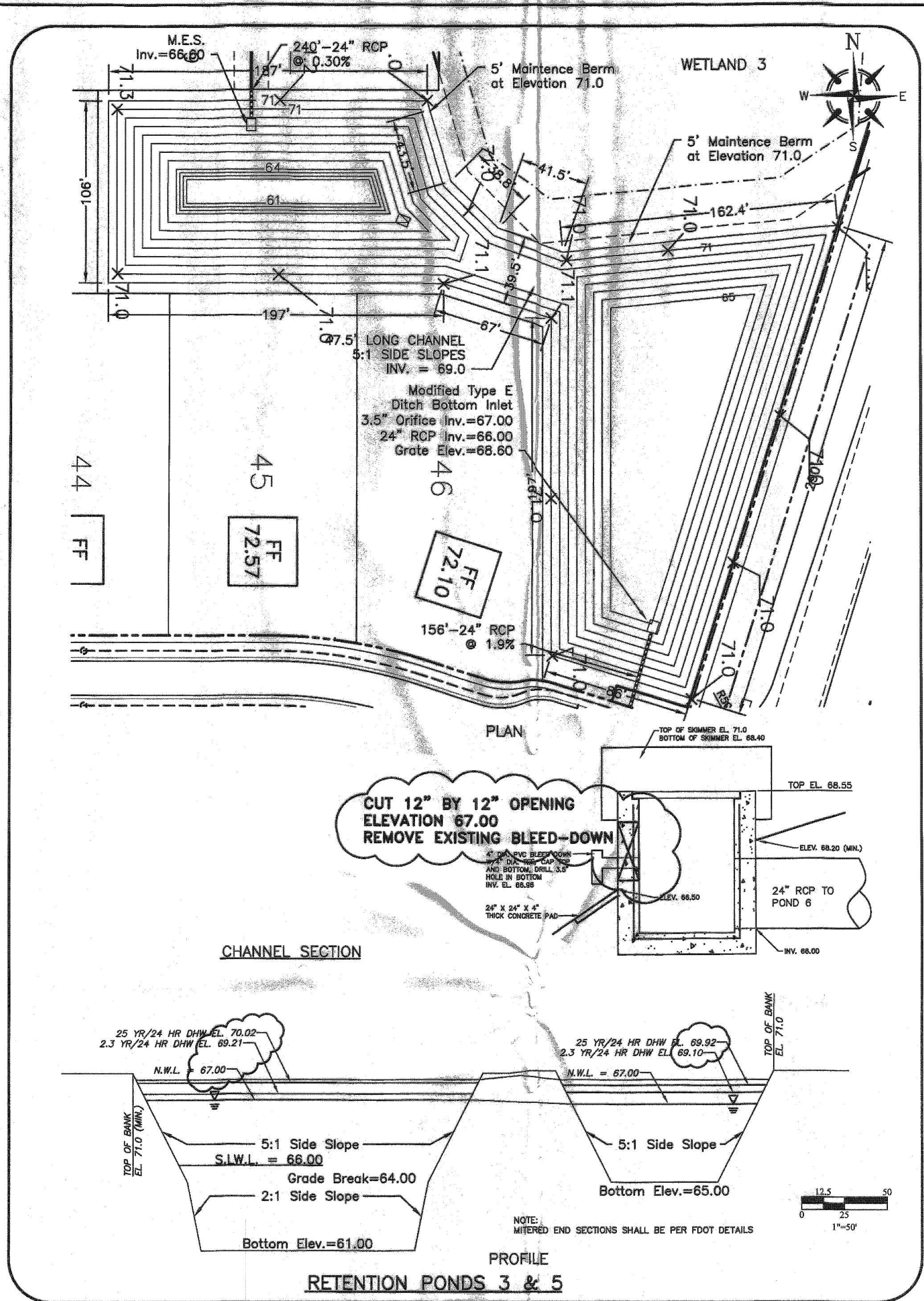
RECORDED IN ALDAMORNE SPRINGS

Drawn by: AJR	Designed by: HWH	Filename: 9023JUNE.011	Scale: 1" = 80'	Date: March, 2011
Engineer: [Signature]	Project: Country Lake Estates	Sheet: 2 of 7	Scale: 1" = 80'	Date: March, 2011
<p>HARLING LOCKLIN & ASSOCIATES, INC. Consulting Engineers - Planners 850 Countland Street Orlando, Florida 32804 Phone: 407-629-1061 Fax: 407-629-2885 E-mail: bharring@harrlinglocklin.com EB # 2910</p>				
<p>Drainage Revisions Country Lake Estates Orange County, Florida</p>				
Revisions	No.	Date	Rev. by:	
1	1	6/21/11	KS	
<p>PER SJRWMD COMMENTS OF 5/6/11</p>				

81542-9 JUN 21 2011



SEE SHEET 2 FOR AS-BUILT ELEVATIONS SHOWN HERE



SEE SHEET 2 FOR AS-BUILT ELEVATIONS SHOWN HERE

HARLING LOCKLIN & ASSOCIATES, INC. Consulting Engineers - Planners 850 Courtland Street Orlando, Florida 32804 Phone: 407-629-1061 Fax: 407-629-2855 E-mail: bharling@hastingslocklin.com EP # 2910		Date	6/21/11	Revisions			
		No.	1				
Drainage Details Country Lake Estates Orange County, Florida		Drawn by:	AJR	Designed by:	HLL	Filename:	9022JUNE 011
		Date:	6/21/11	Scale:	As Noted	Sheet	7 of 7

P:\060022 - Country Lake Estates\9022-JUNE 2011.dwg June 21, 2011 - 12:24pm

81542-9
RECEIVED
JUN 21 2011
ALAMONTE

CR 419 Improvement Plans
Permit No. 58045 - 9
August 1999

CONSTRUCTION PLANS FOR C.R. 419 IMPROVEMENTS ORANGE COUNTY, FLORIDA

SITE DEVELOPER

THE STERLING COMPANIES
2304-A WINTER WOODS BOULEVARD
WINTER PARK, FL 32792
TEL.: (407)657-4365
FAX: (407)678-5860

ENGINEER/SURVEYOR

CONSUL-TECH ENGINEERING, INC.
728 WEST SMITH STREET
ORLANDO, FL 32804
TEL.: (407)843-0094
FAX: (407)423-0085

GEOTECHNICAL ENGINEER

UNIVERSAL ENGINEERING SERVICES
3532 MAGGIE BOULEVARD
ORLANDO, FL 32811
TEL.: (407)423-0504
FAX: (407)423-3106

WATER UTILITIES

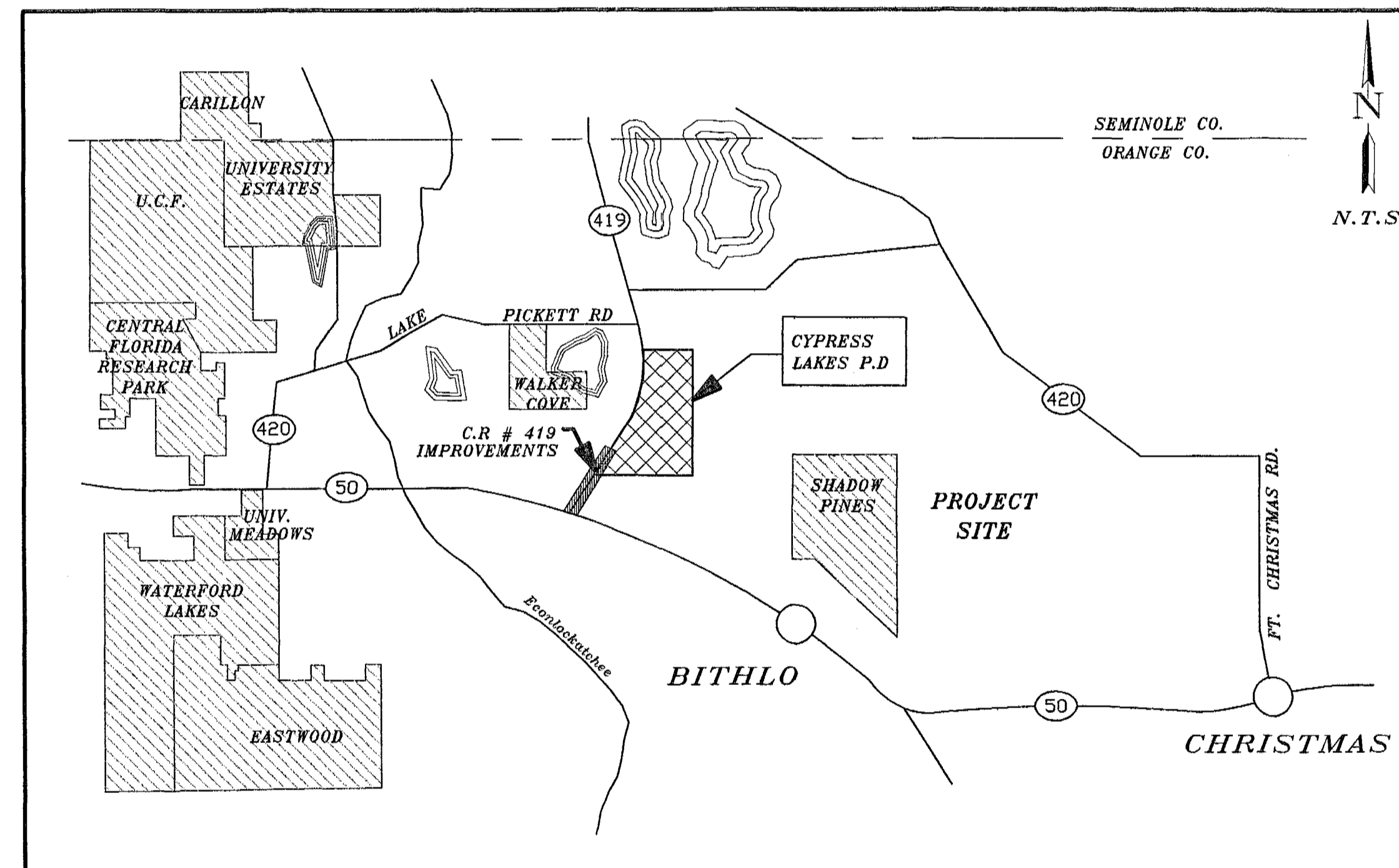
ORANGE COUNTY PUBLIC UTILITIES
201 SOUTH ROSLAND AVENUE
ORLANDO, FL 32801
TEL.: (407)836-7000
FAX: (407)836-5379

ELECTRIC SERVICE

FLORIDA POWER CORPORATION
JAMESTOWN OPERATIONS CENTER
2801 WEST S.R. 426
OVIEDO, FL 32765
TEL.: (407)359-4410

TELEPHONE SERVICE

BELL SOUTH
500 ORANGE AVENUE, RM. 515
ORLANDO, FL 32801
TEL.: (407)237-3082

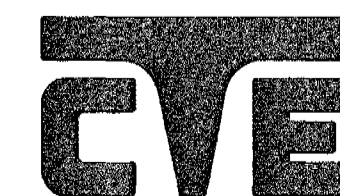


LOCATION MAP

INDEX OF DRAWINGS

- | | |
|-------|--|
| 1 | COVER SHEET |
| 2 | SPECIFICATIONS AND GENERAL NOTES |
| 3 | MASTER DRAINAGE PLAN |
| 4 | C.R.419 AND S.R.50 INTERSECTION |
| 5 | CORNER LAKE COMMERCIAL P.D MASTER LIFT STATION SITE PLAN |
| 6-10 | ROADWAY PLAN AND PROFILES |
| 11-12 | ROADWAY CROSS SECTIONS |
| 13 | PAVEMENT MARKING AND SIGNAGE PLAN |
| 14 | CORNER LAKE COMMERCIAL MASTER LIFT STATION DETAIL |
| 15 | PAVING, GRADING, AND DRAINAGE DETAILS |
| 16 | WATER DETAILS |
| 17 | SANITARY SEWER DETAILS |

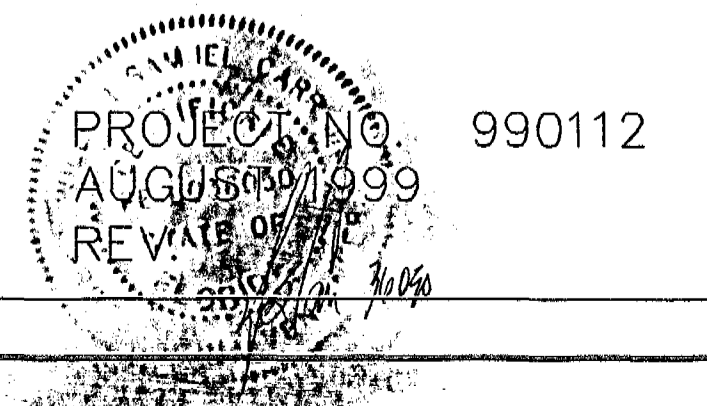
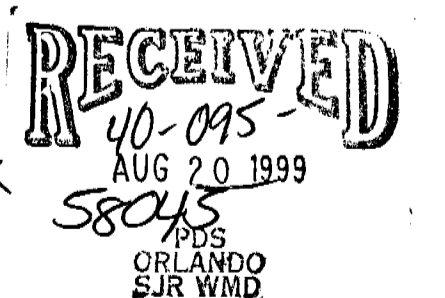
THESE CONSTRUCTION PLANS WERE PREPARED IN ACCORDANCE WITH THE "MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION AND MAINTENANCE FOR STREETS AND HIGHWAYS, STATE OF FLORIDA" (FDOT GREEN BOOK) AND ORANGE COUNTY REGULATIONS AND SPECIFICATIONS.

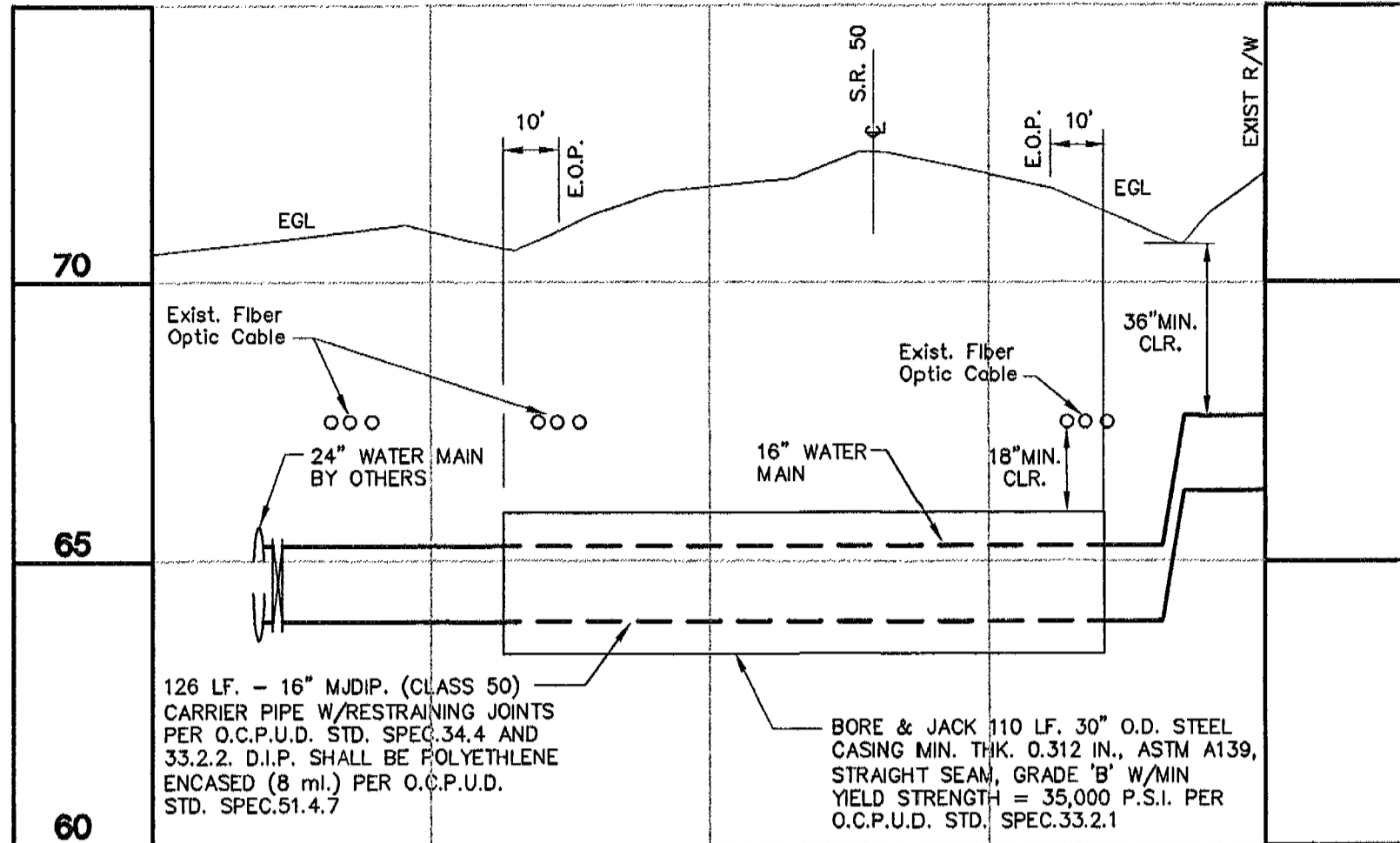


CONSUL-TECH ENGINEERING, INC.

CONSULTING ENGINEERS • LAND PLANNERS • LAND SURVEYORS

728 W. SMITH STREET
ORLANDO, FLORIDA 32804
(407) 843-0094, FAX (407) 423-0085



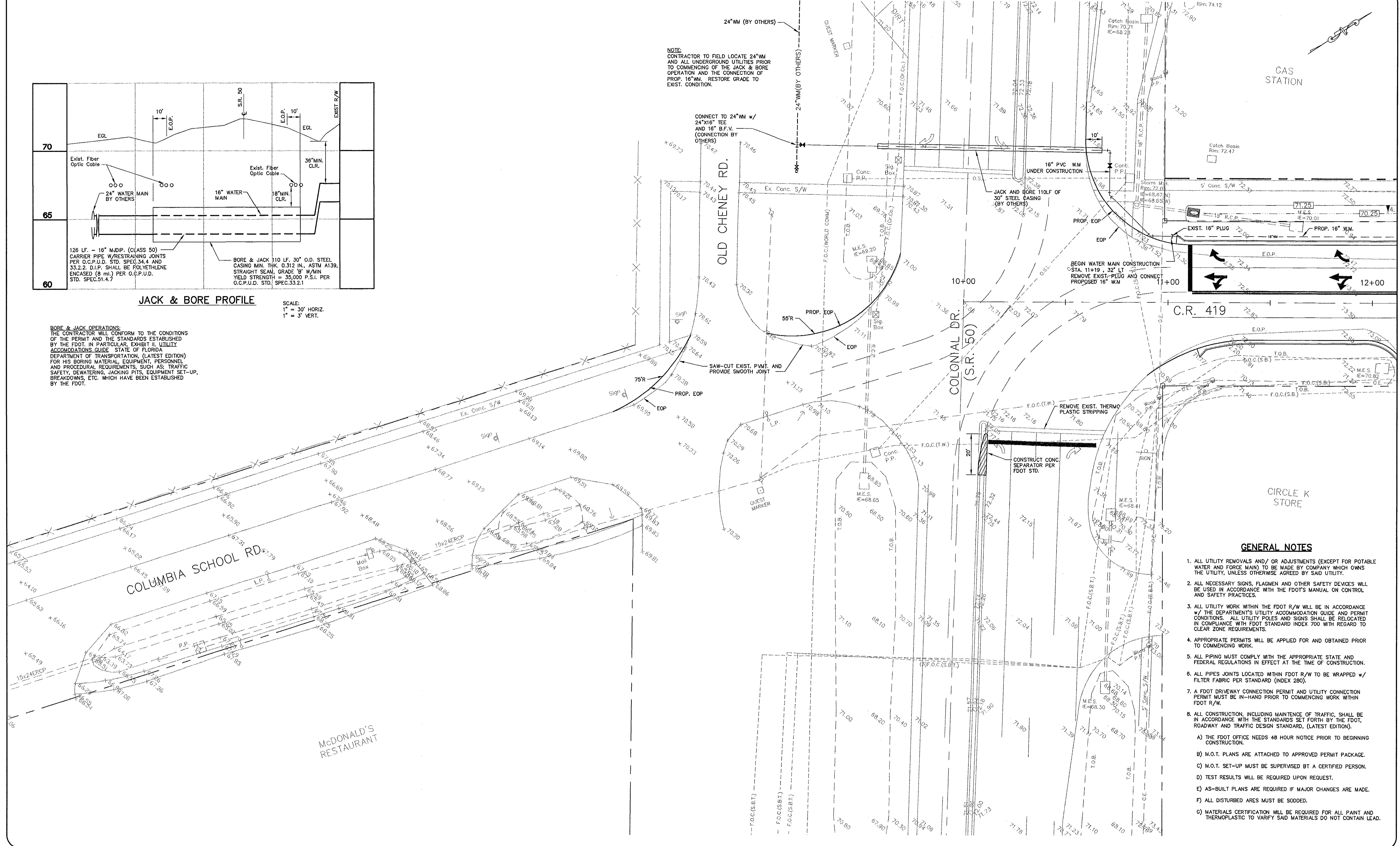


JACK & BORE PROFILE

SCALE:
1" = 30' HORIZ.
1" = 3' VERT.

BORE & JACK OPERATIONS:
THE CONTRACTOR WILL CONFORM TO THE CONDITIONS OF THE PERMIT AND THE STANDARDS ESTABLISHED BY THE FDOT, IN PARTICULAR, EXHIBIT II, UTILITY ACCOMMODATIONS GUIDE STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION, (LATEST EDITION) FOR HIS BORING MATERIAL, EQUIPMENT, PERSONNEL AND PROCEDURAL REQUIREMENTS, SUCH AS: TRAFFIC SAFETY, DEWATERING, JACKING PITS, EQUIPMENT SET-UP, BREAKDOWNS, ETC. WHICH HAVE BEEN ESTABLISHED BY THE FDOT.

NOTE:
CONTRACTOR TO FIELD LOCATE 24" WM AND ALL UNDERGROUND UTILITIES PRIOR TO COMMENCING OF THE JACK & BORE OPERATION AND THE CONNECTION OF PROP. 16" WM. RESTORE GRADE TO EXIST. CONDITION.



GENERAL NOTES

1. ALL UTILITY REMOVALS AND/OR ADJUSTMENTS (EXCEPT FOR POTABLE WATER AND FORCE MAIN) TO BE MADE BY COMPANY WHICH OWNS THE UTILITY, UNLESS OTHERWISE AGREED BY SAID UTILITY.
2. ALL NECESSARY SIGNS, FLAGMEN AND OTHER SAFETY DEVICES WILL BE USED IN ACCORDANCE WITH THE FDOT'S MANUAL ON CONTROL AND SAFETY PRACTICES.
3. ALL UTILITY WORK WITHIN THE FDOT R/W WILL BE IN ACCORDANCE W/ THE DEPARTMENT'S UTILITY ACCOMMODATION GUIDE AND PERMIT CONDITIONS. ALL UTILITY POLES AND SIGNS SHALL BE RELOCATED IN COMPLIANCE WITH FDOT STANDARD INDEX 700 WITH REGARD TO CLEAR ZONE REQUIREMENTS.
4. APPROPRIATE PERMITS WILL BE APPLIED FOR AND OBTAINED PRIOR TO COMMENCING WORK.
5. ALL PIPING MUST COMPLY WITH THE APPROPRIATE STATE AND FEDERAL REGULATIONS IN EFFECT AT THE TIME OF CONSTRUCTION.
6. ALL PIPES JOINTS LOCATED WITHIN FDOT R/W TO BE WRAPPED W/ FILTER FABRIC PER STANDARD (INDEX 280).
7. A FDOT DRIVEWAY CONNECTION PERMIT AND UTILITY CONNECTION PERMIT MUST BE IN-HAND PRIOR TO COMMENCING WORK WITHIN FDOT R/W.
8. ALL CONSTRUCTION, INCLUDING MAINTENANCE OF TRAFFIC, SHALL BE IN ACCORDANCE WITH THE STANDARDS SET FORTH BY THE FDOT, ROADWAY AND TRAFFIC DESIGN STANDARD, (LATEST EDITION).
 - A) THE FDOT OFFICE NEEDS 48 HOUR NOTICE PRIOR TO BEGINNING CONSTRUCTION.
 - B) M.O.T. PLANS ARE ATTACHED TO APPROVED PERMIT PACKAGE.
 - C) M.O.T. SET-UP MUST BE SUPERVISED BY A CERTIFIED PERSON.
 - D) TEST RESULTS WILL BE REQUIRED UPON REQUEST.
 - E) AS-BUILT PLANS ARE REQUIRED IF MAJOR CHANGES ARE MADE.
 - F) ALL DISTURBED AREAS MUST BE SODDED.
 - G) MATERIALS CERTIFICATION WILL BE REQUIRED FOR ALL PAINT AND THERMOPLASTIC TO VERIFY SAID MATERIALS DO NOT CONTAIN LEAD.



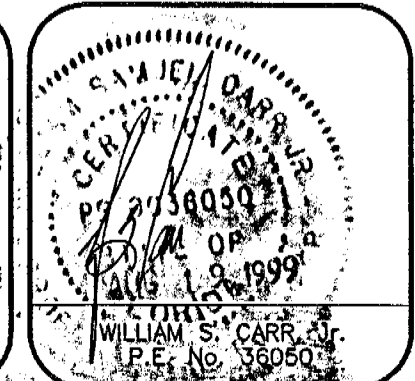
CONSUL-TECH ENGINEERING, INC.
CONSULTING ENGINEERS • LAND PLANNERS • LAND SURVEYORS
728 W. SMITH STREET
ORLANDO, FLORIDA 32804
(407) 843-0094
FAX# (407) 423-0085

CLIENT
THE STERLING COMPANIES
2304-A WINTER WOODS BLVD.
WINTER PARK, FL 32792

PROJECT
C.R. 419 IMPROVEMENTS

TASK
ROADWAY PLAN
C.R. 419 AND S.R. 50

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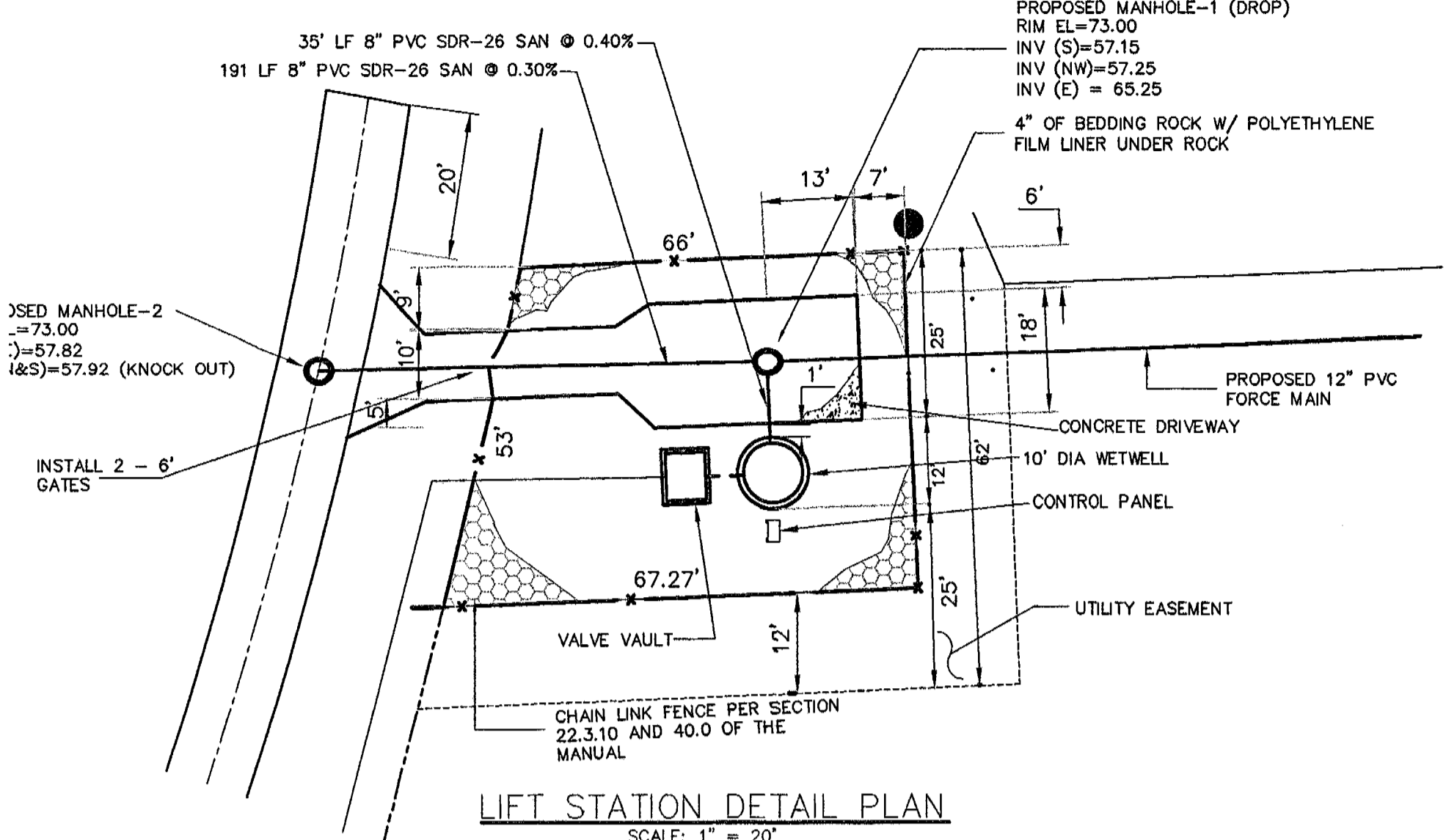
SCALE 1" = 20'
DRAWN BY D.J.V.
DESIGNED BY R.C.R.
CHECKED BY W.S.C.
DATE AUGUST 1999
PROJ. NO. 990112
SHEET 4 OF 17

NOTES:
BOUNDARY AND TOPOGRAPHIC INFORMATION
PROVIDED BY MADDEN ENGINEERING INC.

GRAPHIC SCALE

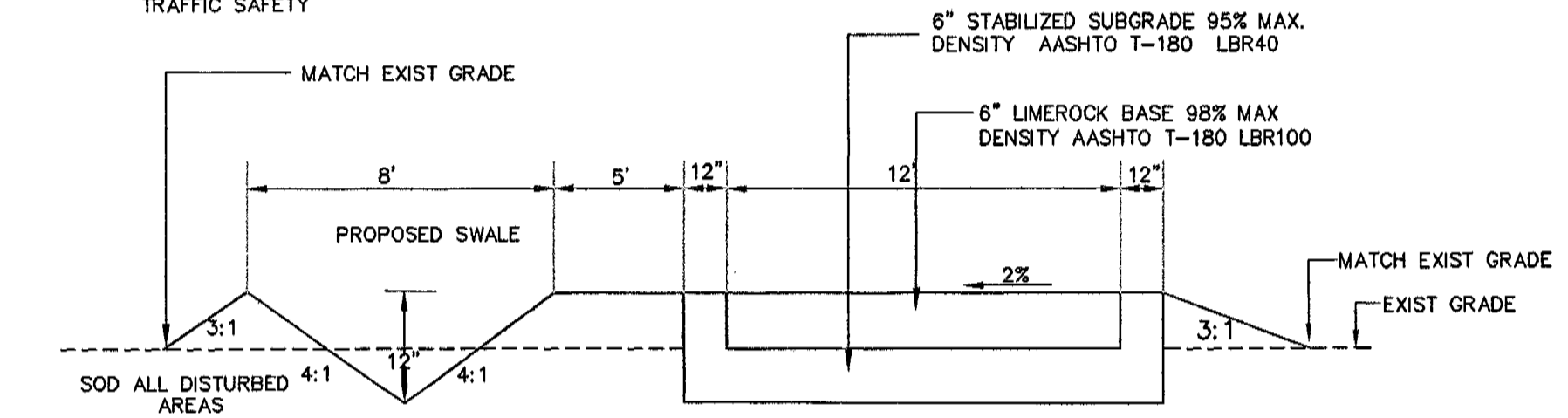
(IN FEET)
1 inch = 60 ft.

FOR CONTINUATION OF 12"
FM SEE SHEET ___ OF ___

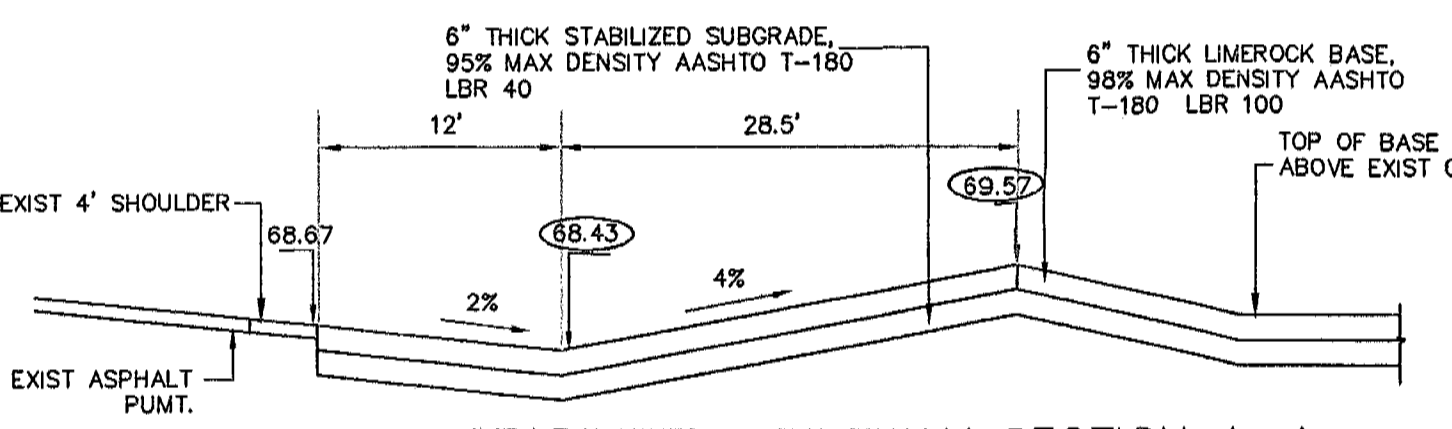


LIFT STATION DETAIL PLAN
SCALE: 1" = 20'

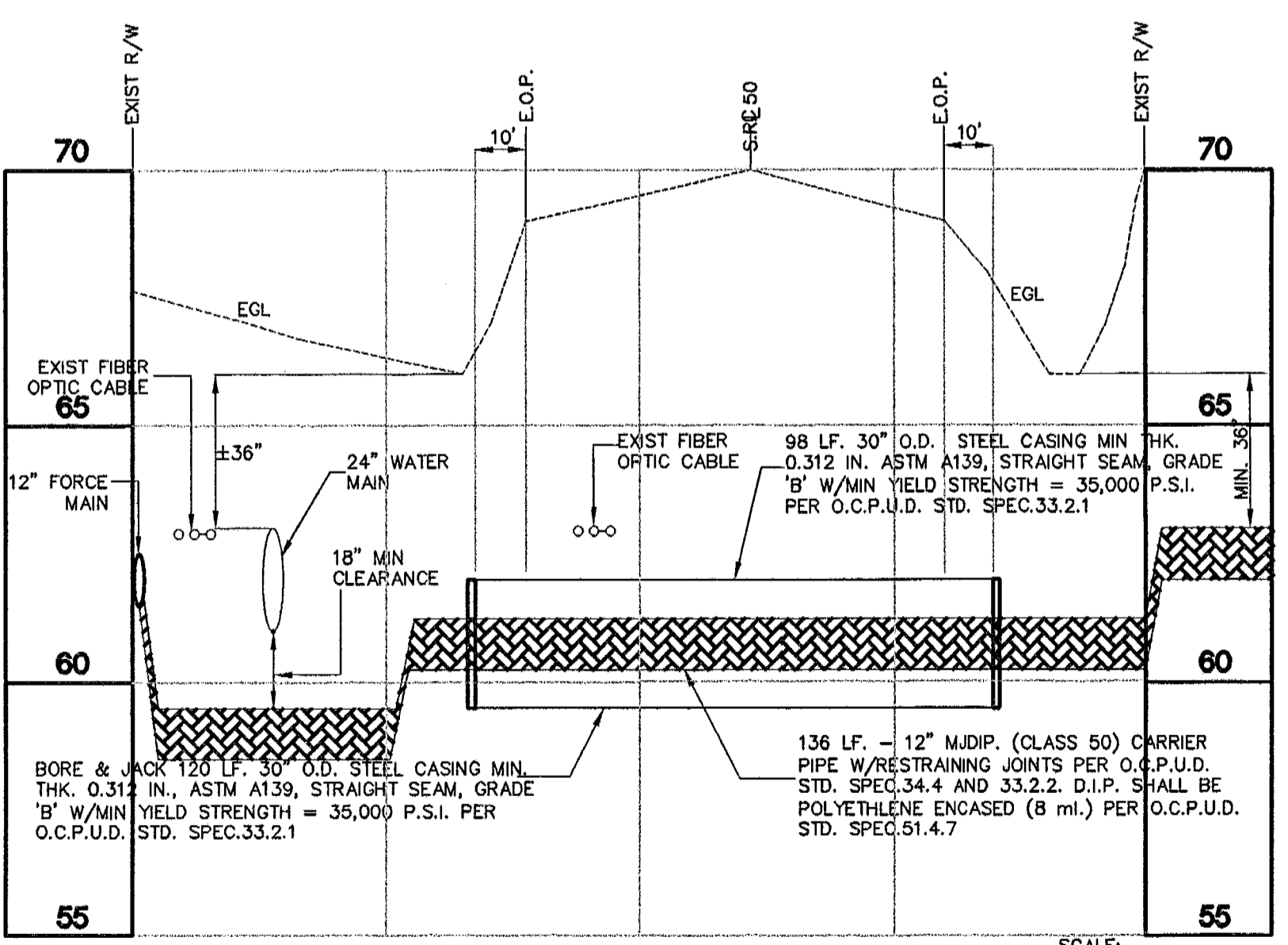
GENERAL NOTES:
IF PUMP STATION IS LOCATED ON A COLLECTION ROAD
ADDITIONAL DRIVEWAY WILL BE REQUIRED FOR THE
TRAFFIC SAFETY



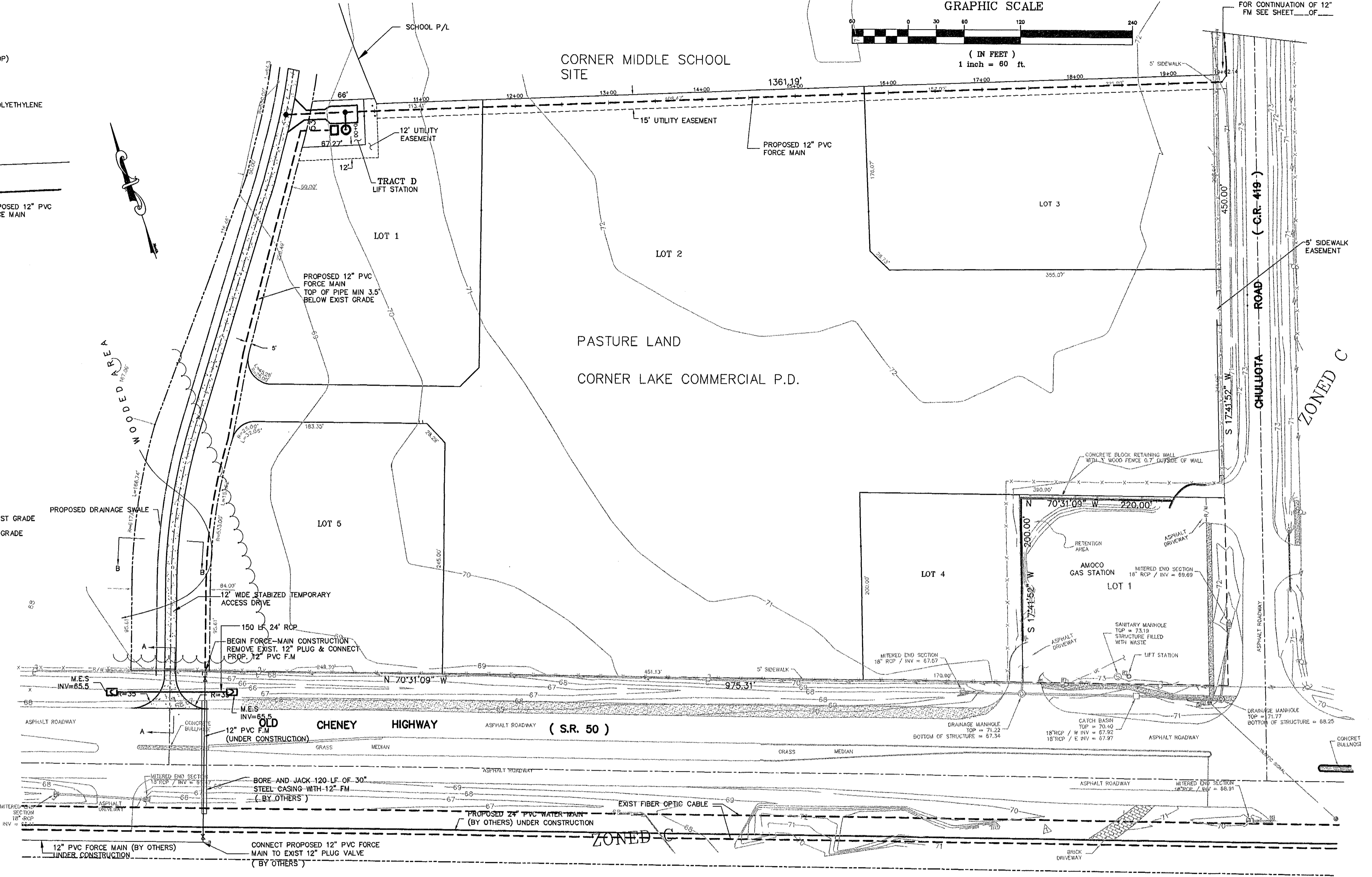
STABILIZED DRIVEWAY SECTION B-B
SCALE: N.T.S.



STABILIZED DRIVEWAY SECTION A-A
SCALE: N.T.S.



BORE & JACK PROFILE
SCALE:
1" = 30' (HORIZONTAL)
1" = 3' (VERTICAL)



PLAN & PROFILE
SCALE:
1" = 60' (HORIZONTAL)
1" = 5' (VERTICAL)

BORE & JACK OPERATIONS:
THE CONTRACTOR WILL CONFORM TO THE CONDITIONS
OF THE PERMIT AND THE STANDARDS ESTABLISHED
BY THE FDOT, IN PARTICULAR, EXHIBIT II, UTILITY
ACCOMMODATIONS GUIDE STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION, (LATEST EDITION)
FOR HIS BORING MATERIAL, EQUIPMENT, PERSONNEL
AND PROCEDURAL REQUIREMENTS, SUCH AS: TRAFFIC
SAFETY, DEWATERING, JACKING PITS, EQUIPMENT SET-UP,
BREAKDOWNS, ETC. WHICH HAVE BEEN ESTABLISHED
BY THE FDOT.

70	WETWELL STA 10+00 RIM EL = 73.00 INV (S) = 57.15 INV (NW) = 57.25 INV (E) = 65.25	EGL	70
65			65
60	TO EXIST F.M. AT R/W		60
55			55

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ORLANDO, FLORIDA 32804
(407) 843-0094
FAX# (407) 423-0085

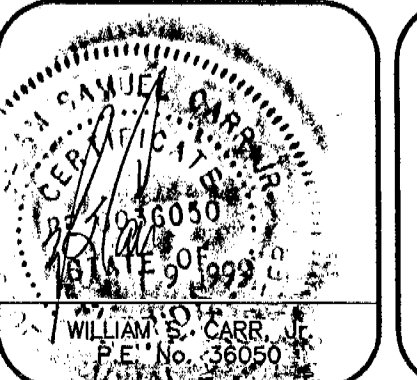
CLIENT
THE STERLING COMPANIES
2304-A WINTER WOODS BLVD.
WINTER PARK, FL 32792

PROJECT
C.R. 419 IMPROVEMENTS

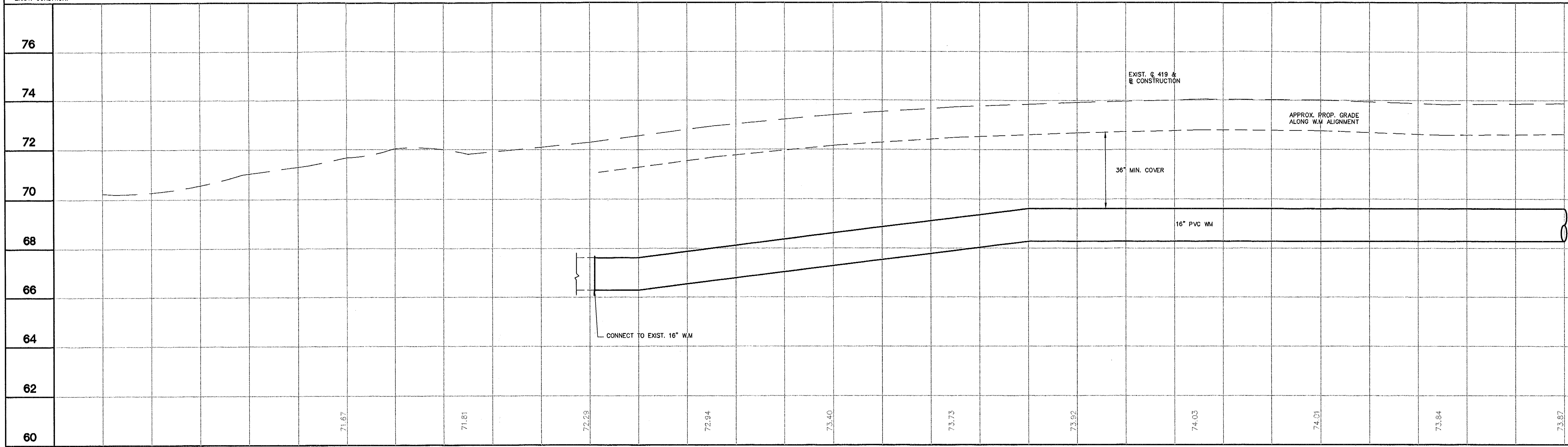
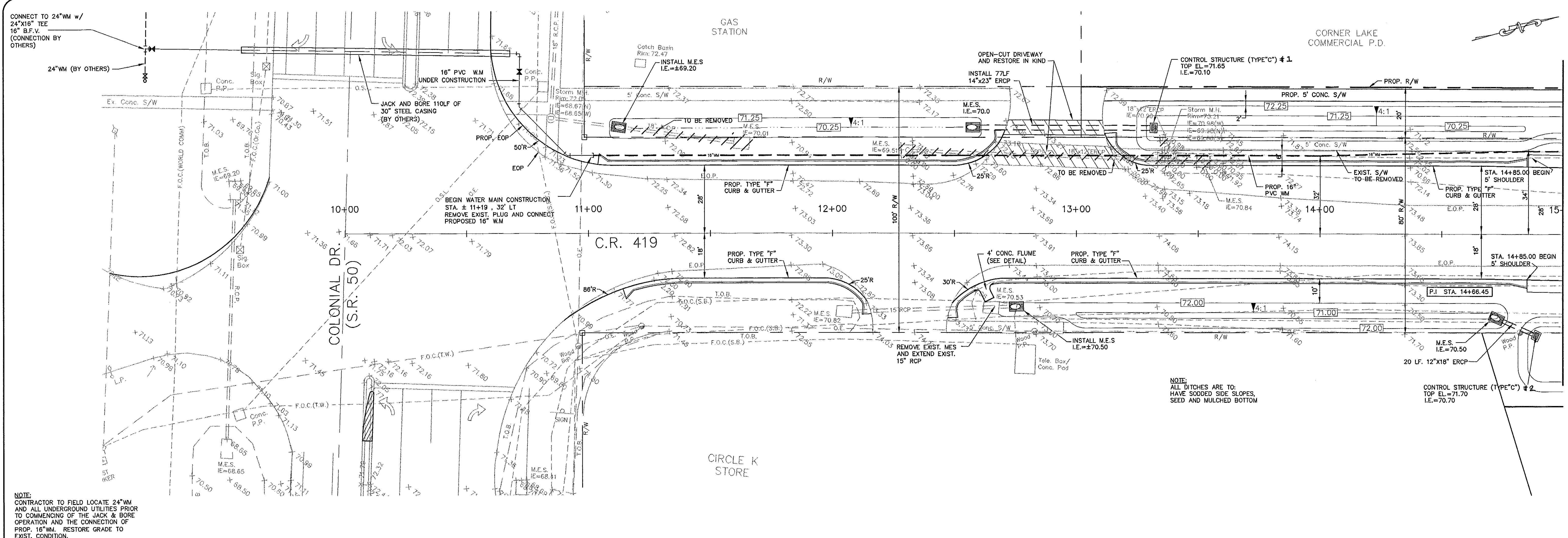
TASK
**CORNER LAKE COMMERCIAL
MASTER LIFT STATION
SITE PLAN**

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SCALE AS NOTED
DRAWN BY D.J.V.
DESIGNED BY R.C.R.
CHECKED BY W.S.C.
DATE AUGUST 1999
PROJ. NO. 990112
SHEET 5 OF 17



MATCH LINE STA. 15+00.00 SEE SHT. 00

NOTE:
CONTRACTOR TO FIELD LOCATE 24\"/>

NOTE:
ALL DITCHES ARE TO:
HAVE SODDED SIDE SLOPES,
SEED AND MULCHED BOTTOM

CONTROL STRUCTURE (TYPE \"C\") # 2
TOP EL.=71.70
I.E.=70.70

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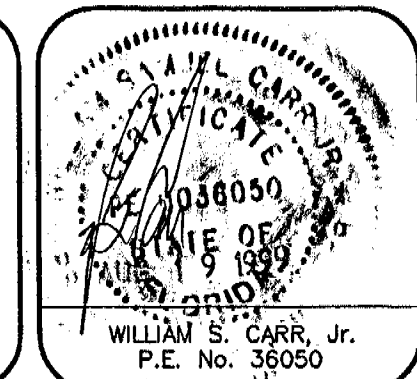
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ORLANDO, FLORIDA 32804
(407) 843-0094
FAX# (407) 423-0085

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THE STERLING COMPANIES
2304-A WINTER WOODS BLVD.
WINTER PARK, FL 32792

PROJECT
C.R. 419 IMPROVEMENTS

TASK
**ROADWAY PLAN AND PROFILE
STA. 10+00 TO STA. 15+00**

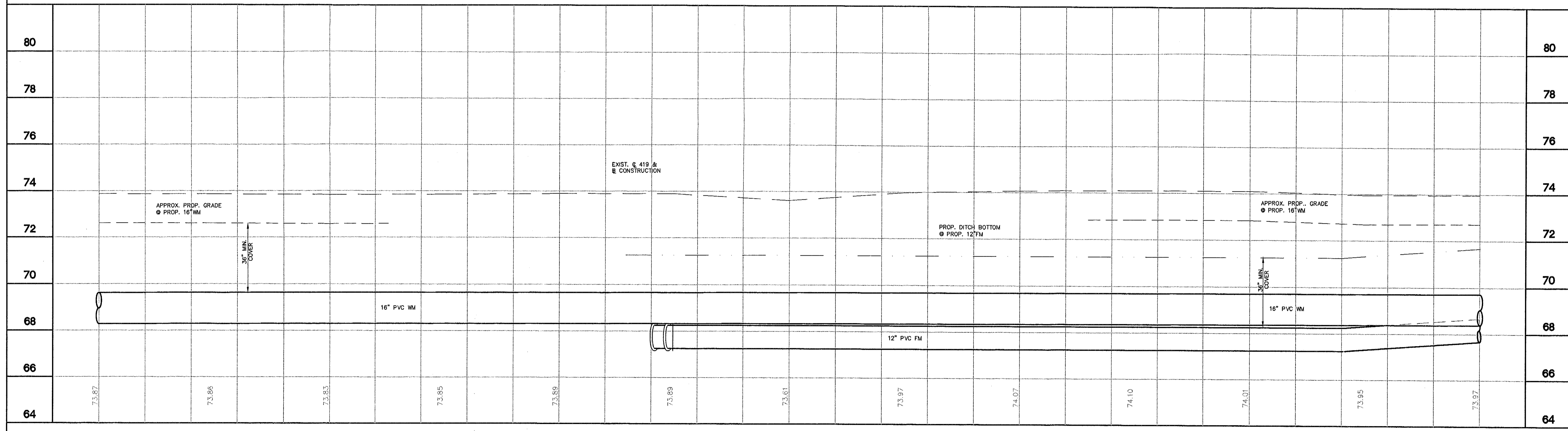
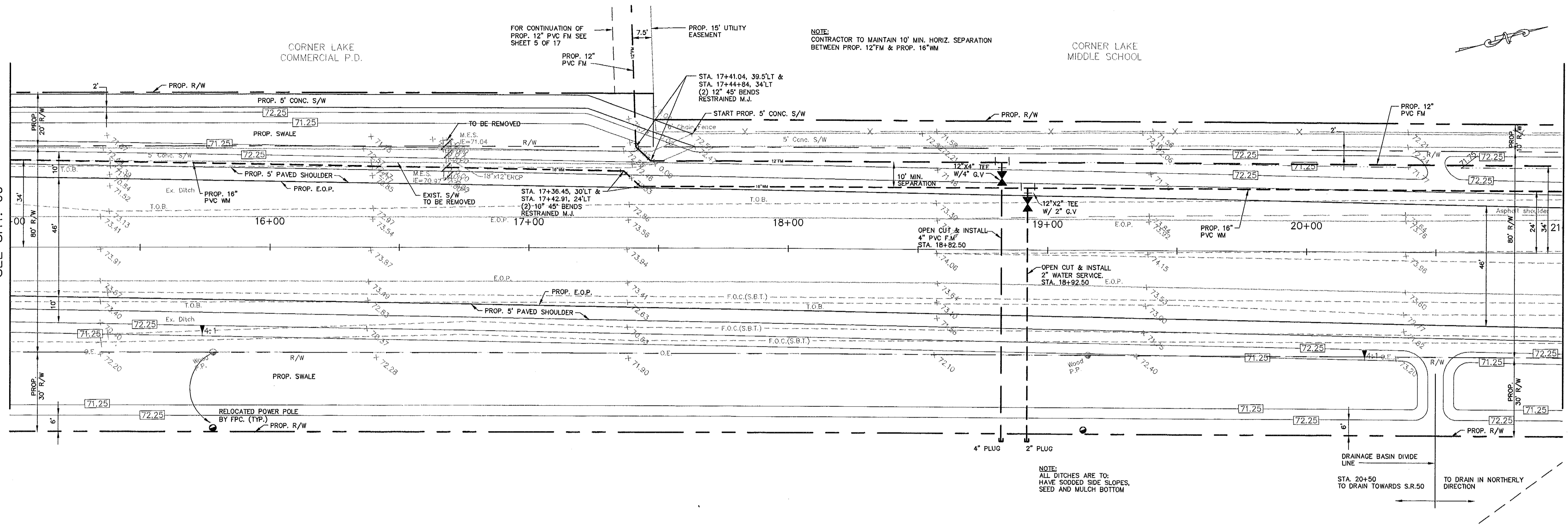
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SCALE AS NOTED
DRAWN BY D.J.V.
DESIGNED BY R.C.R.
CHECKED BY W.S.C.
DATE AUGUST 1999
PROJ. NO. 990112
SHEET 6 OF 17

MATCH LINE STA. 15+00.00
SEE SHT. 00

MATCH LINE STA. 21+00.00
SEE SHT. 00



15+00 16+00 17+00 18+00 19+00 20+00 21+00 SCALE: 1"=20' HOR. 1"=2' VER.

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728 W. SMITH STREET
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(407) 843-0094
FAX# (407) 423-0085

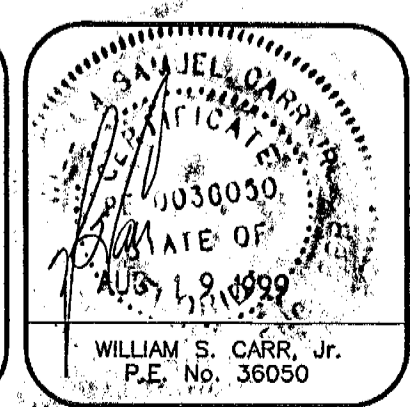
CLIENT
THE STERLING COMPANIES
2304-A WINTER WOODS BLVD.
WINTER PARK, FL 32792

PROJECT
C.R. 419 IMPROVEMENTS

TASK
**ROADWAY PLAN AND PROFILE
STA. 15+00 TO STA. 21+00**

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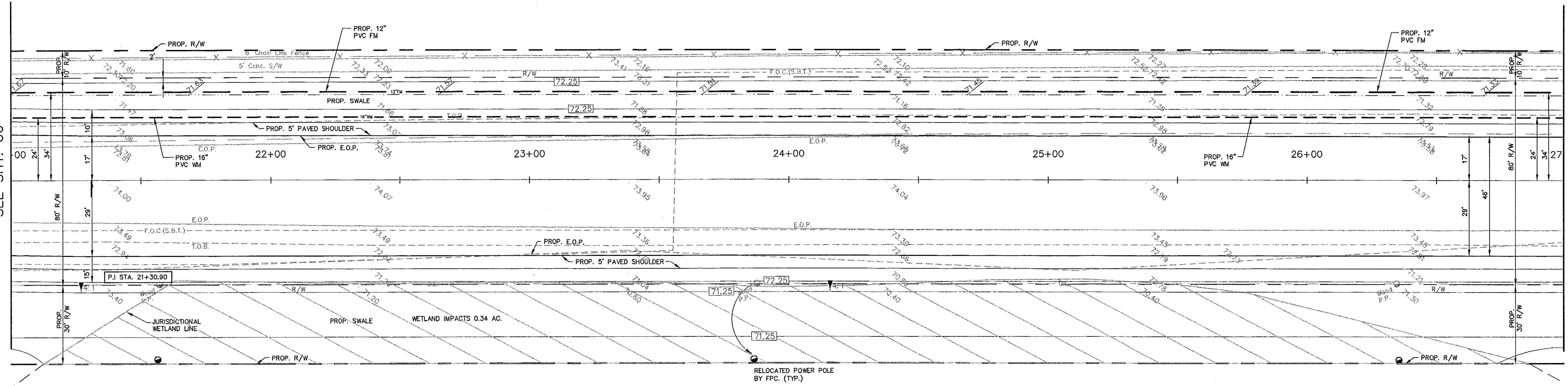
SCALE AS NOTED
DRAWN BY D.J.V.
DESIGNED BY R.C.R.
CHECKED BY W.S.C.
DATE AUGUST 1999
PROJ. NO. 990112
SHEET 7 OF 17

NOTE:
CONTRACTOR TO MAINTAIN 10' MIN. HORIZ. SEPARATION
BETWEEN PROP. 12" FM & PROP. 16" WM

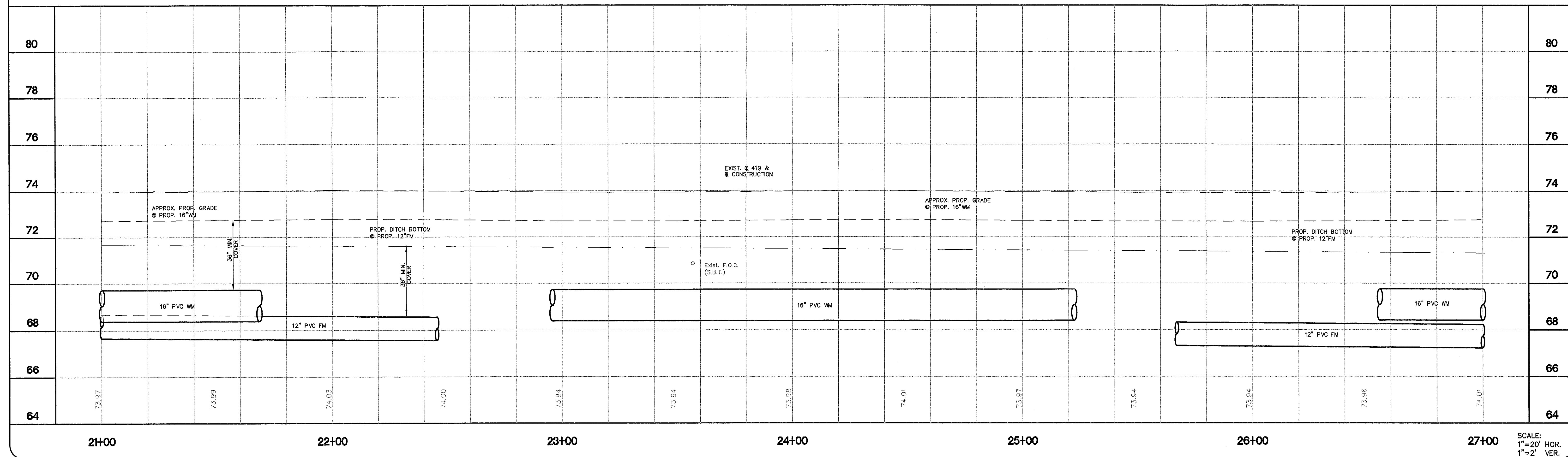
CORNER LAKE
MIDDLE SCHOOL

MATCH LINE STA. 21+00.00
SEE SHT. 00

MATCH LINE STA. 27+00.00
SEE SHT. 00



NOTE:
ALL DITCHES ARE TO:
HAVE SODDED SIDE SLOPES,
SEED AND MULCH BOTTOM



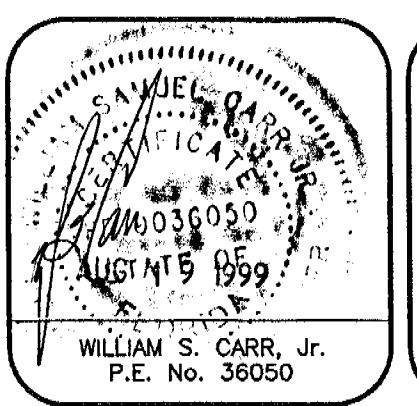
CONSUL-TECH ENGINEERING, INC.
CONSULTING ENGINEERS • LAND PLANNERS • LAND SURVEYORS
728 W. SMITH STREET
ORLANDO, FLORIDA 32804
(407) 843-0094
FAX# (407) 423-0085

CLIENT
THE STERLING COMPANIES
2304-A WINTER WOODS BLVD.
WINTER PARK, FL 32792

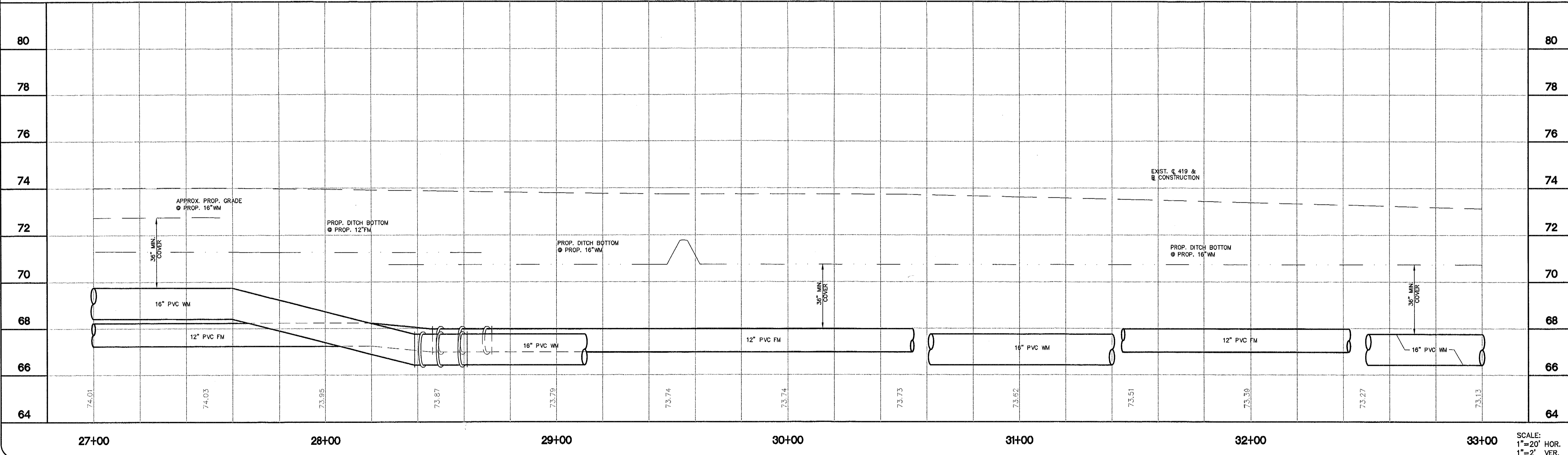
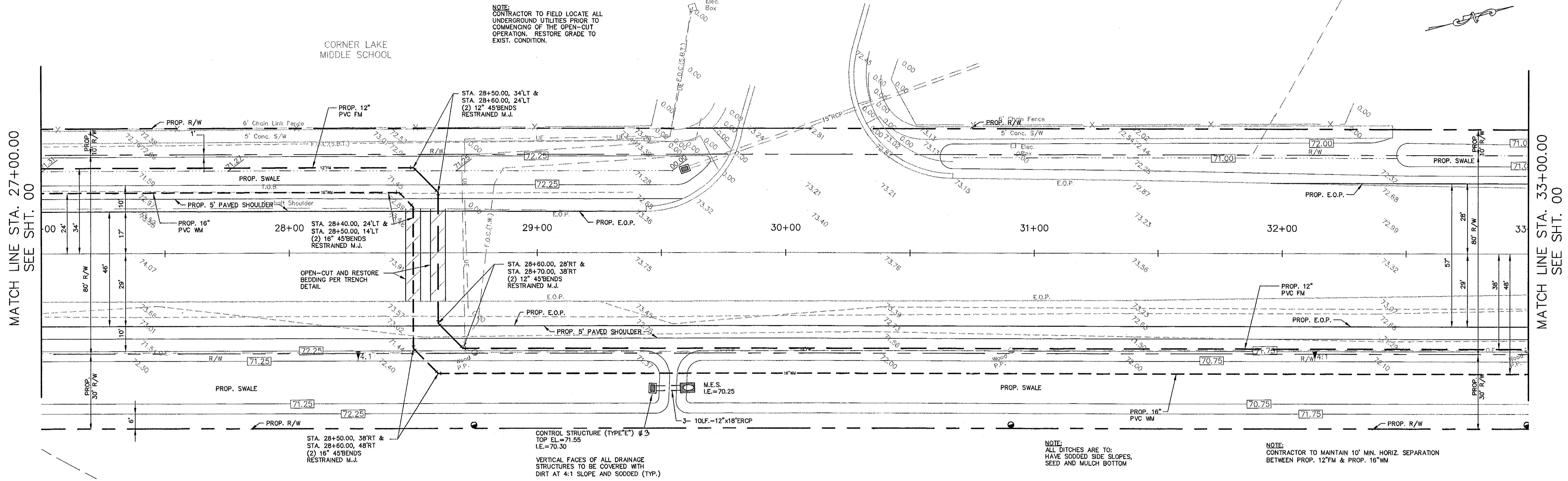
PROJECT
C.R. 419 IMPROVEMENTS

TASK
**ROADWAY PLAN AND PROFILE
STA. 21+00 TO STA. 27+00**

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SCALE: AS NOTED
DRAWN BY: D.J.V.
DESIGNED BY: R.C.R.
CHECKED BY: W.S.C.
DATE: AUGUST 1999
PROJ. NO.: 990112
SHEET: 8 OF 17



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 (407) 843-0094
 FAX# (407) 423-0085

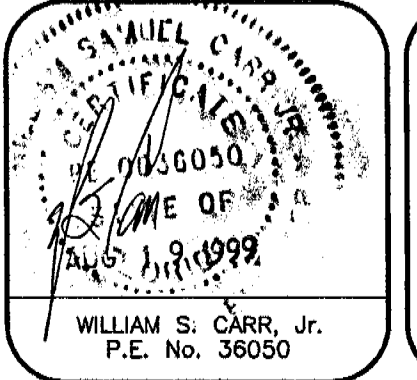
CLIENT
THE STERLING COMPANIES
 2304-A WINTER WOODS BLVD.
 WINTER PARK, FL 32792

PROJECT
C.R. 419 IMPROVEMENTS

TASK
**ROADWAY PLAN AND PROFILE
 STA. 27+00 TO STA. 33+00**

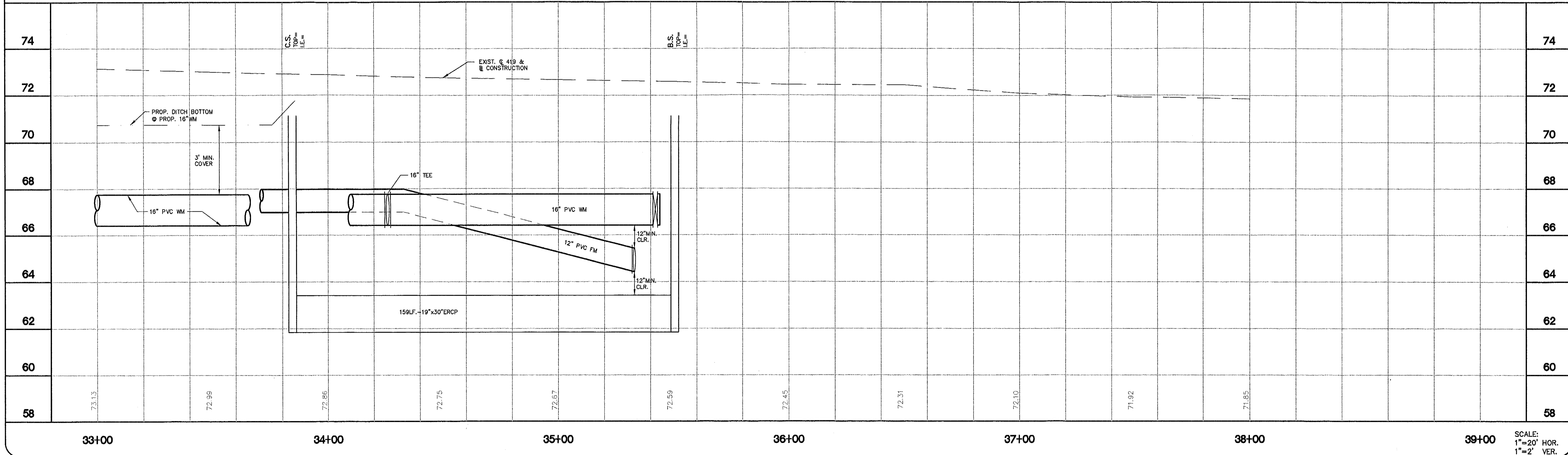
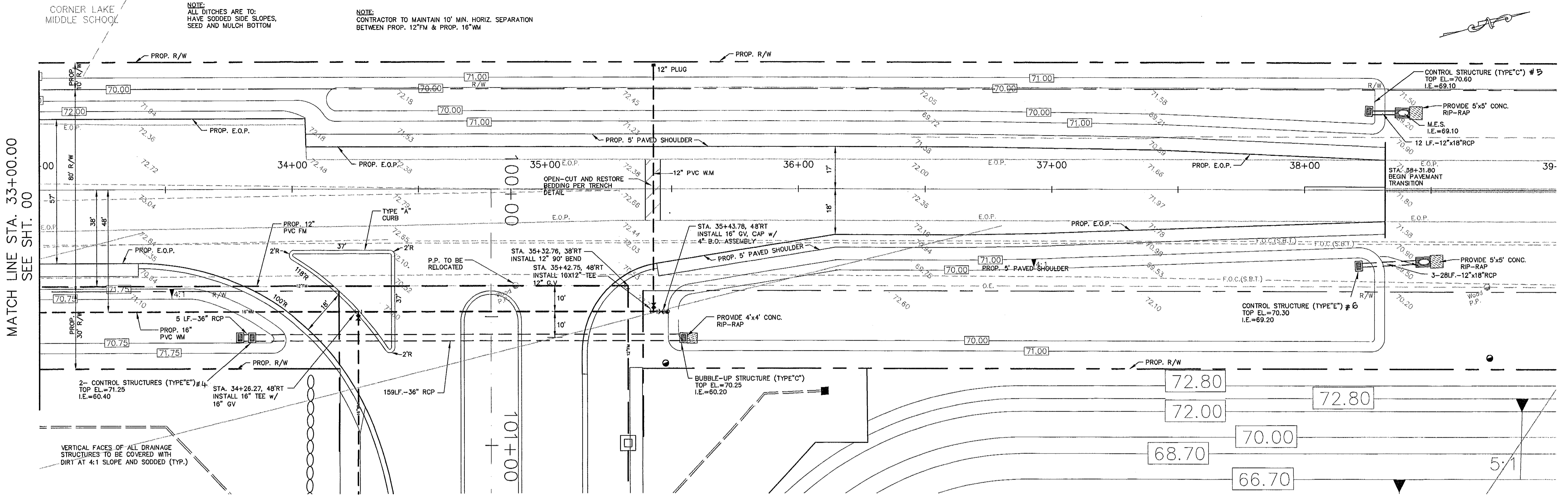
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SCALE: AS NOTED
 1"=20' HOR.
 1"=2' VER.

DRAWN BY: D.J.V.
 DESIGNED BY: R.C.R.
 CHECKED BY: W.S.C.
 DATE: AUGUST 1999
 PROJ. NO.: 990112
 SHEET: 9 OF 17



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 728 W. SMITH STREET
 ORLANDO, FLORIDA 32804
 (407) 843-0094
 FAX# (407) 423-0085

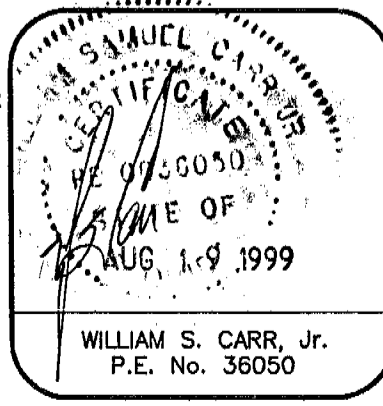
CLIENT
THE STERLING COMPANIES
 2304-A WINTER WOODS BLVD.
 WINTER PARK, FL 32792

PROJECT
C.R. 419 IMPROVEMENTS

TASK
**ROADWAY PLAN AND PROFILE
 STA. 33+00 TO STA. 39+00**

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SCALE AS NOTED

DRAWN BY D.J.V.
 DESIGNED BY R.C.R.
 CHECKED BY W.S.C.
 DATE AUGUST 1999
 PROJ. NO. 990112
 SHEET 10 OF 17

Appendix G – Contamination Report



**CSER
Chuluota Road Roadway
Conceptual Analysis Study
(From SR 50 to Lake Pickett Road)
Orange County, Florida
NADIC Project No.: PR.GEO-
RD20027.1**

Prepared for:

**Johnson, Mirmiran & Thompson, Inc.
615 Crescent Executive Court, Suite 106
Lake Mary, Florida 328746**

Prepared by:

**Nadic Engineering Services, Inc.
601 N. Hart Blvd
Orlando, Florida 32818
407-521-4771**

Consultants in: Civil · Environmental · Geotechnical Engineering
Offices in: Orlando · Miami · Kissimmee

October 4, 2021

Johnson, Mirmiran & Thompson, Inc.
615 Crescent Executive Court, Suite 106
Lake Mary, Florida 328746

Attention: **Greg T. Smith, P.E.**

Re: Contamination Screening Evaluation Report
Chuluota Road Roadway Conceptual Analysis Study
From Colonial Drive (SR 50) to Lake Pickett Road
Orange County Project No.: Y20-830
Orange County, Florida
Nadic Project No. PR.GEO.RD20027.1

Dear **Mr. Smith,**

NADIC Engineering Services, Inc. (NADIC) is pleased to provide this Contamination Screening Evaluation Report (CSER) of facilities near or within the above referenced project alignment. The purpose of this report is to identify the known and potentially known contaminated sites within the vicinity of the project alignment in Orange County, Florida.

NADIC appreciates the opportunity to work with you, **JMT** and the Orange County on this project, and looks forward to a continued association. Please contact us if you have any questions or concern about the report, or if we may be of further assistance.


Sincerely,

NADIC ENGINEERING SERVICES, INC.



Maria Bridge, M.Sc., EI.
Staff Engineer

Ricardina Diaz, M.S.
Staff Geologist



Godwin N. Nnadi, Ph.D., P.E.
Principal Engineer
FL Registration No: 50637

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LIST OF ABBREVIATIONS AND ACRONYMS

AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
CF-FL	State and Tribal Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) maintained by the EPA.
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System (maintained by EPA)
CESQG	Conditionally Exempt Small Quantity Generator
CFR	Code of Federal Regulations
CORRACTS	Identifies hazardous waste handlers with RCRA corrective action activity
CREC	Controlled Recognized Environmental Condition
CSE	Contamination Screening Evaluation
CSER	Contamination Screening Evaluation Report
DOH	Department of Health and Human Services
DRF	Discharge Reporting Form
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right to Know Act (also known as SARA Title III)
ERNS	Emergency Response Notification System
ERS	Environmental Record Search
ESA	Environmental Site Assessment
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FIC/FEC	Federal Institution Controls/Federal Engineering Controls
FOIA	Freedom of Information Act
FR	Federal Register
HREC	Historic Recognized Environmental Condition
ICs	Institutional Controls
LQG	Large Quantity Generator
LLP	Landowner Liability Protections under the Brownfields Amendments
LSCTL	Leachability Soil Cleanup Target Level
LST	Leaking Storage Tanks
LUST	Leaking Underground Storage Tank
LUST-Open-FL	Leaking Underground Storage Tank (LUST) with an ongoing cleanup status.
MSDS	Material Safety Data Sheet
NCP	National Contingency Plan
NFA	No Further Action
NFRAP	Former CERCLIS sites where no further remedial action is planned under
CERCLA NPDES	National Pollutant Discharge Elimination System

LIST OF ABBREVIATIONS AND ACRONYMS CONTINUED

NPL	National Priorities List
NRCS	National Resources Conservation Service
PCBs	Polychlorinated Biphenyls
PEC	Perchloroethylene
PRP	Potentially Responsible Party
PD&E	Project Development and Environment
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
SARA	Superfund Amendments and Reauthorization Act
SQG	Small Quantity Generator
SRCO	Site Rehabilitation Completion Order
SDWWTP	South District Water and Wastewater Treatment Plant
TP	Target Property
TCE	Trichloroethylene
TSDf	Hazardous Waste Treatment, Storage and Disposal facility
US	United States
USCS	Unified Soil Classification System
USDA	United States Department of Agriculture
USGS	United States Geological Survey
UST	Underground Storage Tank

EXECUTIVE SUMMARY

NADIC Engineering Services, Inc. (NADIC) has completed a Contamination Screening Evaluation (CSE) of facilities along Chuluota Road from Colonial Road (SR 50) to Lake Pickett Road in Orange County, Florida. This Contamination Screening Evaluation was conducted in accordance with the Florida Department of Transportation's (FDOT) Project Development and Environment (PD&E Manual, Part 2, Chapter 20, Contamination Impacts), dated July 1, 2020 and conformance with the scope and limitations of the American Society for Testing and Materials (ASTM) Practice E1527-13 for Phase I ESAs. The purpose of the CSE is to identify potential presence/absence of Recognized Environmental Conditions (RECs) as part of the Chuluota Road Roadway Conceptual Analysis (RCA) Study.

In accordance with the PD&E Manual, facilities that may have potential for contamination were identified within prescribed buffers for the project corridor. Each potential contamination site identified was assigned a Contamination Risk Rating (CRR) of **No, Low, Medium, or High**.

Upon completion of the CSE, eight (8) potential contamination facilities were identified; three facilities received a CRPR of **Low**.

Per Orange County's Scope of Services, and in accordance with the PD&E Manual, sites assigned a CRPR of **Low** represent likely no impacts to planned improvements such as right-of-way acquisition, utilities, roadway, bridge, and pond construction. However, in the time period between completion of the CSE and roadway construction, the circumstances can change substantially. A contamination incident may have occurred within that time period or the materials handled may have changed. **NADIC** recommends that this CSER be updated for the facilities identified as No or Low in this report prior to construction activities. In addition, updated should be made if ROW acquisition or construction will occur more than one (1) year from the date of this report.

The following report presents the methodology, qualitative analysis, and recommendations resulting from the Contamination Screening Evaluation for Chuluota Road RCA from Colonial Road to Lake Pickett Road.

1.0 INTRODUCTION

NADIC has conducted a Contamination Screening Evaluation (CSE) of facilities along Chuluota Road from Colonial Road (SR 50) to Lake Pickett Road and prepared a Contamination Screening Evaluation Report (CSER) for Orange County Public Works Department and Transportation Planning Division Roadway Conceptual Analysis (RCA). The CSE was conducted in conformance with methodology described in Part 2, Chapter 20 of Florida Department of Transportation's (FDOT) Project Development and Environment Study (PD&E) Manual, dated July 1, 2020, and in accordance with the scope and limitations of the American Society for Testing and Materials (ASTM) Practice E1527-13 for Phase I ESAs.

The purpose of this CSE was to identify presence/absence of Recognized Environmental Conditions (RECs) within the project corridor along Chuluota Road from Colonial Road to Lake Pickett Road in Orange County. The process of evaluating the project study area for REC's potential contamination is undertaken to avoid costly construction delays as a result of encountering unexpected soil or groundwater contamination. Identification of potential problem areas early in the project development process allows involved parties to make informed decisions regarding avoidance or management of impacts. This CSE consisted of a desktop review of current and historical public records and site reconnaissance. This CSER describes the investigation's methods and findings and provides contamination risk potential ratings (CRPR) for potentially contaminated facilities sites based the presence/absence of Recognized Environmental Conditions (RECs) located in proximity to the project corridor.

This report identifies and evaluates areas of known or potential contamination in the project study area. It includes descriptions of the area's hydrogeological features and land use, and sites with potential concern. Recommendations are made concerning these potentially contaminated sites, as they relate to the proposed project.

1.1 Project Description

The study corridor along Chuluota Road begins at SR 50 and proceeds northeast approximately 1.9 miles to Lake Pickett Road (CR 420). The vicinity map showing the approximate location of the proposed roadway improvements is shown on **Figure 1** in **Appendix A**. The site of the proposed improvements is generally located in Sections 9, 16, 20 and 21, Township 22 South, Range 32 East, in Oviedo SW and Bithlo, Florida.

The RCA has been initiated to study the widening of Chuluota Road from the current two-lane roadway to a four-lane divided road. In addition, the RCA includes evaluation of pedestrian and bike facilities on both sides of the road and accommodation of the East Orange Trail.

1.2 Purpose of Contamination Screening Evaluation (CSE)

The objective of this Contamination Screening Evaluation Report (CSER) was to identify RECs in connection with the project corridor, to the extent feasible pursuant to the processes prescribed in the ASTM E-1527-13 guidelines and in accordance with Part 2, Chapter 20 of the FDOT PD&E Manual, dated July 1, 2020. The term “*REC*” as defined by ASTM is the presence or likely presence of any hazardous substances or petroleum products in, on or at a property:

- Due to any release to the environment
- Under conditions indicative of a release to the environment
- Under conditions that pose a material threat of a future release to the environment

The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

This CSER includes information gathered from federal, state, and local agencies; personal interviews with people familiar with facilities along the project corridor; project site visits were conducted by **NADIC** on September 3 and 10, 2021.

1.3 Scope of Services Summary

The CSE includes a search distance of 500 feet from the right-of-way (ROW) line for petroleum, drycleaners, and non-petroleum facilities; 1,000 feet from the ROW line for non-landfill solid waste sites; and 0.5 mile from the ROW line for the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), NPLs, and landfill sites. This evaluation consisted of the following:

- Review of physical conditions such as topography and soils within the project corridor
- Review of land uses within the project corridor
- Review of public records databases maintained by the Florida Department of Environmental Protection (FDEP), EPA, and local agencies such as OCULUS, Nexus, Geospatial Open Data
- Review of a public records database search report prepared by Environmental Risk Information Services, Inc. (ERIS) and Netronline Environmental
- Review of historical aerial photographs dating to 1947
- Review of historical city directories listing businesses and residences within the project corridor

- Site reconnaissance to identify visual signs of environmental conditions on or adjoining to the study corridor and to verify the locations of potentially contaminated sites identified during desktop review
- Determination of a CRPR for each contamination site
- Preparation of a written report documenting our finds, opinions and conclusions.

1.4 Significant Assumptions

This report was prepared using information obtained from and/or provided by the following sources:

- Visual observation of the project corridor
- Available published information
- Third-party database searched, and
- Local/State government official and/or records

It is assumed that the information obtained through the above methods is valid and accurate as provided. The passage of time, manifestation of latent conditions and occurrence of future events or changes to existing codes/regulations may alter the conclusions and recommendations of this report.

1.5 Limitations and Exceptions

The opinions presented in this report are based upon the scope of services, information obtained through the performance of the services, and the schedule as agreed upon by **NADIC**, **JMT**, and Orange County Public Works Department and Transportation Planning Division. This report is an instrument of professional service and was prepared in accordance with the generally accepted standards and level of skill and care under similar conditions and circumstances established by the environmental consulting industry. No representation, warranty, or guarantee, expressed or implied, is intended or given. Because of the fact that **NADIC** relied upon information prepared by other parties not under contract to **NADIC**, we make no representation as to the accuracy or completeness of such information. This report is expressly for the sole and exclusive use of the party for whom this report was originally prepared, and for a particular purpose. Only the party for whom this report was originally prepared and/or other specifically named parties have the right to make use of and rely upon this report. Reuse of this report or any portion thereof for other than its intended purpose, or if modified, or if used by third parties, shall be at the user's sole risk.

The findings presented in this report apply solely to the Site conditions existing at the time when **NADIC**'s assessment was performed. It must be recognized, however, that a CSE is intended for the purpose of determining the potential for contamination through limited research and

investigative activities and in no way represents a conclusive or complete site characterization. Conditions in other parts of the roadway corridor may vary from those at the locations where data was collected. **NADIC**'s ability to interpret investigation results is related to the availability of the data and the extent of the investigation activities. **NADIC** does not provide any guarantees, certifications, or warranties that a property is free from environmental contamination. Furthermore, nothing contained in this document shall relieve any other party of its responsibility to abide by contract documents and applicable laws, codes, regulations, or standards.

1.6 Special Terms and Conditions

The scope of work for this CSER did not include testing of electrical equipment for the potential presence of PCBs or the assessment of natural hazards such as naturally occurring asbestos or methane gas, assessment of the potential presence of radionuclides, or assessment of non-chemical hazards such as the potential for damage from earthquakes or floods. This report is a desktop review of existing and historical public records and site reconnaissance and did not include an extensive assessment of the environmental compliance status of the facilities or businesses operating along the project corridor, or a health-based risk assessment.

1.7 User Reliance

In preparing this CSER, **NADIC** and **JMT** relied, in whole or in part, on data and information provided by third parties, which information has not been independently verified by **NADIC** and **JMT** and which we have assumed to be accurate, complete, reliable, and current. Therefore, while **NADIC** has utilized the best efforts in preparing this report, we do not warrant or guarantee the conclusions set forth in this report which are dependent or based upon data, information or statements supplied by third parties.

This report is intended for Orange County Public Works Department's sole and exclusive use and is not for the benefit of any third party and may not be distributed to, disclosed in any form to, used by, or relied upon by, any third party without prior written consent of **NADIC** and **JMT** which consent may be withheld in its sole discretion.

Use of this report or any information contained herein, if by any party other than City of Orlando, shall be at the sole risk of such party and shall constitute a release and agreement by such party to defend and indemnify **NADIC** and **JMT** and its affiliates, officers, employees and subcontractors from and against any liability for direct, indirect, incidental, consequential or special loss or damage or other liability of any nature arising from its use of the report or reliance upon any of its content. To the maximum extent permitted by law, such release from and indemnification against liability shall apply in contract, tort (including negligence), strict liability, or any other theory of liability.

2.0 CURRENT LAND USE

The current land uses within the project study area are shown on **Figure 2** in **Appendix A**. Land use information was obtained from Orange County. The project study area is mainly rural and low density residential with institutions and undeveloped/natural lands,

Some Commercial Activity Centers are located at the intersection of Chuluota Road and Colonial Drive (SR 50). Adjacent land uses having the potential for contamination typically include gas stations.

3.0 HYDROGEOLOGICAL FEATURES

3.1 Central Florida Hydrogeologic Features

The geology of Central Florida area is characterized by sedimentary strata formed during three distinct geologic periods. The surficial stratum is composed of undifferentiated Holocene/Pleistocene/Pliocene age sands containing varying amounts of silt and clay, which extend typically to depths on the order of 40 to 60 feet below the ground surface. This upper, mostly sandy zone contains the surficial aquifer (water table). A Miocene age deposit, the Hawthorn Formation, frequently underlies the surficial sands and is typically composed of clay, clayey sands and sandy limestone sometimes containing appreciable amounts of phosphate. This stratum extends to, typically, a depth of 80 to 120 feet beneath the existing ground surface and serves as the confining layer for the underlying Floridian Aquifer. The surficial aquifer (water table) is separated from the deeper Floridan aquifer by a semi-confining unit that is present throughout most of central Florida.

The Eocene age Ocala and Avon Park limestone formations are contained in the Floridian Aquifer, which is one of the most productive aquifers in the world. The extremely high productivity of this aquifer is directly related to its numerous cavities and interconnected channels. The deepest formation of the Eocene age is the Avon Park limestone. The Avon Park limestone consists mostly of hard brown dolostone and tan, granular limestone. In Orange County, the Avon Park limestone formation is approximately 300 to 350 feet thick. Above the Avon Park limestone is the Ocala limestone. The Ocala limestone is a loose to moderately well cemented mass of very small to large microfossils with much less dolostone than the Avon Park limestone. Typically, the Ocala limestone contains almost pure limestone with no dolostone, although the lower few feet can be partly dolomitized in some areas.

Local rainfall, irrigation, lakes, ditches, and streams recharge water in the surficial aquifer; however, upward leakage can occur in areas where the potentiometric surface of the Upper Floridan Aquifer is above the water table. Impacts caused by surface releases of petroleum are typically limited to the upper surficial aquifer due to the low specific gravity of petroleum constituents; however, impacts from certain solvents or inorganic constituents can migrate deeper into the surficial aquifer and potentially affect the Floridan aquifer. Surface overflow generally drains rainfall across the project corridor. Surface topography, stormwater management features (ponds, swales), and local geological features (sinkholes) may influence local surficial groundwater flow directions.

3.2 USGS Quadrangle Map

The “Oviedo, SW and Bithlo, FL” USGS topographic map issued in 2021, in the vicinity of the Chuluota Road was reviewed. The project corridor is shown on an excerpt of the USGS topographic map and presented on **Figure 3 in Appendix A**. The map shows the ground surface elevation in the project vicinity to range from approximately +65 to +75 feet, North American Vertical Datum of 1988 (NAVD-88).

3.3 USDA NRCS Orange County Soil Survey

The Orange County Soil Survey published by the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) is a comprehensive publishes source of information regarding near-surface soil and surficial groundwater depth. The NRCS Orange County Soil Survey was reviewed for information regarding near-surface soil conditions within the study corridor.

The Orange County soil survey identified the following six (6) primary mapping soil units within the limits of the project corridor.

Table 1: USDA/NRCS Soil Survey Summary

Soil Unit	Depth (inches)	Soil Description	AASHTO*	Hydrologic Soil Group	USDA SHGWT (ft.) **
Archbold (2)	0 - 80	Fine sand	A-3	A	3.5 – 6.0
Basinger (3)	0 - 7	Fine sand	A-3	A/D	+2 – 1.0
	7 - 32	Sand, fine sand	A-3, A-2-4		
	32 - 47	Sand, fine sand	A-3, A-2-4		
	47 - 80	Sand, fine sand	A-3, A-2-4		
Pomello (34)	0 - 40	Fine sand	A-3	A	2.0 – 3.5
	40 - 55	Coarse sand, sand, fine sand	A-3, A-2-4		
	55 - 80	Coarse sand, sand, fine sand	A-3		

Soil Unit	Depth (inches)	Soil Description	AASHTO*	Hydrologic Soil Group	USDA SHGWT (ft.) **
St. Johns (37)	0 - 12	Fine sand	A-3	B/D	0 – 1.0
	12 - 24	Sand, fine sand	A-3		
	24 - 44	Sand, fine sand, loamy fine sand	A-3, A-2-4		
	44 - 80	Sand, fine sand	A-3		
Smyrna-Smyrna (44)	0 - 17	Fine sand	A-3, A-2-4	A/D	0 – 1.0
	17 - 27	Sand, fine sand, loamy fine sand	A-3, A-2-4		
	27 - 80	Sand, fine sand	A-3		
Zolfo (53)	0 – 6	Fine sand	A-3, A-2-4	A	2 – 3.5
	6 – 64	Fine sand, sand	A-3, A-2-4		
	64 - 60	Fine sand, sand	A-3, A-2-4		

*AASHTO: American Association of State Highway and Transportation Officials.

**SHGWT: Seasonal High Groundwater Table

Refer to **Figures 4A** and **4B** in **Appendix A** for a reproduction of the USDA NRCS Orange County Soil Survey map for the project area. The NCRS Soil Survey generally identifies these soil types with poorly to moderately well drained soil, with permeability ranging from poorly to very high. The NRCS Soil Survey predicts the groundwater levels for these soil types to range from the natural ground surface to 72 inches below the natural ground surface.

Information from the NCRS Soil Survey is very general and may be outdated due to recent developments in the project site vicinity. Therefore, it may not reflect the actual soil and groundwater conditions, particularly if development has modified the natural soil conditions or surface and near surface drainage.

4.0 METHODOLOGY

The methodology used to complete this CSER included obtaining pertinent environmental records from federal, state and local regulatory agencies, reviewing and evaluating a computerized environmental database, interviewing people knowledgeable of the project area, performing a visual reconnaissance of the project corridor and surrounding area, and evaluating potential environmental impacts along the project corridor. **NADIC** defined the corridor buffer zone to be approximately 1000 feet (0.19 miles) wide.

4.1 Historical Data Review

4.1.1 Historical Aerial Photograph Review

Historical aerial photographs of the project corridor were reviewed to evaluate past land uses and to identify features that could indicate recognized environmental concerns in connection with the project corridor. Historical aerial photographs were accessed through ERIS and Google Earth and were not available before 1947. Aerial photographs for the following years were reviewed: 1947, 1952, 1957, 1969, 1977, 1984, 1990, 1995, 1999, 2005, 2006, 2010, 2013, 2015, 2017 and 2019. These aerial photographs are presented in **Appendix B**.

A summary of the historical aerial review is presented in **Table 2**, below.

**Table 2:
Historical Aerial Photograph Review**

Year	Database Source	Summary
1947	ERIS	An unimproved roadway is apparent along Chuluota Road corridor which began at Old Cheney Highway. The project corridor is predominately rural and undeveloped.
1952	ERIS	SR 50 appears to have been constructed. Chuluota Road still rural and undeveloped.
1957	ERIS	The project corridor remains relatively unchanged
1969	FDOT	Project corridor remains unchanged. Development apparent on both sides of project corridor at SR 50.
1977	USGS	Project corridor remains unchanged. No development on west side of project corridor at SR 50.
1984	NHAP	Trails are visible within the south portion of the corridor. Project corridor remains unchanged.
1990	USGS	Project corridor remains unchanged
1995	USGS	Development at both side of project corridor at SR 50. Project corridor remains unchanged.
1999	USGS	Corner Lake Middle School visible. Remainder of the project corridor unchanged
2005	NAIP	Developments are visible within the project corridor
2006	NAIP	More developments are visible
2010	NAIP	Columbia Elementary School is visible. More development north of the elementary school
2013	NAIP	Project Corridor remain unchanged
2015	NAIP	Project Corridor remain unchanged
2017	NAIP	Project Corridor remain unchanged
2019	NAIP	Project Corridor remain unchanged

4.1.2 USGS Topographic Quadrangles

USGS topographic quadrangle maps were created to map the nation's landscape starting in 1879. Topographic maps show geographic features including railroads, rivers, streams, lakes, boundaries, landfills, structures, roadways, and several other features. For this type of study features such as railroads, landfills, depressions, and agriculture (especially row crops) provide indications of areas of potential for contaminants or buried debris.

NADIC reviews the following historical topographic quadrangle maps for the project provided by ERIS: 1953, 1970, 1980, and 2015. No indications of landfills, railroads, row crops or other potential contamination were identified. The topographic maps are presented in **Appendix C**.

4.1.3 City Directories

City directories are listings of businesses and residences in an area, similar to a standard telephone book. Listings are organized by address, phone number, or name. For studies of this type, the listing by address for previous years is generally utilized to identify past land uses within the project corridor; however, city directories do not contain any information regarding tanks or hazardous materials. **NADIC** contracted ERIS to search city directories for the project corridor presented in **Appendix D**. City directories were available from 1925 through 2020 for the project corridor.

4.1.4 Fire Insurance Maps

Insurance companies prepared fire insurance maps, such as those created by the Sanborn Map Company, for use in assessing fire risk, particularly in historically urban areas. These maps contain details about building construction, business type, building contents, fuel storage tanks, and other factors affecting fire risk. **NADIC** requested that ERIS perform a search of publicly available historical fire insurance maps for the site and its vicinity. According to ERIS, no maps were available for the project corridor, as presented in **Appendix E**.

4.2 Corridor Reconnaissance and interviews

NADIC performed site visits on September 16 and 20, 2021. The purpose of the reconnaissance was to document existing conditions and evaluate whether current land uses could potentially result in hazardous materials or petroleum product contamination of environmental media. The properties within the project corridor were visually inspected for evidence of contamination such as stressed vegetation, accumulated areas of debris, evidence of buried materials, etc. Potential contamination sites were identified as well as specific details of observations made in the field.

Sites presenting a risk for contamination based on observations made during site reconnaissance are listed in the **Table** below shown as "Surveyed Facilities".

Table 3: Surveyed Facilities

Facility Name/ID.	Address	Facility Type	Survey Status
Circle K #7502 DEP Facility 8521400	16959 E COLONIAL DR (SR 50), Orlando, FL 32820	Closed Gas Station	No forwarding Address
Circle K #2708972 DEP Facility 8521400 9101787	16891 E COLONIAL DR Orlando, FL 32820	Open	Interviewed Manager and emailed questionnaire. No response

Photographs taken during site reconnaissance to document general site conditions and pertinent observations are provided in **Appendix F**.

NADIC representative also interviewed representative occupants of the related properties along the corridor. In addition, **NADIC** provided questionnaires to the facility representative to complete. Sample questionnaire document is provided in **Appendix G**.

None of the questionnaires were collected, though we followed up with emails. Attempts were made to interview regulatory agency personnel regarding potential contamination sources along the project corridor but were recommended to search the public databases such as those available through FDEP's MapDirect, Nexus, and OCULUS databases at the state level, and EPA's Superfund and Envirofacts databases at the federal level.

4.3 Standard Environmental Record Sources

A public records review was performed to identify documented contamination and potential contamination sources within the project corridor or within buffer distances prescribed in the PD&E Manual, dated July 1, 2020. A search of available environmental records was conducted by ERIS. The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquires (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527 -13) and FDOT PD&E Manual, Part 2, Chapter 20, Contamination Impacts), dated July 1, 2020. A copy of ERIS Database Report is provided as **Appendix H**.

More detailed information regarding the individual facilities searched along the corridor is included in the ERIS report in **Appendix H**. The ERIS Report also includes information regarding the status of the facility, distance from the project corridor, reports of discharge, and clean-up status. The ERIS Data Report also includes a description of the various information sources and database update information.

4.3.1 Federal Database Sources

The following federal databases were included in the ERIS database search for the project corridor and prescribed buffer zones:

- NPL “Superfund” Sites
- Proposed NPL Sites
- Superfund Enterprise Management System (SEMS)
- Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) Sites
- CERCLIS Liens
- RCRA Corrective Action Sites (CORRACTS)
- RCRA Non-CORRACTS Treatment, Storage, and Disposal (TSD) Sites
- RCRA generator lists (conditionally exempt, small-quantity, and large-quantity generators)
- RCRA Inventory of Open Dumps
- Facility Index System (FINDS) Sites
- Toxic Release Inventory System (TRIS)
- Hazardous Materials Incident Response System (HMIRS) Sites
- Federal Institutional Controls/Engineering Controls Registry (Federal IC/EC)
- Emergency Response Notification System (ERNS) Sites

4.3.2 State Database Sources

The following state-level database sources, primarily maintained by FDEP, were included in the ERIS search for the project corridor and prescribed buffer zones:

- State and tribal NPL and CERCLIS equivalent sites
- State and tribal lists of hazardous waste sites identified for investigation or remediation – dry cleaning facilities
- State and tribal landfill and solid waste disposal sites
- State and tribal registered USTs and aboveground storage tanks (AST)
- State and tribal leaking storage tanks (LST)
- State and tribal IC/EC
- State and tribal voluntary cleanup sites
- State and tribal Brownfield sites

4.3.3 Additional Data Sources

The following additional sources were reviewed for supplemental information:

- FDEP online database, including OCULUS, Nexus, Geospatial Open Data and Florida Sites Summary List. Selected Regulatory documents are presented in **Appendix I**.

- Netronline Environmental Radius Report

5.0 QUALITATIVE ANALYSIS

The environmentally sensitive sites within the project corridor could impact the cost of construction of the proposed roadway improvements. **NADIC** defined the corridor buffer zone to be approximately 500 feet from the ROW line for petroleum, drycleaners and non-petroleum sites and 1,000 feet from ROW line for non-landfill solid waste such as recycling facilities, transfer stations and debris placement areas.

A determination of the risk of encountering contamination was made for all facilities after review of all available information. These determinations are based on the following: existence of contamination at the facility, direction of groundwater flows, clean-up efforts on the known contaminated sites, distance of the subject property to the proposed roadway improvements corridor, questionnaire results, where applicable, and on the degree of concern to the proposed project. The Contamination Risk Potential Rating (CRPR) identifies four degrees of risk for general reference purposes.

Based on our review of the FDEP database, FDEP Florida Site Summary lists and the **ERIS** Database report **NADIC** located environmental sensitive properties adjacent to the project corridor. Based on the review, no known contaminated facility is located within the proposed project improvements buffer

5.1 Contamination Risk Potential Rating

A CRPR was assigned to each potentially contaminated site in the project corridor, as determined by the public records review, historical aerial photograph review, site reconnaissance, and interviews. The CRPR system was developed by FDOT (Part 2, Chapter 20 PD&E, dated July 1, 2020) and is defined by four categories:

The risk ratings are defined as follows:

1. **No:** After review of all available information on the property, there is no indication contamination would be a problem at the facility. It is possible that contaminants could have been handled on the property; however, all available information (FDEP, monitoring wells, water and soil samples, etc.) indicate problems should not be expected.
2. **Low:** The former or current site operation has hazardous waste generator identification (ID) number, or deals with hazardous materials; however, based on all available information, including sampling and test results, there is no reason to believe there would be any involvement with contamination in relation to this project.

3. **Medium:** The subject property is located near or at the same location of as a known contaminated site, and there is a record shown that a cleanup effort has performed in the vicinity. If there is insufficient information (such as a lack of regulatory records or site historical documents) to make a determination as to the potential for contamination impact, and there is reasonable suspicion that contamination may exist, the property should be rated at least as a “Medium.” Properties used historically as gasoline stations that have not been evaluated or assessed by regulatory agencies and sites with abandoned-in-place underground petroleum storage tanks or currently operating gasoline stations should receive this rating. Included within this risk rating are sites which present a moderate degree of concern regarding contamination but do not have sufficient indications of contaminations to be included in high-risk category.
4. **High:** After a review of all available information, there is a definite potential for contamination problems. Further assessment will be required to determine the actual presence and/or levels of contamination and the need of remedial action. Included in this category is a facility located in the same location of known contaminated sites that has no record of a cleanup effort.

The CRPRs are based on current conditions and may not reflect conditions that may exist in the future. Based on the criteria established above, the facilities are grouped as follows:

5.2 Potential Contamination Sites

Eight (8) potentially contaminated sites were identified within the study corridor and were assigned a **No** and **Low**. None of the sites identified was assigned a rating of **Medium** or **High**. **Table 4** lists the sites identified in the study corridor and presents a summary of associated public records reviews and site reconnaissance observations. Documents obtained from the public record search for various sites are included in **Appendix H**

Table 4:
Potential Contamination Sites

Site No.	Facility ID	Site Name	Site Address	Source/Databas e	Risk Ratin g	Comments
1	FLR0001 57024	Columbia Elementary School	18501 Cypress Lake Glen Blvd Orlando, FL 32820	RCRA VSQG	No	This facility is an OCPS which uses a Very Small Quantity Generator. As of Jun 2021, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility. Based on records review and site reconnaissance, a risk of no was assigned.
2	FLR0001 56539	Corner Lake Middle School	1700 Chuluota RD, Orlando FL 32820-1401	RCRA VSQG FINDS/FRS	No	This facility is an OCPS which uses a Very Small Quantity Generator. As of Jun 2021, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility. Based on records review and site reconnaissance, a risk of no was assigned.

Contamination Screening Evaluation Report:

Chuluota Road Roadway Conceptual Analysis Study: From SR 50 to Lake Pickett Road

Project No.: PR.GEO-RD20027.1

October 4, 2021

3	#60558/ /9101787	AMOCO OIL STATION/ CIRCLE K #2708972	16891 E COLONIAL DR ORLANDO FL 32820	RCRA NON- GEN UST		As of Jun 2021, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility. This facility has five (5) USTs (3, 12,000; 1 15,000 and 1, 20,000-gallon gasoline). The three (3) 12,000-gallon tanks were installed May 1, 1991 and the 15,000- and 20,000-gallon tanks were installed in August 1, 2004. Based on the records reviewed, the site is assigned a risk rating of Low
4	8521400	CIRCLE K #7502	16959 E COLONIAL DR (E HWY 50)	LST, UST, RCRA VSQG, SITE, WELL SURVE ILLAN CE	Low	This facility had four (4) 10,000-gallon USTs installed February 1, 1985. Discharge occurred 11/6/1988. Pollutant: unleaded gas and leaded gas contaminated groundwater. Discharge Cleanup started 4/30/2007. Site rehabilitation completion report submitted 9/21/2021. On 9/23/2021, OCEPD submitted to FDEP the SRCO package for review and form processing. Per OCEPD the site qualifies for Site Rehabilitation Completion pursuant to Substation 62-780.680(1). Based on the records reviewed, the site is assigned a risk rating of Low
5	1100563 45192	RANGER CONSTRUC TION INDUSTRIE S INC	CHULUOT A RD AT LAKE PICKETT RD	FINDS/ FRS	No	This facility is located near the intersection of Chuluota Road and Lake Pickett Road. FDEP approved a NOI permit on 12/09/2013 (updated 01/11/2016), for stormwater discharged. Based on records review and site reconnaissance, the facility was assigned a risk rating of no.
6	101487/8 6888	HONEY BEE RANCH LCD/ MONARCH MULCH, LLC	16877 EAST COLONIAL DRIVE #322 ORLANDO FL 32820	SWF/L F	No	This facility is located about 311 feet South West of the project corridor ROW. It is identified as a closed solid waste facility (yard waste facility). Based on records review and site reconnaissance, the facility was assigned a risk rating of no.
7	FLR0002 10625	TRACTOR SUPPLY COMPANY #560	16849 E COLONIAL DR ORLANDO FL 32820- 1910	RCRA VSQG	No	This facility is located about 512 feet South West of the project corridor ROW. It is identified as a tractor supply facility. As of June 2021, there is no compliance monitoring and enforcement (violation) records associated with the facility. Based on records review and site reconnaissance, the facility was assigned a risk rating of no.
8	9810114	PUBLIX SUPER MARKET #897	16825 E COLONIAL DR ORLANDO FL 32820	AST	LOW	This facility has one (1) 1,000-gallon aboveground storage system (AST). It has a spill bucket containment and a rupture alarm that provides electronic release detection. Based on records review and site reconnaissance, the facility was assigned a risk rating of Low.

Abbreviations:

AST: Aboveground Storage Tank	OCPS: Orange County Public School	OCPS: Orange County Public School
FEDP: Florida Department of Environmental Protection	RCRA: Resource Conservation and Recovery Act	STCS: Storage Tank/Contaminated Facility Search
FINDS: Facility Index System	ROW: Right-of-Way	UST: Underground Storage Tank
FRS: Facility Registry Service	SAR: Site Assessment/Resource Removal Report	
LST: Leaking Storage Tank	SCTL: Soil Cleanup Target Level	
NOI: Notice of Intent	SRCO: Site Rehabilitation Completion Order	

5.3 Agricultural Land Uses

Agricultural activities usually involve the use and storage of agrochemicals such as fertilizer, herbicides, pesticides, and petroleum products. Agrochemicals when applied in farmland usually accumulate in the shallow subsurface and can leach into groundwater.

Information obtained from the historical aerial photograph review and site reconnaissance indicated that no agricultural lands were located within the study corridor.

5.4 Well Sites

NADIC utilized ERIS to conduct a physical setting search (see **Appendix J**), which includes registered well sites within the project corridor. The search was primarily conducted to identify the locations of permitted public water supply wells; however, the search also included Public Water Systems Violations and Enforcement data (PWSV), Safe Drinking Water Information System (SDWIS), Florida Subsidence Incident Report, Oil and Gas Wells, Public Water Supply Wells (PWSW), Water Well Completion – St. Johns River Water Management District (SJRWMD), Water Well Construction Permits, and Well Surveillance Program Water Wells. The database search identified the following Public Water Systems Violations and Enforcement data wells (Table 5) within the project corridor buffer zone.

Table 5: Public Water Systems Violation and Enforcement Data Well

Map No.	Well ID	Distance (feet)	PWS Activity Description	PWS Deactivation Date	Source
1	FL3484269	157	Inactive	05/07/2002	PWSV, SDWIS
20	FL3484294	905	Inactive	03/08/1995	PWSV
33	FL3484217	1,188	Inactive	21/05/1993	PWSV

6.0 RECOMMENDATION

A total of eight (8) sites were identified within or adjacent to the project vicinity. Five (5) facilities were assigned a No risk assessment and three (3) were assigned Low risk assessment. No facility was assigned a Medium or High risk.

In the time period between completion of the CSE and roadway construction, the circumstances can change substantially. A contamination incident may have occurred within that time period or the materials handled may have changed. **NADIC** recommends that this CSER be updated for the facilities identified as No or Low in this report prior to construction activities. In addition, updated

should be made if ROW acquisition or construction will occur more than one (1) year from the date of this report.

Potentially contaminated sites, within or near proposed roadway improvement corridor, have been identified and evaluated. Prior to roadway construction, an updated CSER is recommended to be performed to determine if the conclusion made in this report has changed. Resolution of problems associated with contamination should be coordinated with appropriate regulatory agencies and, prior to construction, appropriate action will be taken where applicable.

7.0 CLOSURE

It is our opinion that a complete environmental assessment of known/potentially contaminated facilities be conducted prior to roadway construction. The major concern would be dewatering at or near known contaminated areas. Extensive dewatering can cause contamination migration and may require costly treatment systems to obtain approval.

Professional judgments expressed herein are based on the facts currently available within the limits of the existing data from the EDR report, FDEP and the scope of work. To the extent that more definite conclusions are desired than are warranted by the currently available facts, it is specifically **NADIC's** intent that the conclusions and recommendations made herein are intended as guidance.

8.0 REFERENCES

American Standard Testing and Materials, ASTM E1527-13; Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.

Florida Department of Environmental Protection (FDEP) database, September 20, 2021.

Florida Department of Transportation's (FDOT) Project Development and Environment (PD&E) Manual, Part 2, Chapter 20, Contamination Impacts), dated July 1, 2020.

Florida Department of Environmental Protection Electronic Document Management System (OCULUS, 6.2; Nexus Enterprise Solution

Environmental Risk Information Services, Inc. (ERIS) Database Search, September 18, 2021.

Netronline Environmental Radius Report, September 25, 2021.

Orange County, Florida Future Land Use Map, Land Use Map, 2020.

United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey for Orange County, Florida, August 20, 2021

APPENDIX A

Figure 1

Figure 2

Figure 3

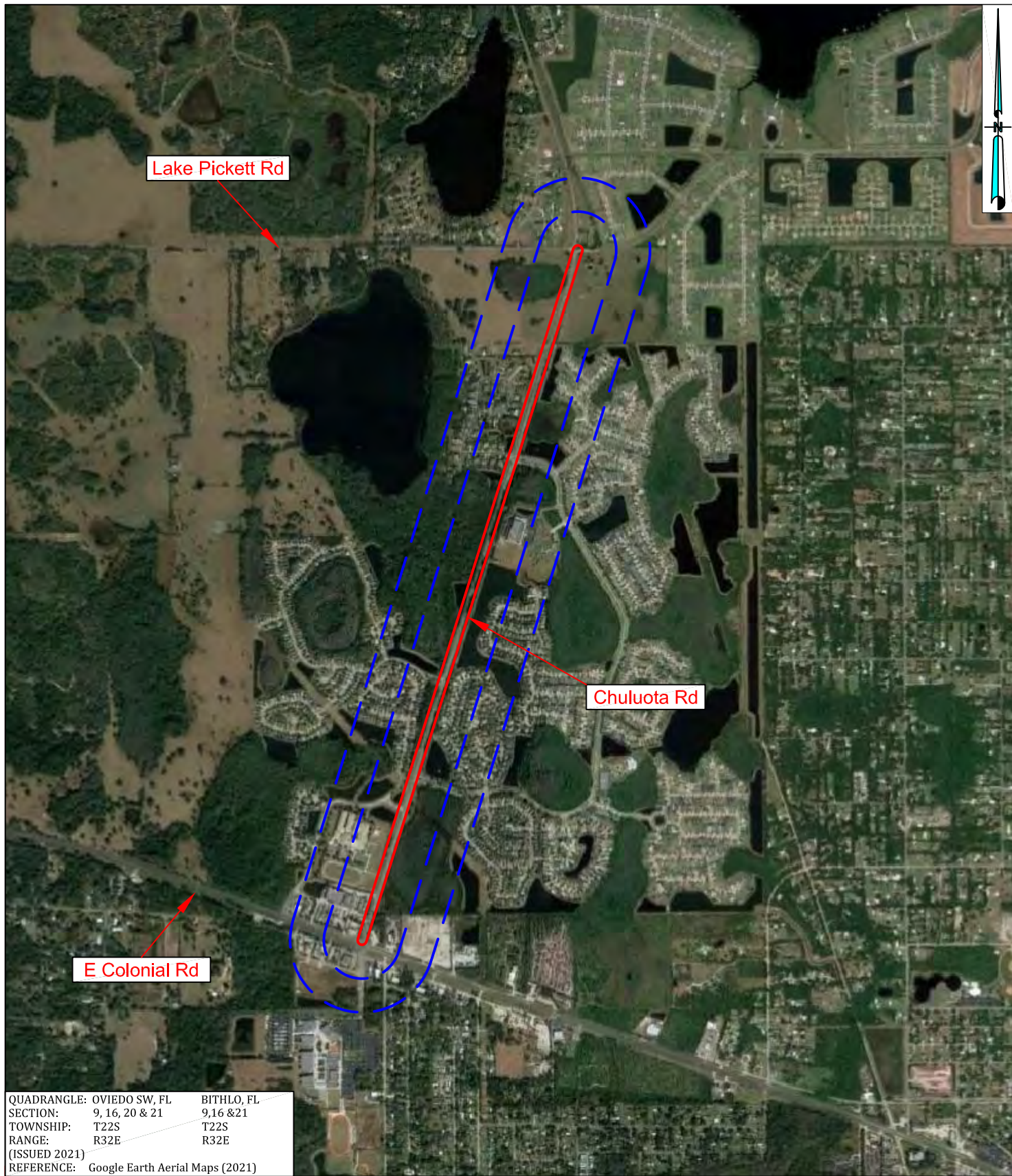
Figures 4A & 4B

Vicinity Map

Land Use Map/Vicinity Map

USGS Quadrangle Map

USDA/NRCS Soil Survey Map




QUADRANGLE: OVIEDO SW, FL BITHLO, FL
 SECTION: 9, 16, 20 & 21 9,16 &21
 TOWNSHIP: T22S T22S
 RANGE: R32E R32E
 (ISSUED 2021)
 REFERENCE: Google Earth Aerial Maps (2021)

NOT TO SCALE

▭ Approximate Project Location
 ▭ Buffer Outline

REVISIONS			NAMES	DATES
DATES	BY	DESCRIPTION	DRAWN BY: MB	10-04-2021
			CHECKED BY: GNN	10-04-2021
			DESIGNED BY: N/A	N/A
			CHECKED BY: N/A	N/A
			APPROVED BY:	

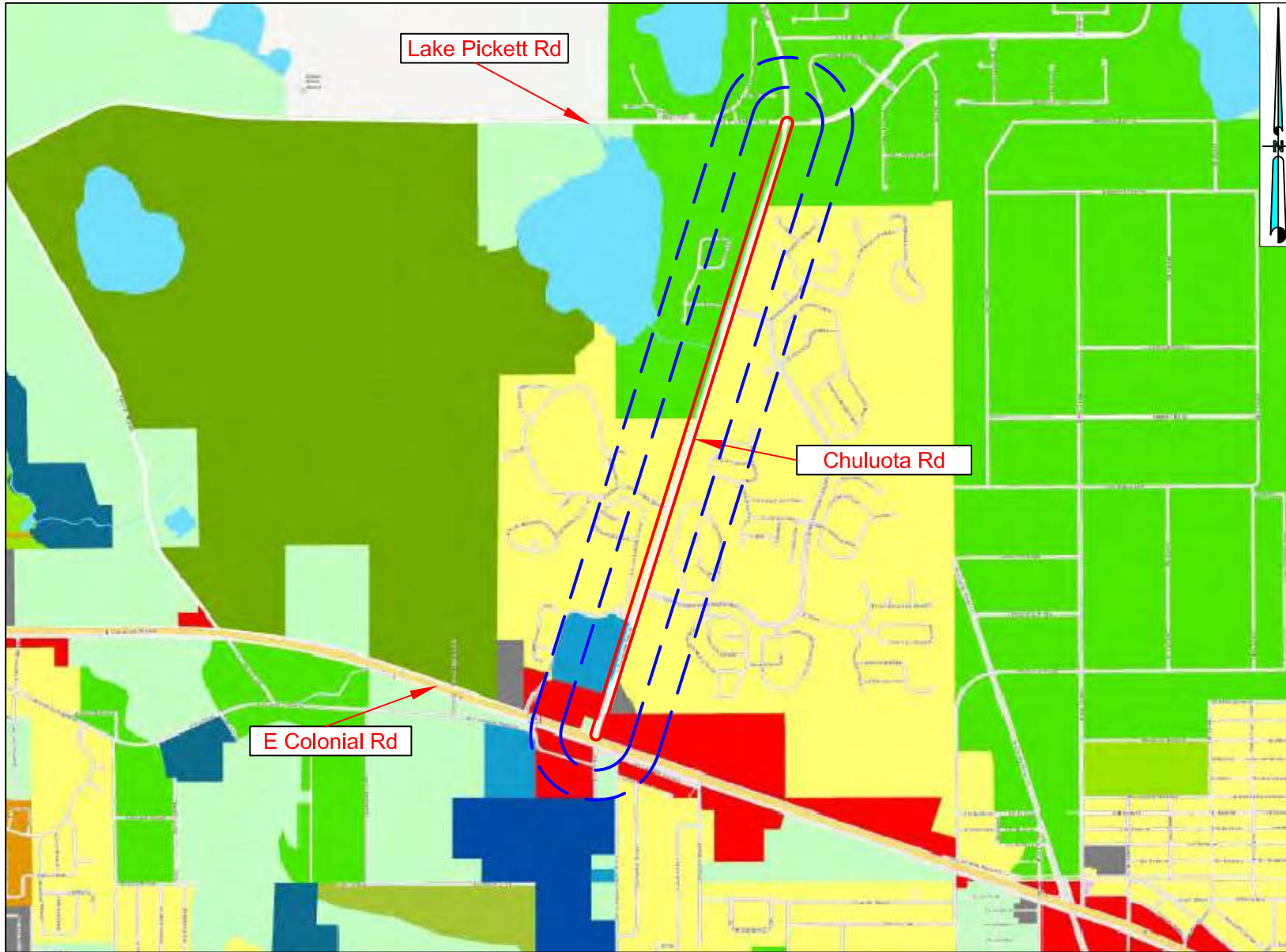


GODWIN N. NNADI, Ph.D., P.E.
 FL REGISTRATION NO. 50637
 NADIC ENGINEERING SERVICES, INC.
 601 N. HART BOULEVARD
 ORLANDO, FL 32818
 PH (407) 521-4771 FAX (407) 521-4772
 CERTIFICATE OF AUTHORIZATION NO. 8214



ORANGE COUNTY, FLORIDA	
COUNTY	CONTRACT No.
ORANGE	Y20-830-CH

FIGURE 1
VICINITY MAP
PROJECT NAME:
CHULOUTA ROAD ROADWAY CONCEPTUAL ANALYSIS (RCA)



LEGEND

- Rural*
- Rural 1/1
- Rural 1/2
- Rural 1/5
- Rural Settlement Low Density
- Lake Pickett
- Medium High Density Residential
- High Density Residential
- Medium Density Residential
- Low Density Residential
- Low-Medium Density
- Traditional Neighborhood
- Neighborhood Activity Corridor
- Neighborhood Center
- Neighborhood Residential
- Activity Center Residential
- Activity Center Mixed Use
- Community Village Center
- Village
- Office
- Commercial
- Industrial
- Institutional
- Education
- Parks/Recreation
- Approximate Project Location
- Buffer Outline

NOT TO SCALE

REVISIONS			NAMES	DATES
DATES	BY	DESCRIPTION	DRAWN BY: MB	10-04-2021
			CHECKED BY: GNN	10-04-2021
			DESIGNED BY: N/A	N/A
			CHECKED BY: N/A	N/A
			APPROVED BY:	



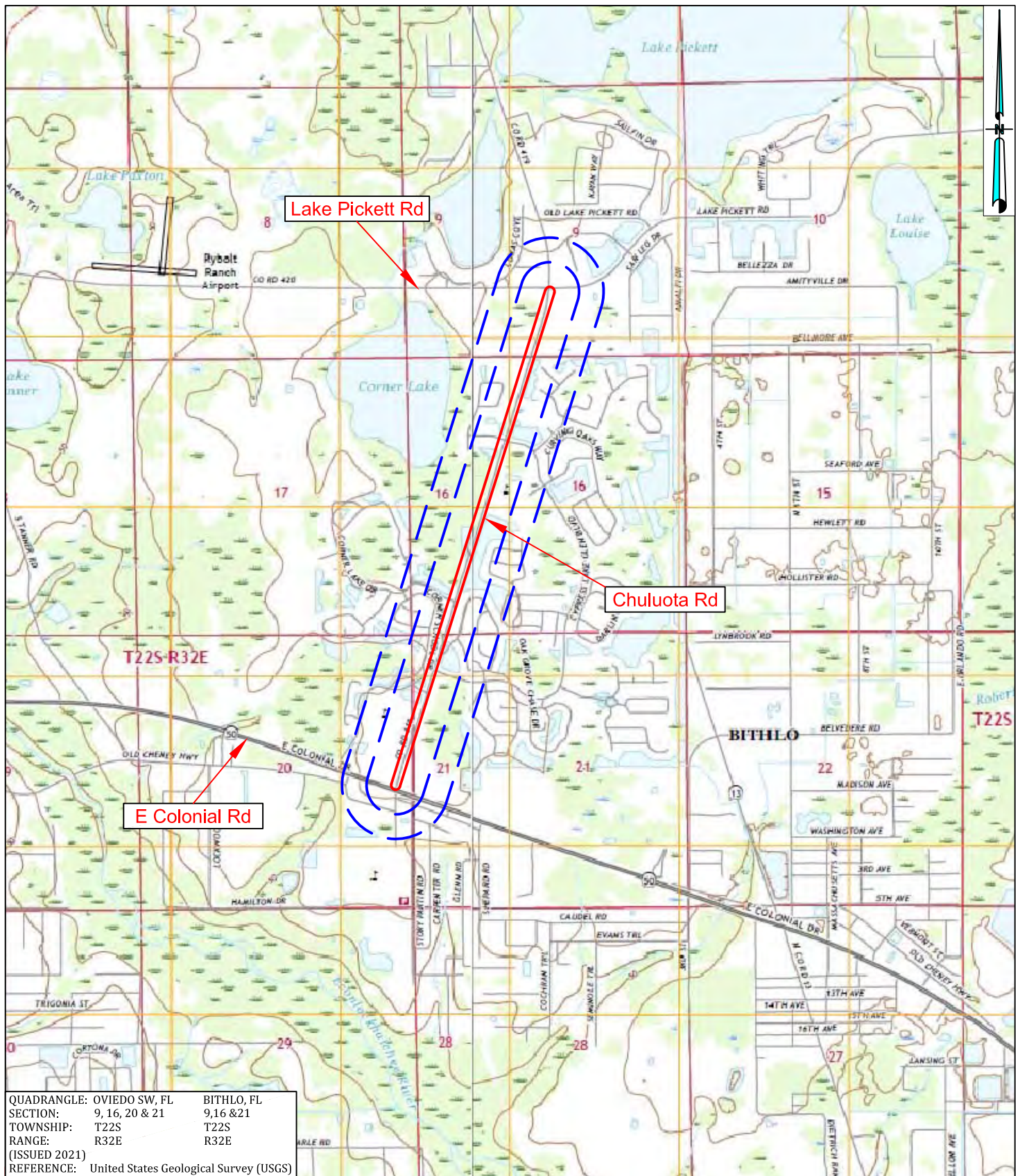
GODWIN N. NNADI, Ph.D., P.E.
 FL REGISTRATION NO. 50637
 NADIC ENGINEERING SERVICES, INC.
 601 N. HART BOULEVARD
 ORLANDO, FL 32818
 PH (407) 521-4771 FAX (407) 521-4772
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ORANGE COUNTY, FLORIDA	
COUNTY	PROJECT No.
ORANGE	Y20-830-CH

FIGURE 2
LAND USE MAP/VICINITY MAP

PROJECT NAME:
**CHULUOTA ROAD
 ROADWAY CONCEPTUAL
 ANALYSIS (RCA)**




QUADRANGLE: OVIEDO SW, FL BITHLO, FL
 SECTION: 9, 16, 20 & 21 9,16 & 21
 TOWNSHIP: T22S T22S
 RANGE: R32E R32E
 (ISSUED 2021)
 REFERENCE: United States Geological Survey (USGS)

NOT TO SCALE

□ Approximate Project Location □ Buffer Outline

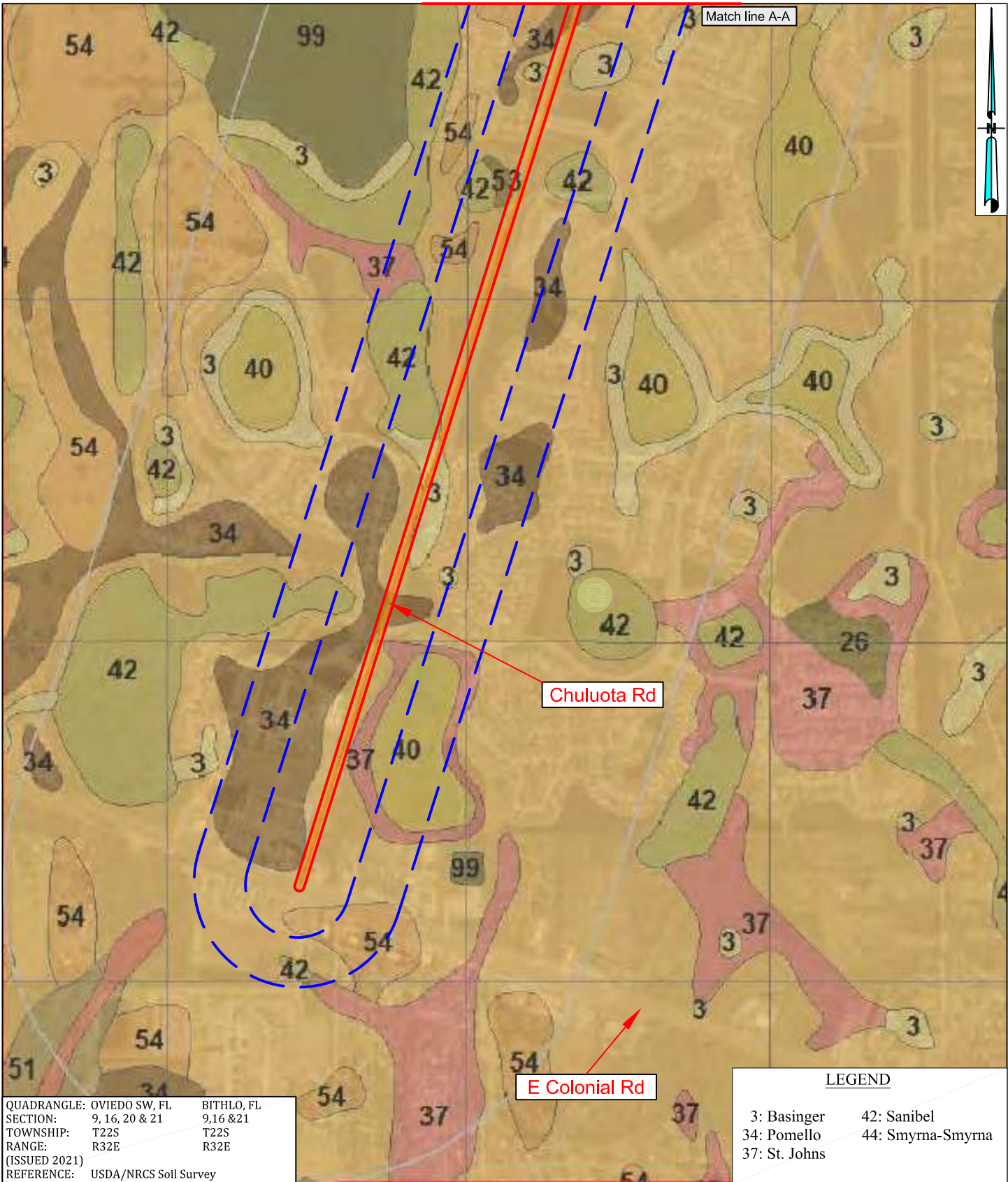
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DATES	BY	DESCRIPTION	DRAWN BY: MB	09-29-2021
			CHECKED BY: GNN	09-29-2021
			DESIGNED BY: N/A	N/A
			CHECKED BY: N/A	N/A
			APPROVED BY:	


NADIC
 GODWIN N. NNADI, Ph.D., P.E.
 FL REGISTRATION NO. 50637
 NADIC ENGINEERING SERVICES, INC.
 601 N. HART BOULEVARD
 ORLANDO, FL 32818
 PH (407) 521-4771 FAX (407) 521-4772
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ORANGE COUNTY, FLORIDA
 COUNTY CONTRACT No.
 ORANGE Y20-830-CH

FIGURE 3
 USGS QUADRANGLE MAP
 PROJECT NAME:
 CHULOUTA ROAD
 ROADWAY CONCEPTUAL
 ANALYSIS (RCA)




QUADRANGLE: OVIEDO SW, FL BITHLO, FL
 SECTION: 9, 16, 20 & 21 9, 16 & 21
 TOWNSHIP: T22S T22S
 RANGE: R32E R32E
 (ISSUED 2021)
 REFERENCE: USDA/NRCS Soil Survey

LEGEND	
3: Basinger	42: Sanibel
34: Pomello	44: Smyrna-Smyrna
37: St. Johns	

NOT TO SCALE

□ Approximate Project Location
 □ Buffer Outline

REVISIONS			NAMES	DATES
DATES	BY	DESCRIPTION	DRAWN BY: MB	10-01-2021
			CHECKED BY: GNN	10-01-2021
			DESIGNED BY: N/A	N/A
			CHECKED BY: N/A	N/A
			APPROVED BY:	

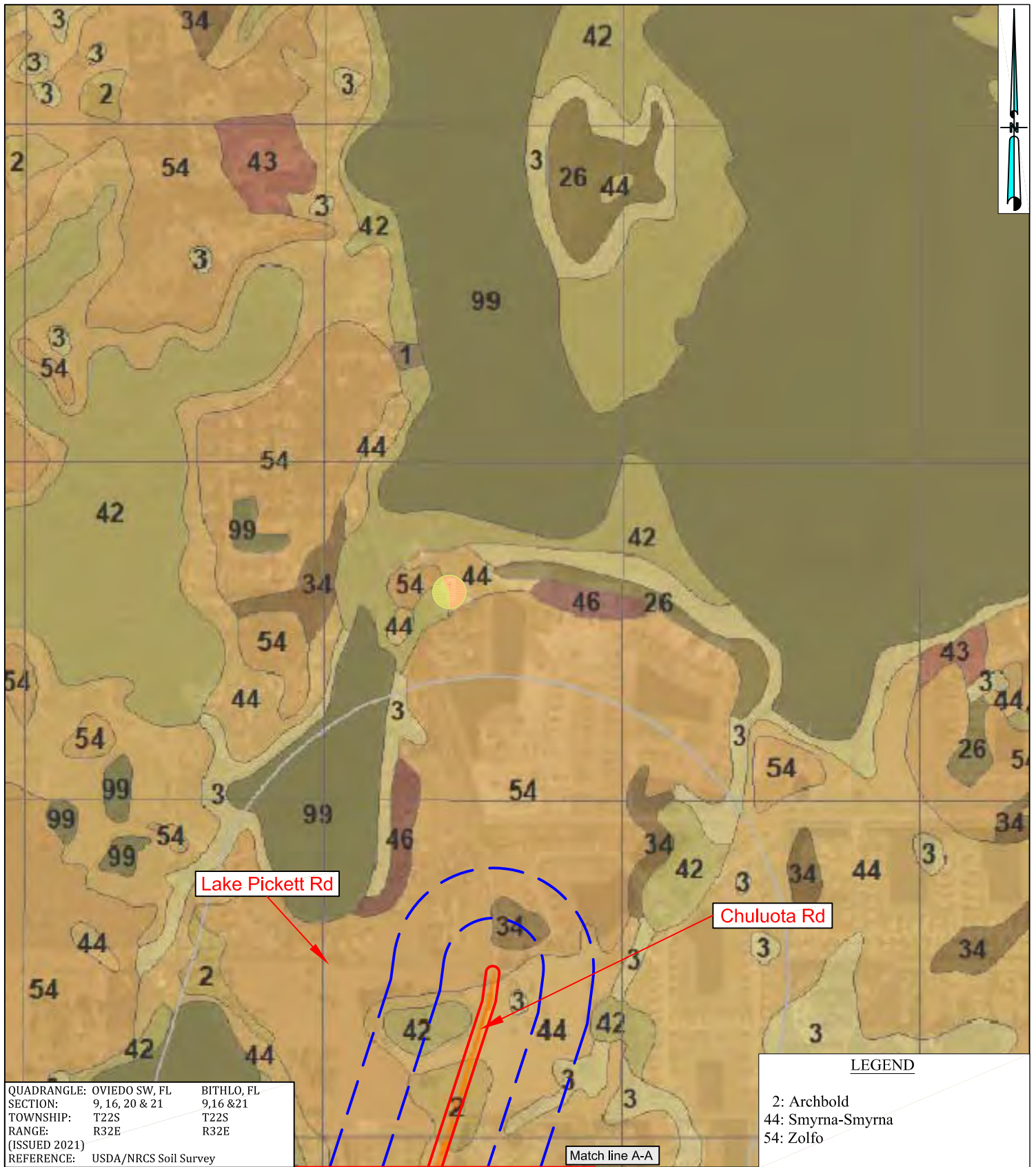


GODWIN N. NNADI, Ph.D., P.E.
 FL REGISTRATION NO. 50637
 NADIC ENGINEERING SERVICES, INC.
 601 N. HART BOULEVARD
 ORLANDO, FL 32818
 PH (407) 521-4771 FAX (407) 521-4772
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ORANGE COUNTY, FLORIDA	
COUNTY	CONTRACT No.
ORANGE	Y20-830-CH

FIGURE 4A
 USDA/NRCS SOIL SURVEY MAP
 PROJECT NAME:
 CHULOUTA ROAD ROADWAY CONCEPTUAL ANALYSIS (RCA)




QUADRANGLE: OVIEDO SW, FL BITHLO, FL
 SECTION: 9, 16, 20 & 21 9,16 &21
 TOWNSHIP: T22S T22S
 RANGE: R32E R32E
 (ISSUED 2021)
 REFERENCE: USDA/NRCS Soil Survey

LEGEND	
2:	Archbold
44:	Smyrna-Smyrna
54:	Zolfo

NOT TO SCALE

□ Approximate Project Location
 □ Buffer Outline

REVISIONS			NAMES	DATES
DATES	BY	DESCRIPTION	DRAWN BY: MB	10-01-2021
			CHECKED BY: GNN	10-01-2021
			DESIGNED BY: N/A	N/A
			CHECKED BY: N/A	N/A
			APPROVED BY:	


NADIC
 GODWIN N. NNADI, Ph.D., P.E.
 FL REGISTRATION NO. 50637
 NADIC ENGINEERING SERVICES, INC.
 601 N. HART BOULEVARD
 ORLANDO, FL 32818
 PH (407) 521-4771 FAX (407) 521-4772
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ORANGE COUNTY FLORIDA

ORANGE COUNTY, FLORIDA	
COUNTY	CONTRACT No.
ORANGE	Y20-830-CH

FIGURE 4B USDA/NRCS SOIL SURVEY MAP
PROJECT NAME: CHULOUTA ROAD ROADWAY CONCEPTUAL ANALYSIS (RCA)

APPENDIX B

Historical Aerials



HISTORICAL **AERIALS**

Project Property: Chuluota Road RCA
Chuluota Rd
Florida FL

Project No: Y20-830

Requested By: Nadic Engineering Services, Inc.

Order No: 21091000565

Date Completed: September 13,2021

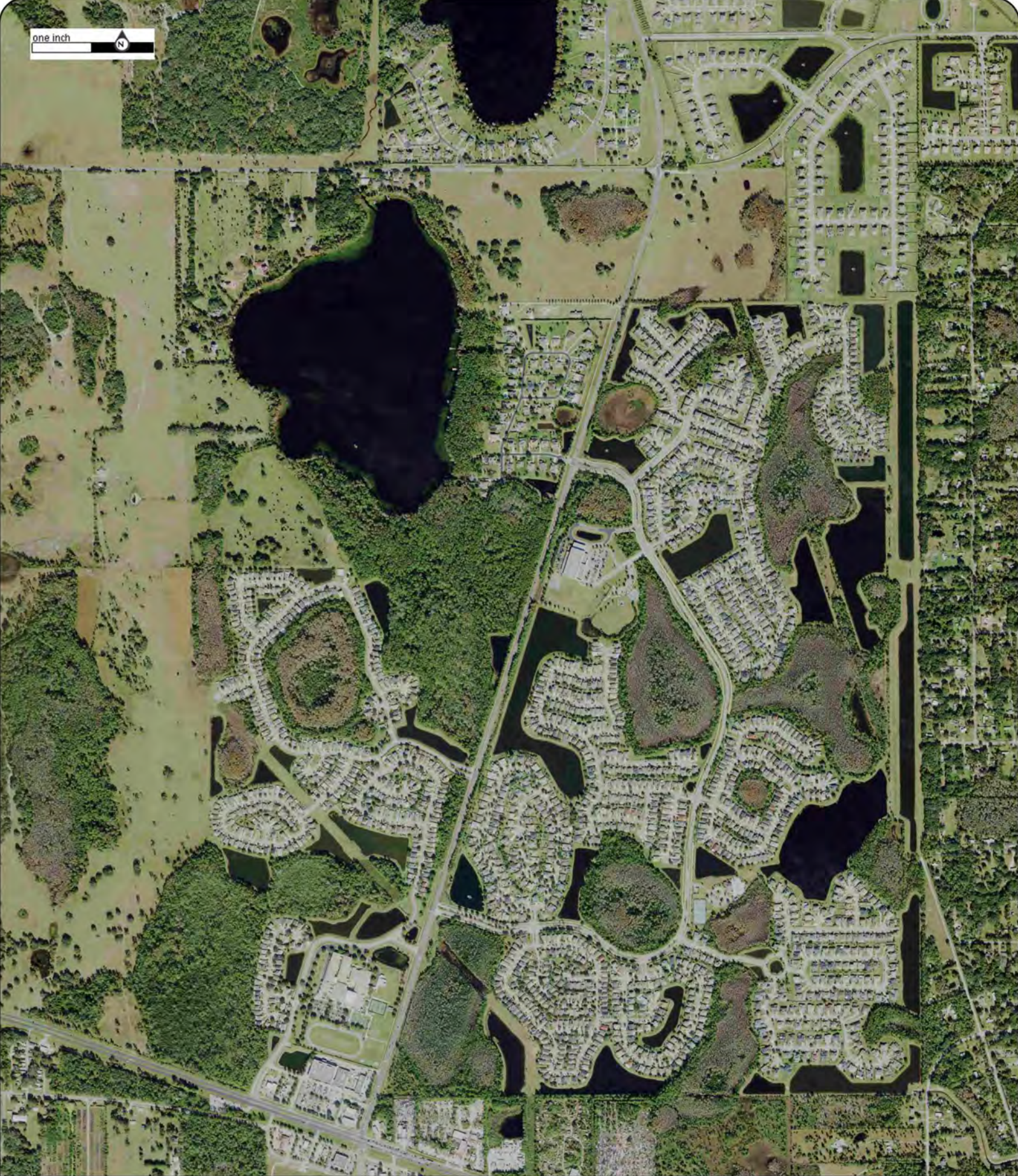
Date	Source	Scale	Comments
2019	National Agriculture Information Program	1" = 1200'	
2017	National Agriculture Information Program	1" = 1200'	
2015	National Agriculture Information Program	1" = 1200'	
2013	National Agriculture Information Program	1" = 1200'	
2010	National Agriculture Information Program	1" = 1200'	
2006	National Agriculture Information Program	1" = 1200'	
2005	National Agriculture Information Program	1" = 1200'	
1999	US Geological Survey	1" = 1200'	
1995	US Geological Survey	1" = 1200'	
1990	US Geological Survey	1" = 1200'	
1984	National High Altitude Photography	1" = 1200'	
1977	US Geological Survey	1" = 1200'	Best Copy Available
1969	Florida Department of Transportation	1" = 1200'	
1957	Agriculture and Soil Conservation Service	1" = 1200'	
1952	US Geological Survey	1" = 1200'	
1947	Agriculture and Soil Conservation Service	1" = 1200'	

Environmental Risk Information Services

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one inch



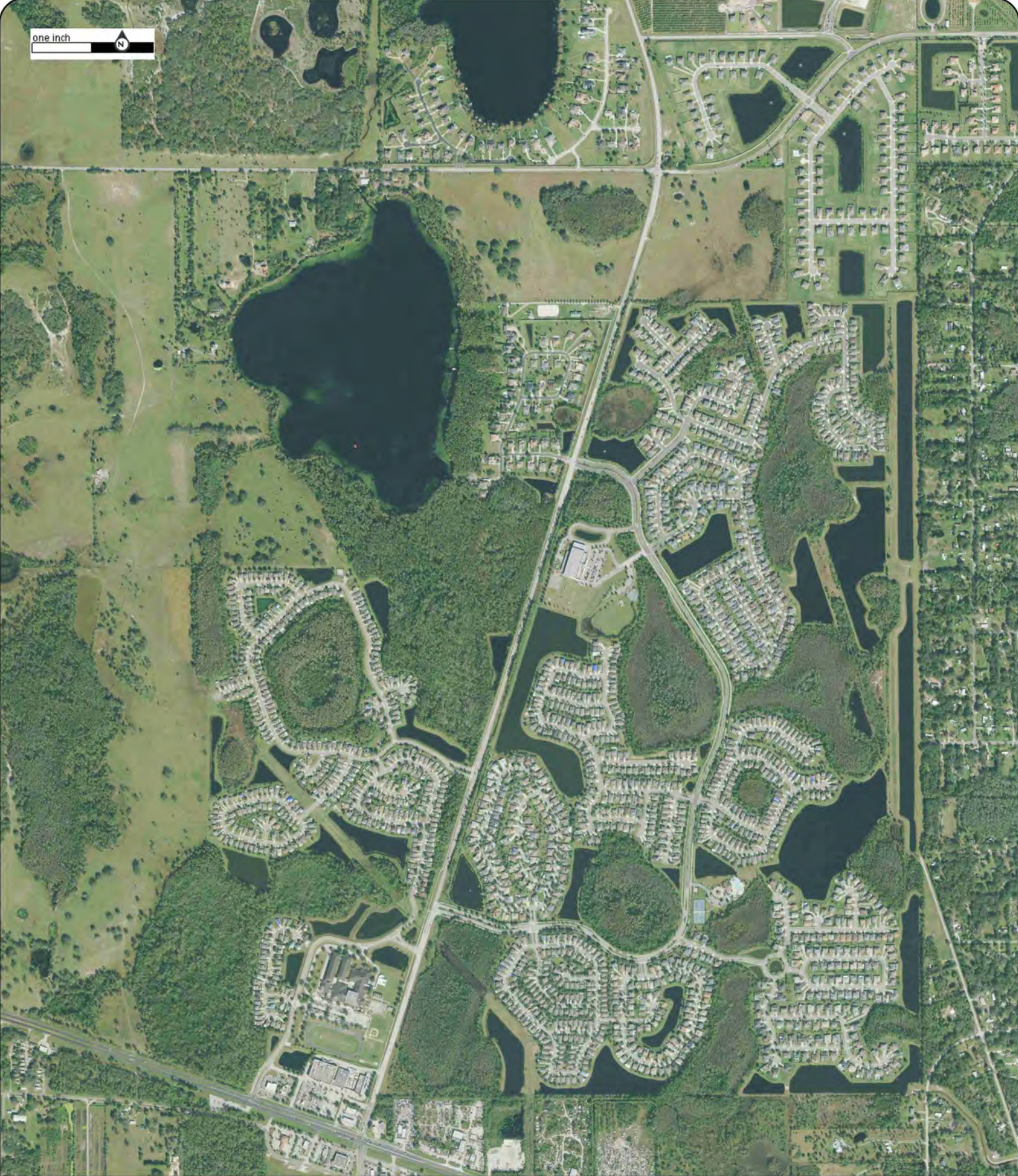
Year: 2019
Source: NAIP
Scale: 1" = 1200'
Comment:

Address: Chuluota Rd, Florida, FL
Approx Center: -81.12497575,28.57406914

Order No: 21091000565



one inch



Year: 2017
Source: NAIP
Scale: 1" = 1200'
Comment:

Address: Chuluota Rd, Florida, FL
Approx Center: -81.12497575,28.57406914

Order No: 21091000565



one inch



Year: 2015
Source: NAIP
Scale: 1" = 1200'
Comment:

Address: Chuluota Rd, Florida, FL
Approx Center: -81.12497575,28.57406914

Order No: 21091000565



one inch



Year: 2013
Source: NAIP
Scale: 1" = 1200'
Comment:

Address: Chuluota Rd, Florida, FL
Approx Center: -81.12497575,28.57406914

Order No: 21091000565



one inch



Year: 2010
Source: NAIP
Scale: 1" = 1200'
Comment:

Address: Chuluota Rd, Florida, FL
Approx Center: -81.12497575,28.57406914

Order No: 21091000565



one inch



Year: 2006
Source: NAIP
Scale: 1" = 1200'
Comment:

Address: Chuluota Rd, Florida, FL
Approx Center: -81.12497575,28.57406914

Order No: 21091000565



one inch



Year: 2005
Source: NAIP
Scale: 1" = 1200'
Comment:

Address: Chuluota Rd, Florida, FL
Approx Center: -81.12497575,28.57406914

Order No: 21091000565



one inch



Year: 1999
Source: USGS
Scale: 1" = 1200'
Comment:

Address: Chuluota Rd, Florida, FL
Approx Center: -81.12497575,28.57406914

Order No: 21091000565



one inch



Year: 1995
Source: USGS
Scale: 1" = 1200'
Comment:

Address: Chuluota Rd, Florida, FL
Approx Center: -81.12497575,28.57406914

Order No: 21091000565



one inch



Year: 1990
Source: USGS
Scale: 1" = 1200'
Comment:

Address: Chuluota Rd, Florida, FL
Approx Center: -81.12497575,28.57406914

Order No: 21091000565



one inch



Year: 1984
Source: NHAP
Scale: 1" = 1200'
Comment:

Address: Chuluota Rd, Florida, FL
Approx Center: -81.12497575,28.57406914

Order No: 21091000565



one inch



Year: 1977
Source: USGS
Scale: 1" = 1200'
Comment: Best Copy Available

Address: Chuluota Rd, Florida, FL
Approx Center: -81.12497575,28.57406914

Order No: 21091000565



one inch



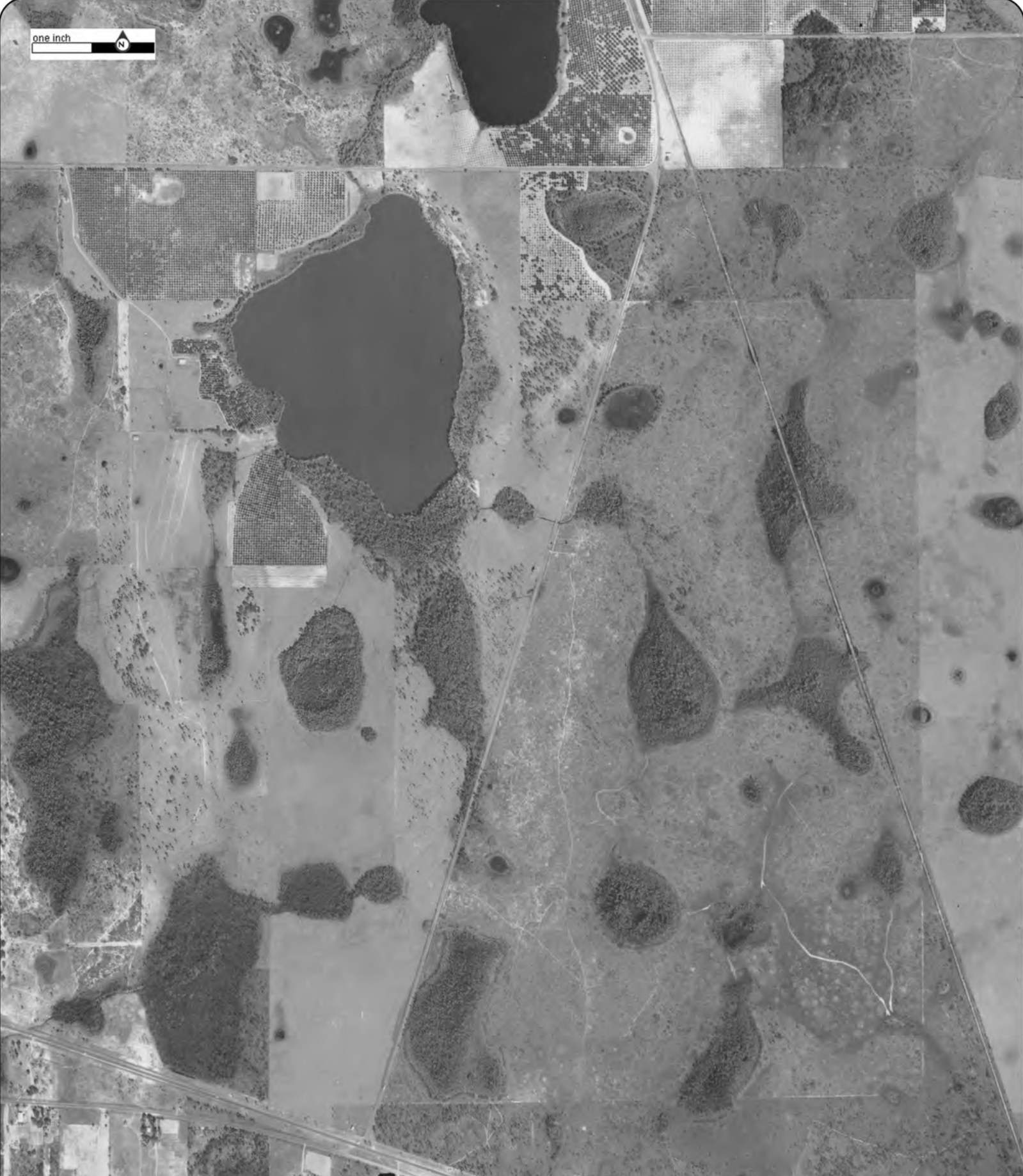
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Source: FDOT
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Address: Chuluota Rd, Florida, FL
Approx Center: -81.12497575,28.57406914

Order No: 21091000565



one inch



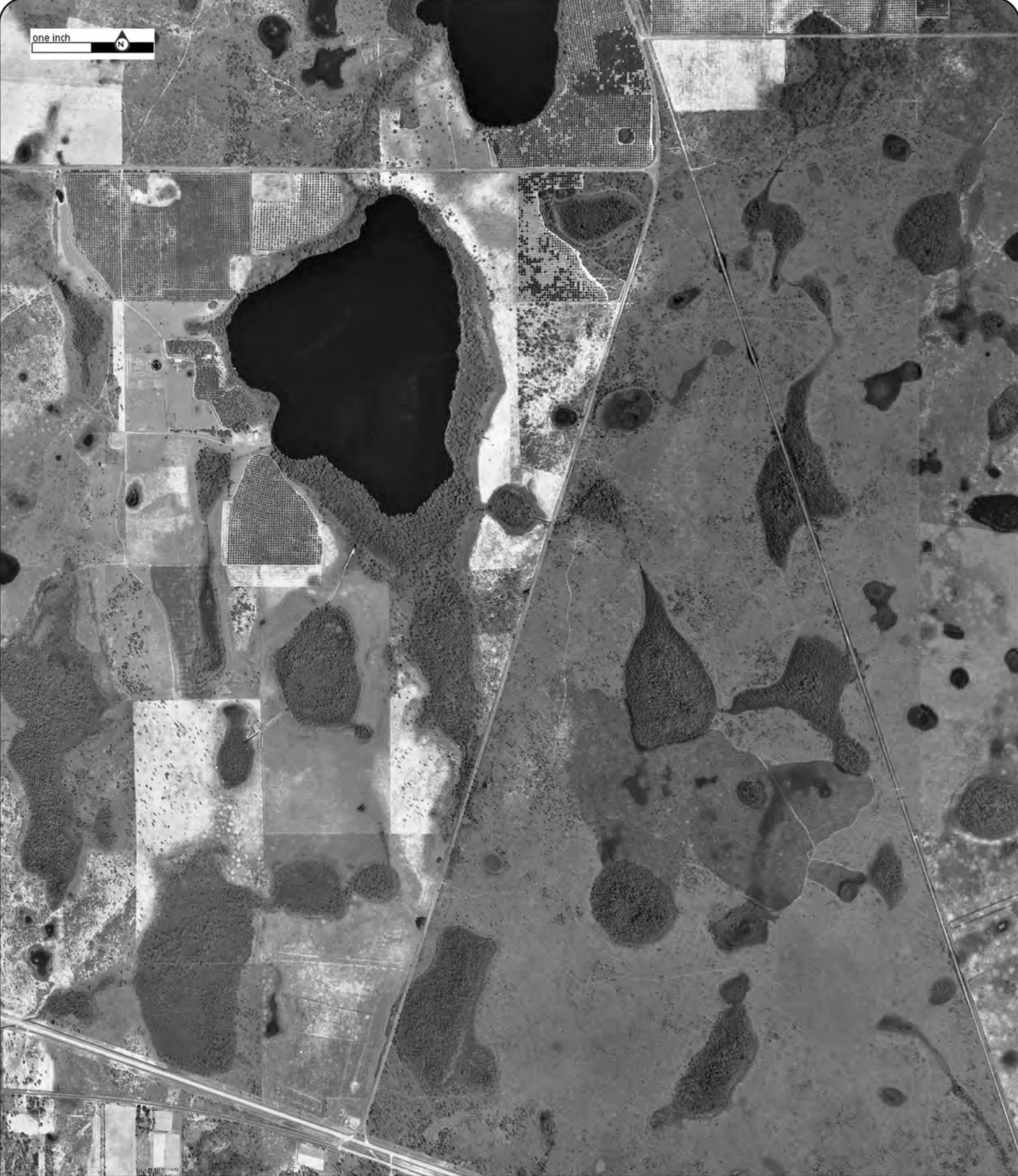
Year: 1957
Source: ASCS
Scale: 1" = 1200'
Comment:

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Approx Center: -81.12497575,28.57406914

Order No: 21091000565



one inch




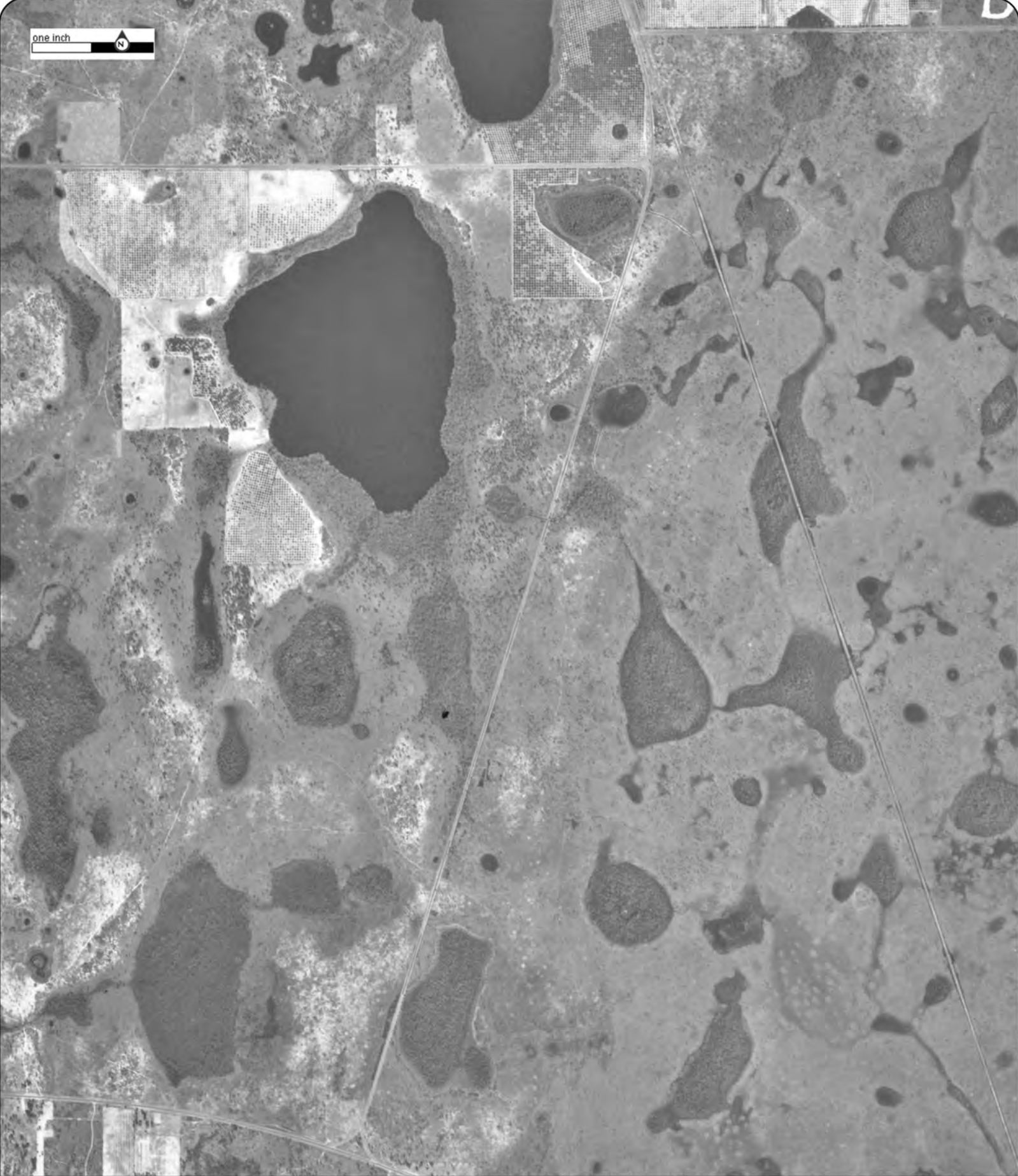
Year: 1952
Source: USGS
Scale: 1" = 1200'
Comment:

Address: Chuluota Rd, Florida, FL
Approx Center: -81.12497575,28.57406914

Order No: 21091000565



one inch 



Year: 1947
Source: ASCS
Scale: 1" = 1200'
Comment:

Address: Chuluota Rd, Florida, FL
Approx Center: -81.12497575,28.57406914

Order No: 21091000565



APPENDIX C

ERIS Topographic Maps



TOPOGRAPHIC MAPS

Project Property: Chuluota Road RCA
Chuluota Rd
Florida FL

Project No: Y20-830

Requested By: Nadic Engineering Services, Inc.

Order No: 21091000565

Date Completed: September 11, 2021

We have searched USGS collections of current topographic maps and historical topographic maps for the project property. Below is a list of maps found for the project property and adjacent area. Maps are from 7.5 and 15 minute topographic map series, if available.

Year	Map Series
2015	7.5
1980	7.5
1970	7.5
1953	7.5

Topographic Maps included in this report are produced by the USGS and are to be used for research purposes including a phase I report. Maps are not to be resold as commercial property.

No warranty of Accuracy or Liability for ERIS: The information contained in this report has been produced by ERIS Information Inc.(in the US) and ERIS Information Limited Partnership (in Canada), both doing business as 'ERIS', using Topographic Maps produced by the USGS. This maps contained herein does not purport to be and does not constitute a guarantee of the accuracy of the information contained herein. Although ERIS has endeavored to present you with information that is accurate, ERIS disclaims, any and all liability for any errors, omissions, or inaccuracies in such information and data, whether attributable to inadvertence, negligence or otherwise, and for any consequences arising therefrom. Liability on the part of ERIS is limited to the monetary value paid for this report.

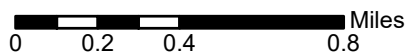
Environmental Risk Information Services

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2015

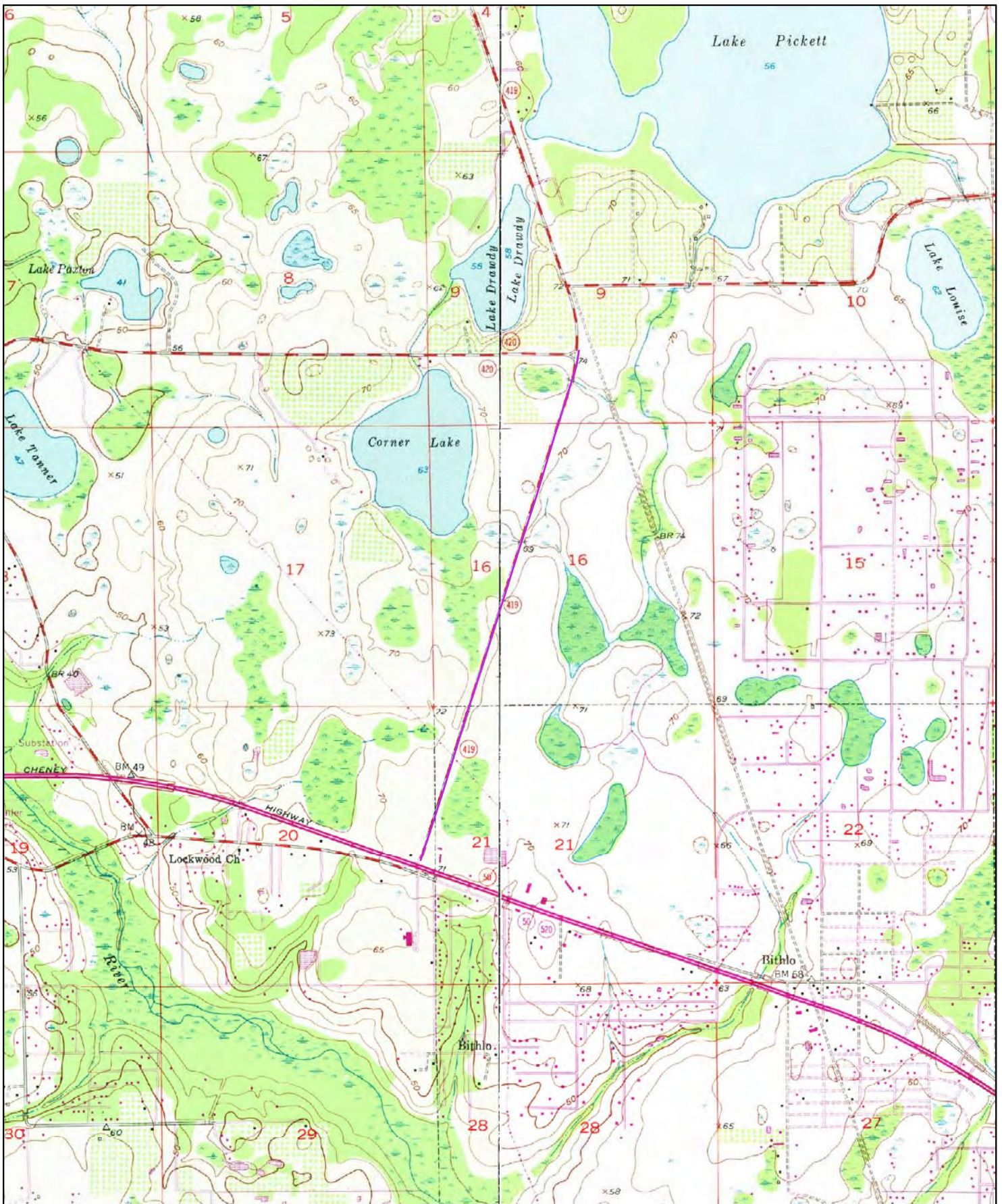


Order No. 21091000565

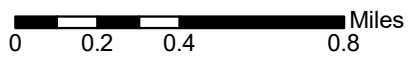
Quadrangle(s): Bithlo, FL; Oviedo SW, FL

Source: USGS 7.5 Minute Topographic Map





1980

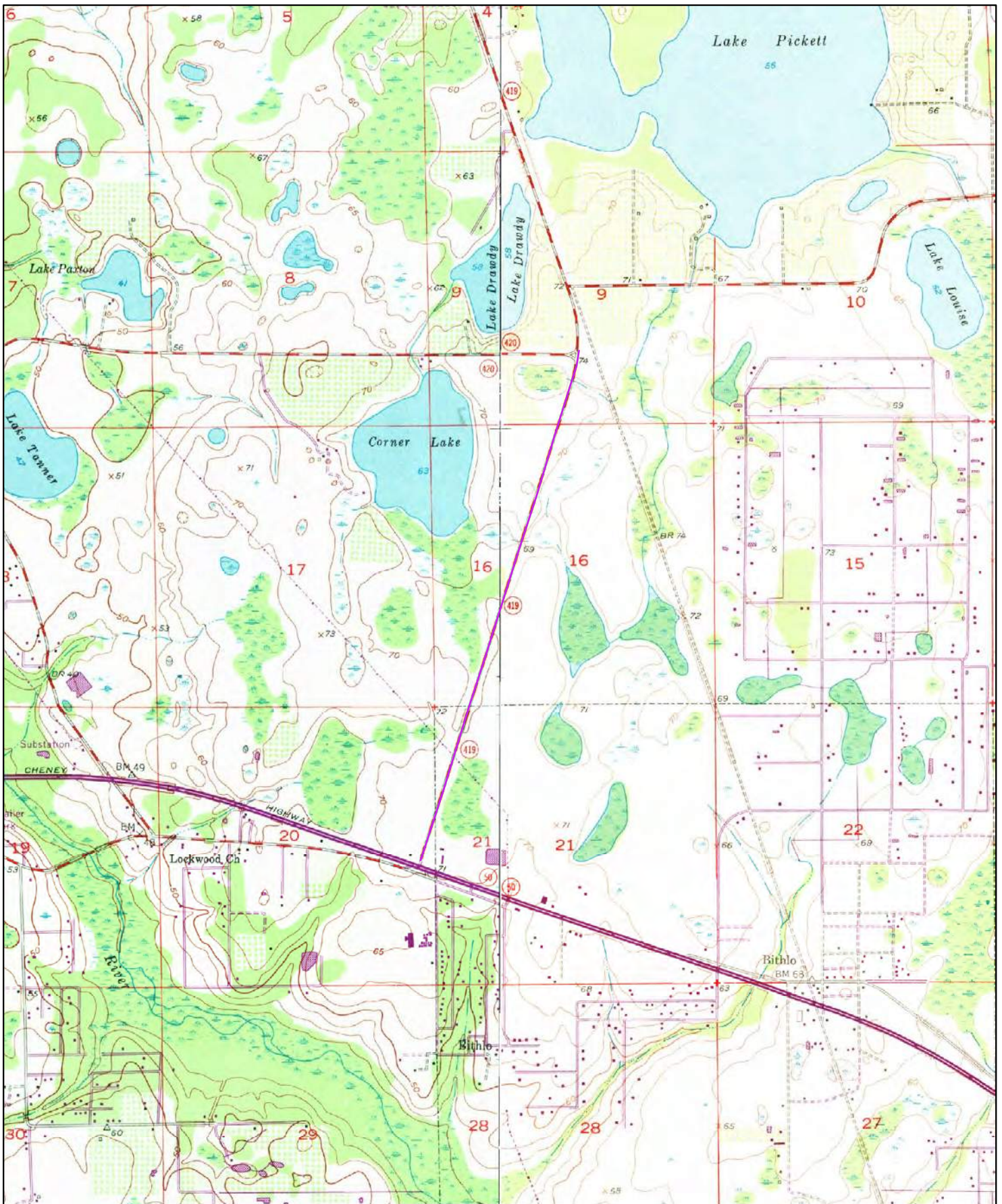


Order No. 21091000565

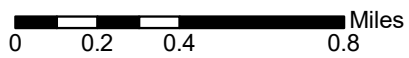
Quadrangle(s): Bithlo, FL; Oviedo SW, FL

Source: USGS 7.5 Minute Topographic Map





1970

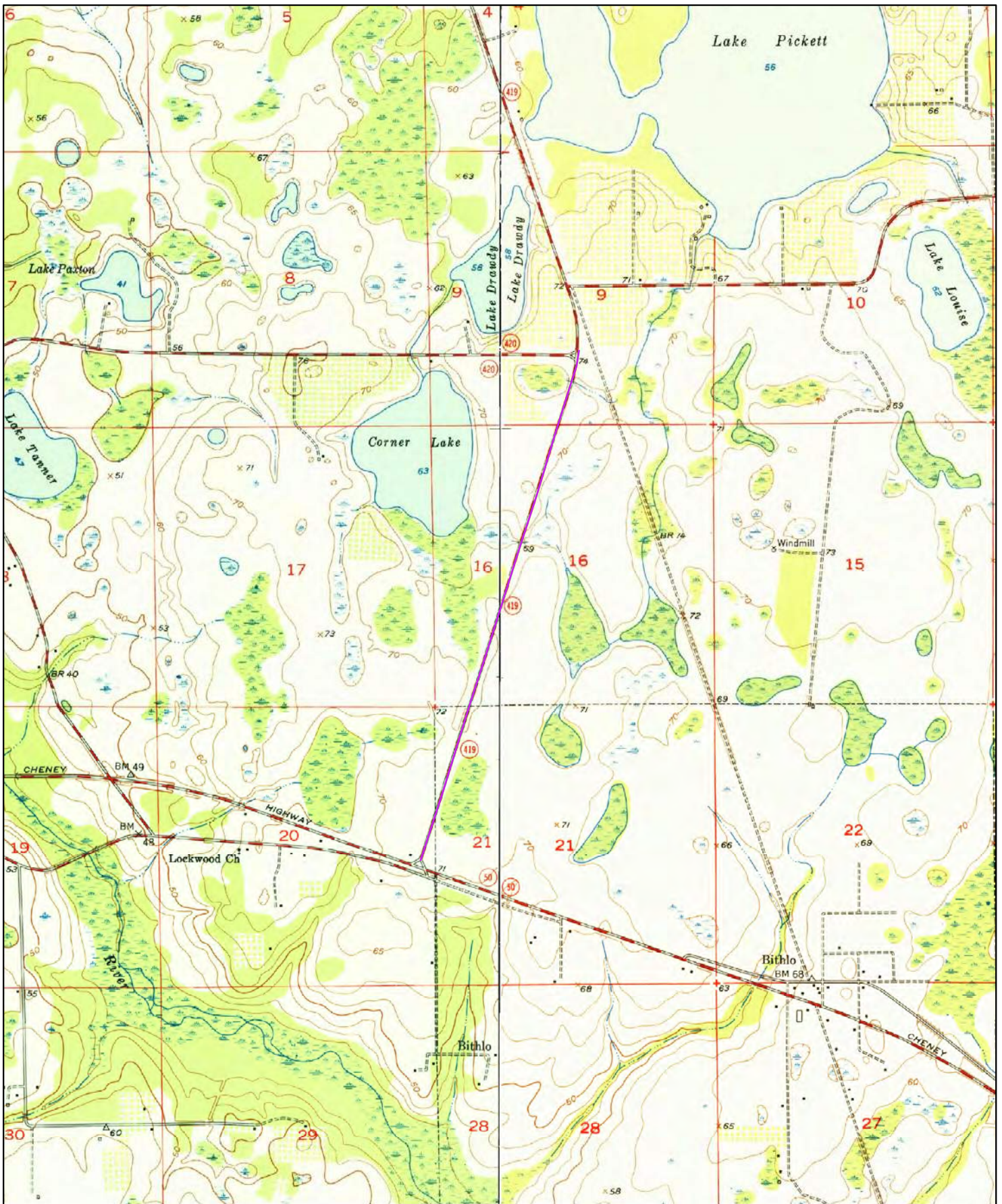


Order No. 21091000565

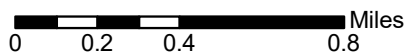
Quadrangle(s): Bithlo, FL; Oviedo SW, FL

Source: USGS 7.5 Minute Topographic Map





1953



Order No. 21091000565

Quadrangle(s): Bithlo, FL; Oviedo SW, FL

Source: USGS 7.5 Minute Topographic Map



APPENDIX D

ERIS City Directory



CITY
DIRECTORY

Project Property: *Chuluota Road RCA
Chuluota Rd
Orlando, FL*

Project No: *Y20-830*

Requested By: *Nadic Engineering Services, Inc.*

Order No: *21091000565*

Date Completed: *September 15, 2021*

September 15, 2021
RE: CITY DIRECTORY RESEARCH
Chuluota Road RCA
Chuluota Rd Orlando, FL

Thank you for contacting ERIS for an City Directory Search for the site described above. Our staff has conducted a reverse listing City Directory search to determine prior occupants of the subject site and adjacent properties. We have provided the nearest addresses(s) when adjacent addresses are not listed. If we have searched a range of addresses, all addresses in that range found in the Directory are included.

Note: Reverse Listing Directories generally are focused on more highly developed areas. Newly developed areas may be covered in the more recent years, but the older directories will tend to cover only the "central" parts of the city. To complete the search, we have either utilized the ACPL, Library of Congress, State Archives, and/or a regional library or history center as well as multiple digitized directories. These do not claim to be a complete collection of all reverse listing city directories produced.

ERIS has made every effort to provide accurate and complete information but shall not be held liable for missing, incomplete or inaccurate information. To complete this search we used the general range(s) below to search for relevant findings. If you believe there are additional addresses or streets that require searching please contact us at 866-517-5204.

Search Criteria:

1600-3000 of Chuluota Rd
16700-17200 of E Colonial Dr

Search Results Summary

Date	Source	Comment
2020	DIGITAL BUSINESS DIRECTORY	
2016	DIGITAL BUSINESS DIRECTORY	
2012	DIGITAL BUSINESS DIRECTORY	
2008	DIGITAL BUSINESS DIRECTORY	
2004	DIGITAL BUSINESS DIRECTORY	
2001	CITY PUBLISHING CO	
1996	CITY PUBLISHING CO	
1991	POLKS	
1985	POLKS	
1980	POLKS	
1975	POLKS	
1970	POLKS	
1965	POLKS	
1959	POLKS	
1955	POLKS	
1950	POLKS	
1945	POLKS	
1940	POLKS	
1935	POLKS	
1930	MILLERS	
1925	ORLANDO DIRECTORY CO	

- 1700 CORNER LAKE MIDDLE SCHOOL...Schoolsuniversities & Colleges Academic
 1700 CORNER LAKE MIDDLE SCHOOL...Schools

- 84 total records. Part 1 of 2
 15695 COUNTY LINE MOOSE...Nonclassified Establishments
 15695 LOYAL ORDER OF MOOSE...Nonprofit Organizations
 15695 LOYAL ORDER OF MOOSE...Fraternal Organizations
 16300 BOB'S MARKET...Grocers-retail
 16300 U-HAUL NEIGHBORHOOD DEALER...Truck Renting & Leasing
 16300 U-HAUL NEIGHBORHOOD DEALER...Trailer Renting & Leasing
 16727 VERIZON WIRELESS...Cellular Telephones (services)
 16729 CELLULAR SALES-VERIZON AUTH...Cellular Telephones (services)
 16729 MIRBEY ADELE DMD...Dentists
 16731 CORNER LAKE FAMILY DENTAL...Dentists
 16783 ZAXBY'S...Full-service Restaurants
 16801 TILLIE'S TWISTEE TREAT...Yogurt
 16801 TILLIE'S TWISTEE TREAT...Ice Cream Parlors
 16825 PUBLIX PHARMACY...Pharmacies
 16825 PUBLIX SUPER MARKET...Convenience Stores
 16825 PUBLIX SUPER MARKET...Grocers-retail
 16837 FANTASTIC SAMS...Beauty Salons
 16837 FANTASTIC SAMS...Health Spas
 16849 TRACTOR SUPPLY CO...Home Centers
 16849 TRACTOR SUPPLY CO...Farm Supplies (whls)
 16857 NI HAO CHINESE RESTAURANT...Restaurants
 16860 FIFTH THIRD BANK...Banks
 16860 FIFTH THIRD BANK...Real Estate Loans
 16860 FIFTH THIRD BANK...Diagnostic Imaging Centers
 16865 ALOHA NAIL SALON...Manicuring
 16865 ELITE METRO CORP...Cellular Telephones-equipment & Supls
 16869 PAPA GIO'S PIZZERIA-CHILOUTA...Pizza
 16873 PIZZA HUT...Full-service Restaurants
 16877 ALTERNATIVE FINISHES INC...Business Services Nec
 16877 BABY GUARD SVC-CENTRAL FL...Baby Accessories
 16877 BABY GUARD SVC-CENTRAL FL...Fence-manufacturers
 16877 CHALLENGE COINS R US...Coin Dealers Supplies & Etc
 16877 CHALLENGE COINS R US...Coin Dealers Supplies & Etc
 16877 FALCON OF THE NILE WATER SLTNS...Swimming Pool Repair & Service
 16877 GIVEJET LLC...Aircraft Charter Rental & Leasing Svc
 16877 GRAYS BACKFLOW SVC LLC...Services Nec
 16877 H J BREEDING LLC...Land Clearing & Leveling
 16877 HIGH CALIBER SVC...Remodeling & Repairing Bldg Contractors
 16877 INSTADRY...Carpet & Rug Cleaners
 16877 LYNN GANSTER...Nonclassified Establishments
 16877 MINGS...Nonclassified Establishments
 16877 MUTATE MEDIA LLC...Nonclassified Establishments
 16877 NO DRAMA INC...Nonclassified Establishments
 16877 OUTSOURCE ORLANDO...Internet Svcs-network Designers/consint
 16877 PODCAST FACTORY...Manufacturers
 16877 R 2 TECHNOLOGIES...Nonclassified Establishments
 16877 REBECCA DIXON...Nonclassified Establishments
 16877 SAFARI SEPTIC & HOME SVC...Septic Tanks
 16877 UPS STORE...Mailing & Shipping Services
 16877 UPS STORE...Packaging Service
 16880 LONG JOHN SILVER'S...Foods-carry Out
 16880 LONG JOHN SILVER'S...Restaurants
 16880 LONG JOHN SILVER'S...Cafes

Part 2 of 2

16884 **BURGER KING**...Foods-carry Out
 16884 **BURGER KING**...Cafes
 16884 **BURGER KING**...Restaurants
 16889 **JACKSON HEWITT TAX SVC**...Tax Return Preparation & Filing
 16889 **SUBWAY**...Restaurants
 16891 **CIRCLE K**...Convenience Stores
 16900 **WALGREENS**...Variety Stores
 16900 **WALGREENS**...Grocerswholesale
 16900 **WALGREENS**...Craft Supplies
 16900 **WALGREENS**...Pharmacies
 16920 **MC DONALD'S**...Cafes
 16920 **MC DONALD'S**...Restaurants
 16920 **MC DONALD'S**...Foods-carry Out
 16928 **ADVANCE AUTO PARTS**...Batteries-storage-retail
 16928 **ADVANCE AUTO PARTS**...Batteriesstoragewholesale
 16928 **ADVANCE AUTO PARTS**...Automobile Parts & Supplies-retail-new
 16959 **CIRCLE K**...Grocers-retail
 16959 **CIRCLE K**...Convenience Stores
 16969 **EAST COLONIAL AUTO PARTS**...Automobile Parts-used & Rebuilt (whls)
 17105 **A AAMOTT INC**...Nonclassified Establishments
 17105 **A AAMOTT INC**...Junk-dealers
 17105 **A ABBOTT USED AUTO PARTS INC**...Recycling Centers (whls)
 17105 **A ABBOTT USED AUTO PARTS INC**...Scrap Metals & Iron (whls)
 17105 **AUTO CRAFT OF FLORIDA**...Counter Tops
 17105 **AUTO CRAFT OF FLORIDA**...Crafts
 17105 **J B USED AUTO PARTS**...Glass-auto Plate & Window & Etc
 17142 **AMERICAN LEGION**...Veterans' & Military Organizations
 17142 **AMERICAN LEGION**...Nonprofit Organizations
 17146 **COMPLETE QUALITY AUTO WORKS**...Automobile Repairing & Service
 17300 **KELLY TRACTOR CO**...Cranes & Derricks (whls)
 17300 **KELLY TRACTOR CO**...Tractor-dealers (whls)

1700 **CORNER LAKE MIDDLE SCHOOL**...Schools

70 total records. Part 1 of 2

15695 LOYAL ORDER OF MOOSE...Fraternal Organizations
 16300 BOB'S MARKET...Grocers-retail
 16300 U-HAUL NEIGHBORHOOD DEALER...Truck Renting & Leasing
 16300 U-HAUL NEIGHBORHOOD DEALER...Trailer Renting & Leasing
 16783 WHATABURGER...Restaurants
 16783 ZAXBY'S...Full-service Restaurants
 16801 TILLIE'S TWISTEE TREAT...Ice Cream Parlors
 16801 TILLIE'S TWISTEE TREAT...Ice Cream Parlors
 16825 PUBLIX PHARMACY...Pharmacies
 16825 PUBLIX SUPER MARKET...Grocers-retail
 16837 FANTASTIC SAM'S...Beauty Salons
 16849 CORNER LAKES PLAZA...Shopping Centers & Malls
 16849 TRACTOR SUPPLY CO...Farm Supplies (whls)
 16857 NI HAO CHINESE RESTAURANT...Restaurants
 16860 FIFTH THIRD BANK...Automated Teller Machines
 16860 FIFTH THIRD BANK...Banks
 16860 FIFTH THIRD BANK ATM...Automated Teller Machines
 16865 ALOHA NAIL SALON...Manicuring
 16865 COMMUNITY HEALTH NTRWK-CENTRAL...Laboratories-medical
 16865 WHITE CLEANERS...Cleaners
 16869 PAPA GIO'S PIZZERIA-CHILOUTA...Pizza
 16869 PAPA GIO'S PIZZERIA-CHILOUTA...Restaurants
 16873 PIZZA HUT...Full-service Restaurants
 16877 ALTERNATIVE FINISHES INC...Business Services Nec
 16877 BABY GUARD SVC-CENTRAL FL...Fence-manufacturers
 16877 BABY GUARD SVC-CENTRAL FL...Baby Accessories
 16877 CHALLENGE COINS R US...Coin Dealers Supplies & Etc
 16877 FALCON OF THE NILE WATER SLTNS...Swimming Pool Repair & Service
 16877 GIVEJET LLC...Aircraft Charter Rental & Leasing Svc
 16877 INSTADRY...Memorial Restoration & Preservation
 16877 INSTADRY...Carpet & Rug Cleaners
 16877 LYNN GANSTER...Nonclassified Establishments
 16877 NO DRAMA INC...Nonclassified Establishments
 16877 OUTSOURCE ORLANDO...Internet Svcs-network Designers/consnt
 16877 REBECCA DIXON...Nonclassified Establishments
 16877 SAFARI SEPTIC & HOME SVC...Septic Tanks
 16877 TACO USA...Restaurants
 16877 UPS STORE...Packaging Service
 16877 UPS STORE...Mailing & Shipping Services
 16880 LONG JOHN SILVER'S...Foods-carry Out
 16880 LONG JOHN SILVER'S...Restaurants
 16884 BURGER KING...Restaurants
 16884 BURGER KING...Foods-carry Out
 16889 JACKSON HEWITT TAX SVC...Tax Return Preparation & Filing
 16889 RED SKY WIRELESS...Cellular Telephones-equipment & Supls
 16889 SUBWAY...Foods-carry Out
 16889 SUBWAY...Restaurants
 16891 AMPM...Service Stations-gasoline & Oil
 16891 CIRCLE K...Convenience Stores
 16900 CHASE ATM...Automated Teller Machines
 16900 WALGREENS...Pharmacies
 16900 WALGREENS...Variety Stores
 16920 MC DONALD'S...Foods-carry Out

Part 2 of 2

16920 MC DONALD'S...Restaurants
 16928 ADVANCE AUTO PARTS...Automobile Parts & Supplies-retail-new
 16928 ADVANCE AUTO PARTS...Batteries-storage-retail
 16928 ADVANCE AUTO PARTS...Automobile Parts & Supplies-retail-new
 16959 CIRCLE K...Convenience Stores
 16959 CIRCLE K...Grocers-retail
 16969 EAST COLONIAL AUTO PARTS...Automobile Parts-used & Rebuilt (whls)
 17105 A ABBOTT USED AUTO PARTS INC...Scrap Metals & Iron (whls)
 17105 AUTO CRAFT OF FLORIDA...Crafts
 17105 J B USED AUTO PARTS...Glass-auto Plate & Window & Etc
 17105 J & B...Transmissions-automobile
 17105 J & B USED AUTO PARTS...Automobile Parts-used & Rebuilt (whls)
 17105 J & B USED AUTO PARTS...Glass-auto Plate & Window & Etc
 17105 JUNKYARD ORLANDO U PULL IT...Automobile Parts-used & Rebuilt (whls)
 17142 AMERICAN LEGION...Veterans' & Military Organizations
 17146 COMPLETE QUALITY AUTO WORKS...Automobile Repairing & Service
 17300 KELLY TRACTOR CO...Cranes & Derricks (whls)

1700 CORNER LAKE MIDDLE SCHOOL...Schools
 1700 CORNER LAKE MIDDLE SCHOOL...Elementary & Secondary Schools
 1700 CORNER LAKE MIDDLE SCHOOL...Schools
 1700 CORNER LAKE MIDDLE SCHOOL...Element, Secon Schl

142 total records. Part 1 of 3
 16300 BOB'S MARKET...Grocers-retail
 16300 BOBS MARKET...Supermarkets & Other Grocery Stores
 16300 BOBS MARKET...Grocers-retail
 16300 BOBS MARKET...Grocery Stores
 16300 BOBS MARKET...Ret Groceries
 16300 U HAUL CO...Truck Rental & Lsg
 16300 U HAUL CO...Truck Trailer & Rv Rental & Leasing
 16300 U HAUL CO...Truck Renting & Leasing
 16300 U-HAUL NEIGHBORHOOD DEALER...Truck Renting & Leasing
 16783 WHATABURGER...Full-service Restaurants
 16783 WHATABURGER RESTAURANT...Quick Serv Burger
 16801 TILLIE'S TWISTEE TREAT INC...Ice Cream Parlors
 16801 TILLIES TWISTEE TREAT INC...Snack & Nonalcoholic Beverage Bars
 16801 TILLIES TWISTEE TREAT INC...Quick Serv Ice Cream/yogurt
 16801 TILLIES TWISTEE TREAT INC...Ice Cream Parlors
 16825 BLOCKBUSTER EXPRESS...Video Rental Kiosks
 16825 PUBLIX PHARMACY...Pharmacies
 16825 PUBLIX SUPER MARKET...Grocers-retail
 16825 PUBLIX SUPER MARKET...Supermarkets & Other Grocery Stores
 16825 PUBLIX SUPER MARKET...Grocers-retail
 16825 PUBLIX SUPER MARKETS...Grocery Stores
 16837 FANTASTIC SAMS...Beauty Salons
 16849 CORNER LAKES PLAZA...Shopping Centers & Malls
 16849 TRACTOR SUPPLY CO...Farm Supplies (whls)
 16849 TRACTOR SUPPLY CO...Whl Farm Supplies
 16849 TRACTOR SUPPLY CO...Farm Supplies Merchant Whols
 16849 TRACTOR SUPPLY CO...Farm Supplies (wholesale)
 16849 TRACTOR SUPPLY STORE 560...Whol Industrial Equipment
 16857 HI HAOS CHINESE RESTAURANT...Restaurants
 16857 NI HAOS CHINESE RESTAURANT...Restaurants
 16857 NI HAOS CHINESE RESTAURANT...Full-service Restaurants
 16857 NI HAOS CHINESE RESTAURANT...Oriental Menu
 16860 FIFTH THIRD BANK...Banks
 16861 FANTASTIC SAMS...Hairdressers
 16861 FANTASTIC SAMS...Beauty Salons
 16861 FANTASTIC SAMS...Beauty Salons
 16861 MARY NAILS...Beauty Shop
 16861 MARYS NAILS...Manicuring
 16865 ALOHA NAIL SALON...Manicuring
 16865 COMMUNITY HEALTH NTRWK-CENTRAL...Laboratories-medical
 16865 MARYS NAILS...Beauty Shops
 16865 MARYS NAILS...Nail Salons
 16865 MARYS NAILS...Nail Salons
 16865 WHITE CLEANERS...Cleaners
 16865 WHITE CLEANERS...Gmt Pressg clrs Agt
 16865 WHITE CLEANERS...Drycleaning & Laundry Svcs
 16869 BRONX PIZZERIA...Restaurants
 16869 BRONX PIZZERIA...Full-service Restaurants
 16869 BRONX PIZZERIA...Quick Serv Pizza Parlor
 16869 PAPA GIO'S PIZZERIA-CHILOUTA...Pizza
 16877 AARON ZMARZLINSKI LAW OFFICE...Legal Services
 16877 C & C TREE PROS...Orna Shrub Tree Sv
 16877 C & C TREE PROS...Landscaping Svcs
 16877 CARPET RESCUE INC...Carpet/upholstery Cleaning Ret Floor Covering

Part 2 of 3

16877 FALCON OF THE NILE WATER SLTNS...Swimming Pool Repair & Service
 16877 FALCON OF THE NILE WATER SLTNS...Commercial Building Construction
 16877 FALCON OF THE NILE WATER SLTNS...Plbg & Heating Eqp
 16877 HONEYS BUZY BEE HOUSE KEEPING...All Other Specialty Trade Contrs
 16877 ILLUMINATIONS...Signs (manufacturers)
 16877 ILLUMINATIONS...Sign Mfg
 16877 ILLUMINATIONS...Signs & Advg Spc
 16877 INTELLIMARK GROUP LLC...Data Processing & Related Svcs
 16877 IT LAGOON...Consumer Lending
 16877 KNIGHTVISION INVESTIGATIONS...Detectives-private
 16877 KNIGHTVISION INVESTIGATIONS...Investigation Svcs
 16877 KNIGHTVISION INVESTIGATIONS...Det, Armored Car Sv
 16877 M & I CONSULTANTS...Consultants-business Nec
 16877 OUTSOURCE ORLANDO...Internet Svcs-network Designers/consint
 16877 OUTSOURCE ORLANDO...Other Computer Related Svcs
 16877 OUTSOURCE ORLANDO...Computer Svcs Nec
 16877 UPS STORE...Mailing & Shipping Services
 16877 UPS STORE...Direct Mail Advg Sv
 16877 UPS STORE...Mailing & Shipping Services
 16877 UPS STORE...Direct Mail Advertising
 16880 LONG JOHN SILVER'S...Restaurants
 16880 TACO BELL...Restaurants
 16880 TACO BELL...Quick Serv Mexican
 16880 TACO BELL...Full-service Restaurants
 16884 BURGER KING...Restaurants
 16884 BURGER KING...Quick Serv Burger
 16884 BURGER KING...Full-service Restaurants
 16889 MOBILPRO...Cellular Telephones (services)
 16889 MOVIE GALLERY...Video Tapes & Discs-renting & Leasing
 16889 MOVIE GALLERY...Video Tape Rental
 16889 S I COMMUNICATIONS INC...Cellular Telephones-equipment & Supls
 16889 SUBWAY...Restaurants
 16891 B P CONNECT...Nonclassified Establishments
 16891 BP CONNECT...Service Stations-gasoline & Oil
 16891 BP CONNECT...Gasoline Sv Station
 16891 BP CONNECT...Other Gasoline Stations
 16891 CARDTRONICS ATM...Automated Teller Machines
 16900 CHASE ATM...Automated Teller Machines
 16900 WALGREENS...Pharmacies
 16900 WALGREEN DRUG STORES...Drug,proprietary Str
 16900 WALGREENS...Pharmacies & Drug Stores
 16920 MC DONALD'S...Restaurants
 16920 MC DONALDS...Restaurants
 16920 MC DONALDS...Full-service Restaurants
 16920 MC DONALDS HAMBURGERS...Quick Serv Burger
 16928 ADVANCE AUTO PARTS...Automobile Parts & Supplies-retail-new
 16928 ADVANCE AUTO PARTS...Automotive Parts & Accessories Stores
 16928 ADVANCE AUTO PARTS...Auto, Home Sups Str
 16928 ADVANCE AUTO PARTS INC...Automobile Parts & Supplies-retail-new
 16928 DISCOUNT AUTO PARTS INC...Auto And Home Supply Store
 16959 CIRCLE K...Convenience Stores
 16959 CIRCLE K...Ret Groceries Gasoline Service Station

Part 3 of 3

16959 CIRCLE K...Convenience Stores
 16959 CIRCLE K FOOD STORES...Conven Stores Chain
 16959 REDBOX...Video Rental Kiosks
 16969 EAST COLONIAL AUTO PARTS...Automobile Parts-used & Rebuilt (whls)
 16969 EAST COLONIAL AUTO PARTS...Used Motor Vehicle Parts Merchant Whols
 16969 EAST COLONIAL AUTO PARTS...Automobile Parts-used & Rebuilt (whol)
 16969 EAST COLONIAL AUTO PARTS...Motor Vh Used Parts
 17105 A ABBOTT AUTO GLASS...Engines-rebuilding & Exchanging
 17105 A ABBOTT USED AUTO PARTS INC...Scrap Metals & Iron (whls)
 17105 A AA MOTT USED CAR PARTS INC...Used Merchandise
 17105 A ABBOTT AUTO GLASS...Other Building Material Dealers
 17105 A ABBOTT AUTO GLASS...Glass
 17105 A ABBOTT RADIATORS...Used Motor Vehicle Parts Merchant Whols
 17105 A ABBOTT USED AUTO PARTS...Whol And Ret Used Auto Parts
 17105 A ABBOTT USED AUTO PARTS...Other Building Material Dealers
 17105 A ABBOTT USED AUTO PARTS INC...Motor Vh Used Parts
 17105 AUTO CRAFT RADIATORS...Transmissions-automobile
 17105 AUTO CRAFT OF FLORIDA...Whol Auto Parts/supplies Automotive Services
 17105 AUTO CRAFT OF FLORIDA...Auto Transm Repair
 17105 AUTO CRAFT RADIATORS...Automotive Transmission Repair
 17105 AUTO CRAFT RADIATORS...Hobby,toy, Game Str
 17105 J & B USED AUTO PARTS...Transmissions-automobile
 17105 J & B USED AUTO PARTS...Automobile Parts-used & Rebuilt (whol)
 17105 J & B USED AUTO PARTS...Used Motor Vehicle Parts Merchant Whols
 17105 J & B USED AUTO PARTS...Motor Vh Used Parts
 17146 COMPLETE QUALITY AUTO WORKS...Automobile Repairing & Service
 17146 PERFORMANCE MUFFLERS & BRAKES...Automotive Exhaust System Repair
 17146 QUALITY AUTO WORKS...Automotive Body & Interior Repair
 17146 QUALITY AUTO WORKS...Auto Body Repair/painting
 17146 QUALITY AUTO WORKS...Auto Body Repair
 17146 TOW PRO...Motor Vehicle Towing
 17146 TOW PRO...Auto Sv Ex Repair
 17237 TARMAC AMERICA...Ready-mixed Concrete-manufacturers
 17300 KELLY TRACTOR CO...Cranes & Derricks (whls)
 17300 KELLY TRACTOR CO...Mats Handling Machnry
 17300 KELLY TRACTOR CO...Heavy Construction Equipment Rental Business Servi
 17300 KELLY TRACTOR CO...

- 1700 CORNER LAKE MIDDLE SCHOOL...Schools
 1700 CORNER LAKE MIDDLE SCHOOL...Element, Secon Schl

- 66 total records. Part 1 of 2
 15695 LOYAL ORDER OF MOOSE...Civic & Social Assn
 16300 BOBS MARKET...Ret Groceries
 16300 BOBS MARKET...Grocery Stores
 16300 BOBS MARKET...Grocers-retail
 16300 U-HAUL CO...Truck Renting & Leasing
 16300 U-HAUL CO...Truck Rental & Lsg
 16783 WHATABURGER RESTAURANT...Quick Serv Burger
 16801 TILLIES TWISTEE TREAT INC...Ice Cream Parlors
 16801 TILLIES TWISTEE TREAT INC...Quick Serv Ice Cream/yogurt
 16825 PUBLIX SUPER MARKET...Grocers-retail
 16825 PUBLIX SUPER MARKETS...Grocery Stores
 16849 TRACTOR SUPPLY CO...Farm Supplies (wholesale)
 16849 TRACTOR SUPPLY CO...Whl Farm Supplies
 16849 TRACTOR SUPPLY STORE 560...Whol Industrial Equipment
 16857 HI HAOS CHINESE RESTAURANT...Restaurants
 16857 NI HAOS CHINESE RESTAURANT...Oriental Menu
 16861 FANTASTIC SAMS...Hairdressers
 16861 FANTASTIC SAMS...Beauty Salons
 16861 MARY NAILS...Beauty Shop
 16861 MARYS NAILS...Manicuring
 16865 MARYS NAILS...Beauty Shops
 16865 WHITE CLEANERS...Gmt Pressg clrs Agt
 16865 WHITE CLEANERS...Cleaners
 16869 BRONX PIZZERIA...Restaurants
 16869 BRONX PIZZERIA...Quick Serv Pizza Parlor
 16877 AARON ZMARZLINSKI LAW OFFICE...Legal Services
 16877 C & C TREE PROS...Orna Shrub Tree Sv
 16877 CARPET RESCUE INC...Carpet/upholstery Cleaning Ret Floor Covering
 16877 FALCON OF THE NILE WATER SLTNS...Plbg & Heating Eqp
 16877 ILLUMINATIONS...Signs & Advg Spc
 16877 ILLUMINATIONS...Signs (manufacturers)
 16877 KNIGHTVISION INVESTIGATIONS...Det Armored Car Sv
 16877 OUTSOURCE ORLANDO...Computer Svs Nec
 16877 UPS STORE...Direct Mail Advg Sv
 16877 UPS STORE...Mailing & Shipping Services
 16880 TACO BELL...Quick Serv Mexican
 16884 BURGER KING...Quick Serv Burger
 16889 MOVIE GALLERY...Video Tapes & Discs-renting & Leasing
 16889 MOVIE GALLERY...Video Tape Rental
 16891 B P CONNECT...Nonclassified Establishments
 16891 BP CONNECT...Gasoline Sv Station
 16900 WALGREEN DRUG STORES...Drug proprietary Str
 16920 MC DONALDS...Restaurants
 16920 MC DONALDS HAMBURGERS...Quick Serv Burger
 16928 ADVANCE AUTO PARTS...Auto Home Sups Str
 16928 ADVANCE AUTO PARTS INC...Automobile Parts & Supplies-retail-new
 16928 DISCOUNT AUTO PARTS INC...Auto And Home Supply Store
 16959 CIRCLE K...Ret Groceries Gasoline Service Station
 16959 CIRCLE K FOOD STORES...Conven Stores Chain
 16969 EAST COLONIAL AUTO PARTS...Automobile Parts-used & Rebuilt (whol)
 16969 EAST COLONIAL AUTO PARTS...Motor Vh Used Parts
 17105 A ABBOTT AUTO GLASS...Glass
 17105 A-AA MOTT USED CAR PARTS INC...Used Merchandise

Part 2 of 2

- 17105 **A-ABBOTT USED AUTO PARTS**...*Whol And Ret Used Auto Parts*
- 17105 **A-ABBOTT USED AUTO PARTS INC**...*Motor Vh Used Parts*
- 17105 **AUTO CRAFT OF FLORIDA**...*Whol Auto Parts/supplies Automotive Services*
- 17105 **AUTO CRAFT OF FLORIDA**...*Auto Transm Repair*
- 17105 **AUTO CRAFT RADIATORS**...*Hobby,toy, Game Str*
- 17105 **J & B USED AUTO PARTS**...*Automobile Parts-used & Rebuilt (whol)*
- 17105 **J & B USED AUTO PARTS**...*Motor Vh Used Parts*
- 17142 **AMERICAN LEGION**...*Vet/mil Org*
- 17146 **QUALITY AUTO WORKS**...*Auto Body Repair/painting*
- 17146 **QUALITY AUTO WORKS**...*Auto Body Repair*
- 17146 **TOW PRO**...*Auto Sv Ex Repair*
- 17300 **KELLY TRACTOR CO**...*Heavy Construction Equipment Rental Business Services*
- 17300 **KELLY TRACTOR CO**...*Mats Handling Machnry*

- 1700 **CORNER LAKE MIDDLE SCHOOL**...*Public Elementary And Secondary Schools*

- 15675 CROWN COMM...
- 15695 LOYAL ORDER OF MOOSE...*Civic Associations*
- 16300 BOB'S MARKET...
- 16891 AMOCO FOOD SHOP...
- 16920 MC DONALD'S...*Steak And Barbecue Restaurants*
- 16928 DISCOUNT AUTO PARTS INC...
- 16959 BANC ONE...
- 16959 CIRCLE K...
- 16969 EAST COLONIAL AUTO PARTS...*Automotive Parts And Supplies Used*
- 16969 ORLANDO GEAR...
- 17105 A-AA BEL INC...
- 17105 A-ABBOTT USED AUTO PARTS...*Automotive Parts And Supplies Used*
- 17105 AAA MOTT TOWING SVC INC...*Automotive Maintenance Services*
- 17105 AUTO CRAFT OF FLORIDA...
- 17105 AUTOCRAFT RADIATORS-FL...
- 17105 J & B USED AUTO PARTS...*Automotive Parts And Supplies Used*
- 17105 MUSTANG RANCH...
- 17142 AMERICAN LEGION...*Fraternal Associations*
- 17146 QUALITY AUTO WORKS...*Interior Repair Services*
- 17237 TARMAC AMERICA INC...
- 17300 KELLY TRACTOR CO...

CHULUOTA RD (R R 4) 32820

From State Hwy 50 north
 Tract 166 (2924-2998 E) \$2
 Tract 166 (3345-4735 B) \$2

- 1700 ★Schools-public
 Orange County
 Corner Lake
 Middle School 568-0510 99
- 2300 Ankerson Chris R 568-6210 84
- 2930 Schmidt Leonard □ 568-7434 01
- 3351 Fredette N 568-0460 99
- 3351 Haynie Robert B 568-6229 00
- 3700 Prouty Dan + 568-4218 01
- 3724 Wasche June + 568-0604 01
- 3800 Hanna David J 568-4077 98
- 4111 Mair Sid 568-2253 99
- 4135 Rollins George D

15695	★Loyal Order Of Moose Lodge 2427	568-4888 96
16300	★Bob's Market	□ 568-2570 01
<i>(R R 10) ZIP CODE 32820</i>		
16891	★Amoco Food Shop	568-8214 93
16920	★McDonald's Restmt Orlando	568-5085 95
16928	★Discount Auto Parts Orlando	□ 568-1296 01
16959	★Banc One	568-4286 98
16959	★Circle K Store	568-5617 89
16959	★Circle K Store #7502	568-3280 98
16969	★East Colonial Auto Parts	568-8444 94
17102	Watkins Eleanore	568-5198 98
17105	★A Aamott Inc	568-2131 82
17105	★A Aa Mott Towing Svc	568-2131 90
17105	★A-abbott Auto Glass	568-2133 80
17105	★A-abbott Radiators	568-2133 93
17105	★A-abbott Used Auto Parts Inc	568-2133 91
17105	★A-aa Bel Inc	568-2131 90
17105	★A-aa Mott Used Car Parts Inc	568-2131 90
17105	★Auto Craft Of Florida	568-2010 82
17105	Horton Norm	568-3117 99
17105	★J & B Auto Glass	568-2131 92
17105	★J & B Used Auto Parts	568-2131 82

COLONIAL DR E (R R 10) 32820 Contd

17105	★Mustang Ranch	568-2131 82
17142	★American Legion Post 242	568-3416 89
17146	★Quality Auto Works	568-2838 92
17300	★Kelly Tractor Co	568-8055 95
17304	★Dillard Smith Construction Co	+ 568-7595 01

CHULUOTA RD (R R 4) 32820

From State Hwy 50 north

Tract 166 (2924-2998 E) \$2

Tract 166 (3345-4735 B) \$2

2300	Ankerson Chris R	568-6210	84
2936	Schmidt Leonard	+ 568-7434	96
3351	● Haynie Barbara W	N/A	
3800	● Davis Greg	568-4077	95
3836	Fallen James W	568-2551	92

15695	★ Loyal Order Of Moose Lodge 2427	+ 568-4888	96
16300	★ Bob's Market	568-2570	83
16316	Decosta Joseph	+ 568-7813	96
16566	● Muscare Gasper P	N/A	
16891	★ Amoco Food Shop	568-8214	93
16920	★ McDonald's Restrnt Orlando	568-5085	95
16959	★ Circle K Store	568-5617	89

STREET NOT LISTED

COLONIAL DR E (R R 4) 32820
Contd

16969	★East Colonial Auto Parts	568-8444 94
17105	★A Aamott Inc	568-2131 82
17105	★A AA Mott Towing Svc	568-2131 90
17105	★A-AA Bel Inc	568-2131 90
17105	★A-AA Mott Used Car Parts Inc	568-2131 90
17105	★A-Abbott Auto Glass	568-2133 80
17105	★A-Abbott Radiators	568-2133 93
17105	★A-Abbott Used Auto Parts Inc	568-2133 91
17105	★Auto Craft Of Florida	568-2010 82
17105	★J & B Auto Glass	568-2131 92
17105	★J & B Used Auto Parts	568-2131 82
17105	★Mustang Ranch	568-2131 82
17142	★American Legion Post 242	568-3416 89
17146	★Adams Well Drilling	568-0350 90
17146	★Quality Auto Works	568-2838 92
17237	★Tarmac Florida Inc Bithlo Plant	568-3340 91
17300	★Kelly Tractor Co	568-8055 95
17361	★Joe's Truck Parts Inc	568-2148 78
17421	★All	

NO LISTINGS IN RANGE

STREET NOT LISTED

NO LISTINGS IN RANGE

STREET NOT LISTED

NO LISTINGS IN RANGE

STREET NOT LISTED

NO LISTINGS IN RANGE

STREET NOT LISTED

NO LISTINGS IN RANGE

STREET NOT LISTED

NO LISTINGS IN RANGE

STREET NOT LISTED

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STREET NOT LISTED

NO LISTINGS IN RANGE

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NO LISTINGS IN RANGE

STREET NOT LISTED

NO LISTINGS IN RANGE

STREET NOT LISTED

NO LISTINGS IN RANGE

STREET NOT LISTED

NO LISTINGS IN RANGE

STREET NOT LISTED

NO LISTINGS IN RANGE

STREET NOT LISTED

NO LISTINGS IN RANGE

APPENDIX E

ERIS Fire Insurance Map



—
FIRE
INSURANCE
MAPS

Project Property: Chuluota Road RCA
Chuluota Rd
Florida FL

Project No: Y20-830

Requested By: Nadic Engineering Services, Inc.

Order No: 21091000565

Date Completed: September 11, 2021

Please note that no information was found for your site or adjacent properties.

APPENDIX F

Reconnaissance Photograph

Photo:	Date:	Description: Start of study corridor at the intersection of Chuluota Road and E HWY 50. BP AMOCO #60558 located at 16981 E Colonial Drive.
1	09/17/2021	



Photo:	Date:	Description: The old Circle K #7502 (DEP Facility # 48/8521400) located at 16959 E. Colonial Drive, is a Delisted Contaminated Site.
2	09/17/2021	



Photo:	Date:	Description: Chuluota Road. Facing Northwest. Sidewalk, and undeveloped, forested area. No apparent signs of contamination were visible.
3	09/17/2021	



Photo:	Date:	North row of Chuluota Road, facing North towards Lake Pickett Road. No apparent signs of contamination were visible.
4	09/17/2021	



Photo:	Date:	Description: Chuluota Road. Facing North. View from the limits with Lake Pickett Road. Electric Fence. No apparent signs of contamination were visible.
5	09/17/2021	



Photo:	Date:	Description: Intersection of Chuluota Rd. and Lake Pickett Road. No apparent signs of contamination were visible.
6	09/17/2021	



Photo:	Date:	Description: Chuluota Road. Facing North. View from the limits with Lake Pickett Road. No apparent signs of contamination were visible.
7	09/17/2021	



Photo:	Date:	Chuluota Rd. Facing South. No apparent signs of contamination were visible.
8	09/17/2021	



Photo:	Date:	Description: Chuluota Road. Facing North. View from the limits with Lake Pickett Road. No apparent signs of contamination were visible.
9	09/17/2021	



Photo:	Date:	Chuluota Rd. Facing South. Multi-family residential visible on the East side. No apparent signs of contamination were visible.
10	09/17/2021	



Photo:	Date:	Description: Chuluota Road. Facing South. View from the limits with Lake Front Elementary School. No apparent signs of contamination were visible.
11	09/17/2021	



Photo:	Date:	Chuluota Rd. Facing South. Multi-family residential visible on the west side. No apparent signs of contamination were visible.
12	09/17/2021	



Photo:	Date:	Description: Chuluota Road. Facing Southwest.
13	09/17/2021	No apparent signs of contamination were visible.



Photo:	Date:	Chuluota Rd. Facing North. No apparent signs of contamination were visible.
14	09/17/2021	



Photo:	Date:	Description: Chuluota Road. Facing South. View from the Corner Lake Middle School. No apparent signs of contamination were visible.
15	09/17/2021	



Photo:	Date:	Description: Interior view of boundary, facing Northwest. This place is located west of Chuluota Road.
16	09/17/2021	



APPENDIX G

Sample Questionnaire Documents

CONTAMINATION SCREENING QUESTIONNAIRE:

**CHULUOTA ROAD RCA STUDY FROM COLONIAL DRIVE TO LAKE
PICKETT ROAD**

PROPERTY DESCRIPTION AND ANALYSIS:

STREET ADDRESS OF SUBJECT PROPERTY

CITY

COUNTY

STATE

ZIP

LEGAL DESCRIPTION

CURRENT USE OF PROPERTY:

RESIDENTIAL COMMERCIAL INDUSTRIAL UNDEVELOPED LAND AGRICULTURAL

OTHER (DESCRIBE):

NAME OF PARTY COMPLETING QUESTIONNAIRE:

COMPANY:

STREET ADDRESS, CITY, STATE, ZIP:

DAYTIME PHONE:

ALTERNATIVE PHONE:

EMAIL ADDRESS / ALTERNATIVE CONTACT:

Chuluota Road RCA Study – Contamination Screening Questionnaire
Nadic Project No. PR.GEO.RD20027.1

SUBJECT PROPERTY DESCRIPTION:

Total Size _____ Size of developed Areas _____
How is property zoned? _____ Is property vacant or improved? _____
Is property currently occupied? _____ How long under current ownership? _____

Current uses: 1. _____ Time _____
2. _____ Time _____
3. _____ Time _____
Past uses: 1. _____ Time _____
2. _____ Time _____
3. _____ Time _____

Structures on the property: 1. _____ Age _____
2. _____ Age _____
3. _____ Age _____

Can a property layout be faxed? _____

Ground cover:

Asphalt _____ Concrete _____
Grass _____ Dirt _____
Vegetation _____ Other ground cover _____

Land features:

Direction of slope _____
Approximate incline _____
Sensitive Lands / Wetlands _____ Size _____
Surface Water _____ Size _____

How is storm water handled? _____

Herbicide/Pesticide use (type, quantity, frequency) _____

Utilities:

septic or sewer _____
well or city water _____
electricity or gas _____

Are materials ever burned on the property? _____

Storage facilities _____
Hazardous materials storage _____
Waste materials _____

**Chuluota Road RCA Study – Contamination Screening Questionnaire
Nadic Project No. PR.GEO.RD20027.1**

How long since excavation on the property?

By Whom? _____

Why? _____

Last time natural features manipulated

By Whom? _____

Why? _____

Previous ESA's (Environmental Site Assessment)

By Whom? _____

Why? _____

Previous remediation work

By Whom? _____

Why? _____

SURROUNDING PROPERTIES:

General description of area:

Uses of surrounding properties:

East _____

West _____

North _____

South _____

Proximity to:

gas station _____

manufacturing plants _____

waste treatment facility _____

water treatment facility _____

Is there any reason to suspect environmental contamination from adjoining properties?

QUESTIONNAIRE:

1a. Did you observe evidence or do you have any prior knowledge that the *subject property* is currently or has been previously used for an **industrial use**?

yes no unknown

1b. Did you observe evidence or do you have any prior knowledge that any *adjoining properties* is currently or has been previously used for an **industrial use**?

yes no unknown

Chuluota Road RCA Study – Contamination Screening Questionnaire
Nadic Project No. PR.GEO.RD20027.1

2a. Did you observe evidence or do you have any knowledge that the *subject property* is currently or has previously been used for any of the following (circle all that apply):

- **gasoline station**
- **motor repair facility**
- **dry cleaners**
- **photo developing laboratory**
- **junkyard or landfill**
- **waste treatment, storage, disposal, processing or recycling facility**

yes no unknown

2b. Did you observe evidence or do you have any knowledge that any *adjoining property* is currently or has previously been used for any of the following (circle all that apply):

- **gasoline station**
- **motor repair facility**
- **dry cleaners**
- **photo developing laboratory**
- **junkyard or landfill**
- **waste treatment, storage, disposal, processing or recycling facility**

yes no unknown

3. Did you observe evidence or do you have any knowledge that there are currently or have been previously any damaged or discarded **automotive or industrial batteries, pesticides, paints, or other chemicals** in individual containers > 5 gallons (19 L) in volume or 50 gallons (190 L) in the aggregate, stored on or used at the *subject property*?

yes no unknown

4. Did you observe evidence or do you have any knowledge that there are currently or have been previously any **industrial drums** (typically 55 gal) or sacks of chemicals located on the *subject property*?

yes no unknown

5. Did you observe evidence or do you have any prior knowledge that **fill dirt** has been brought onto the *subject property* **that originated from a contaminated site or is of unknown origin**?

yes no unknown

6. Did you observe evidence or do you have any prior knowledge that there is currently or has been previously any **pits, ponds, or lagoons** located on the *subject property* in connection with waste treatment or waste disposal?

yes no unknown

7. Did you observe evidence or do you have any prior knowledge that there is currently or has been previously any **stained soil** on the *subject property*?

yes no unknown

Chuluota Road RCA Study – Contamination Screening Questionnaire
Nadic Project No. PR.GEO.RD20027.1

8. Did you observe evidence or do you have any prior knowledge that there is currently or has been previously any **registered or unregistered storage tanks** (above or underground) located on the *subject property*?

yes no unknown

9. Did you observe evidence or do you have any prior knowledge that there is currently or has been previously any **vent pipes, fill pipes, or access ways** indicating a fill pipe protruding from the ground on the *subject property or adjacent to any structure* on the subject property?

yes no unknown

10. Is there currently evidence of **leaks, spill, or staining** by substances other than water, or **foul odors**, associated with flooring, drains, walls, ceilings, or exposed grounds on the *subject property*?

yes no unknown

11. If the *subject property* is served by a **private well or non-public water system**, is there evidence or do you have any knowledge that **contaminants** have been identified in the well or system, or that the well has been **designated as contaminated** by any government environmental / health agency?

yes no unknown

12. Do you have any knowledge of **environmental liens** or government notification relating to **past or recurrent violations of environmental laws** with respect to the *subject property*?

yes no unknown

13. Have you been informed of the current or past existence of **hazardous substances or petroleum products** with respect to the *subject property*?

yes no unknown

14. Do you have any knowledge of any **environmental site assessment** of the property or facility that indicated the presence of **hazardous substances or petroleum products on, or contamination** of, the *subject property*, or **recommended further assessment** of the *subject property*?

yes no unknown

15. Do you know of any past, threatened, or pending **lawsuits or administrative proceedings** concerning a release or threatened release of any hazardous substance or petroleum products involving the *subject property* by any owner or occupant of the property?

yes no unknown

16. Does the *subject property* **discharge waste water** (not including sanitary waste or storm water) onto or adjacent to the property and/or into a storm water system?

yes no unknown

Maria Bridges

From: Godwin Nnadi
Sent: Monday, October 4, 2021 4:41 PM
To: Maria Bridges
Subject: FW: Environmental Screening Questionnaire Chuluota Rd
Attachments: ENVIRONMENTAL SCREENING QUESTIONNAIRE_Chuluota Road RCA.doc

From: Ricardina Diaz <rdiaz@nadicinc.com>
Sent: Friday, September 24, 2021 4:30 PM
To: kburrell@circlek.com
Cc: Godwin Nnadi <gnnadi@nadicinc.com>
Subject: Environmental Screening Questionnaire Chuluota Rd

Good afternoon,

NADIC Engineering is responsible to complete Contamination Screening Evaluation for Chuluota Road Roadway Conceptual Analysis Study from Colonial Drive (SR 50) to Lake Pickett Road, a distance of approximately 1.9 miles in Orange County.

As per the American Standard Testing and Materials (ASTM) Standard E 1527-13. Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process and Florida Department of Transportation PD&E Manual, Chapter 20, Contamination Impacts, dated July 1, 2020:

- Interviews will be conducted by phone, in writing, or in person with key site managers, representative occupants of the related properties, and local government officials as appropriate, to obtain information indicating recognized environmental conditions in connection with those sites.



We would like your support by answering the attached questionnaire.

This email is a followup on the questionnaire that was delivered on Tuesday at the Circle K Gas Station located 16891 E. Colonial Drive, Orlando, FL.

Thank you for your cooperation.

Ricardina Diaz

NADIC ENGINEERING SERVICES INC

601 N. Hart Blvd., Orlando, FL. 32818, | Kissimmee, FL | Miami Lakes, FL |
|  407.521.4771 |  407.521.4772 |



Email: rdiaz@nadicinc.com

Nadic Engineering Services (NADIC), Inc. qualifies as a Minority/Woman Business Enterprise with the State of Florida. NADIC is also certified by Orange County, City of Orlando, Greater Orlando Aviation Authority (GOAA), Central Florida Expressway Authority (CFX), Miami-Dade County and Miami-Dade Expressway Authority (MDX). NADIC has served the State of Florida for 20 years in the areas of geotechnical and environmental engineering, construction material testing and inspection.

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APPENDIX H

ERIS Database Report



DATABASE REPORT

Project Property: *Chuluota Road RCA
Chuluota Rd
Florida FL*

Project No: *Y20-830*

Report Type: *Database Report*

Order No: *21091000565*

Requested by: *Nadic Engineering Services, Inc.*

Date Completed: *September 28, 2021*

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Executive Summary

Property Information:

Project Property: Chuluota Road RCA
Chuluota Rd Florida FL

Project No: Y20-830

Coordinates:

Latitude: 28.57406914
Longitude: -81.12497575
UTM Northing: 3,160,803.99
UTM Easting: 487,777.80
UTM Zone: 17R

Elevation: 69 FT

Order Information:

Order No: 21091000565
Date Requested: September 10, 2021
Requested by: Nadic Engineering Services, Inc.
Report Type: Database Report

Historicals/Products:

Aerial Photographs Historical Aerials (Boundaries)
City Directory Search CD - 2 Street Search
ERIS Xplorer [ERIS Xplorer](#)
Excel Add-On Excel Add-On
Fire Insurance Maps US Fire Insurance Maps
Physical Setting Report (PSR) Physical Setting Report (PSR)
Topographic Map Topographic Maps

Executive Summary: Report Summary

<i>Database</i>	<i>Searched</i>	<i>Search Radius</i>	<i>Project Property</i>	<i>Within 0.12mi</i>	<i>0.125mi to 0.25mi</i>	<i>0.25mi to 0.50mi</i>	<i>0.50mi to 1.00mi</i>	<i>Total</i>
<u>Standard Environmental Records</u>								
Federal								
DOE FUSRAP	Y	1	0	0	0	0	0	0
NPL	Y	1	0	0	0	0	0	0
PROPOSED NPL	Y	1	0	0	0	0	0	0
DELETED NPL	Y	0.5	0	0	0	0	-	0
SEMS	Y	0.5	0	0	0	0	-	0
ODI	Y	0.5	0	0	0	0	-	0
SEMS ARCHIVE	Y	0.5	0	0	0	0	-	0
CERCLIS	Y	0.5	0	0	0	0	-	0
IODI	Y	0.5	0	0	0	0	-	0
CERCLIS NFRAP	Y	0.5	0	0	0	0	-	0
CERCLIS LIENS	Y	PO	0	-	-	-	-	0
RCRA CORRACTS	Y	1	0	0	0	0	0	0
RCRA TSD	Y	0.5	0	0	0	0	-	0
RCRA LQG	Y	0.25	0	0	0	-	-	0
RCRA SQG	Y	0.25	0	0	1	-	-	1
RCRA VSQG	Y	0.25	0	5	2	-	-	7
RCRA NON GEN	Y	0.25	0	1	0	-	-	1
FED ENG	Y	0.5	0	0	0	0	-	0
FED INST	Y	0.5	0	0	0	0	-	0
LUCIS	Y	0.5	0	0	0	0	-	0
ERNS 1982 TO 1986	Y	PO	0	-	-	-	-	0
ERNS 1987 TO 1989	Y	PO	0	-	-	-	-	0
ERNS	Y	PO	0	-	-	-	-	0
FED BROWNFIELDS	Y	0.5	0	0	0	0	-	0
FEMA UST	Y	0.25	0	0	0	-	-	0
FRP	Y	0.25	0	0	0	-	-	0
HIST GAS STATIONS	Y	0.25	0	0	0	-	-	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
REFN	Y	0.25	0	0	0	-	-	0
BULK TERMINAL	Y	0.25	0	0	0	-	-	0
SEMS LIEN	Y	PO	0	-	-	-	-	0
SUPERFUND ROD	Y	1	0	0	0	0	0	0
State								
SHWS	Y	1	0	0	0	0	0	0
DELISTED SHWS	Y	1	0	0	0	0	0	0
CLEANUP DEP	Y	1	0	0	0	0	0	0
WCRPS	Y	1	0	2	0	0	0	2
DELISTED WCRPS	Y	1	0	0	0	0	0	0
SWF/LF	Y	0.5	0	2	1	1	-	4
LST	Y	0.5	0	1	0	1	-	2
DELISTED LST	Y	0.5	0	0	0	0	-	0
UST	Y	0.25	0	2	0	-	-	2
AST	Y	0.25	0	1	0	-	-	1
TANK	Y	0.25	0	0	0	-	-	0
DEL UST AST TANK	Y	0.25	0	0	0	-	-	0
DEL STORAGE TANK	Y	0.25	0	0	0	-	-	0
FF TANKS	Y	0.25	0	0	0	-	-	0
STCS	Y	0.5	0	0	0	0	-	0
INST	Y	0.5	0	2	0	0	-	2
ENG	Y	0.5	0	0	0	0	-	0
VCP	Y	0.5	0	0	0	0	-	0
BROWNFIELDS	Y	0.5	0	0	0	0	-	0
BROWNFIELD AREA	Y	0.5	0	0	0	0	-	0
Tribal								
INDIAN LUST	Y	0.5	0	0	0	0	-	0
INDIAN UST	Y	0.25	0	0	0	-	-	0
DELISTED ILST	Y	0.5	0	0	0	0	-	0
DELISTED IUST	Y	0.25	0	0	0	-	-	0

County

No County databases were selected to be included in the search.

Additional Environmental Records

Federal

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
PFAS NPL	Y	0.5	0	0	0	0	-	0
FINDS/FRS	Y	PO	0	6	-	-	-	6
TRIS	Y	PO	0	-	-	-	-	0
PFAS TRI	Y	0.5	0	0	0	0	-	0
PFAS WATER	Y	0.5	0	0	0	0	-	0
HMIRS	Y	0.125	0	0	-	-	-	0
NCDL	Y	0.125	0	0	-	-	-	0
TSCA	Y	0.125	0	0	-	-	-	0
HIST TSCA	Y	0.125	0	0	-	-	-	0
FTTS ADMIN	Y	PO	0	-	-	-	-	0
FTTS INSP	Y	PO	0	-	-	-	-	0
PRP	Y	PO	0	-	-	-	-	0
SCRD DRYCLEANER	Y	0.5	0	0	0	0	-	0
ICIS	Y	PO	0	-	-	-	-	0
FED DRYCLEANERS	Y	0.25	0	0	0	-	-	0
DELISTED FED DRY	Y	0.25	0	0	0	-	-	0
FUDS	Y	1	0	0	0	0	0	0
FORMER NIKE	Y	1	0	0	0	0	0	0
PIPELINE INCIDENT	Y	PO	0	-	-	-	-	0
MLTS	Y	PO	0	-	-	-	-	0
HIST MLTS	Y	PO	0	-	-	-	-	0
MINES	Y	0.25	0	0	0	-	-	0
SMCRA	Y	1	0	0	0	0	0	0
MRDS	Y	1	0	0	0	0	0	0
URANIUM	Y	1	0	0	0	0	0	0
ALT FUELS	Y	0.25	0	0	0	-	-	0
SSTS	Y	0.25	0	0	0	-	-	0
PCB	Y	0.5	0	0	0	0	-	0
State								
PRIORITYCLEAN	Y	0.5	0	0	0	0	-	0
DRYCLEANERS	Y	0.25	0	0	0	-	-	0
DELISTED DRYCLEANERS	Y	0.25	0	0	0	-	-	0
HISTORICAL DRYC	Y	0.25	0	0	0	-	-	0
SPILLS	Y	0.125	0	0	-	-	-	0
DWM CONTAM	Y	0.5	0	2	0	1	-	3

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
DEL CONTAM SITE	Y	0.5	0	2	0	1	-	3
PFAS AFFF	Y	0.5	0	0	0	0	-	0
PFAS	Y	0.5	0	0	0	0	-	0
UIC	Y	PO	0	-	-	-	-	0
WELL SURVEILLANCE	Y	0.25	0	1	0	-	-	1
CDV SOUTHEAST	Y	0.5	0	0	0	0	-	0
TIER 2	Y	0.125	0	0	-	-	-	0
DELISTED COUNTY	Y	0.25	0	0	0	-	-	0

Tribal

No Tribal additional environmental record sources available for this State.

County

No County additional environmental databases were selected to be included in the search.

Total:	0	27	4	4	0	35
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* PO – Property Only

* 'Property and adjoining properties' database search radii are set at 0.25 miles.

Executive Summary: Site Report Summary - Project Property

<i>Map Key</i>	<i>DB</i>	<i>Company/Site Name</i>	<i>Address</i>	<i>Direction</i>	<i>Distance (mi/ft)</i>	<i>Elev Diff (ft)</i>	<i>Page Number</i>
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No records found in the selected databases for the project property.

Executive Summary: Site Report Summary - Surrounding Properties

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
1	RCRA VSQG	COLUMBIA ELEMENTARY SCHOOL	18501 CYPRESS LAKE GLEN BLVD ORLANDO FL 32820-0000 EPA Handler ID: FLR000157024	NE	0.16 / 857.87	0	22
2	RCRA VSQG	CORNER LAKE MIDDLE SCHOOL	1700 CHULUOTA RD ORLANDO FL 32820-1401 EPA Handler ID: FLR000156539	SSW	0.00 / 18.86	3	25
2	RCRA VSQG	ORANGE COUNTY SOLID WASTE	1700 CHULUOTA RD ORLANDO FL 32820-1401 EPA Handler ID: FLT990063778	SSW	0.00 / 18.86	3	28
2	FINDS/FRS	CORNER LAKE MIDDLE SCHOOL	1700 CHULUOTA RD ORLANDO FL 32820-1401 Registry ID: 110036555395	SSW	0.00 / 18.86	3	28
2	FINDS/FRS	ORANGE COUNTY SOLID WASTE	1700 CHULUOTA RD ORLANDO FL 328201401 Registry ID: 110035551006	SSW	0.00 / 18.86	3	29
3	RCRA NON GEN	AMOCO OIL STATION #60558	16891 E COLONIAL DR ORLANDO FL 32820-1910 EPA Handler ID: FLR000111187	SSW	0.03 / 155.66	1	30
3	UST	CIRCLE K #2708972	16891 E COLONIAL DR ORLANDO FL 32820 Facility ID Facility Status: 9101787 OPEN Tank Status Status Date: U - In Service 01-DEC-2004, 01-AUG-2004, 01-AUG-2004, U - In Service 01-DEC-2004, 01-AUG-2004	SSW	0.03 / 155.66	1	31
4	LST	CIRCLE K #7502	16959 E COLONIAL DR (E HWY 50) ORLANDO FL 32820-1912 Facility ID Facility Status: 8521400 CLOSED Cleanup Required: R - CLEANUP REQUIRED	SSW	0.03 / 135.56	1	33
4	DEL CONTAM SITE	CIRCLE K #7502	16959 E COLONIAL DR (E HWY 50) ORLANDO FL 32820	SSW	0.03 / 135.56	1	36
4	DWM CONTAM	CIRCLE K #7502	16959 E COLONIAL DR (E HWY 50) ORLANDO FL 32820 Facility ID: 8521400 Facility Status: ACTIVE	SSW	0.03 / 135.56	1	36
4	UST	CIRCLE K #7502	16959 E COLONIAL DR (E HWY 50) ORLANDO FL 32820 Facility ID Facility Status: 8521400 CLOSED Tank Status Status Date: 28-FEB-2020, 28-FEB-2020, 28-FEB-2020	SSW	0.03 / 135.56	1	36
5	FINDS/FRS	CHULUOTA RD AT LAKE PICKETT RD	UNKNOWN ORLANDO FL 32820	NNE	0.01 / 35.67	0	37

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
			Registry ID: 110056345192				
6	SWF/LF	HONEY BEE RANCH LCD	16877 EAST COLONIAL DRIVE #322 ORLANDO FL 32820	SSW	0.06 / 311.03	1	38
6	SWF/LF	19161, LLC (FORMERLY MONARCH MULCH, LLC)	16877 E. COLONIAL DRIVE ORLANDO FL 32820	SSW	0.06 / 311.03	1	39
7	FINDS/FRS	CIRCLE K STORE #7502	16959 E HWY 50 ORLANDO FL 32820 Registry ID: 110006389354	SSW	0.02 / 86.95	1	40
8	RCRA VSQG	TRACTOR SUPPLY COMPANY #560	16849 E COLONIAL DR ORLANDO FL 32820-1910 EPA Handler ID: FLR000210625	SSW	0.10 / 512.38	1	41
9	AST	PUBLIX SUPER MARKET #897	16825 E COLONIAL DR ORLANDO FL 32820 Facility ID Facility Status: 9810114 OPEN Tank Status Status Date: U - In Service 01-FEB-2008	SSW	0.11 / 557.38	0	42
10	RCRA VSQG	CIRCLE K STORE #7502	16959 E COLONIAL DR ORLANDO FL 32820-1912 EPA Handler ID: FLD984251470	SSW	0.05 / 284.96	0	43
10	DEL CONTAM SITE	CIRCLE K #7502	16959 E COLONIAL DR (E HWY 50) ORLANDO FL 32820	SSW	0.05 / 284.96	0	44
10	WELL SURVEILLANCE	CIRCLE K	16959 E COLONIAL DR ORLANDO FL 32820	SSW	0.05 / 284.96	0	44
11	DWM CONTAM	ECOGREEN AUTO PARTS	16969 EAST COLONIAL DRIVE ORLANDO FL 32820- Facility ID: 338803 Facility Status: OPEN	SSW	0.07 / 376.28	0	45
12	RCRA VSQG	ECO GREEN AUTO PARTS	16969 E COLONIAL DR ORLANDO FL 32820-1912 EPA Handler ID: FLR000053637	SSW	0.08 / 417.77	0	45
12	WCRPS	ECOGREEN AUTO PARTS	16969 EAST COLONIAL DRIVE ORLANDO FL	SSW	0.08 / 417.77	0	50
12	WCRPS	EAST COLONIAL USED AUTO PARTS	16969 EAST COLONIAL DR ORLANDO FL	SSW	0.08 / 417.77	0	50
12	INST	Eco Green Auto Parts	16969 EAST COLONIAL DRIVE ORLANDO FL 32820	SSW	0.08 / 417.77	0	51

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
12	INST	Eco Green Auto Parts	16969 E Colonial Dr Orlando FL 32820	SSW	0.08 / 417.77	0	51
13	FINDS/FRS	CYPRESS LAKES - PHASE 5 - TRACT J & K	CR 419 & LAKE PICKETT RD ORLANDO FL 32820 <i>Registry ID:</i> 110035571645	NNE	0.00 / 4.37	0	52
14	FINDS/FRS	CYPRESS LAKES - PHASE 4 & 5	CR-419 & COLONIAL DR ORLANDO FL 32820 <i>Registry ID:</i> 110032780382	SSW	0.00 / 26.31	1	53
15	RCRA VSQG	J & B USED AUTO PARTS INC	17105 E COLONIAL DR ORLANDO FL 32820-2204 <i>EPA Handler ID:</i> FLR000059147	S	0.21 / 1,110.03	0	53
15	SWF/LF	J & B USED AUTO PARTS, INC.	17105 E. COLONIAL DR Orlando FL 32820	S	0.21 / 1,110.03	0	58
16	RCRA SQG	QUALITY AUTO WORKS INC	17146 E COLONIAL DR ORLANDO FL 32833 <i>EPA Handler ID:</i> FLD984249458	S	0.24 / 1,276.33	-1	58
17	SWF/LF	I.G.FONTE(IMPORT USED AUTO PARTS)	17421 E COLONIAL DR ORLANDO FL 32820	S	0.49 / 2,579.58	0	60
18	LST	FIRE RESCUE #82	500 N STORY PARTIN RD ORLANDO FL 32833-2811 <i>Facility ID Facility Status:</i> 9100721 CLOSED <i>Cleanup Required:</i> R - CLEANUP REQUIRED, R - CLEANUP REQUIRED	SSW	0.40 / 2,099.00	-8	61
19	DEL CONTAM SITE	ORANGE CNTY FIRE RESCUE #82	500 STORY PARTIN RD BITHLO FL 32833	S	0.41 / 2,158.98	-9	63
19	DWM CONTAM	ORANGE CNTY FIRE RESCUE #82	500 STORY PARTIN RD BITHLO FL 32833 <i>Facility ID:</i> 9100721 <i>Facility Status:</i> ACTIVE	S	0.41 / 2,158.98	-9	64

Executive Summary: Summary by Data Source

Standard

Federal

RCRA SQG - RCRA Small Quantity Generators List

A search of the RCRA SQG database, dated Jun 14, 2021 has found that there are 1 RCRA SQG site(s) within approximately 0.25 miles of the project property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
QUALITY AUTO WORKS INC	17146 E COLONIAL DR ORLANDO FL 32833	S	0.24 / 1,276.33	16
<i>EPA Handler ID: FLD984249458</i>				

RCRA VSQG - RCRA Very Small Quantity Generators List

A search of the RCRA VSQG database, dated Jun 14, 2021 has found that there are 7 RCRA VSQG site(s) within approximately 0.25 miles of the project property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
ORANGE COUNTY SOLID WASTE	1700 CHULUOTA RD ORLANDO FL 32820-1401	SSW	0.00 / 18.86	2
<i>EPA Handler ID: FLT990063778</i>				
CORNER LAKE MIDDLE SCHOOL	1700 CHULUOTA RD ORLANDO FL 32820-1401	SSW	0.00 / 18.86	2
<i>EPA Handler ID: FLR000156539</i>				
TRACTOR SUPPLY COMPANY #560	16849 E COLONIAL DR ORLANDO FL 32820-1910	SSW	0.10 / 512.38	8
<i>EPA Handler ID: FLR000210625</i>				
CIRCLE K STORE #7502	16959 E COLONIAL DR ORLANDO FL 32820-1912	SSW	0.05 / 284.96	10
<i>EPA Handler ID: FLD984251470</i>				
ECO GREEN AUTO PARTS	16969 E COLONIAL DR ORLANDO FL 32820-1912	SSW	0.08 / 417.77	12
<i>EPA Handler ID: FLR000053637</i>				
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
COLUMBIA ELEMENTARY SCHOOL	18501 CYPRESS LAKE GLEN BLVD ORLANDO FL 32820-0000	NE	0.16 / 857.87	1
<i>EPA Handler ID: FLR000157024</i>				
J & B USED AUTO PARTS INC	17105 E COLONIAL DR ORLANDO FL 32820-2204	S	0.21 / 1,110.03	15

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
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EPA Handler ID: FLR000059147

RCRA NON GEN - RCRA Non-Generators

A search of the RCRA NON GEN database, dated Jun 14, 2021 has found that there are 1 RCRA NON GEN site(s) within approximately 0.25 miles of the project property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
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AMOCO OIL STATION #60558	16891 E COLONIAL DR ORLANDO FL 32820-1910	SSW	0.03 / 155.66	3
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EPA Handler ID: FLR000111187

State

WCRPS - Waste Cleanup Responsible Party Sites

A search of the WCRPS database, dated Apr 11, 2021 has found that there are 2 WCRPS site(s) within approximately 1.00 miles of the project property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
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ECOGREEN AUTO PARTS	16969 EAST COLONIAL DRIVE ORLANDO FL	SSW	0.08 / 417.77	12
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EAST COLONIAL USED AUTO PARTS	16969 EAST COLONIAL DR ORLANDO FL	SSW	0.08 / 417.77	12
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SWF/LF - Solid Waste Facilities and Landfills

A search of the SWF/LF database, dated Mar 24, 2021 has found that there are 4 SWF/LF site(s) within approximately 0.50 miles of the project property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
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19161, LLC (FORMERLY MONARCH MULCH, LLC)	16877 E. COLONIAL DRIVE ORLANDO FL 32820	SSW	0.06 / 311.03	6
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HONEY BEE RANCH LCD	16877 EAST COLONIAL DRIVE #322 ORLANDO FL 32820	SSW	0.06 / 311.03	6
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<u>Lower Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
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J & B USED AUTO PARTS, INC.	17105 E. COLONIAL DR Orlando FL 32820	S	0.21 / 1,110.03	15
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I.G.FONTE(IMPORT USED AUTO PARTS)	17421 E COLONIAL DR ORLANDO FL 32820	S	0.49 / 2,579.58	17
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<u>Lower Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
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LST - Leaking Tanks

A search of the LST database, dated Aug 13, 2021 has found that there are 2 LST site(s) within approximately 0.50 miles of the project property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
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CIRCLE K #7502	16959 E COLONIAL DR (E HWY 50) ORLANDO FL 32820-1912	SSW	0.03 / 135.56	4
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*Facility ID | Facility Status: 8521400 | CLOSED
Cleanup Required: R - CLEANUP REQUIRED*

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
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FIRE RESCUE #82	500 N STORY PARTIN RD ORLANDO FL 32833-2811	SSW	0.40 / 2,099.00	18
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*Facility ID | Facility Status: 9100721 | CLOSED
Cleanup Required: R - CLEANUP REQUIRED, R - CLEANUP REQUIRED*

UST - Underground Storage Tanks

A search of the UST database, dated Aug 17, 2021 has found that there are 2 UST site(s) within approximately 0.25 miles of the project property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
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CIRCLE K #2708972	16891 E COLONIAL DR ORLANDO FL 32820	SSW	0.03 / 155.66	3
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*Facility ID | Facility Status: 9101787 | OPEN
Tank Status | Status Date: U - In Service | 01-DEC-2004, 01-AUG-2004, 01-AUG-2004, U - In Service | 01-DEC-2004, 01-AUG-2004*

CIRCLE K #7502	16959 E COLONIAL DR (E HWY 50) ORLANDO FL 32820	SSW	0.03 / 135.56	4
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*Facility ID | Facility Status: 8521400 | CLOSED
Tank Status | Status Date: 28-FEB-2020, 28-FEB-2020, 28-FEB-2020, 28-FEB-2020*

AST - Aboveground Storage Tanks

A search of the AST database, dated Aug 17, 2021 has found that there are 1 AST site(s) within approximately 0.25 miles of the project property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
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PUBLIX SUPER MARKET #897	16825 E COLONIAL DR ORLANDO FL 32820	SSW	0.11 / 557.38	9
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*Facility ID | Facility Status: 9810114 | OPEN
Tank Status | Status Date: U - In Service | 01-FEB-2008*

INST - Institutional Controls Registry

A search of the INST database, dated May 24, 2021 has found that there are 2 INST site(s) within approximately 0.50 miles of the project property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
Eco Green Auto Parts	16969 E Colonial Dr Orlando FL 32820	SSW	0.08 / 417.77	12
Eco Green Auto Parts	16969 EAST COLONIAL DRIVE ORLANDO FL 32820	SSW	0.08 / 417.77	12

Non Standard

Federal

FINDS/FRS - Facility Registry Service/Facility Index

A search of the FINDS/FRS database, dated Nov 2, 2020 has found that there are 6 FINDS/FRS site(s) within approximately 0.02 miles of the project property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
ORANGE COUNTY SOLID WASTE	1700 CHULUOTA RD ORLANDO FL 328201401 <i>Registry ID: 110035551006</i>	SSW	0.00 / 18.86	2
CORNER LAKE MIDDLE SCHOOL	1700 CHULUOTA RD ORLANDO FL 32820-1401 <i>Registry ID: 110036555395</i>	SSW	0.00 / 18.86	2
CIRCLE K STORE #7502	16959 E HWY 50 ORLANDO FL 32820 <i>Registry ID: 110006389354</i>	SSW	0.02 / 86.95	7
CYPRESS LAKES - PHASE 4 & 5	CR-419 & COLONIAL DR ORLANDO FL 32820 <i>Registry ID: 110032780382</i>	SSW	0.00 / 26.31	14
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
CHULUOTA RD AT LAKE PICKETT RD	UNKNOWN ORLANDO FL 32820 <i>Registry ID: 110056345192</i>	NNE	0.01 / 35.67	5
CYPRESS LAKES - PHASE 5 - TRACT J & K	CR 419 & LAKE PICKETT RD ORLANDO FL 32820 <i>Registry ID: 110035571645</i>	NNE	0.00 / 4.37	13

State

DWM CONTAM - Contaminated Sites

A search of the DWM CONTAM database, dated Mar 12, 2020 has found that there are 3 DWM CONTAM site(s) within approximately 0.50 miles of the project property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
CIRCLE K #7502	16959 E COLONIAL DR (E HWY 50) ORLANDO FL 32820	SSW	0.03 / 135.56	4
	<i>Facility ID: 8521400</i> <i>Facility Status: ACTIVE</i>			

ECOGREEN AUTO PARTS	16969 EAST COLONIAL DRIVE ORLANDO FL 32820-	SSW	0.07 / 376.28	11
	<i>Facility ID: 338803</i> <i>Facility Status: OPEN</i>			

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
ORANGE CNTY FIRE RESCUE #82	500 STORY PARTIN RD BITHLO FL 32833	S	0.41 / 2,158.98	19
	<i>Facility ID: 9100721</i> <i>Facility Status: ACTIVE</i>			

DEL CONTAM SITE - Delisted Contaminated Sites

A search of the DEL CONTAM SITE database, dated Sep 30, 2015 has found that there are 3 DEL CONTAM SITE site(s) within approximately 0.50 miles of the project property.

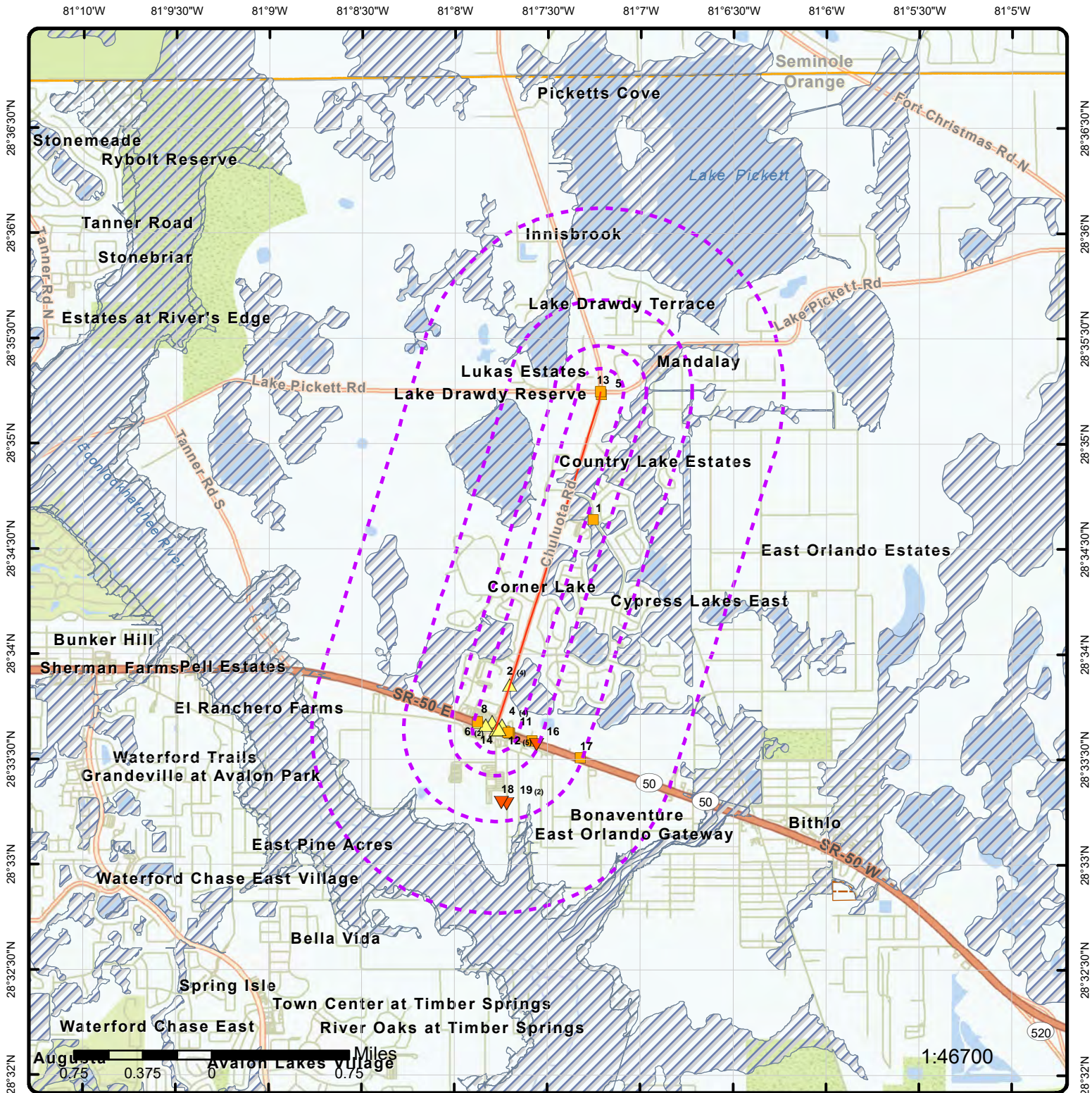
<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
CIRCLE K #7502	16959 E COLONIAL DR (E HWY 50) ORLANDO FL 32820	SSW	0.03 / 135.56	4
CIRCLE K #7502	16959 E COLONIAL DR (E HWY 50) ORLANDO FL 32820	SSW	0.05 / 284.96	10

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
ORANGE CNTY FIRE RESCUE #82	500 STORY PARTIN RD BITHLO FL 32833	S	0.41 / 2,158.98	19

WELL SURVEILLANCE - Well Surveillance Program Facilities

A search of the WELL SURVEILLANCE database, dated Jul 1, 2021 has found that there are 1 WELL SURVEILLANCE site(s) within approximately 0.25 miles of the project property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
CIRCLE K	16959 E COLONIAL DR ORLANDO FL 32820	SSW	0.05 / 284.96	10

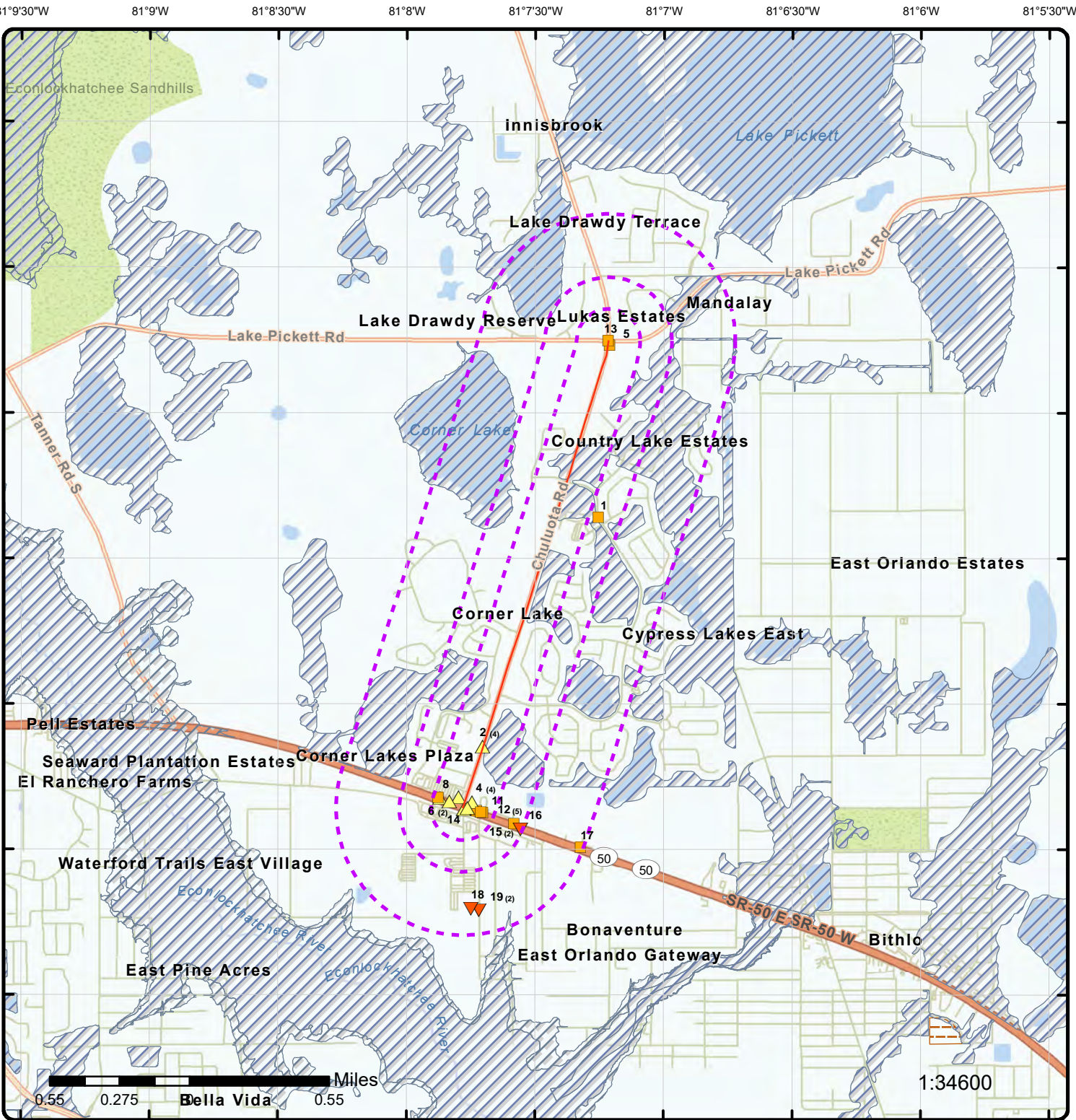


Map: 1.0 Mile Radius

Order Number: 21091000565
 Address: Chuluota Rd, Florida, FL



Project Property	Buffer Outline	State	FWS Special Designation Areas
Eris Sites with Higher Elevation	Freeways; Highways	Country	State Brownfield Sites
Eris Sites with Same Elevation	Traffic Circle; Ramp	National Priority List Sites	State Brownfield Areas
Eris Sites with Lower Elevation	Major & Minor Arterial	National Wetland	State Superfund Areas: Dept. of Defense
Eris Sites with Unknown Elevation	Traffic Circle; Ramp	Indian Reserve Land	State Superfund Areas: NPL
Eris Areas with Higher Elevation	Local Road	Historic Fill	WQARF Areas
Eris Areas with Same Elevation	Rail	100 Year Flood Zone	Federal Lands: Dept. of Defense (owned/administered areas)
Eris Areas with Lower Elevation		500 Year Flood Zone	
Eris Areas with Unknown Elevation			

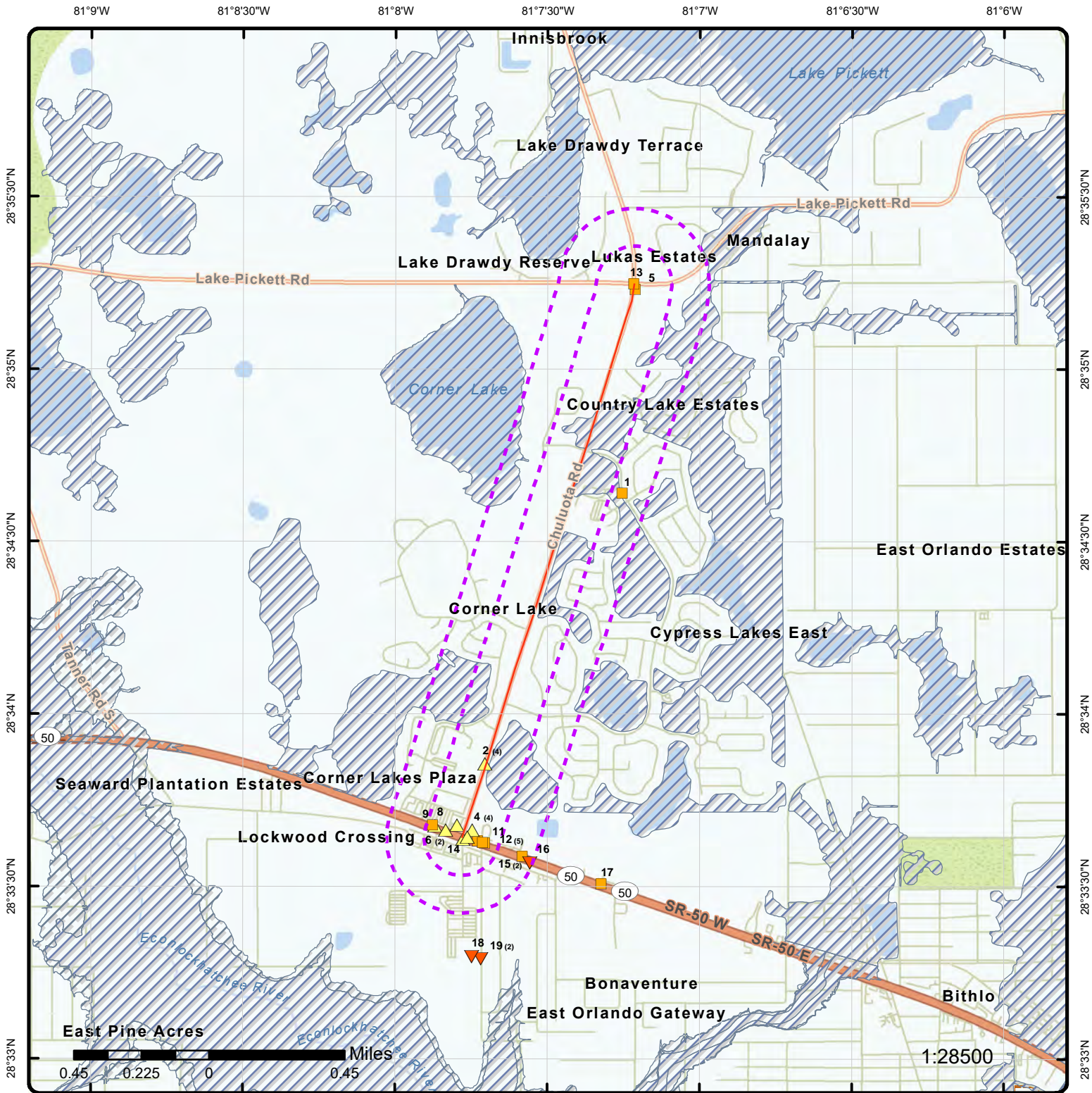


Map: 0.5 Mile Radius

Order Number: 21091000565
 Address: Chuluota Rd, Florida, FL



Project Property	Buffer Outline	State	FWS Special Designation Areas
Eris Sites with Higher Elevation	Freeways; Highways	Country	State Brownfield Sites
Eris Sites with Same Elevation	Traffic Circle; Ramp	National Priority List Sites	State Brownfield Areas
Eris Sites with Lower Elevation	Major & Minor Arterial	National Wetland	State Superfund Areas: Dept. of Defense
Eris Sites with Unknown Elevation	Traffic Circle; Ramp	Indian Reserve Land	State Superfund Areas: NPL
Eris Areas with Higher Elevation	Local Road	Historic Fill	WQARF Areas
Eris Areas with Same Elevation	Rail	100 Year Flood Zone	Federal Lands: Dept. of Defense (owned/administered areas)
Eris Areas with Lower Elevation		500 Year Flood Zone	
Eris Areas with Unknown Elevation			



Map: 0.25 Mile Radius

Order Number: 21091000565
 Address: Chuluota Rd, Florida, FL



Project Property	Buffer Outline	State	FWS Special Designation Areas
Eris Sites with Higher Elevation	Freeways; Highways	Country	State Brownfield Sites
Eris Sites with Same Elevation	Traffic Circle; Ramp	National Priority List Sites	State Brownfield Areas
Eris Sites with Lower Elevation	Major & Minor Arterial	National Wetland	State Superfund Areas:Dept. of Defense
Eris Sites with Unknown Elevation	Traffic Circle; Ramp	Indian Reserve Land	State Superfund Areas:NPL
Eris Areas with Higher Elevation	Local Road	Historic Fill	WQARF Areas
Eris Areas with Same Elevation	Rail	100 Year Flood Zone	Federal Lands: Dept. of Defense (owned/administered areas)
Eris Areas with Lower Elevation		500 Year Flood Zone	
Eris Areas with Unknown Elevation			

81°8'W

81°7'30"W

81°7'W

28°35'N

28°35'N

28°34'30"N

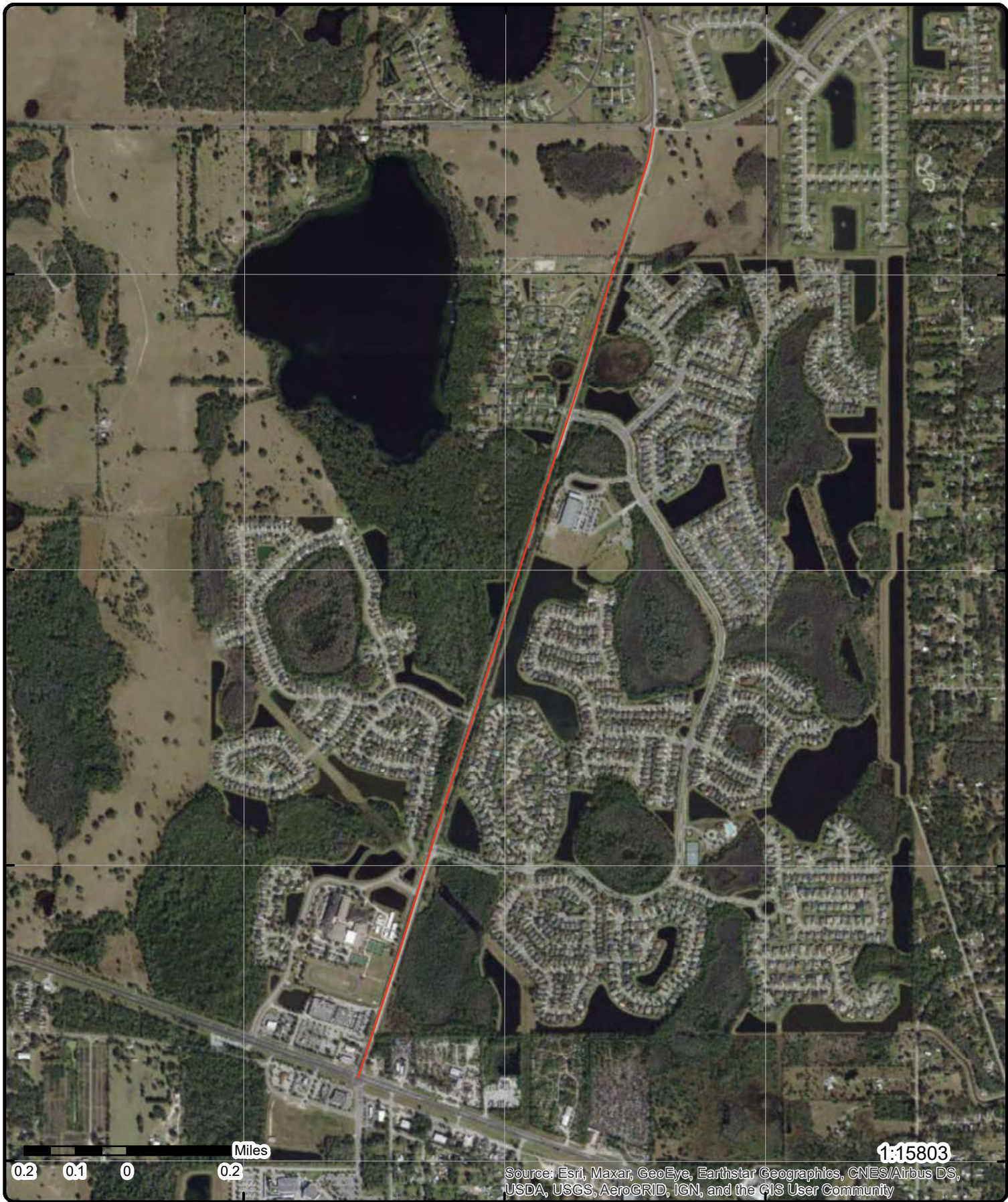
28°34'30"N

28°34'N

28°34'N

28°33'30"N

28°33'30"N



0.2 0.1 0 0.2 Miles

115803

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Aerial Year: 2019

Address: Chuluota Rd, Florida, FL

Source: ESRI World Imagery

Order Number: 21091000565



© ERIS Information Inc.

81°8'30"W

81°8'W

81°7'30"W

81°7'W

81°6'30"W

28°35'30"N

28°35'N

28°34'30"N

28°34'N

28°33'30"N

28°33'N

28°35'30"N

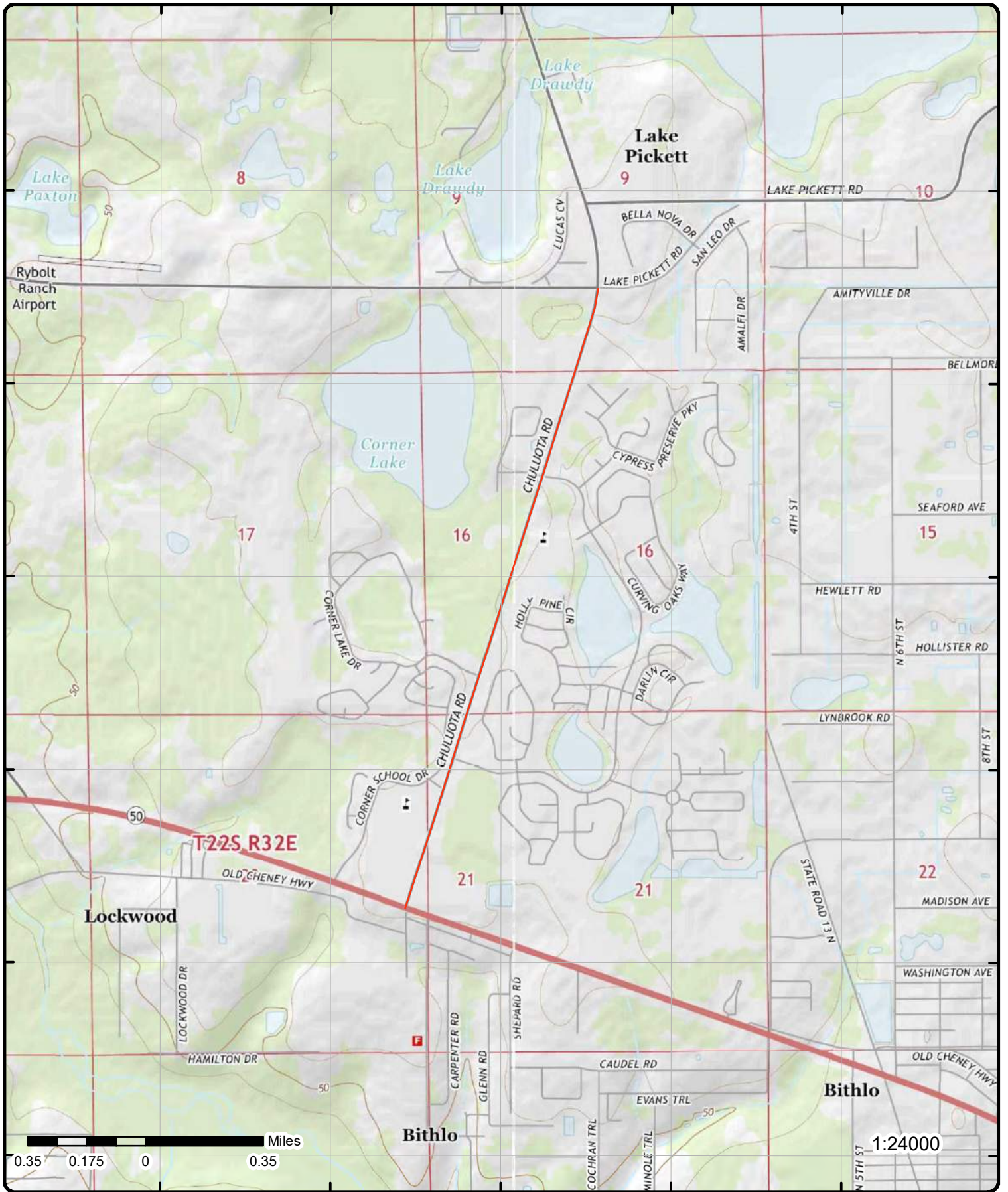
28°35'N

28°34'30"N

28°34'N

28°33'30"N

28°33'N



Topographic Map

Year: 2015

Order Number: 21091000565

Address: Chuluota Rd, FL

Quadrangle(s): Bithlo, FL; Oviedo SW, FL

Source: USGS Topographic Map



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Detail Report

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
1	1 of 1	NE	0.16 / 857.87	68.87 / 0	COLUMBIA ELEMENTARY SCHOOL 18501 CYPRESS LAKE GLEN BLVD ORLANDO FL 32820-0000	RCRA VSQG

EPA Handler ID: FLR000157024
Gen Status Universe: VSG
Contact Name: JENNIFER FOWLER
Contact Address: 3909 S SUMMERLIN AVE , , ORLANDO , FL, 32806-6905 , US
Contact Phone No and Ext: 407-317-3900 x3939
Contact Email: JENNIFER.FOWLER@OCPS.NET
Contact Country: US
County Name: ORANGE
EPA Region: 04
Land Type: County
Receive Date: 20090611
Location Latitude: 28.576674
Location Longitude: -81.122945

Violation/Evaluation Summary

Note: NO RECORDS: As of Jun 2021, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 200906
Receive Date: 20090611
Handler Name: COLUMBIA ELEMENTARY SCHOOL
Federal Waste Generator Code: 3
Generator Code Description: Very Small Quantity Generator
Source Type: Notification

Waste Code Details

Hazardous Waste Code: D001

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Waste Code Description:					IGNITABLE WASTE	
Hazardous Waste Code:					D002	
Waste Code Description:					CORROSIVE WASTE	
Hazardous Waste Code:					D003	
Waste Code Description:					REACTIVE WASTE	
Hazardous Waste Code:					D004	
Waste Code Description:					ARSENIC	
Hazardous Waste Code:					D005	
Waste Code Description:					BARIUM	
Hazardous Waste Code:					D006	
Waste Code Description:					CADMIUM	
Hazardous Waste Code:					D007	
Waste Code Description:					CHROMIUM	
Hazardous Waste Code:					D008	
Waste Code Description:					LEAD	
Hazardous Waste Code:					D009	
Waste Code Description:					MERCURY	
Hazardous Waste Code:					D010	
Waste Code Description:					SELENIUM	
Hazardous Waste Code:					D011	
Waste Code Description:					SILVER	
Hazardous Waste Code:					D012	
Waste Code Description:					ENDRIN (1,2,3,4,10,10-HEXACHLORO-1,7-EPOXY-1,4,4A,5,6,7,8,8A-OCTAHYDRO-1,4-ENDO, ENDO-5,8-DIMETH-ANO-NAPHTHALENE)	
Hazardous Waste Code:					D013	
Waste Code Description:					LINDANE (1,2,3,4,5,6-HEXA-CHLOROCYCLOHEXANE, GAMMA ISOMER)	
Hazardous Waste Code:					D014	
Waste Code Description:					METHOXYCHLOR (1,1,1-TRICHLORO-2,2-BIS [P-METHOXYPHENYL] ETHANE)	
Hazardous Waste Code:					D015	
Waste Code Description:					TOXAPHENE (C10 H10 CL8, TECHNICAL CHLORINATED CAMPHENE, 67-69 PERCENT CHLORINE)	
Hazardous Waste Code:					D016	
Waste Code Description:					2,4-D (2,4-DICHLOROPHENOXYACETIC ACID)	
Hazardous Waste Code:					D017	
Waste Code Description:					2,4,5-TP SILVEX (2,4,5-TRICHLOROPHENOXYPROPIONIC ACID)	
Hazardous Waste Code:					D018	
Waste Code Description:					BENZENE	
Hazardous Waste Code:					D019	
Waste Code Description:					CARBON TETRACHLORIDE	
Hazardous Waste Code:					D020	
Waste Code Description:					CHLORDANE	
Hazardous Waste Code:					D021	
Waste Code Description:					CHLOROBENZENE	
Hazardous Waste Code:					D022	
Waste Code Description:					CHLOROFORM	
Hazardous Waste Code:					D023	
Waste Code Description:					O-CRESOL	

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Hazardous Waste Code:			D024			
Waste Code Description:			M-CRESOL			
Hazardous Waste Code:			D025			
Waste Code Description:			P-CRESOL			
Hazardous Waste Code:			D026			
Waste Code Description:			CRESOL			
Hazardous Waste Code:			D027			
Waste Code Description:			1,4-DICHLOROETHYLENE			
Hazardous Waste Code:			D028			
Waste Code Description:			1,2-DICHLOROETHANE			
Hazardous Waste Code:			D029			
Waste Code Description:			1,1-DICHLOROETHYLENE			
Hazardous Waste Code:			D030			
Waste Code Description:			2,4-DINITROTOLUENE			
Hazardous Waste Code:			D031			
Waste Code Description:			HEPTACHLOR (AND ITS EPOXIDE)			
Hazardous Waste Code:			D032			
Waste Code Description:			HEXACHLOROETHYLENE			
Hazardous Waste Code:			D033			
Waste Code Description:			HEXACHLOROBUTADIENE			
Hazardous Waste Code:			D034			
Waste Code Description:			HEXACHLOROETHANE			
Hazardous Waste Code:			D035			
Waste Code Description:			METHYL ETHYL KETONE			
Hazardous Waste Code:			D036			
Waste Code Description:			NITROBENZENE			
Hazardous Waste Code:			D037			
Waste Code Description:			PENTACHLOROPHENOL			
Hazardous Waste Code:			D038			
Waste Code Description:			PYRIDINE			
Hazardous Waste Code:			D039			
Waste Code Description:			TETRACHLOROETHYLENE			
Hazardous Waste Code:			D040			
Waste Code Description:			TRICHLOROETHYLENE			
Hazardous Waste Code:			D041			
Waste Code Description:			2,4,5-TRICHLOROPHENOL			
Hazardous Waste Code:			D042			
Waste Code Description:			2,4,6-TRICHLOROPHENOL			
Hazardous Waste Code:			D043			
Waste Code Description:			VINYL CHLORIDE			

Owner/Operator Details

Owner/Operator Ind:	Current Owner	Street No:	
Type:	Other	Street 1:	445 W AMELIA ST
Name:	ORANGE COUNTY PUBLIC SCHOOLS	Street 2:	
Date Became Current:	20051101	City:	ORLANDO
Date Ended Current:		State:	FL
Phone:	407-317-3200	Country:	US

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Source Type:		Notification			Zip Code: 32801-1129	
Owner/Operator Ind:		Current Operator			Street No:	
Type:		Other			Street 1: 445 W AMELIA ST	
Name:		ORANGE COUNTY PUBLIC SCHOOLS			Street 2:	
Date Became Current:		20090611			City: ORLANDO	
Date Ended Current:					State: FL	
Phone:		407-317-3200			Country: US	
Source Type:		Notification			Zip Code: 32801-1129	

2 1 of 4 **SSW** 0.00 / 18.86 71.77 / 3 **CORNER LAKE MIDDLE SCHOOL** **RCRA VSQG**
1700 CHULUOTA RD
ORLANDO FL 32820-1401

EPA Handler ID: FLR000156539
Gen Status Universe: VSG
Contact Name: JENNIFER FOWLER
Contact Address: 3909 S SUMMERLIN AVE , , ORLANDO , FL, 32806-6905 , US
Contact Phone No and Ext: 407-317-3900 x3939
Contact Email: JENNIFER.FOWLER@OCPS.NET
Contact Country: US
County Name: ORANGE
EPA Region: 04
Land Type: County
Receive Date: 20090611
Location Latitude: 28.564749
Location Longitude: -81.130316

Violation/Evaluation Summary

Note: NO RECORDS: As of Jun 2021, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 200906
Receive Date: 20090611
Handler Name: CORNER LAKE MIDDLE SCHOOL
Federal Waste Generator Code: 3
Generator Code Description: Very Small Quantity Generator
Source Type: Notification

Waste Code Details

Hazardous Waste Code: D001

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Waste Code Description:					IGNITABLE WASTE	
Hazardous Waste Code:					D002	
Waste Code Description:					CORROSIVE WASTE	
Hazardous Waste Code:					D003	
Waste Code Description:					REACTIVE WASTE	
Hazardous Waste Code:					D004	
Waste Code Description:					ARSENIC	
Hazardous Waste Code:					D005	
Waste Code Description:					BARIUM	
Hazardous Waste Code:					D006	
Waste Code Description:					CADMIUM	
Hazardous Waste Code:					D007	
Waste Code Description:					CHROMIUM	
Hazardous Waste Code:					D008	
Waste Code Description:					LEAD	
Hazardous Waste Code:					D009	
Waste Code Description:					MERCURY	
Hazardous Waste Code:					D010	
Waste Code Description:					SELENIUM	
Hazardous Waste Code:					D011	
Waste Code Description:					SILVER	
Hazardous Waste Code:					D012	
Waste Code Description:					ENDRIN (1,2,3,4,10,10-HEXACHLORO-1,7-EPOXY-1,4,4A,5,6,7,8,8A-OCTAHYDRO-1,4-ENDO, ENDO-5,8-DIMETH-ANO-NAPHTHALENE)	
Hazardous Waste Code:					D013	
Waste Code Description:					LINDANE (1,2,3,4,5,6-HEXA-CHLOROCYCLOHEXANE, GAMMA ISOMER)	
Hazardous Waste Code:					D014	
Waste Code Description:					METHOXYCHLOR (1,1,1-TRICHLORO-2,2-BIS [P-METHOXYPHENYL] ETHANE)	
Hazardous Waste Code:					D015	
Waste Code Description:					TOXAPHENE (C10 H10 CL8, TECHNICAL CHLORINATED CAMPHENE, 67-69 PERCENT CHLORINE)	
Hazardous Waste Code:					D016	
Waste Code Description:					2,4-D (2,4-DICHLOROPHENOXYACETIC ACID)	
Hazardous Waste Code:					D017	
Waste Code Description:					2,4,5-TP SILVEX (2,4,5-TRICHLOROPHENOXYPROPIONIC ACID)	
Hazardous Waste Code:					D018	
Waste Code Description:					BENZENE	
Hazardous Waste Code:					D019	
Waste Code Description:					CARBON TETRACHLORIDE	
Hazardous Waste Code:					D020	
Waste Code Description:					CHLORDANE	
Hazardous Waste Code:					D021	
Waste Code Description:					CHLOROBENZENE	
Hazardous Waste Code:					D022	
Waste Code Description:					CHLOROFORM	
Hazardous Waste Code:					D023	
Waste Code Description:					O-CRESOL	

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Hazardous Waste Code:			D024			
Waste Code Description:			M-CRESOL			
Hazardous Waste Code:			D025			
Waste Code Description:			P-CRESOL			
Hazardous Waste Code:			D026			
Waste Code Description:			CRESOL			
Hazardous Waste Code:			D027			
Waste Code Description:			1,4-DICHLOROBENZENE			
Hazardous Waste Code:			D028			
Waste Code Description:			1,2-DICHLOROETHANE			
Hazardous Waste Code:			D029			
Waste Code Description:			1,1-DICHLOROETHYLENE			
Hazardous Waste Code:			D030			
Waste Code Description:			2,4-DINITROTOLUENE			
Hazardous Waste Code:			D031			
Waste Code Description:			HEPTACHLOR (AND ITS EPOXIDE)			
Hazardous Waste Code:			D032			
Waste Code Description:			HEXACHLOROBENZENE			
Hazardous Waste Code:			D033			
Waste Code Description:			HEXACHLOROBUTADIENE			
Hazardous Waste Code:			D034			
Waste Code Description:			HEXACHLOROETHANE			
Hazardous Waste Code:			D035			
Waste Code Description:			METHYL ETHYL KETONE			
Hazardous Waste Code:			D036			
Waste Code Description:			NITROBENZENE			
Hazardous Waste Code:			D037			
Waste Code Description:			PENTACHLOROPHENOL			
Hazardous Waste Code:			D038			
Waste Code Description:			PYRIDINE			
Hazardous Waste Code:			D039			
Waste Code Description:			TETRACHLOROETHYLENE			
Hazardous Waste Code:			D040			
Waste Code Description:			TRICHLOROETHYLENE			
Hazardous Waste Code:			D041			
Waste Code Description:			2,4,5-TRICHLOROPHENOL			
Hazardous Waste Code:			D042			
Waste Code Description:			2,4,6-TRICHLOROPHENOL			
Hazardous Waste Code:			D043			
Waste Code Description:			VINYL CHLORIDE			

Owner/Operator Details

Owner/Operator Ind:	Current Owner	Street No:	
Type:	Other	Street 1:	445 W AMELIA ST
Name:	ORANGE COUNTY PUBLIC SCHOOLS	Street 2:	
Date Became Current:	20090611	City:	ORLANDO
Date Ended Current:		State:	FL
Phone:	407-317-3200	Country:	US

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Source Type:		Notification			Zip Code: 32801-1129	
Owner/Operator Ind:		Current Operator			Street No:	
Type:		Other			Street 1: 445 W AMELIA ST	
Name:		ORANGE COUNTY PUBLIC SCHOOLS			Street 2:	
Date Became Current:		20090611			City: ORLANDO	
Date Ended Current:					State: FL	
Phone:		407-317-3200			Country: US	
Source Type:		Notification			Zip Code: 32801-1129	

2 2 of 4 **SSW** 0.00 / 18.86 71.77 / 3 **ORANGE COUNTY SOLID WASTE
1700 CHULUOTA RD
ORLANDO FL 32820-1401** **RCRA VSQG**

EPA Handler ID: FLT990063778
Gen Status Universe: VSG
Contact Name:
Contact Address: US
Contact Phone No and Ext:
Contact Email:
Contact Country: US
County Name: ORANGE
EPA Region: 04
Land Type: Other
Receive Date: 19990916
Location Latitude: 28.586522
Location Longitude: -81.120463

Violation/Evaluation Summary

Note: NO RECORDS: As of Jun 2021, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 199909
Receive Date: 19990916
Handler Name: ORANGE COUNTY SOLID WASTE
Federal Waste Generator Code: 3
Generator Code Description: Very Small Quantity Generator
Source Type: Emergency

2 3 of 4 **SSW** 0.00 / 18.86 71.77 / 3 **CORNER LAKE MIDDLE SCHOOL
1700 CHULUOTA RD
ORLANDO FL 32820-1401** **FINDS/FRS**

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Registry ID:		11003655395				
FIPS Code:		12095				
HUC Code:		03080101				
Site Type Name:		STATIONARY				
Location Description:						
Supplemental Location:						
Create Date:		19-JUN-08				
Update Date:		17-OCT-17				
Interest Types:		ICIS-NPDES NON-MAJOR, UNSPECIFIED UNIVERSE				
SIC Codes:						
SIC Code Descriptions:						
NAICS Codes:		611110				
NAICS Code Descriptions:		ELEMENTARY AND SECONDARY SCHOOLS.				
Conveyor:		RCRAINFO				
Federal Facility Code:						
Federal Agency Name:						
Tribal Land Code:						
Tribal Land Name:						
Congressional Dist No:		24				
Census Block Code:		120950166012150				
EPA Region Code:		04				
County Name:		ORANGE				
US/Mexico Border Ind:						
Latitude:		28.564547				
Longitude:		-81.129402				
Reference Point:		POINT WHERE WATER OR OTHER SUBSTANCE COULD BE DRAWN FROM ENVIRONMENT FOR DELIVERY TO A FACILITY OR DISTRIBUTION SYSTEM (SUBSTANCE DESTINATION COULD RANGE FROM A SINGLE RESIDENCE TO A LARGE FACILITY)				
Coord Collection Method:		INTERPOLATION-PHOTO				
Accuracy Value:		3				
Datum:		NAD83				
Source:						
Facility Detail Rprt URL:		https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=11003655395				
Program Acronyms:						
NPDES:FLR10RY06, RCRAINFO:FLR000156539						

<u>2</u>	4 of 4	SSW	0.00 / 18.86	71.77 / 3	ORANGE COUNTY SOLID WASTE 1700 CHULUOTA RD ORLANDO FL 328201401	FINDS/FRS
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Registry ID:		110035551006				
FIPS Code:		12095				
HUC Code:		03080101				
Site Type Name:		STATIONARY				
Location Description:						
Supplemental Location:						
Create Date:		23-APR-08				
Update Date:		28-MAR-14				
Interest Types:		CESQG, STATE MASTER				
SIC Codes:						
SIC Code Descriptions:						
NAICS Codes:						
NAICS Code Descriptions:						
Conveyor:		FRS-GEOCODE				
Federal Facility Code:						
Federal Agency Name:						
Tribal Land Code:						
Tribal Land Name:						
Congressional Dist No:		24				
Census Block Code:		120950166012150				
EPA Region Code:		04				
County Name:		ORANGE				
US/Mexico Border Ind:						
Latitude:		28.5641				
Longitude:		-81.12843				

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
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Reference Point: CENTER OF A FACILITY OR STATION
Coord Collection Method: ADDRESS MATCHING-HOUSE NUMBER
Accuracy Value: 30
Datum: NAD83
Source:
Facility Detail Rprt URL: https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110035551006
Program Acronyms:

FDM:68077, RCRAINFO:FLT990063778

<u>3</u>	1 of 2	SSW	0.03 / 155.66	70.72 / 1	AMOCO OIL STATION #60558 16891 E COLONIAL DR ORLANDO FL 32820-1910	RCRA NON GEN
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EPA Handler ID: FLR000111187
Gen Status Universe: No Report
Contact Name: JEFF WARD
Contact Address: PO BOX 6038 , , ARTESIA , CA, 90702-6038 , US
Contact Phone No and Ext: 770-889-5849
Contact Email:
Contact Country: US
County Name: ORANGE
EPA Region: 04
Land Type: Private
Receive Date: 20100315
Location Latitude:
Location Longitude:

Violation/Evaluation Summary

Note: NO RECORDS: As of Jun 2021, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 201003
Receive Date: 20100315
Handler Name: AMOCO OIL STATION #60558
Source Type: Notification
Federal Waste Generator Code: N
Generator Code Description: Not a Generator, Verified

Waste Code Details

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Hazardous Waste Code:		D018				
Waste Code Description:		BENZENE				
<u>Owner/Operator Details</u>						
Owner/Operator Ind:	Current Operator				Street No:	
Type:	Private				Street 1:	PO BOX 6038
Name:	JACKIE DOUGHERTY				Street 2:	
Date Became Current:	20040809				City:	ARTESIA
Date Ended Current:					State:	CA
Phone:					Country:	US
Source Type:	Notification				Zip Code:	90702-6038
Owner/Operator Ind:	Current Operator				Street No:	
Type:	Private				Street 1:	PO BOX 6038
Name:	BP #13681				Street 2:	
Date Became Current:	20040809				City:	ARTESIA
Date Ended Current:					State:	CA
Phone:					Country:	US
Source Type:	Notification				Zip Code:	90702-6038
Owner/Operator Ind:	Current Operator				Street No:	
Type:	Private				Street 1:	PO BOX 6038
Name:	BP #13681				Street 2:	
Date Became Current:	20040809				City:	ARTESIA
Date Ended Current:	20100315				State:	CA
Phone:					Country:	US
Source Type:	Notification				Zip Code:	90702-6038
Owner/Operator Ind:	Current Owner				Street No:	
Type:	Private				Street 1:	PO BOX 6038
Name:	BP PRODUCTS NORTH AMERICA INC				Street 2:	
Date Became Current:	20040809				City:	ARTESIA
Date Ended Current:					State:	CA
Phone:					Country:	US
Source Type:	Notification				Zip Code:	90702-6038

3 2 of 2 **SSW** 0.03 / 155.66 70.72 / 1 **CIRCLE K #2708972**
16891 E COLONIAL DR
ORLANDO FL 32820 **UST**

Facility ID: 9101787 **Lat DD:** 28
Facility Status: OPEN **Lat MM:** 33
ASTs: **Lat SS:** 67
USTs: **Long DD:** 81
Tanks: **Long MM:** 7
Facility Type: A **Long SS:** 81
Contact: GRAHAM BIGGS **Lat/Long Method:** AGPS
Facility Phone: 9197746700 **Bad Addr Indicator:**
Owner ID: 4045 **County:** ORANGE
Owner Phone: 9197746700 **Dep Co:** C
Owner: CIRCLE K STORES INC
Owner Address1: 1100 SITUS CT #100
Owner Address2: ATTN: STORAGE TANK REGIS
Owner City: Raleigh
Owner State: NC
Owner Zip 5: 27606
Owner Zip 4:
Type Desc: Retail Station
Source: Tank Facility - All Locations and Tank Information; Tank Facility - All Locations and Owner Information
Oculus Docs Inventory URL: https://erisservice7.ecologeris.com/ErisExt/flo/ocure.ashx?ID=9101787&CAT=11
Information Portal Facility URL: http://prodenv.dep.state.fl.us/DepNexus/public/facilitysearch?pagination=true&facility.id=9101787
Information Portal Doc URL: http://prodenv.dep.state.fl.us/DepNexus/public/electronic-documents/9101787/facility!search

Tank Information

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Tank ID:	5				Tank Desc:	Double Walled
Tank Status:	U - In Service				Capacity:	20000
Status Date:	01-DEC-2004				Placement:	UNDERGROUND
Installation Date:	01-AUG-2004				Tank Vessel Indic:	TANK
Substance:	B - Unleaded Gas					
<u>Piping</u>						
Tank Stat:	U				Stat Date:	01-DEC-2004
Pipe Description:	C-Fiberglass					
Tank Stat:	U				Stat Date:	01-DEC-2004
Pipe Description:	F-Double wall					
<u>Monitoring</u>						
Tank Stat:	U				Stat Date:	01-DEC-2004
Monitoring Desc:	G-Electronic line leak detector					
Tank Stat:	U				Stat Date:	01-DEC-2004
Monitoring Desc:	F-Monitor dbl wall tank space					
Tank Stat:	U				Stat Date:	01-DEC-2004
Monitoring Desc:	L-Automatic tank gauging - USTs					
Tank Stat:	U				Stat Date:	01-DEC-2004
Monitoring Desc:	K-Monitor dbl wall pipe space					
<u>Tank Construction</u>						
Cons Code:	I				Cons Desc:	Double wall
Cons Code:	E				Cons Desc:	Fiberglass
Cons Code:	A				Cons Desc:	Ball check valve
<u>Tank Information</u>						
Tank ID:	2				Tank Desc:	
Tank Status:	U - In Service				Capacity:	12000
Status Date:	01-AUG-2004				Placement:	UNDERGROUND
Installation Date:	01-MAY-1991				Tank Vessel Indic:	TANK
Substance:	B - Unleaded Gas					
<u>Tank Information</u>						
Tank ID:	3				Tank Desc:	
Tank Status:	U - In Service				Capacity:	12000
Status Date:	01-AUG-2004				Placement:	UNDERGROUND
Installation Date:	01-MAY-1991				Tank Vessel Indic:	TANK
Substance:	B - Unleaded Gas					
<u>Tank Information</u>						
Tank ID:	4				Tank Desc:	Double Walled
Tank Status:	U - In Service				Capacity:	15000
Status Date:	01-DEC-2004				Placement:	UNDERGROUND
Installation Date:	01-AUG-2004				Tank Vessel Indic:	TANK
Substance:	B - Unleaded Gas					

Piping

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Tank Stat:	U				Stat Date:	01-DEC-2004
Pipe Description:	C-Fiberglass					
Tank Stat:	U				Stat Date:	01-DEC-2004
Pipe Description:	F-Double wall					
Monitoring						
Tank Stat:	U				Stat Date:	01-DEC-2004
Monitoring Desc:	F-Monitor dbl wall tank space					
Tank Stat:	U				Stat Date:	01-DEC-2004
Monitoring Desc:	G-Electronic line leak detector					
Tank Stat:	U				Stat Date:	01-DEC-2004
Monitoring Desc:	K-Monitor dbl wall pipe space					
Tank Stat:	U				Stat Date:	01-DEC-2004
Monitoring Desc:	L-Automatic tank gauging - USTs					
Tank Construction						
Cons Code:	I				Cons Desc:	Double wall
Cons Code:	A				Cons Desc:	Ball check valve
Cons Code:	E				Cons Desc:	Fiberglass
Tank Information						
Tank ID:	1				Tank Desc:	
Tank Status:					Capacity:	12000
Status Date:	01-AUG-2004				Placement:	UNDERGROUND
Installation Date:	01-MAY-1991				Tank Vessel Indic:	TANK
Substance:	B - Unleaded Gas					

4 1 of 4 **SSW** 0.03 / 135.56 70.61 / 1 **CIRCLE K #7502** **LST**
16959 E COLONIAL DR (E HWY 50)
ORLANDO FL 32820-1912

Facility ID:	8521400	Contact:	GRAHAM BIGGS
Facility Status:	CLOSED	Phone:	(919)774-6700
Facility Type:	A - Retail Station	Name Changed:	
Score:	56	Address Changed:	12/19/2005
Score Effective Date:	03/20/2009	Section:	020
Score when Ranked:	41	Township:	22S
Rank:	3987	Range:	32E
Operator:	GRAHAM BIGGS	District:	CD
Prim Related Party:	4045	County:	ORANGE
Primary RP Role:	ACCOUNT OWNER	County No:	48
RP Begin Date:	04/17/2006	Lat DD:	28
RP Address1:	1100 SITUS CT #100	Lat MM:	33
Rp Address2:	ATTN: STORAGE TANK REGIS	Lat SS:	39.0038
RP City:	Raleigh	Long DD:	81
RP State:	NC	Long MM:	7
RP Zip5:	27606	Long SS:	44.5696
RP Zip4:	4295	Feature:	
RP Phone:	(919)774-6700	Method:	AGPS
RP Phone Ext.:	6326	Datum:	0
RP Bad Addr Ind:	No		
Facility Name (Map):	CIRCLE K #7502		
Address (Map):	16959 E COLONIAL DR (E HWY 50)		
City (Map):	ORLANDO		
Zip5 (Map):	32820		

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Facility T (Map):		Retail Station				
Facility S (Map):		CLOSED				
County (Map):		ORANGE				
Lat DD (Map):		28				
Lat MM (Map):		33				
Long DD (Map):		81				
Long MM (Map):		7				
Datum (Map):		HARN				
Rel Feat (Map):		EXACT				
Collection (Map):		DPHO				
Collector (Map):		RAUENZAHN_R48				
Collecti 1 (Map):		19-Sep-2003				
Document L (Map):		https://prodenv.dep.state.fl.us/DepNexus/public/electronic-documents/8521400/facility!search				
Lat SS (Map):						
Long SS (Map):						
Geometry (Map):						
RP Name:		CIRCLE K STORES INC				
Oculus Docs Inventory:		https://erisservice7.ecologeris.com/ErisExt/flo/ocure.ashx?ID=8521400&CAT=11				
Information Portal Fac URL:		http://prodenv.dep.state.fl.us/DepNexus/public/facilitysearch?pagination=true&facility.id=8521400				
Information Portal Doc URL:		http://prodenv.dep.state.fl.us/DepNexus/public/electronic-documents/8521400/facility!search				

Discharge Cleanup Summary

Discharge Date:	11/06/1988
Cleanup Required:	R - CLEANUP REQUIRED
Discharge Cleanup Status:	RA - RA ONGOING
Discharge Cleanup Stat Date:	04/30/2007
Eligibility Indicator:	E - ELIGIBLE
Site Manager:	SMEENK_S
Site Manager End Date:	
Tank Office:	PCLP48 - ORANGE COUNTY ENVIRONMENTAL PROTECTION DIV

Contaminated Media

Contaminated Drinking Wells:	0
Contaminated Mntring Wells:	YES
Contaminated Soil:	NO
Contaminated Surface Water:	NO
Contaminated Ground Water:	YES
Pollutant:	B - Unleaded Gas
Other Description:	
Gallons Discharged:	

Contaminated Media

Contaminated Drinking Wells:	0
Contaminated Mntring Wells:	YES
Contaminated Soil:	NO
Contaminated Surface Water:	NO
Contaminated Ground Water:	YES
Pollutant:	A - Leaded Gas
Other Description:	
Gallons Discharged:	

Petroleum Cleanup Program Eligibility

Cleanup Program:	E - EARLY DETECTION INCENTIVE
Eligibility Status:	ELIGIBLE

Task Info

SA Task ID:	21045	RAP Task ID:	21046
SA Cleanup Resp:	ST - STATE	RAP Clean Resp ID:	ST - STATE

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
SA Fund Elig Type:	-				RAP Fund Elig Type:	-
SA Actual Cost:					RAP Actual Cost:	
SA Complete Date:					RAP Complete Date:	
SA Payment Date:					RAP Payment Date:	
SR Task ID:	21044				RAP Last Ord Appr:	
SR Cleanup Resp:	ST - STATE				RA Task ID:	21047
SR Fund Elig Type:	-				RA Cleanup Resp:	ST - STATE
SR Actual Cost:					RA Fund Elig Type:	-
SR Complete Date:					RA Yrs to Complete:	0
SR Payment Date:					RA Actual Cost:	
SR Oral Date:					SRC Action Type:	SRCR - SITE REHABILITATION COMPLETION REPORT
SR Written Date:					SRC Submit Date:	04-21-2014
SR Soil Removal:					SRC Review Date:	04-22-2014
SR Free Prod Rmvl:					SRC Complete Status:	A - APPROVED
SR Soil Ton Remove:					SRC Comp Status Dt:	04-22-2014
SR Soil Treatment:					SRC Issue Date:	06-06-2014
SR Other Treatment:					SRC Comments:	
SR Alt Proc Rec:					Tank Office:	PCLP48 - Orange County
SR Alternate Procedure Status:						
SR Alt Procedure Status Dt:						
SR Alt Procedure Comment:						

Petroleum Cleanup Funding Cap Encumbrance to Date

FCFS:	\$0.00
LPSPASM:	\$0.00
SPASM:	\$0.00
NPDES:	\$0.00
Utility 1 Time Payments:	\$0.00
All Wo Ta Co Pos Encumbered:	\$119,343.95
Wo Ta Co Pos Exclu from Cap:	\$0.00
Ttl Amnt Encumbered to Date:	\$119,343.95
Ttl Amnt Encumbered Towar:	\$119,343.95

Petroleum Cleanup PCT Facility Score

Facility Cleanup Status:	ONGO - ONGOING
Related Party ID:	4045
RP Contact:	GRAHAM BIGGS
Bad Address Indicator:	N

Contract

Contractor:	ATC GROUP SERVICES, LLC FRMLY CARDNO ATC
Score:	56
Facility Name:	CIRCLE K #7502
Address:	16959 E COLONIAL DR (E HWY 50)
City:	ORLANDO
Zip:	32820
District:	CD
County ID:	48
County:	ORANGE

Discharge Info (Map)

Discharge:	8884	Discharg 3:	RA
Discharg 1:	06-Nov-1988	Disch Clea:	30-Apr-2007
Discharg 2:	56	Report Pha:	RA
Eligibilit:	ELIGIBLE	Report Sub:	PARM
Eligibil 1:	EDI	Report S 1:	21-Jun-2021
General Cl:	WORK UNDERWAY	Staff Assi:	SMEENK_S
Tank Offic:	ORANGE COUNTY ENVIRONMENTAL PROTECTION DIV		

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
<u>4</u>	2 of 4	SSW	0.03 / 135.56	70.61 / 1	CIRCLE K #7502 16959 E COLONIAL DR (E HWY 50) ORLANDO FL 32820	DEL CONTAM SITE

Prgm Site ID:	8521400	Record Date:	
Remedi Status:	ACTIVE	County:	ORANGE
Priority Score:	56	Method:	DPHO
Program Area:	Petroleum	Datum:	HARN
Program Eligible:	Y	Lat DD:	28
Ineligible:		Lat MM:	33
Offsite Contam:	Y	Lat SS:	39.0038
Dt Known Offsite:		Long DD:	81
Proj Manager:	PARKER_RH	Long MM:	7
Office District:	PCLP48	Long SS:	44.5696
Original Source:	CS		
Record Date:	31-MAR-2015		

<u>4</u>	3 of 4	SSW	0.03 / 135.56	70.61 / 1	CIRCLE K #7502 16959 E COLONIAL DR (E HWY 50) ORLANDO FL 32820	DWM CONTAM
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Facility ID:	8521400	Related Party ID:	
Facility Type:		Primary RP Role:	
Program Area:	Petroleum	RP Begin Date:	
Rank:		RP Name:	
Operator:		RP Address1:	
Phone:		RP Address2:	
Name Changed:		RP City:	
Addr Changed:		RP State:	
Method:		RP Zip5:	
Datum:		RP Zip4:	
County:	ORANGE	Contact:	
Range:		RP Phone:	
Township:		RP Extension:	
Section:		Rp Bad Addr Ind:	

Program Details

Facility Status:	ACTIVE	Lat DD:	28
Priority Score:	56	Lat MM:	33
Score Effective Dt:		Lat SS:	39.0038
Score When Ranked:		Long DD:	81
Offsite Contam:	Y	Long MM:	7
Program Eligible:	Y	Long SS:	44.5696
Ineligible:		Datum:	HARN
District:	PCLP48	Staff Assigned:	
Method:	DPHO	Priority:	
Project Coordinator:	PARKER_RH		

<u>4</u>	4 of 4	SSW	0.03 / 135.56	70.61 / 1	CIRCLE K #7502 16959 E COLONIAL DR (E HWY 50) ORLANDO FL 32820	UST
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Facility ID:	8521400	Lat DD:	28
Facility Status:	CLOSED	Lat MM:	33
ASTs:		Lat SS:	38
USTs:		Long DD:	81
Tanks:		Long MM:	7
Facility Type:	A	Long SS:	45
Contact:	GRAHAM BIGGS	Lat/Long Method:	AGPS
Facility Phone:	9197746700	Bad Addr Indicator:	
Owner ID:	4045	County:	ORANGE
Owner Phone:	9197746700	Dep Co:	P
Owner:	CIRCLE K STORES INC		

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Owner Address1:		1100 SITUS CT #100				
Owner Address2:		ATTN: STORAGE TANK REGIS				
Owner City:		Raleigh				
Owner State:		NC				
Owner Zip 5:		27606				
Owner Zip 4:						
Type Desc:		Retail Station				
Source:		Tank Facility - All Locations and Tank Information; Tank Facility - All Locations and Owner Information				
Oculus Docs Inventory URL:		https://eriservice7.ecologeris.com/ErisExt/flo/ocure.ashx?ID=8521400&CAT=11				
Information Portal Facility URL:		http://prodenv.dep.state.fl.us/DepNexus/public/facilitysearch?pagination=true&facility.id=8521400				
Information Portal Doc URL:		http://prodenv.dep.state.fl.us/DepNexus/public/electronic-documents/8521400/facility!search				
<u>Tank Information</u>						
Tank ID:	2				Tank Desc:	
Tank Status:					Capacity:	10000
Status Date:	28-FEB-2020				Placement:	UNDERGROUND
Installation Date:	01-FEB-1985				Tank Vessel Indic:	TANK
Substance:		B - Unleaded Gas				
<u>Tank Information</u>						
Tank ID:	1				Tank Desc:	
Tank Status:					Capacity:	10000
Status Date:	28-FEB-2020				Placement:	UNDERGROUND
Installation Date:	01-FEB-1985				Tank Vessel Indic:	TANK
Substance:		B - Unleaded Gas				
<u>Tank Information</u>						
Tank ID:	3				Tank Desc:	
Tank Status:					Capacity:	10000
Status Date:	28-FEB-2020				Placement:	UNDERGROUND
Installation Date:	01-FEB-1985				Tank Vessel Indic:	TANK
Substance:		B - Unleaded Gas				
<u>Tank Information</u>						
Tank ID:	4				Tank Desc:	
Tank Status:					Capacity:	10000
Status Date:	28-FEB-2020				Placement:	UNDERGROUND
Installation Date:	01-FEB-1985				Tank Vessel Indic:	TANK
Substance:		D - Vehicular Diesel				

5 1 of 1 **NNE** 0.01 / 35.67 68.98 / 0 **CHULUOTA RD AT LAKE PICKETT RD UNKNOWN ORLANDO FL 32820** **FINDS/FRS**

Registry ID: 110056345192
FIPS Code: FL095
HUC Code: 03080101
Site Type Name: STATIONARY
Location Description:
Supplemental Location:
Create Date: 09-DEC-13
Update Date: 11-JAN-16
Interest Types: ICIS-NPDES NON-MAJOR
SIC Codes:
SIC Code Descriptions:
NAICS Codes:
NAICS Code Descriptions:
Conveyor: ICIS

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
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Federal Facility Code:
Federal Agency Name:
Tribal Land Code:
Tribal Land Name:
Congressional Dist No: 24
Census Block Code: 120950166011025
EPA Region Code: 04
County Name: ORANGE
US/Mexico Border Ind:
Latitude: 28.5872
Longitude: -81.1202
Reference Point:
Coord Collection Method:
Accuracy Value:
Datum: NAD83
Source:
Facility Detail Rprt URL: https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110056345192
Program Acronyms:
 NPDES:FLR10NH07

<u>6</u>	1 of 2	SSW	0.06 / 311.03	70.16 / 1	HONEY BEE RANCH LCD 16877 EAST COLONIAL DRIVE #322 ORLANDO FL 32820	SWF/LF
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Facility ID: 86888 Resp Authority: RA Address: RA City: RA State: RA Zip: RA Phone No.: RA Email: Site Supervisor: SS Address: SS City: SS State: SS Zip: SS Phone No.: SS Email: Land Owner: LO Address: LO City: LO State: LO Zip:	LO Phone No: Fac Type (Geodata): Solid Waste Fac Status (Geodata): Closed, No Gw Monitoring Status Dt (Geodata): 2014/08/01 00:00:00+00 Ownership (Geodata): Private City (Geodata): Orlando Zip4 (Geodata): 1910 Zip5 (Geodata): 32820 District (Geodata): CD Office (Geodata): Central District County ID (Geodata): 48 County (Geodata): Orange County: ORANGE District: CD Section: 23 Township: 22S Range: 32E Latitude: 28:32:53.32 Longitude: 81:5:36.5
Facility Name (Geodata): HONEY BEE RANCH LCD Address (Geodata): 16877 EAST COLONIAL DRIVE #322 Documents (Geodata): https://prodenv.dep.state.fl.us/DepNexus/public/electronic-documents/86888/gis-facility!search Reports (Geodata): https://fldeloc.dep.state.fl.us/WWW_WACS/Reports/SW_Facility_Inventory_res2.asp?wacsid=86888 Information Portal Facility URL: http://prodenv.dep.state.fl.us/DepNexus/public/facilitysearch?pagination=true&facility.id=86888 Oculus Docs Inventory URL: https://erisservice7.ecologeris.com/ErisExt/flo/ocure.ashx?ID=86888&CAT=8 Data Source: Solid Waste Facility Inventory Report; Florida DEP Geospatial Open Data	

Class details

Class: YARD TRASH DISPOSAL FACILITY
Class Status: CLOSED, NO GW MONITORING (J)

SWF Inventory Report/ Geo Data class details

Object of Interest: General Disposal Area Coordinate Method: Digital Aerial Photography Accuracy Level: 4	Lat DD: 28 Lat MM: 32 Lat SS:
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Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Accuracy:	11 - 20 meters				Long DD: 81	
QA Status:	Reviewed				Long MM: 5	
Datum ID:	NAD83				Long SS:	
Proximity ID:	Entrance to site or facility containing feature location					
X:	-81.0934750532774					
Y:	28.5481438522504					

Class details

Class: SOURCE-SEPARATED ORGANICS PROC. FAC. (SOPF)
Class Status: ACTIVITY NOT PERMITTED/REGISTERED (N)

SWF Inventory Report/ Geo Data class details

Object of Interest:	Waste Processing Area	Lat DD:	28
Coordinate Method:	Digital Aerial Photography	Lat MM:	33
Accuracy Level:	3	Lat SS:	
Accuracy:	1.1 - 10 meters	Long DD:	81
QA Status:	Reviewed	Long MM:	5
Datum ID:	NAD83	Long SS:	
Proximity ID:	Approximate feature location		
X:	-81.0937540256841		
Y:	28.5512214640967		

Solid Waste Facility Inventory Geospatial Open Data

Object of Interest:	Facility	Lat DD:	28
Class:		Lat MM:	32
Class Status:		Lat SS:	
Coord Method ID:	Digital Aerial Photography	Long DD:	81
Accuracy Level:	3	Long MM:	5
Accuracy:	1.1 - 10 meters	Long SS:	
QA Status:	Reviewed	Datum ID:	NAD83
Proximity ID:	Entrance to site or facility containing feature location		
X:	-81.0934752477221		
Y:	28.5481497966964		

<u>6</u>	2 of 2	SSW	0.06 / 311.03	70.16 / 1	19161, LLC (FORMERLY MONARCH MULCH, LLC) 16877 E. COLONIAL DRIVE ORLANDO FL 32820	SWF/LF
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Facility ID:	101487	LO Phone No:	
Resp Authority:		Fac Type (Geodata):	Solid Waste
RA Address:		Fac Status (Geodata):	Activity Not Permitted/Registered
RA City:		Status Dt (Geodata):	2016/08/01 00:00:00+00
RA State:		Ownership (Geodata):	Private
RA Zip:		City (Geodata):	Orlando
RA Phone No.:		Zip4 (Geodata):	
RA Email:		Zip5 (Geodata):	32820
Site Supervisor:		District (Geodata):	CD
SS Address:		Office (Geodata):	
SS City:		County ID (Geodata):	48
SS State:		County (Geodata):	Orange
SS Zip:		County:	ORANGE
SS Phone No.:		District:	CD
SS Email:		Section:	
Land Owner:		Township:	
LO Address:		Range:	
LO City:		Latitude:	28:32:52.9197
LO State:		Longitude:	81:5:36.866
LO Zip:			
Facility Name (Geodata):	19161, LLC (FORMERLY MONARCH MULCH, LLC)		
Address (Geodata):	16877 E. COLONIAL DRIVE		
Documents (Geodata):	https://prodenv.dep.state.fl.us/DepNexus/public/electronic-documents/101487/gis-facility!search		

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
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Reports (Geodata): https://fideploc.dep.state.fl.us/WWW_WACS/Reports/SW_Facility_Inventory_res2.asp?wacsid=101487
Information Portal Facility URL: <http://prodenv.dep.state.fl.us/DepNexus/public/facilitysearch?pagination=true&facility.id=101487>
Oculus Docs Inventory URL: <https://erisservice7.ecologeris.com/ErisExt/flo/ocure.ashx?ID=101487&CAT=8>
Data Source: Solid Waste Facility Inventory Report; Florida DEP Geospatial Open Data

Class details

Class: SOURCE-SEPARATED ORGANICS PROC. FAC. (SOPF)
Class Status: ACTIVITY NOT PERMITTED/REGISTERED (N)

SWF Inventory Report/ Geo Data class details

Object of Interest:	Waste Processing Area	Lat DD:	28
Coordinate Method:	Digital Aerial Photography	Lat MM:	34
Accuracy Level:	3	Lat SS:	
Accuracy:	1.1 - 10 meters	Long DD:	81
QA Status:	Reviewed	Long MM:	5
Datum ID:	NAD83	Long SS:	
Proximity ID:	Approximate feature location		
X:	-81.0850942736934		
Y:	28.5672014404034		

Solid Waste Facility Inventory Geospatial Open Data

Object of Interest:	Facility	Lat DD:	28
Class:		Lat MM:	32
Class Status:		Lat SS:	
Coord Method ID:	Digital Aerial Photography	Long DD:	81
Accuracy Level:	3	Long MM:	5
Accuracy:	1.1 - 10 meters	Long SS:	
QA Status:	Reviewed	Datum ID:	NAD83
Proximity ID:	Entrance to site or facility containing feature location		
X:	-81.093576914415		
Y:	28.5480386022223		

<u>7</u>	1 of 1	SSW	0.02 / 86.95	69.98 / 1	CIRCLE K STORE #7502 16959 E HWY 50 ORLANDO FL 32820	FINDS/FRS
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Registry ID: 110006389354
FIPS Code: 12095
HUC Code: 03080101
Site Type Name: STATIONARY
Location Description:
Supplemental Location:
Create Date: 01-MAR-00
Update Date: 05-MAR-13
Interest Types: CESQG, ICIS-NPDES NON-MAJOR, STATE MASTER
SIC Codes:
SIC Code Descriptions:
NAICS Codes:
NAICS Code Descriptions:
Conveyor: RCRAINFO
Federal Facility Code:
Federal Agency Name:
Tribal Land Code:
Tribal Land Name:
Congressional Dist No: 24
Census Block Code: 120950166011075
EPA Region Code: 04
County Name: ORANGE
US/Mexico Border Ind:
Latitude: 28.56105
Longitude: -81.129061
Reference Point: FACILITY/MONITORING SITE BOUNDARY POINT

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
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Coord Collection Method: THE GEOGRAPHIC COORDINATE DETERMINATION METHOD BASED ON ADDRESS MATCHING
Accuracy Value: 4
Datum: NAD83
Source:
Facility Detail Rprt URL: https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110006389354
Program Acronyms:

FDM:30199, NPDES:FLG912141, RCRAINFO:FLD984251470

<u>8</u>	1 of 1	SSW	0.10 / 512.38	69.78 / 1	TRACTOR SUPPLY COMPANY #560 16849 E COLONIAL DR ORLANDO FL 32820-1910	RCRA VSQG
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EPA Handler ID: FLR000210625
Gen Status Universe: VSG
Contact Name: TREY BROWN
Contact Address: 200 , POWELL PL , , BRENTWOOD , TN, 37027-7514 , US
Contact Phone No and Ext: 615-440-4660
Contact Email: TSCRISKMGMT@TRACTORSUPPLY.COM
Contact Country: US
County Name: ORANGE
EPA Region: 04
Land Type: Private
Receive Date: 20140421
Location Latitude: 28.560433
Location Longitude: -81.128582

Violation/Evaluation Summary

Note: NO RECORDS: As of Jun 2021, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 201404
Receive Date: 20140421
Handler Name: TRACTOR SUPPLY COMPANY #560
Federal Waste Generator Code: 3
Generator Code Description: Very Small Quantity Generator
Source Type: Notification

Waste Code Details

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Hazardous Waste Code:		D001				
Waste Code Description:		IGNITABLE WASTE				
Hazardous Waste Code:		D002				
Waste Code Description:		CORROSIVE WASTE				
Hazardous Waste Code:		F005				
Waste Code Description:		THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.				

Owner/Operator Details

Owner/Operator Ind:	Current Owner	Street No:	
Type:	Private	Street 1:	5147 ISLEWORTH COUNTRY CLUB DR
Name:	MILLER GROUP PROPERTIES CORPORATION	Street 2:	
Date Became Current:	20130325	City:	WINDERMERE
Date Ended Current:		State:	FL
Phone:	516-953-0709	Country:	US
Source Type:	Notification	Zip Code:	34786
Owner/Operator Ind:	Current Operator	Street No:	
Type:	Private	Street 1:	16849 E. COLONIAL DRIVE
Name:	TRACTOR SUPPLY COMPANY	Street 2:	
Date Became Current:	20021210	City:	ORLANDO
Date Ended Current:		State:	FL
Phone:	615-440-4660	Country:	US
Source Type:	Notification	Zip Code:	32820

9 1 of 1 **SSW** 0.11 / 557.38 69.66 / 0 **PUBLIX SUPER MARKET #897** **AST**
16825 E COLONIAL DR
ORLANDO FL 32820

Facility ID:	9810114	Lat DD:	
Facility Status:	OPEN	Lat MM:	
ASTs:		Lat SS:	
USTs:		Long DD:	
Tanks:		Long MM:	
Facility Type:	C	Long SS:	
Contact:	MICHAEL HEWETT BRENDA WILLIAMS EXT-55017	Lat/Long Method:	
Facility Phone:	4075680858	Bad Addr Indicator:	
Owner ID:	25164	County:	ORANGE
Owner Phone:	8636881188	Dep Co:	P
Owner:	PUBLIX SUPER MARKETS INC - ENVIRONMENTAL		
Owner Address1:	PO BOX 407		
Owner Address2:	ATTN: ESP STORAGE TANK REGIS		
Owner City:	LAKELAND		
Owner State:	FL		
Owner Zip 5:	33802		
Owner Zip 4:			
Type Desc:	Fuel user/Non-retail		
Source:	Tank Facility - All Locations and Tank Information; Tank Facility - All Locations and Owner Information		
Oculus Docs Inventory URL:	https://eriservice7.ecologeris.com/ErisExt/fio/ocure.ashx?ID=9810114&CAT=11		
Information Portal Facility URL:	http://prodenv.dep.state.fl.us/DepNexus/public/facilitysearch?pagination=true&facility.id=9810114		
Information Portal Doc URL:	http://prodenv.dep.state.fl.us/DepNexus/public/electronic-documents/9810114/facility!search		

Tank Information

Tank ID:	1	Tank Desc:	Double Walled
Tank Status:	U - In Service	Capacity:	1000
Status Date:	01-FEB-2008	Placement:	ABOVEGROUND

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Installation Date:		01-FEB-2008		Tank Vessel Indic:		TANK
Content Desc:		G - Emerg Generator Diesel				
<u>Piping</u>						
Tank Stat:		U		Stat Date:		01-FEB-2008
Piping Description:		A-Abv, no soil contact				
Tank Stat:		U		Stat Date:		01-FEB-2008
Piping Description:		I-Suction piping system				
<u>Monitoring</u>						
Tank Stat:		U		Stat Date:		01-FEB-2008
Monitoring Desc:		Q-Visual inspection of ASTs				
Tank Stat:		U		Stat Date:		01-FEB-2008
Monitoring Desc:		1-Continuous electronic sensing				
Tank Stat:		U		Stat Date:		01-FEB-2008
Monitoring Desc:		F-Monitor dbl wall tank space				
<u>Tank Construction</u>						
Constr Code:		M		Constr Desc:		Spill containment bucket
Constr Code:		C		Constr Desc:		Steel
Constr Code:		I		Constr Desc:		Double wall
Constr Code:		P		Constr Desc:		Level gauges/alarms

[10](#)

1 of 3

SSW

0.05 /
284.96

69.58 /
0

CIRCLE K STORE #7502
16959 E COLONIAL DR
ORLANDO FL 32820-1912

RCRA VSQG

EPA Handler ID: FLD984251470
Gen Status Universe: VSG
Contact Name: STEVE BELIN
Contact Address: 500 , FAULKENBURG RD , , TAMPA , FL, 33619 , US
Contact Phone No and Ext: 813-689-8161
Contact Email:
Contact Country: US
County Name: ORANGE
EPA Region: 04
Land Type: Other
Receive Date: 19930203
Location Latitude: 28.560433
Location Longitude: -81.128582

Violation/Evaluation Summary

Note: NO RECORDS: As of Jun 2021, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Furnace Exemption:		No				
Underground Injection Activity:		No				
Commercial TSD:		No				
Used Oil Transporter:		No				
Used Oil Transfer Facility:		No				
Used Oil Processor:		No				
Used Oil Refiner:		No				
Used Oil Burner:		No				
Used Oil Market Burner:		No				
Used Oil Spec Marketer:		No				

Hazardous Waste Handler Details

Sequence No: 199302
Receive Date: 19930203
Handler Name: CIRCLE K STORE #7502
Federal Waste Generator Code: 3
Generator Code Description: Very Small Quantity Generator
Source Type: Notification

Waste Code Details

Hazardous Waste Code: D018
Waste Code Description: BENZENE

Owner/Operator Details

Owner/Operator Ind:	Current Owner	Street No:	
Type:	Private	Street 1:	500 FAULKENBURG RD
Name:	STEVE BELIN	Street 2:	
Date Became Current:	19981119	City:	TAMPA
Date Ended Current:		State:	FL
Phone:		Country:	US
Source Type:	Notification	Zip Code:	33619
Owner/Operator Ind:	Current Owner	Street No:	
Type:	Private	Street 1:	500 FAULKENBURG RD
Name:	BELIN STEVE	Street 2:	
Date Became Current:	19981119	City:	TAMPA
Date Ended Current:		State:	FL
Phone:		Country:	US
Source Type:	Notification	Zip Code:	33619

[10](#) 2 of 3 **SSW** 0.05 / 284.96 69.58 / 0 **CIRCLE K #7502**
16959 E COLONIAL DR (E HWY 50)
ORLANDO FL 32820 **DEL CONTAM SITE**

Prgm Site ID:	8521400	Record Date:	30-SEP-2013
Remedi Status:	ACTIVE	County:	ORANGE
Priority Score:	56	Method:	DPHO
Program Area:	Petroleum	Datum:	HARN
Program Eligible:	Y	Lat DD:	28
Ineligible:		Lat MM:	33
Offsite Contam:	Y	Lat SS:	39.0038
Dt Known Offsite:		Long DD:	81
Proj Manager:	WHITE_CL	Long MM:	7
Office District:	PCLP48	Long SS:	44.5696
Original Source:	CS		
Record Date:	30-SEP-2013		

[10](#) 3 of 3 **SSW** 0.05 / 284.96 69.58 / 0 **CIRCLE K**
16959 E COLONIAL DR
ORLANDO FL 32820 **WELL SURVEILLANCE**

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
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Facility ID:	8521400	County:	ORANGE
Project ID:	SUPER	Longitude:	-81.129038
Req No:	47678	Latitude:	28.56081
Loc ID:	184497	GPS Date:	12/23/2008 0:00:00
GPS ID:	184497	Datum:	WS1984
Type:	PETROLEUM	Software:	Risk_Solo_v2
Insp CHD:	VOLUSIA	Streetside:	
HAE:	23.59	Agency:	DOH
Loc Method:	DGPS - Differentially Corrected GPS		
Insp F Name:	GINGER		
Insp L Name:	HANCOCK		
Comment:			

11	1 of 1	SSW	0.07 / 376.28	69.50 / 0	ECOGREEN AUTO PARTS 16969 EAST COLONIAL DRIVE ORLANDO FL 32820-	DWM CONTAM
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Facility ID:	338803	Related Party ID:	
Facility Type:		Primary RP Role:	
Program Area:	Responsible Party	RP Begin Date:	
Rank:		RP Name:	
Operator:		RP Address1:	
Phone:		RP Address2:	
Name Changed:		RP City:	
Addr Changed:		RP State:	
Method:	UNVR	RP Zip5:	
Datum:	27	RP Zip4:	
County:	ORANGE	Contact:	
Range:		RP Phone:	
Township:		RP Extension:	
Section:		Rp Bad Addr Ind:	

Program Details

Facility Status:	OPEN	Lat DD:	28
Priority Score:		Lat MM:	33
Score Effective Dt:		Lat SS:	39.6109
Score When Ranked:		Long DD:	81
Offsite Contam:		Long MM:	7
Program Eligible:		Long SS:	41.7714
Ineligible:		Datum:	27
District:	CD	Staff Assigned:	
Method:	UNVR	Priority:	
Project Coordinator:			

12	1 of 5	SSW	0.08 / 417.77	69.55 / 0	ECO GREEN AUTO PARTS 16969 E COLONIAL DR ORLANDO FL 32820-1912	RCRA VSQG
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EPA Handler ID:	FLR000053637
Gen Status Universe:	VSG
Contact Name:	CARLOS FURZAN
Contact Address:	16969 E COLONIAL DR , , ORLANDO , FL, 32820-0000 , US
Contact Phone No and Ext:	407-568-8444
Contact Email:	
Contact Country:	US
County Name:	ORANGE
EPA Region:	04
Land Type:	Tribal
Receive Date:	20180123
Location Latitude:	28.560406
Location Longitude:	-81.128385

Violation/Evaluation Summary

Note: VIOLATION or UNDETERMINED: There are VIOLATION or UNDETERMINED details or records associated with this facility (EPA ID) in the Compliance Monitoring and Enforcement table dated Jun, 2021.

Violation Details

Found Violation: Yes
Citation: GGR:40 CFR 262.11
Violation Short Description: Generators - General
Violation Type: 262.A
Violation Determined Date: 20040623
Scheduled Compliance Date:
Return to Compliance: Unverifiable
Actual Return to Compl: 20050125
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 318
Enforcement Type Description: DEP FINAL ADMINISTRATIVE ORDER
Enforcement Action Date: 20041115
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount: 200
Paid Amount: 200

Violation Details

Found Violation: Yes
Citation: UOS:40 CFR 279.22(d)
Violation Short Description: Used Oil - Generators
Violation Type: 279.C
Violation Determined Date: 20040623
Scheduled Compliance Date:
Return to Compliance: Unverifiable
Actual Return to Compl: 20050225
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 318
Enforcement Type Description: DEP FINAL ADMINISTRATIVE ORDER
Enforcement Action Date: 20041115
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount: 200
Paid Amount: 200

Violation Details

Found Violation: Yes
Citation: DOR:325.223(1) FS
Violation Short Description: State Statute or Regulation
Violation Type: XXS
Violation Determined Date: 20040623
Scheduled Compliance Date:
Return to Compliance: Unverifiable
Actual Return to Compl: 20050125

Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 318
Enforcement Type Description: DEP FINAL ADMINISTRATIVE ORDER
Enforcement Action Date: 20041115
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount: 200
Paid Amount: 200

Violation Details

Found Violation: Yes
Citation: DOR:62-730.030(3) FAC
Violation Short Description: State Statute or Regulation
Violation Type: XXS
Violation Determined Date: 20040623
Scheduled Compliance Date:
Return to Compliance: Unverifiable
Actual Return to Compl: 20050125
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 318
Enforcement Type Description: DEP FINAL ADMINISTRATIVE ORDER
Enforcement Action Date: 20041115
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount: 200
Paid Amount: 200

Evaluation Details

Evaluation Start Date: 20180123
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description:
Return to Compliance Date:
Evaluation Agency: State

Evaluation Start Date: 20071003
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description:
Return to Compliance Date:
Evaluation Agency: State

Evaluation Start Date: 20050225
Evaluation Type Description: NOT A SIGNIFICANT NON-COMPLIER
Violation Short Description:
Return to Compliance Date:
Evaluation Agency: State

Evaluation Start Date: 20041028
Evaluation Type Description: COMPLIANCE SCHEDULE EVALUATION
Violation Short Description:
Return to Compliance Date:
Evaluation Agency: State

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Evaluation Start Date:			20040707			
Evaluation Type Description:			SIGNIFICANT NON-COMPLIER			
Violation Short Description:						
Return to Compliance Date:						
Evaluation Agency:			State			
Evaluation Start Date:			20040623			
Evaluation Type Description:			COMPLIANCE EVALUATION INSPECTION ON-SITE			
Violation Short Description:			Used Oil - Generators			
Return to Compliance Date:			20050225			
Evaluation Agency:			State			
Evaluation Start Date:			20040623			
Evaluation Type Description:			COMPLIANCE EVALUATION INSPECTION ON-SITE			
Violation Short Description:			State Statute or Regulation			
Return to Compliance Date:			20050125			
Evaluation Agency:			State			
Evaluation Start Date:			20040623			
Evaluation Type Description:			COMPLIANCE EVALUATION INSPECTION ON-SITE			
Violation Short Description:			Generators - General			
Return to Compliance Date:			20050125			
Evaluation Agency:			State			
Evaluation Start Date:			20020903			
Evaluation Type Description:			COMPLIANCE ASSISTANCE VISIT			
Violation Short Description:						
Return to Compliance Date:						
Evaluation Agency:			State			
Evaluation Start Date:			20010227			
Evaluation Type Description:			NON-FINANCIAL RECORD REVIEW			
Violation Short Description:						
Return to Compliance Date:						
Evaluation Agency:			State			
Evaluation Start Date:			20001212			
Evaluation Type Description:			NON-FINANCIAL RECORD REVIEW			
Violation Short Description:						
Return to Compliance Date:						
Evaluation Agency:			State			
Evaluation Start Date:			19991118			
Evaluation Type Description:			COMPLIANCE SCHEDULE EVALUATION			
Violation Short Description:						
Return to Compliance Date:						
Evaluation Agency:			State			
Evaluation Start Date:			19990610			
Evaluation Type Description:			COMPLIANCE ASSISTANCE VISIT			
Violation Short Description:						
Return to Compliance Date:						
Evaluation Agency:			State			
Evaluation Start Date:			19990218			
Evaluation Type Description:			COMPLIANCE EVALUATION INSPECTION ON-SITE			
Violation Short Description:						
Return to Compliance Date:						
Evaluation Agency:			State			
<u>Handler Summary</u>						
Importer Activity:			No			
Mixed Waste Generator:			No			
Transporter Activity:			No			
Transfer Facility:			No			
Onsite Burner Exemption:			No			
Furnace Exemption:			No			

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Underground Injection Activity:	No					
Commercial TSD:	No					
Used Oil Transporter:	No					
Used Oil Transfer Facility:	No					
Used Oil Processor:	No					
Used Oil Refiner:	No					
Used Oil Burner:	No					
Used Oil Market Burner:	No					
Used Oil Spec Marketer:	No					

Hazardous Waste Handler Details

Sequence No: 200710
Receive Date: 20071003
Handler Name: EAST COLONIAL USED AUTO PARTS
Federal Waste Generator Code: 3
Generator Code Description: Very Small Quantity Generator
Source Type: Implementer

Waste Code Details

Hazardous Waste Code: D001
Waste Code Description: IGNITABLE WASTE

Hazardous Waste Handler Details

Sequence No: 201801
Receive Date: 20180123
Handler Name: ECO GREEN AUTO PARTS
Federal Waste Generator Code: 3
Generator Code Description: Very Small Quantity Generator
Source Type: Implementer

Waste Code Details

Hazardous Waste Code: D001
Waste Code Description: IGNITABLE WASTE

Owner/Operator Details

Owner/Operator Ind: Current Operator	Street No:
Type: Private	Street 1: 16969 E COLONIAL DR
Name: CARLOS FURZAN	Street 2:
Date Became Current: 20180124	City: ORLANDO
Date Ended Current:	State: FL
Phone: 407-568-8444	Country: US
Source Type: Implementer	Zip Code: 32820-0000

Owner/Operator Ind: Current Operator	Street No:
Type: Private	Street 1: 16969 E COLONIAL DR
Name: GREEN EAST COLONIAL DRIVE LLC	Street 2:
Date Became Current: 20180124	City: ORLANDO
Date Ended Current:	State: FL
Phone: 407-568-8444	Country: US
Source Type: Implementer	Zip Code: 32820-0000

Owner/Operator Ind: Current Owner	Street No:
Type: Private	Street 1: 16969 E COLONIAL DR
Name: MAGIC	Street 2:
Date Became Current: 19990302	City: ORLANDO
Date Ended Current: 20180123	State: FL
Phone: 407-568-8444	Country: US
Source Type: Implementer	Zip Code: 32820-1912

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
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Owner/Operator Ind:	Current Owner				Street No:	
Type:	Private				Street 1:	16969 E COLONIAL DR
Name:	CARLOS FURZAN				Street 2:	
Date Became Current:	20180124				City:	ORLANDO
Date Ended Current:					State:	FL
Phone:	407-568-8444				Country:	US
Source Type:	Implementer				Zip Code:	32820-0000
Owner/Operator Ind:	Current Owner				Street No:	
Type:	Private				Street 1:	16969 E COLONIAL DR
Name:	GREEN EAST COLONIAL DRIVE LLC				Street 2:	
Date Became Current:	20180124				City:	ORLANDO
Date Ended Current:					State:	FL
Phone:	407-568-8444				Country:	US
Source Type:	Implementer				Zip Code:	32820-0000
Owner/Operator Ind:	Current Owner				Street No:	
Type:	Private				Street 1:	16969 E COLONIAL DR
Name:	MAGIC				Street 2:	
Date Became Current:	19990302				City:	ORLANDO
Date Ended Current:					State:	FL
Phone:					Country:	US
Source Type:	Implementer				Zip Code:	32820-1912

Historical Handler Details

Receive Dt:	20071003
Generator Code Description:	Very Small Quantity Generator
Handler Name:	EAST COLONIAL USED AUTO PARTS

12	2 of 5	SSW	0.08 / 417.77	69.55 / 0	ECOGREEN AUTO PARTS 16969 EAST COLONIAL DRIVE ORLANDO FL	WCRPS
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Site ID:	338803	Coord Accuracy ID:	3
Datum ID:	NAD83	Zip5:	32820
Method ID:	DPHO	Zip4:	
Feature:	building	County ID:	48
Object of Interest:	CAP_RAP SITE	County:	ORANGE
Proximity to Object:	EXACT	Lat DD:	28
Interpolation Scale:	5000	Lat MM:	33
Map Source:	IMAGERY_11_13	Long DD:	81
Map Source Scale:	5000	Long MM:	7
Collect Program ID:	CR		
Collect Username:	SUSSKO_R		
Collect Affiliation:	Florida Department of Environmental Protection		
Verifying Program ID:	CR		
Verify Method ID:	DPHO		
Verifier Username:	SUSSKO_R		
Verifier Affiliation:	DEPARTMENT OF ENVIRONMENTAL PROTECTION		
Project Name:	ECOGREEN AUTO PARTS		
Documents:	https://prodenv.dep.state.fl.us/DepNexus/public/electronic-documents/COM_338803/gis-facility!search		

Project Details

Project ID:	348671	District:	CD
OGC No:		GIS ALBX:	680392.34
Status:	CLOSED	GIS ALBY:	509363.68
Priority Score:		Source:	Closed Responsible Party Sites
Offsite COC:	U		
Contaminants:			

12	3 of 5	SSW	0.08 / 417.77	69.55 / 0	EAST COLONIAL USED AUTO PARTS	WCRPS
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Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
16969 EAST COLONIAL DR ORLANDO FL						
Site ID:	234438				Coord Accuracy ID: 4	
Datum ID:	NAD83				Zip5: 32820	
Method ID:	DPHO				Zip4:	
Feature:	at location of benzene-gw				County ID: 48	
Object of Interest:	CAP_RAP SITE				County: ORANGE	
Proximity to Object:	EXACT				Lat DD: 28	
Interpolation Scale:					Lat MM: 33	
Map Source:	1999 doqs				Long DD: 81	
Map Source Scale:	5000				Long MM: 7	
Collect Program ID:		CL				
Collect Username:						
Collect Affiliation:						
Verifying Program ID:		CL				
Verify Method ID:		DPHO				
Verifier Username:		WOEBER_A				
Verifier Affiliation:		DEPARTMENT OF ENVIRONMENTAL PROTECTION				
Project Name:		EAST COLONIAL USED AUTO PARTS				
Documents:		https://prodenv.dep.state.fl.us/DepNexus/public/electronic-documents/COM_234438/gis-facility!search				

Project Details

Project ID:	280253			District:	CD
OGC No:				GIS ALBX:	680375.49
Status:	CLOSED			GIS ALBY:	509366.35
Priority Score:				Source:	Closed Responsible Party Sites
Offsite COC:	N				
Contaminants:		TCE			

12	4 of 5	SSW	0.08 / 417.77	69.55 / 0	Eco Green Auto Parts 16969 EAST COLONIAL DRIVE ORLANDO FL 32820	INST
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Facility ID No:	FIESTA-1501			Site ZIP5:	32820
Site ID:	ERIC_12853			Site ZIP4:	0
Boundary Key:	1438			Site State:	FL
OIC Obj of Inter ID:	SWIM			Mechanism Instr No:	
VSC1 Verif Status ID:	REVIEWED			Mechanism Effect Dt:	13-JUL-20
Control ID:	IC-1580			Mechanism Counties:	Orange
Begin Date:	7/13/2020			Mechanism Category:	Conditions only-No IC
End Date:	1/1/1970			Mechanism Book No:	
Previously Publish?:	Yes			Mechanism Page No:	
Site WMD:	SFWMD			Create User Name:	WILLIAMS_CA
Site Progr Type Key:	RESPONSPARTY			Create Date/Time:	9/21/2020
Site Managing Progr:	Responsible Party Cleanup			Modify User Name:	WILLIAMS_CA
Site Dep Office:	CD			Modify Date/Time:	9/29/2020
Engineering Controls:	None			Collector User Name:	WILLIAMS_CA
Contaminated Media:	Soil			Collection Date:	9/21/2020
PC2 Proximity ID:	EXACT			Verification Date:	1/1/1970
Horizontal Reference:	HARN			Verifier User Name:	
Site Name:	ECOGREEN AUTO PARTS				
Control Name:	ECOGREEN AUTO PARTS				
CMC2 Coord Method ID:	CSUR				
Contaminations:	Benzo(a)pyrene Equivalents				
Restrictions:	None				
Mechanism Types:	ACTL- No IC				
Description:	ACTL- No IC				
Site Documents:	https://prodenv.dep.state.fl.us/DepNexus/public/electronic-documents/ERIC_12853/gis-facility!search				
Comments:					

12	5 of 5	SSW	0.08 / 417.77	69.55 / 0	Eco Green Auto Parts 16969 E Colonial Dr Orlando FL 32820	INST
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Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Facility ID No:	FIESTA-1501				Site ZIP5: 32820	
Site ID:	ERIC_7619				Site ZIP4: 1912	
Boundary Key:	1412				Site State: FL	
OIC Obj of Inter ID:	SWIM				Mechanism Instr No:	
VSC1 Verif Status ID:	REVIEWED				Mechanism Effect Dt: 13-JUL-20	
Control ID:	IC-1562				Mechanism Counties: Orange	
Begin Date:	7/13/2020				Mechanism Category: Conditions only-No IC	
End Date:	1/1/1970				Mechanism Book No:	
Previously Publish?:	Yes				Mechanism Page No:	
Site WMD:	SJRWMD				Create User Name: WILLIAMS_CA	
Site Progr Type Key:					Create Date/Time: 7/22/2020	
Site Managing Progr:					Modify User Name: WILLIAMS_CA	
Site Dep Office:	CD				Modify Date/Time: 9/8/2020	
Engineering Controls:	None				Collector User Name: WILLIAMS_CA	
Contaminated Media:	Soil				Collection Date: 7/22/2020	
PC2 Proximity ID:	EXACT				Verification Date: 1/1/1970	
Horizontal Reference:	HARN				Verifier User Name:	
Site Name:	Eco Green Auto Parts					
Control Name:	Eco Green Auto Parts					
CMC2 Coord Method ID:	CSUR					
Contaminations:	Benzo(a)pyrene					
Restrictions:	None					
Mechanism Types:	ACTL- No IC					
Description:	ACTL - Soil					
Site Documents:	https://prodenv.dep.state.fl.us/DepNexus/public/electronic-documents/ERIC_7619/gis-facility!search					
Comments:						

13	1 of 1	NNE	0.00 / 4.37	69.08 / 0	CYPRESS LAKES - PHASE 5 - TRACT J & K CR 419 & LAKE PICKETT RD ORLANDO FL 32820	FINDS/FRS
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Registry ID: 110035571645
FIPS Code: 12095
HUC Code: 03080101
Site Type Name: STATIONARY
Location Description:
Supplemental Location:
Create Date: 23-APR-08
Update Date:
Interest Types: STATE MASTER
SIC Codes:
SIC Code Descriptions:
NAICS Codes:
NAICS Code Descriptions:
Conveyor: FDM
Federal Facility Code:
Federal Agency Name:
Tribal Land Code:
Tribal Land Name:
Congressional Dist No: 24
Census Block Code: 120950166011033
EPA Region Code: 04
County Name: ORANGE
US/Mexico Border Ind:
Latitude: 28.579167
Longitude: -81.1225
Reference Point: FACILITY CENTROID
Coord Collection Method: UNKNOWN
Accuracy Value: 1000
Datum: NAD83
Source:
Facility Detail Rprt URL: https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110035571645
Program Acronyms:

FDM:75960

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
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14	1 of 1	SSW	0.00 / 26.31	69.78 / 1	CYPRESS LAKES - PHASE 4 & 5 CR-419 & COLONIAL DR ORLANDO FL 32820	FINDS/FRS
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Registry ID: 110032780382
FIPS Code: 12095
HUC Code: 03080101
Site Type Name: STATIONARY
Location Description:
Supplemental Location:
Create Date: 02-DEC-07
Update Date: 24-APR-08
Interest Types: STATE MASTER
SIC Codes:
SIC Code Descriptions:
NAICS Codes:
NAICS Code Descriptions:
Conveyor: FDM
Federal Facility Code:
Federal Agency Name:
Tribal Land Code:
Tribal Land Name:
Congressional Dist No: 24
Census Block Code: 120950166011025
EPA Region Code: 04
County Name: ORANGE
US/Mexico Border Ind:
Latitude: 28.576944
Longitude: -81.120278
Reference Point: FACILITY CENTROID
Coord Collection Method: UNKNOWN
Accuracy Value: 1000
Datum: NAD83
Source:
Facility Detail Rprt URL: https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110032780382
Program Acronyms:

FDM:79226

15	1 of 2	S	0.21 / 1,110.03	68.88 / 0	J & B USED AUTO PARTS INC 17105 E COLONIAL DR ORLANDO FL 32820-2204	RCRA VSQG
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EPA Handler ID: FLR000059147
Gen Status Universe: VSG
Contact Name: PAUL FETTERLY
Contact Address: 17105 E COLONIAL DR , , ORLANDO , FL, 32820-2204 , US
Contact Phone No and Ext: 407-568-2131
Contact Email:
Contact Country: US
County Name: ORANGE
EPA Region: 04
Land Type: Other
Receive Date: 20160817
Location Latitude: 28.559874
Location Longitude: -81.126654

Violation/Evaluation Summary

Note: VIOLATION or UNDETERMINED: There are VIOLATION or UNDETERMINED details or records associated with this facility (EPA ID) in the Compliance Monitoring and Enforcement table dated Jun, 2021.

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
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Violation Details

Found Violation: Yes
Citation:
Violation Short Description: Generators - General
Violation Type: 262.A
Violation Determined Date: 20071003
Scheduled Compliance Date: 20071119
Return to Compliance: Unverifiable
Actual Return to Compl: 20071119
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 123
Enforcement Type Description: DEP NON-COMPLIANCE LETTER
Enforcement Action Date: 20071019
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Found Violation: Yes
Citation:
Violation Short Description: Universal Waste - Small Quantity Handlers
Violation Type: 273.B
Violation Determined Date: 20071003
Scheduled Compliance Date: 20071119
Return to Compliance: Unverifiable
Actual Return to Compl: 20071119
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 123
Enforcement Type Description: DEP NON-COMPLIANCE LETTER
Enforcement Action Date: 20071019
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Found Violation: Yes
Citation:
Violation Short Description: Used Oil - Generators
Violation Type: 279.C
Violation Determined Date: 20071003
Scheduled Compliance Date: 20071119
Return to Compliance: Unverifiable
Actual Return to Compl: 20071119
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 123
Enforcement Type Description: DEP NON-COMPLIANCE LETTER
Enforcement Action Date: 20071019
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Found Violation: Yes
Citation:
Violation Short Description: Permit Condition or Requirement
Violation Type: PCR
Violation Determined Date: 20071003
Scheduled Compliance Date: 20071119
Return to Compliance: Unverifiable
Actual Return to Compl: 20071119
Violation Responsible Agency: State

Enforcement Details

Enforcement Type: 123
Enforcement Type Description: DEP NON-COMPLIANCE LETTER
Enforcement Action Date: 20071019
Enf Disposition Status:
Disposition Status Date:
Enforcement Lead Agency: State
Proposed Penalty Amount:
Final Amount:
Paid Amount:

Violation Details

Found Violation: Yes
Citation: GPT:262.11
Violation Short Description: Generators - General
Violation Type: 262.A
Violation Determined Date: 20040129
Scheduled Compliance Date:
Return to Compliance: Unverifiable
Actual Return to Compl: 20040304
Violation Responsible Agency: State

Violation Details

Found Violation: Yes
Citation: GPT:279.22(c)
Violation Short Description: Used Oil - Generators
Violation Type: 279.C
Violation Determined Date: 20040129
Scheduled Compliance Date:
Return to Compliance: Unverifiable
Actual Return to Compl: 20040304
Violation Responsible Agency: State

Evaluation Details

Evaluation Start Date: 20160817
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
<i>Violation Short Description:</i>						
<i>Return to Compliance Date:</i>						
<i>Evaluation Agency:</i>		State				
<i>Evaluation Start Date:</i>		20090807				
<i>Evaluation Type Description:</i>		COMPLIANCE EVALUATION INSPECTION ON-SITE				
<i>Violation Short Description:</i>						
<i>Return to Compliance Date:</i>						
<i>Evaluation Agency:</i>		State				
<i>Evaluation Start Date:</i>		20071003				
<i>Evaluation Type Description:</i>		COMPLIANCE EVALUATION INSPECTION ON-SITE				
<i>Violation Short Description:</i>		Used Oil - Generators				
<i>Return to Compliance Date:</i>		20071119				
<i>Evaluation Agency:</i>		State				
<i>Evaluation Start Date:</i>		20071003				
<i>Evaluation Type Description:</i>		COMPLIANCE EVALUATION INSPECTION ON-SITE				
<i>Violation Short Description:</i>		Permit Condition or Requirement				
<i>Return to Compliance Date:</i>		20071119				
<i>Evaluation Agency:</i>		State				
<i>Evaluation Start Date:</i>		20071003				
<i>Evaluation Type Description:</i>		COMPLIANCE EVALUATION INSPECTION ON-SITE				
<i>Violation Short Description:</i>		Universal Waste - Small Quantity Handlers				
<i>Return to Compliance Date:</i>		20071119				
<i>Evaluation Agency:</i>		State				
<i>Evaluation Start Date:</i>		20071003				
<i>Evaluation Type Description:</i>		COMPLIANCE EVALUATION INSPECTION ON-SITE				
<i>Violation Short Description:</i>		Generators - General				
<i>Return to Compliance Date:</i>		20071119				
<i>Evaluation Agency:</i>		State				
<i>Evaluation Start Date:</i>		20040408				
<i>Evaluation Type Description:</i>		COMPLIANCE SCHEDULE EVALUATION				
<i>Violation Short Description:</i>						
<i>Return to Compliance Date:</i>						
<i>Evaluation Agency:</i>		State				
<i>Evaluation Start Date:</i>		20040129				
<i>Evaluation Type Description:</i>		COMPLIANCE EVALUATION INSPECTION ON-SITE				
<i>Violation Short Description:</i>		Used Oil - Generators				
<i>Return to Compliance Date:</i>		20040304				
<i>Evaluation Agency:</i>		State				
<i>Evaluation Start Date:</i>		20040129				
<i>Evaluation Type Description:</i>		COMPLIANCE EVALUATION INSPECTION ON-SITE				
<i>Violation Short Description:</i>		Generators - General				
<i>Return to Compliance Date:</i>		20040304				
<i>Evaluation Agency:</i>		State				
<i>Evaluation Start Date:</i>		20000223				
<i>Evaluation Type Description:</i>		COMPLIANCE EVALUATION INSPECTION ON-SITE				
<i>Violation Short Description:</i>						
<i>Return to Compliance Date:</i>						
<i>Evaluation Agency:</i>		State				
<i>Evaluation Start Date:</i>		19990824				
<i>Evaluation Type Description:</i>		COMPLIANCE ASSISTANCE VISIT				
<i>Violation Short Description:</i>						
<i>Return to Compliance Date:</i>						
<i>Evaluation Agency:</i>		State				

Handler Summary

Importer Activity: No
Mixed Waste Generator: No

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Transporter Activity:		No				
Transfer Facility:		No				
Onsite Burner Exemption:		No				
Furnace Exemption:		No				
Underground Injection Activity:		No				
Commercial TSD:		No				
Used Oil Transporter:		No				
Used Oil Transfer Facility:		No				
Used Oil Processor:		No				
Used Oil Refiner:		No				
Used Oil Burner:		No				
Used Oil Market Burner:		No				
Used Oil Spec Marketer:		No				

Hazardous Waste Handler Details

Sequence No: 200908
Receive Date: 20090807
Handler Name: J & B USED AUTO PARTS INC
Federal Waste Generator Code: 3
Generator Code Description: Very Small Quantity Generator
Source Type: Implementer

Waste Code Details

Hazardous Waste Code: D001
Waste Code Description: IGNITABLE WASTE

Hazardous Waste Handler Details

Sequence No: 201608
Receive Date: 20160817
Handler Name: J & B USED AUTO PARTS INC
Federal Waste Generator Code: 3
Generator Code Description: Very Small Quantity Generator
Source Type: Implementer

Waste Code Details

Hazardous Waste Code: D001
Waste Code Description: IGNITABLE WASTE

Owner/Operator Details

Owner/Operator Ind: Current Owner	Street No:
Type: Private	Street 1: 17105 E COLONIAL DR
Name: HORTON NORMAN	Street 2:
Date Became Current: 19990825	City: ORLANDO
Date Ended Current:	State: FL
Phone:	Country: US
Source Type: Implementer	Zip Code: 32820-2204

Owner/Operator Ind: Current Owner	Street No:
Type: Private	Street 1: 17105 E COLONIAL DR
Name: NORMAN HORTON	Street 2:
Date Became Current: 19990825	City: ORLANDO
Date Ended Current:	State: FL
Phone:	Country: US
Source Type: Implementer	Zip Code: 32820-2204

Historical Handler Details

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Receive Dt:		20090807				
Generator Code Description:		Very Small Quantity Generator				
Handler Name:		J & B USED AUTO PARTS INC				

[15](#) 2 of 2 S 0.21 / 1,110.03 68.88 / 0 J & B USED AUTO PARTS, INC.
17105 E. COLONIAL DR
Orlando FL 32820 **SWF/LF**

Facility ID:	97007	LO Phone No:	
Resp Authority:		Fac Type (Geodata):	
RA Address:		Fac Status (Geodata):	
RA City:		Status Dt (Geodata):	
RA State:		Ownership (Geodata):	
RA Zip:		City (Geodata):	
RA Phone No.:		Zip4 (Geodata):	
RA Email:	JNBUSEDPARTS@AOL.COM	Zip5 (Geodata):	
Site Supervisor:		District (Geodata):	
SS Address:		Office (Geodata):	
SS City:		County ID (Geodata):	
SS State:		County (Geodata):	
SS Zip:		County:	ORANGE
SS Phone No.:		District:	CD
SS Email:		Section:	
Land Owner:		Township:	
LO Address:		Range:	
LO City:		Latitude:	::
LO State:		Longitude:	::
LO Zip:			
Facility Name (Geodata):			
Address (Geodata):			
Documents (Geodata):			
Reports (Geodata):			
Information Portal Facility URL:	http://prodenv.dep.state.fl.us/DepNexus/public/facilitysearch?pagination=true&facility.id=97007&facility.name=J%20&%20B%20USED%20AUTO%20PARTS.%20INC.		
Oculus Docs Inventory URL:	https://eriservice7.ecologeris.com/ErisExt/flo/ocure.ashx?ID=97007&CAT=8		
Data Source:	Solid Waste Facility Inventory Report		

Class details

Class: WASTE TIRE COLLECTOR
Class Status: INACTIVE (I)

[16](#) 1 of 1 S 0.24 / 1,276.33 68.21 / -1 QUALITY AUTO WORKS INC
17146 E COLONIAL DR
ORLANDO FL 32833 **RCRA SQG**

EPA Handler ID:	FLD984249458
Gen Status Universe:	Small Quantity Generator
Contact Name:	TIM DEES
Contact Address:	17146 , E COLONIAL DR , , ORLANDO , FL, 32820-2203 , US
Contact Phone No and Ext:	407-568-2838
Contact Email:	
Contact Country:	US
County Name:	ORANGE
EPA Region:	04
Land Type:	Private
Receive Date:	19930113
Location Latitude:	28.559012
Location Longitude:	-81.12435

Violation/Evaluation Summary

Note: NO RECORDS: As of Jun 2021, there are no Compliance Monitoring and Enforcement (violation) records associated with this facility (EPA ID).

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
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Handler Summary

Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility: No
Onsite Burner Exemption: No
Furnace Exemption: No
Underground Injection Activity: No
Commercial TSD: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Burner: No
Used Oil Market Burner: No
Used Oil Spec Marketer: No

Hazardous Waste Handler Details

Sequence No: 199301
Receive Date: 19930113
Handler Name: QUALITY AUTO WORKS INC
Federal Waste Generator Code: 2
Generator Code Description: Small Quantity Generator
Source Type: Notification

Waste Code Details

Hazardous Waste Code: D001
Waste Code Description: IGNITABLE WASTE

Hazardous Waste Code: D006
Waste Code Description: CADMIUM

Hazardous Waste Code: D007
Waste Code Description: CHROMIUM

Hazardous Waste Code: D008
Waste Code Description: LEAD

Hazardous Waste Code: F003
Waste Code Description: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Hazardous Waste Code: F005
Waste Code Description: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Owner/Operator Details

Owner/Operator Ind:	Current Owner	Street No:	
Type:	Private	Street 1:	17146 E COLONIAL DR
Name:	TIM DEES	Street 2:	
Date Became Current:	19981119	City:	ORLANDO

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Date Ended Current:					State:	FL
Phone:					Country:	US
Source Type:	Notification				Zip Code:	32820-2203
Owner/Operator Ind:		Current Owner			Street No:	
Type:	Private				Street 1:	17146 E COLONIAL DR
Name:	DEES TIM				Street 2:	
Date Became Current:	19981119				City:	ORLANDO
Date Ended Current:					State:	FL
Phone:					Country:	US
Source Type:	Notification				Zip Code:	32820-2203

[17](#) 1 of 1 S 0.49 / 2,579.58 69.19 / 0 I.G.FONTE(IMPORT USED AUTO PARTS) SWF/LF
17421 E COLONIAL DR
ORLANDO FL 32820

Facility ID:	24690	LO Phone No:	
Resp Authority:	I.G.FONTE, JR.	Fac Type (Geodata):	Solid Waste
RA Address:	17421 E COLONIAL DR	Fac Status (Geodata):	Cleanup, Waste Removed
RA City:	ORLANDO	Status Dt (Geodata):	2006/04/07 00:00:00+00
RA State:	FL	Ownership (Geodata):	Private
RA Zip:		City (Geodata):	Orlando
RA Phone No.:		Zip4 (Geodata):	
RA Email:		Zip5 (Geodata):	32820
Site Supervisor:		District (Geodata):	CD
SS Address:		Office (Geodata):	Central District
SS City:		County ID (Geodata):	48
SS State:		County (Geodata):	Orange
SS Zip:		County:	ORANGE
SS Phone No.:		District:	CD
SS Email:		Section:	21
Land Owner:		Township:	22S
LO Address:		Range:	32E
LO City:		Latitude:	28:33:32.03
LO State:		Longitude:	81:7:22.87
LO Zip:			
Facility Name (Geodata):	I.G.FONTE(IMPORT USED AUTO PARTS)		
Address (Geodata):	17421 E COLONIAL DR		
Documents (Geodata):	https://prodenv.dep.state.fl.us/DepNexus/public/electronic-documents/24690/gis-facility!search		
Reports (Geodata):	https://fldeloc.dep.state.fl.us/WWW_WACS/Reports/SW_Facility_Inventory_res2.asp?wacsid=24690		
Information Portal Facility URL:	http://prodenv.dep.state.fl.us/DepNexus/public/facilitysearch?pagination=true&facility.id=24690&facility.name=I.G.FONTE(IMPORT%20USED%20AUTO%20PARTS)		
Oculus Docs Inventory URL:	https://eriservice7.ecologeris.com/ErisExt/flo/ocure.ashx?ID=24690&CAT=8		
Data Source:	Solid Waste Facility Inventory Report; Florida DEP Geospatial Open Data		

Class details

Class: WASTE TIRE COLLECTION CENTER
Class Status: CLEANUP, WASTE REMOVED (C)

SWF Inventory Report/ Geo Data class details

Object of Interest:	Waste Processing Area	Lat DD:	28
Coordinate Method:	Digital Aerial Photography	Lat MM:	33
Accuracy Level:	4	Lat SS:	
Accuracy:	11 - 20 meters	Long DD:	81
QA Status:	Reviewed	Long MM:	7
Datum ID:	NAD83	Long SS:	
Proximity ID:	Entrance to site or facility containing feature location		
X:	-81.1230157289179		
Y:	28.5589039374106		

Solid Waste Facility Inventory Geospatial Open Data

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Object of Interest:	Facility			Lat DD:	28	
Class:				Lat MM:	33	
Class Status:				Lat SS:		
Coord Method ID:	Digital Aerial Photography			Long DD:	81	
Accuracy Level:	3			Long MM:	7	
Accuracy:	1.1 - 10 meters			Long SS:		
QA Status:	Not Reviewed			Datum ID:	NAD83	
Proximity ID:						
X:	-81.1230224789196					
Y:	28.5589025762992					

[18](#) 1 of 1 **SSW** 0.40 / 2,099.00 60.77 / -8 **FIRE RESCUE #82** **500 N STORY PARTIN RD** **ORLANDO FL 32833-2811** **LST**

Facility ID:	9100721	Contact:	PHILLIP FRANCOM TISHA PENCE (407) 836-9638
Facility Status:	CLOSED	Phone:	(407)836-9843
Facility Type:	I - County Government	Name Changed:	03/20/2019
Score:	45	Address Changed:	06/19/2019
Score Effective Date:	08/03/2010	Section:	20
Score when Ranked:		Township:	22S
Rank:		Range:	32E
Operator:	PHILLIP FRANCOM	District:	CD
Prim Related Party:	15902	County:	ORANGE
Primary RP Role:	ACCOUNT OWNER	County No:	48
RP Begin Date:	07/30/1991	Lat DD:	28
RP Address1:	6590 AMORY CT	Lat MM:	33
RP Address2:	ATTN: STORAGE TANK REGIS	Lat SS:	17.3644
RP City:	WINTER PARK	Long DD:	81
RP State:	FL	Long MM:	7
RP Zip5:	32793	Long SS:	46.1254
RP Zip4:		Feature:	DPHO
RP Phone:	(407)836-9843	Method:	DPHO
RP Phone Ext.:		Datum:	0
RP Bad Addr Ind:	No		
Facility Name (Map):	FIRE RESCUE #82		
Address (Map):	500 N STORY PARTIN RD		
City (Map):	ORLANDO		
Zip5 (Map):	32833		
Facility T (Map):	County Government		
Facility S (Map):	CLOSED		
County (Map):	ORANGE		
Lat DD (Map):	28		
Lat MM (Map):	33		
Long DD (Map):	81		
Long MM (Map):	7		
Datum (Map):	NAD83		
Rel Feat (Map):	EXACT		
Collection (Map):	DPHO		
Collector (Map):	WILLIAMS_CA		
Collecti 1 (Map):	14-Jun-2010		
Document L (Map):	https://prodenv.dep.state.fl.us/DepNexus/public/electronic-documents/9100721/facility!search		
Lat SS (Map):			
Long SS (Map):			
Geometry (Map):			
RP Name:	ORANGE CNTY BOCC - FIRE & RESCUE DIV		
Oculus Docs Inventory:	https://eriservice7.ecologeris.com/ErisExt/flo/ocure.ashx?ID=9100721&CAT=11		
Information Portal Fac URL:	http://prodenv.dep.state.fl.us/DepNexus/public/facilitysearch?pagination=true&facility.id=9100721		
Information Portal Doc URL:	http://prodenv.dep.state.fl.us/DepNexus/public/electronic-documents/9100721/facility!search		

Discharge Cleanup Summary

Discharge Date: 06/15/2009
Cleanup Required: R - CLEANUP REQUIRED
Discharge Cleanup Status: NFA - NFA COMPLETE
Discharge Cleanup Stat Date: 06/24/2010

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
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Eligibility Indicator: I - INELIGIBLE
Site Manager: TAYLOR_DT
Site Manager End Date: 05/20/2010
Tank Office: PCLP48 - ORANGE COUNTY ENVIRONMENTAL PROTECTION DIV

Contaminated Media

Contaminated Drinking Wells:
Contaminated Mntring Wells: NO
Contaminated Soil: YES
Contaminated Surface Water: NO
Contaminated Ground Water: NO
Pollutant: G - Emerg Generator Diesel
Other Description:
Gallons Discharged: 30

Task Info

SA Task ID:	85598	RAP Task ID:	
SA Cleanup Resp:	-	RAP Clean Resp ID:	-
SA Fund Elig Type:	-	RAP Fund Elig Type:	-
SA Actual Cost:		RAP Actual Cost:	
SA Complete Date:		RAP Complete Date:	
SA Payment Date:		RAP Payment Date:	
SR Task ID:		RAP Last Ord Appr:	
SR Cleanup Resp:	-	RA Task ID:	85125
SR Fund Elig Type:	-	RA Cleanup Resp:	RP - RESPONSIBLE PARTY
SR Actual Cost:		RA Fund Elig Type:	-
SR Complete Date:		RA Yrs to Complete:	0
SR Payment Date:		RA Actual Cost:	
SR Oral Date:		SRC Action Type:	NFA - NO FURTHER ACTION
SR Written Date:		SRC Submit Date:	04-21-2010
SR Soil Removal:		SRC Review Date:	05-20-2010
SR Free Prod Rmvl:		SRC Complete Status:	A - APPROVED
SR Soil Ton Remove:		SRC Comp Status Dt:	05-20-2010
SR Soil Treatment:		SRC Issue Date:	06-24-2010
SR Other Treatment:		SRC Comments:	
SR Alt Proc Rec:		Tank Office:	PCLP48 - Orange County
SR Alternate Procedure Status:			
SR Alt Procedure Status Dt:			
SR Alt Procedure Comment:			

Discharge Cleanup Summary

Discharge Date: 08/11/2009
Cleanup Required: R - CLEANUP REQUIRED
Discharge Cleanup Status: NFA - NFA COMPLETE
Discharge Cleanup Stat Date: 12/03/2010
Eligibility Indicator: I - INELIGIBLE
Site Manager: TAYLOR_DT
Site Manager End Date: 11/09/2010
Tank Office: PCLP48 - ORANGE COUNTY ENVIRONMENTAL PROTECTION DIV

Contaminated Media

Contaminated Drinking Wells:
Contaminated Mntring Wells: NO
Contaminated Soil: YES
Contaminated Surface Water: NO
Contaminated Ground Water: NO
Pollutant: G - Emerg Generator Diesel
Other Description:
Gallons Discharged: 30

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
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Task Info

SA Task ID:		RAP Task ID:	
SA Cleanup Resp:	-	RAP Clean Resp ID:	-
SA Fund Elig Type:	-	RAP Fund Elig Type:	-
SA Actual Cost:		RAP Actual Cost:	
SA Complete Date:		RAP Complete Date:	
SA Payment Date:		RAP Payment Date:	
SR Task ID:		RAP Last Ord Appr:	
SR Cleanup Resp:	-	RA Task ID:	86255
SR Fund Elig Type:	-	RA Cleanup Resp:	RP - RESPONSIBLE PARTY
SR Actual Cost:		RA Fund Elig Type:	-
SR Complete Date:		RA Yrs to Complete:	0
SR Payment Date:		RA Actual Cost:	
SR Oral Date:		SRC Action Type:	NFA - NO FURTHER ACTION
SR Written Date:		SRC Submit Date:	09-22-2010
SR Soil Removal:		SRC Review Date:	11-09-2010
SR Free Prod Rmvl:		SRC Complete Status:	A - APPROVED
SR Soil Ton Remove:		SRC Comp Status Dt:	11-09-2010
SR Soil Treatment:		SRC Issue Date:	12-03-2010
SR Other Treatment:		SRC Comments:	
SR Alt Proc Rec:		Tank Office:	PCLP48 - Orange County
SR Alternate Procedure Status:			
SR Alt Procedure Status Dt:			
SR Alt Procedure Comment:			

Petroleum Cleanup PCT Facility Score

Facility Cleanup Status: CMPL - COMPLETED
Related Party ID: 15902
RP Contact: PHILLIP FRANCOM | TISHA PENCE (407) 836-9638
Bad Address Indicator: N

Discharge Info (Map)

Discharge:	59271	Discharg 3:	NFA
Discharg 1:	15-Jun-2009	Disch Clea:	24-Jun-2010
Discharg 2:	0	Report Pha:	COMPLETED
Eligibilit:	INELIGIBLE	Report Sub:	COMPLETED
Eligibil 1:		Report S 1:	24-Jun-2010
General Cl:	CLOSURE	Staff Assi:	
Tank Offic:	ORANGE COUNTY ENVIRONMENTAL PROTECTION DIV		

Discharge Info (Map)

Discharge:	59240	Discharg 3:	NFA
Discharg 1:	11-Aug-2009	Disch Clea:	03-Dec-2010
Discharg 2:	45	Report Pha:	COMPLETED
Eligibilit:	INELIGIBLE	Report Sub:	COMPLETED
Eligibil 1:		Report S 1:	03-Dec-2010
General Cl:	CLOSURE	Staff Assi:	
Tank Offic:	ORANGE COUNTY ENVIRONMENTAL PROTECTION DIV		

19	1 of 2	S	0.41 / 2,158.98	60.16 / -9	ORANGE CNTY FIRE RESCUE #82 500 STORY PARTIN RD BITHLO FL 32833	DEL CONTAM SITE
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Prgm Site ID:	9100721	Record Date:	
Remedi Status:	ACTIVE	County:	ORANGE
Priority Score:		Method:	DPHO
Program Area:	Petroleum	Datum:	
Program Eligible:		Lat DD:	28
Ineligible:	Y	Lat MM:	33

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Offsite Contam:	U				Lat SS: 17.52	
Dt Known Offsite:					Long DD: 81	
Proj Manager:	TAYLOR_DT				Long MM: 7	
Office District:	PCLP48				Long SS: 44.69	
Original Source:		CS				
Record Date:		31-MAR-2015				

[19](#) 2 of 2 S 0.41 / 2,158.98 60.16 / -9 **ORANGE CNTY FIRE RESCUE #82
500 STORY PARTIN RD
BITHLO FL 32833** **DWM CONTAM**

Facility ID:	9100721	Related Party ID:	
Facility Type:		Primary RP Role:	
Program Area:	Petroleum	RP Begin Date:	
Rank:		RP Name:	
Operator:		RP Address1:	
Phone:		RP Address2:	
Name Changed:		RP City:	
Addr Changed:		RP State:	
Method:		RP Zip5:	
Datum:		RP Zip4:	
County:	ORANGE	Contact:	
Range:		RP Phone:	
Township:		RP Extension:	
Section:		Rp Bad Addr Ind:	

Program Details

Facility Status:	ACTIVE	Lat DD:	28
Priority Score:		Lat MM:	33
Score Effective Dt:		Lat SS:	17.52
Score When Ranked:		Long DD:	81
Offsite Contam:	U	Long MM:	7
Program Eligible:		Long SS:	44.69
Ineligible:	Y	Datum:	
District:	PCLP48	Staff Assigned:	
Method:	DPHO	Priority:	
Project Coordinator:	TAYLOR_DT		

Unplottable Summary

Total: 1 Unplottable sites

DB	Company Name/Site Name	Address	City	Zip	ERIS ID
HMIRS		E. COLONIAL DRIVE	ORLANDO FL		818489009

Unplottable Report

Site:

E. COLONIAL DRIVE ORLANDO FL

HMIRS

Incident County: ORANGE

HMIR Incident Reports

Report No: I-1990060352
Report Type: A hazardous material incident
Date of Incident: 1990-06-01
Time of Incident: 0830
Haz Class Code:
Hazardous Class: 3
Commodity Short Nm: GASOLINE INCLUDES GASOLI
Commodity Long Nm: GASOLINE INCLUDES GASOLINE MIXED WITH ETHYL ALCOHOL, WITH NOT MORE THAN 10% ALCOHOL

Trade Name: GASOLINE
ID No: UN1203
Haz Waste Ind: No
Haz Waste EPA No:
HMIS Tox Inhalation?: No
TIH Hazard Zone:
Qty Released: 70
Unit of Measure: Liquid - Gallon

What Failed:
What Failed Desc:
How Failed Code:
How Failed Desc:
Failure Cause Code:
Failure Cause Desc:
Ident. Markings:
Cont1 Pkging Type:
Cont1 Const Mat:
Cont1 Head Type:
Cont1 Pkg Capacity: 9000
C1 Capacity UOM: LGA
Cont1 Pkg Amt: 0
C1 Pkg Amt UOM:
Cont1 Pkg No: 1
C1 Pkg NO Failed: 1
Cont1 Pkg Mnfr: GREAT DANE TRAILERS INC
Cont1 Pkg Mnfr Dt: 0-00-00 00:00:00
Cont1 Pkg Serial NO:
C1 Pkg Last Test Dt: 1988-12-01 00:00:00
C1 Test Const Mat:
C1 Pkg Dsign Pres.: 0
C1 Dsign Press UOM:
C1 Pkg Shell Thick: 0
C1 Shell Thick UOM:
C1 Head Thickness: 0
C1 Head Thick UOM:
C1 Pkg Srvc Pres.: 0
C1 Srvc Press UOM:
C1 Valve/Device Fail?: No
C1 Device Type:
C1 Device Mnfr:
C1 Device Model:
NRC No:

Fed DOT Agency Nm:
Fed DOT Report No:
Report Submit Src: Paper
Inc Multiple Rows: No
Inc Non US State:
Mode Transport: Highway
Transport Phase: Unloading
Incident Occrrnce:

Mat Ship Approval?: No
Mat Ship Approv No:
Undecl Hazmat Ship?: No
Packaging Type: Cargo Tank Motor Vehicle (CTMV)
Packing Group:
Carrier Reporter: REDWING CARRIERS INC
CR Street Name: 8515 PALM RIVER ROAD
CR City: TAMPA
CR State: FL
CR Postal Code: 33619
CR Non US State:
CR Fed DOT ID: 0
CR Hazmat Reg ID:
CR Country: US
Shipper Name: NOT REPORTED BY CARRIER
Shipper Street Name: UNKNOWN
Shipper City: UNKNOWN
Shipper State:
Shipper Postal:
Shipper Non US St: XX
Shipper Country:
Shipper Waybill: W/B 654254
Ship Hazmat Reg ID:
Origin City:
Origin State:
Origin Postal:
Origin Non US St:
Origin Country: US
Destination City: ORLANDO
Destination State: FLORIDA
Destination Postal: 32826
Destination Non US:
Destination Country: US
Cont2 Package Type:
Cont2 Const Mat:
Cont2 Pkg Capacity: 0
Cont2 Capacity UOM:
Cont2 Pkg Amount: 0
Cont2 Pkg Amt UOM:
Cont2 Pkg No: 0
Cont2 Pkg No Failed: 0

RAM Pkg Category:

Haz NonHosp Public: 0

RAM Pkg Cert.: FALSE
RAM Pkg Cert. NBR:
RAM Nuclide S:
RAM Transport Index:
RAM UOM:
RAM Activity Rpted: 0
RAM UOM Rpted:
RAM Activity: 0
RAM Activity UOM:
RAM Mat Safety:
Spillage Result: Yes
Fire Result: No
Explosion Result: No
Water Sewer Result: No
Gas Dispersion: No
Environment Damage: No
No Release Result: No
Fire EMS Report: No
Fire EMS EMS Report:
Police Report: No
Police Report No:
In House Cleanup: No
Other Cleanup: No
Damage > 500: Yes
Material Loss: 70
Carrier Damage: 0
Property Damage: 0
Response Cost: 0
Remediation Cost: 4500
Damage Old Form: 0
Total Damages Amt: 4570
Hazmat Fatality: No
Haz Fatal Employees: 0
Haz Fatal Respndrs: 0
Haz Fatal Gen Public: 0
Tot Hazmat Fatalities: 0
Non Hazmat Fatality: No
Non Hazmat Fatafs: 0
Hazmat Injury: No
Haz Hospital Empl: 0
Haz Hospital Resp: 0
Haz Hosp Gen Public: 0
Haz Hosp Old Form: 0
Total Haz Hosp Inj: 0
Haz Non Hosp Empl: 0
Haz Non Hosp Resp: 0
Description of Events:

Haz NonHosp Old:
Tot Haz Non Hosp Inj:
Total Hazmat Injuries: 0
Evacuation Indicator: No
Public Evacuated: 0
Employees Evac: 0
Total Evacuated: 0
Total Evacuation Hrs: 0
Major Artery Closed: No
Mjr Artery Hrs Closed: 0
Material Involved: No
Estimated Speed: 0
Weather Conditions:
Vehicle Overturn: No
Vehicle Left Roadway: No
Passenger Aircraft: No
Cargo Baggage:
Ship Non Transport: No
Ship Air First Flight: No
Ship Air Subflight: No
Ship Init Transport: No
Ship Phase Transfer: No
Contact Name: JAMES F. PENDERGRAST
Contact Title: SAFETY DIRECTOR
Contact Business:
Contact Street:
Contact City:
Contact State:
Contact Postal:
Contact Non US St:
Contact Country: US
Inc. Report Prepared:
HMIS Serious Incidnt: No
HMIS Serious Fatality: No
HMIS Serious Injury: No
HMIS Flight Plan: No
HMIS Serious Evacs: No
HMIS Major Artery: No
HMIS Bulk Release: No
HMIS Marine Pollutnt: No
HMIS Radioactive: No
HMIS Gen Pkg Type: TANK
HMIS Container Code: MC306
HMIS Container Desc: Cargo tanks
HMIS Bulk Incident: Yes
Undeclared Shipment: No

DRIVER WAS PUMPING OUT CUSTOMER'S TANK INTO TANK TRAILER WHEN PRODUCT OVERFILLED TANK TRAILER. NO INJURIES. FLORIDA PETROLEUM CLEANED UP AND REMOVE D CONTAMINATED DIRT FOR INCINERATION. EPA STATISFIED.

Recommend Actions Taken:

Appendix: Database Descriptions

Environmental Risk Information Services (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. ERIS updates databases as set out in ASTM Standard E1527-13, Section 8.1.8 Sources of Standard Source Information:

"Government information from nongovernmental sources may be considered current if the source updates the information at least every 90 days, or, for information that is updated less frequently than quarterly by the government agency, within 90 days of the date the government agency makes the information available to the public."

Standard Environmental Record Sources

Federal

Formerly Utilized Sites Remedial Action Program:

[DOE FUSRAP](#)

The U.S. Department of Energy (DOE) established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from the Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations. The DOE Office of Legacy Management (LM) established long-term surveillance and maintenance (LTS&M) requirements for remediated FUSRAP sites. DOE evaluates the final site conditions of a remediated site on the basis of risk for different future uses. DOE then confirms that LTS&M requirements will maintain protectiveness.

Government Publication Date: Mar 4, 2017

National Priority List:

[NPL](#)

National Priorities List (Superfund)-NPL: EPA's (United States Environmental Protection Agency) list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Superfund program. The NPL, which EPA is required to update at least once a year, is based primarily on the score a site receives from EPA's Hazard Ranking System. A site must be on the NPL to receive money from the Superfund Trust Fund for remedial action.

Government Publication Date: Aug 25, 2021

National Priority List - Proposed:

[PROPOSED NPL](#)

Includes sites proposed (by the EPA, the state, or concerned citizens) for addition to the NPL due to contamination by hazardous waste and identified by the Environmental Protection Agency (EPA) as a candidate for cleanup because it poses a risk to human health and/or the environment.

Government Publication Date: Aug 25, 2021

Deleted NPL:

[DELETED NPL](#)

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Government Publication Date: Aug 25, 2021

SEMS List 8R Active Site Inventory:

[SEMS](#)

The Superfund Program has deployed the Superfund Enterprise Management System (SEMS), which integrates multiple legacy systems into a comprehensive tracking and reporting tool. This inventory contains active sites evaluated by the Superfund program that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The Active Site Inventory Report displays site and location information at active SEMS sites. An active site is one at which site assessment, removal, remedial, enforcement, cost recovery, or oversight activities are being planned or conducted.

Government Publication Date: Jul 29, 2021

Inventory of Open Dumps, June 1985:

[ODI](#)

The Resource Conservation and Recovery Act (RCRA) provides for publication of an inventory of open dumps. The Act defines "open dumps" as facilities which do not comply with EPA's "Criteria for Classification of Solid Waste Disposal Facilities and Practices" (40 CFR 257).

Government Publication Date: Jun 1985

SEMS List 8R Archive Sites:

[SEMS ARCHIVE](#)

The Superfund Enterprise Management System (SEMS) Archived Site Inventory displays site and location information at sites archived from SEMS. An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time.

Government Publication Date: Jul 29, 2021

Comprehensive Environmental Response, Compensation and Liability Information System -

[CERCLIS](#)

CERCLIS:

Superfund is a program administered by the United States Environmental Protection Agency (EPA) to locate, investigate, and clean up the worst hazardous waste sites throughout the United States. CERCLIS is a database of potential and confirmed hazardous waste sites at which the EPA Superfund program has some involvement. It contains sites that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The EPA administers the Superfund program in cooperation with individual states and tribal governments; this database is made available by the EPA.

Government Publication Date: Oct 25, 2013

EPA Report on the Status of Open Dumps on Indian Lands:

[IODI](#)

Public Law 103-399, The Indian Lands Open Dump Cleanup Act of 1994, enacted October 22, 1994, identified congressional concerns that solid waste open dump sites located on American Indian or Alaska Native (AI/AN) lands threaten the health and safety of residents of those lands and contiguous areas. The purpose of the Act is to identify the location of open dumps on Indian lands, assess the relative health and environment hazards posed by those sites, and provide financial and technical assistance to Indian tribal governments to close such dumps in compliance with Federal standards and regulations or standards promulgated by Indian Tribal governments or Alaska Native entities.

Government Publication Date: Dec 31, 1998

CERCLIS - No Further Remedial Action Planned:

[CERCLIS NFRAP](#)

An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time. The Archive designation means that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL). This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Government Publication Date: Oct 25, 2013

CERCLIS Liens:

[CERCLIS LIENS](#)

A Federal Superfund lien exists at any property where EPA has incurred Superfund costs to address contamination ("Superfund site") and has provided notice of liability to the property owner. A Federal CERCLA ("Superfund") lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. This database is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Jan 30, 2014

RCRA CORRACTS-Corrective Action:

[RCRA CORRACTS](#)

RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. At these sites, the Corrective Action Program ensures that cleanups occur. EPA and state regulators work with facilities and communities to design remedies based on the contamination, geology, and anticipated use unique to each site.

Government Publication Date: Jun 14, 2021

RCRA non-CORRACTS TSD Facilities:

[RCRA TSD](#)

RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. This database includes Non-Corrective Action sites listed as treatment, storage and/or disposal facilities of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).

Government Publication Date: Jun 14, 2021

RCRA Generator List:

[RCRA LQG](#)

RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Large Quantity Generators (LQGs) generate 1,000 kilograms per month or more of hazardous waste or more than one kilogram per month of acutely hazardous waste.

Government Publication Date: Jun 14, 2021

RCRA Small Quantity Generators List:

[RCRA SQG](#)

RCRA Info is the EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Small Quantity Generators (SQGs) generate more than 100 kilograms, but less than 1,000 kilograms, of hazardous waste per month.

Government Publication Date: Jun 14, 2021

RCRA Very Small Quantity Generators List:

[RCRA VSQG](#)

RCRA Info is the EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Very Small Quantity Generators (VSQG) generate 100 kilograms or less per month of hazardous waste, or one kilogram or less per month of acutely hazardous waste. Additionally, VSQG may not accumulate more than 1,000 kilograms of hazardous waste at any time.

Government Publication Date: Jun 14, 2021

RCRA Non-Generators:

[RCRA NON GEN](#)

RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Non-Generators do not presently generate hazardous waste.

Government Publication Date: Jun 14, 2021

Federal Engineering Controls-ECs:

[FED ENG](#)

Engineering controls (ECs) encompass a variety of engineered and constructed physical barriers (e.g., soil capping, sub-surface venting systems, mitigation barriers, fences) to contain and/or prevent exposure to contamination on a property. This database is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Feb 23, 2021

Federal Institutional Controls- ICs:

[FED INST](#)

Institutional controls are non-engineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy. Although it is EPA's (United States Environmental Protection Agency) expectation that treatment or engineering controls will be used to address principal threat wastes and that groundwater will be returned to its beneficial use whenever practicable, ICs play an important role in site remedies because they reduce exposure to contamination by limiting land or resource use and guide human behavior at a site.

Government Publication Date: Feb 23, 2021

Land Use Control Information System:

[LUCIS](#)

The LUCIS database is maintained by the U.S. Department of the Navy and contains information for former Base Realignment and Closure (BRAC) properties across the United States.

Government Publication Date: Sep 1, 2006

Emergency Response Notification System:

[ERNS 1982 TO 1986](#)

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

Government Publication Date: 1982-1986

Emergency Response Notification System:

[ERNS 1987 TO 1989](#)

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

Government Publication Date: 1987-1989

Emergency Response Notification System:

[ERNS](#)

Database of oil and hazardous substances spill reports made available by the United States Coast Guard National Response Center (NRC). The NRC fields initial reports for pollution and railroad incidents and forwards that information to appropriate federal/state agencies for response. These data contain initial incident data that has not been validated or investigated by a federal/state response agency.

Government Publication Date: Jul 26, 2021

The Assessment, Cleanup and Redevelopment Exchange System (ACRES) Brownfield Database:

[FED BROWNFIELDS](#)

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties protects the environment, reduces blight, and takes development pressures off greenspaces and working lands. This database is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Aug 20, 2021

FEMA Underground Storage Tank Listing:

[FEMA UST](#)

The Federal Emergency Management Agency (FEMA) of the Department of Homeland Security maintains a list of FEMA owned underground storage tanks.

Government Publication Date: Dec 31, 2017

Facility Response Plan:

[FRP](#)

List of facilities that have submitted Facility Response Plans (FRP) to EPA. Facilities that could reasonably be expected to cause "substantial harm" to the environment by discharging oil into or on navigable waters are required to prepare and submit Facility Response Plans (FRPs). Harm is determined based on total oil storage capacity, secondary containment and age of tanks, oil transfer activities, history of discharges, proximity to a public drinking water intake or sensitive environments.

Government Publication Date: Dec 2, 2020

Historical Gas Stations:

[HIST GAS STATIONS](#)

This historic directory of service stations is provided by the Cities Service Company. The directory includes Cities Service filling stations that were located throughout the United States in 1930.

Government Publication Date: Jul 1, 1930

Petroleum Refineries:

[REFN](#)

List of petroleum refineries from the U.S. Energy Information Administration (EIA) Refinery Capacity Report. Includes operating and idle petroleum refineries (including new refineries under construction) and refineries shut down during the previous year located in the 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, Guam, and other U.S. possessions. Survey locations adjusted using public data.

Government Publication Date: Jul 10, 2020

Petroleum Product and Crude Oil Rail Terminals:

[BULK TERMINAL](#)

List of petroleum product and crude oil rail terminals made available by the U.S. Energy Information Administration (EIA). Includes operable bulk petroleum product terminals located in the 50 States and the District of Columbia with a total bulk shell storage capacity of 50,000 barrels or more, and/or the ability to receive volumes from tanker, barge, or pipeline; also rail terminals handling the loading and unloading of crude oil that were active between 2017 and 2018. Petroleum product terminals comes from the EIA-815 Bulk Terminal and Blender Report, which includes working, shell in operation, and shell idle for several major product groupings. Survey locations adjusted using public data.

Government Publication Date: Apr 28, 2020

LIEN on Property:

[SEMS LIEN](#)

The EPA Superfund Enterprise Management System (SEMS) provides LIEN information on properties under the EPA Superfund Program.

Government Publication Date: Jul 29, 2021

Superfund Decision Documents:

[SUPERFUND ROD](#)

This database contains a listing of decision documents for Superfund sites. Decision documents serve to provide the reasoning for the choice of (or) changes to a Superfund Site cleanup plan. The decision documents include Records of Decision (ROD), ROD Amendments, Explanations of Significant Differences (ESD), along with other associated memos and files. This information is maintained and made available by the US EPA (Environmental Protection Agency).

Government Publication Date: Jun 28, 2021

State

Superfund Waste Cleanup & State-Funded Action Sites:

[SHWS](#)

List of hazardous waste cleanup sites participating in various federal and state funded cleanup programs. Florida's State-Funded Action Sites and Superfund Waste Cleanup Sites lists are maintained and made available by the Florida Department of Environmental Protection (FDEP). This database is state equivalent CERCLIS.

Government Publication Date: Aug 6, 2021

Delisted State-Funded Action Sites:

[DELISTED SHWS](#)

This database contains a list of closed hazardous waste sites of various federal and state funded cleanup programs that were removed from the Florida Department of Environmental Protection (FDEP).

Government Publication Date: Aug 6, 2021

Florida Department of Environmental Protection Cleanup Sites:

[CLEANUP DEP](#)

The Cleanup Sites layer feeds the FDEP's Contamination Locator Map (CLM). It provides locations and document links for sites currently in the cleanup process and sites awaiting cleanup funding. Cleanup programs include: Brownfields, Petroleum, EPA Superfund (CERCLA), Drycleaning, Responsible Party Cleanup, State Funded Cleanup, State Owned Lands Cleanup and Hazardous Waste Cleanup.

Government Publication Date: Apr 25, 2021

Waste Cleanup Responsible Party Sites:

[WCRPS](#)

List of Open, Closed, and Inactive Waste Cleanup Responsible Party sites made available by the Florida Department of Environmental Protection.

Government Publication Date: Apr 11, 2021

Delisted Waste Cleanup Responsible Party Sites:

[DELISTED WCRPS](#)

List of sites which once appeared on - and have since been removed from - the list of Waste Cleanup Responsible Party Sites made available by the Florida Department of Environmental Protection.

Government Publication Date: Apr 25, 2021

Solid Waste Facilities and Landfills:

[SWF/LF](#)

The Solid Waste Facility Inventory Report made available by the Florida Department of Environmental Protection (FDEP) includes all types of authorized and unauthorized facilities: municipal solid waste, landfills, dumps, construction and demolition disposal, recycling facilities, and more.

Government Publication Date: Mar 24, 2021

Leaking Tanks:

[LST](#)

The Storage Tank Regulation Section is part of the Petroleum Restoration Program in the Florida Department of Environmental Protection (FDEP)'s Division of Waste Management. In 1983, Florida was one of the first states in the union to pass legislation and adopt rules for underground and aboveground storage tank systems. Since then, over 28,000 facilities have reported discharges of petroleum products from storage tank systems. Florida relies on groundwater for about 92 percent of its drinking water needs, and has some of the most stringent rules in the country.

Government Publication Date: Aug 13, 2021

Delisted Leaking Tanks:

[DELISTED LST](#)

Whereas Leaking Tanks (LST) includes only facilities which currently have contamination as recorded by the Florida Department of Environmental Protection, this list contains facilities which were once included in LST data but no longer appear on the list made available by FDEP. Facilities may be removed from the current LST list because the discharge has been cleaned up, or the discharge is not required for 62-770.

Government Publication Date: Aug 18, 2021

Underground Storage Tanks:

[UST](#)

List of Underground Storage Tank facilities made available by the Florida Department of Environmental Protection (FL DEP). Includes facilities tracked for active storage tanks, storage tank history, or petroleum cleanup activity. In an effort to minimize the occurrence and environmental risks of releases and discharges, FDEP administers standards pertaining to the construction, installation, operation, maintenance, repair, closure, and disposal of underground storage tank systems that store regulated substances.

Government Publication Date: Aug 17, 2021

Aboveground Storage Tanks:

[AST](#)

List of Aboveground Storage Tank facilities made available by the Florida Department of Environmental Protection (FL DEP). Includes facilities tracked for active storage tanks, storage tank history, or petroleum cleanup activity. The Florida Department of Environmental Protection (FDEP) provides standards for aboveground storage tanks (ASTs) that have individual storage tank capacities greater than 550 gallons. The state also regulates the registration, construction, installation, operation, maintenance, repair, closure, and disposal of storage tank systems that store regulated substances.

Government Publication Date: Aug 17, 2021

Storage Tank Facilities:

[TANK](#)

List of storage tank facilities made available by the Florida Department of Environmental Protection (FL DEP) for which tank information is not available. In the case of closed facilities - where all tanks have been removed or closed, and there is also no petroleum discharge or on-going cleanup activity - the owner data may not be current, but rather would represent the most recent information made available to FL DEP.

Government Publication Date: Aug 17, 2021

Delisted AST UST Storage Tanks:

[DEL UST AST TANK](#)

This database contains a list of closed UST and AST storage tank sites that were removed from the Florida Department of Environmental Protection (FDEP) storage tank database.

Government Publication Date: Jul 2, 2015

Delisted Storage Tanks:

[DEL STORAGE TANK](#)

List of sites that once appeared on - and have since been removed from - the list of UST and AST storage tank facilities made available by the Florida Department of Environmental Protection.

Government Publication Date: Aug 17, 2021

Federal Facilities Listing:

[FF TANKS](#)

The Florida Department of Environmental Protection (FDEP) Storage Tank Program registers facilities and storage tanks where aboveground or underground storage tanks store pollutants, hazardous substances, and/or mineral acid substances regulated by Chapter 62-761, Florida Administrative Code, or when aboveground storage tanks or compression vessels store a hazardous substance which requires registration according to Chapter 376, Florida Statutes.

Government Publication Date: Jun 24, 2021

Storage Tank/Contaminated Facility Search:

[STCS](#)

List of facilities and tanks in the Florida Department of Environmental Protection (FDEP) Bureau of Petroleum Storage Systems Storage Tank/Contaminated Facility Search which do not currently have active, regulated underground or aboveground storage tanks (USTs or ASTs) containing petroleum. Note that tank details do not appear for facilities for which all tanks have been removed.

Government Publication Date: Aug 18, 2021

Institutional Controls Registry:

[INST](#)

The Institutional Controls registry is maintained by the Florida Department of Environmental Protection (FDEP). The registry aims to help preserve adequate protection of contaminated soil regions and help to minimize any chances of exposure.

Government Publication Date: May 24, 2021

Engineering Controls:

[ENG](#)

A listing of all engineering controls that are in place to eliminate or reduce the potential for contaminant migration and exposure to contaminants. These controls may include caps, barriers, guards or fences. The list is maintained by the Florida Department of Environmental Protection (FDEP).

Government Publication Date: May 24, 2021

Voluntary Cleanup Sites:

[VCP](#)

A listing of active and closed voluntary cleanup sites registered by the Florida Department of Environmental Protection (FDEP).

Government Publication Date: Dec 31, 2020

Brownfield Sites:

[BROWNFIELDS](#)

Brownfields are defined by the Florida Department of Environmental Protection (FDEP) as abandoned, idled, or underused industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination. This is a list of sites within designated Brownfield Areas within Florida where Brownfield Site Rehabilitation Agreement (BSRA)s have been executed between FDEP and a responsible party.

Government Publication Date: Aug 19, 2021

Brownfield Areas:

[BROWNFIELD AREA](#)

Brownfields are defined by the Florida Department of Environmental Protection (FDEP) as abandoned, idled, or underused industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination. This is a list of Brownfield Areas, defined by the FDEP as contiguous areas of one or more brownfield sites, some of which may not be contaminated, that have been designated as such by a local government resolution. Such areas may include all or portions of community redevelopment areas, enterprise zones, empowerment zones, other such designated economically deprived communities and areas, and Environmental Protection Agency (EPA) designated brownfield pilot projects. Because a variety of sources and methods were used to derive information for this data, locations are approximate.

Government Publication Date: May 28, 2021

Tribal

Leaking Underground Storage Tanks (LUSTs) on Indian Land:

[INDIAN LUST](#)

Leaking Underground Storage Tanks (LUSTs) on Tribal/Indian Lands in EPA Region 4, which includes Florida.

Government Publication Date: Apr 14, 2020

Underground Storage Tanks (USTs) on Indian Lands:

INDIAN UST

Listing of underground storage tanks (USTs) on Tribal/Indian Lands in EPA Region 4, which includes Florida.

Government Publication Date: Apr 14, 2020

Delisted Tribal Leaking Storage Tanks:

DELISTED ILST

Leaking Underground Storage Tank facilities which have been removed from the Regional Tribal LUST lists made available by the EPA.

Government Publication Date: Apr 14, 2020

Delisted Tribal Underground Storage Tanks:

DELISTED IUST

Underground Storage Tank facilities which have been removed from the Regional Tribal UST lists made available by the EPA.

Government Publication Date: Apr 14, 2020

County

No County databases were selected to be included in the search.

Additional Environmental Record Sources

Federal

PFOA/PFOS Contaminated Sites:

PFAS NPL

List of sites where PFOA or PFOS contaminants have been found in drinking water or soil. Made available by the Federal Environmental Protection Agency (EPA).

Government Publication Date: Mar 1, 2021

Facility Registry Service/Facility Index:

FINDS/FRS

The Facility Registry Service (FRS) is a centrally managed database that identifies facilities, sites, or places subject to environmental regulations or of environmental interest. FRS creates high-quality, accurate, and authoritative facility identification records through rigorous verification and management procedures that incorporate information from program national systems, state master facility records, and data collected from EPA's Central Data Exchange registrations and data management personnel. This list is made available by the Environmental Protection Agency (US EPA).

Government Publication Date: Nov 2, 2020

Toxics Release Inventory (TRI) Program:

TRIS

The EPA's Toxics Release Inventory (TRI) is a database containing data on disposal or other releases of over 650 toxic chemicals from thousands of U.S. facilities and information about how facilities manage those chemicals through recycling, energy recovery, and treatment. One of TRI's primary purposes is to inform communities about toxic chemical releases to the environment.

Government Publication Date: Aug 24, 2021

Perfluorinated Alkyl Substances (PFAS) Releases:

PFAS TRI

List of Toxics Release Inventory (TRI) facilities at which the reported chemical is a Per- or polyfluorinated alkyl substance (PFAS) included in the Environmental Protection Agency (EPA)'s consolidated PFAS Master List of PFAS Substances. The EPA's Toxics Release Inventory (TRI) is a database containing data on disposal or other releases of over 650 toxic chemicals from thousands of U.S. facilities and information about how facilities manage those chemicals through recycling, energy recovery, and treatment.

Government Publication Date: Aug 24, 2021

Perfluorinated Alkyl Substances (PFAS) Water Quality:

PFAS WATER

The Water Quality Portal (WQP) is a cooperative service sponsored by the United States Geological Survey (USGS), the Environmental Protection Agency (EPA), and the National Water Quality Monitoring Council (NWQMC). This listing includes records from the Water Quality Portal where the characteristic (environmental measurement) is in the Environmental Protection Agency (EPA)'s consolidated PFAS Master List of PFAS Substances.

Government Publication Date: Jul 20, 2020

Hazardous Materials Information Reporting System:

HMIRS

US DOT - Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) Incidents Reports Database taken from Hazmat Intelligence Portal, U.S. Department of Transportation.

National Clandestine Drug Labs:

[NCDL](#)

The U.S. Department of Justice ("the Department") provides this data as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy.

Government Publication Date: Oct 5, 2020

Toxic Substances Control Act:

[TSCA](#)

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.

The CDR enables EPA to collect and publish information on the manufacturing, processing, and use of commercial chemical substances and mixtures (referred to hereafter as chemical substances) on the TSCA Chemical Substance Inventory (TSCA Inventory). This includes current information on chemical substance production volumes, manufacturing sites, and how the chemical substances are used. This information helps the Agency determine whether people or the environment are potentially exposed to reported chemical substances. EPA publishes submitted CDR data that is not Confidential Business Information (CBI).

Government Publication Date: Apr 11, 2019

Hist TSCA:

[HIST TSCA](#)

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.

The 2006 IUR data summary report includes information about chemicals manufactured or imported in quantities of 25,000 pounds or more at a single site during calendar year 2005. In addition to the basic manufacturing information collected in previous reporting cycles, the 2006 cycle is the first time EPA collected information to characterize exposure during manufacturing, processing and use of organic chemicals. The 2006 cycle also is the first time manufacturers of inorganic chemicals were required to report basic manufacturing information.

Government Publication Date: Dec 31, 2006

FTTS Administrative Case Listing:

[FTTS ADMIN](#)

An administrative case listing from the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.

Government Publication Date: Jan 19, 2007

FTTS Inspection Case Listing:

[FTTS INSP](#)

An inspection case listing from the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.

Government Publication Date: Jan 19, 2007

Potentially Responsible Parties List:

[PRP](#)

Early in the cleanup process, the Environmental Protection Agency (EPA) conducts a search to find the potentially responsible parties (PRPs). EPA looks for evidence to determine liability by matching wastes found at the site with parties that may have contributed wastes to the site.

Government Publication Date: Jun 25, 2021

State Coalition for Remediation of Drycleaners Listing:

[SCRD DRYCLEANER](#)

The State Coalition for Remediation of Drycleaners (SCRD) was established in 1998, with support from the U.S. Environmental Protection Agency (EPA) Office of Superfund Remediation and Technology Innovation. Coalition members are states with mandated programs and funding for drycleaner site remediation. Current members are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Government Publication Date: Nov 08, 2017

Integrated Compliance Information System (ICIS):

[ICIS](#)

The Integrated Compliance Information System (ICIS) is a system that provides information for the Federal Enforcement and Compliance (FE&C) and the National Pollutant Discharge Elimination System (NPDES) programs. The FE&C component supports the Environmental Protection Agency's (EPA) Civil Enforcement and Compliance program activities. These activities include Compliance Assistance, Compliance Monitoring and Enforcement. The NPDES program supports tracking of NPDES permits, limits, discharge monitoring data and other program reports.

Government Publication Date: Jun 14, 2021

Drycleaner Facilities:

[FED DRYCLEANERS](#)

A list of drycleaner facilities from Enforcement and Compliance History Online (ECHO) online search. The Environmental Protection Agency (EPA) tracks facilities that possess NAIC and SIC codes that classify businesses as drycleaner establishments.

Government Publication Date: May 5, 2021

Delisted Drycleaner Facilities:

[DELISTED FED DRY](#)

List of sites removed from the list of Drycleaner Facilities (sites in the EPA's Integrated Compliance Information System (ICIS) with NAIC or SIC codes identifying the business as a drycleaner establishment).

Government Publication Date: May 5, 2021

Formerly Used Defense Sites:

[FUDES](#)

Formerly Used Defense Sites (FUDES) are properties that were formerly owned by, leased to, or otherwise possessed by and under the jurisdiction of the Secretary of Defense prior to October 1986, where the Department of Defense (DoD) is responsible for an environmental restoration. This list is published by the U.S. Army Corps of Engineers.

Government Publication Date: May 26, 2021

Former Military Nike Missile Sites:

[FORMER NIKE](#)

This information was taken from report DRXTH-AS-IA-83A016 (Historical Overview of the Nike Missile System, 12/1984) which was performed by Environmental Science and Engineering, Inc. for the U.S. Army Toxic and Hazardous Materials Agency Assessment Division. The Nike system was deployed between 1954 and the mid-1970's. Among the substances used or stored on Nike sites were liquid missile fuel (JP-4); starter fluids (UDKH, aniline, and furfuryl alcohol); oxidizer (IRFNA); hydrocarbons (motor oil, hydraulic fluid, diesel fuel, gasoline, heating oil); solvents (carbon tetrachloride, trichloroethylene, trichloroethane, stoddard solvent); and battery electrolyte. The quantities of material a disposed of and procedures for disposal are not documented in published reports. Virtually all information concerning the potential for contamination at Nike sites is confined to personnel who were assigned to Nike sites. During deactivation most hardware was shipped to depot-level supply points. There were reportedly instances where excess materials were disposed of on or near the site itself at closure. There was reportedly no routine site decontamination.

Government Publication Date: Dec 2, 1984

PHMSA Pipeline Safety Flagged Incidents:

[PIPELINE INCIDENT](#)

A list of flagged pipeline incidents made available by the U.S. Department of Transportation (US DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA). PHMSA regulations require incident and accident reports for five different pipeline system types.

Government Publication Date: Jul 7, 2020

Material Licensing Tracking System (MLTS):

[MLTS](#)

A list of sites that store radioactive material subject to the Nuclear Regulatory Commission (NRC) licensing requirements. This list is maintained by the NRC. As of September 2016, the NRC no longer releases location information for sites. Site locations were last received in July 2016.

Government Publication Date: May 11, 2021

Historic Material Licensing Tracking System (MLTS) sites:

[HIST MLTS](#)

A historic list of sites that have inactive licenses and/or removed from the Material Licensing Tracking System (MLTS). In some cases, a site is removed from the MLTS when the state becomes an "Agreement State". An Agreement State is a State that has signed an agreement with the Nuclear Regulatory Commission (NRC) authorizing the State to regulate certain uses of radioactive materials within the State.

Government Publication Date: Jan 31, 2010

Mines Master Index File:

[MINES](#)

The Master Index File (MIF) contains mine identification numbers issued by the Department of Labor Mine Safety and Health Administration (MSHA) for mines active or opened since 1971. Note that addresses may or may not correspond with the physical location of the mine itself.

Government Publication Date: Nov 3, 2020

Surface Mining Control and Reclamation Act Sites:

[SMCRA](#)

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by the Office of Surface Mining Reclamation and Enforcement (OSMRE) to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of Abandoned Mine Land (AML) impacts, as well as information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Government Publication Date: Dec 18, 2020

Mineral Resource Data System:

[MRDS](#)

The Mineral Resource Data System (MRDS) is a collection of reports describing metallic and nonmetallic mineral resources throughout the world. Included are deposit name, location, commodity, deposit description, geologic characteristics, production, reserves, resources, and references. This database contains the records previously provided in the Mineral Resource Data System (MRDS) of USGS and the Mineral Availability System/Mineral Industry Locator System (MAS/MILS) originated in the U.S. Bureau of Mines, which is now part of USGS. The USGS has ceased systematic updates of the MRDS database with their focus more recently on deposits of critical minerals while providing a well-documented baseline of historical mine locations from USGS topographic maps.

Government Publication Date: Mar 15, 2006

Uranium Mill Tailings Radiation Control Act Sites:

URANIUM

The Legacy Management Office of the Department of Energy (DOE) manages radioactive and chemical waste, environmental contamination, and hazardous material at over 100 sites across the U.S. The L.M. Office manages this database of sites registered under the Uranium Mill Tailings Control Act (UMTRCA).

Government Publication Date: Mar 4, 2017

Alternative Fueling Stations:

ALT FUELS

List of alternative fueling stations made available by the US Department of Energy's Office of Energy Efficiency & Renewable Energy. Includes Biodiesel stations, Ethanol (E85) stations, Liquefied Petroleum Gas (Propane) stations, Ethanol (E85) stations, Natural Gas stations, Hydrogen stations, and Electric Vehicle Supply Equipment (EVSE). The National Renewable Energy Laboratory (NREL) obtains information about new stations from trade media, Clean Cities coordinators, a Submit New Station form on the Station Locator website, and through collaborating with infrastructure equipment and fuel providers, original equipment manufacturers (OEMs), and industry groups.

Government Publication Date: Jul 12, 2021

Registered Pesticide Establishments:

SSTS

List of active EPA-registered foreign and domestic pesticide-producing and device-producing establishments based on data from the Section Seven Tracking System (SSTS). The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Section 7 requires that facilities producing pesticides, active ingredients, or devices be registered. The list of establishments is made available by the EPA.

Government Publication Date: Apr 13, 2021

Polychlorinated Biphenyl (PCB) Notifiers:

PCB

Facilities included in the national list of facilities that have notified the United States Environmental Protection Agency (EPA) of Polychlorinated Biphenyl (PCB) activities. Any company or person storing, transporting or disposing of PCBs or conducting PCB research and development must notify the EPA and receive an identification number.

Government Publication Date: Nov 19, 2020

State

Priority Ranking List:

PRIORITYCLEAN

The Florida Legislature has established a state-funded program to cleanup properties that are contaminated as a result of the operations of a drycleaning facility or wholesale supply facility (Chapter 376, Florida Statutes). The program is administered by the Florida Department of Environmental Protection (FDEP). The statute was sponsored by the drycleaning industry to address environmental, economic, and liability issues resulting from drycleaning solvent contamination. The program provides limited liability protection to the owner, operator and real property owner of drycleaning or wholesale supply facilities for cleanup of drycleaning solvent contamination if the parties meet the eligibility conditions stated in the law.

Government Publication Date: Jul 14, 2021

Dry Cleaning Facilities:

DRYCLEANERS

A listing of dry cleaning facilities registered with the Florida Department of Environmental Protection (FDEP). The information contains facility identification number, site location information, related party (owner) information, and facility type and status. Data is taken from the Storage Tank & Contamination Monitoring database, the registration repository of dry cleaner facility data.

Government Publication Date: Mar 9, 2021

Delisted Dry Cleaning Facilities:

DELISTED DRYCLEANERS

List of sites removed from the drycleaners database made available by the Florida Department of Environmental Conservation (DEC).

Government Publication Date: Mar 10, 2021

Historical Dry Cleaners:

HISTORICAL DRYC

The Florida Department of Environmental Protection (FDEP) provided this historical database of regulated and non-regulated dry cleaning facilities. These facilities were at one time tracked and registered by the FDEP OCULUS Electronic Document Management System as "drums" in the underground storage tank database.

Oil and Hazardous Materials Incidents:

SPILLS

Statewide listing of oil and hazardous materials spills and incidents recorded by the Florida Department of Environmental Protection (FDEP).

Government Publication Date: May 18, 2021

Contaminated Sites:

DWM CONTAM

Florida Department of Environmental Protection (FDEP) Division of Waste Management (DWM) listing of active or known sites that include sites requiring cleanup but are not actively being worked on due to the agency's lack of funding (primarily petroleum and drycleaning).

Government Publication Date: Mar 12, 2020

Delisted Contaminated Sites:

DEL CONTAM SITE

List of sites which were once included on the Florida Department of Environmental Protection (FDEP) Division of Waste Management (DWM)'s Contaminated Sites list. As sites on the Contaminated Sites (CS) list are cleaned up or closed under risk based corrective action, they are removed from the CS list.

Government Publication Date: Sep 30, 2015

Aqueous Film Forming Foam (AFFF):

PFAS AFFF

A list of fire fighter training facilities that use or possibly used Aqueous Film Forming Foam (AFFF). This list is made available by the Florida Department of Environmental Protection (DEP).

Government Publication Date: Aug 20, 2020

PFAS Investigation at Federal Facilities:

PFAS

List of Federal facilities in Florida with confirmed or suspected usage of Aqueous Film Forming Foam (AFFF) made available by the Florida Department of Environmental Protection (DEP). Investigative work for AFFF source areas at DOD facilities in Florida is in the early stages with some preliminary sampling completed to confirm perfluorooctanoic acid (PFOA) and/or perfluorooctane sulfonate (PFOS) presence and some sampling to be completed at suspected AFFF potential release areas. DEP will continue to work closely with the Department of Defense (DOD), as well as other federal facilities, in order to investigate and mitigate for PFOA and PFOS introduced due to use of AFFF or other sources, with an emphasis to identify and protect drinking water resources.

Government Publication Date: Apr 20, 2020

Underground Injection Control Wells:

UIC

Class I Underground Injection Control (UIC) wells that are currently or were previously active, as well as proposed sites, regulated by the Florida Department of Environmental Protection (FDEP). Class I UIC wells are used to inject nonhazardous waste, hazardous waste (new hazardous waste wells were banned in 1983), or municipal waste below the lowermost underground source of drinking water.

Government Publication Date: May 18, 2021

Well Surveillance Program Facilities:

WELL SURVEILLANCE

List of facilities made available by the Florida Health Well Surveillance group. The Well Surveillance group manages several programs to identify and monitor areas in Florida where contaminated drinking water is suspected and may pose a threat to public health. The section coordinates with the County Health Departments (CHDs) to locate potable wells and conduct water sampling for contaminants of concern. The Well Surveillance Section is composed of the State Underground Petroleum Environmental Response Act (SUPER Act), Drinking Water Toxics Program (Toxics), Drycleaner Solvent Cleanup Program (DSCP). Includes locations of known cattle dipping vats.

Government Publication Date: Jul 1, 2021

Cattle Dip Vats:

CDV SOUTHEAST

A list of Cattle Dip Vats in Southeast Florida made available by the Florida Department of Environmental Protection.

Government Publication Date: Jan 19, 2017

Tier 2 Report:

TIER 2

A list of Tier 2 facilities in the state of Florida. The list tracks the inventory of chemicals within a particular facility. This list is provided by the Florida Division of Emergency Management.

Government Publication Date: Jul 9, 2021

Delisted County Records:

DELISTED COUNTY

Records removed from county databases. Records may be removed from the county lists made available by the respective county departments because they are inactive, or because they have been deemed to be below reportable thresholds.

Government Publication Date: Aug 6, 2021

Tribal

No Tribal additional environmental record sources available for this State.

County

No County additional environmental databases were selected to be included in the search.

Definitions

Database Descriptions: This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

Detail Report: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

Distance: The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries. All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

Elevation: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

Unplottables: These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and are included as reference.

APPENDIX I

Regulatory Documents

CIRCLE K# 7502

Regulatory Documents



TALLAHASSEE COPY

5602 Thompson Center Court, Suite 405
Tampa, Florida 33634
www.atcassociates.com
813.889.8960
Fax 813.889.8754

Ms. Carol White
Orange County Environmental Protection Division
Leeds Commerce Center
800 Mercy Drive, Suite 4
Orlando, Florida 32808-7896

April 27, 2011

Subject: Letter Report
Circle K #7502
16959 East Colonial Drive
Orlando (Bithlo), Orange County, Florida
FDEP Facility I.D. No. 488521400
FDEP Work Order No. 2011-48-W91082
ATC Project No. 05.16564.0631

RECEIVED
O.C. ENVIRONMENTAL
PROTECTION DIVISION
2011 APR 28 AM 10:05

Dear Ms. White:

ATC Associates Inc. (ATC) has completed the installation of monitoring well MW-14 at the above referenced site. A copy of the associated Verbal Change Order (VCO) is included as **Appendix A**. A site plan illustrating current site conditions has been provided as **Figure 1**. A summary of the field activities and groundwater sampling results are summarized below.

ATC oversaw the installation of one monitoring well (MW-14) by Preferred Drilling Solutions, Inc. (PDS) on April 4, 2011. MW-14 was installed downgradient of MW-10 at the edge of the property line to characterize the horizontal extent of dissolved petroleum contamination. The location of the monitoring well is depicted on **Figure 1**.

Monitoring well MW-14 was installed to a total depth of 12 feet below land surface (bls) and it was constructed of two-inch diameter Schedule 40 PVC with 10 feet of 0.01-inch slotted well screen. The well was completed flush to grade with the land surface and finished with a protective steel manhole and concrete pad. The soil boring log and monitoring well construction details are provided in **Appendix B**. The well specifications, top-of-casing (TOC) elevations, groundwater level measurements and the calculated water table elevations are presented in **Table 1**.

Monitoring well MW-14 was developed for approximately 30 minutes using a centrifugal pump, until the purged water was generally visually clear of sediment. The development water (approximately 33 gallons) was discharged onto the asphalt surface and allowed to evaporate.

Groundwater samples were collected from monitoring well MW-14 on April 11, 2011 and were sent to SPL in Scott, Louisiana, to be analyzed for benzene, toluene, ethylbenzene, total xylenes and methyl tert-butyl ether (BTEX/MTBE) via EPA Method 8021B and for polycyclic aromatic hydrocarbons (PAHs) via EPA Method 8270D. Copies of the groundwater sampling logs and the



equipment calibration log are provided in **Appendix C**. Groundwater analytical results are summarized in **Table 2**.

Dissolved-phase petroleum constituents in the groundwater sample collected from monitoring well MW-14 were not detected or detected below the applicable Chapter 62-777, F.A.C. Groundwater Cleanup Target Level (GCTL). The distribution of dissolved hydrocarbons is depicted on **Figure 2**.

Conclusions and Recommendations

Monitoring well MW-14 was installed in order to determine if dissolved petroleum impacts were migrating offsite in the vicinity of MW-10, dissolved naphthalene (20 µg/L) above the GCTL was detected in MW-10 during the annual groundwater sampling event in January 28, 2011.

Based on the historical groundwater flow interpretations (southern direction) and groundwater laboratory results from January 28, 2011 and April 11, 2011, a dissolved-phase petroleum contamination is limited within the property boundary. It is ATC's opinion that the No Further Action with conditions criteria of Chapter 62-780.680, F.A.C. is appropriate for this site.

The facility owner (Circle K) and responsible party have an agreement that allows NFA with Conditions at sites that qualify according to Chapter 62-770.680 (2) F.A.C. Following approval by the FDEP to pursue NFA with conditions, the following information will be obtained and submitted:

- 1) Professional survey of the property showing outer boundaries in relation to the contaminated area along with pertinent structures and underground utilities.
- 2) Certified copy of the deed to the property.
- 3) Copy of the legal description of the property.
- 4) A title abstract which identifies lessees, mortgage holders or others with an interest in the real property. (Note: if there are mortgage holders, and if necessary a subordination of mortgage may be completed).
- 5) A completed, signed, and dated Declaration of Restrictive Covenant.



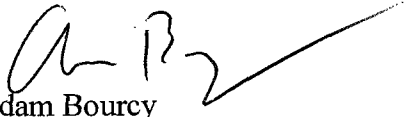
Environmental, Geotechnical and Materials Professionals


Letter Report
Circle K #7502
Orlando (Bithlo), Florida
Page 3

Please contact ATC at (813) 889-8960 if you have any questions regarding the information provided in this correspondence.

Sincerely,

ATC ASSOCIATES INC.


Adam Bourcy
Project Manager


Jason Commander
Senior Project Manager

Attachments

cc: Ms. Beni Siersema, ConocoPhillips Contract Program Manager



5602 Thompson Center Court, Suite 405
Tampa, Florida 33634
www.atcassociates.com
813.889.8960
Fax 813.889.8754

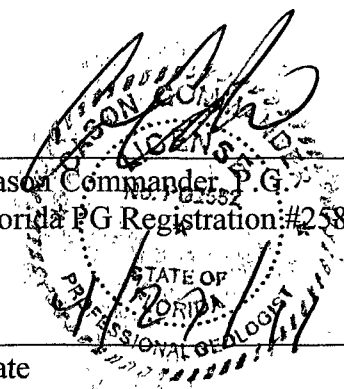
PROFESSIONAL GEOLOGIST CERTIFICATION

LETTER REPORT

CIRCLE K #7502

16959 EAST COLONIAL DRIVE
ORLANDO (BITHLO), FLORIDA
ATC PROJECT NUMBER 05.16564.0631
FDEP FACILITY NUMBER 488521400

I have reviewed the geologic/hydrogeologic aspects of this document and found them to conform to currently accepted geologic practices pursuant to Chapter 492 of the Florida Statutes.

A circular professional seal for a geologist in the State of Florida. The seal contains the text 'STATE OF FLORIDA' and 'PROFESSIONAL GEOLOGIST'. A signature is written across the seal, and the number '2582' is visible. The seal is partially overlapping the signature line.

Casey Commander, P.G.
Florida P.G. Registration: #2582

Date



Environmental, Geotechnical and Materials Professionals

TABLES

TABLE 1: GROUNDWATER ELEVATION TABLE

Facility Name: Circle K #7502
 Facility ID#: 488521400

All Measurements = Feet
 No Data = Blank

Well No.	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6
Diameter (inches)	2	2	2	2	2	2
Well Depth	12	12	12	12	12	12
Screen Interval (feet)	2 -12	2 -12	2 -12	2 -12	2 -12	2 -12
TOC Elevation	100.00	100.23	99.91	99.81	100.29	100.38

DATE	DTW	ELEV	FP	DTW	ELEV	FP	DTW	ELEV	FP	DTW	ELEV	FP	DTW	ELEV	FP	DTW	ELEV	FP
12/09/05	4.19	95.81	--	4.39	95.84	--	4.19	95.72	--	3.59	96.22	--	4.39	95.90	--	4.08	96.30	--
03/09/06				5.93	94.30	--	5.73	94.18	--				5.91	94.38	--			
06/26/06	4.58	95.42	--	5.24	94.99	--												
11/10/06										4.92	94.89	--						
11/17/06																		
06/22/07	6.68	93.32	--	6.80	93.43	--	6.49	93.42	--	6.29	93.52	--	6.70	93.59	--	6.51	93.87	--
07/05/07	6.73	93.27	--	6.90	93.33	--				6.43	93.38	--				6.79	93.59	--
09/19/07	4.87	95.13	--	5.15	95.08	--	4.97	94.94	--	4.60	95.21	--	5.18	95.11	--			
11/06/07	3.91	96.09	--	4.01	96.22	--	3.81	96.10	--	3.48	96.33	--	3.92	96.37	--			
11/19/08	5.84	94.16	--	5.86	94.37	--	5.80	94.11	--	5.31	94.50	--	5.63	94.66	--	5.22	95.16	--
10/05/09	4.90	95.10	--	5.02	95.21	--	4.90	95.01	--	4.49	95.32	--	4.93	95.36	--			
01/06/10	5.47	94.53	--	5.59	94.64	--	5.40	94.51	--	5.02	94.79	--	5.48	94.81	--			
05/03/10	4.51	95.49	--				4.45	95.46	--				4.58	95.71	--			
09/14/10	4.94	95.06	--				4.89	95.02	--				5.02	95.27	--			
01/28/11	5.62	94.38	--				5.66	94.25	--				5.79	94.50	--			
04/11/11																		

TABLE 1: GROUNDWATER ELEVATION TABLE

Facility Name: Circle K #7502

Facility ID#: 488521400

All Measurements = Feet

No Data = Blank

Well No.	DMW-7	MW-8	MW-9	MW-10	MW-11	MW-12
Diameter	2	2	2	2	2	2
Well Depth	30	12	12	12	12	12
Screen Interval	25 -30	2 -12	2 -12	2 -12	2 -12	2 -12
TOC Elevation	100.18	100.16	100.49	100.30	98.07	98.16

DATE	DTW	ELEV	FP	DTW	ELEV	FP	DTW	ELEV	FP	DTW	ELEV	FP	DTW	ELEV	FP	DTW	ELEV	FP
12/09/05	5.91	94.27	--															
03/09/06				5.68	94.48	--	5.99	94.50	--									
06/26/06							5.44	95.05	--	5.42	94.88	--						
11/10/06				5.40	94.76	--				5.81	94.49	--	4.05	94.02	--	4.21	93.95	--
11/17/06													4.33	93.74	--	4.51	93.65	--
06/22/07	6.82	93.36	--	6.38	93.78	--	6.73	93.76	--	6.92	93.38	--	5.00	93.07	--	5.28	92.88	--
07/05/07	6.88	93.30	--	6.58	93.58	--	6.95	93.54	--				5.14	92.93	--	5.35	92.81	--
09/19/07				5.01	95.15	--	5.19	95.30	--	5.27	95.03	--	3.27	94.80	--	3.52	94.64	--
11/06/07				3.65	96.51	--	3.94	96.55	--	4.14	96.16	--	2.33	95.74	--	2.59	95.57	--
11/19/08	5.98	94.20	--	5.21	94.95	--	5.61	94.88	--	6.02	94.28	--	4.23	93.84	--	4.59	93.57	--
10/05/09				4.63	95.53	--	4.97	95.52	--	5.13	95.17	--	3.31	94.76	--	3.55	94.61	--
01/06/10				5.20	94.96	--	5.53	94.96	--	5.71	94.59	--	3.89	94.18	--	4.14	94.02	--
05/03/10										4.78	95.52	--	2.95	95.12	--	3.21	94.95	--
09/14/10										5.20	95.10	--	3.35	94.72	--	3.61	94.55	--
01/28/11										5.91	94.39	--	4.12	93.95	--	4.34	93.82	--
04/11/11																		

TABLE 1: GROUNDWATER ELEVATION TABLE

Facility Name: Circle K #7502
Facility ID#: 488521400

All Measurements = Feet
No Data = Blank

Well No.	MW-13	MW-14				
Diameter	2	2				
Well Depth	12	12				
Screen Interval	2 -12	2 -12				
TOC Elevation	99.85	100.54				

DATE	DTW	ELEV	FP	DTW	ELEV	FP	DTW	ELEV	FP	DTW	ELEV	FP	DTW	ELEV	FP	DTW	ELEV	FP
12/09/05																		
03/09/06																		
06/26/06																		
11/10/06																		
11/17/06																		
06/22/07																		
07/05/07																		
09/19/07																		
11/06/07																		
11/19/08																		
10/05/09																		
01/06/10																		
05/03/10																		
09/14/10																		
01/28/11	5.51	94.34																
04/11/11				3.71	96.83													

TABLE 2: GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY

Facility Name: Circle K #7502

Facility ID#: 488521400

Not Detected = ND

No Data = Blank

Samples Destroyed = SD

Analytical Results = ug/L, unless otherwise indicated

Sample		Benzene	Toluene	Ethyl benzene	Total Xylenes	Total BTEX	MTBE	Naph.	1Meth. Naph.	2Meth. Naph.	Total Naphs.	Benzo(a) pyrene	1,2,4-Trimethyl benzene	EDB	Lead	TPH (mg/L)
Location	Date															
GCTLs		1	40	30	20	NA	20	14	28	28	NA	0.2	10	0.02	15	5,000
NADSCs		100	400	300	200	NA	200	140	280	280	NA	20	100	2	150	50,000
DP-1	5/13/2004	<1.0	<1.0	<1.0	<1.0	<4.0	<1.0	<1.0			<1.0			<1.0		<0.525
DP-2	5/13/2004	<1.0	<1.0	<1.0	<1.0	<4.0	<1.0	<1.0			<1.0			<1.0		<0.525
DP-3	5/13/2004	<1.0	<1.0	<1.0	<1.0	<4.0	<1.0	<1.0			<1.0			<1.0		<0.525
DP-1	9/28/2005	<1.0	<1.0	<1.0	7.5	7.5	<5.0	8.2	<5.0	<5.0	8.2					
DP-2	9/28/2005	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<5.0	<5.0	<5.0	<15.0					
DP-3	9/28/2005	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<5.0	<5.0	<5.0	<15.0					
DP-4	9/28/2005	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<5.0	<5.0	<5.0	<15.0					
DP-5	9/28/2005	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<5.0	<5.0	<5.0	<15.0					
DP-6	9/28/2005	510	1,500	1,100	8,700	11,810	750	680	<500	<500	680					
DP-7	9/28/2005	<10	10	12	630	652	<50	66	<50	<50	66					
DP-8	9/28/2005	<100	1,200	1,200	7,000	9400	<500	640	<500	<500	640					
DP-9	9/28/2005	<1.0	<1.0	<1.0	28.7	28.7	<5.0	8.4	<5.0	6.8	15.2					
DP-10	9/28/2005	<5.0	<5.0	210	165	375	<25	240	37	60	337					
DP-11	9/28/2005	<1.0	<1.0	1.4	<2.0	1.4	<5.0	15.9	25.4	23.8	65.1					
MW-1	12/9/2005	<0.2	0.21	0.33	1.7	2.24	<0.21	0.27	0.18	0.19	0.64	ND	0.75	<0.0028	<0.00341	<0.00044
	7/5/2007	<0.50	<0.51	<0.44	<0.50	<1.95	<0.44	0.93	<0.50	<0.50	0.93	<0.057				
	9/19/2007	<0.18	<0.25	8.5	<0.22	8.5	<2.8	0.77	<0.074	<0.056	0.77	<0.047				
	11/6/2007	<0.18	<0.25	12	4.9	16.9	<2.8	4.4	0.26	0.25	4.91	0.22				
	11/19/2008	<0.18	<0.25	15	<0.22	15	<2.8	12 V	2	1.3	15.3	<0.0097				
	10/5/2009	<0.75	<0.59	22	16.4	38	2.4 I	3.7	0.2	0.096	4.0	<0.016				

I = Analyte detected but could not be quantified with certainty
 V = Analyte detected in the associated Method Blank above Rep. Limit
 Q = Reported value is between lab MDL and the lab PQL

TABLE 2: GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY

Facility Name: Circle K #7502

Facility ID#: 488521400

Not Detected = ND

No Data = Blank

Samples Destroyed = SD

Analytical Results = ug/L, unless otherwise indicated

Sample		Benzene	Toluene	Ethyl benzene	Total Xylenes	Total BTEX	MTBE	Naph.	1Meth. Naph.	2Meth. Naph.	Total Naphs.	Benzo(a) pyrene	1,2,4-Trimethyl benzene	EDB	Lead	TPH (mg/L)
Location	Date															
GCTLs		1	40	30	20	NA	20	14	28	28	NA	0.2	10	0.02	15	5,000
NADSCs		100	400	300	200	NA	200	140	280	280	NA	20	100	2	150	50,000
MW-1 (cont.)	1/6/2010	<0.75	<0.59	11	3.3	14	<0.84	7	0.34	0.42	8	<0.036				
	5/3/2010	<0.75	<0.59	26	10.9	37	<0.84	16	1.1	1.6	19	<0.036				
	9/14/2010	<0.6	<0.83	22	3	25	5.4 I	22	2.7	5.4	30	<0.036				
	1/28/2011	<0.6	<0.83	<0.48	<1	<3	<0.72	1.4	0.45	0.36	2.21	<0.036				
MW-2	12/9/2005	<0.3	<0.94	<0.23	<0.34	<1.81	<0.22	0.094	<0.058	<0.096	0.094					<0.22
	6/26/2006	<0.2	9	93	318	420	<0.21	6.7			6.7					
	7/5/2007	<0.50	<0.51	<0.44	<0.50	<1.95	1.1	<0.25	<0.50	<0.50	<1.25	<0.057				
	9/19/2007	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	<0.099	<0.074	<0.056	<0.229	<0.047				
	11/6/2007	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	<0.099	<0.074	<0.056	<0.299	<0.047				
	11/19/2008	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	0.095 V	0.028 I	0.043 I	0.166	<0.0097				
	10/5/2009	<0.75	<0.59	<0.58	<0.22	<2.14	<0.84	<0.03	<0.02	<0.035	<0.09	<0.016				
	1/6/2010	<0.75	<0.59	<0.58	<0.22	<2.14	<0.84	<0.036	<0.036	<0.036	<0.108	<0.036				
MW-3	12/9/2005	<0.3	<0.94	<0.23	<0.34	<1.81	<0.22	<0.25	<0.31	<0.63						<0.22
	6/22/2007	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	<0.099	<0.074	<0.056	<0.229	<0.047				
	9/19/2007	<0.18	<0.25	1.2	<0.22	1.2	<2.8	1	<0.074	<0.056	1	<0.047				
	11/6/2007	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	<0.099	<0.074	<0.056	<0.229	<0.047				
	11/19/2008	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	0.024 IV	<0.023	<0.023	0.024	<0.0097				
	10/5/2009	<0.75	<0.59	<0.58	<0.22	<2.14	<0.84	<0.03	<0.02	<0.035	<0.09	<0.016				
	1/6/2010	<0.75	<0.59	<0.58	<0.22	<2.14	<0.84	<0.036	<0.036	<0.036	<0.108	<0.036				
	5/3/2010	<0.75	<0.59	<0.58	<0.22	<2.14	<0.84	<0.036	<0.036	<0.036	<0.108	<0.036				
MW-4	12/9/2005	<0.3	<0.94	<0.23	<0.34	<1.81	<0.22	<0.055	<0.058	<0.096	<0.209					<0.22
	7/5/2007	<0.50	<0.51	<0.44	<0.50	<1.95	<0.44	<0.25	<0.50	<0.50	<1.25	<0.057				
MW-5	12/9/2005	<0.3	<0.94	8.3	45	53.3	<0.22	5.8	5.9	7	18.7					<0.22
	3/9/2006	0.61	<0.94	4.4	25	30.01	<0.22									
	6/22/2007	<0.18	<0.25	37	157	194	<2.8	9.4	2.5	5.9	17.8	<0.047				
	9/19/2007	<0.18	<0.25	7.3	15.6	22.9	<2.8	<0.099	<0.074	<0.056	<0.229	<0.047				
	11/6/2007	<0.18	<0.25	5.8	20.6	26.4	<2.8	1.1	<0.074	<0.056	1.1	<0.047				
	11/19/2008	<0.18	<0.25	22	42 V	64	<2.8	8.5 V	2.8	5.2	16.5	<0.0097				
10/5/2009	<0.75	<0.59	5.7	<0.22	5.7	1.5 I	2	1	1.7	5	<0.016					

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TABLE 2: GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY

Facility Name: Circle K #7502

Facility ID#: 488521400

Not Detected = ND

No Data = Blank

Samples Destroyed = SD

Analytical Results = ug/L, unless otherwise indicated

Sample		Benzene	Toluene	Ethyl benzene	Total Xylenes	Total BTEX	MTBE	Naph.	1Meth. Naph.	2Meth. Naph.	Total Naphs.	Benzo(a) pyrene	1,2,4-Trimethyl benzene	EDB	Lead	TPH (mg/L)
Location	Date															
GCTLs		1	40	30	20	NA	20	14	28	28	NA	0.2	10	0.02	15	5,000
NADSCs		100	400	300	200	NA	200	140	280	280	NA	20	100	2	150	50,000
MW-5 (cont.)	1/6/2010	<0.75	<0.59	12	3.6	16	<0.84	3.6 V	1.3	2.8	7.7	<0.036				
	5/3/2010	<0.75	<0.59	13	<0.22	13	<0.84	4.1	1.5	3.3	8.9	<0.036				
	9/14/2010	<0.6	<0.83	12	4.7	16.7	<0.72	4.5	1.1	2	7.6	<0.036				
	1/28/2011	<0.6	<0.83	5.2	<1	5.2	<0.72	2.8	0.83	1.4	5.03	<0.036				
MW-6	12/9/2005	<0.3	<0.94	<0.23	<0.34	<1.81	<0.22	0.16	<0.058	0.11	0.27					<0.22
	7/5/2007	<0.50	<0.51	<0.44	<0.50	<1.95	<0.44	<0.25	<0.50	<0.50	<1.25	0.083 Q				
DMW-7	12/9/2005	<0.3	<0.94	<0.23	2.7	2.7	<0.22	0.061	0.089	<0.096	0.15					0.28
	7/5/2007	<0.50	0.67	<0.44	<0.50	0.67	<0.44	<0.25	<0.50	<0.50	<1.25	<0.057				
MW-8	3/9/2006	<0.3	<0.94	<0.23	<0.34	<1.81	<0.22	<0.087	<0.08	<0.08	<0.247					<0.29
	7/5/2007	<0.50	<0.51	<0.44	<0.50	<1.95	<0.44	<0.25	<0.50	<0.50	<1.25	<0.057				
MW-9	3/9/2006	<0.3	<0.94	<0.23	<0.34	<1.81	<0.22	<0.087	<0.08	<0.08	<0.247					<0.29
	6/22/2007	SD	SD	SD	SD	SD	SD	<0.099	<0.074	<0.056	<0.229	<0.047				
	7/5/2007	<0.50	<0.51	<0.44	<0.50	<1.95	<0.44									
	9/19/2007	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	<0.099	<0.074	<0.056	<0.229	<0.047				
	11/6/2007	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	<0.099	<0.074	<0.056	<0.229	<0.047				
	11/19/2008	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	<0.023	<0.023	<0.023	<0.069	<0.0097				
	10/5/2009	<0.75	<0.59	<0.58	<0.22	<2.14	<0.84	<0.03	<0.02	<0.035	<0.09	<0.016				
	1/6/2010	<0.75	<0.59	<0.58	<0.22	<2.14	<0.84	<0.036	<0.036	0.091 I	0.091	<0.036				
MW-10	6/26/2006	1.8	1.2	43	171	217	1.2	61	25	26	112	ND	110			0.59
	6/22/2007	1.5	<0.25	160	45	206.5	<2.8	62	6.4	14	82.4	<0.047				
	9/19/2007	<0.18	<0.25	84	5.2	89.2	<2.8	<0.099	3.3	1.1	4.4	<0.047				
	11/6/2007	<0.18	<0.25	1.9	<0.22	1.9	<2.8	18	1.6	2.8	22.4	<0.047				
	11/19/2008	0.65 I	0.57 I	140	57	198.22	<0.28	0.98 V	0.13	0.054	1.164	<0.0097				
	10/5/2009	<0.75	<0.59	19	<0.22	19	<0.84	34	5.8	11	51	<0.016				
	1/6/2010	<0.75	<0.59	5.1	<0.22	5.1	<0.84	35	5.1	9.4	50	<0.036				
	5/3/2010	<0.75	<0.59	<0.58	<0.22	<2.14	<0.84	11	1.9	3.4	16	<0.036				
	9/14/2010	<0.6	<0.83	<0.48	<1	<2.91	<0.72	8.5	1.9	3.8	14.2	<0.036				
	1/28/2011	<0.6	<0.83	5.4	<1	5.4	<0.72	20	4.1	3.2	27.3	<0.036				

I = Analyte detected but could not be quantified with certainty

V = Analyte detected in the associated Method Blank above Rep. Limit

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TABLE 2: GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY

Facility Name: Circle K #7502

Facility ID#: 488521400

Not Detected = ND

No Data = Blank

Samples Destroyed = SD

Analytical Results = ug/L, unless otherwise indicated

Sample		Benzene	Toluene	Ethyl benzene	Total Xylenes	Total BTEX	MTBE	Naph.	1Meth. Naph.	2Meth. Naph.	Total Naphs.	Benzo(a) pyrene	1,2,4-Trimethyl benzene	EDB	Lead	TPH (mg/L)
Location	Date															
GCTLs		1	40	30	20	NA	20	14	28	28	NA	0.2	10	0.02	15	5,000
NADSCs		100	400	300	200	NA	200	140	280	280	NA	20	100	2	150	50,000
MW-11	11/17/2006	<0.50	<0.50	0.71	<0.50	0.71	0.57	0.57	<0.50	<0.50	0.57	<0.057				
	6/22/2007	SD	SD	SD	SD	SD	SD	<0.099	<0.074	<0.056	<0.229	<0.047				
	7/5/2007	<0.50	<0.51	<0.44	<0.50	<1.95	<0.44									
	9/19/2007	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	<0.099	<0.074	<0.056	<0.229	<0.047				
	11/6/2007	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	<0.099	<0.074	<0.056	<0.229	<0.047				
	11/19/2008	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	<0.023	<0.023	<0.023	<0.069	<0.0097				
	10/5/2009	<0.75	<0.59	<0.58	<0.22	<2.14	2.8 I	<0.03	<0.02	<0.035	<0.09	<0.016				
	1/6/2010	<0.75	<0.59	<0.58	<0.22	<2.14	<0.84	<0.036	<0.036	<0.036	<0.108	<0.036				
	5/3/2010	<0.75	<0.59	<0.58	<0.22	<2.14	<0.84	0.1 I	<0.036	<0.036	0.1	<0.036				
	9/14/2010	<0.6	<0.83	<0.48	<1	<2.91	<0.72	<0.036	<0.036	<0.036	<0.108	<0.036				
	1/28/2011	<0.6	<0.83	<0.48	<1	<3	<0.72	0.092 I	<0.036	<0.036	0.092	<0.036				
MW-12	11/17/2006	<0.50	<0.51	<0.44	1.3	1.3	2.7	7	0.78	1.1	8.88	<0.057				
	6/22/2007	SD	SD	SD	SD	SD	SD	19	0.92	1.7	21.62	<0.047				
	7/5/2007	1.1	<0.51	17	2.1	20.2	0.47									
	9/19/2007	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	4.9	<0.074	<0.056	4.9	<0.047				
	11/6/2007	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	1.1	<0.074	<0.056	1.1	<0.047				
	11/19/2008	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	6.2 V	0.4	0.41	7.01	<0.0097				
	10/5/2009	<0.75	<0.59	<0.58	<0.22	<2.14	<0.84	<0.03	<0.02	<0.035	<0.09	<0.016				
	1/6/2010	<0.75	<0.59	<0.58	<0.22	<2.14	<0.84	2.5	0.25	0.44	3.2	<0.036				
	5/3/2010	<0.75	<0.59	<0.58	<0.22	<2.14	<0.84	1	0.16	0.26	1	<0.036				
	9/14/2010	<0.6	<0.83	<0.48	<1	<2.91	<0.72	0.23	0.09	0.2	0.52	<0.036				
	1/28/2011	<0.6	<0.83	<0.48	<1	<3	<0.72	0.26	<0.036	<0.036	0.26	<0.036				
MW-13	1/28/2011	<0.6	<0.83	<0.48	<1	<3	<0.72	<0.036	<0.036	<0.036	<0.108	<0.036				
MW-14	4/11/2011	<0.78	<0.64	<0.95	<0.73	<3.1	<4.7	0.69	0.058 I	0.054 I	0.0802 I	<0.036				
DP-11 (via SPLP)	12/7/2005															2.4

I = Analyte detected but could not be quantified with certainty

V = Analyte detected in the associated Method Blank above Rep. Limit

Q = Reported value is between lab MDL and the lab PQL



Environmental, Geotechnical and Materials Professionals

FIGURES

COLUMBIA SCHOOL ROAD
ASPHALT PAVEMENT



LEGEND:

	PAY PHONE
	VACUUM
	TRAFFIC SIGNAL BOX
	OVERHEAD UTILITY
	UTILITY POLE
	LIGHT POLE
	SANITARY SEWER MANHOLE WELL
	FIBER OPTIC CABLE MARKER
	FIRE DEPARTMENT CONNECTION
	MITERED END SECTION
	MONITORING WELL LOCATION
	DEEP MONITORING WELL LOCATION
	FIBER OPTIC CABLE

COLONIAL DRIVE
STATE ROAD No. 50
ASPHALT PAVEMENT

CONCRETE MEDIAN



0 15 30

SCALE: 1" = 30'



5632 Thompson Center Court
Suite 450
Tampa, Florida 33634
(813) 889-8980
(813) 889-8754 FAX

Associates Inc.

DRAWN BY: S.A.M. CHECKED BY: A.Z.

SITE MAP
CIRCLE K STORE #7502
16959 E. HIGHWAY 50
BITHLO, FLORIDA

PROJECT NO.:
05.16564.0631

SCALE:
1" = 30'

DATE: 04-21-11

FIGURE NO.: 1

COLUMBIA SCHOOL ROAD
ASPHALT PAVEMENT

LEGEND:

- ⊕ MONITORING WELL LOCATION
- ⊙ DEEP MONITORING WELL LOCATION

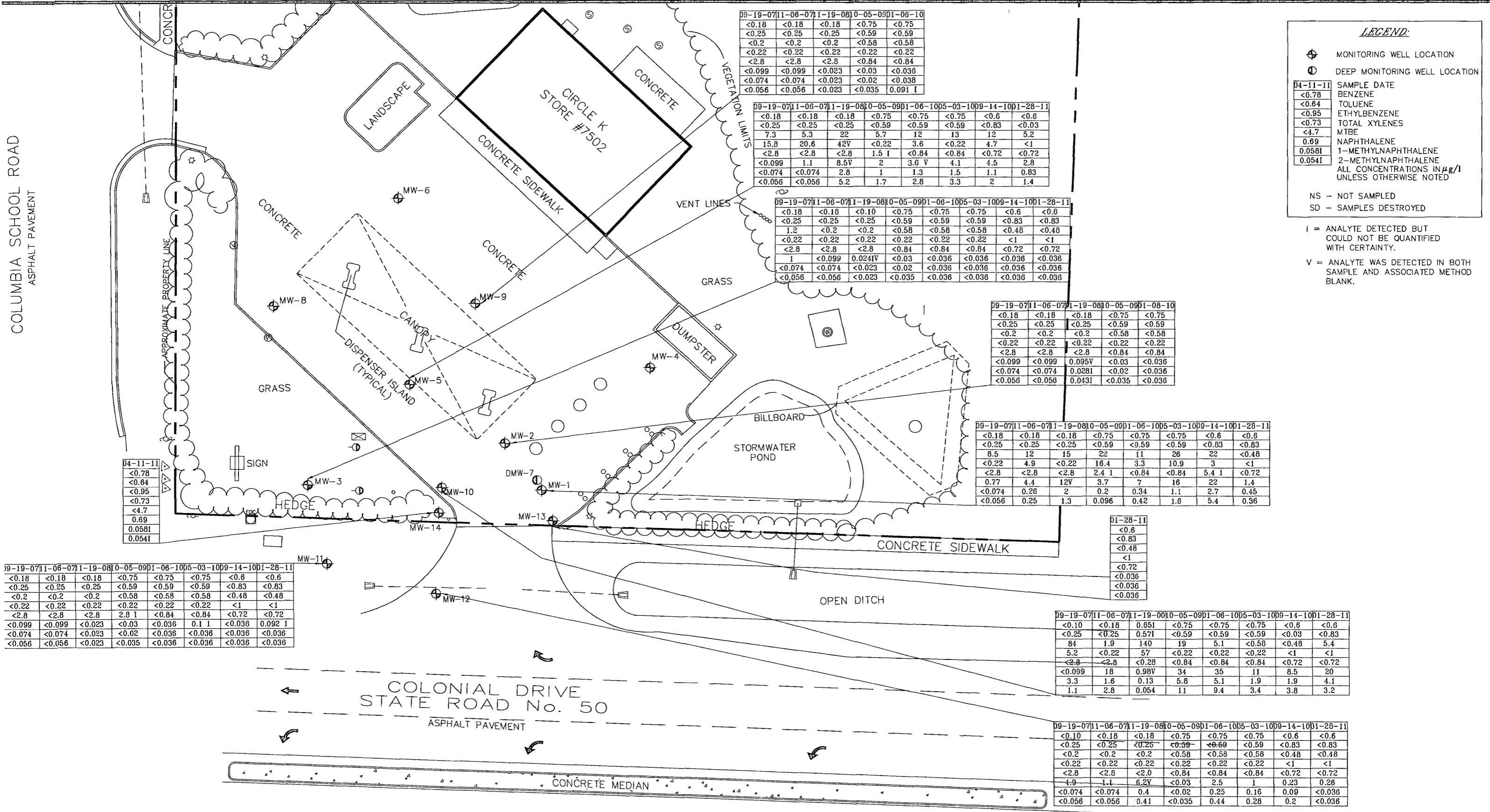
04-11-11	SAMPLE DATE
<0.78	BENZENE
<0.64	TOLUENE
<0.95	ETHYLBENZENE
<0.73	TOTAL XYLENES
<4.7	MTBE
0.69	NAPHTHALENE
0.0581	1-METHYLNAPHTHALENE
0.0541	2-METHYLNAPHTHALENE

ALL CONCENTRATIONS IN μg/l
UNLESS OTHERWISE NOTED

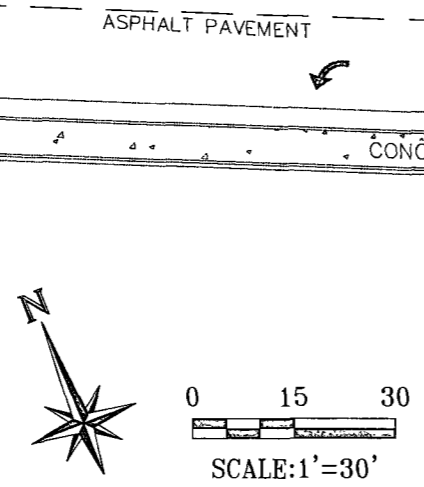
NS - NOT SAMPLED
SD - SAMPLES DESTROYED

I = ANALYTE DETECTED BUT
COULD NOT BE QUANTIFIED
WITH CERTAINTY.

V = ANALYTE WAS DETECTED IN BOTH
SAMPLE AND ASSOCIATED METHOD
BLANK.



COLONIAL DRIVE
STATE ROAD No. 50



VATC
Associates Inc.

5602 Thompson Center Court
Suite 405
Tampa, Florida 33634
(813) 889-8960
(813) 889-8754 FAX

DRAWN BY: S.A.M. CHECKED BY: A.Z.

DISTRIBUTION OF DISSOLVED HYDROCARBONS
CIRCLE K STORE #7502
16959 E. HIGHWAY 50
BITHLO, FLORIDA

PROJECT NO.:
05.16564.0631

SCALE:
1" = 30'

DATE: 04-21-11

FIGURE NO.: 2



Environmental, Geotechnical and Materials Professionals

APPENDIX A

Verbal Change Order

813 - 889 - 8754

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems - Petroleum Cleanup
Verbal Authorization for Change in Scope of Work

FDEP Work Order # 2011-48-W91082 FACID #: 488521400 FDEP Site Manager: Carol White
 Contractor Name: ATC Associates Inc. Contractor Phone #: 813-889-8980 ext. 245
 Site Name and Address: CIRCLE K #7502, 18959 E COLONIAL DR (E HWY 50), ORLANDO

This is an authorization for the costs associated with the scope of work listed below. In order for these costs to be paid, these changes will need to be incorporated into the applicable change order/invoice for the referenced work order or task assignment (including copies of all applicable subcontractor & materials invoices).

Description of Change: 2 Field Event

ATC requests the costs to install and sample one monitoring well, MW-14, approximately 10 feet south of MW-10 (downgradient), at the property boundary, as recommended in the 2/17/11 Year 2 NAM Report and approved in 2/23/11 email correspondence from the OCEPD. The well is proposed to be 2-inch in diameter, screened from 2-12 feet b/s, and installed via hand auger due to an overhead electric line. The well will be sampled at least one week later. A summary of the field events and results will be included in a Letter Report. The proposed due date for the Letter Report is 4/15/11.

VCO #3

Field Work	Section & Number	Template Activity Description	Cost per Item	# of Items	Authorized Costs
	C-1	Mobilization (2 persons) <i>Install</i>	\$810.76	1	\$810.76
	C-19	Well Sampling (per well)	\$241.75	1	\$241.75
	H-2	Letter / NPDES Report	\$282.27	1	\$282.27
	C-2	Mobilization (1 person) <i>sample</i>	\$453.05	1	\$453.05 <i>(u)</i>
	C-7	Well <i>Install</i> (≤ 20 ft)	\$484.26	1	\$484.26 <i>(u)</i>
n/a	H-1	General / SA Report Preparation Costs ¹	n/a		\$2272.09 <i>(u)</i>
subtotal:					\$1,334.78

¹ actual amount will be determined in template cost sheet during invoicing

Subcontractor/Equip. Purchase	Authorized Costs	In-house Services/Equip. Rental	Authorized Costs
Laboratory [<u>SPL</u>]	\$189.56 ✓		
Preferred Drilling	\$1,046.23 ✓		
subtotal (with 10% markup):		subtotal (no markup):	
\$1,359.37 ✓			

Field Work	Labor Category	"Bare" Labor Rates	Labor Hours	Authorized Costs	Misc. Expenses	Authorized Costs
	ULT	\$23.36	5.0	\$116.80	Equipment:	
	MLT	\$17.53	5.0	\$88.15	Materials:	
					Other:	
Equipment Kit Costs: -\$316.88		subtotal:		\$1,032.88	subtotal:	
(See Price List)		(* includes all markups & equipment kit costs)				

Deliverable(s)	Previous Due Date(s)	New Due Date(s)	FDEP Cost Share 100%
1st: <u>NAM Quarterly Q3Y2</u>	<u>9/2/2010</u>	<u>11/1/2010</u>	Total Authorized Costs: \$3,727.03 <i>\$3631.46 (u)</i>
2nd:			
3rd: <u>Letter Report</u>		<u>4/30/2011 (u)</u>	
4th:			
5th:			
Final: <u>Year 2, Quarter 8 NAM Report</u>	<u>1/29/2011</u>	<u>2/19/2011</u>	Period of Service extended to:

Requested by Contractor Representative: Meghan Bergquist (Print Name) Date: 2/24/2011
 Authorized by FDEP Site Manager: Carol White (Print Name) Date: 3/10/11
 Accepted Contractor Representative: Meghan Bergquist (Print Name) Date: 3/10/11
 Cost Center Administrator Approval >\$10,000: _____ Reviewer Initials (optional): MB Date: 03/10/11



Environmental, Geotechnical and Materials Professionals

APPENDIX B

Monitoring Well Construction, Development Log, and Soil Boring Log

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA					
Well Number: <i>mw-14</i>	Site Name: <i>(10) # 7502</i>	FDEP Facility I.D. Number: 488521400	Well Install Date(s): <i>4.4.11</i>		
Well Location and Type (check appropriate boxes): <input checked="" type="checkbox"/> On-Site <input type="checkbox"/> Right-of-Way <input type="checkbox"/> Off-Site Private Property <input type="checkbox"/> Above Grade (AG) <input checked="" type="checkbox"/> Flush-to-Grade		Well Purpose: <input type="checkbox"/> Perched Monitoring <input checked="" type="checkbox"/> Shallow (Water-Table) Monitoring <input type="checkbox"/> Intermediate or Deep Monitoring <input type="checkbox"/> Remediation or Other (describe)		Well Install Method: <i>HA</i>	
If AG, list feet of riser above land surface:				Surface Casing Install Method: <i>N/A</i>	
Borehole Depth (feet): <i>12</i>	Well Depth (feet): <i>12</i>	Borehole Diameter (inches): <i>4"</i>	Manhole Diameter (inches):	Well Pad Size: <i>2</i> feet by <i>2</i> feet	
Riser Diameter and Material: <i>2" PVC</i>		Riser/Screen Connections: <input checked="" type="checkbox"/> Flush-Threaded <input type="checkbox"/> Other (describe)	Riser Length: <i>2</i> feet from <i>0</i> feet to <i>2</i> feet		
Screen Diameter and Material: <i>2" PVC</i>		Screen Slot Size: <i>.010</i>	Screen Length: <i>10</i> feet from <i>2</i> feet to <i>12</i> feet		
1 st Surface Casing Material: <i>N/A</i> also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		1 st Surface Casing I.D. (inches):	1 st Surface Casing Length: _____ feet from _____ feet to _____ feet		
2 nd Surface Casing Material: <i>N/A</i> also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		2 nd Surface Casing I.D. (inches):	2 nd Surface Casing Length: _____ feet from _____ feet to _____ feet		
3 rd Surface Casing Material: <i>N/A</i> also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		3 rd Surface Casing I.D. (inches):	3 rd Surface Casing Length: _____ feet from _____ feet to _____ feet		
Filter Pack Material and Size: <i>20/30 sand</i>	Prepacked Filter Around Screen (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Filter Pack Length: <i>11</i> feet from <i>1</i> feet to <i>12</i> feet		
Filter Pack Seal Material and Size: <i>30/65 flg sand</i>			Filter Pack Seal Length: <i>1/2</i> feet from <i>1/2</i> feet to <i>1</i> feet		
Surface Seal Material: <i>grout</i>			Surface Seal Length: <i>1/2</i> feet from <i>0</i> feet to <i>1/2</i> feet		

WELL DEVELOPMENT DATA			
Well Development Date: <i>4.4.11</i>	Well Development Method (check one): <input type="checkbox"/> Surge/Pump <input checked="" type="checkbox"/> Pump <input type="checkbox"/> Compressed Air <input type="checkbox"/> Other (describe)		
Development Pump Type (check): <input checked="" type="checkbox"/> Centrifugal <input type="checkbox"/> Peristaltic <input type="checkbox"/> Submersible <input type="checkbox"/> Other (describe)	Depth to Groundwater (before developing in feet): <i>5.40</i>		
Pumping Rate (gallons per minute): <i>1 GPM</i>	Maximum Drawdown of Groundwater During Development (feet): <i>2.7</i>	Well Purged Dry (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Pumping Condition (check one): <input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent	Total Development Water Removed (gallons): <i>33</i>	Development Duration (minutes): <i>33</i>	Development Water Drummed (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Water Appearance (color and odor) At Start of Development: <i>DK Brown, no odor</i>		Water Appearance (color and odor) At End of Development: <i>no color, no sign of fines, JL pink color</i>	

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

BORING LOG

Boring/Well Number: MW-14		Permit Number:		FDEP Facility Identification Number: 488521400	
Site Name: (B) # 7502		Borehole Start Date: 4-4-11 End Date: 4-4-11		Borehole Start Time: 0920 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM End Time: 1020 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	
Environmental Contractor: ATC Associates Inc.		Geologist's Name: Todd Robbins		Environmental Technician's Name: Brian Riley	
Drilling Company: PDS		Pavement Thickness (inches): Grass	Borehole Diameter (inches): 4"		Borehole Depth (feet): 12'
Drilling Method(s): HA	Apparent Borehole DTW (in feet from soil moisture content): 5'		Measured Well DTW (in feet after water recharges in well):	OVA (list model and check type): Mini. RAE 200 <input type="checkbox"/> FID <input checked="" type="checkbox"/> PID	
Disposition of Drill Cuttings [check method(s)]: <input type="checkbox"/> Drum <input checked="" type="checkbox"/> Spread <input type="checkbox"/> Backfill <input type="checkbox"/> Stockpile <input type="checkbox"/> Other (describe if other or multiple items are checked):					
Borehole Completion (check one): <input checked="" type="checkbox"/> Well <input type="checkbox"/> Grout <input type="checkbox"/> Bentonite <input type="checkbox"/> Backfill <input type="checkbox"/> Other (describe)					

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
HA	0-2	N/A				4.4	1	Sand gray f/g	SP	M	
HA	2-4	N/A				0.2	2	Sand brown f/g slightly silty	SP/SM	W	
HA	4-6	N/A				ND	3	SAND → Sand pale brown f/g	SP	W/S	
HA	6-8	N/A				0.2	4	Sand brown f/g minor clay	SP	S	
HA	8-10	N/A				0.9	5	SAND	SP	S	
HA	10-12	N/A				NS	6	Not Sampled			

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

208 12'



Environmental, Geotechnical and Materials Professionals

APPENDIX C

Groundwater Analytical Lab Report, Groundwater Sampling Log, and Equipment Calibration Log



SPL ENVIRONMENTAL
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Case Narrative for:
ATC ASSOCIATES, INC.

Certificate of Analysis Number:
11040450

Report To: ATC ASSOCIATES, INC. ADAM BOURCY 5602 THOMPSON CENTER COURT SUITE 405 TAMPA FL 33634- ph: (813) 889-8960 fax: (813) 889-8754	Project Name: 005.16564.0631/ FAC 488531400 Site: CIRCLE K #7502 Site Address: 16959 E. COLONIAL DR. ORLANDO FL PO Number: State: Florida State Cert. No.: E87657 Date Reported: 4/15/2011
---	--

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data for those samples spiked by the laboratory and may be applicable to other samples of similar matrix from the site. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group.

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process. If insufficient sample is supplied for MS/MSD, a Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) are reported with the analytical batch and serve as the batch quality control (QC).

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

Samples were reported according to the Analytical Methods Guidance for Chapters 62-770, F. A. C. addressing reporting requirements for data submitted to the FDEP programs. Whenever an analyte is not detected above the MDL, the MDL for the measurement is reported along with a qualifier code (U) indicating that the analyte was not detected at the reported detection limit. Alternately, the analytical value followed by the qualifier code (I) indicates the analytical value reported was below the PQL (laboratory detection limit "Rep.Limit"), but above the MDL. For those samples where an analyte was detected in both the sample and the associated method blank, the analytical value is followed by the qualifier "V".

NOTE: The laboratory defines the terms Reporting Limit (RL) and Practical Quantitation Limit (PQL) as equivalent terms.

With guidance from the Florida Bureau of Petroleum Storage Systems, MDLs are based on empirically determined limits of quantitation as opposed to statistical MDL values. The RepLimits/PQLs are based on Florida Target PQLs for regulated carcinogenic PAHs.

Accutest Gulf Coast/SPL Laboratory is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

11040450 Page 1

4/18/2011

Cristina Thibeaux
Project Manager

Test results meet all requirements of NELAC, unless specified in the narrative.

Date



SPL ENVIRONMENTAL
 500 AMBASSADOR CAFFERY PARKWAY
 SCOTT, LA 70583
 (337) 237-4775

ATC ASSOCIATES, INC.

Certificate of Analysis Number:

11040450

Report To: ATC ASSOCIATES, INC.
 ADAM BOURCY
 5602 THOMPSON CENTER COURT
 SUITE 405
 TAMPA
 FL
 33634-
 ph: (813) 889-8960 fax: (813) 889-8754

Project Name: 005.16564.0631/ FAC 488531400
Site: CIRCLE K #7502
Site Address: 16959 E. COLONIAL DR.
 ORLANDO FL
PO Number:
State: Florida
State Cert. No.: E87657
Date Reported: 4/15/2011

Fax To:

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MV-14	11040450-01	Water	04/11/2011 10:31	4/12/2011 9:35:00 AM	324572	<input type="checkbox"/>

Cristina C. Thibeaux

Cristina Thibeaux
 Project Manager

4/18/2011

Date

Ron Benjamin
 Laboratory Director

Tristan Davis
 Quality Assurance Officer



SPL ENVIRONMENTAL
 500 AMBASSADOR CAFFERY PARKWAY
 SCOTT, LA 70583
 (337) 237-4775

Client Sample ID: MW-14 Collected: 04/11/2011 10:31 SPL Sample ID: 11040450-01

Site: CIRCLE K #7502

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
BTEX + MTBE BY METHOD 8021B					MCL	SW8021B Units: ug/L		
Benzene	U		0.78	1	1	04/12/11 17:41	IHK	4013970
Ethylbenzene	U		0.95	1	1	04/12/11 17:41	IHK	4013970
Methyl tert-butyl ether	U		4.7	8	1	04/12/11 17:41	IHK	4013970
Toluene	U		0.64	1	1	04/12/11 17:41	IHK	4013970
m,p-Xylene	U		1.5	2	1	04/12/11 17:41	IHK	4013970
o-Xylene	U		0.73	1	1	04/12/11 17:41	IHK	4013970
Xylenes, Total	U		0.73	1	1	04/12/11 17:41	IHK	4013970
Surr: 1,4-Difluorobenzene	98.1		0	% 72-138	1	04/12/11 17:41	IHK	4013970
Surr: 4-Bromofluorobenzene	98.9		0	% 65-142	1	04/12/11 17:41	IHK	4013970

Cristina C. Thibeaux

Cristina Thibeaux
 Project Manager

Qualifiers: ND/U - Not Detected at the Method Detection Limit
 I - Analyte detected but could not be quantified with certainty
 * - Surrogate Recovery Outside Advisable QC Limits
 E - Concentrations exceeding Calibration range of Instrument
 V - Analyte Detected In The Method Blank At Or Above The MDL

>MCL - Result Over Maximum Contamination Limit (MCL)
 D - Surrogate Recovery Unreportable due to Dilution
 MI - Matrix Interference
 TNTC - Too numerous to count

11040450 Page 3
 4/18/2011 8:50:22 AM



SPL ENVIRONMENTAL
 500 AMBASSADOR CAFFERY PARKWAY
 SCOTT, LA 70583
 (337) 237-4775

Client Sample ID: MW-14 Collected: 04/11/2011 10:31 SPL Sample ID: 11040450-01

Site: CIRCLE K #7502

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #	
PAHS BY EPA 8270D					MCL	SW8270D Units: ug/L			
1-Methylnaphthalene	0.058	I	0.036	0.14	1	04/14/11 2:44	LDD	4016113	
2-Methylnaphthalene	0.054	I	0.036	0.14	1	04/14/11 2:44	LDD	4016113	
Acenaphthene	U		0.036	0.14	1	04/14/11 2:44	LDD	4016113	
Acenaphthylene	U		0.036	0.14	1	04/14/11 2:44	LDD	4016113	
Anthracene	U		0.036	0.14	1	04/14/11 2:44	LDD	4016113	
Benz(a)anthracene	U		0.036	0.14	1	04/14/11 2:44	LDD	4016113	
Benzo(a)pyrene	U		0.036	0.14	1	04/14/11 2:44	LDD	4016113	
Benzo(b)fluoranthene	U		0.036	0.071	1	04/14/11 2:44	LDD	4016113	
Benzo(g,h,i)perylene	U		0.036	0.14	1	04/14/11 2:44	LDD	4016113	
Benzo(k)fluoranthene	U		0.036	0.14	1	04/14/11 2:44	LDD	4016113	
Chrysene	U		0.036	0.14	1	04/14/11 2:44	LDD	4016113	
Dibenz(a,h)anthracene	U		0.036	0.14	1	04/14/11 2:44	LDD	4016113	
Fluoranthene	U		0.036	0.14	1	04/14/11 2:44	LDD	4016113	
Fluorene	U		0.036	0.14	1	04/14/11 2:44	LDD	4016113	
Indeno(1,2,3-cd)pyrene	U		0.036	0.14	1	04/14/11 2:44	LDD	4016113	
Naphthalene	0.69		0.036	0.14	1	04/14/11 2:44	LDD	4016113	
Phenanthrene	U		0.036	0.14	1	04/14/11 2:44	LDD	4016113	
Pyrene	U		0.036	0.14	1	04/14/11 2:44	LDD	4016113	
Surr: 2-Fluorobiphenyl	57.1		0	% 53-136	1	04/14/11 2:44	LDD	4016113	
Surr: 4-Terphenyl-d14	66.1		0	% 38-151	1	04/14/11 2:44	LDD	4016113	
Surr: Nitrobenzene-d5	63.6		0	% 31-169	1	04/14/11 2:44	LDD	4016113	

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	04/12/2011 12:25	JT	0.71

Cristina C. Thibeaux

Cristina Thibeaux
 Project Manager

Qualifiers: ND/U - Not Detected at the Method Detection Limit
 I - Analyte detected but could not be quantified with certainty
 * - Surrogate Recovery Outside Advisable QC Limits
 E - Concentrations exceeding Calibration range of Instrument
 V - Analyte Detected In The Method Blank At Or Above The MDL

>MCL - Result Over Maximum Contamination Limit (MCL)
 D - Surrogate Recovery Unreportable due to Dilution
 MI - Matrix Interference
 TNTC - Too numerous to count

Quality Control Documentation



SPL ENVIRONMENTAL
 500 AMBASSADOR CAFFERY PARKWAY
 SCOTT, LA 70583
 (337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.
 005.16564.0631/ FAC 488531400

Analysis: BTEX + MTBE by Method 8021B
 Method: SW8021B

WorkOrder: 11040450
 Lab Batch ID: R259877

Method Blank

Samples in Analytical Batch:

RunID: HPCC_110408F-4013964 Units: ug/L
 Analysis Date: 04/12/2011 8:09 Analyst: IHK

Lab Sample ID: 11040450-01A
 Client Sample ID: MW-14

Analyte	Result	Qual	PQL	MDL
Benzene	U		1.0	0.78
Ethylbenzene	U		1.0	0.95
Methyl tert-butyl ether	U		8.0	4.7
Toluene	U		1.0	0.64
m,p-Xylene	U		2.0	1.5
o-Xylene	U		1.0	0.73
Xylenes, Total	U		1.0	0.73
Surr: 1,4-Difluorobenzene	98.1		72-138	0
Surr: 4-Bromofluorobenzene	98.8		65-142	0

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: HPCC_110408F-4013965 Units: ug/L
 Analysis Date: 04/12/2011 8:43 Analyst: IHK

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Benzene	50.0	54.1	108	50.0	55.5	111	2.7	11	74	132
Ethylbenzene	50.0	50.1	100	50.0	51.5	103	2.9	12	86	118
Methyl tert-butyl ether	50.0	57.2	114	50.0	61.7	123	7.5	24	63	141
Toluene	50.0	52.9	106	50.0	52.7	105	0.4	11	88	116
m,p-Xylene	100	102	102	100	99.6	99.6	2.3	13	87	116
o-Xylene	50.0	51.0	102	50.0	50.1	100	1.9	12	87	115
Xylenes, Total	150	153	102	150	150	99.8	2.2	13	87	116
Surr: 1,4-Difluorobenzene	30.0	30.3	101	30.0	30.4	101	0.2	30	72	138
Surr: 4-Bromofluorobenzene	30.0	29.9	99.6	30.0	30.2	101	0.9	30	65	142

Qualifiers: U - Not Detected At The MDL MI - Matrix Interference
 E - Estimated Value exceeds calibration curve D - Recovery Unreportable due to Dilution
 I - Estimated Value Between MDL And PQL * - Recovery Outside Advisable QC Limits
 V - Analyte Detected In The Method Blank At Or Above The MDL Data Qualifiers I, U And V Conform To Chapter 62-160, FAC
 N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
 TNTC - Too numerous to count M - Estimated Value Reported As The PQL

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.



SPL ENVIRONMENTAL
 500 AMBASSADOR CAFFERY PARKWAY
 SCOTT, LA 70583
 (337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.
 005.16564.0631/ FAC 488531400

Analysis: PAHs by EPA 8270D
 Method: SW8270D

WorkOrder: 11040450
 Lab Batch ID: 99658

Method Blank

Samples in Analytical Batch:

RunID: L_110412A-4015322 Units: ug/L
 Analysis Date: 04/12/2011 14:06 Analyst: LDD
 Preparation Date: 04/12/2011 12:25 Prep By: JT Method: SW3510C

Lab Sample ID: 11040450-01B
 Client Sample ID: MW-14

Analyte	Result	Qual	PQL	MDL
1-Methylnaphthalene	U		0.20	0.036
2-Methylnaphthalene	U		0.20	0.036
Acenaphthene	U		0.20	0.036
Acenaphthylene	U		0.20	0.036
Anthracene	U		0.20	0.036
Benz(a)anthracene	U		0.20	0.036
Benzo(a)pyrene	U		0.20	0.036
Benzo(b)fluoranthene	U		0.10	0.036
Benzo(g,h,i)perylene	U		0.20	0.036
Benzo(k)fluoranthene	U		0.20	0.036
Chrysene	U		0.20	0.036
Dibenz(a,h)anthracene	U		0.20	0.036
Fluoranthene	U		0.20	0.036
Fluorene	U		0.20	0.036
Indeno(1,2,3-cd)pyrene	U		0.20	0.036
Naphthalene	U		0.20	0.036
Phenanthrene	U		0.20	0.036
Pyrene	U		0.20	0.036
Surr: 2-Fluorobiphenyl	90.7		53-136	0
Surr: 4-Terphenyl-d14	96.9		38-151	0
Surr: Nitrobenzene-d5	92.1		31-169	0

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: L_110413A-4015315 Units: ug/L
 Analysis Date: 04/13/2011 15:39 Analyst: LDD
 Preparation Date: 04/12/2011 12:25 Prep By: JT Method: SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1-Methylnaphthalene	3.57	3.42	95.8	3.57	3.24	90.7	5.4	34	50	129
2-Methylnaphthalene	3.57	3.61	101	3.57	3.45	96.6	4.5	36	52	126
Acenaphthene	3.57	3.26	91.3	3.57	3.09	86.5	5.4	36	54	121
Acenaphthylene	3.57	3.41	95.5	3.57	3.24	90.7	5.1	35	55	132

Qualifiers: U - Not Detected At The MDL
 E - Estimated Value exceeds calibration curve
 I - Estimated Value Between MDL And PQL
 V - Analyte Detected In The Method Blank At Or Above The MDL
 N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
 TNTC - Too numerous to count
 M - Estimated Value Reported As The PQL
 MI - Matrix Interference
 D - Recovery Unreportable due to Dilution
 *- Recovery Outside Advisable QC Limits
 Data Qualifiers I, U And V Conform To Chapter 62-160, FAC

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.



SPL ENVIRONMENTAL
 500 AMBASSADOR CAFFERY PARKWAY
 SCOTT, LA 70583
 (337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.
 005.16564.0631/ FAC 488531400

Analysis: PAHs by EPA 8270D
 Method: SW8270D

WorkOrder: 11040450
 Lab Batch ID: 99658

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: L_110413A-4015315 Units: ug/L
 Analysis Date: 04/13/2011 15:39 Analyst: LDD
 Preparation Date: 04/12/2011 12:25 Prep By: JT Method: SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Anthracene	3.57	2.98	83.4	3.57	2.73	76.4	8.8	32	54	122
Benz(a)anthracene	3.57	3.25	91.0	3.57	3.19	89.3	1.9	34	60	133
Benzo(a)pyrene	3.57	3.36	94.1	3.57	3.26	91.3	3.0	35	52	141
Benzo(b)fluoranthene	3.57	3.14	87.9	3.57	3.00	84.0	4.6	41	48	147
Benzo(g,h,i)perylene	3.57	3.28	91.8	3.57	3.21	89.9	2.2	36	54	129
Benzo(k)fluoranthene	3.57	3.66	102	3.57	3.30	92.4	10.3	41	47	144
Chrysene	3.57	3.10	86.8	3.57	2.83	79.2	9.1	34	54	122
Dibenz(a,h)anthracene	3.57	3.17	88.8	3.57	3.08	86.2	2.9	35	50	133
Fluoranthene	3.57	3.26	91.3	3.57	3.18	89.0	2.5	32	57	128
Fluorene	3.57	2.91	81.5	3.57	2.86	80.1	1.7	34	59	136
Indeno(1,2,3-cd)pyrene	3.57	3.47	97.2	3.57	3.37	94.4	2.9	36	50	131
Naphthalene	3.57	3.28	91.8	3.57	3.18	89.0	3.1	35	49	122
Phenanthrene	3.57	3.30	92.4	3.57	3.16	88.5	4.3	29	55	116
Pyrene	3.57	3.70	104	3.57	3.42	95.8	7.9	38	54	141
Surr: 2-Fluorobiphenyl	3.57	3.06	85.7	3.57	2.80	78.4	8.9	30	53	136
Surr: 4-Terphenyl-d14	3.57	3.51	98.3	3.57	2.85	79.8	20.8	30	38	151
Surr: Nitrobenzene-d5	3.57	3.17	88.8	3.57	2.96	82.9	6.9	30	31	169

Qualifiers: U - Not Detected At The MDL MI - Matrix Interference
 E - Estimated Value exceeds calibration curve D - Recovery Unreportable due to Dilution
 I - Estimated Value Between MDL And PQL * - Recovery Outside Advisable QC Limits
 V - Analyte Detected In The Method Blank At Or Above The MDL Data Qualifiers I, U And V Conform To Chapter 62-160, FAC
 N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
 TNTC - Too numerous to count M - Estimated Value Reported As The PQL

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

*Sample Receipt Checklist
And
Chain of Custody*



SPL ENVIRONMENTAL
 500 AMBASSADOR CAFFERY PARKWAY
 SCOTT, LA 70583
 (337) 237-4775

Sample Receipt Checklist

Workorder:	11040450	Received By:	COM
Date and Time Received:	4/12/2011 9:35:00 AM	Carrier name:	FedEx-Std 1 Day PM
Temperature:	2.5°C	Chilled by:	Water Ice

- 1. Shipping container/cooler in good condition? Yes No Not Present
- 2. Custody seals intact on shipping container/cooler? Yes No Not Present
- 3. Custody seals intact on sample bottles? Yes No Not Present
- 4. Chain of custody present? Yes No
- 5. Chain of custody signed when relinquished and received? Yes No
- 6. Chain of custody agrees with sample labels? Yes No
- 7. Samples in proper container/bottle? Yes No
- 8. Sample containers intact? Yes No
- 9. Sufficient sample volume for indicated test? Yes No
- 10. All samples received within holding time? Yes No
- 11. Container/Temp Blank temperature in compliance? Yes No
- 12. Water - VOA vials have zero headspace? Yes No VOA Vials Not Present
- 13. Water - Preservation checked upon receipt (except VOA*)? Yes No Not Applicable

*VOA Preservation Checked After Sample Analysis

SPL Representative:

Contact Date & Time:

Client Name Contacted:

Non Conformance Issues:

Client Instructions:



SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No.

324572

11040450 page 1 of 1

Client Name: ATC ASSOCIATES INC
 Address: 5602 THOMPSON CENTER CT Suite 405
 City TAMPA State FL Zip 33624
 Phone/Fax: 813-889-8960
 Client Contact: ADAM BOURCEY Email:
 Project Name/No.: 005.16567.0631
 Site Name: CIRCLE K #7502
 Site Location: ORLANDO FL.

matrix bottle size pres.
 W=water S=soil O=oil A=air
 SL=sludge E=encore X=other
 P=plastic A=amber glass
 G=glass V=vial X=other
 1=1 liter 4=4oz 40=vial
 8=8oz 16=16oz X=other
 1=HCl 2=HNO3
 3=H2SO4 X=other

Requested Analysis

INVOICE TO:		Ph:		matrix		bottle		size		pres.		Requested Analysis	
SAMPLE ID	DATE	TIME	comp	grab	W	SL	P	G	1	8	1	3	Number of Containers
MW-14	4-11-11	1031		X	W		A	V	40	4	1	X	5

Client/Consultant Remarks: FAC ID 488521400
 Laboratory remarks: NO CS 8698 2062 5259
RS 337 (7) YS-700 (14)
 Intact? Y N
 Ice? Y N
 Temp: 2.5 (A-10)

Requested TAT
 1 Business Day Contract
 2 Business Days Standard
 3 Business Days
 Other _____
 Rush TAT requires prior notice

Special Reporting Requirements Results: Fax Email PDF
 Standard QC Level 3 QC Level 4 QC TX TRRP LA RECAP

Special Detection Limits (specify):
 PM review (initial):

1. Relinquished by Sampler: <u>Marty Walker</u> <u>ATC</u>	date <u>4-11-11</u>	time	2. Received by: <u>FEDOR</u>
3. Relinquished by: <u>FEDOR</u>	date <u>4-12-11</u>	time <u>0900</u>	4. Received by: <u>Dee</u>
5. Relinquished by: <u>Dee</u>	date <u>4-12-11</u>	time <u>0935</u>	6. Received by Laboratory: <u>Conrad Meany</u>

fedEx US Airbill
Express

FedEx
Tracking
Number

8698 2062 5259

Recipient's Copy

1 From This portion can be removed for Recipient's records.

Date 4-11-11 FedEx Tracking Number 869820625259

Sender's Name MARTY WALKER Phone 813 917-6874

Company ATC ASSOCIATES INC

Address 5002 THOMPSON CENTER CR 405
Dept./Floor/Suite/Room

City TAMPA State FL ZIP 33634

2 Your Internal Billing Reference

R#7502 / 305.16.564.0631

3 To

Recipient's Name SHIPPING AND RECEIVING Phone 337 237-4775

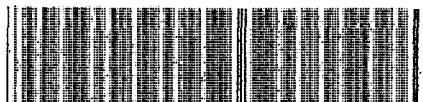
Company SOUTHERN PETROLEUM HOLD Weekday Print FedEx location address below. NOT available for FedEx First Overnight. HOLD Saturday Print FedEx location address below. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Address 500 AMBASSADOR CAFFERY PKWY
We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room

Address
Print FedEx location address here if HOLD option is selected.

City SCOTT State LA ZIP 70583-5300

0407061717



8698 2062 5259

4a Express Package Service

* To most locations.

Packages up to 150 lbs.

- FedEx Priority Overnight Next business morning. * Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- FedEx Standard Overnight Next business afternoon. Saturday Delivery NOT available.
- FedEx First Overnight Earliest next business morning delivery to select locations. * Saturday Delivery NOT available.
- FedEx 2Day Second business day. * Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- FedEx Express Saver Third business day. * Saturday Delivery NOT available.

4b Express Freight Service

** To most locations.

Packages over 150 lbs.

- FedEx 1Day Freight Next business day. ** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected. FedEx 1Day Freight Booking No.
- FedEx 2Day Freight Second business day. ** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- FedEx 3Day Freight Third business day. ** Saturday Delivery NOT available.

5 Packaging

* Declared value limit \$500.

- FedEx Envelope*
- FedEx Pak* Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak.
- FedEx Box
- FedEx Tube
- Other

6 Special Handling and Delivery Signature Options

SATURDAY Delivery NOT available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 2Day Freight.

- No Signature Required Package may be left without obtaining a signature for delivery.
- Direct Signature Someone at recipient's address may sign for delivery. Fee applies.
- Indirect Signature If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Fee applies.

Does this shipment contain dangerous goods?

- No
- Yes As per attached Shipper's Declaration.
- Yes Shipper's Declaration not required.
- Dry Ice Dry Ice, 3, UN 1845 _____ x _____ kg
- Cargo Aircraft Only

7. Payment Bill to:

- Sender Acct. No. in Section 1 will be billed.
- Recipient
- Third Party
- Credit Card
- Cash/Check

Total Packages 1 Total Weight 0.705 lbs. Credit Card Auth. 553

*Our liability is limited to \$100 unless you declare a higher value. See the current FedEx Service Guide for details.

553

fedex.com 1800.GoFedEx 1800.463.3339

RECIPIENT: PEEL HERE

5002 THOMPSON CENTER CR TAMPA FL 33634

Form FD 9000-24
GROUNDWATER SAMPLING LOG

SITE NAME: R# 7502	SITE LOCATION: Orlando, FL.
WELL NO: MW-14	SAMPLE ID: MW-14
DATE: 4-11-19	

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 2 feet to 12 feet	STATIC DEPTH TO WATER (feet): 3.71	PURGE PUMP TYPE OR BAILER: PP
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = (12 feet - 3.71 feet) X 0.16 gallons/foot = 1.3264 gallons				
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable) = gallons + (gallons/foot X feet) + gallons = gallons				
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 5.75	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 5.75	PURGING INITIATED AT: 1006	PURGING ENDED AT: 1029	TOTAL VOLUME PURGED (gallons): 2.30

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) μmhos/cm or (μS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1021	1.50	1.50	0.10	4.90	7.87	25.52	597	3.12	23.4	NONE	NONE
1023	0.20	1.70	0.10	4.90	7.87	25.54	598	3.10	24.4		
1025	0.20	1.90	0.10	4.90	7.84	25.58	599	2.95	25.3		
1027	0.20	2.10	0.10	4.90	7.78	25.60	600	2.84	25.1		
1029	0.20	2.30	0.10	4.90	7.77	25.56	601	2.70	24.9		

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016
PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: MARTY WALKER ATC			SAMPLER(S) SIGNATURE(S): <i>Marty Walker</i>			SAMPLING INITIATED AT: 1031		SAMPLING ENDED AT: 1037	
PUMP OR TUBING DEPTH IN WELL (feet): 5.75			TUBING MATERIAL CODE: PE			FIELD-FILTERED: Y <input checked="" type="checkbox"/> (N)		FILTER SIZE: _____ μm	
FIELD DECONTAMINATION: PUMP Y <input checked="" type="checkbox"/> (N)			TUBING Y <input checked="" type="checkbox"/> (replaced)			DUPLICATE: Y <input checked="" type="checkbox"/> (N)			

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
MW-14	3	CG	40mL	HCL	-	-	8021B	RFPP	60
	2	AG	125mL	none	-	-	8270D	APP	100

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Groundwater Sampling Equipment Field Verification Log

Date: 4-11-11

Project: (K) #7502

Instrument(s): YSI 556 mps
LaMotte 2020

	Standard Value	Standard Origin ¹	Pre-Verification Time	Pre-Verification Value	Out-of-Range Verification Value ²	Out-of-Range Verification Time ²	Post-Verification Time ³	Post-Verification Value ³
Temperature:	—		0920	24.22°C			1055	27.61°C
Turbidity:	1.00	06/11		1.00				1.00
	10.00	08/11		9.98				10.01
Conductivity:	500	08/11		504				502
	1000	04/11		1001				1003
DO:	100%	AMBIENT		100.2% @ 8.4mg/L				100.5% @ 8.15mg/L
pH:	4.01	05/11		4.01				4.01
	7.00	04/11		7.03				7.04

Sampler Initials: MW

¹—Acceptable unique identification standards include: date of manufacture, date of expiration, manufacturer's lot number, etc.
²—Note that this value is only necessary if observed data exceed the calibrated range of your instrument.
³—Note that this value is NOT necessary if the sampling equipment will be used on another job within 24 hours.

April 5, 2021

Ms. Sharon Smeenk
Orange County Environmental Protection Division
3465 McCrory Place, Suite
Orlando, FL 32803

**RE: Groundwater Monitoring Report
Circle K Store #2707502
16959 E. Colonial Drive
Orlando, Orange County, Florida
FDEP Facility ID #48/8521400
Discharge Date: November 6, 1988 (EDI)
ATC Project #0752840132**

Dear Ms. Smeenk:

The following Groundwater Monitoring Report has been prepared for the Circle K #2707502 facility located at 16959 E. Colonial Drive in Orlando, Orange County, Florida. The groundwater monitoring event was conducted in accordance with the Orange County Environmental Protection Division (OCEPD) February 15, 2021 Review Letter. A site plan is provided as **Figure 1**.

Water Level Measurements

On March 19, 2021, ATC personnel measured the depth to water (DTW) levels from onsite monitoring wells MW-1, MW-2, MW-3, MW-4 and MW-5. The depth to water readings, well casing elevations and corresponding water table elevations are summarized in **Table 1**. A water table elevation contour map (**Figure 2**) was developed from the March 19, 2021, monitoring data and displays the groundwater in the surficial aquifer flowing in a southwest direction. Historical flow direction has been to the southwest.

Groundwater Sampling

On March 19, 2021, ATC personnel collected groundwater samples from monitoring wells MW-1, MW-2, MW-3, MW-4 and MW-5. The groundwater samples were analyzed for benzene, toluene, ethylbenzene, total xylenes and methyl tert-butyl ether (BTEX/MTBE) by EPA Method 8260, polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270 and for total recoverable petroleum hydrocarbons (TRPH) by the Florida Petroleum Range Organic Method (FL-PRO). All groundwater samples were collected in accordance with the FDEP Standard Operating Procedures for Field Activities. At each well, dedicated tubing was positioned at a selected elevation within the screened interval of the well and attached to a peristaltic pump located near the wellhead. Depth to water, temperature, pH, turbidity, dissolved oxygen, conductivity and oxidation-reduction potential (ORP) readings were measured using a depth to water indicator, an YSI 556 multi-meter and a LaMotte 2020 Turbidimeter.

The groundwater cleanup target level (GCTL), provided in Chapter 62-777, Florida Administrative Code (FAC) was exceeded for benzene in MW-1. The analytical results from the March 19, 2021, sampling event are summarized in **Table 2** and are depicted on **Figure 3**. The monitoring well sampling logs, and calibration report are presented in **Attachment I** and the laboratory analytical report with chain of custody is presented in **Attachment II**.

Conclusions and Recommendations

Based on the contaminant concentrations reported in MW-1, ATC recommends proceeding Natural Attenuation Monitoring as described in Chapter 62-780.690 F.A.C.

The monitoring wells to be sampled, the sampling parameters, and the sampling frequency are as follows:

<u>Monitoring Wells</u>	<u>Contaminants of Concern</u>	<u>Frequency</u>
MW-1, MW-3, And MW-5	BTEX, MTBE, PAHs	Quarterly

If the concentrations of contaminants of concern in any of the designated wells increase above the action levels listed below, the well or wells will be resampled no later than 30 days after the initial positive results are known.

Source Well:

MW-1: 20 µg/L Benzene; 40 µg/L Toluene; 30 µg/L Ethylbenzene; 20 µg/L Total Xylenes; 20 µg/L MTBE; 20 µg/L Naphthalene; 28 µg/L 1-Methylnaphthalene; 28 µg/L 2-Methylnaphthalene.

Perimeter Wells:

MW-3 and MW-5: 1 µg/L Benzene; 40 µg/L Toluene; 30 µg/L Ethylbenzene; 20 µg/L Total Xylenes; 20 µg/L MTBE; 14 µg/L Naphthalene; 28 µg/L 1-Methylnaphthalene; 28 µg/L 2-Methylnaphthalene.

The designated source monitoring well is MW-1. The designated perimeter wells are MW-3 and MW-5. All monitoring wells will be sampled on a quarterly basis for laboratory analysis by EPA Method 8260 for benzene, toluene, ethylbenzene, total xylenes and methyl tert-butyl ethylene (BTEX/MTBE), and by EPA Method 8270 for polycyclic aromatic hydrocarbons (PAHs).

If you have any questions or comments concerning this report, please contact me at your earliest convenience.

Sincerely,
ATC Group Services, LLC



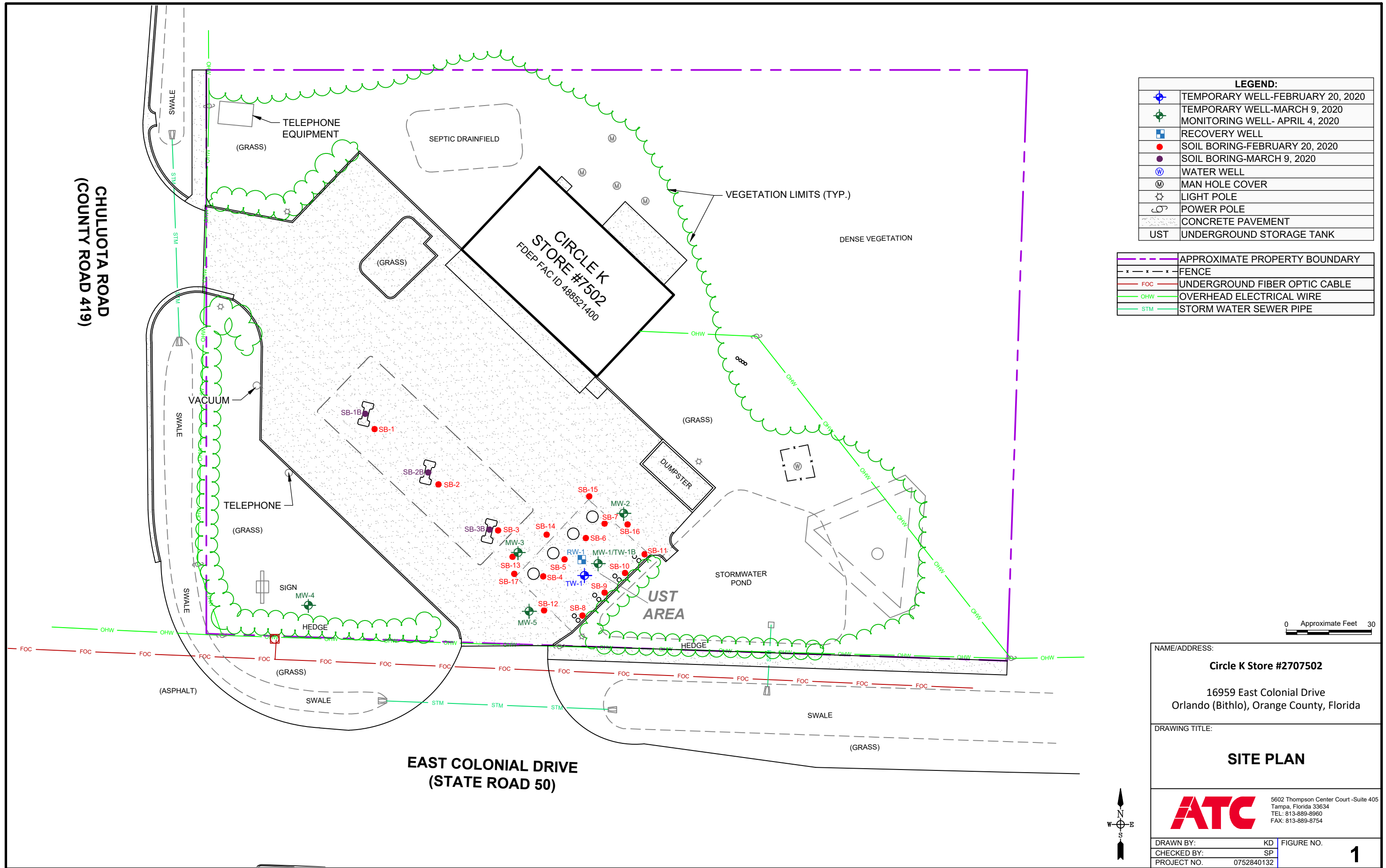
Scott S. Patterson, P.G.
Senior Project Manager
Florida License #1939

4/5/2021



C: Circle K Stores – Alan Cubberley

FIGURES



LEGEND:

	TEMPORARY WELL-FEBRUARY 20, 2020
	TEMPORARY WELL-MARCH 9, 2020
	MONITORING WELL- APRIL 4, 2020
	RECOVERY WELL
	SOIL BORING-FEBRUARY 20, 2020
	SOIL BORING-MARCH 9, 2020
	WATER WELL
	MAN HOLE COVER
	LIGHT POLE
	POWER POLE
	CONCRETE PAVEMENT
	UST UNDERGROUND STORAGE TANK

	APPROXIMATE PROPERTY BOUNDARY
	FENCE
	FOC UNDERGROUND FIBER OPTIC CABLE
	OHW OVERHEAD ELECTRICAL WIRE
	STM STORM WATER SEWER PIPE

0 Approximate Feet 30

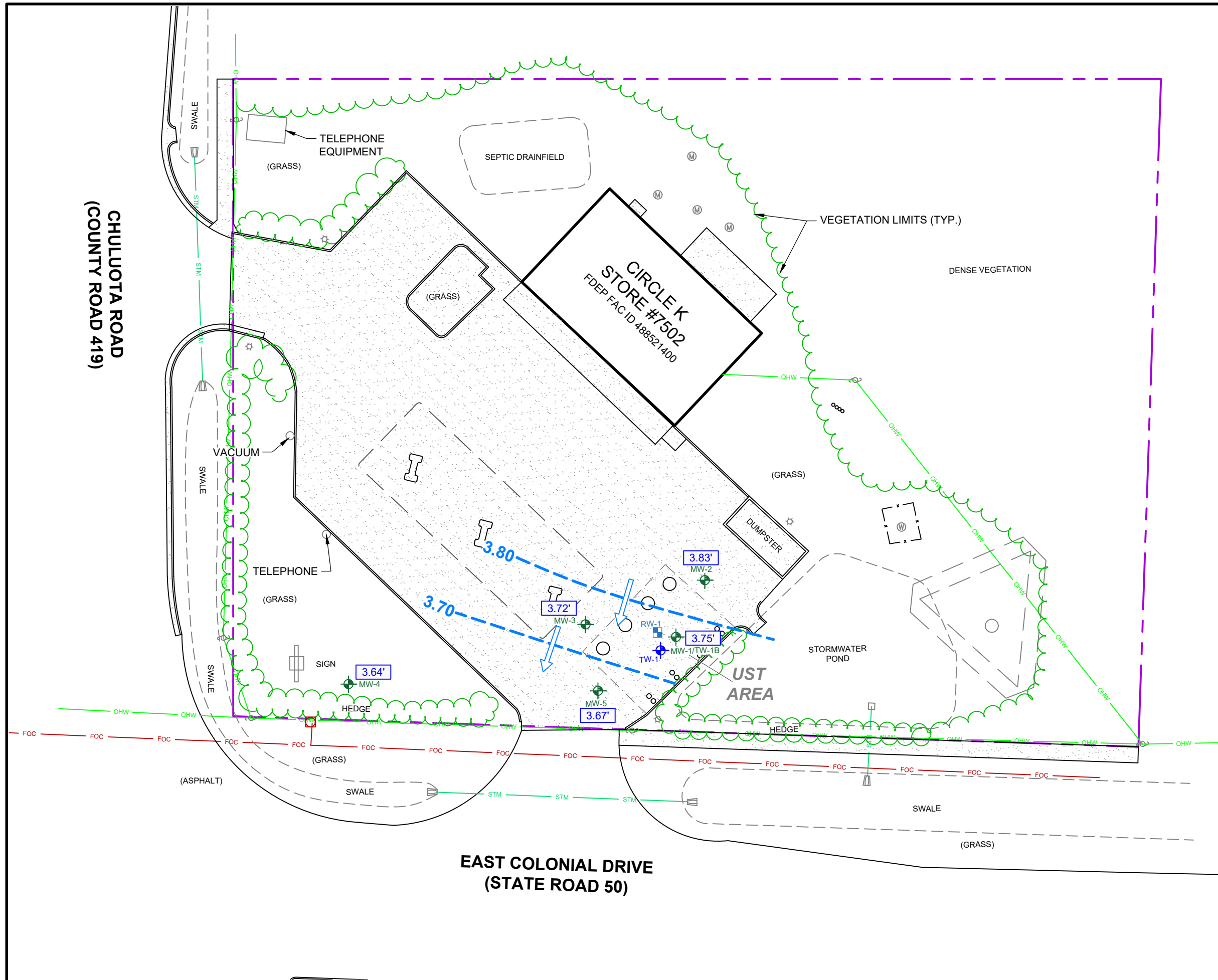
NAME/ADDRESS:
Circle K Store #2707502
 16959 East Colonial Drive
 Orlando (Bithlo), Orange County, Florida

DRAWING TITLE:
SITE PLAN

ATC 5602 Thompson Center Court -Suite 405
 Tampa, Florida 33634
 TEL: 813-889-8960
 FAX: 813-889-8754

DRAWN BY: KD FIGURE NO. **1**
 CHECKED BY: SP
 PROJECT NO. 0752840132



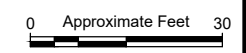


LEGEND:

	TEMPORARY WELL-FEBRUARY 20, 2020
	TEMPORARY WELL-MARCH 9, 2020
	MONITORING WELL- APRIL 4, 2020
	RECOVERY WELL
	SOIL BORING-FEBRUARY 20, 2020
	SOIL BORING-MARCH 9, 2020
	WATER WELL
	MAN HOLE COVER
	LIGHT POLE
	POWER POLE
	CONCRETE PAVEMENT
	UNDERGROUND STORAGE TANK

	APPROXIMATE PROPERTY BOUNDARY
	FENCE
	FOC UNDERGROUND FIBER OPTIC CABLE
	OHW OVERHEAD ELECTRICAL WIRE
	STM STORM WATER SEWER PIPE

	FEET EQUIPOTENTIAL LINE
	CONTOUR INTERVAL x.xx FEET
	GROUNDWATER FLOW DIRECTION
	FEET WATER TABLE ELEVATION

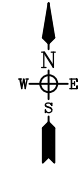


NAME/ADDRESS:
Circle K Store #2707502
 16959 East Colonial Drive
 Orlando (Bithlo), Orange County, Florida

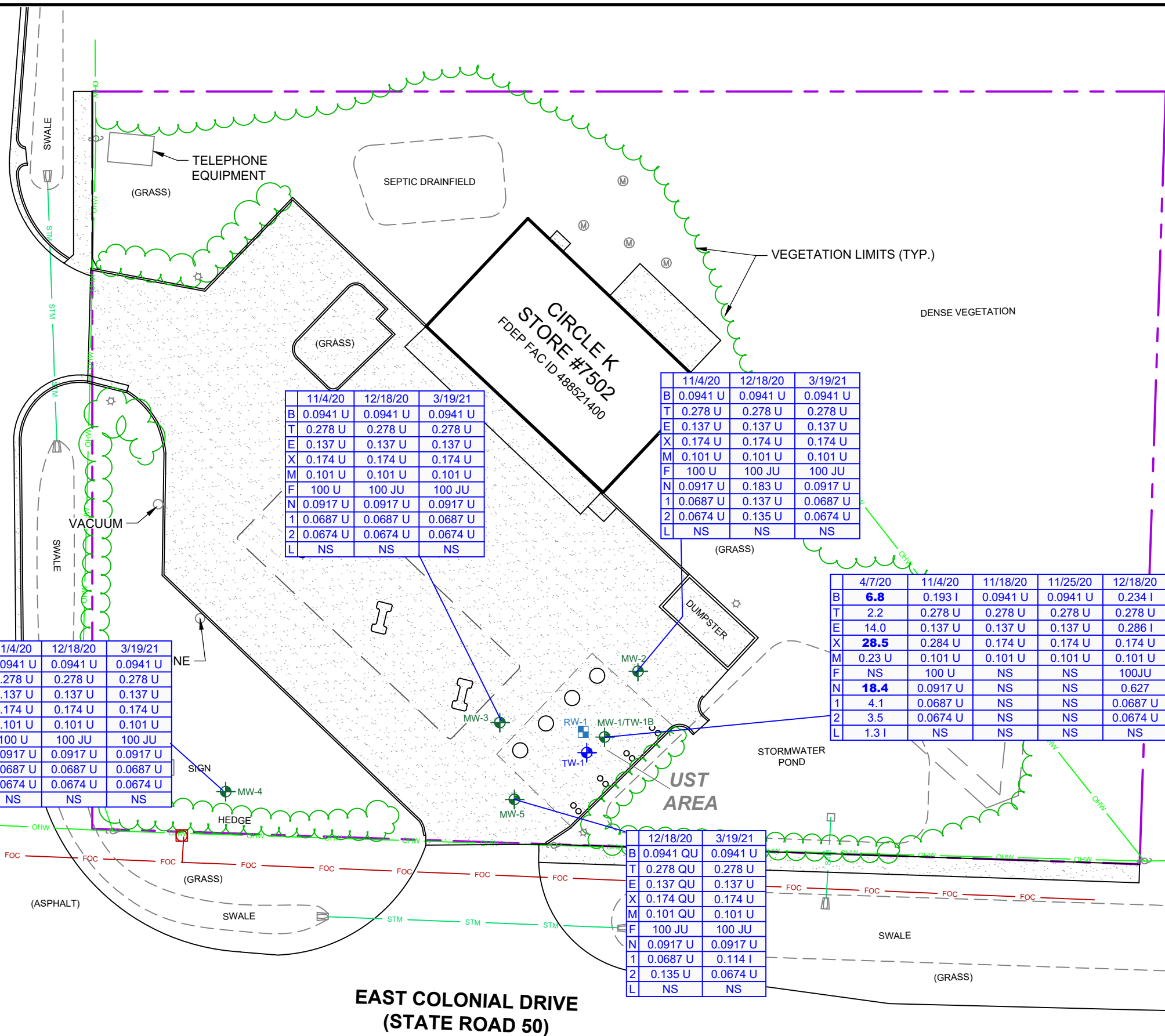
DRAWING TITLE:
**Groundwater Elevation
 Contour Map-3/19/2021**

ATC 5602 Thompson Center Court -Suite 405
 Tampa, Florida 33634
 TEL: 813-889-8960
 FAX: 813-889-8754

DRAWN BY: KD	FIGURE NO. 2
CHECKED BY: SP	
PROJECT NO. 0752840132	



CHULUOTA ROAD
(COUNTY ROAD 419)



LEGEND:

	TEMPORARY WELL-FEBRUARY 20, 2020
	TEMPORARY WELL-MARCH 9, 2020 MONITORING WELL- APRIL 4, 2020
	RECOVERY WELL
	SOIL BORING-FEBRUARY 20, 2020
	SOIL BORING-MARCH 9, 2020
	WATER WELL
	MAN HOLE COVER
	LIGHT POLE
	POWER POLE
	CONCRETE PAVEMENT
	UNDERGROUND STORAGE TANK

	APPROXIMATE PROPERTY BOUNDARY
	FENCE
	UNDERGROUND FIBER OPTIC CABLE
	OVERHEAD ELECTRICAL WIRE
	STORM WATER SEWER PIPE

DATE SAMPLED (mm/dd/yy)	
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	TOTAL XYLENES
M	METHYL TERT-BUTYL ETHER (MTBE)
F	TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (TRPH) BY FL-PRO
N	NAPHTHALENE
1	1-METHYLNAPHTHALENE
2	2-METHYLNAPHTHALENE
L	TOTAL LEAD

ALL RESULTS IN µg/L (micrograms per liter ≈ parts per billion) except TRPH which is in mg/L
BOLD TEXT indicates concentration exceeds Groundwater Cleanup Target Level (GCTL).

I	INDICATES REPORTED VALUE IS BETWEEN METHOD DETECTION LIMIT AND PRACTICAL QUANTITATION LIMIT.
U	ANALYTE NOT DETECTED AT METHOD DETECTION LIMIT.

0 Approximate Feet 30

NAME/ADDRESS:
Circle K Store #2707502
16959 East Colonial Drive
Orlando (Bithlo), Orange County, Florida

DRAWING TITLE:
Groundwater Analytical Summary Map

ATC 5602 Thompson Center Court -Suite 405
Tampa, Florida 33634
TEL: 813-889-8960
FAX: 813-889-8754

DRAWN BY: _____ KD
CHECKED BY: _____ SP
PROJECT NO. 0752840132

FIGURE NO. **3**

	11/4/20	12/18/20	3/19/21
B	0.0941 U	0.0941 U	0.0941 U
T	0.278 U	0.278 U	0.278 U
E	0.137 U	0.137 U	0.137 U
X	0.174 U	0.174 U	0.174 U
M	0.101 U	0.101 U	0.101 U
F	100 U	100 JU	100 JU
N	0.0917 U	0.0917 U	0.0917 U
1	0.0687 U	0.0687 U	0.0687 U
2	0.0674 U	0.0674 U	0.0674 U
L	NS	NS	NS

	11/4/20	12/18/20	3/19/21
B	0.0941 U	0.0941 U	0.0941 U
T	0.278 U	0.278 U	0.278 U
E	0.137 U	0.137 U	0.137 U
X	0.174 U	0.174 U	0.174 U
M	0.101 U	0.101 U	0.101 U
F	100 U	100 JU	100 JU
N	0.0917 U	0.183 U	0.0917 U
1	0.0687 U	0.137 U	0.0687 U
2	0.0674 U	0.135 U	0.0674 U
L	NS	NS	NS

	4/7/20	11/4/20	11/18/20	11/25/20	12/18/20	3/19/21
B	6.8	0.193 I	0.0941 U	0.0941 U	0.234 I	5.86
T	2.2	0.278 U	0.278 U	0.278 U	0.278 U	0.278 U
E	14.0	0.137 U	0.137 U	0.137 U	0.286 I	2.38
X	28.5	0.284 U	0.174 U	0.174 U	0.174 U	0.645 I
M	0.23 U	0.101 U	0.101 U	0.101 U	0.101 U	0.101 U
F	NS	100 U	NS	NS	100JU	100 JU
N	18.4	0.0917 U	NS	NS	0.627	5.61
1	4.1	0.0687 U	NS	NS	0.0687 U	0.291
2	3.5	0.0674 U	NS	NS	0.0674 U	0.632
L	1.3 I	NS	NS	NS	NS	NS

	11/4/20	12/18/20	3/19/21
B	0.0941 U	0.0941 U	0.0941 U
T	0.278 U	0.278 U	0.278 U
E	0.137 U	0.137 U	0.137 U
X	0.174 U	0.174 U	0.174 U
M	0.101 U	0.101 U	0.101 U
F	100 U	100 JU	100 JU
N	0.0917 U	0.0917 U	0.0917 U
1	0.0687 U	0.0687 U	0.0687 U
2	0.0674 U	0.0674 U	0.0674 U
L	NS	NS	NS

	12/18/20	3/19/21
B	0.0941 QU	0.0941 U
T	0.278 QU	0.278 U
E	0.137 QU	0.137 U
X	0.174 QU	0.174 U
M	0.101 QU	0.101 U
F	100 JU	100 JU
N	0.0917 U	0.0917 U
1	0.0687 U	0.114 I
2	0.135 U	0.0674 U
L	NS	NS

TABLES

Table 1 GROUNDWATER ELEVATION DATA

**Circle K 2707502
 16959 E Colonial Drive
 Orlando, Florida
 Facility ID #488521400
 ATC Project #0752840132**

WELL NO.	MW-1			MW-2			MW-3			MW-4		
DIAMETER	2"			2"			2"			2"		
WELL DEPTH	12'			12'			12'			12'		
SCREEN INTERVAL	2' - 12'			2' - 12'			2' - 12'			2' - 12'		
TOC ELEVATION	10.00			10.07			10.22			10.46		
DATE	ELEV	DTW	FP	ELEV	DTW	FP	ELEV	DTW	FP	ELEV	DTW	FP
4/7/2020	3.88	6.12										
11/4/2020	5.31	4.69		5.43	4.64		5.24	4.98		5.14	5.32	
11/18/2020	6.16	3.84										
11/25/2020	5.64	4.36										
12/18/2020	4.77	5.23		4.88	5.19		4.72	5.50		4.63	5.83	
3/19/2021	3.75	6.25		3.83	6.24		3.72	6.50		3.64	6.82	

WELL NO.	MW-5											
DIAMETER	2"											
WELL DEPTH	12'											
SCREEN INTERVAL	2' - 12'											
TOC ELEVATION	10.24											
DATE	ELEV	DTW	FP	ELEV	DTW	FP	ELEV	DTW	FP	ELEV	DTW	FP
12/18/2020	4.65	5.59										
3/19/2021	3.67	6.57										

Notes:

1) Measurements in feet.

TABLE 2: GROUNDWATER ANALYTICAL DATA

**Circle K 2707502
 16959 E Colonial Drive
 Orlando, Florida
 Facility ID #488521400
 ATC Project #0752840132**

Sample		Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE	TRPH	Naph- thalene	1-Methyl- naphthalene	2-Methyl- naphthalene	Total Lead
Location	Date										
Natural Attenuation (Source Area) Default Concentrations		100	400	300	200	200	50,000	140	280	280	150
Groundwater Criteria		1	40	30	20	20	5,000	14	28	28	15
MW-5	12/18/2020	0.0941 QU	0.278 QU	0.137 QU	0.174 QU	0.101 QU	100 JU	0.183 U	0.137 U	0.135 U	NS
	3/19/2021	0.0941 U	0.278 U	0.137 U	0.174 U	0.101 U	100 JU	0.0917 U	0.114 I	0.0674 U	NS

Notes:

1. Units in micrograms per liter (ug/l).
2. FDEP Chapter 62-777 FAC Groundwater Cleanup Target Levels displayed in shaded cells
3. Total xylenes = m,p-Xylenes + o-Xylene concentrations
4. " U " = The compound was not detected above the method detection limit.
5. " I " = The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
6. " V " = Analyte was detected in both the sample and the method blank.
7. " S " = Split Sample by Taylor Environmental

ATTACHMENT I

DEP-SOP-001/01
 FT 1000 General Field Testing and Measurement

Site: 7507
 Site Address: 16959 E Colonial Dr, Orlando
 Facility ID#:

Form FD 9000-8: FIELD INSTRUMENT CALIBRATION RECORDS

YSI INSTRUMENT (MAKE/MODEL#) 556 mPS INSTRUMENT # -
 LaMotte INSTRUMENT (MAKE/MODEL#) 20200 INSTRUMENT # -
 OVA/PID INSTRUMENT (MAKE/MODEL#) _____ INSTRUMENT # _____

PARAMETER: [check applicable standards]

TEMPERATURE CONDUCTIVITY SALINITY pH ORP
 TURBIDITY OVA DO OTHER _____

STANDARDS: [Specify the origin of the standards, Lot #, Bottle # and the date the standards expire, as applicable]

Standard A (Temp.) _____ Standard B (pH 4.01 +/- 0.2) 200907A 10/22
 Standard C (pH 7.00 +/- 0.2) 200320C 10/21 Standard D (pH 10.00 +/- 0.2) 20033A 10/21
 Standard E (Cond. 500uS +/- 5%) _____ Standard F (Cond. ¹⁴¹³1000uS +/- 5%) 201119A 11/21
 Standard G (Turb. 1.0 NTU +/- 10%) _____ Standard H (Turb. 10 NTU +/- 10%) 2032011 5/22
 Standard I (Turb. 40 NTU +/- 8%) _____ Standard J (DO mg/L +/- 0.3mg/L) _____
 Standard K (OVA 100ppm isobutylene) _____ Standard L (ORP 231 mV @25°C) _____

DATE (m/d/y)	TIME (hr:min)	STD (A, B, C, etc.)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INITIAL, POST)	SAMPLER INITIALS
3/19/21	9:00	B	4	4.06		N	I	[Signature]
		BC	7	7.09		N	I	
		D	10	10.10		N	I	
		F	1413	1427		N	I	
		H	10	9.95		N	I	
	12:00	J	100%	100.7		N	I	
		J	100%	112.3		Y	P	
		C	7	7.08		N	P	
		F	1413	1429		N	P	
		H	10	9.15		Y		

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: 7502		SITE LOCATION: 16959 Ecological Dr. Orlando	
WELL NO: MW-1	SAMPLE ID: MW-1	DATE: 3/19/12	

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 3/16	WELL SCREEN INTERVAL DEPTH: 2 feet to 12 feet	STATIC DEPTH TO WATER (feet): 6.25	PURGE PUMP TYPE OR BAILER: PP
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = (12 feet - 6.25 feet) X 0.16 gallons/foot = 0.92 gallons				
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable) = _____ gallons + (_____ gallons/foot X _____ feet) + _____ gallons = _____ gallons				
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8	PURGING INITIATED AT: 9:45	PURGING ENDED AT: 10:09	TOTAL VOLUME PURGED (gallons): 1.9

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	ORP (mV)	TEMP (°C)	COND. (circle units) μmhos/cm or μS/cm	DISSOLVED OXYGEN (circle units) mg/l or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1000	1.2	1.2	0.08	6.60	6.01	-129	1623	817	0.84	19	Green	N
1003	0.24	1.44	↓	6.60	6.03	-127	1616	819	0.86	17	↓	↓
1006	0.24	1.68	↓	6.60	6.05	-124	1610	820	0.87	19	↓	↓

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
 TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016
 PURGING EQUIPMENT CODES: B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: J. Hobbins/ATC	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1010	SAMPLING ENDED AT: 1015
PUMP OR TUBING DEPTH IN WELL (feet): 8	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y <input checked="" type="checkbox"/> N	FILTRATION EQUIPMENT TYPE: 2
FIELD DECONTAMINATION: PUMP Y <input checked="" type="checkbox"/> N	TUBING Y <input checked="" type="checkbox"/> N (replaced)	DUPLICATE: Y <input checked="" type="checkbox"/> N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	3	AG	40	HCL	-	-	8260	APP	100
	2	↓	40	FLP	-	-	8270		
	2	↓	100	HCL	-	-	FLP=0		

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
 2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
 pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: 7502		SITE LOCATION: 16959 E Colonial Dr. Orlando	
WELL NO: MW-2	SAMPLE ID: MW-2	DATE: 3/19/12	

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 3/16	WELL SCREEN INTERVAL DEPTH: 2 feet to 18 feet	STATIC DEPTH TO WATER (feet): 6.24	PURGE PUMP TYPE OR BAILER: AP
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = (17 feet - 6.24 feet) X 0.16 gallons/foot = 0.92 gallons				
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable) = gallons + (gallons/foot X feet) + gallons = gallons				
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8	PURGING INITIATED AT: 9:05	PURGING ENDED AT: 9:09	TOTAL VOLUME PURGED (gallons): 1.92

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	ORP (mV)	TEMP (°C)	COND. (circle units) $\mu\text{mhos/cm}$ or $(\mu\text{S/cm})$	DISSOLVED OXYGEN (circle units) (mg/L or % saturation)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
9:20	1.2	1.2	0.08	6.55	6.58	107	15.23	106	2.45	27	h	10
9:23	0.24	1.44	0.08	6.55	6.52	92	15.24	106	2.42	24	↓	↓
9:26	0.24	1.68	0.08	6.55	6.52	92	15.24	106	2.36	23	↓	↓

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
 TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016
 PURGING EQUIPMENT CODES: B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: J. Vedding / ATC	SAMPLER(S) SIGNATURE(S): <i>[Signature]</i>	SAMPLING INITIATED AT: 9:30	SAMPLING ENDED AT: 9:35
PUMP OR TUBING DEPTH IN WELL (feet): 8	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	FILTRATION EQUIPMENT TYPE: PP
FIELD DECONTAMINATION: PUMP Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	TUBING Y <input type="checkbox"/> N (replaced) <input checked="" type="checkbox"/>	DUPLICATE: Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	3	AG	20ml	HCL	-	-	8260	APP	<100
	2	AG	40	ICE	-	-	8270		
	2	AG	100	HCL	-	-	FLPC		

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
 2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
 pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: 7507		SITE LOCATION: 16959 Colonial Dr. Orlando	
WELL NO: mw-3	SAMPLE ID: mw-3	DATE: 3/19/01	

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 3/16	WELL SCREEN INTERVAL DEPTH: 2 feet to 12 feet	STATIC DEPTH TO WATER (feet): 6.50	PURGE PUMP TYPE OR BAILER: PP								
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = (12 feet - 6.50 feet) X 0.16 gallons/foot = _____ gallons												
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable) = _____ gallons + (_____ gallons/foot X _____ feet) + _____ gallons = _____ gallons												
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8	PURGING INITIATED AT: 1055	PURGING ENDED AT: 1119	TOTAL VOLUME PURGED (gallons): 1.9								
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	ORP (mV)	TEMP (°C)	COND. (circle units) μmhos/cm or μS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
11:10	1.2	1.2	0.08	6.62	6.43	-66	17.51	361	0.74	12	Un	N
11:13	0.24	1.44	0.08	6.67	6.43	-66	17.53	360	0.73	10	↓	↓
11:16	0.24	1.68	0.08	6.62	6.43	-66	17.55	359	0.73	10	↓	↓
WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88 TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016												
PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)												

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: J. Heddings / ATC				SAMPLER(S) SIGNATURE(S):				SAMPLING INITIATED AT: 1120	SAMPLING ENDED AT: 1125
PUMP OR TUBING DEPTH IN WELL (feet): 8				TUBING MATERIAL CODE: HDPE				FIELD-FILTERED: Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>	FILTER SIZE: _____ μm
FIELD DECONTAMINATION: PUMP Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>				TUBING Y <input checked="" type="checkbox"/> N (replaced) <input checked="" type="checkbox"/>				DUPLICATE: Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>	
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	3	AG	400ml	HCl	-	-	8260	APP	<100
	2	↓	40	Ice	-	-	8270		
	2	↓	100	HCl	-	-	FL Pro		
REMARKS:									
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)									
SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPF = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)									

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
 2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
 pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: (B) 7502		SITE LOCATION: 16959 Ecological Dr. Orlando	
WELL NO: mw-4	SAMPLE ID: mw-4	DATE: 3/19/21	

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 3/16	WELL SCREEN INTERVAL DEPTH: 2 feet to 12 feet	STATIC DEPTH TO WATER (feet): 6.82	PURGE PUMP TYPE OR BAILER: PP								
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = (12 feet - 6.82 feet) X 0.16 gallons/foot = 0.8 gallons												
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable) = gallons + (gallons/foot X feet) + gallons = gallons												
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8	PURGING INITIATED AT: 1130	PURGING ENDED AT: 1149	TOTAL VOLUME PURGED (gallons): 1.52								
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	ORP (mV)	TEMP (°C)	COND. (circle units) μmhos/cm or μS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1140	0.8	0.8	0.08	6.94	5.91	-46	1614	299	0.97	13	4	↓
1143	0.24	1.04	0.08	6.94	5.93	-45	1616	250	0.94	13	↓	↓
1146	0.24	1.28	0.08	6.94	5.90	-44	1618	251	0.93	12	↓	↓
WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88 TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016												
PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)												

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: S. Hedding / ATC				SAMPLER(S) SIGNATURE(S):				SAMPLING INITIATED AT: 1150	SAMPLING ENDED AT: 1155
PUMP OR TUBING DEPTH IN WELL (feet): 8				TUBING MATERIAL CODE: HDPE		FIELD-FILTERED: Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Filtration Equipment Type: A		FILTER SIZE: _____ μm	
FIELD DECONTAMINATION: PUMP Y <input checked="" type="checkbox"/> N <input type="checkbox"/>				TUBING Y <input checked="" type="checkbox"/> N (replaced) <input type="checkbox"/>		DUPLICATE: Y <input checked="" type="checkbox"/> N <input type="checkbox"/>			
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	3	AG	40ml	ACCL	-	-	8260	APP	100
	2	↓	40	Ice	-	-	8270		
	2	↓	100	Ice	-	-	FL 800		
REMARKS:									
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)									
SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; RFPF = Reverse Flow Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)									

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
 2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
 pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: Q 7508		SITE LOCATION: 16959 E. Colonial P. Orlando	
WELL NO: mw-5	SAMPLE ID: MW-5	DATE: 3/19/01	

PURGING DATA

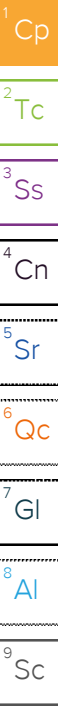
WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 3/16	WELL SCREEN INTERVAL DEPTH: 2 feet to 12 feet	STATIC DEPTH TO WATER (feet): 6.57	PURGE PUMP TYPE OR BAILER: PP								
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = (12 feet - 6.57 feet) X 0.16 gallons/foot = 0.86 gallons												
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable) = gallons + (gallons/foot X feet) + gallons = gallons												
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8	PURGING INITIATED AT: 1020	PURGING ENDED AT: 1044	TOTAL VOLUME PURGED (gallons): 1.9								
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	ORP (mV)	TEMP (°C)	COND. (circle units) $\mu\text{mhos/cm}$ or $\mu\text{S/cm}$	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1035	1.2	1.2	0.8	6.65	5.87	-103	1680	469	1.06	10	←	10
1038	0.24	1.44	0.8	6.65	5.84	-103	1685	467	1.06	10	↓	↓
1041	0.24	1.68	0.8	6.65	5.83	-104	1691	467	1.06	10	↓	↓
WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88 TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016												
PURGING EQUIPMENT CODES: B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)												

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: S. Hedding / AIC				SAMPLER(S) SIGNATURE(S):				SAMPLING INITIATED AT: 1045	SAMPLING ENDED AT: 1050	
PUMP OR TUBING DEPTH IN WELL (feet): 8				TUBING MATERIAL CODE: HDPE				FIELD-FILTERED: Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	FILTER SIZE: _____ μm	
FIELD DECONTAMINATION: PUMP Y <input type="checkbox"/> N <input checked="" type="checkbox"/>				TUBING Y <input type="checkbox"/> N <input checked="" type="checkbox"/> (replaced)				DUPLICATE: Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)				INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH				
	3	AG	40	HCL	-	-	8260	APP	<100	
	2	↓	40	ICP	-	-	8270			
	7	↓	100	HCL	-	-	FLPro			
REMARKS:										
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)										
SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)										

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
 2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
 pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: $\pm 5\%$ Dissolved Oxygen: all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or $\pm 10\%$ (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or $\pm 10\%$ (whichever is greater)

ATTACHMENT II



ATC Group Services LLC

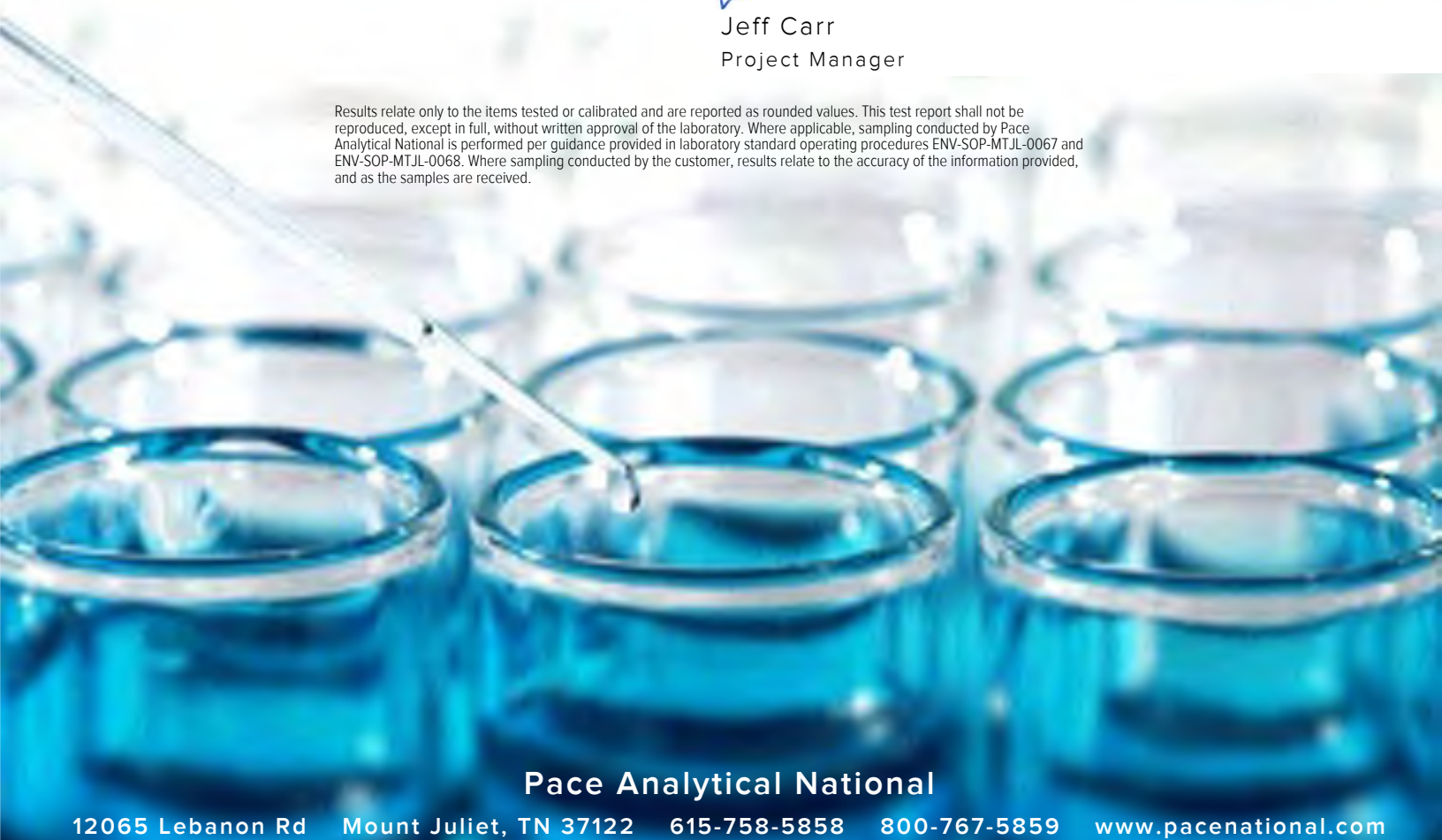
Sample Delivery Group: L1329080
Samples Received: 03/20/2021
Project Number: 0752840132
Description: Circle K 2707502
Site: 7502
Report To: Scott Patterson
5602 Thompson Center Court
Suite 405
Tampa, FL 33634

Entire Report Reviewed By:



Jeff Carr
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

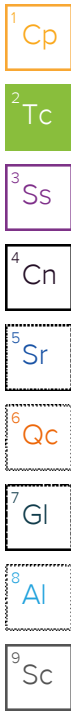


Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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SAMPLE SUMMARY

MW-1 L1329080-01 GW

Collected by J Hedding Collected date/time 03/19/21 10:10 Received date/time 03/20/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1638220	1	03/21/21 16:37	03/21/21 16:37	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method FLPRO	WG1639484	1	03/24/21 09:42	03/24/21 19:20	WCR	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1638170	1	03/22/21 14:31	03/23/21 01:59	AAT	Mt. Juliet, TN

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

MW-2 L1329080-02 GW

Collected by J Hedding Collected date/time 03/19/21 09:30 Received date/time 03/20/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1638220	1	03/21/21 16:58	03/21/21 16:58	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method FLPRO	WG1638176	1	03/23/21 00:56	03/23/21 12:25	WCR	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1638170	1	03/22/21 14:31	03/23/21 02:19	AAT	Mt. Juliet, TN

MW-3 L1329080-03 GW

Collected by J Hedding Collected date/time 03/19/21 11:20 Received date/time 03/20/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1638220	1	03/21/21 17:18	03/21/21 17:18	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method FLPRO	WG1639484	1	03/24/21 09:42	03/24/21 19:41	WCR	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1638170	1	03/22/21 14:31	03/23/21 02:39	AAT	Mt. Juliet, TN

MW-4 L1329080-04 GW

Collected by J Hedding Collected date/time 03/19/21 11:50 Received date/time 03/20/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1638220	1	03/21/21 17:38	03/21/21 17:38	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method FLPRO	WG1638176	1	03/23/21 00:56	03/23/21 13:10	WCR	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1638170	1	03/22/21 14:31	03/23/21 02:59	AAT	Mt. Juliet, TN

MW-5 L1329080-05 GW

Collected by J Hedding Collected date/time 03/19/21 10:45 Received date/time 03/20/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1638220	1	03/21/21 17:59	03/21/21 17:59	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method FLPRO	WG1639484	1	03/24/21 09:42	03/24/21 20:03	WCR	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1638170	1	03/22/21 14:31	03/23/21 03:19	AAT	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Jeff Carr
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	5.86		0.0941	1.00	1	03/21/2021 16:37	WG1638220
Toluene	0.278	U	0.278	1.00	1	03/21/2021 16:37	WG1638220
Ethylbenzene	2.38		0.137	1.00	1	03/21/2021 16:37	WG1638220
Total Xylenes	0.645	I	0.174	3.00	1	03/21/2021 16:37	WG1638220
Methyl tert-butyl ether	0.101	U	0.101	1.00	1	03/21/2021 16:37	WG1638220
(S) Toluene-d8	89.2			80.0-120		03/21/2021 16:37	WG1638220
(S) 4-Bromofluorobenzene	96.2			77.0-126		03/21/2021 16:37	WG1638220
(S) 1,2-Dichloroethane-d4	116			70.0-130		03/21/2021 16:37	WG1638220

Semi-Volatile Organic Compounds (GC) by Method FLPRO

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Petroleum Range Organics	100	J U	100	400	1	03/24/2021 19:20	WG1639484
(S) o-Terphenyl	58.2	J		66.0-139		03/24/2021 19:20	WG1639484
(S) C35	40.5			40.0-129		03/24/2021 19:20	WG1639484

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Anthracene	0.0190	U	0.0190	0.0500	1	03/23/2021 01:59	WG1638170
Acenaphthene	0.147		0.0190	0.0500	1	03/23/2021 01:59	WG1638170
Acenaphthylene	0.0171	U	0.0171	0.0500	1	03/23/2021 01:59	WG1638170
Benzo(a)anthracene	0.0203	U	0.0203	0.0500	1	03/23/2021 01:59	WG1638170
Benzo(a)pyrene	0.0184	U	0.0184	0.0500	1	03/23/2021 01:59	WG1638170
Benzo(b)fluoranthene	0.0168	U	0.0168	0.0500	1	03/23/2021 01:59	WG1638170
Benzo(g,h,i)perylene	0.0184	U	0.0184	0.0500	1	03/23/2021 01:59	WG1638170
Benzo(k)fluoranthene	0.0202	U	0.0202	0.0500	1	03/23/2021 01:59	WG1638170
Chrysene	0.0179	U	0.0179	0.0500	1	03/23/2021 01:59	WG1638170
Dibenz(a,h)anthracene	0.0160	U	0.0160	0.0500	1	03/23/2021 01:59	WG1638170
Fluoranthene	0.0270	U	0.0270	0.100	1	03/23/2021 01:59	WG1638170
Fluorene	0.0993		0.0169	0.0500	1	03/23/2021 01:59	WG1638170
Indeno(1,2,3-cd)pyrene	0.0158	U	0.0158	0.0500	1	03/23/2021 01:59	WG1638170
Naphthalene	5.61		0.0917	0.250	1	03/23/2021 01:59	WG1638170
Phenanthrene	0.0411	I	0.0180	0.0500	1	03/23/2021 01:59	WG1638170
Pyrene	0.0169	U	0.0169	0.0500	1	03/23/2021 01:59	WG1638170
1-Methylnaphthalene	0.291		0.0687	0.250	1	03/23/2021 01:59	WG1638170
2-Methylnaphthalene	0.632		0.0674	0.250	1	03/23/2021 01:59	WG1638170
(S) Nitrobenzene-d5	92.1			31.0-160		03/23/2021 01:59	WG1638170
(S) 2-Fluorobiphenyl	88.4			48.0-148		03/23/2021 01:59	WG1638170
(S) p-Terphenyl-d14	112			37.0-146		03/23/2021 01:59	WG1638170

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	0.0941	U	0.0941	1.00	1	03/21/2021 16:58	WG1638220
Toluene	0.278	U	0.278	1.00	1	03/21/2021 16:58	WG1638220
Ethylbenzene	0.137	U	0.137	1.00	1	03/21/2021 16:58	WG1638220
Total Xylenes	0.174	U	0.174	3.00	1	03/21/2021 16:58	WG1638220
Methyl tert-butyl ether	0.101	U	0.101	1.00	1	03/21/2021 16:58	WG1638220
(S) Toluene-d8	90.3			80.0-120		03/21/2021 16:58	WG1638220
(S) 4-Bromofluorobenzene	97.0			77.0-126		03/21/2021 16:58	WG1638220
(S) 1,2-Dichloroethane-d4	118			70.0-130		03/21/2021 16:58	WG1638220

Semi-Volatile Organic Compounds (GC) by Method FLPRO

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Petroleum Range Organics	100	JU	100	400	1	03/23/2021 12:25	WG1638176
(S) o-Terphenyl	75.0			66.0-139		03/23/2021 12:25	WG1638176
(S) C35	40.6			40.0-129		03/23/2021 12:25	WG1638176

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Anthracene	0.0190	U	0.0190	0.0500	1	03/23/2021 02:19	WG1638170
Acenaphthene	0.0190	U	0.0190	0.0500	1	03/23/2021 02:19	WG1638170
Acenaphthylene	0.0171	U	0.0171	0.0500	1	03/23/2021 02:19	WG1638170
Benzo(a)anthracene	0.0203	U	0.0203	0.0500	1	03/23/2021 02:19	WG1638170
Benzo(a)pyrene	0.0184	U	0.0184	0.0500	1	03/23/2021 02:19	WG1638170
Benzo(b)fluoranthene	0.0168	U	0.0168	0.0500	1	03/23/2021 02:19	WG1638170
Benzo(g,h,i)perylene	0.0184	U	0.0184	0.0500	1	03/23/2021 02:19	WG1638170
Benzo(k)fluoranthene	0.0202	U	0.0202	0.0500	1	03/23/2021 02:19	WG1638170
Chrysene	0.0179	U	0.0179	0.0500	1	03/23/2021 02:19	WG1638170
Dibenz(a,h)anthracene	0.0160	U	0.0160	0.0500	1	03/23/2021 02:19	WG1638170
Fluoranthene	0.0270	U	0.0270	0.100	1	03/23/2021 02:19	WG1638170
Fluorene	0.0169	U	0.0169	0.0500	1	03/23/2021 02:19	WG1638170
Indeno(1,2,3-cd)pyrene	0.0158	U	0.0158	0.0500	1	03/23/2021 02:19	WG1638170
Naphthalene	0.0917	U	0.0917	0.250	1	03/23/2021 02:19	WG1638170
Phenanthrene	0.0180	U	0.0180	0.0500	1	03/23/2021 02:19	WG1638170
Pyrene	0.0169	U	0.0169	0.0500	1	03/23/2021 02:19	WG1638170
1-Methylnaphthalene	0.0687	U	0.0687	0.250	1	03/23/2021 02:19	WG1638170
2-Methylnaphthalene	0.0674	U	0.0674	0.250	1	03/23/2021 02:19	WG1638170
(S) Nitrobenzene-d5	95.8			31.0-160		03/23/2021 02:19	WG1638170
(S) 2-Fluorobiphenyl	90.0			48.0-148		03/23/2021 02:19	WG1638170
(S) p-Terphenyl-d14	108			37.0-146		03/23/2021 02:19	WG1638170

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	0.0941	U	0.0941	1.00	1	03/21/2021 17:18	WG1638220
Toluene	0.278	U	0.278	1.00	1	03/21/2021 17:18	WG1638220
Ethylbenzene	0.137	U	0.137	1.00	1	03/21/2021 17:18	WG1638220
Total Xylenes	0.174	U	0.174	3.00	1	03/21/2021 17:18	WG1638220
Methyl tert-butyl ether	0.101	U	0.101	1.00	1	03/21/2021 17:18	WG1638220
(S) Toluene-d8	89.1			80.0-120		03/21/2021 17:18	WG1638220
(S) 4-Bromofluorobenzene	95.8			77.0-126		03/21/2021 17:18	WG1638220
(S) 1,2-Dichloroethane-d4	119			70.0-130		03/21/2021 17:18	WG1638220

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Semi-Volatile Organic Compounds (GC) by Method FLPRO

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Petroleum Range Organics	100	JU	100	400	1	03/24/2021 19:41	WG1639484
(S) o-Terphenyl	69.1			66.0-139		03/24/2021 19:41	WG1639484
(S) C35	49.2			40.0-129		03/24/2021 19:41	WG1639484

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Anthracene	0.0190	U	0.0190	0.0500	1	03/23/2021 02:39	WG1638170
Acenaphthene	0.0190	U	0.0190	0.0500	1	03/23/2021 02:39	WG1638170
Acenaphthylene	0.0171	U	0.0171	0.0500	1	03/23/2021 02:39	WG1638170
Benzo(a)anthracene	0.0203	U	0.0203	0.0500	1	03/23/2021 02:39	WG1638170
Benzo(a)pyrene	0.0184	U	0.0184	0.0500	1	03/23/2021 02:39	WG1638170
Benzo(b)fluoranthene	0.0168	U	0.0168	0.0500	1	03/23/2021 02:39	WG1638170
Benzo(g,h,i)perylene	0.0184	U	0.0184	0.0500	1	03/23/2021 02:39	WG1638170
Benzo(k)fluoranthene	0.0202	U	0.0202	0.0500	1	03/23/2021 02:39	WG1638170
Chrysene	0.0179	U	0.0179	0.0500	1	03/23/2021 02:39	WG1638170
Dibenz(a,h)anthracene	0.0160	U	0.0160	0.0500	1	03/23/2021 02:39	WG1638170
Fluoranthene	0.0270	U	0.0270	0.100	1	03/23/2021 02:39	WG1638170
Fluorene	0.0169	U	0.0169	0.0500	1	03/23/2021 02:39	WG1638170
Indeno(1,2,3-cd)pyrene	0.0158	U	0.0158	0.0500	1	03/23/2021 02:39	WG1638170
Naphthalene	0.0917	U	0.0917	0.250	1	03/23/2021 02:39	WG1638170
Phenanthrene	0.0180	U	0.0180	0.0500	1	03/23/2021 02:39	WG1638170
Pyrene	0.0169	U	0.0169	0.0500	1	03/23/2021 02:39	WG1638170
1-Methylnaphthalene	0.0687	U	0.0687	0.250	1	03/23/2021 02:39	WG1638170
2-Methylnaphthalene	0.0674	U	0.0674	0.250	1	03/23/2021 02:39	WG1638170
(S) Nitrobenzene-d5	87.9			31.0-160		03/23/2021 02:39	WG1638170
(S) 2-Fluorobiphenyl	84.7			48.0-148		03/23/2021 02:39	WG1638170
(S) p-Terphenyl-d14	109			37.0-146		03/23/2021 02:39	WG1638170

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	0.0941	U	0.0941	1.00	1	03/21/2021 17:38	WG1638220
Toluene	0.278	U	0.278	1.00	1	03/21/2021 17:38	WG1638220
Ethylbenzene	0.137	U	0.137	1.00	1	03/21/2021 17:38	WG1638220
Total Xylenes	0.174	U	0.174	3.00	1	03/21/2021 17:38	WG1638220
Methyl tert-butyl ether	0.101	U	0.101	1.00	1	03/21/2021 17:38	WG1638220
(S) Toluene-d8	87.5			80.0-120		03/21/2021 17:38	WG1638220
(S) 4-Bromofluorobenzene	94.1			77.0-126		03/21/2021 17:38	WG1638220
(S) 1,2-Dichloroethane-d4	119			70.0-130		03/21/2021 17:38	WG1638220

Semi-Volatile Organic Compounds (GC) by Method FLPRO

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Petroleum Range Organics	100	JU	100	400	1	03/23/2021 13:10	WG1638176
(S) o-Terphenyl	74.0			66.0-139		03/23/2021 13:10	WG1638176
(S) C35	40.8			40.0-129		03/23/2021 13:10	WG1638176

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Anthracene	0.0190	U	0.0190	0.0500	1	03/23/2021 02:59	WG1638170
Acenaphthene	0.0190	U	0.0190	0.0500	1	03/23/2021 02:59	WG1638170
Acenaphthylene	0.0171	U	0.0171	0.0500	1	03/23/2021 02:59	WG1638170
Benzo(a)anthracene	0.0203	U	0.0203	0.0500	1	03/23/2021 02:59	WG1638170
Benzo(a)pyrene	0.0184	U	0.0184	0.0500	1	03/23/2021 02:59	WG1638170
Benzo(b)fluoranthene	0.0168	U	0.0168	0.0500	1	03/23/2021 02:59	WG1638170
Benzo(g,h,i)perylene	0.0184	U	0.0184	0.0500	1	03/23/2021 02:59	WG1638170
Benzo(k)fluoranthene	0.0202	U	0.0202	0.0500	1	03/23/2021 02:59	WG1638170
Chrysene	0.0179	U	0.0179	0.0500	1	03/23/2021 02:59	WG1638170
Dibenz(a,h)anthracene	0.0160	U	0.0160	0.0500	1	03/23/2021 02:59	WG1638170
Fluoranthene	0.0270	U	0.0270	0.100	1	03/23/2021 02:59	WG1638170
Fluorene	0.0169	U	0.0169	0.0500	1	03/23/2021 02:59	WG1638170
Indeno(1,2,3-cd)pyrene	0.0158	U	0.0158	0.0500	1	03/23/2021 02:59	WG1638170
Naphthalene	0.0917	U	0.0917	0.250	1	03/23/2021 02:59	WG1638170
Phenanthrene	0.0180	U	0.0180	0.0500	1	03/23/2021 02:59	WG1638170
Pyrene	0.0169	U	0.0169	0.0500	1	03/23/2021 02:59	WG1638170
1-Methylnaphthalene	0.0687	U	0.0687	0.250	1	03/23/2021 02:59	WG1638170
2-Methylnaphthalene	0.0674	U	0.0674	0.250	1	03/23/2021 02:59	WG1638170
(S) Nitrobenzene-d5	90.0			31.0-160		03/23/2021 02:59	WG1638170
(S) 2-Fluorobiphenyl	86.8			48.0-148		03/23/2021 02:59	WG1638170
(S) p-Terphenyl-d14	111			37.0-146		03/23/2021 02:59	WG1638170

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	0.0941	U	0.0941	1.00	1	03/21/2021 17:59	WG1638220
Toluene	0.278	U	0.278	1.00	1	03/21/2021 17:59	WG1638220
Ethylbenzene	0.137	U	0.137	1.00	1	03/21/2021 17:59	WG1638220
Total Xylenes	0.174	U	0.174	3.00	1	03/21/2021 17:59	WG1638220
Methyl tert-butyl ether	0.101	U	0.101	1.00	1	03/21/2021 17:59	WG1638220
(S) Toluene-d8	89.2			80.0-120		03/21/2021 17:59	WG1638220
(S) 4-Bromofluorobenzene	95.6			77.0-126		03/21/2021 17:59	WG1638220
(S) 1,2-Dichloroethane-d4	118			70.0-130		03/21/2021 17:59	WG1638220

Semi-Volatile Organic Compounds (GC) by Method FLPRO

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Petroleum Range Organics	100	J U	100	400	1	03/24/2021 20:03	WG1639484
(S) o-Terphenyl	65.8	J		66.0-139		03/24/2021 20:03	WG1639484
(S) C35	46.7			40.0-129		03/24/2021 20:03	WG1639484

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Anthracene	0.0190	U	0.0190	0.0500	1	03/23/2021 03:19	WG1638170
Acenaphthene	0.0190	U	0.0190	0.0500	1	03/23/2021 03:19	WG1638170
Acenaphthylene	0.0171	U	0.0171	0.0500	1	03/23/2021 03:19	WG1638170
Benzo(a)anthracene	0.0203	U	0.0203	0.0500	1	03/23/2021 03:19	WG1638170
Benzo(a)pyrene	0.0184	U	0.0184	0.0500	1	03/23/2021 03:19	WG1638170
Benzo(b)fluoranthene	0.0168	U	0.0168	0.0500	1	03/23/2021 03:19	WG1638170
Benzo(g,h,i)perylene	0.0184	U	0.0184	0.0500	1	03/23/2021 03:19	WG1638170
Benzo(k)fluoranthene	0.0202	U	0.0202	0.0500	1	03/23/2021 03:19	WG1638170
Chrysene	0.0179	U	0.0179	0.0500	1	03/23/2021 03:19	WG1638170
Dibenz(a,h)anthracene	0.0160	U	0.0160	0.0500	1	03/23/2021 03:19	WG1638170
Fluoranthene	0.0270	U	0.0270	0.100	1	03/23/2021 03:19	WG1638170
Fluorene	0.0169	U	0.0169	0.0500	1	03/23/2021 03:19	WG1638170
Indeno(1,2,3-cd)pyrene	0.0158	U	0.0158	0.0500	1	03/23/2021 03:19	WG1638170
Naphthalene	0.0917	U	0.0917	0.250	1	03/23/2021 03:19	WG1638170
Phenanthrene	0.0180	U	0.0180	0.0500	1	03/23/2021 03:19	WG1638170
Pyrene	0.0169	U	0.0169	0.0500	1	03/23/2021 03:19	WG1638170
1-Methylnaphthalene	0.114	U	0.0687	0.250	1	03/23/2021 03:19	WG1638170
2-Methylnaphthalene	0.0674	U	0.0674	0.250	1	03/23/2021 03:19	WG1638170
(S) Nitrobenzene-d5	84.7			31.0-160		03/23/2021 03:19	WG1638170
(S) 2-Fluorobiphenyl	87.4			48.0-148		03/23/2021 03:19	WG1638170
(S) p-Terphenyl-d14	115			37.0-146		03/23/2021 03:19	WG1638170

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3633704-2 03/21/21 15:31

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	0.0941	NI	0.0941	1.00
Ethylbenzene	0.137	NI	0.137	1.00
Methyl tert-butyl ether	0.101	NI	0.101	1.00
Toluene	0.278	NI	0.278	1.00
Xylenes, Total	0.174	NI	0.174	3.00
(S) Toluene-d8	89.9			80.0-120
(S) 4-Bromofluorobenzene	96.1			77.0-126
(S) 1,2-Dichloroethane-d4	115			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3633704-1 03/21/21 14:30

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	5.49	110	70.0-123	
Ethylbenzene	5.00	4.64	92.8	79.0-123	
Methyl tert-butyl ether	5.00	4.84	96.8	68.0-125	
Toluene	5.00	4.13	82.6	79.0-120	
Xylenes, Total	15.0	13.0	86.7	79.0-123	
(S) Toluene-d8			86.8	80.0-120	
(S) 4-Bromofluorobenzene			96.9	77.0-126	
(S) 1,2-Dichloroethane-d4			113	70.0-130	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3633968-1 03/23/21 10:30

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Petroleum Range Organics	100	<u>U</u>	100	400
(S) C35	47.1			40.0-129
(S) o-Terphenyl	87.6			66.0-139

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3633968-2 03/23/21 10:53 • (LCSD) R3633968-3 03/23/21 11:16

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Petroleum Range Organics	1700	1880	2250	111	132	66.0-119		<u>J</u>	17.9	20
(S) C35				39.8	45.5	40.0-129	<u>J</u>			
(S) o-Terphenyl				72.2	82.0	66.0-139				



Method Blank (MB)

(MB) R3634493-1 03/24/21 17:53

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Petroleum Range Organics	100	U	100	400
(S) C35	42.7			40.0-129
(S) o-Terphenyl	59.2	J		66.0-139

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3634493-2 03/24/21 18:15 • (LCSD) R3634493-3 03/24/21 18:36

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Petroleum Range Organics	1700	991	1130	58.3	66.5	66.0-119	J		13.1	20
(S) C35				43.9	49.3	40.0-129				
(S) o-Terphenyl				61.0	68.8	66.0-139	J			

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3633548-3 03/22/21 19:15

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Anthracene	0.0190	IC	0.0190	0.0500
Acenaphthene	0.0190	IC	0.0190	0.0500
Acenaphthylene	0.0171	IC	0.0171	0.0500
Benzo(a)anthracene	0.0203	IC	0.0203	0.0500
Benzo(a)pyrene	0.0184	IC	0.0184	0.0500
Benzo(b)fluoranthene	0.0168	IC	0.0168	0.0500
Benzo(g,h,i)perylene	0.0184	IC	0.0184	0.0500
Benzo(k)fluoranthene	0.0202	IC	0.0202	0.0500
Chrysene	0.0179	IC	0.0179	0.0500
Dibenz(a,h)anthracene	0.0160	IC	0.0160	0.0500
Fluoranthene	0.0270	IC	0.0270	0.100
Fluorene	0.0169	IC	0.0169	0.0500
Indeno(1,2,3-cd)pyrene	0.0158	IC	0.0158	0.0500
Naphthalene	0.0917	IC	0.0917	0.250
Phenanthrene	0.0180	IC	0.0180	0.0500
Pyrene	0.0169	IC	0.0169	0.0500
1-Methylnaphthalene	0.0687	IC	0.0687	0.250
2-Methylnaphthalene	0.0674	IC	0.0674	0.250
(S) Nitrobenzene-d5	85.5			31.0-160
(S) 2-Fluorobiphenyl	84.5			48.0-148
(S) p-Terphenyl-d14	109			37.0-146

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3633548-1 03/22/21 18:40 • (LCSD) R3633548-2 03/22/21 18:58

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Anthracene	2.00	1.69	1.69	84.5	84.5	67.0-150			0.000	20
Acenaphthene	2.00	1.83	1.86	91.5	93.0	65.0-138			1.63	20
Acenaphthylene	2.00	1.91	1.91	95.5	95.5	66.0-140			0.000	20
Benzo(a)anthracene	2.00	1.84	1.88	92.0	94.0	61.0-140			2.15	20
Benzo(a)pyrene	2.00	1.65	1.65	82.5	82.5	60.0-143			0.000	20
Benzo(b)fluoranthene	2.00	1.65	1.67	82.5	83.5	58.0-141			1.20	20
Benzo(g,h,i)perylene	2.00	1.65	1.68	82.5	84.0	52.0-153			1.80	20
Benzo(k)fluoranthene	2.00	1.63	1.61	81.5	80.5	58.0-148			1.23	20
Chrysene	2.00	1.84	1.85	92.0	92.5	64.0-144			0.542	20
Dibenz(a,h)anthracene	2.00	1.65	1.65	82.5	82.5	52.0-155			0.000	20
Fluoranthene	2.00	1.69	1.71	84.5	85.5	69.0-153			1.18	20
Fluorene	2.00	1.93	1.93	96.5	96.5	64.0-136			0.000	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3633548-1 03/22/21 18:40 • (LCSD) R3633548-2 03/22/21 18:58

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Indeno(1,2,3-cd)pyrene	2.00	1.72	1.72	86.0	86.0	54.0-153			0.000	20
Naphthalene	2.00	1.83	1.83	91.5	91.5	61.0-137			0.000	20
Phenanthrene	2.00	1.70	1.72	85.0	86.0	62.0-137			1.17	20
Pyrene	2.00	2.02	2.06	101	103	60.0-142			1.96	20
1-Methylnaphthalene	2.00	1.87	1.87	93.5	93.5	66.0-142			0.000	20
2-Methylnaphthalene	2.00	1.80	1.78	90.0	89.0	62.0-136			1.12	20
<i>(S) Nitrobenzene-d5</i>				95.5	93.0	31.0-160				
<i>(S) 2-Fluorobiphenyl</i>				92.0	90.5	48.0-148				
<i>(S) p-Terphenyl-d14</i>				113	112	37.0-146				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

GLOSSARY OF TERMS

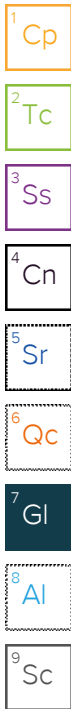
Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.



Qualifier Description

I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J	The value is outside laboratory established criteria.
U	Indicates the compound was analyzed for but not detected above the method detection limit.

ACCREDITATIONS & LOCATIONS

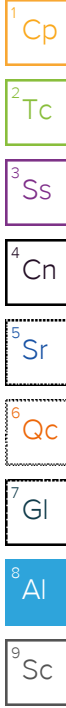
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



Company Name/Address:
ATC Group Services LLC
 5602 Thompson Center Court
 Suite 405
 Tampa, FL 33634

Billing Information:
Accounts Payable
 5602 Thompson Center Court
 Suite 405
 Tampa, FL 33634

Report to:
Scott Patterson

Email To: **scott.patterson@atcgs.com**

Project Description:
 Circle K 2707502

City/State Collected: **Orlando/FL**

Please Circle:
 PT MT CT ET

Phone: **813-681-4067**

Client Project #
0752840132

Lab Project #
ENVCOMTFL-7502

Collected by (print):
S. Helting/ATC

Site/Facility ID #
7502

P.O. #

Collected by (signature):
[Signature]
 Immediately Packed on Ice N Y

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #
 Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	FLPRO 100ml Amb HCl	PAHSIMLVl 40mlAmb-NoPres-WT	V8260BTEXM 40mlAmb-HCl
MW-1	Grab	GW		3/19/21	1010	7	X	X	X
MW-2	↓	GW			9:30	7	X	X	X
MW-3	↓	GW			1120	7	X	X	X
MW-4	↓	GW			1150	7	X	X	X
MW-5	↓	GW			1045	7	X	X	X

Analysis / Container / Preservative									



12065 Lebanon Road Mt Juliet, TN 37122
 Phone: 615-758-5858 Alt: 800-767-5859
 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: <https://info.pacelabs.com/hubfs/pac-standard-terms.pdf>

SDG # **1329080**
J165

Acctnum: **ENVCOMTFL**

Template: **T176006**

Prelogin: **P834798**

PM: **206 - Jeff Carr**

PB: **BF 3/16/21**

Shipped Via: **FedEX Priority**

Remarks	Sample # (lab only)
	21
	-02
	-03
	-04
	-05

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other _____

Remarks: **Rush 48hr Turn**

pH _____ Temp _____
 Flow _____ Other _____

Sample Receipt Checklist		
COC Seal Present/Intact:	<input checked="" type="checkbox"/> NP	<input type="checkbox"/> Y <input type="checkbox"/> N
COC Signed/Accurate:	<input checked="" type="checkbox"/>	<input type="checkbox"/> Y <input type="checkbox"/> N
Bottles arrive intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/> Y <input type="checkbox"/> N
Correct bottles used:	<input checked="" type="checkbox"/>	<input type="checkbox"/> Y <input type="checkbox"/> N
Sufficient volume sent:	<input checked="" type="checkbox"/>	<input type="checkbox"/> Y <input type="checkbox"/> N
If Applicable		
VOA Zero Headspace:	<input checked="" type="checkbox"/>	<input type="checkbox"/> Y <input type="checkbox"/> N
Preservation Correct/Checked:	<input checked="" type="checkbox"/>	<input type="checkbox"/> Y <input type="checkbox"/> N
RAD Screen <0.5 mR/hr:	<input checked="" type="checkbox"/>	<input type="checkbox"/> Y <input type="checkbox"/> N

Relinquished by: (Signature)
[Signature]

Date: **3/16/21**
 Time: **1:22PM**

Received by: (Signature)
[Signature]

Trip Blank Received: Yes No
 HCL MeOH TBR
 Temp: **12.01** °C
 Bottles Received: **35**
1.7+1=1.8

Relinquished by: (Signature)
[Signature]

Date: **3/19/21**

Received by: (Signature)
[Signature]

Date: **3-20-21**
 Time: **0930**

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Received for lab by: (Signature)
Patricia Michael

Date: **3-20-21**
 Time: **0930**

Hold: _____
 Condition: **NCF / OK**



TALLAHASSEE COPY RECEIVED
O.C. ENVIRONMENTAL
PROTECTION DIVISION

5602 Thompson Center Court, Suite 405
Tampa, Florida 33634
www.atcassociates.com
813.889.8960
Fax 813.889.8754

2011 FEB 18 AM 11:50

Ms. Carol White
Orange County Environmental Protection Division
Leeds Commerce Center
800 Mercy Drive, Suite 4
Orlando, Florida 32808-7896

February 17, 2011

**Subject: Natural Attenuation Monitoring Annual Report - Year Two
Circle K #7502**
16959 East Colonial Drive
Orlando (Bithlo), Orange County, Florida
FDEP Facility I.D. No. 488521400
FDEP Work Order No. 2011-48-W91082
ATC Project No. 05.16564.0631

Dear Ms. White:

ATC Associates Inc. (ATC) has completed the Second Year of Natural Attenuation Monitoring (NAM) activities for the above referenced site. A copy of the Florida Department of Environmental Protection (FDEP) Work Order and associated Verbal Change Orders (VCOs) are included as **Appendix A**. A site plan illustrating current site conditions has been provided as **Figure 1**. The well specifications, top-of-casing (TOC) elevations, groundwater level measurements, and the calculated water table elevations are presented in **Table 1**. Copies of the groundwater sampling logs and the equipment calibration log are provided in **Appendix B**. Groundwater analytical results are summarized in **Table 2**, and a copy of the laboratory analytical report is also provided in **Appendix B**.

Year Two, Quarter One NAM Event – January 6, 2010

Static depth to groundwater measurements were collected from monitoring wells MW-1 through MW-5 and MW-8 through MW-12 prior to groundwater sampling. Depth to groundwater in the monitoring wells ranged from 3.89 to 5.71 feet below land surface (bls). Groundwater flow in the surficial aquifer was inferred towards the south-southwest in January 2010, which is generally consistent with historical interpretations.

Groundwater samples were collected from monitoring wells MW-1, MW-2, MW-3, MW-5, MW-9, MW-10, MW-11, and MW-12 for the quarterly groundwater sampling event. All groundwater samples were sent to Southern Petroleum Laboratories, Inc. (SPL) in Scott, Louisiana, to be analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) and methyl tert-butyl ether (MTBE) via EPA Method 8021B. Groundwater samples were also analyzed for polycyclic aromatic hydrocarbons (PAHs) via EPA Method 8270D.



Dissolved naphthalene (35 µg/L) was detected in the groundwater sample collected from monitoring well MW-10 at a concentration exceeding its applicable Chapter 62-777, F.A.C., Groundwater Cleanup Target Level (GCTL) of 20 µg/L. All other analyzed constituents were below their respective GCTLs for samples collected from monitoring wells MW-1, MW-2, MW-3, MW-5, MW-9, MW-10, MW-11, and MW-12.

Year Two, Quarter Two NAM Event – May 3, 2010

Static depth to groundwater measurements were collected from monitoring wells MW-1 through MW-5 and MW-8 through MW-12 prior to groundwater sampling. Depth to groundwater in the monitoring wells ranged from 2.95 feet bls in MW-11 to 4.78 feet bls in MW-10. Groundwater flow in the surficial aquifer was inferred towards the south-southwest in May 2010, which is generally consistent with historical interpretations.

Groundwater samples were collected from monitoring wells MW-1, MW-3, MW-5, MW-10, MW-11, and MW-12 on May 3, 2010, for the quarterly groundwater sampling event. The groundwater samples were sent to SPL in Scott, Louisiana, to be analyzed BTEX/MTBE via EPA Method 8021B and for PAHs via EPA Method 8270D.

Dissolved naphthalene (16 µg/L) was detected in the groundwater sample collected from monitoring well MW-1 at a concentration exceeding the applicable GCTL. Each of the other analyzed parameters was below its respective GCTL in groundwater samples collected from MW-1. Groundwater samples collected from monitoring wells MW-3, MW-5, MW-10, MW-11, and MW-12 were below their respective GCTLs for all analyzed parameters.

Year Two, Quarter Three NAM Event – September 14, 2010

Static depth to groundwater measurements were collected from monitoring wells MW-1, MW-3, MW-5, MW-10, MW-11, and MW-12 for the quarterly sampling event. Depth to groundwater in the monitoring wells ranged from 3.35 feet bls in MW-11 to 5.20 feet bls in MW-10. Groundwater flow in the surficial aquifer was inferred towards the south-southwest in September 2010, which is consistent with historical interpretations.

Groundwater samples were collected from monitoring wells MW-1, MW-3, MW-5, MW-10, MW-11, and MW-12. Each groundwater sample was sent to SPL in Scott, Louisiana, to be analyzed for BTEX/MTBE via EPA Method 8021B and for PAHs via EPA Method 8270D.

Dissolved naphthalene (22 µg/L) was detected in the groundwater sample collected from monitoring well MW-1 at a concentration exceeding the GCTL. Each of the other analyzed parameters was below its respective GCTL in groundwater samples collected from MW-1. Groundwater samples collected from monitoring wells MW-3, MW-5, MW-10, MW-11, and MW-12 were below their respective GCTLs for the analyzed parameters.

Year Two, Quarter Four NAM Event – January 28, 2011

ATC oversaw the installation of one monitoring well (MW-13) by Preferred Drilling Solutions, Inc. (PDS) on January 18, 2011. MW-13 was installed downgradient of MW-10 at the edge of the property line to characterize the horizontal extent of dissolved petroleum contamination. The location of the monitoring well is depicted on **Figure 1**.

Monitoring well MW-13 was installed to a total depth of 12 feet bls and it was constructed of two-inch diameter Schedule 40 PVC with 10 feet of 0.01-inch slotted well screen. The well was completed flush to grade with the land surface and finished with a protective steel manhole and concrete pad. The soil boring log and monitoring well construction details are provided in **Appendix C**. Monitoring well MW-13 was developed for approximately 25 minutes using a centrifugal pump, until the purged water was generally visually clear of sediment. The development water (approximately 50 gallons) was discharged onto the asphalt surface and allowed to evaporate.

Static depth to groundwater measurements were collected from monitoring wells MW-1, MW-3, MW-5, MW-10, MW-11, MW-12, and MW-13 on January 28, 2011, for the annual sampling event. Depth to groundwater in the monitoring wells ranged from 4.12 feet bls in MW-11 to 5.91 feet bls in MW-10, on January 28, 2011. Groundwater flow in the surficial aquifer was inferred towards the south-southwest in January 2011, which is consistent with historical interpretations. **Figure 2** illustrate the groundwater elevation contour map based on the January 28, 2011, measurements.

Groundwater samples were collected from monitoring wells MW-1, MW-3, MW-5, MW-10, MW-11, MW-12, and MW-13 on January 28, 2011, for the annual sampling event. Each groundwater sample was sent to SPL in Scott, Louisiana, to be analyzed for BTEX/MTBE via EPA Method 8021B and for PAHs via EPA Method 8270D.

Dissolved naphthalene (20 µg/L) was detected in the groundwater sample collected from monitoring well MW-10 at a concentration exceeding the GCTL. Each of the other analyzed parameters was below its respective GCTL in groundwater samples collected from MW-10. Groundwater samples collected from monitoring wells MW-1, MW-3, MW-5, MW-11, MW-12, and MW-13 were below their respective GCTLs for the analyzed parameters. A dissolved naphthalene plume map is presented as **Figure 4**.

Conclusions and Recommendations

The newly-installed monitoring well MW-13 was installed in order to determine if dissolved petroleum impacts were migrating offsite in the vicinity of MW-1. As previously stated, concentrations were below GCTLs for both MW-1 and MW-13 during the annual NAM event in January 2011.

Dissolved naphthalene was detected above the GCTL in the groundwater sample collected from monitoring well MW-10 during the January 2011 sampling event. ATC recommends the




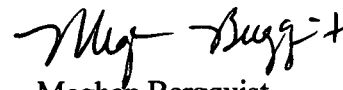
installation of one monitoring well downgradient of MW-10 at the edge of the property boundary to confirm groundwater contamination is contained within the property boundaries. The additional monitoring well is proposed in order to determine if the No Further Action with conditions criteria of Chapter 62-780.680, F.A.C. is appropriate for this site. The location of the proposed monitoring well is illustrated on **Figure 5**.

Please contact ATC at (813) 889-8960 if you have any questions regarding the information provided in this correspondence.

Sincerely,

ATC ASSOCIATES INC.


Andreia Zlatea
Staff Engineer


Meghan Bergquist
Project Manager

Attachments

cc: Ms. Beni Siersema, ConocoPhillips Contract Program Manager



5602 Thompson Center Court, Suite 405
Tampa, Florida 33634
www.atcassociates.com
813.889.8960
Fax 813.889.8754

PROFESSIONAL GEOLOGIST CERTIFICATION

NATURAL ATTENUATION MONITORING QUARTERLY REPORT YEAR TWO

CIRCLE K #7502

16959 EAST COLONIAL DRIVE
ORLANDO (BITHLO), FLORIDA
ATC PROJECT NUMBER 05.16564.0631
FDEP FACILITY NUMBER 488521400

I have reviewed the geologic/hydrogeologic aspects of this document and found them to conform to currently accepted geologic practices pursuant to Chapter 492 of the Florida Statutes.

Cason Commander P. G.
Florida P.G. Registration #2582

Date



Environmental, Geotechnical and Materials Professionals

TABLES

TABLE 1: GROUNDWATER ELEVATION TABLE

Facility Name: Circle K #7502
Facility ID#: 488521400

All Measurements = Feet
No Data = Blank

Well No.	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6
Diameter (inches)	2	2	2	2	2	2
Well Depth	12	12	12	12	12	12
Screen Interval (feet)	2 -12	2 -12	2 -12	2 -12	2 -12	2 -12
TOC Elevation	100.00	100.23	99.91	99.81	100.29	100.38

DATE	DTW	ELEV	FP	DTW	ELEV	FP	DTW	ELEV	FP	DTW	ELEV	FP	DTW	ELEV	FP	DTW	ELEV	FP
12/09/05	4.19	95.81	--	4.39	95.84	--	4.19	95.72	--	3.59	96.22	--	4.39	95.90	--	4.08	96.30	--
03/09/06				5.93	94.30	--	5.73	94.18	--				5.91	94.38	--			
06/26/06	4.58	95.42	--	5.24	94.99	--												
11/10/06										4.92	94.89	--						
11/17/06																		
06/22/07	6.68	93.32	--	6.80	93.43	--	6.49	93.42	--	6.29	93.52	--	6.70	93.59	--	6.51	93.87	--
07/05/07	6.73	93.27	--	6.90	93.33	--				6.43	93.38	--				6.79	93.59	--
09/19/07	4.87	95.13	--	5.15	95.08	--	4.97	94.94	--	4.60	95.21	--	5.18	95.11	--			
11/06/07	3.91	96.09	--	4.01	96.22	--	3.81	96.10	--	3.48	96.33	--	3.92	96.37	--			
11/19/08	5.84	94.16	--	5.86	94.37	--	5.80	94.11	--	5.31	94.50	--	5.63	94.66	--	5.22	95.16	--
10/05/09	4.90	95.10	--	5.02	95.21	--	4.90	95.01	--	4.49	95.32	--	4.93	95.36	--			
01/06/10	5.47	94.53	--	5.59	94.64	--	5.40	94.51	--	5.02	94.79	--	5.48	94.81	--			
05/03/10	4.51	95.49	--				4.45	95.46	--				4.58	95.71	--			
09/14/10	4.94	95.06	--				4.89	95.02	--				5.02	95.27	--			
01/28/11	5.62	94.38	--				5.66	94.25	--				5.79	94.50	--			

TABLE 1: GROUNDWATER ELEVATION TABLE

Facility Name: Circle K #7502
 Facility ID#: 488521400

All Measurements = Feet
 No Data = Blank

Well No.	DMW-7	MW-8	MW-9	MW-10	MW-11	MW-12
Diameter	2	2	2	2	2	2
Well Depth	30	12	12	12	12	12
Screen Interval	25 -30	2 -12	2 -12	2 -12	2 -12	2 -12
TOC Elevation	100.18	100.16	100.49	100.30	98.07	98.16

DATE	DTW	ELEV	FP	DTW	ELEV	FP	DTW	ELEV	FP	DTW	ELEV	FP	DTW	ELEV	FP	DTW	ELEV	FP
12/09/05	5.91	94.27	--															
03/09/06				5.68	94.48	--	5.99	94.50	--									
06/26/06							5.44	95.05	--	5.42	94.88	--						
11/10/06				5.40	94.76	--				5.81	94.49	--	4.05	94.02	--	4.21	93.95	--
11/17/06													4.33	93.74	--	4.51	93.65	--
06/22/07	6.82	93.36	--	6.38	93.78	--	6.73	93.76	--	6.92	93.38	--	5.00	93.07	--	5.28	92.88	--
07/05/07	6.88	93.30	--	6.58	93.58	--	6.95	93.54	--				5.14	92.93	--	5.35	92.81	--
09/19/07				5.01	95.15	--	5.19	95.30	--	5.27	95.03	--	3.27	94.80	--	3.52	94.64	--
11/06/07				3.65	96.51	--	3.94	96.55	--	4.14	96.16	--	2.33	95.74	--	2.59	95.57	--
11/19/08	5.98	94.20	--	5.21	94.95	--	5.61	94.88	--	6.02	94.28	--	4.23	93.84	--	4.59	93.57	--
10/05/09				4.63	95.53	--	4.97	95.52	--	5.13	95.17	--	3.31	94.76	--	3.55	94.61	--
01/06/10				5.20	94.96	--	5.53	94.96	--	5.71	94.59	--	3.89	94.18	--	4.14	94.02	--
05/03/10										4.78	95.52	--	2.95	95.12	--	3.21	94.95	--
09/14/10										5.20	95.10	--	3.35	94.72	--	3.61	94.55	--
01/28/11										5.91	94.39	--	4.12	93.95	--	4.34	93.82	--

TABLE 2: GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY

Facility Name: Circle K #7502

Facility ID#: 488521400

Not Detected = ND

No Data = Blank

Samples Destroyed = SD

Analytical Results = ug/L, unless otherwise indicated

Sample		Benzene	Toluene	Ethyl benzene	Total Xylenes	Total BTEX	MTBE	Naph.	1Meth. Naph.	2Meth. Naph.	Total Naphs.	Benzo(a) pyrene	1,2,4-Trimethyl benzene	EDB	Lead	TPH (mg/L)
Location	Date															
GCTLs		1	40	30	20	NA	20	14	28	28	NA	0.2	10	0.02	15	5,000
NADSCs		100	400	300	200	NA	200	140	280	280	NA	20	100	2	150	50,000
DP-1	5/13/2004	<1.0	<1.0	<1.0	<1.0	<4.0	<1.0	<1.0			<1.0			<1.0		<0.525
DP-2	5/13/2004	<1.0	<1.0	<1.0	<1.0	<4.0	<1.0	<1.0			<1.0			<1.0		<0.525
DP-3	5/13/2004	<1.0	<1.0	<1.0	<1.0	<4.0	<1.0	<1.0			<1.0			<1.0		<0.525
DP-1	9/28/2005	<1.0	<1.0	<1.0	7.5	7.5	<5.0	8.2	<5.0	<5.0	8.2					
DP-2	9/28/2005	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<5.0	<5.0	<5.0	<15.0					
DP-3	9/28/2005	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<5.0	<5.0	<5.0	<15.0					
DP-4	9/28/2005	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<5.0	<5.0	<5.0	<15.0					
DP-5	9/28/2005	<1.0	<1.0	<1.0	<2.0	<5.0	<5.0	<5.0	<5.0	<5.0	<15.0					
DP-6	9/28/2005	510	1,500	1,100	8,700	11,810	750	680	<500	<500	680					
DP-7	9/28/2005	<10	10	12	630	652	<50	66	<50	<50	66					
DP-8	9/28/2005	<100	1,200	1,200	7,000	9400	<500	640	<500	<500	640					
DP-9	9/28/2005	<1.0	<1.0	<1.0	28.7	28.7	<5.0	8.4	<5.0	6.8	15.2					
DP-10	9/28/2005	<5.0	<5.0	210	165	375	<25	240	37	60	337					
DP-11	9/28/2005	<1.0	<1.0	1.4	<2.0	1.4	<5.0	15.9	25.4	23.8	65.1					
MW-1	12/9/2005	<0.2	0.21	0.33	1.7	2.24	<0.21	0.27	0.18	0.19	0.64	ND	0.75	<0.0028	<0.00341	<0.00044
	7/5/2007	<0.50	<0.51	<0.44	<0.50	<1.95	<0.44	0.93	<0.50	<0.50	0.93	<0.057				
	9/19/2007	<0.18	<0.25	8.5	<0.22	8.5	<2.8	0.77	<0.074	<0.056	0.77	<0.047				
	11/6/2007	<0.18	<0.25	12	4.9	16.9	<2.8	4.4	0.26	0.25	4.91	0.22				
	11/19/2008	<0.18	<0.25	15	<0.22	15	<2.8	12 V	2	1.3	15.3	<0.0097				
	10/5/2009	<0.75	<0.59	22	16.4	38	2.4 I	3.7	0.2	0.096	4.0	<0.016				

I = Analyte detected but could not be quantified with certainty
 V = Analyte detected in the associated Method Blank above Rep. Limit
 Q = Reported value is between lab MDL and the lab PQL

TABLE 2: GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY

Facility Name: Circle K #7502

Facility ID#: 488521400

Not Detected = ND

No Data = Blank

Samples Destroyed = SD

Analytical Results = ug/L, unless otherwise indicated

Sample		Benzene	Toluene	Ethyl benzene	Total Xylenes	Total BTEX	MTBE	Naph.	1Meth. Naph.	2Meth. Naph.	Total Naphs.	Benzo(a) pyrene	1,2,4-Trimethyl benzene	EDB	Lead	TPH (mg/L)
Location	Date															
GCTLs		1	40	30	20	NA	20	14	28	28	NA	0.2	10	0.02	15	5,000
NADSCs		100	400	300	200	NA	200	140	280	280	NA	20	100	2	150	50,000
MW-1 (cont.)	1/6/2010	<0.75	<0.59	11	3.3	14	<0.84	7	0.34	0.42	8	<0.036				
	5/3/2010	<0.75	<0.59	26	10.9	37	<0.84	16	1.1	1.6	19	<0.036				
	9/14/2010	<0.6	<0.83	22	3	25	5.4 I	22	2.7	5.4	30	<0.036				
	1/28/2011	<0.6	<0.83	<0.48	<1	<3	<0.72	1.4	0.45	0.36	2.21	<0.036				
MW-2	12/9/2005	<0.3	<0.94	<0.23	<0.34	<1.81	<0.22	0.094	<0.058	<0.096	0.094					<0.22
	6/26/2006	<0.2	9	93	318	420	<0.21	6.7			6.7					
	7/5/2007	<0.50	<0.51	<0.44	<0.50	<1.95	1.1	<0.25	<0.50	<0.50	<1.25	<0.057				
	9/19/2007	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	<0.099	<0.074	<0.056	<0.229	<0.047				
	11/6/2007	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	<0.099	<0.074	<0.056	<0.299	<0.047				
	11/19/2008	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	0.095 V	0.028 I	0.043 I	0.166	<0.0097				
	10/5/2009	<0.75	<0.59	<0.58	<0.22	<2.14	<0.84	<0.03	<0.02	<0.035	<0.09	<0.016				
	1/6/2010	<0.75	<0.59	<0.58	<0.22	<2.14	<0.84	<0.036	<0.036	<0.036	<0.108	<0.036				
MW-3	12/9/2005	<0.3	<0.94	<0.23	<0.34	<1.81	<0.22	<0.25	<0.31	<0.63						<0.22
	6/22/2007	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	<0.099	<0.074	<0.056	<0.229	<0.047				
	9/19/2007	<0.18	<0.25	1.2	<0.22	1.2	<2.8	1	<0.074	<0.056	1	<0.047				
	11/6/2007	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	<0.099	<0.074	<0.056	<0.229	<0.047				
	11/19/2008	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	0.024 IV	<0.023	<0.023	0.024	<0.0097				
	10/5/2009	<0.75	<0.59	<0.58	<0.22	<2.14	<0.84	<0.03	<0.02	<0.035	<0.09	<0.016				
	1/6/2010	<0.75	<0.59	<0.58	<0.22	<2.14	<0.84	<0.036	<0.036	<0.036	<0.108	<0.036				
	5/3/2010	<0.75	<0.59	<0.58	<0.22	<2.14	<0.84	<0.036	<0.036	<0.036	<0.108	<0.036				
	9/14/2010	<0.6	<0.83	<0.48	<1	<2.91	<0.72	<0.036	<0.036	<0.036	<0.108	<0.036				
	1/28/2011	<0.6	<0.83	<0.48	<1	<3	<0.72	<0.036	<0.036	<0.036	<0.108	<0.036				
MW-4	12/9/2005	<0.3	<0.94	<0.23	<0.34	<1.81	<0.22	<0.055	<0.058	<0.096	<0.209					<0.22
	7/5/2007	<0.50	<0.51	<0.44	<0.50	<1.95	<0.44	<0.25	<0.50	<0.50	<1.25	<0.057				
MW-5	12/9/2005	<0.3	<0.94	8.3	45	53.3	<0.22	5.8	5.9	7	18.7					<0.22
	3/9/2006	0.61	<0.94	4.4	25	30.01	<0.22									
	6/22/2007	<0.18	<0.25	37	157	194	<2.8	9.4	2.5	5.9	17.8	<0.047				
	9/19/2007	<0.18	<0.25	7.3	15.6	22.9	<2.8	<0.099	<0.074	<0.056	<0.229	<0.047				
	11/6/2007	<0.18	<0.25	5.8	20.6	26.4	<2.8	1.1	<0.074	<0.056	1.1	<0.047				
	11/19/2008	<0.18	<0.25	22	42 V	64	<2.8	8.5 V	2.8	5.2	16.5	<0.0097				
10/5/2009	<0.75	<0.59	5.7	<0.22	5.7	1.5 I	2	1	1.7	5	<0.016					

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V = Analyte detected in the associated Method Blank above Rep. Limit

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TABLE 2: GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY

Facility Name: Circle K #7502

Facility ID#: 488521400

Not Detected = ND

No Data = Blank

Samples Destroyed = SD

Analytical Results = ug/L, unless otherwise indicated

Sample		Benzene	Toluene	Ethyl benzene	Total Xylenes	Total BTEX	MTBE	Naph.	1Meth. Naph.	2Meth. Naph.	Total Naphs.	Benzo(a) pyrene	1,2,4-Trimethyl benzene	EDB	Lead	TPH (mg/L)
Location	Date															
GCTLs		1	40	30	20	NA	20	14	28	28	NA	0.2	10	0.02	15	5,000
NADSCs		100	400	300	200	NA	200	140	280	280	NA	20	100	2	150	50,000
MW-5 (cont.)	1/6/2010	<0.75	<0.59	12	3.6	16	<0.84	3.6 V	1.3	2.8	7.7	<0.036				
	5/3/2010	<0.75	<0.59	13	<0.22	13	<0.84	4.1	1.5	3.3	8.9	<0.036				
	9/14/2010	<0.6	<0.83	12	4.7	16.7	<0.72	4.5	1.1	2	7.6	<0.036				
	1/28/2011	<0.6	<0.83	5.2	<1	5.2	<0.72	2.8	0.83	1.4	5.03	<0.036				
MW-6	12/9/2005	<0.3	<0.94	<0.23	<0.34	<1.81	<0.22	0.16	<0.058	0.11	0.27					<0.22
	7/5/2007	<0.50	<0.51	<0.44	<0.50	<1.95	<0.44	<0.25	<0.50	<0.50	<1.25	0.083 Q				
DMW-7	12/9/2005	<0.3	<0.94	<0.23	2.7	2.7	<0.22	0.061	0.089	<0.096	0.15					0.28
	7/5/2007	<0.50	0.67	<0.44	<0.50	0.67	<0.44	<0.25	<0.50	<0.50	<1.25	<0.057				
MW-8	3/9/2006	<0.3	<0.94	<0.23	<0.34	<1.81	<0.22	<0.087	<0.08	<0.08	<0.247					<0.29
	7/5/2007	<0.50	<0.51	<0.44	<0.50	<1.95	<0.44	<0.25	<0.50	<0.50	<1.25	<0.057				
MW-9	3/9/2006	<0.3	<0.94	<0.23	<0.34	<1.81	<0.22	<0.087	<0.08	<0.08	<0.247					<0.29
	6/22/2007	SD	SD	SD	SD	SD	SD	<0.099	<0.074	<0.056	<0.229	<0.047				
	7/5/2007	<0.50	<0.51	<0.44	<0.50	<1.95	<0.44									
	9/19/2007	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	<0.099	<0.074	<0.056	<0.229	<0.047				
	11/6/2007	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	<0.099	<0.074	<0.056	<0.229	<0.047				
	11/19/2008	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	<0.023	<0.023	<0.023	<0.069	<0.0097				
	10/5/2009	<0.75	<0.59	<0.58	<0.22	<2.14	<0.84	<0.03	<0.02	<0.035	<0.09	<0.016				
1/6/2010	<0.75	<0.59	<0.58	<0.22	<2.14	<0.84	<0.036	<0.036	0.091 I	0.091	<0.036					
MW-10	6/26/2006	1.8	1.2	43	171	217	1.2	61	25	26	112	ND	110			0.59
	6/22/2007	1.5	<0.25	160	45	206.5	<2.8	62	6.4	14	82.4	<0.047				
	9/19/2007	<0.18	<0.25	84	5.2	89.2	<2.8	<0.099	3.3	1.1	4.4	<0.047				
	11/6/2007	<0.18	<0.25	1.9	<0.22	1.9	<2.8	18	1.6	2.8	22.4	<0.047				
	11/19/2008	0.65 I	0.57 I	140	57	198.22	<0.28	0.98 V	0.13	0.054	1.164	<0.0097				
	10/5/2009	<0.75	<0.59	19	<0.22	19	<0.84	34	5.8	11	51	<0.016				
	1/6/2010	<0.75	<0.59	5.1	<0.22	5.1	<0.84	35	5.1	9.4	50	<0.036				
	5/3/2010	<0.75	<0.59	<0.58	<0.22	<2.14	<0.84	11	1.9	3.4	16	<0.036				
	9/14/2010	<0.6	<0.83	<0.48	<1	<2.91	<0.72	8.5	1.9	3.8	14.2	<0.036				
1/28/2011	<0.6	<0.83	5.4	<1	5.4	<0.72	20	4.1	3.2	27.3	<0.036					

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TABLE 2: GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY

Facility Name: Circle K #7502

Facility ID#: 488521400

Not Detected = ND

No Data = Blank

Samples Destroyed = SD

Analytical Results = ug/L, unless otherwise indicated

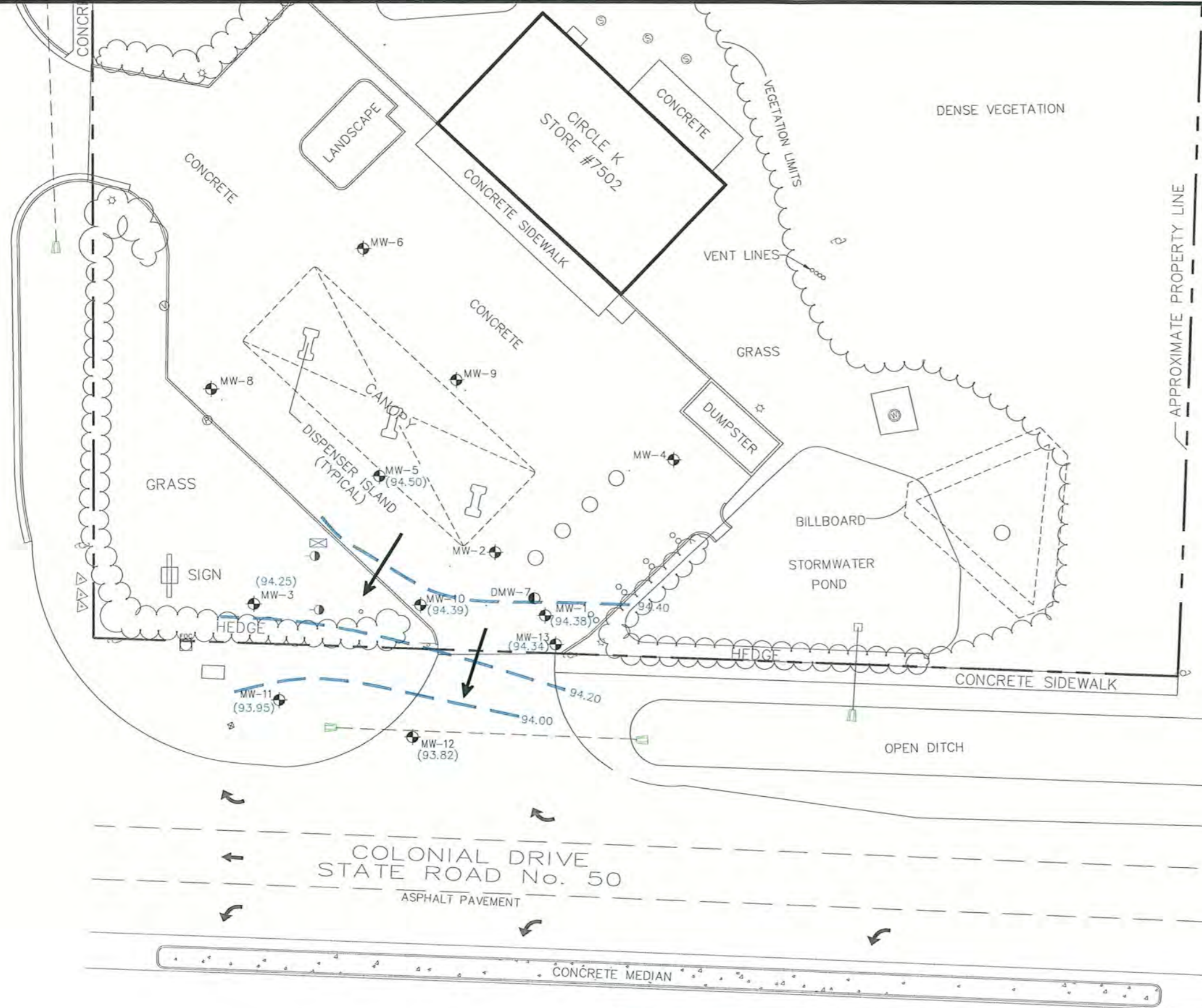
Sample		Benzene	Toluene	Ethyl benzene	Total Xylenes	Total BTEX	MTBE	Naph.	1Meth. Naph.	2Meth. Naph.	Total Naphs.	Benzo(a) pyrene	1,2,4-Trimethyl benzene	EDB	Lead	TPH (mg/L)
Location	Date															
GCTLs		1	40	30	20	NA	20	14	28	28	NA	0.2	10	0.02	15	5,000
NADSCs		100	400	300	200	NA	200	140	280	280	NA	20	100	2	150	50,000
MW-11	11/17/2006	<0.50	<0.50	0.71	<0.50	0.71	0.57	0.57	<0.50	<0.50	0.57	<0.057				
	6/22/2007	SD	SD	SD	SD	SD	SD	<0.099	<0.074	<0.056	<0.229	<0.047				
	7/5/2007	<0.50	<0.51	<0.44	<0.50	<1.95	<0.44									
	9/19/2007	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	<0.099	<0.074	<0.056	<0.229	<0.047				
	11/6/2007	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	<0.099	<0.074	<0.056	<0.229	<0.047				
	11/19/2008	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	<0.023	<0.023	<0.023	<0.069	<0.0097				
	10/5/2009	<0.75	<0.59	<0.58	<0.22	<2.14	2.8 I	<0.03	<0.02	<0.035	<0.09	<0.016				
	1/6/2010	<0.75	<0.59	<0.58	<0.22	<2.14	<0.84	<0.036	<0.036	<0.036	<0.108	<0.036				
	5/3/2010	<0.75	<0.59	<0.58	<0.22	<2.14	<0.84	0.1 I	<0.036	<0.036	0.1	<0.036				
	9/14/2010	<0.6	<0.83	<0.48	<1	<2.91	<0.72	<0.036	<0.036	<0.036	<0.108	<0.036				
	1/28/2011	<0.6	<0.83	<0.48	<1	<3	<0.72	0.092 I	<0.036	<0.036	0.092	<0.036				
MW-12	11/17/2006	<0.50	<0.51	<0.44	1.3	1.3	2.7	7	0.78	1.1	8.88	<0.057				
	6/22/2007	SD	SD	SD	SD	SD	SD	19	0.92	1.7	21.62	<0.047				
	7/5/2007	1.1	<0.51	17	2.1	20.2	0.47									
	9/19/2007	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	4.9	<0.074	<0.056	4.9	<0.047				
	11/6/2007	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	1.1	<0.074	<0.056	1.1	<0.047				
	11/19/2008	<0.18	<0.25	<0.2	<0.22	<0.85	<2.8	6.2 V	0.4	0.41	7.01	<0.0097				
	10/5/2009	<0.75	<0.59	<0.58	<0.22	<2.14	<0.84	<0.03	<0.02	<0.035	<0.09	<0.016				
	1/6/2010	<0.75	<0.59	<0.58	<0.22	<2.14	<0.84	2.5	0.25	0.44	3.2	<0.036				
	5/3/2010	<0.75	<0.59	<0.58	<0.22	<2.14	<0.84	1	0.16	0.26	1	<0.036				
	9/14/2010	<0.6	<0.83	<0.48	<1	<2.91	<0.72	0.23	0.09	0.2	0.52	<0.036				
1/28/2011	<0.6	<0.83	<0.48	<1	<3	<0.72	0.26	<0.036	<0.036	0.26	<0.036					
MW-13	1/28/2011	<0.6	<0.83	<0.48	<1	<3	<0.72	<0.036	<0.036	<0.036	<0.108	<0.036				
DP-11 (via SPLP)	12/7/2005															2.4

I = Analyte detected but could not be quantified with certainty

V = Analyte detected in the associated Method Blank above Rep. Limit

Q = Reported value is between lab MDL and the lab PQL

COLUMBIA SCHOOL ROAD
ASPHALT PAVEMENT



LEGEND:

- PAY PHONE
- VACUUM
- TRAFFIC SIGNAL BOX
- UTILITY POLE
- LIGHT POLE
- SANITARY SEWER MANHOLE
- WELL
- FIBER OPTIC CABLE MARKER
- FIRE DEPARTMENT CONNECTION
- MITTERED END SECTION
- MONITORING WELL LOCATION
- DEEP MONITORING WELL LOCATION
- (94.39) WATER TABLE ELEVATION (FT)
- EQUIPOTENTIAL LINE
- GROUND WATER FLOW DIRECTION
- CONTOUR INTERVAL = 0.20 FEET

COLONIAL DRIVE
STATE ROAD No. 50
ASPHALT PAVEMENT



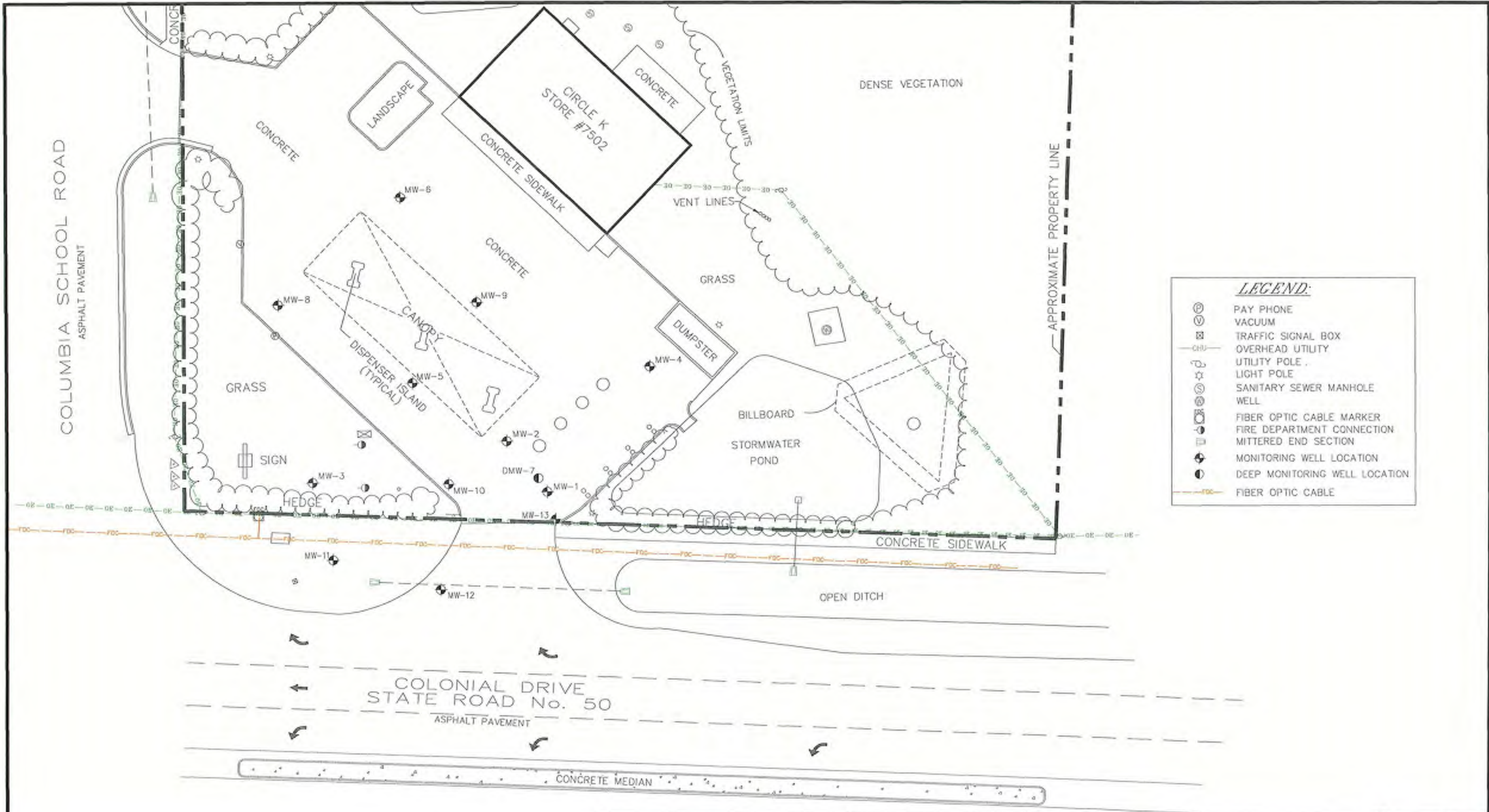
VATC
Associates Inc.

5602 Thompson Center Court
Suite 405
Tampa, Florida 33634
(813) 889-8960
(813) 889-8754 FAX

DRAWN BY: S.A.M. CHECKED BY: M.B.

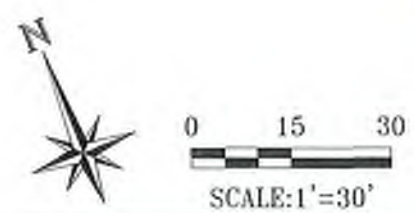
GROUNDWATER ELEVATION CONTOUR MAP
JANUARY 28, 2011
CIRCLE K STORE #7502
16959 E. HIGHWAY 50
BITHLO, FLORIDA

PROJECT NO.: 05.16564.0631
SCALE: 1" = 30'
DATE: 02-15-11
FIGURE NO.: 2



LEGEND:

	PAY PHONE
	VACUUM
	TRAFFIC SIGNAL BOX
	OVERHEAD UTILITY
	UTILITY POLE
	LIGHT POLE
	SANITARY SEWER MANHOLE WELL
	FIBER OPTIC CABLE MARKER
	FIRE DEPARTMENT CONNECTION
	MITERED END SECTION
	MONITORING WELL LOCATION
	DEEP MONITORING WELL LOCATION
	FIBER OPTIC CABLE



ATC
Associates Inc.

5602 Thompson Center Court
Suite 400
Tampa, Florida 33634
(813) 889-5900
(813) 889-5754 FAX

DRAWN BY: S.A.M. CHECKED BY: M.B.

SITE MAP
CIRCLE K STORE #7502
16959 E. HIGHWAY 50
BITHLO, FLORIDA

PROJECT NO.: 05.16564.0631
SCALE: 1" = 30'
DATE: 02-15-11
FIGURE NO.: 1

COLUMBIA SCHOOL ROAD
ASPHALT PAVEMENT

09-19-07	11-06	07-11-19	08-10-05	09-01-06	10-05-03	10-09-14	10-01-28	11
<0.18	<0.18	<0.18	<0.75	<0.75	<0.75	<0.6	<0.6	<0.6
<0.25	<0.25	<0.25	<0.59	<0.59	<0.59	<0.83	<0.83	<0.83
<0.2	<0.2	<0.2	<0.58	<0.58	<0.58	<0.48	<0.48	<0.48
<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<1	<1	<1
<2.8	<2.8	<2.8	2.8 I	<0.84	<0.84	<0.72	<0.72	<0.72
<0.099	<0.099	<0.023	<0.03	<0.036	0.1 I	<0.036	0.092 I	<0.036
<0.074	<0.074	<0.023	<0.02	<0.036	<0.036	<0.036	<0.036	<0.036
<0.056	<0.056	<0.023	<0.035	<0.036	<0.036	<0.036	<0.036	<0.036

09-19-07	11-06	07-11-19	08-10-05	09-01-06	10-05-03	10-09-14	10-01-28	11
<0.18	<0.18	<0.18	<0.75	<0.75	<0.75	<0.6	<0.6	<0.6
<0.25	<0.25	<0.25	<0.59	<0.59	<0.59	<0.83	<0.83	<0.83
<0.2	<0.2	<0.2	<0.58	<0.58	<0.58	<0.48	<0.48	<0.48
<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<1	<1	<1
<2.8	<2.8	<2.8	2.8	<0.84	<0.84	<0.72	<0.72	<0.72
<0.099	<0.099	<0.023	<0.03	<0.036	<0.036	<0.036	<0.036	<0.036
<0.074	<0.074	<0.023	<0.02	<0.036	<0.036	<0.036	<0.036	<0.036
<0.056	<0.056	<0.023	<0.035	<0.036	<0.036	<0.036	<0.036	<0.036

09-19-07	11-06	07-11-19	08-10-05	09-01-06	10-05-03	10-09-14	10-01-28	11
<0.18	<0.18	<0.18	<0.75	<0.75	<0.75	<0.6	<0.6	<0.6
<0.25	<0.25	<0.25	<0.59	<0.59	<0.59	<0.83	<0.83	<0.83
<0.2	<0.2	<0.2	<0.58	<0.58	<0.58	<0.48	<0.48	<0.48
<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<1	<1	<1
<2.8	<2.8	<2.8	1.5 I	<0.84	<0.84	<0.72	<0.72	<0.72
<0.099	<0.099	1.1	8.5V	2	3.6 V	4.1	4.5	2.8
<0.074	<0.074	2.8	1	1.3	1.5	1.1	1.1	0.83
<0.056	<0.056	5.2	1.7	2.8	3.3	2	1.4	

09-19-07	11-06	07-11-19	08-10-05	09-01-06	10-05-03	10-09-14	10-01-28	11
<0.18	<0.18	<0.18	<0.75	<0.75	<0.75	<0.6	<0.6	<0.6
<0.25	<0.25	<0.25	<0.59	<0.59	<0.59	<0.83	<0.83	<0.83
<0.2	<0.2	<0.2	<0.58	<0.58	<0.58	<0.48	<0.48	<0.48
<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<1	<1	<1
<2.8	<2.8	<2.8	<2.8	<0.84	<0.84	<0.72	<0.72	<0.72
1	<0.099	0.021V	<0.03	<0.036	<0.036	<0.036	<0.036	<0.036
<0.074	<0.074	<0.023	<0.02	<0.036	<0.036	<0.036	<0.036	<0.036
<0.056	<0.056	<0.023	<0.035	<0.036	<0.036	<0.036	<0.036	<0.036

09-19-07	11-06	07-11-19	08-10-05	09-01-06	10-05-03	10-09-14	10-01-28	11
<0.18	<0.18	<0.18	<0.75	<0.75	<0.75	<0.6	<0.6	<0.6
<0.25	<0.25	<0.25	<0.59	<0.59	<0.59	<0.83	<0.83	<0.83
<0.2	<0.2	<0.2	<0.58	<0.58	<0.58	<0.48	<0.48	<0.48
<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<1	<1	<1
<2.8	<2.8	<2.8	<2.8	<0.84	<0.84	<0.72	<0.72	<0.72
<0.099	<0.099	0.005V	<0.03	<0.036	<0.036	<0.036	<0.036	<0.036
<0.074	<0.074	0.028	<0.02	<0.036	<0.036	<0.036	<0.036	<0.036
<0.056	<0.056	0.043	<0.035	<0.036	<0.036	<0.036	<0.036	<0.036

09-19-07	11-06	07-11-19	08-10-05	09-01-06	10-05-03	10-09-14	10-01-28	11
<0.18	<0.18	<0.18	<0.75	<0.75	<0.75	<0.6	<0.6	<0.6
<0.25	<0.25	<0.25	<0.59	<0.59	<0.59	<0.83	<0.83	<0.83
0.5	12	15	22	11	26	22	<0.48	<0.48
<0.22	4.0	<0.22	16.4	3.3	10.9	3	<1	<1
<2.8	<2.8	<2.8	2.4 I	<0.84	<0.84	5.4 I	<0.72	<0.72
0.77	4.4	12V	3.7	7	16	22	1.4	1.4
<0.074	0.26	2	0.2	0.34	1.1	2.7	0.45	0.45
<0.056	0.25	1.3	0.095	0.42	1.6	5.4	0.36	0.36

01-28-11
<0.6
<0.83
<0.48
<1
<0.72
<0.036
<0.036
<0.036

09-19-07	11-06	07-11-19	08-10-05	09-01-06	10-05-03	10-09-14	10-01-28	11
<0.18	<0.18	0.051	<0.75	<0.75	<0.75	<0.6	<0.6	<0.6
<0.25	<0.25	0.571	<0.59	<0.59	<0.59	<0.83	<0.83	<0.83
84	1.9	140	19	5.1	<0.58	<0.48	5.4	5.4
5.2	<0.22	57	<0.22	<0.22	<0.22	<1	<1	<1
<2.8	<2.8	<0.28	<0.84	<0.84	<0.84	<0.72	<0.72	<0.72
<0.099	18	0.98V	34	35	11	8.5	20	20
3.3	1.6	0.13	5.8	5.1	1.9	1.9	4.1	4.1
1.1	2.8	0.054	11	9.4	3.4	3.8	3.2	3.2

09-19-07	11-06	07-11-19	08-10-05	09-01-06	10-05-03	10-09-14	10-01-28	11
<0.18	<0.18	<0.18	<0.75	<0.75	<0.75	<0.6	<0.6	<0.6
<0.25	<0.25	<0.25	<0.59	<0.59	<0.59	<0.83	<0.83	<0.83
<0.2	<0.2	<0.2	<0.58	<0.58	<0.58	<0.48	<0.48	<0.48
<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<1	<1	<1
<2.8	<2.8	<2.8	<0.84	<0.84	<0.84	<0.72	<0.72	<0.72
4.9	1.1	6.2V	<0.03	2.5	1	0.23	0.26	0.26
<0.074	<0.074	0.4	<0.02	0.25	0.16	0.09	<0.036	<0.036
<0.056	<0.056	0.41	<0.035	0.41	0.26	0.2	<0.036	<0.036

LEGEND:

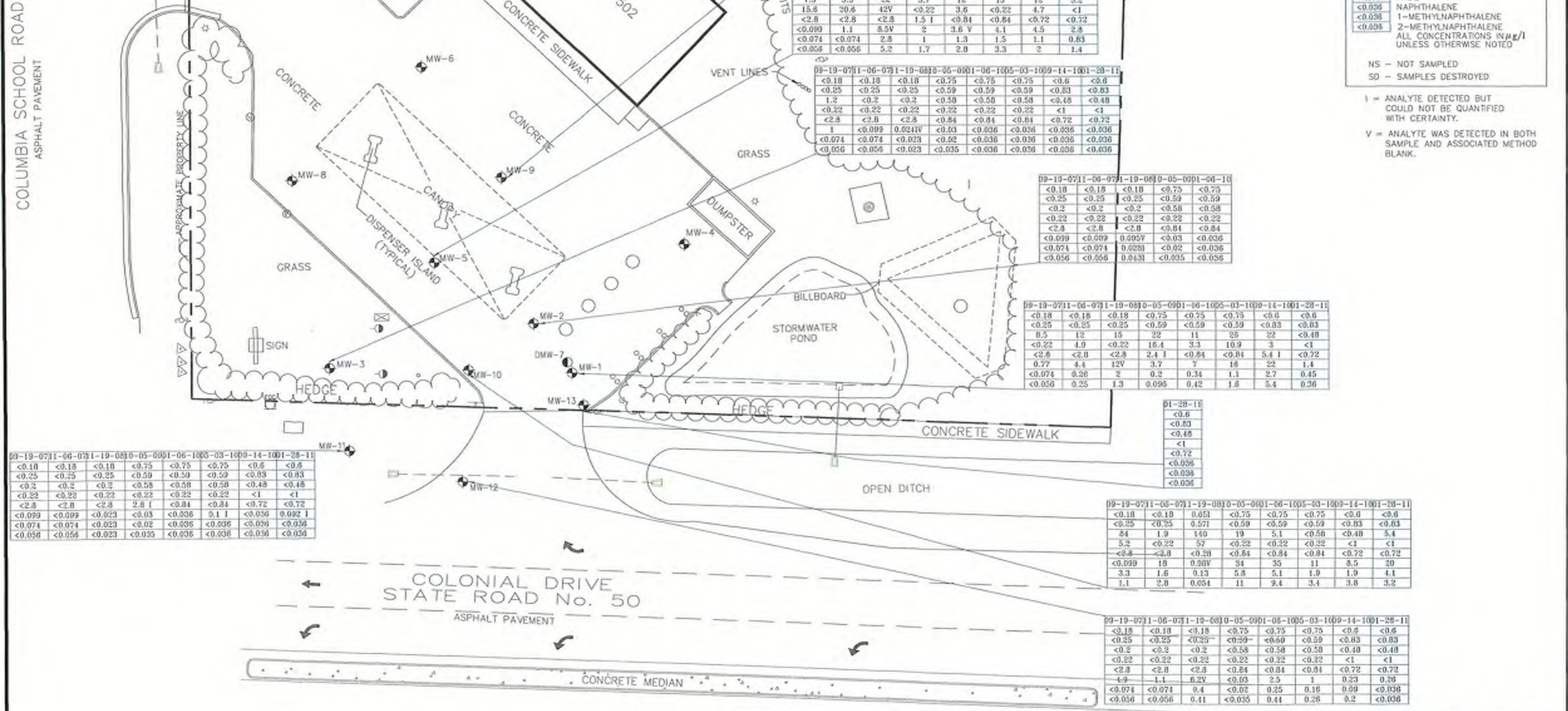
- MONITORING WELL LOCATION
- DEEP MONITORING WELL LOCATION

01-28-11	SAMPLE DATE
<0.6	BENZENE
<0.83	TOLUENE
<0.48	ETHYLBENZENE
<1	TOTAL XYLENES
<0.72	MTBE
<0.036	NAPHTHALENE
<0.036	1-METHYLNAPHTHALENE
<0.036	2-METHYLNAPHTHALENE

ALL CONCENTRATIONS IN $\mu\text{g/l}$ UNLESS OTHERWISE NOTED

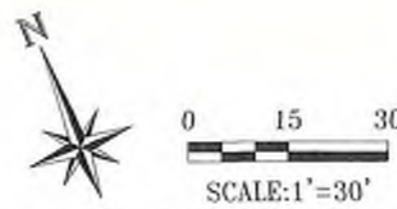
NS - NOT SAMPLED
SD - SAMPLES DESTROYED

I = ANALYTE DETECTED BUT COULD NOT BE QUANTIFIED WITH CERTAINTY.
V = ANALYTE WAS DETECTED IN BOTH SAMPLE AND ASSOCIATED METHOD BLANK.



COLONIAL DRIVE
STATE ROAD No. 50
ASPHALT PAVEMENT

CONCRETE MEDIAN



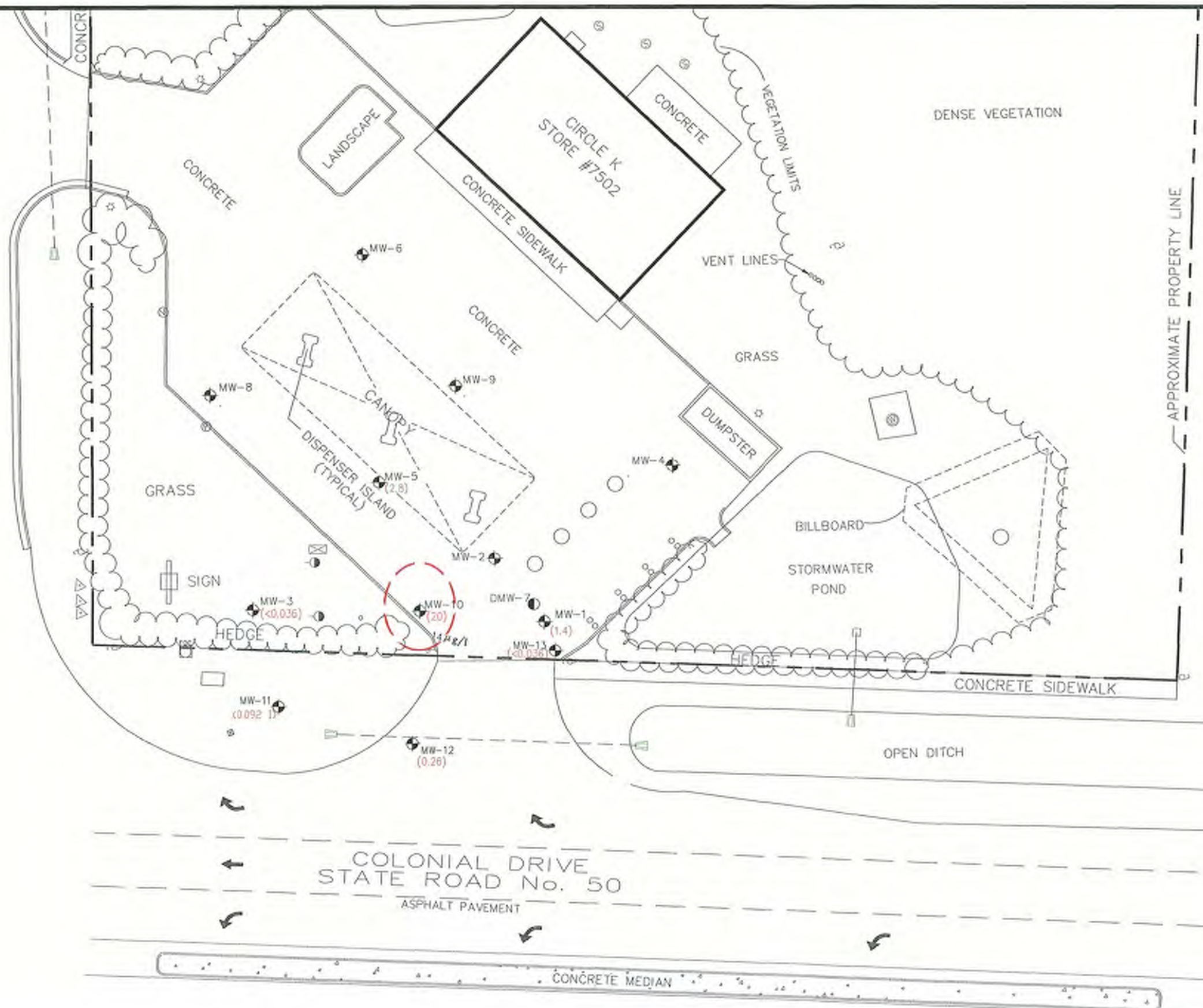
VATC Associates Inc.
5602 Thompson Center Court
Suite 405
Tampa, Florida 33634
(813) 899-8960
(813) 899-8754 FAX

DISTRIBUTION OF DISSOLVED HYDROCARBONS
CIRCLE K STORE #7502
16959 E. HIGHWAY 50
BITHLO, FLORIDA

DRAWN BY: S.A.M. CHECKED BY: M.B.

PROJECT NO.: 05.16564.0631
SCALE: 1" = 30'
DATE: 02-15-11
FIGURE NO.: 3

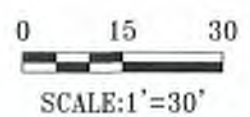
COLUMBIA SCHOOL ROAD
ASPHALT PAVEMENT



LEGEND:

	PAY PHONE
	VACUUM
	TRAFFIC SIGNAL BOX
	UTILITY POLE
	LIGHT POLE
	SANITARY SEWER MANHOLE WELL
	FIBER OPTIC CABLE MARKER
	FIRE DEPARTMENT CONNECTION
	MITERED END SECTION
	MONITORING WELL LOCATION
	DEEP MONITORING WELL LOCATION
()	DISS. NAPHTHALENE CONC. REPORTED IN $\mu\text{g/l}$ IN JAN. 28 2011
	ESTIMATED DISSOLVED NAPHTHALENE PLUME EXTENT

U = ANALYTE NOT DETECTED AT THE METHOD DETECTION LIMIT.
 I = ANALYTE DETECTED BUT COULD NOT BE QUANTIFIED WITH CERTAINTY

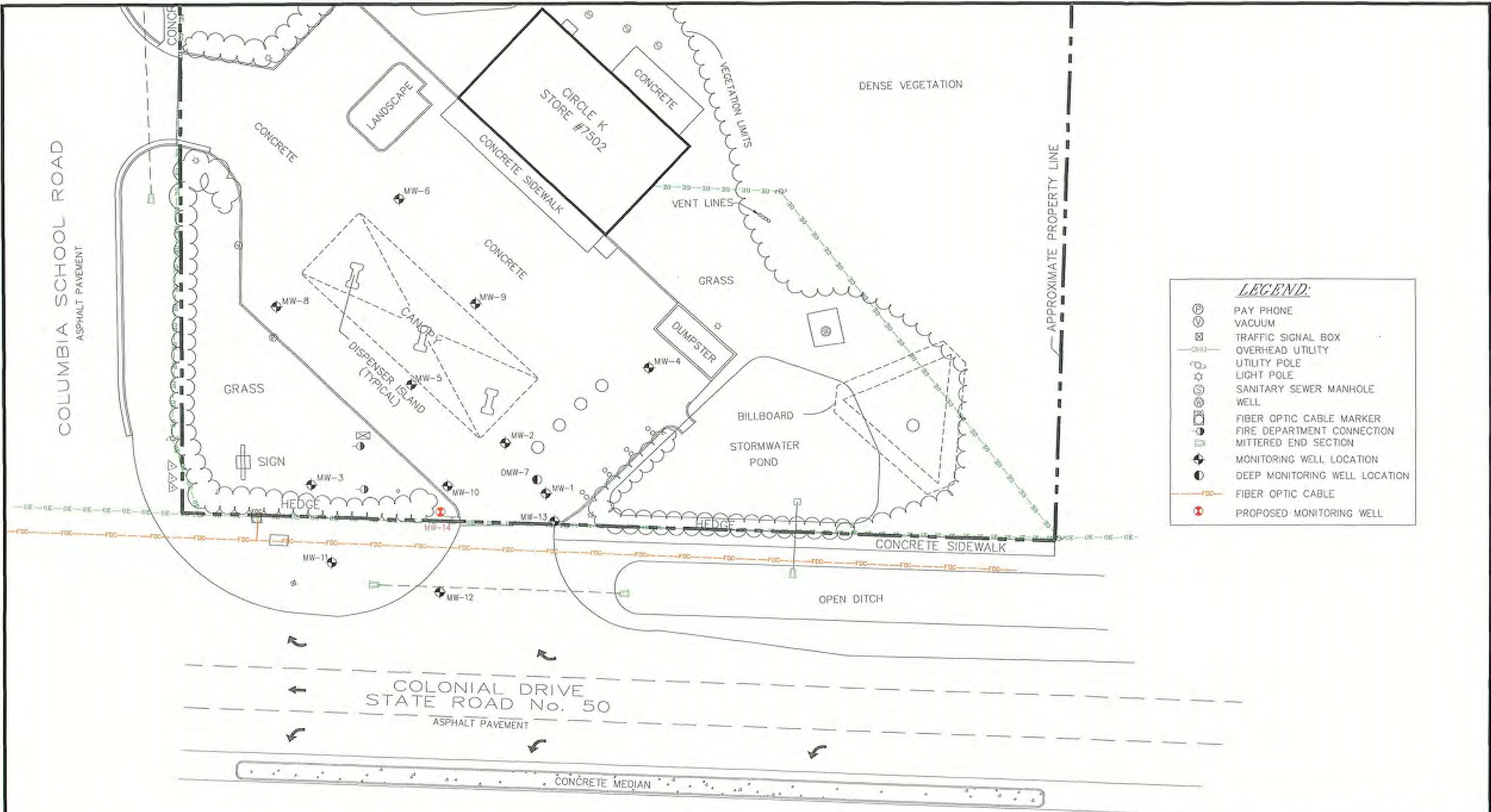


VATC
 Associates Inc.
 5602 Thompson Center Court
 Suite 405
 Tampa, Florida 33634
 (813) 889-8993
 (813) 889-8754 FAX

DRAWN BY: S.A.M. CHECKED BY: M.B.

DISSOLVED NAPHTHALENE PLUME MAP
 JANUARY 28, 2011
 CIRCLE K STORE #7502
 16959 E. HIGHWAY 50
 BITHLO, FLORIDA

PROJECT NO.:
 05.16564.0631
 SCALE:
 1" = 30'
 DATE: 02-15-11
 FIGURE NO.: 4



LEGEND:

	PAY PHONE
	VACUUM
	TRAFFIC SIGNAL BOX
	OVERHEAD UTILITY
	UTILITY POLE
	LIGHT POLE
	SANITARY SEWER MANHOLE WELL
	FIBER OPTIC CABLE MARKER
	FIRE DEPARTMENT CONNECTION
	MITERED END SECTION
	MONITORING WELL LOCATION
	DEEP MONITORING WELL LOCATION
	FIBER OPTIC CABLE
	PROPOSED MONITORING WELL



0 15 30
SCALE: 1" = 30'

VATC
Associates Inc.
5052 Thompson Center Court
Suite 405
Tampa, Florida 33634
(813) 889-8993
(813) 889-8754 FAX

DRAWN BY: S.A.M. CHECKED BY: M.B.

PROPOSED MONITORING WELL LOCATION
CIRCLE K STORE #7502
16959 E. HIGHWAY 50
BITHLO, FLORIDA

PROJECT NO.: 05.16564.0631
SCALE: 1" = 30'
DATE: 02-16-11
FIGURE NO.: 5



Environmental, Geotechnical and Materials Professionals

APPENDIX A
FDEP Work Order
and
Verbal Change Orders

3A

Petroleum Preapproval Program Work Order

Work Order Number: <u>2011-48-W91082</u>	Cost Center #: <u>37450404555</u>	Category: <u>087888/FY 10-11/UP</u>
FDEP Facility Id #: <u>48/8521400</u>	Score: <u>56</u>	Contract #: <u>PPA017</u>
Site Name: <u>CIRCLE K #7502</u>		Eligibility: <u>SCR</u>
Address (Street, City): <u>16959 E COLONIAL DR (E HWY 50), ORLANDO</u>		County: <u>Orange</u>
Contractor Name: <u>ATC ASSOCIATES, INC.</u>		CID #: <u>00787</u>
Contractor Address: <u>5602 THOMPSON CENTER COURT, SUITE 405, TAMPA, FL 33634</u>		FEID #: <u>46-0399408</u>
Contractor Representative: <u>Meghan Bergquist</u>		Phone #: <u>813/889-8960 ext.245</u>
FDEP Site Manager: <u>Renee H. Parker</u>		Phone #: <u>407/836-1420</u>
Cleanup Phase: <u>Remedial Action</u>		
Cleanup Activity: <u>NATURAL ATTENUATION MONITORING</u>		

Work Order Description:

In accordance with section 376.30711(1)(b), F.S., all work, including verbal change orders (VCOs), must be preapproved by the Department prior to the work being performed or the costs being incurred.

No proposal prep authorized under this WO. In accordance with BPSS spending procedures and Chapters 62-160, 62-770, FAC, and Pre-Approval Procedures SOP Guidance documents PCS-003, -004, -005 & -006, perform 2-quarters of NAM.

EVENT 1: Gauge and sample groundwater from MW-1, -3, -5,-10, -11 & 12 as indicated in the attached Sampling Parameter Table worksheet. Analyze for BTEX+MTBE (8021B) and PAHs (8270). Groundwater sample analysis by Southern Petroleum Laboratories (SPL) NELAP certification # E87657: Submit Year 2 Quarter 3 NAM report w/recommendations by due date below.

EVENT 2: Gauge and sample groundwater from MW-1, -3, -5,-10, -11 & 12 as indicated in the attached Sampling Parameter Table worksheet. Analyze for BTEX+MTBE (8021B) and PAHs (8270). Groundwater sample analysis by Southern Petroleum Laboratories (SPL) NELAP certification # E87657: Submit Year 2 : Annual NAM report w/recommendations by due date below.

Please double side reports to conserve paper and OCEPD file space. Contractor qualifications expire 06/01/2011.

Deliverable 1: <u>NA QUARTERLY REPORT</u> <i>Y2Q3</i>	Due Date 1: <u>Sep 2, 2010</u>
Deliverable 2:	Due Date 2: <u>2010 JUL 21 AM 9:36</u>
Deliverable 3:	Due Date 3: <u>2010 JUL 21 AM 9:36</u>
Deliverable 4:	Due Date 4: <u>2010 JUL 21 AM 9:36</u>
Deliverable 5:	Due Date 5: <u>2010 JUL 21 AM 9:36</u>
Deliverable 6:	Due Date 6: <u>2010 JUL 21 AM 9:36</u>
Final Deliverable: <u>LEVEL 1 NA OR POST RA MONITORING ANNUAL REPORT</u> <i>Y2Q4</i>	Final Due Date: <u>Dec 31 2010</u> ✓

Period of Service: Contractor Representative Signature Date To May 30, 2011

Amount: \$8,879.21 ✓

This WORK ORDER is not in effect until signed by all parties. The FDEP will not pay any amount of this WORK ORDER until the original signed copy has been returned to the FDEP. The FDEP will not pay for any portion of the scope of work that has not been performed as of the date of invoice.

Performance of this work order shall be governed by the terms of the preapproval work order performance agreement (PPA) listed above and the additional terms and conditions on the following pages.

FDEP Site Manager: <u>Renee H. Parker</u>	Date: <u>6/25/2010</u>
FDEP Manager: <u>[Signature]</u>	<u>7/16/10</u>
Cost Center Administrator: <u>[Signature]</u> <i>MM 7/21</i>	<u>07/21/10</u>
Contractor Representative: <u>Meghan Bergquist</u>	<u>8/24/10</u>
Contractor Representative: _____	_____

(second contractor signature is optional)

FDEP Use Only:	Technical review: Initials: <u>ms</u>	Date: <u>06-28-10</u>
	Fiscal Review: Initials: <u>cm</u>	Date: <u>7/16/10</u>

*OCap eg
EDI*

Petroleum Preapproval Program Work Order

Work Order # 2011-48-W91082

NOTICE

ALL PRIME CONTRACTORS, SUBCONTRACTORS AND VENDORS ARE STRONGLY ENCOURAGED TO REVIEW THE TERMS AND CONDITIONS OF THIS CONTRACT

WORK ORDER TERMS & CONDITIONS

1. Certification of Performance

- a. The PRIME CONTRACTOR signing this Work Order agrees to be bound by the terms and conditions contained herein.
- b. The PRIME CONTRACTOR signing this Work Order agrees to perform the approved scope of work at the approved cost. Any changes to the scope of work or cost must be approved in writing by the Florida Department of Environmental Protection (DEPARTMENT).
- c. The PRIME CONTRACTOR agrees that it is responsible for the professional quality, technical accuracy, timely completion and coordination of all designs, drawings, specifications, reports, other services and installations furnished under this Work Order.
- d. The PRIME CONTRACTOR represents that its services and installations shall be performed in a manner consistent with that level of care and skill ordinarily exercised by other professional consultants under similar circumstances at the time the services are performed.
- e. The PRIME CONTRACTOR certifies that it currently meets all of the qualifications for participation in the Petroleum Cleanup Preapproval Program as required by Sections 376.30711(2)(b)-(c), Florida Statutes (F.S.), and any other appropriate Florida laws and as outlined in Section 2.2 of the Preapproval SOP. The PRIME CONTRACTOR further certifies that it will not knowingly permit any of these qualifications to lapse during the duration of this Work Order. The PRIME CONTRACTOR agrees that if any of the qualifications do lapse, it will immediately notify the DEPARTMENT and will suspend the performance of this Work Order until all the qualifications are met.
- f. The PRIME CONTRACTOR certifies that it has read, understands and will perform all work in accordance with these terms and conditions, applicable statutes, and any rules and guidance issued by the DEPARTMENT and the standards of performance therein.

2. Additional Terms and Conditions

a. This Work Order is issued to the listed PRIME CONTRACTOR and is not transferable or assignable. However, pursuant to Section 376.30711(5)(a), F.S., invoices submitted pursuant to this Work Order are assignable. Persons wishing to exercise this option should refer to section 6.7.10 of the Preapproval SOP and/or contact the DEPARTMENT for assistance. The PRIME CONTRACTOR or the PRIME CONTRACTOR's in-house services, subsidiaries or affiliates, shall not subcontract, assign, or transfer any work under this Work Order that:

- (1) Costs \$2,500 or more and is not covered by a Preapproval fixed cost template or fixed price schedule without the prior written consent of the DEPARTMENT using the verbal authorization form. No first tier subcontractor or vendor awarded work under this Work Order shall further subcontract, assign, or transfer any work that costs \$2,500 or more without the prior written consent of the DEPARTMENT using the verbal authorization form. All requests from first tier subcontractors or vendors to the DEPARTMENT for prior written approval must be made through the PRIME CONTRACTOR. Violations of this provision shall result in forfeiture of payment for the associated work;

Petroleum Preapproval Program Work Order

Work Order # 2011-48-W91082

(2) Costs \$2,500 or more and is covered by a Preapproval fixed cost template or fixed price schedule without providing prior written notice to the DEPARTMENT before the work is performed. No first tier subcontractor or vendor awarded work under this Work Order shall further subcontract, assign, or transfer any work that costs \$2,500 or more without providing prior written notice to the DEPARTMENT before the work is performed. All such notices from first tier subcontractors or vendors to the DEPARTMENT must be made through the PRIME CONTRACTOR. Violations of this provision shall result in forfeiture of payment for the associated work.

b. The PRIME CONTRACTOR shall provide a copy of this Work Order, including the terms and conditions, to each and every subcontractor and vendor regardless of value.

c. The PRIME CONTRACTOR agrees to be responsible for the fulfillment of all work elements included in any subcontract consented to by the DEPARTMENT and agrees to be responsible for the payment of all monies due under any subcontract in accordance with Subsection 287.0585(1) and Subsections 376.30711(5)(d) and (e), F.S., see Chapter 2008-127, Laws of Florida (L.O.F.), and paragraphs 2. j and 2. l of this agreement. It is understood and agreed by the PRIME CONTRACTOR that the DEPARTMENT shall not be liable to any subcontractor or vendor for any expenses or liabilities incurred under the subcontract and that the PRIME CONTRACTOR shall be solely liable to the subcontractor or vendor for all expenses and liabilities incurred under the subcontract.

d. The issuance of this Work Order does not constitute an approval, certification, or endorsement of the PRIME CONTRACTOR by the DEPARTMENT. The DEPARTMENT hereby gives its written consent to use the subcontractors and vendors designated in the proposal for the work as designated in the proposal.

e. The issuance of this Work Order does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations. This Work Order is not a waiver of, or approval of, any other DEPARTMENT permit or approval that may be required for other aspects of the total project which are not addressed in this Work Order.

f. This Work Order does not relieve the PRIME CONTRACTOR from liability for harm or injury to human health or welfare, animal or plant life, or property, caused by its activities or from penalties therefore; nor does it allow the PRIME CONTRACTOR to cause or contribute to pollution in contravention of Florida Statutes and DEPARTMENT rules.

g. All documents, reports correspondence, invoices, billings and any other written or electronic records related to this Work Order are considered to be public records. The DEPARTMENT may unilaterally cancel this Work Order, remove the PRIME CONTRACTOR as the designated cleanup contractor for the subject site, or cancel the PRIME CONTRACTOR's participation in the Preapproval Program for failure of the PRIME CONTRACTOR to maintain such public records and allow unrestricted access to such public records as specified by Chapter 119, F.S.

h. The PRIME CONTRACTOR, by accepting this Work Order, specifically agrees to allow authorized DEPARTMENT personnel, and personnel of a contracted Local Program or Team, to observe and inspect the work being performed under this Work Order, including:

(1) Access to any public records that must be kept under conditions of the Work Order;

(2) Inspection of the facility, equipment, practices, or operations required under this Work Order; and

(3) Sampling or monitoring of any substances or parameters at any location reasonable or necessary to assure compliance with this Work Order or DEPARTMENT rules.

i. The PRIME CONTRACTOR agrees that this Work Order is subject to the applicable provisions of Section 287.058, F.S., Section 287.0582, F.S., Section 287.0585, and Subsection 376.30711(5), F.S., (see Chapter 2008-127, L.O.F.).

Petroleum Preapproval Program Work Order

Work Order # 2011-48-W91082

j. Pursuant to Subsection 287.0585(1) and Subsection 376.30711(5), F.S., (see Chapter 2008-127, L.O.F.) the PRIME CONTRACTOR, or persons to which the PRIME CONTRACTOR has assigned its right to payment, is responsible for prompt payment of all subcontractors and vendors under this Work Order within 7 working days from the date of receipt of payment from the DEPARTMENT, and the provisions of Subsection 287.0585(2), F.S., do not apply. If the PRIME CONTRACTOR receives less than full payment from the DEPARTMENT for the services or goods of the subcontractors or vendors, then the PRIME CONTRACTOR shall be required to disburse only the funds to the subcontractors and vendors in the same proportion as paid by the DEPARTMENT.

k. In accordance with Section 287.0585, F.S., the DEPARTMENT is not responsible for ensuring that the PRIME CONTRACTOR provides payment to all subcontractors and vendors. Section 287.0585, F.S., authorizes the Department of Legal Affairs (DLA) in the Attorney General's Office to provide legal assistance to subcontractors and vendors in proceedings brought against Contractors for non-compliance with the prompt payment provisions of that section, as well as the payment of penalties and restitution for attorney's fees and related expenses of the aggrieved party or the DLA.

l. For final invoices, all subcontractors and vendors must be paid by the PRIME CONTRACTOR prior to submittal of the final invoice for this Work Order for all of their costs included in all of the PRIME CONTRACTOR's invoices submitted for this Work Order prior to the final invoice in proportion to the amount approved for payment by the DEPARTMENT. The PRIME CONTRACTOR shall also be required to submit a properly completed Contractor Release of Claim Form stating that it acknowledges these requirements, that prompt payment of all subcontractors and vendors for all of their costs included in the final invoice is required as outlined in paragraph 2. j. above, that penalties for non-compliance and provisions for legal assistance from the Department of Legal Affairs are included in Subsection 287.0585(1), F.S., that the work was completed in accordance with this Work Order, and that upon receipt of the final payment it releases the property owner and the DEPARTMENT from any claims arising from this Work Order.

m. If this Work Order has been issued pursuant to a Preapproved Advanced Cleanup (PAC) or Petroleum Cleanup Participation Program (PCPP) contract, then the termination of that contract may result in the immediate termination of this Work Order.

n. The State of Florida's performance and obligation to pay for services under this Work Order is contingent upon appropriations by the Legislature in effect at the time of execution. Authorization for continuation and completion of this Work Order and payment associated therewith may be rescinded with proper notice at the discretion of the DEPARTMENT if Legislative appropriations are reduced.

o. In accordance with Subsection 376.30711(5)(b), F.S., (see Chapter 2008-127, L.O.F.) the PRIME CONTRACTOR shall submit invoices to the DEPARTMENT within 30 days after the date of the DEPARTMENT's written acceptance of each interim deliverable and written approval of the final deliverable specified in the Work Order. It is understood and agreed by the PRIME CONTRACTOR that failure to submit interim invoices within this timeframe may result in monetary penalties and failure to submit the final invoice within this timeframe may result in the automatic closure of the Work Order and forfeiture of the unpaid balance of the Work Order.

p. The purchase of non-expendable equipment costing \$1,000.00 or more under this Work Order shall remain the property of the DEPARTMENT and be subject to the provisions of Section 7.4 of the Preapproval Program SOP. The PRIME CONTRACTOR shall have the use of the equipment for authorized purposes under the Work Order until the required work has been completed provided adequate maintenance procedures are implemented. When no longer needed, the PRIME CONTRACTOR shall return all non-expendable equipment purchased under this Work Order to the DEPARTMENT. However, if the responsible party or property owner wish to acquire the equipment, the DEPARTMENT, at its discretion, may elect to transfer ownership of the equipment to the responsible party or property owner in exchange for payment or trade based on its fair market value as of the date of title transfer. All such ownership transfers are subject to approval of the DEPARTMENT's Surplus Property Review Board and must be documented in a formal agreement executed by both parties in a format approved by the DEPARTMENT such as a Funding Transition Agreement or Site Rehabilitation Funding Allocation Agreement.

q. The PRIME CONTRACTOR acknowledges that the total amount of this Work Order is not considered to be a fixed price contract or a lump sum contract.

Petroleum Preapproval Program Work Order

Work Order # 2011-48-W91082

r. The PRIME CONTRACTOR represents that if it (or any entity that it has an ownership interest in or has an ownership interest in it) has a financial or ownership interest in the cleanup site that is the subject of this Work Order, that written notice has already been provided to the Site Manager stating the specific nature of the interest in the property and who holds that interest.

s. In addition to any other remedies available at law, failure to implement any of the terms and conditions of this Work Order shall be considered a breach of contract and shall subject the PRIME CONTRACTOR to cancellation of this Work Order, loss of payment, or removal as the designated PRIME CONTRACTOR. Individual contract terms may also have other specific remedies for violations.

3. Audit - Access to Records & Purpose

a. The PRIME CONTRACTOR shall maintain organized and cataloged books, records, documents and all subcontractor and vendor invoices directly or indirectly pertinent to performance under this Work Order in accordance with generally accepted accounting principles consistently applied. All such records shall be kept at one of the Prime Contractor's offices located within the legal boundaries of the State of Florida per Chapter 6, F.S. or made available at such office within five business days of receipt of a request from the DEPARTMENT. The DEPARTMENT, the State or their authorized representatives shall have access to such records without charge for audit or investigation purposes during the term of the Work Order and for three years following Work Order completion. Failure to maintain such required records shall constitute a breach of contract and could result in forfeiture of remaining payments on this Work Order, removal as the designated PRIME CONTRACTOR for the subject site or dismissal of the PRIME CONTRACTOR from participation in the Preapproval Program.

b. The PRIME CONTRACTOR acknowledges that there are several purposes of a DEPARTMENT audit:

1) To confirm the actual level of effort and costs for comparison with the Preapproval Fixed Cost Templates, Fixed Price Schedule and Level of Effort guidelines: Such information is not intended for cost recovery, but will be used to support future adjustments in these fixed costs program wide; and

2) To confirm compliance with the terms and conditions of the Work Order, the Preapproval standard operating procedures, applicable DEPARTMENT rules and guidance, and to investigate instances of criminal violations pursuant to Section 376.302, F.S., any of which may result cost recovery or other appropriate action.

4. Dispute Resolution - Suspension or Cancellation of Work

a. The DEPARTMENT may order a suspension or cessation of work in order to resolve disputes regarding a PRIME CONTRACTOR'S performance or the performance of their subcontractor. If this is necessary, the DEPARTMENT will notify the PRIME CONTRACTOR either verbally and/or in writing by either express or certified USPS mail or private express mail with a copy of the notification sent to the property owner. The PRIME CONTRACTOR or its subcontractors will not be paid for any work performed or idle time during such suspension or cancellation until the DEPARTMENT determines what, if any payments should be made.

b. The DEPARTMENT may initiate a suspension or cancellation of work. The DEPARTMENT reserves the right to suspend or cancel work for good cause. Good cause includes, but is not limited to, failure to comply with the provisions of this Work Order, failure to acquire proper state, federal or local permits, any audit or report indicating that any phase of actual work completed was inconsistent with the approved scope or cost, or failure of a PRIME CONTRACTOR to maintain its required qualifications.

c. A written notice of intent to suspend or cancel work shall give the PRIME CONTRACTOR a minimum of fifteen (15) working days to respond and to correct the deficiencies unless the DEPARTMENT's initial findings are so egregious that no remedies are acceptable. In cases where the findings are egregious, the DEPARTMENT reserves the right to remove the PRIME CONTRACTOR from the site and take whatever actions may be necessary.

d. If the PRIME CONTRACTOR does not remedy the deficiency within the timeframe allotted, the Work Order shall be deemed suspended or canceled at the discretion of the DEPARTMENT.

e. In the event the DEPARTMENT determines, in its sole discretion, that the PRIME CONTRACTOR or any of its subcontractors is in breach of the terms and conditions of this Work Order, the DEPARTMENT reserves the right to exercise all remedies at law and equity.

Petroleum Preapproval Program Work Order

Work Order # 2011-48-W91082

(FOR PRIME CONTRACTOR, SUBCONTRACTOR & VENDOR REFERENCE)

*Note: Effective July 1, 2008, Subsection 376.30711(5)(e), F.S. (see Chapter 2008-127, L.O.F.) stipulates that Subsection 287.0585(2), F.S., shall not apply to payments associated with preapproved site rehabilitation agreements. Therefore, payment agreements between preapproval contractors and their subcontractors and suppliers will not affect the statutory requirement in Subsection 287.0585(1), F.S., for preapproval contractors to make prompt payment to subcontractors and suppliers within seven (7) days of receipt of payment from the Department. Penalties for non-compliance and provisions for legal assistance are included in Subsection 287.0585(1), F.S. (see applicable statutory citations below):

Subsection 376.30711(5)(d) & (e), F.S. (2008)

376.30711 Preapproved site rehabilitation,

(5)(d) Contractors or persons to which the contractor has assigned its right to payment pursuant to paragraph (a) shall make prompt payment to subcontractors and suppliers for their costs associated with a preapproved site rehabilitation agreement pursuant to s. 287.0585(1).

(5)(e) The exemption in s. 287.0585(2) shall not apply to payments associated with a preapproved site rehabilitation agreement.

Section 287.0585, Florida Statutes (2004)

287.0585 Late payments by contractors to sub-contractors and suppliers; penalty.

(1) When a contractor receives from a state agency any payment for contractual services, commodities, supplies, or construction contracts, except those construction contracts subject to the provisions of chapter 339, the contractor shall pay such money's received to each subcontractor and supplier in proportion to the percentage of work completed by each subcontractor and supplier at the time of receipt of the payment. If the contractor receives less than full payment, then the contractor shall be required to disburse only the funds received on a pro rata basis with the contractor, sub-contractors, and suppliers, each receiving a prorated portion based on the amount due on the payment. If the contractor without reasonable cause fails to make payments required by this section to subcontractors and suppliers within 7 working days after the receipt by the contractor of full or partial payment, the contractors shall pay to the subcontractors and suppliers a penalty in the amount of one-half of 1 percent of the amount due, per day, from the expiration of the period allowed herein for payment. Such penalty shall be in addition to actual payments owed and shall not exceed 15 percent of the outstanding balance due. In addition to other fines or penalties, a person found not in compliance with any provision of this subsection may be ordered by the court to make restitution for attorney's fees and all related costs to the aggrieved party or the Department of Legal Affairs when it provides legal assistance pursuant to this section. The Department of Legal Affairs may provide legal assistance to subcontractors or vendors in proceedings brought against contractors under the provisions of this section.

(2) This section shall not apply when the contract between the contractor and subcontractors or subvendors provides otherwise.

Petroleum Preapproval Program Work Order Template

First Event

Work Order #: 2011-48-W91082
 Facility Id #: 488521400
 Contractor #: 00787
 Date: 07/16/10

FDEP/LP Site Mgr: RENEE PARKER
 Site Name: CIRCLE K #7502
 Contractor Name: ATC ASSOCIATES, INC.
 FDEP Contract #: PPA017

Cost Share Information
 FDEP Share: 100.00%
 Applicant/Owner Share: 0.00%
 Total: 100.00%

Work Description: Y2Q7 NAM Sampling

Template	Comments / Notes	Allowed Cost	Original		Change		Template Total Cost
			Number of Items	Item Cost	Change Amount	Change Costs	
Section A: Packaged Work Scopes							
1	Pumping Test or Multi-phase Pilot Test (using in-house personnel)	\$3,048.90		\$0.00		\$0.00	\$0.00
2	Vapor Extraction or Air Sparging Pilot Test (using in-house personnel)	\$2,055.39		\$0.00		\$0.00	\$0.00
3	Air Sparging & Vapor Extraction Pilot Test (using in-house personnel)	\$3,197.27		\$0.00		\$0.00	\$0.00
4	Monthly O&M Visit	\$851.42		\$0.00		\$0.00	\$0.00
5	RAI Monthly O&M Allowance - Small System	\$2,776.92		\$0.00		\$0.00	\$0.00
6	RAI Monthly O&M Allowance - Medium System	\$3,254.33		\$0.00		\$0.00	\$0.00
7	RAI Monthly O&M Allowance - Large System	\$3,831.74		\$0.00		\$0.00	\$0.00
8	RAI Supplemental O&M Monthly Allowance - Thermo/Catox Treatment	\$476.03		\$0.00		\$0.00	\$0.00
Section A Subtotals:				\$0.00		\$0.00	\$0.00
Section B: Office Activities, Part I							
1	Proposal Preparation	\$536.08		\$0.00		\$0.00	\$0.00
2	File Review	\$583.13		\$0.00		\$0.00	\$0.00
3	Permits	\$730.45		\$0.00		\$0.00	\$0.00
4	Site Health & Safety Plan	\$341.70		\$0.00		\$0.00	\$0.00
5	Notice of Discovery of Contamination Package (Initial or TPOC)	\$270.59		\$0.00		\$0.00	\$0.00
Section B Subtotals:				\$0.00		\$0.00	\$0.00
Section C: Field Activities							
1	Mobilization (2 persons)	\$810.76	1	\$810.76		\$0.00	\$810.76
2	Mobilization (1 person)	\$453.05		\$0.00		\$0.00	\$0.00
3	Drilling Setup (w/utility clearance)	\$565.93		\$0.00		\$0.00	\$0.00
4	SB for Soil Screening or Piezometer Install (≤ 10 ft)	\$236.65		\$0.00		\$0.00	\$0.00
5	SB for Soil Screening or Piezometer Install (> 10 ft to ≤ 30 ft)	\$354.98		\$0.00		\$0.00	\$0.00
6	SB for Soil Screening or Piezometer Install (> 30 ft)	\$473.31		\$0.00		\$0.00	\$0.00
7	Well Install (≤ 20 ft)	\$484.26		\$0.00		\$0.00	\$0.00
8	Well Install (> 20 ft to ≤ 40 ft)	\$726.39		\$0.00		\$0.00	\$0.00
9	Well Install (> 40 ft)			\$0.00		\$0.00	\$0.00
10	Well Install, double cased (≤ 40 ft)	\$1,452.78		\$0.00		\$0.00	\$0.00
11	Well Install, multiple cased (> 40 ft)			\$0.00		\$0.00	\$0.00
12	Recovery Well Install (≤ 40 ft)	\$968.52		\$0.00		\$0.00	\$0.00
13	Recovery Well Install (> 40 ft)			\$0.00		\$0.00	\$0.00
14	Air Sparging Well Install (≤ 40 ft)	\$363.20		\$0.00		\$0.00	\$0.00
15	Soil VE Well Install (≤ 40 ft)	\$236.65		\$0.00		\$0.00	\$0.00
16	AS and/or Soil VE Well Install (> 40 ft)			\$0.00		\$0.00	\$0.00
17	Well or Piezometer Abandonment	\$85.65		\$0.00		\$0.00	\$0.00
18	Recovery or Multi-phase Well Abandonment	\$243.18		\$0.00		\$0.00	\$0.00
19	Well Sampling with Water Level MW 1,3,5,10, 11, 12	\$241.75	6	\$1,450.50		\$0.00	\$1,450.50
20	Water Level or Free Product Gauging	\$24.58		\$0.00		\$0.00	\$0.00
21	Free Product Gauging & Bailing (per well)	\$116.13		\$0.00		\$0.00	\$0.00
22	Area Survey	\$968.52		\$0.00		\$0.00	\$0.00
23	Whole Day Oversight [total days (to nearest 1/10th) x number of people]	\$894.28		\$0.00		\$0.00	\$0.00
24	Kit Allowance (total days to nearest 1/10th) (no per diem included)	\$342.06		\$0.00		\$0.00	\$0.00
25	Per Diem (total days x number of people)	\$117.98		\$0.00		\$0.00	\$0.00
Section C Subtotals:				\$2,261.26		\$0.00	\$2,261.26
Section D: Other Field Work							
1	Other Field Work			\$0.00		\$0.00	\$0.00
2	Other Field Work			\$0.00		\$0.00	\$0.00
Section D Subtotals:				\$0.00		\$0.00	\$0.00
Section E: Other Equip. Rental Cost(s)							
1	Other Equipment			\$0.00		\$0.00	\$0.00
2	Other Equipment			\$0.00		\$0.00	\$0.00
Section E Subtotals:				\$0.00		\$0.00	\$0.00

Petroleum Preapproval Program Work Order Template

First Event

Work Order #: 2011-48-W91082

Facility Id #: 488521400

Site Name: CIRCLE K #7502

Date: 07/16/10

Template	Comments / Notes	Allowed Cost	Original		Change		Template Total Cost	
			Number of Items	Item Cost	Change Amount	Change Costs		
Section F: In-house Service Cost(s)								
1	Laboratory			\$0.00		\$0.00	\$0.00	
2	Drilling			\$0.00		\$0.00	\$0.00	
3	Direct Push			\$0.00		\$0.00	\$0.00	
4	Construction			\$0.00		\$0.00	\$0.00	
5	Other			\$0.00		\$0.00	\$0.00	
				Section F Subtotals:	\$0.00	\$0.00	\$0.00	
Section G: Subcontractor Cost(s)		Sub Markup = 10.00%	Unit Cost	# Units	Do not include markup			
1	Laboratory (from worksheet)	SPL	\$1,137.36		\$1,251.10	\$0.00	\$1,251.10	
2	Laboratory				\$0.00	\$0.00	\$0.00	
3	Mobile Lab				\$0.00	\$0.00	\$0.00	
4	Drilling				\$0.00	\$0.00	\$0.00	
5	Direct Push				\$0.00	\$0.00	\$0.00	
6	Construction				\$0.00	\$0.00	\$0.00	
7	Non-Capital Equip. and/or Materials				\$0.00	\$0.00	\$0.00	
8	Remedial Equip./System Lease				\$0.00	\$0.00	\$0.00	
9	Disposal				\$0.00	\$0.00	\$0.00	
10	Other				\$0.00	\$0.00	\$0.00	
				Section G Subtotals:	\$1,251.10	\$0.00	\$1,251.10	
Section G1: Remedial System Purchase								
1	Remedial System Costs				\$0.00	\$0.00	\$0.00	
2	PAC Remedial System Costs				\$0.00	\$0.00	\$0.00	
				Remedial System Subtotals:	\$0.00	\$0.00	\$0.00	
Section H: Office Activities, Part II								
1	General / SA Report							
Field Work Costs (Secs C & D) =		Field Work	x Multiplier			Field Work =	\$0.00	
		\$2,261.26	25%	\$565.32		\$0.00	\$0.00	
2	Letter / NPDES Report			\$282.27		\$0.00	\$0.00	
3	O&M Quarterly Report			\$1,645.53		\$0.00	\$0.00	
4	O&M Annual Report			\$3,038.45		\$0.00	\$0.00	
5	Pilot Test Plan			\$730.17		\$0.00	\$0.00	
6	Pilot Test Report			\$1,275.27		\$0.00	\$0.00	
7	Level 1 LSRAP or RAP Modification			\$1,401.02		\$0.00	\$0.00	
8	Level 2 LSRAP or RAP Modification			\$2,742.89		\$0.00	\$0.00	
9	Level 3 LSRAP or RAP Modification			\$4,866.33		\$0.00	\$0.00	
10	Level 4 LSRAP or RAP Modification			\$8,038.42		\$0.00	\$0.00	
11	Level 1 Remedial Action Plan			\$12,072.42		\$0.00	\$0.00	
12	Level 2 Remedial Action Plan			\$16,076.85		\$0.00	\$0.00	
13	As-built Drawings (P.E. red lined)			\$617.81		\$0.00	\$0.00	
14	Construction Drawings and Specs			\$3,398.01		\$0.00	\$0.00	
15	RAC Bid Package Solicitation/Evaluation			\$1,916.72		\$0.00	\$0.00	
16	RA Startup Report			\$2,386.61		\$0.00	\$0.00	
17	Soil Source Removal Report			\$1,768.80		\$0.00	\$0.00	
18	Natural Attenuation Plan			\$1,079.88		\$0.00	\$0.00	
19	Remedial Action Interim Report			\$530.10		\$0.00	\$0.00	
20	General Remedial Action Report			\$1,079.88		\$0.00	\$0.00	
21	NA or Post RA Monitoring Quarterly Report			\$530.10	1	\$530.10	\$0.00	
22	NA or Post RA Monitoring Annual Report			\$1,324.39		\$0.00	\$0.00	
23	Well Abandonment Report			\$244.51		\$0.00	\$0.00	
24	Initial Map & Table Generation			\$1,863.05		\$0.00	\$0.00	
25	Other Report Type (backup spreadsheet)					\$0.00	\$0.00	
				Section H Subtotals:	\$530.10	\$0.00	\$530.10	

Deliverables

Interim Deliverable	Due Date	Deliverable / Documentation
	09/02/10	NA Quarterly Report
Final Deliverable Information (Specify only if selected for this event)		
Deliverable #		
Deliverable Due		
Period of Service to:	06/30/11	

This Event Template Totals

	Original	Change	Total
Event Total:	\$4,042.46	\$0.00	\$4,042.46
Retainage:	0%		

Cumulative Work Order Totals (less Retainage)

Invoice	Previous	This Event	Total
# 1-6 Events	n/a	\$4,042.46	\$4,042.46
# 7 Remedial Systems	n/a	\$0.00	\$0.00
# 8 Final Deliverable	n/a	\$0.00	\$0.00
# 9 Retainage	n/a	\$0.00	\$0.00
Work Order Total		\$4,042.46	\$4,042.46

This Event Template Invoice Totals (less Retainage)

Invoice	Original	Change	Total
# 1 1st Event	\$4,042.46	\$0.00	\$4,042.46
# 7 Remedial Systems	\$0.00	\$0.00	\$0.00
# 8 Final Deliverable	\$0.00	\$0.00	\$0.00
# 9 Retainage	\$0.00	\$0.00	\$0.00
Event Template Total	\$4,042.46	\$0.00	\$4,042.46

Petroleum Preapproval Program Work Order Template

Second Event

Work Order #: 2011-48-W91082
 Facility Id #: 488521400
 Contractor #: 00787
 Date: 07/16/10

FDEP/LP Site Mgr: RENEE PARKER
 Site Name: CIRCLE K #7502
 Contractor Name: ATC ASSOCIATES, INC.
 FDEP Contract #: PPA017

Cost Share Information
 FDEP Share: 100.00%
 Applicant/Owner Share: 0.00%
 Total: 100.00%

Work Description: Y2 Annual NAM

Template	Comments / Notes	Allowed Cost	Original		Change		Template Total Cost
			Number of Items	Item Cost	Change Amount	Change Costs	
Section A: Packaged Work Scopes							
1	Pumping Test or Multi-phase Pilot Test (using in-house personnel)	\$3,048.90		\$0.00		\$0.00	\$0.00
2	Vapor Extraction or Air Sparging Pilot Test (using in-house personnel)	\$2,055.39		\$0.00		\$0.00	\$0.00
3	Air Sparging & Vapor Extraction Pilot Test (using in-house personnel)	\$3,197.27		\$0.00		\$0.00	\$0.00
4	Monthly O&M Visit	\$851.42		\$0.00		\$0.00	\$0.00
5	RAI Monthly O&M Allowance - Small System	\$2,776.92		\$0.00		\$0.00	\$0.00
6	RAI Monthly O&M Allowance - Medium System	\$3,254.33		\$0.00		\$0.00	\$0.00
7	RAI Monthly O&M Allowance - Large System	\$3,831.74		\$0.00		\$0.00	\$0.00
8	RAI Supplemental O&M Monthly Allowance - ThermoX/Catox Treatment	\$476.03		\$0.00		\$0.00	\$0.00
Section A Subtotals:				\$0.00		\$0.00	\$0.00
Section B: Office Activities, Part I							
1	Proposal Preparation	\$536.08		\$0.00		\$0.00	\$0.00
2	File Review	\$583.13		\$0.00		\$0.00	\$0.00
3	Permits	\$730.45		\$0.00		\$0.00	\$0.00
4	Site Health & Safety Plan	\$341.70		\$0.00		\$0.00	\$0.00
5	Notice of Discovery of Contamination Package (Initial or TPOC)	\$270.59		\$0.00		\$0.00	\$0.00
Section B Subtotals:				\$0.00		\$0.00	\$0.00
Section C: Field Activities							
1	Mobilization (2 persons)	\$810.76	1	\$810.76		\$0.00	\$810.76
2	Mobilization (1 person)	\$453.05		\$0.00		\$0.00	\$0.00
3	Drilling Setup (w/utility clearance)	\$565.93		\$0.00		\$0.00	\$0.00
4	SB for Soil Screening or Piezometer Install (≤ 10 ft)	\$236.65		\$0.00		\$0.00	\$0.00
5	SB for Soil Screening or Piezometer Install (> 10 ft to ≤ 30 ft)	\$354.98		\$0.00		\$0.00	\$0.00
6	SB for Soil Screening or Piezometer Install (> 30 ft)	\$473.31		\$0.00		\$0.00	\$0.00
7	Well Install (≤ 20 ft)	\$484.26		\$0.00		\$0.00	\$0.00
8	Well Install (> 20 ft to ≤ 40 ft)	\$726.39		\$0.00		\$0.00	\$0.00
9	Well Install (> 40 ft)			\$0.00		\$0.00	\$0.00
10	Well Install, double cased (≤ 40 ft)	\$1,452.78		\$0.00		\$0.00	\$0.00
11	Well Install, multiple cased (> 40 ft)			\$0.00		\$0.00	\$0.00
12	Recovery Well Install (≤ 40 ft)	\$968.52		\$0.00		\$0.00	\$0.00
13	Recovery Well Install (> 40 ft)			\$0.00		\$0.00	\$0.00
14	Air Sparging Well Install (≤ 40 ft)	\$363.20		\$0.00		\$0.00	\$0.00
15	Soil VE Well Install (≤ 40 ft)	\$236.65		\$0.00		\$0.00	\$0.00
16	AS and/or Soil VE Well Install (> 40 ft)			\$0.00		\$0.00	\$0.00
17	Well or Piezometer Abandonment	\$85.65		\$0.00		\$0.00	\$0.00
18	Recovery or Multi-phase Well Abandonment	\$243.18		\$0.00		\$0.00	\$0.00
19	Well Sampling with Water Level MW 1,3,5,10, 11, 12	\$241.75	6	\$1,450.50		\$0.00	\$1,450.50
20	Water Level or Free Product Gauging	\$24.58		\$0.00		\$0.00	\$0.00
21	Free Product Gauging & Bailing (per well)	\$116.13		\$0.00		\$0.00	\$0.00
22	Area Survey	\$968.52		\$0.00		\$0.00	\$0.00
Section C Subtotals:				\$2,261.26		\$0.00	\$2,261.26
Section D: Other Field Work							
1	Other Field Work			\$0.00		\$0.00	\$0.00
2	Other Field Work			\$0.00		\$0.00	\$0.00
Section D Subtotals:				\$0.00		\$0.00	\$0.00
Section E: Other Equip. Rental Cost(s)							
1	Other Equipment			\$0.00		\$0.00	\$0.00
2	Other Equipment			\$0.00		\$0.00	\$0.00
Section E Subtotals:				\$0.00		\$0.00	\$0.00

Petroleum Preapproval Program Work Order Template

Second Event

Work Order #: 2011-48-W91082 Facility Id #: 488621400 Site Name: CIRCLE K #7502 Date: 07/16/10

Template	Comments / Notes	Allowed Cost	Original		Change		Template Total Cost	
			Number of Items	Item Cost	Change Amount	Change Costs		
Section F: In-house Service Cost(s)								
1	Laboratory			\$0.00		\$0.00	\$0.00	
2	Drilling			\$0.00		\$0.00	\$0.00	
3	Direct Push			\$0.00		\$0.00	\$0.00	
4	Construction			\$0.00		\$0.00	\$0.00	
5	Other			\$0.00		\$0.00	\$0.00	
				Section F Subtotals:	\$0.00	\$0.00	\$0.00	
Section G: Subcontractor Cost(s)		Sub Markup = 10.00%	Unit Cost	# Units	Do not include markup			
1	Laboratory (from worksheet)	SPL	\$1,137.36		\$1,251.10	\$0.00	\$1,251.10	
2	Laboratory				\$0.00	\$0.00	\$0.00	
3	Mobile Lab				\$0.00	\$0.00	\$0.00	
4	Drilling				\$0.00	\$0.00	\$0.00	
5	Direct Push				\$0.00	\$0.00	\$0.00	
6	Construction				\$0.00	\$0.00	\$0.00	
7	Non-Capital Equip. and/or Materials				\$0.00	\$0.00	\$0.00	
8	Remedial Equip./System Lease				\$0.00	\$0.00	\$0.00	
9	Disposal				\$0.00	\$0.00	\$0.00	
10	Other				\$0.00	\$0.00	\$0.00	
				Section G Subtotals:	\$1,251.10	\$0.00	\$1,251.10	
Section G1: Remedial System Purchase								
1	Remedial System Costs				\$0.00	\$0.00	\$0.00	
2	PAC Remedial System Costs				\$0.00	\$0.00	\$0.00	
				Remedial System Subtotals:	\$0.00	\$0.00	\$0.00	
Section H: Office Activities, Part II								
1	General / SA Report							
Field Work Costs (Secs C & D) =		Field Work	x Multiplier			Field Work =	\$0.00	
2	Letter / NPDES Report	\$2,261.26	25%		\$565.32	\$0.00	\$0.00	
3	O&M Quarterly Report				\$282.27	\$0.00	\$0.00	
4	O&M Annual Report				\$1,645.53	\$0.00	\$0.00	
5	Pilot Test Plan				\$3,036.45	\$0.00	\$0.00	
6	Pilot Test Report				\$730.17	\$0.00	\$0.00	
7	Level 1 LSRAP or RAP Modification				\$1,275.27	\$0.00	\$0.00	
8	Level 2 LSRAP or RAP Modification				\$1,401.02	\$0.00	\$0.00	
9	Level 3 LSRAP or RAP Modification				\$2,742.89	\$0.00	\$0.00	
10	Level 4 LSRAP or RAP Modification				\$4,866.33	\$0.00	\$0.00	
11	Level 1 Remedial Action Plan				\$8,038.42	\$0.00	\$0.00	
12	Level 2 Remedial Action Plan				\$12,072.42	\$0.00	\$0.00	
13	As-built Drawings (P.E. red lined)				\$16,076.85	\$0.00	\$0.00	
14	Construction Drawings and Specs				\$617.81	\$0.00	\$0.00	
15	RAC Bid Package Solicitation/Evaluation				\$3,398.01	\$0.00	\$0.00	
16	RA Startup Report				\$1,916.72	\$0.00	\$0.00	
17	Soil Source Removal Report				\$2,386.61	\$0.00	\$0.00	
18	Natural Attenuation Plan				\$1,768.80	\$0.00	\$0.00	
19	Remedial Action Interim Report				\$1,079.88	\$0.00	\$0.00	
20	General Remedial Action Report				\$1,079.88	\$0.00	\$0.00	
21	NA or Post RA Monitoring Quarterly Report				\$530.10	\$0.00	\$0.00	
22	NA or Post RA Monitoring Annual Report			1	\$1,324.39	\$1,324.39	\$1,324.39	
23	Well Abandonment Report				\$244.51	\$0.00	\$0.00	
24	Initial Map & Table Generation				\$1,863.05	\$0.00	\$0.00	
25	Other Report Type (backup spreadsheet)					\$0.00	\$0.00	
				Section H Subtotals:	\$1,324.39	\$0.00	\$1,324.39	

Deliverables

Interim Deliverable	Due Date	Deliverable / Documentation
Final Deliverable Information (Specify only if selected for this event)		
Deliverable #	22	NA or Post RA Monitoring
Deliverable Due	12/01/10	Annual Report
Period of Service to:	05/30/11	

This Event Template Totals

	Original	Change	Total
Event Total:	\$4,836.76	\$0.00	\$4,836.76

Cumulative Work Order Totals (less Retainage)

Invoice	Previous	This Event	Total
# 1-6 Events	\$4,042.46	\$3,512.36	\$7,554.82
# 7 Remedial Systems	\$0.00	\$0.00	\$0.00
# 8 Final Deliverable	\$0.00	\$1,324.39	\$1,324.39
# 9 Retainage	\$0.00	\$0.00	\$0.00
Work Order Total	\$4,042.46	\$4,836.75	\$8,879.21

This Event Template Invoice Totals (less Retainage)

Invoice	Original	Change	Total
# 2 2nd Event	\$3,512.36	\$0.00	\$3,512.36
# 7 Remedial Systems	\$0.00	\$0.00	\$0.00
# 8 Final Deliverable	\$1,324.39	\$0.00	\$1,324.39
# 9 Retainage	\$0.00	\$0.00	\$0.00
Event Template Total	\$4,836.75	\$0.00	\$4,836.75

Petroleum Cleanup Preapproval Program Services Change Order & Invoice

Work Order # 2011-48-W91082	FAC.ID # 488521400	FDEP Contract # PPA017	Contractor # 00787	Invoice # 00000	Invoice Date 01/00/00	Cost Center # 37450404555
CIRCLE K #7502			01/00/00 to 05/30/11		01/00/00	087888/FY 10-11/UP
Facility Name ORLANDO, ORANGE			Period of Service (PoS) 0		PoS Extended to	Category/FY/EO
City and County			Date(s) Contractor Rendered Services			

Vendor Remit Payment To: _____ 0 _____ 0 _____ 0 _____ 0 FEID #: 00000000000 Agent: 0 Telephone: -	Bill To: Florida Dept. of Environmental Protection Bureau of Petroleum Storage Systems 2600 Blair Stone Road, M.S. 4575 Tallahassee, Florida 32399-2400 Attn: BPSS Accounting	RECEIVED U.C. ENVIRONMENTAL PROTECTION DIVISION 2011 FEB 18 AM 11:50 FDEP/LP Received Date
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(1)	Invoicing Point (y/pl-)	(2)	Original Amount	(3)	Change Amount	(4)	New Total	(5)	Previously Invoiced	(6)	Due This Invoice	Balance
1	<input type="checkbox"/> 1st Event	\$4,042.46	\$4,042.46	\$0.00	\$4,042.46	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$4,042.46	
2	<input type="checkbox"/> 2nd Event	\$3,512.36	\$3,512.36	\$0.00	\$3,512.36	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$3,512.36	
3	<input type="checkbox"/> 3rd Event	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
4	<input type="checkbox"/> 4th Event	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
5	<input type="checkbox"/> 5th Event	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
6	<input type="checkbox"/> 6th Event	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
7	<input type="checkbox"/> Remedial Systems	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
8	<input type="checkbox"/> Final Deliverable	\$1,324.39	\$1,324.39	\$0.00	\$1,324.39	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,324.39	
9	<input type="checkbox"/> Retainage	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Total		\$8,879.21	\$8,879.21	\$0.00	\$8,879.21	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$8,879.21	

Signature by authorized contractor representative affirms that this invoice is submitted in accordance with the Work Order Terms & Conditions and certifies any change request. _____ 0 Contractor Representative Signature Print Name	STOP CLOCK #1 Date: _____ Reason: _____ RESTART CLOCK #1 Date: _____
---	--

FDEP/LP Use Only: Manual Invoice Corrections (if necessary) Manual Corrections Made By (print name): _____ Approved By (print contractor rep. name): _____ Date Approved: _____ Approval Method (circle one): phone fax email other _____	STOP CLOCK #2 Date: _____ Reason: _____ RESTART CLOCK #2 Date: _____
--	--

FDEP/LP Use Only: Performance Certified Satisfactory: Date Complete Invoice Received: _____ Date Services Rendered: _____ Date Services Approved: _____ Final Invoice: YES NO	Site Manager Signature _____ Date _____ FDEP Manager Signature _____ Date _____ Cost Center Administrator Signature _____ Date _____ Finance & Accounting Received Date
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Preapproval Sampling Parameter Table

Work Order # 2011-48-W91082 Facility ID # 488521400 Site Name: CIRCLE K #7502

EVENT 1		Analytical Parameters (enter number of samples for each method)										
Groundwater Sample Locations	Number of Events	BTEX + MTBE EPA 8021B	BTEX + MTBE EPA 8260B	PAHs EPA 8270C	PAHs EPA 8310	TRPHs FL-PRO	Lead EPA 6010B	VOAs & VOHs EPA 8021B	VOAs & VOHs EPA 8260B	EDB EPA 504	EDB EPA 8011	Chapter 62-770 Table B
		1	MW-1	1		1						
2	MW-3	1		1								
3	MW-5	1		1								
4	MW-10	1		1								
5	MW-11	1		1								
6	MW-12	1		1								
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
No. Samples		6	0	6	0	0	0	0	0	0	0	0
Cost per Sample		\$60.67	\$60.67	\$128.89	\$128.89	\$96.05	\$15.16	\$128.89	\$128.89	\$50.55	\$55.61	\$374.07
Subtotal		\$1,137.36	\$0.00	\$773.34	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Soil /Air Sample Locations	Number of Events	BTEX + MTBE EPA 8021B	BTEX + MTBE EPA 8260B	PAHs EPA 8270C	PAHs EPA 8310	TRPHs FL-PRO	VOHs EPA 8021B	VOHs EPA 8260B	As, Cd, Cr, Pb EPA 6010B	SPLP Extraction EPA 1312	Modified EPA 18	Chapter 62-770 Table B
		1										
2												
3												
4												
5												
6												
7												
No. Samples		0	0	0	0	0	0	0	0	0	0	0
Cost per Sample		\$67.23	\$67.23	\$136.49	\$136.49	\$98.58	\$80.89	\$80.89	\$70.76	\$101.10	\$126.37	\$126.37
Subtotal		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

Event 1 Total Lab Cost: **\$1,137.36**

EVENT 2		Analytical Parameters (enter number of samples for each method)										
Groundwater Sample Locations	Number of Events	BTEX + MTBE EPA 8021B	BTEX + MTBE EPA 8260B	PAHs EPA 8270C	PAHs EPA 8310	TRPHs FL-PRO	Lead EPA 6010B	VOAs & VOHs EPA 8021B	VOAs & VOHs EPA 8260B	EDB EPA 504	EDB EPA 8011	Chapter 62-770 Table B
		1	MW-1	1		1						
2	MW-3	1		1								
3	MW-5	1		1								
4	MW-10	1		1								
5	MW-11	1		1								
6	MW-12	1		1								
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
No. Samples		6	0	6	0	0	0	0	0	0	0	0
Cost per Sample		\$60.67	\$60.67	\$128.89	\$128.89	\$96.05	\$15.16	\$128.89	\$128.89	\$50.55	\$55.61	\$374.07
Subtotal		\$1,137.36	\$0.00	\$773.34	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Soil /Air Sample Locations	Number of Events	BTEX + MTBE EPA 8021B	BTEX + MTBE EPA 8260B	PAHs EPA 8270C	PAHs EPA 8310	TRPHs FL-PRO	VOHs EPA 8021B	VOHs EPA 8260B	As, Cd, Cr, Pb EPA 6010B	SPLP Extraction EPA 1312	Modified EPA 18	Chapter 62-770 Table B
		1										
2												
3												
4												
5												
6												
7												
No. Samples		0	0	0	0	0	0	0	0	0	0	0
Cost per Sample		\$67.23	\$67.23	\$136.49	\$136.49	\$98.58	\$80.89	\$80.89	\$70.76	\$101.10	\$126.37	\$126.37
Subtotal		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

Event 2 Total Lab Cost: **\$1,137.36**

WO TOTAL LAB COST \$2,274.72

EVENT 3		Analytical Parameters (enter number of samples for each method)										
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Verbal Authorization for Change in Scope of Work

FDEP

FDEP Work Order # 2011-48-W91082 FACID #: 488521400 Site Manager: Renee Parker
 Contractor Name: ATC Associates Inc. Contractor Phone #: 813-889-8960 ext. 245
 Site Name and Address: CIRCLE K #7502, 16959 E COLONIAL DR (E HWY 50), ORLANDO

This is an authorization for the costs associated with the scope of work listed below. In order for these costs to be paid, these changes will need to be incorporated into the applicable change order/invoice for the referenced work order or task assignment (including copies of all applicable subcontractor & materials invoices).

Description of Change: 1 **Field Event**

ATC requests a 60-day deliverable due date extension for Deliverable 1 and the Final Deliverable, since the Work Order was not received until 8/24/10.

VCO #1

Field Work	Section & Number	Template Activity Description	Cost per Item	# of Items	Authorized Costs
n/a	H-1	General / SA Report Preparation Costs ¹	n/a		

¹ actual amount will be determined in template cost sheet during invoicing

subtotal:

Subcontractor/Equip. Purchase	Authorized Costs	In-house Services/Equip. Rental	Authorized Costs
Laboratory []	\$0.00		

Field Work	Labor Category	"Bare" Labor Rates	Labor Hours	Authorized Costs	Misc. Expenses	Authorized Costs
					Equipment:	
					Materials:	
					Other:	
					[]	
	Equipment Kit Costs:	\$0.00				
	(See Price List)					

subtotal*:
(* Includes all markups & equipment kit costs)

subtotal:

Deliverable(s)	Previous Due Date(s)	New Due Date(s)	FDEP Cost Share 100%
1st: NAM Quarterly Q3Y2	9/2/2010	11/1/2010	Total Authorized Costs
2nd:			
3rd:			
4th:			
5th:			
Final: Year 2, Quarter 8 NAM Report	12/1/2010	1/29/2011	

Period of Service extended to:

Requested by Contractor Representative: Meghan Bergquist (Print Name) [Signature] Date: 8/30/2010
 Authorized by FDEP Site Manager: Renee Parker (Print Name) [Signature] Date: 8/30/10
 Accepted Contractor Representative: Meghan Bergquist (Print Name) [Signature] Date: 8/30/10

Cost Center Administrator Approval >\$10,000: _____ Reviewer Initials (optional): _____ Date: _____

fax 813-889-8754

Florida Department of Environmental Protection-Division of Waste Management-Bureau of Petroleum Storage Systems-Petroleum Cleanup

Verbal Authorization for Change In Scope of Work

FDEP Work Order # 2011-48-W91082 FACID #: 486521400 FDEP Site Manager: Carol White
 Contractor Name: ATC Associates Inc. Contractor Phone #: 813-889-8960 ext. 245
 Site Name and Address: CIRCLE K #7602, 16959 E COLONIAL DR (E HWY 50), ORLANDO

This is an authorization for the costs associated with the scope of work listed below. In order for these costs to be paid, these changes will need to be incorporated into the applicable change order/invoice for the referenced work order or task assignment (including copies of all applicable subcontractor & materials invoices).

Description of Change: 2 Field Event

ATC requests the costs to install and sample one monitoring well, MW-13, approximately 10 feet south of MW-1 (downgradient), at the property boundary, as recommended in the 10/25/10 Quarter 7 NAM Report and approved in the 11/17/10 deliverable review letter from the OCEPD. The well is proposed to be 2-inch in diameter, screened from 2-12 feet bts, and installed via Direct Push Technology due to an overhead electric line. The well will be sampled during the annual NAM event. A deliverable due date extension is also requested in order to have time to install the well, perform the annual sampling event, and include the results in the annual NAM report.

VCO #2

Field Work	Section & Number	Template Activity Description	Cost per Item	# of Items	Authorized Costs
	C-1	Mobilization (2 persons)	\$810.76	1	\$810.76 ✓
	C-19	Well Sampling (per well)	\$241.75	1	\$241.75 ✓
n/a	H-1	General / SA Report Preparation Costs ¹	n/a		
¹ actual amount will be determined in template cost sheet during invoicing					subtotal: \$1,062.51

Subcontractor/Equip. Purchase	Authorized Costs	In-house Services/Equip. Rental	Authorized Costs
Laboratory [SPL]	\$189.58 ✓		
Preferred Drilling	\$1,598.00 ✓		

Field Work	Labor Category	"Bare" Labor Rates	Labor Hours	Authorized Costs	Misc. Expenses	Authorized Costs
	ULT	\$23.36	5.0	\$116.80	Equipment:	
	MLT	\$17.63	5.0	\$88.15	Materials:	
					Other:	
	Equipment Kit Costs: (See Price List)	\$316.38		subtotal²: \$1,032.88 ✓		subtotal:
				² includes all markups & equipment kit costs		

Deliverable(s)	Previous Due Date(s)	New Due Date(s)	FDEP Cost Share
1st: <u>NAM Quarterly Q3Y2</u> ✓	<u>9/2/2010</u>	<u>11/1/2010</u>	<u>100%</u>
2nd:			Total Authorized Costs \$4,051.71 ✓
3rd:			
4th:			
5th:			
Final: <u>Year 2, Quarter 8 NAM Report</u>	<u>1/29/2011</u>	<u>2/19/2011</u>	Period of Service extended to:

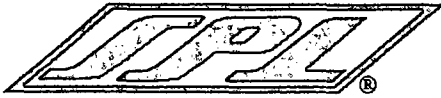
Requested by Contractor Representative: Meghan Bergquist (Print Name) *Meghan Bergquist* Date: 11/23/2010
 Authorized by FDEP Site Manager: Carol White (Print Name) *Carol White* Date: 11/30/2010
 Accepted Contractor Representative: Meghan Bergquist (Print Name) *Meghan Bergquist* Date: 12/7/10
 Cost Center Administrator Approval >\$10,000: _____ Reviewer Initials (optional): mb Date: 12/10/10



Environmental, Geotechnical and Materials Professionals

APPENDIX B

Groundwater Analytical Lab Report, Groundwater Sampling Logs, and Equipment Calibration Log



LAFAYETTE LABORATORY
 500 AMBASSADOR CAFFERY PARKWAY
 SCOTT, LA 70583
 (337) 237-4775

Case Narrative for:
ATC ASSOCIATES, INC.

Certificate of Analysis Number:
11020011

<p>Report To: ATC ASSOCIATES, INC. WENDY HUNTER 5602 THOMPSON CENTER COURT SUITE 405 TAMPA FL 33634- ph: (813) 889-8960 fax: (813) 889-8754</p>	<p>Project Name: 005.16564.0320 Site: CIRCLE K #7487 Site Address: WINTER HAVEN FL PO Number: State: Florida State Cert. No.: E87657 Date Reported: 2/8/2011</p>
---	--

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data for those samples spiked by the laboratory and may be applicable to other samples of similar matrix from the site. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group.

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process. If insufficient sample is supplied for MS/MSD, a Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) are reported with the analytical batch and serve as the batch quality control (QC).

Results are reported on a Wet Weight Basis unless otherwise noted in the sample unit field as -dry.

The collection of samples using encores, terracores or other field collection devices may result in inconsistent initial sample weights for the parent sample and MS/MSD samples.

The MS/MSD recovery and precision data are calculated based on detected spike concentrations that are adjusted for initial sample weights. As a result of the variability between initial sample weights, the calculated RPD may have increased bias.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Samples were reported according to the Analytical Methods Guidance for Chapters 62-770, F. A. C. addressing reporting requirements for data submitted to the FDEP programs. Whenever an analyte is not detected above the MDL, the MDL for the measurement is reported along with a qualifier code (U) indicating that the analyte was not detected at the reported detection limit. Alternately, the analytical value followed by the qualifier code (I) indicates the analytical value reported was below the PQL (laboratory detection limit "Rep.Limit"), but above the MDL. For those samples where an analyte was detected in both the sample and the associated method blank, the analytical value is followed by the qualifier "V".

NOTE: The laboratory defines the terms Reporting Limit (RL) and Practical Quantitation Limit (PQL) as equivalent terms.

With guidance from the Florida Bureau of Petroleum Storage Systems, MDLs are based on empirically determined limits of quantitation as opposed to statistical MDL values. The RepLimits/PQLs are based on Florida Target PQLs for regulated carcinogenic PAHs.

Alberto E. Granados
 Project Manager

Test results meet all requirements of NELAC, unless specified in the narrative.

11020011 Page 1

2/8/2011

Date



LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

ATC ASSOCIATES, INC.

Certificate of Analysis Number:

11020011

Report To: ATC ASSOCIATES, INC.
WENDY HUNTER
5602 THOMPSON CENTER COURT
SUITE 405
TAMPA
FL
33634-
ph: (813) 889-8960 fax: (813) 889-8754

Project Name: 005.16564.0320
Site: CIRCLE K #7487
Site Address: WINTER HAVEN FL
PO Number:
State: Florida
State Cert. No.: E87657
Date Reported: 2/8/2011

Fax To:

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-13	11020011-01	Water	01/28/2011 10:40	2/1/2011 9:45:00 AM	317291	<input type="checkbox"/>
MW-11	11020011-02	Water	01/28/2011 10:43	2/1/2011 9:45:00 AM	317291	<input type="checkbox"/>
MW-1	11020011-03	Water	01/28/2011 11:22	2/1/2011 9:45:00 AM	317291	<input type="checkbox"/>
MW-3	11020011-04	Water	01/28/2011 11:22	2/1/2011 9:45:00 AM	317291	<input type="checkbox"/>
MW-5	11020011-05	Water	01/28/2011 11:52	2/1/2011 9:45:00 AM	317291	<input type="checkbox"/>
MW-10	11020011-06	Water	01/28/2011 11:58	2/1/2011 9:45:00 AM	317291	<input type="checkbox"/>
MW-12	11020011-07	Water	01/28/2011 12:36	2/1/2011 9:45:00 AM	317291	<input type="checkbox"/>

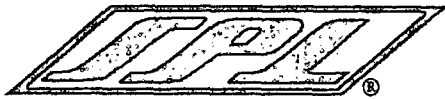
Alberto E. Granados
Project Manager

2/8/2011

Date

Ron Benjamin
Laboratory Director

Tristan Davis
Quality Assurance Officer



LAFAYETTE LABORATORY
 500 AMBASSADOR CAFFERY PARKWAY
 SCOTT, LA 70583
 (337) 237-4775

Client Sample ID: MW-13

Collected: 01/28/2011 10:40 SPL Sample ID: 11020011-01

Site: CIRCLE K #7487

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
BTEX + MTBE BY METHOD 8021B				MCL		SW8021B Units: ug/L		
Benzene	U		0.6	1	1	02/01/11 23:13	SNV	3918841
Ethylbenzene	U		0.48	1	1	02/01/11 23:13	SNV	3918841
Methyl tert-butyl ether	U		0.72	8	1	02/01/11 23:13	SNV	3918841
Toluene	U		0.83	1	1	02/01/11 23:13	SNV	3918841
m,p-Xylene	U		1	2	1	02/01/11 23:13	SNV	3918841
o-Xylene	U		0.43	1	1	02/01/11 23:13	SNV	3918841
Xylenes, Total	U		1	1	1	02/01/11 23:13	SNV	3918841
Surr: 1,4-Difluorobenzene	110		0	% 72-138	1	02/01/11 23:13	SNV	3918841
Surr: 4-Bromofluorobenzene	102		0	% 65-142	1	02/01/11 23:13	SNV	3918841

Alberto E. Granados
 Project Manager

Qualifiers:

- ND/U - Not Detected at the Method Detection Limit
- I - Analyte detected but could not be quantified with certainty
- * - Surrogate Recovery Outside Advisable QC Limits
- E - Concentrations exceeding Calibration range of Instrument
- V - Analyte Detected In The Method Blank At Or Above The MDL
- result Over Maximum Contamination Limit(MCL)
- D - Surrogate Recovery Unreportable due to Dilution
- MI - Matrix Interference
- TNTC - Too numerous to count



LAFAYETTE LABORATORY
 500 AMBASSADOR CAFFERY PARKWAY
 SCOTT, LA 70583
 (337) 237-4775

Client Sample ID: MW-13

Collected: 01/28/2011 10:40 SPL Sample ID: 11020011-01

Site: CIRCLE K #7487

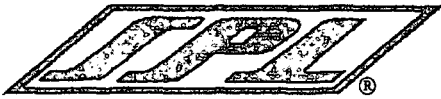
Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #	
PAHS BY EPA 8270D					MCL	SW8270D Units: ug/L			
1-Methylnaphthalene	U		0.036	0.14	1	02/03/11 16:54	LDD	3922492	
2-Methylnaphthalene	U		0.036	0.14	1	02/03/11 16:54	LDD	3922492	
Acenaphthene	U		0.036	0.14	1	02/03/11 16:54	LDD	3922492	
Acenaphthylene	U		0.036	0.14	1	02/03/11 16:54	LDD	3922492	
Anthracene	U		0.036	0.14	1	02/03/11 16:54	LDD	3922492	
Benz(a)anthracene	U		0.036	0.14	1	02/03/11 16:54	LDD	3922492	
Benzo(a)pyrene	U		0.036	0.14	1	02/03/11 16:54	LDD	3922492	
Benzo(b)fluoranthene	U		0.036	0.071	1	02/03/11 16:54	LDD	3922492	
Benzo(g,h,i)perylene	U		0.036	0.14	1	02/03/11 16:54	LDD	3922492	
Benzo(k)fluoranthene	U		0.036	0.14	1	02/03/11 16:54	LDD	3922492	
Chrysene	U		0.036	0.14	1	02/03/11 16:54	LDD	3922492	
Dibenz(a,h)anthracene	U		0.036	0.14	1	02/03/11 16:54	LDD	3922492	
Fluoranthene	U		0.036	0.14	1	02/03/11 16:54	LDD	3922492	
Fluorene	U		0.036	0.14	1	02/03/11 16:54	LDD	3922492	
Indeno(1,2,3-cd)pyrene	U		0.036	0.14	1	02/03/11 16:54	LDD	3922492	
Naphthalene	U		0.036	0.14	1	02/03/11 16:54	LDD	3922492	
Phenanthrene	U		0.036	0.14	1	02/03/11 16:54	LDD	3922492	
Pyrene	U		0.036	0.14	1	02/03/11 16:54	LDD	3922492	
Surr: 2-Fluorobiphenyl	78.7		0	% 53-136	1	02/03/11 16:54	LDD	3922492	
Surr: 4-Terphenyl-d14	77.0		0	% 38-151	1	02/03/11 16:54	LDD	3922492	
Surr: Nitrobenzene-d5	97.7		0	% 31-169	1	02/03/11 16:54	LDD	3922492	

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	02/03/2011 8:40	JT	0.71

Alberto E. Granados
 Project Manager

Qualifiers:

- ND/U - Not Detected at the Method Detection Limit
- I - Analyte detected but could not be quantified with certainty
- * - Surrogate Recovery Outside Advisable QC Limits
- E - Concentrations exceeding Calibration range of Instrument
- V - Analyte Detected In The Method Blank At Or Above The MDL
- result Over Maximum Contamination Limit(MCL)
- D - Surrogate Recovery Unreportable due to Dilution
- MI - Matrix Interference
- TNTC - Too numerous to count



LAFAYETTE LABORATORY
 500 AMBASSADOR CAFFERY PARKWAY
 SCOTT, LA 70583
 (337) 237-4775

Client Sample ID: MW-11

Collected: 01/28/2011 10:43 SPL Sample ID: 11020011-02

Site: CIRCLE K #7487

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
BTEX + MTBE BY METHOD 8021B					MCL	SW8021B Units: ug/L		
Benzene	U		0.6	1	1	02/01/11 22:40	SNV	3918840
Ethylbenzene	U		0.48	1	1	02/01/11 22:40	SNV	3918840
Methyl tert-butyl ether	U		0.72	8	1	02/01/11 22:40	SNV	3918840
Toluene	U		0.83	1	1	02/01/11 22:40	SNV	3918840
m,p-Xylene	U		1	2	1	02/01/11 22:40	SNV	3918840
o-Xylene	U		0.43	1	1	02/01/11 22:40	SNV	3918840
Xylenes, Total	U		1	1	1	02/01/11 22:40	SNV	3918840
Surr: 1,4-Difluorobenzene	103		0	% 72-138	1	02/01/11 22:40	SNV	3918840
Surr: 4-Bromofluorobenzene	98.7		0	% 65-142	1	02/01/11 22:40	SNV	3918840

Alberto E. Granados
 Project Manager

Qualifiers:

- ND/U - Not Detected at the Method Detection Limit
- I - Analyte detected but could not be quantified with certainty
- * - Surrogate Recovery Outside Advisable QC Limits
- E - Concentrations exceeding Calibration range of Instrument
- V - Analyte Detected In The Method Blank At Or Above The MDL
- result Over Maximum Contamination Limit(MCL)
- D - Surrogate Recovery Unreportable due to Dilution
- MI - Matrix Interference
- TNTC - Too numerous to count

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LAFAYETTE LABORATORY
 500 AMBASSADOR CAFFERY PARKWAY
 SCOTT, LA 70583
 (337) 237-4775

Client Sample ID: MW-11

Collected: 01/28/2011 10:43 SPL Sample ID: 11020011-02

Site: CIRCLE K #7487

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #	
PAHS BY EPA 8270D					MCL	SW8270D Units: ug/L			
1-Methylnaphthalene	U		0.036	0.14	1	02/03/11 17:18	LDD	3922493	
2-Methylnaphthalene	U		0.036	0.14	1	02/03/11 17:18	LDD	3922493	
Acenaphthene	U		0.036	0.14	1	02/03/11 17:18	LDD	3922493	
Acenaphthylene	U		0.036	0.14	1	02/03/11 17:18	LDD	3922493	
Anthracene	U		0.036	0.14	1	02/03/11 17:18	LDD	3922493	
Benz(a)anthracene	U		0.036	0.14	1	02/03/11 17:18	LDD	3922493	
Benzo(a)pyrene	U		0.036	0.14	1	02/03/11 17:18	LDD	3922493	
Benzo(b)fluoranthene	U		0.036	0.071	1	02/03/11 17:18	LDD	3922493	
Benzo(g,h,i)perylene	U		0.036	0.14	1	02/03/11 17:18	LDD	3922493	
Benzo(k)fluoranthene	U		0.036	0.14	1	02/03/11 17:18	LDD	3922493	
Chrysene	U		0.036	0.14	1	02/03/11 17:18	LDD	3922493	
Dibenz(a,h)anthracene	U		0.036	0.14	1	02/03/11 17:18	LDD	3922493	
Fluoranthene	U		0.036	0.14	1	02/03/11 17:18	LDD	3922493	
Fluorene	U		0.036	0.14	1	02/03/11 17:18	LDD	3922493	
Indeno(1,2,3-cd)pyrene	U		0.036	0.14	1	02/03/11 17:18	LDD	3922493	
Naphthalene	0.092	I	0.036	0.14	1	02/03/11 17:18	LDD	3922493	
Phenanthrene	U		0.036	0.14	1	02/03/11 17:18	LDD	3922493	
Pyrene	U		0.036	0.14	1	02/03/11 17:18	LDD	3922493	
Surr: 2-Fluorobiphenyl	80.1		0	% 53-136	1	02/03/11 17:18	LDD	3922493	
Surr: 4-Terphenyl-d14	84.0		0	% 38-151	1	02/03/11 17:18	LDD	3922493	
Surr: Nitrobenzene-d5	103		0	% 31-169	1	02/03/11 17:18	LDD	3922493	

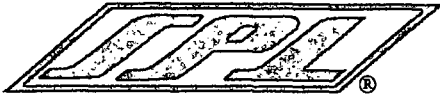
Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	02/03/2011 8:40	JT	0.71

Alberto E. Granados
 Project Manager

Qualifiers:

- ND/U - Not Detected at the Method Detection Limit
- I - Analyte detected but could not be quantified with certainty
- * - Surrogate Recovery Outside Advisable QC Limits
- E - Concentrations exceeding Calibration range of Instrument
- V - Analyte Detected In The Method Blank At Or Above The MDL
- result Over Maximum Contamination Limit(MCL)
- D - Surrogate Recovery Unreportable due to Dilution
- MI - Matrix Interference
- TNTC - Too numerous to count

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LAFAYETTE LABORATORY
 500 AMBASSADOR CAFFERY PARKWAY
 SCOTT, LA 70583
 (337) 237-4775

Client Sample ID: MW-1

Collected: 01/28/2011 11:22 SPL Sample ID: 11020011-03

Site: CIRCLE K #7487

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
BTEX + MTBE BY METHOD 8021B					MCL	SW8021B Units: ug/L		
Benzene	U		0.6	1	1	02/01/11 22:06	SNV	3918839
Ethylbenzene	U		0.48	1	1	02/01/11 22:06	SNV	3918839
Methyl tert-butyl ether	U		0.72	8	1	02/01/11 22:06	SNV	3918839
Toluene	U		0.83	1	1	02/01/11 22:06	SNV	3918839
m,p-Xylene	U		1	2	1	02/01/11 22:06	SNV	3918839
o-Xylene	U		0.43	1	1	02/01/11 22:06	SNV	3918839
Xylenes, Total	U		1	1	1	02/01/11 22:06	SNV	3918839
Surr: 1,4-Difluorobenzene	107		0	% 72-138	1	02/01/11 22:06	SNV	3918839
Surr: 4-Bromofluorobenzene	114		0	% 65-142	1	02/01/11 22:06	SNV	3918839

Alberto E. Granados
 Project Manager

Qualifiers:

- ND/U - Not Detected at the Method Detection Limit
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- V - Analyte Detected In The Method Blank At Or Above The MDL
- result Over Maximum Contamination Limit(MCL)
- D - Surrogate Recovery Unreportable due to Dilution
- MI - Matrix Interference
- TNTC - Too numerous to count

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 2/8/2011 7:18:53 AM



LAFAYETTE LABORATORY
 500 AMBASSADOR CAFFERY PARKWAY
 SCOTT, LA 70583
 (337) 237-4775

Client Sample ID: MW-1

Collected: 01/28/2011 11:22 SPL Sample ID: 11020011-03

Site: CIRCLE K #7487

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
PAHS BY EPA 8270D					MCL	SW8270D Units: ug/L		
1-Methylnaphthalene	0.45		0.036	0.14	1	02/03/11 17:42	LDD	3922494
2-Methylnaphthalene	0.36		0.036	0.14	1	02/03/11 17:42	LDD	3922494
Acenaphthene	0.052	I	0.036	0.14	1	02/03/11 17:42	LDD	3922494
Acenaphthylene	U		0.036	0.14	1	02/03/11 17:42	LDD	3922494
Anthracene	U		0.036	0.14	1	02/03/11 17:42	LDD	3922494
Benz(a)anthracene	U		0.036	0.14	1	02/03/11 17:42	LDD	3922494
Benzo(a)pyrene	U		0.036	0.14	1	02/03/11 17:42	LDD	3922494
Benzo(b)fluoranthene	U		0.036	0.071	1	02/03/11 17:42	LDD	3922494
Benzo(g,h,i)perylene	U		0.036	0.14	1	02/03/11 17:42	LDD	3922494
Benzo(k)fluoranthene	U		0.036	0.14	1	02/03/11 17:42	LDD	3922494
Chrysene	U		0.036	0.14	1	02/03/11 17:42	LDD	3922494
Dibenz(a,h)anthracene	U		0.036	0.14	1	02/03/11 17:42	LDD	3922494
Fluoranthene	U		0.036	0.14	1	02/03/11 17:42	LDD	3922494
Fluorene	U		0.036	0.14	1	02/03/11 17:42	LDD	3922494
Indeno(1,2,3-cd)pyrene	U		0.036	0.14	1	02/03/11 17:42	LDD	3922494
Naphthalene	1.4		0.036	0.14	1	02/03/11 17:42	LDD	3922494
Phenanthrene	U		0.036	0.14	1	02/03/11 17:42	LDD	3922494
Pyrene	U		0.036	0.14	1	02/03/11 17:42	LDD	3922494
Surr: 2-Fluorobiphenyl	66.1		0	% 53-136	1	02/03/11 17:42	LDD	3922494
Surr: 4-Terphenyl-d14	72.5		0	% 38-151	1	02/03/11 17:42	LDD	3922494
Surr: Nitrobenzene-d5	87.1		0	% 31-169	1	02/03/11 17:42	LDD	3922494

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	02/03/2011 8:40	JT	0.71

Alberto E. Granados
 Project Manager

Qualifiers:

- ND/U - Not Detected at the Method Detection Limit
- I - Analyte detected but could not be quantified with certainty
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- E - Concentrations exceeding Calibration range of Instrument
- V - Analyte Detected In The Method Blank At Or Above The MDL
- result Over Maximum Contamination Limit(MCL)
- D - Surrogate Recovery Unreportable due to Dilution
- MI - Matrix Interference
- TNTC - Too numerous to count



LAFAYETTE LABORATORY
 500 AMBASSADOR CAFFERY PARKWAY
 SCOTT, LA 70583
 (337) 237-4775

Client Sample ID: MW-3

Collected: 01/28/2011 11:22 SPL Sample ID: 11020011-04

Site: CIRCLE K #7487

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
BTEX + MTBE BY METHOD 8021B					MCL	SW8021B Units: ug/L		
Benzene	U		0.6	1	1	02/01/11 21:33	SNV	3918838
Ethylbenzene	U		0.48	1	1	02/01/11 21:33	SNV	3918838
Methyl tert-butyl ether	U		0.72	8	1	02/01/11 21:33	SNV	3918838
Toluene	U		0.83	1	1	02/01/11 21:33	SNV	3918838
m,p-Xylene	U		1	2	1	02/01/11 21:33	SNV	3918838
o-Xylene	U		0.43	1	1	02/01/11 21:33	SNV	3918838
Xylenes, Total	U		1	1	1	02/01/11 21:33	SNV	3918838
Surr: 1,4-Difluorobenzene	108		0	% 72-138	1	02/01/11 21:33	SNV	3918838
Surr: 4-Bromofluorobenzene	108		0	% 65-142	1	02/01/11 21:33	SNV	3918838

Alberto E. Granados
 Project Manager

Qualifiers:

- ND/U - Not Detected at the Method Detection Limit
- I - Analyte detected but could not be quantified with certainty
- * - Surrogate Recovery Outside Advisable QC Limits
- E - Concentrations exceeding Calibration range of Instrument
- V - Analyte Detected In The Method Blank At Or Above The MDL
- result Over Maximum Contamination Limit(MCL)
- D - Surrogate Recovery Unreportable due to Dilution
- MI - Matrix Interference
- TNTC - Too numerous to count

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 2/8/2011 7:18:54 AM



LAFAYETTE LABORATORY
 500 AMBASSADOR CAFFERY PARKWAY
 SCOTT, LA 70583
 (337) 237-4775

Client Sample ID: MW-3

Collected: 01/28/2011 11:22 SPL Sample ID: 11020011-04

Site: CIRCLE K #7487

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #	
PAHS BY EPA 8270D					MCL	SW8270D Units: ug/L			
1-Methylnaphthalene	U		0.036	0.14	1	02/03/11 18:05	LDD	3922495	
2-Methylnaphthalene	U		0.036	0.14	1	02/03/11 18:05	LDD	3922495	
Acenaphthene	U		0.036	0.14	1	02/03/11 18:05	LDD	3922495	
Acenaphthylene	U		0.036	0.14	1	02/03/11 18:05	LDD	3922495	
Anthracene	U		0.036	0.14	1	02/03/11 18:05	LDD	3922495	
Benz(a)anthracene	U		0.036	0.14	1	02/03/11 18:05	LDD	3922495	
Benzo(a)pyrene	U		0.036	0.14	1	02/03/11 18:05	LDD	3922495	
Benzo(b)fluoranthene	U		0.036	0.071	1	02/03/11 18:05	LDD	3922495	
Benzo(g,h,i)perylene	U		0.036	0.14	1	02/03/11 18:05	LDD	3922495	
Benzo(k)fluoranthene	U		0.036	0.14	1	02/03/11 18:05	LDD	3922495	
Chrysene	U		0.036	0.14	1	02/03/11 18:05	LDD	3922495	
Dibenz(a,h)anthracene	U		0.036	0.14	1	02/03/11 18:05	LDD	3922495	
Fluoranthene	U		0.036	0.14	1	02/03/11 18:05	LDD	3922495	
Fluorene	U		0.036	0.14	1	02/03/11 18:05	LDD	3922495	
Indeno(1,2,3-cd)pyrene	U		0.036	0.14	1	02/03/11 18:05	LDD	3922495	
Naphthalene	U		0.036	0.14	1	02/03/11 18:05	LDD	3922495	
Phenanthrene	U		0.036	0.14	1	02/03/11 18:05	LDD	3922495	
Pyrene	U		0.036	0.14	1	02/03/11 18:05	LDD	3922495	
Surr: 2-Fluorobiphenyl	77.3		0	% 53-136	1	02/03/11 18:05	LDD	3922495	
Surr: 4-Terphenyl-d14	73.1		0	% 38-151	1	02/03/11 18:05	LDD	3922495	
Surr: Nitrobenzene-d5	92.4		0	% 31-169	1	02/03/11 18:05	LDD	3922495	

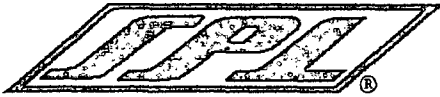
Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	02/03/2011 8:40	JT	0.71

Alberto E. Granados
 Project Manager

Qualifiers:

- ND/U - Not Detected at the Method Detection Limit
- I - Analyte detected but could not be quantified with certainty
- * - Surrogate Recovery Outside Advisable QC Limits
- E - Concentrations exceeding Calibration range of Instrument
- V - Analyte Detected In The Method Blank At Or Above The MDL

- result Over Maximum Contamination Limit(MCL)
- D - Surrogate Recovery Unreportable due to Dilution
- MI - Matrix Interference
- TNTC - Too numerous to count



LAFAYETTE LABORATORY
 500 AMBASSADOR CAFFERY PARKWAY
 SCOTT, LA 70583
 (337) 237-4775

Client Sample ID: MW-5

Collected: 01/28/2011 11:52 SPL Sample ID: 11020011-05

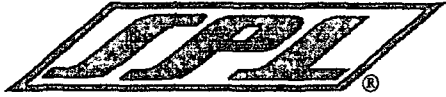
Site: CIRCLE K #7487

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
BTEX + MTBE BY METHOD 8021B					MCL	SW8021B	Units: ug/L	
Benzene	U		0.6	1	1	02/01/11 21:00	SNV	3918837
Ethylbenzene	5.2		0.48	1	1	02/01/11 21:00	SNV	3918837
Methyl tert-butyl ether	U		0.72	8	1	02/01/11 21:00	SNV	3918837
Toluene	U		0.83	1	1	02/01/11 21:00	SNV	3918837
m,p-Xylene	U		1	2	1	02/01/11 21:00	SNV	3918837
o-Xylene	U		0.43	1	1	02/01/11 21:00	SNV	3918837
Xylenes, Total	U		1	1	1	02/01/11 21:00	SNV	3918837
Surr: 1,4-Difluorobenzene	100		0	% 72-138	1	02/01/11 21:00	SNV	3918837
Surr: 4-Bromofluorobenzene	110		0	% 65-142	1	02/01/11 21:00	SNV	3918837

Alberto E. Granados
 Project Manager

Qualifiers:

- ND/U - Not Detected at the Method Detection Limit
- I - Analyte detected but could not be quantified with certainty
- * - Surrogate Recovery Outside Advisable QC Limits
- E - Concentrations exceeding Calibration range of Instrument
- V - Analyte Detected In The Method Blank At Or Above The MDL
- result Over Maximum Contamination Limit(MCL)
- D - Surrogate Recovery Unreportable due to Dilution
- MI - Matrix Interference
- TNTC - Too numerous to count



LAFAYETTE LABORATORY
 500 AMBASSADOR CAFFERY PARKWAY
 SCOTT, LA 70583
 (337) 237-4775

Client Sample ID: MW-5

Collected: 01/28/2011 11:52 SPL Sample ID: 11020011-05

Site: CIRCLE K #7487

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
PAHS BY EPA 8270D					MCL	SW8270D Units: ug/L		
1-Methylnaphthalene	0.83		0.036	0.14	1	02/03/11 18:29	LDD	3922496
2-Methylnaphthalene	1.4		0.036	0.14	1	02/03/11 18:29	LDD	3922496
Acenaphthene	U		0.036	0.14	1	02/03/11 18:29	LDD	3922496
Acenaphthylene	U		0.036	0.14	1	02/03/11 18:29	LDD	3922496
Anthracene	U		0.036	0.14	1	02/03/11 18:29	LDD	3922496
Benz(a)anthracene	U		0.036	0.14	1	02/03/11 18:29	LDD	3922496
Benzo(a)pyrene	U		0.036	0.14	1	02/03/11 18:29	LDD	3922496
Benzo(b)fluoranthene	U		0.036	0.071	1	02/03/11 18:29	LDD	3922496
Benzo(g,h,i)perylene	U		0.036	0.14	1	02/03/11 18:29	LDD	3922496
Benzo(k)fluoranthene	U		0.036	0.14	1	02/03/11 18:29	LDD	3922496
Chrysene	U		0.036	0.14	1	02/03/11 18:29	LDD	3922496
Dibenz(a,h)anthracene	U		0.036	0.14	1	02/03/11 18:29	LDD	3922496
Fluoranthene	U		0.036	0.14	1	02/03/11 18:29	LDD	3922496
Fluorene	U		0.036	0.14	1	02/03/11 18:29	LDD	3922496
Indeno(1,2,3-cd)pyrene	U		0.036	0.14	1	02/03/11 18:29	LDD	3922496
Naphthalene	2.8		0.036	0.14	1	02/03/11 18:29	LDD	3922496
Phenanthrene	U		0.036	0.14	1	02/03/11 18:29	LDD	3922496
Pyrene	U		0.036	0.14	1	02/03/11 18:29	LDD	3922496
Surr: 2-Fluorobiphenyl	83.4		0	% 53-136	1	02/03/11 18:29	LDD	3922496
Surr: 4-Terphenyl-d14	82.9		0	% 38-151	1	02/03/11 18:29	LDD	3922496
Surr: Nitrobenzene-d5	102		0	% 31-169	1	02/03/11 18:29	LDD	3922496

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	02/03/2011 8:40	JT	0.71

Alberto E. Granados
 Project Manager

Qualifiers:

- ND/U - Not Detected at the Method Detection Limit
- I - Analyte detected but could not be quantified with certainty
- * - Surrogate Recovery Outside Advisable QC Limits
- E - Concentrations exceeding Calibration range of Instrument
- V - Analyte Detected In The Method Blank At Or Above The MDL

- result Over Maximum Contamination Limit(MCL)
- D - Surrogate Recovery Unreportable due to Dilution
- MI - Matrix Interference
- TNTC - Too numerous to count

11020011 Page 12
 2/8/2011 7:18:56 AM



LAFAYETTE LABORATORY
 500 AMBASSADOR CAFFERY PARKWAY
 SCOTT, LA 70583
 (337) 237-4775

Client Sample ID: MW-10

Collected: 01/28/2011 11:58 SPL Sample ID: 11020011-06

Site: CIRCLE K #7487

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
BTEX + MTBE BY METHOD 8021B					MCL	SW8021B	Units: ug/L	
Benzene	U		0.6	1	1	02/01/11 20:27	SNV	3918836
Ethylbenzene	5.4		0.48	1	1	02/01/11 20:27	SNV	3918836
Methyl tert-butyl ether	U		0.72	8	1	02/01/11 20:27	SNV	3918836
Toluene	U		0.83	1	1	02/01/11 20:27	SNV	3918836
m,p-Xylene	U		1	2	1	02/01/11 20:27	SNV	3918836
o-Xylene	U		0.43	1	1	02/01/11 20:27	SNV	3918836
Xylenes, Total	U		1	1	1	02/01/11 20:27	SNV	3918836
Surr: 1,4-Difluorobenzene	106		0	% 72-138	1	02/01/11 20:27	SNV	3918836
Surr: 4-Bromofluorobenzene	115		0	% 65-142	1	02/01/11 20:27	SNV	3918836

Alberto E. Granados

Project Manager

Qualifiers:

- ND/U - Not Detected at the Method Detection Limit
- I - Analyte detected but could not be quantified with certainty
- * - Surrogate Recovery Outside Advisable QC Limits
- E - Concentrations exceeding Calibration range of Instrument
- V - Analyte Detected In The Method Blank At Or Above The MDL
- result Over Maximum Contamination Limit(MCL)
- D - Surrogate Recovery Unreportable due to Dilution
- MI - Matrix Interference
- TNTC - Too numerous to count

11020011 Page 13
 2/8/2011 7:18:57 AM



LAFAYETTE LABORATORY
 500 AMBASSADOR CAFFERY PARKWAY
 SCOTT, LA 70583
 (337) 237-4775

Client Sample ID: MW-10

Collected: 01/28/2011 11:58 SPL Sample ID: 11020011-06

Site: CIRCLE K #7487

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #	
PAHS BY EPA 8270D					MCL	SW8270D Units: ug/L			
1-Methylnaphthalene	4.1		0.036	0.14	1	02/03/11 18:51	LDD	3922497	
2-Methylnaphthalene	3.2		0.036	0.14	1	02/03/11 18:51	LDD	3922497	
Acenaphthene	U		0.036	0.14	1	02/03/11 18:51	LDD	3922497	
Acenaphthylene	U		0.036	0.14	1	02/03/11 18:51	LDD	3922497	
Anthracene	U		0.036	0.14	1	02/03/11 18:51	LDD	3922497	
Benz(a)anthracene	U		0.036	0.14	1	02/03/11 18:51	LDD	3922497	
Benzo(a)pyrene	U		0.036	0.14	1	02/03/11 18:51	LDD	3922497	
Benzo(b)fluoranthene	U		0.036	0.071	1	02/03/11 18:51	LDD	3922497	
Benzo(g,h,i)perylene	U		0.036	0.14	1	02/03/11 18:51	LDD	3922497	
Benzo(k)fluoranthene	U		0.036	0.14	1	02/03/11 18:51	LDD	3922497	
Chrysene	U		0.036	0.14	1	02/03/11 18:51	LDD	3922497	
Dibenz(a,h)anthracene	U		0.036	0.14	1	02/03/11 18:51	LDD	3922497	
Fluoranthene	U		0.036	0.14	1	02/03/11 18:51	LDD	3922497	
Fluorene	U		0.036	0.14	1	02/03/11 18:51	LDD	3922497	
Indeno(1,2,3-cd)pyrene	U		0.036	0.14	1	02/03/11 18:51	LDD	3922497	
Naphthalene	20		0.18	0.71	5	02/04/11 14:47	LDD	3923523	
Phenanthrene	U		0.036	0.14	1	02/03/11 18:51	LDD	3922497	
Pyrene	U		0.036	0.14	1	02/03/11 18:51	LDD	3922497	
Surr: 2-Fluorobiphenyl	81.2		0	% 53-136	1	02/03/11 18:51	LDD	3922497	
Surr: 2-Fluorobiphenyl	77.6		0	% 53-136	5	02/04/11 14:47	LDD	3923523	
Surr: 4-Terphenyl-d14	78.1		0	% 38-151	1	02/03/11 18:51	LDD	3922497	
Surr: 4-Terphenyl-d14	74.5		0	% 38-151	5	02/04/11 14:47	LDD	3923523	
Surr: Nitrobenzene-d5	74.5		0	% 31-169	5	02/04/11 14:47	LDD	3923523	
Surr: Nitrobenzene-d5	102		0	% 31-169	1	02/03/11 18:51	LDD	3922497	

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	02/03/2011 8:40	JT	0.71

Alberto E. Granados
 Project Manager

Qualifiers:

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- I - Analyte detected but could not be quantified with certainty
- * - Surrogate Recovery Outside Advisable QC Limits
- E - Concentrations exceeding Calibration range of Instrument
- V - Analyte Detected In The Method Blank At Or Above The MDL
- result Over Maximum Contamination Limit(MCL)
- D - Surrogate Recovery Unreportable due to Dilution
- MI - Matrix Interference
- TNTC - Too numerous to count



LAFAYETTE LABORATORY
 500 AMBASSADOR CAFFERY PARKWAY
 SCOTT, LA 70583
 (337) 237-4775

Client Sample ID: MW-12

Collected: 01/28/2011 12:36 SPL Sample ID: 11020011-07

Site: CIRCLE K #7487

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
BTEX + MTBE BY METHOD 8021B					MCL	SW8021B Units: ug/L		
Benzene	U		0.6	1	1	02/01/11 19:53	SNV	3918835
Ethylbenzene	U		0.48	1	1	02/01/11 19:53	SNV	3918835
Methyl tert-butyl ether	U		0.72	8	1	02/01/11 19:53	SNV	3918835
Toluene	U		0.83	1	1	02/01/11 19:53	SNV	3918835
m,p-Xylene	U		1	2	1	02/01/11 19:53	SNV	3918835
o-Xylene	U		0.43	1	1	02/01/11 19:53	SNV	3918835
Xylenes, Total	U		1	1	1	02/01/11 19:53	SNV	3918835
Surr. 1,4-Difluorobenzene	102		0	% 72-138	1	02/01/11 19:53	SNV	3918835
Surr. 4-Bromofluorobenzene	102		0	% 65-142	1	02/01/11 19:53	SNV	3918835

Alberto E. Granados
 Project Manager

Qualifiers:

- ND/U - Not Detected at the Method Detection Limit
- I - Analyte detected but could not be quantified with certainty
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- MI - Matrix Interference
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LAFAYETTE LABORATORY
 500 AMBASSADOR CAFFERY PARKWAY
 SCOTT, LA 70583
 (337) 237-4775

Client Sample ID: MW-12

Collected: 01/28/2011 12:36 SPL Sample ID: 11020011-07

Site: CIRCLE K #7487

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #	
PAHS BY EPA 8270D					MCL	SW8270D Units: ug/L			
1-Methylnaphthalene	U		0.036	0.14	1	02/03/11 19:14	LDD	3922498	
2-Methylnaphthalene	U		0.036	0.14	1	02/03/11 19:14	LDD	3922498	
Acenaphthene	U		0.036	0.14	1	02/03/11 19:14	LDD	3922498	
Acenaphthylene	U		0.036	0.14	1	02/03/11 19:14	LDD	3922498	
Anthracene	U		0.036	0.14	1	02/03/11 19:14	LDD	3922498	
Benz(a)anthracene	U		0.036	0.14	1	02/03/11 19:14	LDD	3922498	
Benzo(a)pyrene	U		0.036	0.14	1	02/03/11 19:14	LDD	3922498	
Benzo(b)fluoranthene	U		0.036	0.071	1	02/03/11 19:14	LDD	3922498	
Benzo(g,h,i)perylene	U		0.036	0.14	1	02/03/11 19:14	LDD	3922498	
Benzo(k)fluoranthene	U		0.036	0.14	1	02/03/11 19:14	LDD	3922498	
Chrysene	U		0.036	0.14	1	02/03/11 19:14	LDD	3922498	
Dibenz(a,h)anthracene	U		0.036	0.14	1	02/03/11 19:14	LDD	3922498	
Fluoranthene	U		0.036	0.14	1	02/03/11 19:14	LDD	3922498	
Fluorene	U		0.036	0.14	1	02/03/11 19:14	LDD	3922498	
Indeno(1,2,3-cd)pyrene	U		0.036	0.14	1	02/03/11 19:14	LDD	3922498	
Naphthalene	0.26		0.036	0.14	1	02/03/11 19:14	LDD	3922498	
Phenanthrene	U		0.036	0.14	1	02/03/11 19:14	LDD	3922498	
Pyrene	U		0.036	0.14	1	02/03/11 19:14	LDD	3922498	
Surr: 2-Fluorobiphenyl	81.5		0	% 53-136	1	02/03/11 19:14	LDD	3922498	
Surr: 4-Terphenyl-d14	80.1		0	% 38-151	1	02/03/11 19:14	LDD	3922498	
Surr: Nitrobenzene-d5	98.6		0	% 31-169	1	02/03/11 19:14	LDD	3922498	

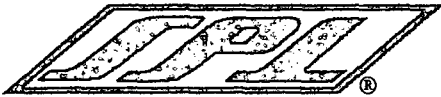
Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	02/03/2011 8:40	JT	0.71

Alberto E. Granados
 Project Manager

Qualifiers:

- ND/U - Not Detected at the Method Detection Limit
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- MI - Matrix Interference
- TNTC - Too numerous to count

Quality Control Documentation



LAFAYETTE LABORATORY
 500 AMBASSADOR CAFFERY PARKWAY
 SCOTT, LA 70583
 (337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

005.16564.0320

Analysis: BTEX + MTBE by Method 8021B
 Method: SW8021B

WorkOrder: 11020011
 Lab Batch ID: R254429

Method Blank

Samples in Analytical Batch:

RunID: HPPP_110131D-3918830 Units: ug/L
 Analysis Date: 02/01/2011 12:47 Analyst: SNV

Lab Sample ID	Client Sample ID
11020011-01A	MW-13
11020011-02A	MW-11
11020011-03A	MW-1
11020011-04A	MW-3
11020011-05A	MW-5
11020011-06A	MW-10
11020011-07A	MW-12

Analyte	Result	Qual	PQL	MDL
Benzene	U		1.0	0.6
Ethylbenzene	U		1.0	0.48
Methyl tert-butyl ether	U		8.0	0.72
Toluene	U		1.0	0.83
m,p-Xylene	U		2.0	1
o-Xylene	U		1.0	0.43
Xylenes, Total	U		1.0	1
Surr: 1,4-Difluorobenzene	98.8		72-138	0
Surr: 4-Bromofluorobenzene	104.4		65-142	0

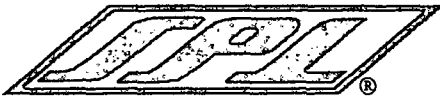
Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: HPPP_110131D-3918831 Units: ug/L
 Analysis Date: 02/01/2011 14:19 Analyst: SNV

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Benzene	50.0	48.8	97.7	50.0	48.5	97.1	0.6	11	74	132
Ethylbenzene	50.0	48.1	96.3	50.0	48.7	97.3	1.1	12	86	118
Methyl tert-butyl ether	50.0	52.7	105	50.0	53.5	107	1.6	24	63	141
Toluene	50.0	49.2	98.4	50.0	48.6	97.3	1.2	11	88	116
m,p-Xylene	100	94.4	94.4	100	95.3	95.3	0.9	13	87	116
o-Xylene	50.0	50.1	100	50.0	52.1	104	3.9	12	87	115
Xylenes, Total	150.0	144.5	96.33	150.0	147.4	98.26	2.0	13	87	116
Surr: 1,4-Difluorobenzene	30.0	37.6	125	30.0	29.3	97.8	24.6	30	72	138
Surr: 4-Bromofluorobenzene	30.0	32.2	107	30.0	30.1	100	6.5	30	65	142

Qualifiers: U - Not Detected At The MDL MI - Matrix Interference
 E - Estimated Value exceeds calibration curve D - Recovery Unreportable due to Dilution
 I - Estimated Value Between MDL And PQL * - Recovery Outside Advisable QC Limits
 V - Analyte Detected In The Method Blank At Or Above The MDL Data Qualifiers I, U And V Conform To Chapter 62-160, FAC
 N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
 TNTC - Too numerous to count M - Estimated Value Reported As The PQL

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.



LAFAYETTE LABORATORY
 500 AMBASSADOR CAFFERY PARKWAY
 SCOTT, LA 70583
 (337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

005.16564.0320

Analysis: PAHs by EPA 8270D
 Method: SW8270D

WorkOrder: 11020011
 Lab Batch ID: 97619

Method Blank

Samples in Analytical Batch:

RunID: L_110203A-3922489 Units: ug/L
 Analysis Date: 02/03/2011 10:53 Analyst: LDD
 Preparation Date: 02/03/2011 8:40 Prep By: JT Method: SW3510C

Lab Sample ID	Client Sample ID
11020011-01B	MW-13
11020011-02B	MW-11
11020011-03B	MW-1
11020011-04B	MW-3
11020011-05B	MW-5
11020011-06B	MW-10
11020011-07B	MW-12

Analyte	Result	Qual	PQL	MDL
1-Methylnaphthalene	U		0.20	0.036
2-Methylnaphthalene	U		0.20	0.036
Acenaphthene	U		0.20	0.036
Acenaphthylene	U		0.20	0.036
Anthracene	U		0.20	0.036
Benz(a)anthracene	U		0.20	0.036
Benzo(a)pyrene	U		0.20	0.036
Benzo(b)fluoranthene	U		0.10	0.036
Benzo(g,h,i)perylene	U		0.20	0.036
Benzo(k)fluoranthene	U		0.20	0.036
Chrysene	U		0.20	0.036
Dibenz(a,h)anthracene	U		0.20	0.036
Fluoranthene	U		0.20	0.036
Fluorene	U		0.20	0.036
Indeno(1,2,3-cd)pyrene	U		0.20	0.036
Naphthalene	U		0.20	0.036
Phenanthrene	U		0.20	0.036
Pyrene	U		0.20	0.036
Surr: 2-Fluorobiphenyl	81.8		53-136	0
Surr: 4-Terphenyl-d14	75.0		38-151	0
Surr: Nitrobenzene-d5	86.8		31-169	0

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: L_110203A-3922490 Units: ug/L
 Analysis Date: 02/03/2011 16:05 Analyst: LDD
 Preparation Date: 02/03/2011 8:40 Prep By: JT Method: SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1-Methylnaphthalene	3.57	3.35	93.8	3.57	3.58	100	6.6	34	50	129
2-Methylnaphthalene	3.57	3.08	86.2	3.57	3.27	91.6	6.0	36	52	126
Acenaphthene	3.57	3.13	87.6	3.57	3.16	88.5	1.0	36	54	121
Acenaphthylene	3.57	3.34	93.5	3.57	3.18	89.0	4.9	35	55	132
Anthracene	3.57	3.10	86.8	3.57	3.04	85.1	2.0	32	54	122
Benz(a)anthracene	3.57	3.01	84.3	3.57	2.89	80.9	4.1	34	60	133

Qualifiers: U - Not Detected At The MDL MI - Matrix Interference
 E - Estimated Value exceeds calibration curve D - Recovery Unreportable due to Dilution
 I - Estimated Value Between MDL And PQL * - Recovery Outside Advisable QC Limits
 V - Analyte Detected In The Method Blank At Or Above The MDL Data Qualifiers I, U And V Conform To Chapter 62-160, FAC
 N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
 TNTC - Too numerous to count M - Estimated Value Reported As The PQL

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.



LAFAYETTE LABORATORY
 500 AMBASSADOR CAFFERY PARKWAY
 SCOTT, LA 70583
 (337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

005.16564.0320

Analysis: PAHs by EPA 8270D
 Method: SW8270D

WorkOrder: 11020011
 Lab Batch ID: 97619

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: L_110203A-3922490 Units: ug/L
 Analysis Date: 02/03/2011 16:05 Analyst: LDD
 Preparation Date: 02/03/2011 8:40 Prep By: JT Method: SW3510C

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Benzo(a)pyrene	3.57	3.08	86.2	3.57	3.27	91.6	6.0	35	52	141
Benzo(b)fluoranthene	3.57	3.26	91.3	3.57	3.39	94.9	3.9	41	48	147
Benzo(g,h,i)perylene	3.57	3.34	93.5	3.57	3.83	107	13.7	36	54	129
Benzo(k)fluoranthene	3.57	3.06	85.7	3.57	3.15	88.2	2.9	41	47	144
Chrysene	3.57	3.08	86.2	3.57	3.13	87.6	1.6	34	54	122
Dibenz(a,h)anthracene	3.57	3.22	90.2	3.57	3.56	99.7	10.0	35	50	133
Fluoranthene	3.57	3.00	84.0	3.57	3.02	84.6	0.7	32	57	128
Fluorene	3.57	2.79	78.1	3.57	2.83	79.2	1.4	34	59	136
Indeno(1,2,3-cd)pyrene	3.57	3.30	92.4	3.57	3.83	107	14.9	36	50	131
Naphthalene	3.57	3.08	86.2	3.57	3.11	87.1	1.0	35	49	122
Phenanthrene	3.57	3.12	87.4	3.57	3.01	84.3	3.6	29	55	116
Pyrene	3.57	3.28	91.8	3.57	3.13	87.6	4.7	38	54	141
Surr: 2-Fluorobiphenyl	3.57	2.90	81.2	3.57	2.87	80.4	1.0	30	53	136
Surr: 4-Terphenyl-d14	3.57	3.11	87.1	3.57	2.85	79.8	8.7	30	38	151
Surr: Nitrobenzene-d5	3.57	3.25	91.0	3.57	3.06	85.7	6.0	30	31	169

Qualifiers: U - Not Detected At The MDL MI - Matrix Interference
 E - Estimated Value exceeds calibration curve D - Recovery Unreportable due to Dilution
 I - Estimated Value Between MDL And PQL * - Recovery Outside Advisable QC Limits
 V - Analyte Detected In The Method Blank At Or Above The MDL Data Qualifiers I, U And V Conform To Chapter 62-160, FAC
 N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
 TNTC - Too numerous to count M - Estimated Value Reported As The PQL

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

*Sample Receipt Checklist
And
Chain of Custody*



LAFAYETTE LABORATORY
 500 AMBASSADOR CAFFERY PARKWAY
 SCOTT, LA 70583
 (337) 237-4775

Sample Receipt Checklist

Workorder:	11020011	Received By:	EMB
Date and Time Received:	2/1/2011 9:45:00 AM	Carrier name:	FedEx-Std 1 Day PM
Temperature:	4°C	Chilled by:	Water Ice

1. Shipping container/cooler in good condition? Yes No Not Present
2. Custody seals intact on shipping container/cooler? Yes No Not Present
3. Custody seals intact on sample bottles? Yes No Not Present
4. Chain of custody present? Yes No
5. Chain of custody signed when relinquished and received? Yes No
6. Chain of custody agrees with sample labels? Yes No
7. Samples in proper container/bottle? Yes No
8. Sample containers intact? Yes No
9. Sufficient sample volume for indicated test? Yes No
10. All samples received within holding time? Yes No
11. Container/Temp Blank temperature in compliance? Yes No
12. Water - VOA vials have zero headspace? Yes No VOA Vials Not Present
13. Water - Preservation checked upon receipt (except VOA*)? Yes No Not Applicable

*VOA Preservation Checked After Sample Analysis

SPL Representative:

Contact Date & Time:

Client Name Contacted:

Non Conformance Issues:

Client Instructions:

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FedEx Tracking Number **8724 2742 9178**

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Date **01-31-2011** FedEx Tracking Number **872427429178**

Sender's Name **AUNDRE LERAY** Phone **813-917-4580**

Company **ATC (Tampa)**

Address **5602 Thompson Cen. Cir. CO. SU. #405**

City **Tampa** State **FL** ZIP **33634**

RECIPIENT: PEEL HERE

2 Your Internal Billing Reference

3 To Recipient's Name **SHIPPING AND RECEIVING** Phone **337-237-4775**

Company **SOUTHERN PETROLEUM LABS**

Address **500 AMBASSADOR CAFFERY PKWY**

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- FedEx 10Day Freight
- FedEx 2Day Freight
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5 Packaging

- FedEx Envelope*
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- Other

6 Special Handling and Delivery Signature Options

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- No Signature Required
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- Indirect Signature

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**Form FD 9000-24
GROUNDWATER SAMPLING LOG**

SITE NAME: K # 7502	SITE LOCATION: Orlando, FL
WELL NO:	SAMPLE ID: MW-1
DATE: 01-28-2011	

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 2 1/4"	WELL SCREEN INTERVAL DEPTH: 0 feet to 12 feet	STATIC DEPTH TO WATER (feet): 5.62	PURGE PUMP TYPE OR BAILER: PP
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = (12 feet - 5.62 feet) X .110 gallons/foot = 1.02 gallons				
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable) = _____ gallons + (_____ gallons/foot X _____ feet) + _____ gallons = _____ gallons				
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 7'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 7'	PURGING INITIATED AT: 1101	PURGING ENDED AT: 1121	TOTAL VOLUME PURGED (gallons): 250

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) $\mu\text{mhos/cm}$ or $\mu\text{S/cm}$	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1111	1.25	1.25	0.12	5.91	5.71	21.37	195	.56	4.78	NONE	NONE
1113	.25	1.50	0.12	5.91	5.72	21.41	195	.52	3.75		
1115	.25	1.75	0.12	5.91	5.67	21.44	195	.50	3.26		
1117	.25	2.00	0.12	5.91	5.72	21.44	194	.48	4.02		
1119	.25	2.25	0.12	5.91	5.70	21.45	196	.48	4.26		
1121	.25	2.50	0.12	5.91	5.68	21.44	196	.46	4.01		

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; **2" = 0.16**; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.008; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; **PP** = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: ANDRE GRAY / A70		SAMPLER(S) SIGNATURE(S): <i>Andre Gray</i>		SAMPLING INITIATED AT: 1122	SAMPLING ENDED AT: 1128
PUMP OR TUBING DEPTH IN WELL (feet): 7'		TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	FILTER SIZE: _____ μm	
FIELD DECONTAMINATION: PUMP Y <input checked="" type="checkbox"/> TUBING Y <input checked="" type="checkbox"/> (replaced)		DUPLICATE: Y <input checked="" type="checkbox"/> N <input type="checkbox"/>			

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
MW-1	3	AG	40mL	HEP	-	-	8091B	RFP	60
↓	2	AG	1.25mL	Ø	-	-	8970D	APP	100

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailor; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: $\pm 5\%$ Dissolved Oxygen: all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or $\pm 10\%$ (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or $\pm 10\%$ (whichever is greater)

Form FD 9000-24
GROUNDWATER SAMPLING LOG

SITE NAME: <u>(K) 7502</u>	SITE LOCATION: <u>Orlando, FL</u>
WELL NO: <u>MW-3</u>	SAMPLE ID: <u>MW-3</u>
DATE: <u>1/28/11</u>	

PURGING DATA

WELL DIAMETER (inches): <u>2</u>	TUBING DIAMETER (inches): <u>1/4</u>	WELL SCREEN INTERVAL DEPTH: <u>2 feet to 12 feet</u>	STATIC DEPTH TO WATER (feet): <u>5.66</u>	PURGE PUMP TYPE OR BAILER: <u>PP</u>							
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = <u>(12 feet - 5.66 feet) X .16 gallons/foot = 1.01 gallons</u>											
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable) = <u> gallons + (gallons/foot X feet) + gallons = gallons</u>											
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): <u>7</u>	FINAL PUMP OR TUBING DEPTH IN WELL (feet): <u>7.50</u>	PURGING INITIATED AT: <u>1110</u>	PURGING ENDED AT: <u>1121</u>	TOTAL VOLUME PURGED (gallons): <u>1.70</u>							
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) <u>μmhos/cm or μS/cm</u>	DISSOLVED OXYGEN (circle units) <u>mg/L or % saturation</u>	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
<u>1117</u>	<u>1.10</u>	<u>1.10</u>	<u>.15</u>	<u>6.43</u>	<u>5.08</u>	<u>22.24</u>	<u>258</u>	<u>1.34</u>	<u>42.3</u>	<u>none</u>	<u>none</u>
<u>1119</u>	<u>.30</u>	<u>1.40</u>	<u>.18</u>	<u>6.43</u>	<u>5.08</u>	<u>22.32</u>	<u>255</u>	<u>1.39</u>	<u>42.6</u>	<u>"</u>	<u>"</u>
<u>1121</u>	<u>.30</u>	<u>1.70</u>	<u>.15</u>	<u>6.43</u>	<u>5.07</u>	<u>22.36</u>	<u>255</u>	<u>1.40</u>	<u>41.9</u>	<u>"</u>	<u>"</u>
WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; <u>2" = 0.16</u> ; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88 TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016											
PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; <u>PP = Peristaltic Pump</u> ; O = Other (Specify)											

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: <u>ATC</u> <u>Todd Robbins</u>				SAMPLER(S) SIGNATURE(S): <u>[Signature]</u>				SAMPLING INITIATED AT: <u>1122</u>		SAMPLING ENDED AT: <u>1130</u>			
PUMP OR TUBING DEPTH IN WELL (feet): <u>7.50</u>				TUBING MATERIAL CODE: <u>PE</u>		FIELD-FILTERED: Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>		FILTER SIZE: <u> </u> μm					
FIELD DECONTAMINATION: PUMP Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>				TUBING Y <input checked="" type="checkbox"/> N (replaced) <input checked="" type="checkbox"/>				DUPLICATE: Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>					
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION				INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE		SAMPLE PUMP FLOW RATE (mL per minute)	
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH							
<u>MW-3</u>	<u>3</u>	<u>CG</u>	<u>40ml</u>	<u>HCL</u>	<u> </u>	<u> </u>	<u>80213</u>		<u>RAPP</u>		<u>40</u>		
<u>MW-3</u>	<u>2</u>	<u>AG</u>	<u>125ml</u>	<u>None</u>	<u> </u>	<u> </u>	<u>8270D</u>		<u>APP</u>		<u>100</u>		
REMARKS: <u>Numbering down well</u>													
MATERIAL CODES: <u>AG</u> = Amber Glass; <u>CG</u> = Clear Glass; <u>PE</u> = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)													
SAMPLING EQUIPMENT CODES: <u>APP</u> = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; <u>RAPP</u> = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)													

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

**Form FD 9000-24
GROUNDWATER SAMPLING LOG**

SITE NAME: ED 7902	SITE LOCATION: Orlando, FL
WELL NO: MW-5	SAMPLE ID: MW-5 DATE: 1/28/11

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 2 feet to 12 feet	STATIC DEPTH TO WATER (feet): 5.79	PURGE PUMP TYPE OR BAILER: PP
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = (12 feet - 5.79 feet) X .16 gallons/foot = .99 gallons				
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable) = gallons + (gallons/foot X feet) + gallons = gallons				
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 7.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 7.5	PURGING INITIATED AT: 1140	PURGING ENDED AT: 1151	TOTAL VOLUME PURGED (gallons): 1.56

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) μmhos/cm or μS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1147	1.0	1.0	.14	6.61	5.11	23.77	361	4.22	7.20	None	None
1149	.28	1.28	.14	6.61	5.11	23.77	356	4.23	6.60	11	11
1151	.28	1.56	.14	6.61	5.11	23.81	354	4.22	3.48	11	11

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; **2" = 0.16**; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016
PURGING EQUIPMENT CODES: B = Bailer, BP = Bladder Pump; ESP = Electric Submersible Pump; **PP = Peristaltic Pump**; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: ATC Todd Robbins		SAMPLER(S) SIGNATURE(S): Todd Robbins		SAMPLING INITIATED AT: 1152	SAMPLING ENDED AT: 1200
PUMP OR TUBING DEPTH IN WELL (feet): 7.5		TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>	FILTER SIZE: _____ μm	
FIELD DECONTAMINATION: PUMP Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>		TUBING Y <input checked="" type="checkbox"/> N (replaced) <input checked="" type="checkbox"/>	DUPLICATE: Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>		

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
MW-5	3	CG	40ml	HLL	—	—	80213	RAPP	40
MW-5	2	AG	125ml	None	—	—	82700	RPP	100

REMARKS: **NO LEAKY DECONTAM**

MATERIAL CODES: **AG = Amber Glass**; **CG = Clear Glass**; **PE = Polyethylene**; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)
SAMPLING EQUIPMENT CODES: **RPP = Reverse Flow Peristaltic Pump**; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; APP = After Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

**Form FD 9000-24
GROUNDWATER SAMPLING LOG**

SITE NAME: KO# 7502	SITE LOCATION: Orlando, FL
WELL NO: MW-10	SAMPLE ID: MW-10 DATE: 01-28-01

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/4"	WELL SCREEN INTERVAL DEPTH: 2 feet to 12 feet	STATIC DEPTH TO WATER (feet): 5.91	PURGE PUMP TYPE OR BAILER: PP							
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = (12 feet - 5.91 feet) X .116 gallons/foot = 0.91 gallons											
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable) = _____ gallons + (_____ gallons/foot X _____ feet) + _____ gallons = _____ gallons											
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 7	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 7	PURGING INITIATED AT: 1141	PURGING ENDED AT: 1157	TOTAL VOLUME PURGED (gallons): 1.50							
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) $\mu\text{mhos/cm}$ or $\mu\text{S/cm}$	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1151	1.00	1.00	0.1	10.35	5.10	22.70	252	.41	2.44	NONP	PE#
1154	.85	1.85	0.08	10.35	5.01	22.75	251	.40	3.31	↓	
1157	.65	1.50	0.08	10.35	5.00	22.73	254	.44	2.49	↓	
WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.116 ; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88 TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026 ; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016											
PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump ; O = Other (Specify)											

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: AUNDRE LORAY				SAMPLER(S) SIGNATURE(S): <i>Aundre Gray</i>			SAMPLING INITIATED AT: 1158		SAMPLING ENDED AT: 1205	
PUMP OR TUBING DEPTH IN WELL (feet):				TUBING MATERIAL CODE:		FIELD-FILTERED: Y <input checked="" type="checkbox"/> N <input type="checkbox"/>		FILTER SIZE: _____ μm		
FIELD DECONTAMINATION: PUMP Y <input checked="" type="checkbox"/> N <input type="checkbox"/>				TUBING Y <input checked="" type="checkbox"/> N (replaced) <input type="checkbox"/>		DUPLICATE: Y <input checked="" type="checkbox"/> N <input type="checkbox"/>				
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD		SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH				
MW-10	3	CG	40mL	HCl	-	-	8001B		RFP	60
↓	2	ALG	105mL	⊖	-	-	8070D		APP	100
REMARKS:										
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)										
SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)										

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
 2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
 pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

**Form FD 9000-24
GROUNDWATER SAMPLING LOG**

SITE NAME: <u>7502</u>	SITE LOCATION: <u>Bithlo, FL Orlando, FL</u>
WELL NO: <u>nw-11</u>	SAMPLE ID: <u>mw-11</u>
DATE: <u>1/28/11</u>	

PURGING DATA

WELL DIAMETER (inches): <u>2</u>	TUBING DIAMETER (inches): <u>1/4</u>	WELL SCREEN INTERVAL DEPTH: <u>2</u> feet to <u>12</u> feet	STATIC DEPTH TO WATER (feet): <u>4.12</u>	PURGE PUMP TYPE OR BAILER: <u>PP</u>
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = <u>(12 - 4.12)</u> feet X <u>.16</u> gallons/foot = <u>1.26</u> gallons				
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable) = _____ gallons + (_____ gallons/foot X _____ feet) + _____ gallons = _____ gallons				
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): <u>6</u>	FINAL PUMP OR TUBING DEPTH IN WELL (feet): <u>6</u>	PURGING INITIATED AT: <u>1027</u>	PURGING ENDED AT: <u>1042</u>	TOTAL VOLUME PURGED (gallons): <u>2.14</u>

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) μmhos/cm or μS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1036	1.30	1.30	.14	5.02	6.41	21.18	309	3.89	23.1	none	none
1038	.28	1.58	.14	5.02	6.39	21.30	306	3.83	26.2	"	"
1040	.28	1.86	.14	5.02	6.38	21.38	305	3.67	28.9	"	"
1042	.28	2.14	.14	5.02	6.36	21.42	304	3.51	23.4	"	"

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) AFFILIATION: <u>ATZ</u> <u>Todd Robinson</u>	SAMPLER(S) SIGNATURE(S): <u>[Signature]</u>	SAMPLING INITIATED AT: <u>1043</u>	SAMPLING ENDED AT: <u>1050</u>
PUMP OR TUBING DEPTH IN WELL (feet): <u>6</u>	TUBING MATERIAL CODE: <u>PE</u>	FIELD-FILTERED: Y <u>(N)</u>	FILTER SIZE: _____ μm
FIELD DECONTAMINATION: PUMP Y <u>(N)</u>	TUBING Y <u>(N) (replaced)</u>	DUPLICATE: Y <u>(N)</u>	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
MW-11	3	CG	40 ml	HCL	—	—	80213	RFPP	40.0
MW-11	2	AG	125 ml	none	—	—	8270D	APP	100

REMARKS: New tubing down well

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

**Form FD 9000-24
GROUNDWATER SAMPLING LOG**

SITE NAME: K# 7500	SITE LOCATION: Orlando, FL
WELL NO:	SAMPLE ID: MW-12
DATE: 01-28-2011	

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/4"	WELL SCREEN INTERVAL DEPTH: 2 feet to 6 feet	STATIC DEPTH TO WATER (feet): 5.51	PURGE PUMP TYPE OR BAILER: PP
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = (12 feet - 5.51 feet) X .10 gallons/foot = 1.00 gallons				
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable) = _____ gallons + (_____ gallons/foot X _____ feet) + _____ gallons = _____ gallons				
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 7'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 7'	PURGING INITIATED AT: 1221	PURGING ENDED AT: 1235	TOTAL VOLUME PURGED (gallons): 1.75

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) $\mu\text{mhos/cm}$ or $\mu\text{S/cm}$	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1231	1.05	1.05	0.12	5.61	5.55	23.24	279	.48	285	NONE	NONE
1233	.25	1.50	0.12	5.61	5.55	23.34	278	.42	200	↓	↓
1235	.25	1.75	0.12	5.61	5.54	23.35	278	.41	201	↓	↓

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; **2" = 0.10**; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; **1/4" = 0.0026**; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; **PP = Peristaltic Pump**; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: FLUNDER, LORAY ATC			SAMPLER(S) SIGNATURE(S): <i>[Signature]</i>			SAMPLING INITIATED AT: 1236	SAMPLING ENDED AT: 1242
PUMP OR TUBING DEPTH IN WELL (feet): 7'			TUBING MATERIAL CODE: PE		FIELD-FILTERED: Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	FILTER SIZE: _____ μm	
FIELD DECONTAMINATION: PUMP Y <input type="checkbox"/> N <input checked="" type="checkbox"/>			TUBING Y <input type="checkbox"/> N (replaced) <input checked="" type="checkbox"/>			DUPLICATE: Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
121	3	AG	1000	HOP	—	—	COOL B	RFPP	100
↓	2	AG	125	—	—	—	COOL	APP	100

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. **STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)**
pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** $\pm 5\%$ **Dissolved Oxygen:** all readings $\leq 20\%$ saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or $\pm 10\%$ (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or $\pm 10\%$ (whichever is greater)

Groundwater Sampling Equipment Field Verification Log

Date: 1/28/11

Project: ② 2502

Instrument(s): YSI 556 # 4
Luna A/C 2020C (ATC)

	Standard Value	Standard Origin ¹	Pre-Verification Time	Pre-Verification Value	Out-of-Range Verification Value ²	Out-of-Range Verification Time ²	Post-Verification Time ³	Post-Verification Value ³
Temperature:	15.03	YSI 556	1000	15.03			1230	20.98
Turbidity:	1.0	9/11	↓	1.02			↓	1.00
	10.0	7/10		10.01				10.02
Conductivity:	500	9/11	↓	503			↓	501
	1000	11/11		1002				1001
DO:	10.05	T2 15.03	↓	10.03			↓	8.97
		T2 20.98						
pH:	4.01	5/11	↓	4.00			↓	4.02
	7.00	4/11		6.98				6.97

Sampler Initials: *[Signature]*

¹--Acceptable unique identification standards include: date of manufacture, date of expiration, manufacturer's lot number, etc.

²--Note that this value is only necessary if observed data exceed the calibrated range of your instrument.

³--Note that this value is NOT necessary if the sampling equipment will be used on another job within 24 hours.

Groundwater Sampling Equipment Field Verification Log

Date: 01-28-2011

Project: 05-1165164-0631

Instrument(s): YSI # 6
Lamotte 0020 NRE #7

(K) # 7508

	Standard Value	Standard Origin ¹	Pre-Verification Time	Pre-Verification Value	Out-of-Range Verification Value ²	Out-of-Range Verification Time ²	Post-Verification Time ³	Post-Verification Value ³
Temperature:	10.83	YSI 35Lp	0905	10.83			1250	10.15
Turbidity:	10.00	EXP 2011	0907	10.00			1253	10.00
	1.00	EXP 2011	0907	1.00			1253	1.00
Conductivity:	.500	EXP 04-11	0911	.498			1254	.501
	1.000	EXP 02-11	0913	1.000			1301	1.001
DO:	11.17	T=109 1100%	0905	10.87			1250	9.50
pH:	7.00	EXP 04-11	0914	6.97			1304	6.98
	4.01	EXP 03-11	0923	4.02			1307	4.01

Sampler Initials: Qeg

¹-Acceptable unique identification standards include: date of manufacture, date of expiration, manufacturer's lot number, etc.

²-Note that this value is only necessary if observed data exceed the calibrated range of your instrument.

³-Note that this value is NOT necessary if the sampling equipment will be used on another job within 24 hours.



Environmental, Geotechnical and Materials Professionals

APPENDIX C

Monitoring Well Construction and Development Log, and Soil Boring Log

BORING LOG

Boring/Well Number: MW-13		Permit Number: N/A		FDEP Facility Identification Number: 488521400	
Site Name: Circle K #7502		Borehole Start Date: 1-18-11	Borehole Start Time: 1220	<input type="checkbox"/> AM <input checked="" type="checkbox"/> PM	
		End Date: 1-18-11	End Time: 1302	<input type="checkbox"/> AM <input checked="" type="checkbox"/> PM	
Environmental Contractor: ATC Associates Inc.		Geologist's Name: Brian Riley		Environmental Technician's Name: Meghan Bergquist	
Drilling Company: Preferred Drilling		Pavement Thickness (inches): 4"	Borehole Diameter (inches): 4"	Borehole Depth (feet): 12	
Drilling Method(s): Hand auger	Apparent Borehole DTW (in feet from soil moisture content): 6'	Measured Well DTW (in feet after water recharges in well): 6.38	OVA (list model and check type): Mini. PAR 2000 <input type="checkbox"/> FID <input checked="" type="checkbox"/> PID		
Disposition of Drill Cuttings [check method(s)]: <input type="checkbox"/> Drum <input checked="" type="checkbox"/> Spread <input type="checkbox"/> Backfill <input type="checkbox"/> Stockpile <input type="checkbox"/> Other <i>(describe if other or multiple items are checked):</i>					
Borehole Completion (check one): <input checked="" type="checkbox"/> Well <input type="checkbox"/> Grout <input type="checkbox"/> Bentonite <input type="checkbox"/> Backfill <input type="checkbox"/> Other (describe)					

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
							1				
HA	1-3		N/A	ND	ND	ND	2	DK BR flg sand		D	
							3				
							4				
HA	3-5		N/A	ND	ND	ND	5	flg BROWN sand		M	
							6				
							7				
							8				
							9				
							10				
							11				
HA	5-12		N/A	N/A	N/A	N/A	12	NO Petrochemical odor detected		S	wet @ 6 1/2

Sample Type Codes: PH = Post Hole; HA = Hand Auger; SS = Split Spoon; ST = Shelby Tube; DP = Direct Push; SC = Sonic Core; DC = Drill Cuttings
 Moisture Content Codes: D = Dry; M = Moist; W = Wet; S = Saturated

EOP 12'

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA					
Well Number: MW-13		Site Name: Circle K #7502		FDEP Facility I.D. Number: 488521400	
Well Location and Type (check appropriate boxes): <input checked="" type="checkbox"/> On-Site <input type="checkbox"/> Right-of-Way <input type="checkbox"/> Off-Site Private Property <input type="checkbox"/> Above Grade (AG) <input checked="" type="checkbox"/> Flush-to-Grade		Well Purpose: <input type="checkbox"/> Perched Monitoring <input checked="" type="checkbox"/> Shallow (Water-Table) Monitoring <input type="checkbox"/> Intermediate or Deep Monitoring <input type="checkbox"/> Remediation or Other (describe)		Well Install Date(s): 1-18-11	
If AG, list feet of riser above land surface:		Well Install Method: Hand auger		Surface Casing Install Method: N/A	
Borehole Depth (feet): 12	Well Depth (feet): 12	Borehole Diameter (inches): 4"	Manhole Diameter (inches): 8 1/4	Well Pad Size: 2 feet by 2 feet	
Riser Diameter and Material: 2" PVC		Riser/Screen Connections: <input checked="" type="checkbox"/> Flush-Threaded <input type="checkbox"/> Other (describe)	Riser Length: 2 feet from 0 feet to 2 feet		
Screen Diameter and Material: 2" PVC		Screen Slot Size: .010	Screen Length: 10 feet from 2 feet to 12 feet		
1 st Surface Casing Material: N/A also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		1 st Surface Casing I.D. (inches):	1 st Surface Casing Length: _____ feet from 0 feet to _____ feet		
2 nd Surface Casing Material: N/A also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		2 nd Surface Casing I.D. (inches):	2 nd Surface Casing Length: _____ feet from 0 feet to _____ feet		
3 rd Surface Casing Material: N/A also check: <input type="checkbox"/> Permanent <input type="checkbox"/> Temporary		3 rd Surface Casing I.D. (inches):	3 rd Surface Casing Length: _____ feet from 0 feet to _____ feet		
Filter Pack Material and Size: 20/30 sand		Prepacked Filter Around Screen (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Filter Pack Length: 10 1/2 feet from 1 1/2 feet to 12 feet		
Filter Pack Seal Material and Size: 30/65 flg sand		Filter Pack Seal Length: 1/2 feet from 1 feet to 1 1/2 feet			
Surface Seal Material: Grout		Surface Seal Length: 1/2 feet from 1/2 feet to 1 feet			

WELL DEVELOPMENT DATA					
Well Development Date: 1-18-11		Well Development Method (check one): <input type="checkbox"/> Surge/Pump <input checked="" type="checkbox"/> Pump <input type="checkbox"/> Compressed Air <input type="checkbox"/> Other (describe)			
Development Pump Type (check): <input checked="" type="checkbox"/> Centrifugal <input type="checkbox"/> Peristaltic <input type="checkbox"/> Submersible <input type="checkbox"/> Other (describe)		Depth to Groundwater (before developing in feet): 6-38			
Pumping Rate (gallons per minute): 2.542 gpm		Maximum Drawdown of Groundwater During Development (feet): 5.62	Well Purged Dry (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Pumping Condition (check one): <input type="checkbox"/> Continuous <input checked="" type="checkbox"/> Intermittent	Total Development Water Removed (gallons): 50	Development Duration (minutes): 25	Development Water Drummed (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Water Appearance (color and odor) At Start of Development: DK Brown, no odor			Water Appearance (color and odor) At End of Development: No color, no sign of fines, sulfur odor		

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

CIRCLE K# 2708972

Regulatory Documents



Department of Environmental Protection

2600 Blair Stone Road ♦ Tallahassee, Florida 32399-2400

DEP Form 62-762.901(6)
Form Title: Incident Notification Form
Effective Date: January 2017
Incorporated in Rule 62-762.411, F.A.C.

Incident Notification Form

Complete all applicable blanks

Facility ID Number (if registered): _____ Date of Form Completion: _____
 Facility Name: _____ Date of Discovery of Incident: _____
 Telephone Number: _____ County: _____
 Facility Owner or Operator: _____
 Mailing Address: _____
 Location of Incident (facility street address): _____

Monitoring method or activity that indicates an incident: (Check all that apply)

- | | | |
|-----------------------------|--------------------------------------|------------------------|
| Visual Observation | Electronic sensors, probes or cables | Closure |
| Primary integrity test | Interstitial monitoring | Line leak detectors |
| Interstitial integrity test | Closure integrity evaluation | Automatic tank gauging |
| Containment integrity test | Tracer or helium testing | Other (specify): _____ |

Type of regulated substance stored in the storage system: (Check all that apply)

- | | | |
|--------------|----------------------------|------------------------------------|
| Gasoline | Jet fuel | Mineral acid (ASTs) |
| Diesel | Used/waste oil | Ammonia compound Chlorine compound |
| Heating oil | New motor/lube oil | Biofuel blends |
| Kerosene | Pesticide | Unknown |
| Aviation gas | Grades 5 & 6 residual oils | Other (specify): _____ |
- Hazardous substance (USTs) – write name or Chemical Abstract Service (CAS) #: _____

Incident involves or originated from: (Check all that apply)

- | | | |
|---|---------------------------------|---|
| <u>A positive response of release detection device:</u> | <u>A failed integrity test:</u> | <u>Or:</u> |
| 1. Visual observation | 1. Double-walled tank | 1. Odors in the vicinity |
| 2. Alarm | 2. Double-walled piping | 2. Loss > 100 gallons on impervious surface |
| 3. Vacuum or pressure change | 3. Containment sump | 3. Loss > 500 gallons in AST dike field |
| 4. MLLD restricting flow | 4. Spill containment system | 4. Unusual operating conditions |
| 5. ELLD/other device shutting power off to pump | 5. Double bottom AST | Other (specify): _____ |
| 6. Liquid > 1 inch in out-of-service tank (UST only) | | |

Cause of the incident, if known: (Check all that apply)

- | | | |
|---------------------------------------|---|------------------------|
| Improper installation | Spill/Overfill >100 gallons on impervious surface | Human error |
| Material failure (crack, split, etc.) | Spill/Overfill >500 gallons in AST dike field | Vandalism or theft |
| Material incompatibility | Corrosion | Unknown |
| Faulty probe or sensor | Weather | Other (specify): _____ |

Actions taken in response to the incident:

Comments:

Agencies notified (as applicable):

Fire Department County Program _____ District Office _____ State Watch Office 800-320-0519 National Response Center 800-424-8802

To the best of my knowledge and belief all information submitted on this form is true, accurate, and complete.

Printed name of Owner, Operator or Authorized Representative

Graham Biggs

Signature of Owner, Operator and Authorized Representative



Florida Department of Environmental Protection
 Twin Towers Office Bldg. 2600 Blair Stone Road. Tallahassee, Florida 32399-
 Division of Waste Management
 Bureau of Petroleum Storage Systems

Storage Tank Facility Installation Site Inspection Report

Facility Information:

Facility ID: 9101787 County: ORANGE Inspection Date: 03/25/2013
 Facility Type: A -Retail Station
 Facility Name: CIRCLE K #2708972 # Of Inspected ASTs: 0
 16891 E COLONIAL DR USTs: 2
 ORLANDO, FL 32820 Mineral Acid Tanks: 0
 Latitude: 28° 33' 40.9193"
 Longitude: 81° 7' 47.5484"
 LL Method: DPHO

Inspection Result:

Result : In Compliance
 Description: Facility is In Compliance.

Financial Responsibility

Financial Responsibility: INSURANCE
 Insurance Carrier: CHUBB
 Effective Date: 12/01/2011 Expiration Date: 12/01/2013

Signatures:

TKOREP - ORANGE CNTY ENVIRONMENTAL PROTECTION DIVISION

Storage Tank Program Office

(407) 836-1400

Storage Tank Program Office Phone Number

Glen Becker

INSPECTOR NAME

INSPECTOR SIGNATURE

Ernie

REPRESENTATIVE NAME

REPRESENTATIVE SIGNATURE

Facility ID: 9101787

Owners of UST facilities are reminded that the Federal Energy Policy Act of 2005 requires Operator Training at all facilities by August 8, 2012. For further information please visit: http://www.dep.state.fl.us/waste/categories/tanks/pages/op_train.htm

System Tests

Type	Date Completed	Results	Reviewed	Next Due Date	Comment
------	----------------	---------	----------	---------------	---------

Completed Tests

Annual Inline Leak Detector Test	09/22/2011	Passed	10/11/2011	09/22/2012	
Annual Operability Test	09/22/2011	Passed	10/11/2011	09/22/2012	

Site Visit Comments

03/29/2013

Onsite: 9:24am

Offsite: 9:51am

JMP onsite to install new dispenser liners on all the dispenser islands.

New Ameron LCX fiberglass double wall piping, FDEP EQ#291, was installed to new Petroleum Containment dispenser liners, FDEP EQ #203. The primary piping is holding 50 psi on all lines attached to the newly installed dispenser liners. Soap test passed on piping joints.

04/02/2013

Onsite: 8:22am

Offsite: 8:49am

Secondary piping pressure test and dispenser liner hydrostatic tests performed. All secondary piping holding 4psi on the new piping installed on the the four south dispensers. Soap tests performed on the piping joints passed.

Hydrostatic tests performed on the Petroleum Containment dispenser liners passed.

04/05/2013

Onsite: 9:49am

Offsite: 10:06am

Final inspection performed. All of the piping/shear valve anchoring systems in all of the dispensers were secure.

**Please send post-installation piping testing documents to OCEPD as soon as possible.

Inspection report sent electronically to corporate office.

Inspection Comments

03/25/2013

Onsite: 11:28am

Offsite: 11:49am

JMP Solutions, PCC #050647, onsite to start to remove the dispensers from the islands.

Inspection Photos

Facility ID: 9101787

Added Date 04/02/2013

2013/04/02; Pressure on primary and secondary piping



Added Date 04/02/2013

2013/04/02; Photo of new piping and dispenser liner



Added Date 04/08/2013

2013/04/05; Existing piping sump with new piping





ENVIRONMENTAL PROTECTION DIVISION
Lori Cunniff, CEP, CHMM, Deputy Director
Community, Environmental and Development Services Department
800 Mercy Drive, Suite 4
Orlando, FL 32808-7896
407-836-1400 • Fax 407-836-1499
www.ocfl.net

March 31, 2014

BY Electronic Mail
ffrancon@circlek.com

Frances Franconi
Circle K Stores, Inc.
12911 N Telecom Pkwy
Tampa, Florida 33637

Chapter 62-761, F.A.C., Non-Compliance Letter
Orange County – Regulated Storage Tanks
CIRCLE K #2708972
16891 E COLONIAL DR
ORLANDO, FL 32820
DEP Facility # 489101787

Dear Ms. Fran Franconi:

The Orange County Environmental Protection Division is contracted with the Florida Department of Environmental Protection (Department) to conduct the Storage Tank System Compliance Verification Program for facilities located in Orange County. On March 26, 2014, a storage tank Annual Compliance inspection was conducted at the above referenced facility. A copy of the inspection report is enclosed for your review. Based on the inspection, you may not be operating in compliance with the requirements of Chapter 62-761, Florida Administrative Code (F.A.C.).

Any noncompliance items must be corrected immediately. Please provide a written response to this office within 30 days of receipt of this letter and provide documentation to show that the issues addressed in the enclosed report and in this letter have been resolved. Please include the facility identification number on all correspondence. Your failure to timely respond may result in further enforcement action.

Please be aware that violations of Chapter 62-761, F.A.C., may subject you to penalties of up to \$10,000.00 per day per violation, in addition to investigative costs. These penalties and costs may be imposed in accordance with Chapters 376 and 403, Florida Statutes.

If you have any questions please contact Steve Cottrell at 407-558-0744 or by E-mail at steve.cottrell@ocfl.net.

Sincerely,

Steve Cottrell
Senior Environmental Specialist

Enclosure



Florida Department of Environmental Protection
Twin Towers Office Bldg. 2600 Blair Stone Road. Tallahassee, Florida 32399-2400
Division of Waste Management
Bureau of Petroleum Storage Systems

Storage Tank Facility Annual Compliance Site Inspection Report

Facility Information:

Facility ID: 9101787 County: ORANGE Inspection Date: 03/26/2014
Facility Type: A -Retail Station
Facility Name: CIRCLE K #2708972 # Of Inspected ASTs: 0
16891 E COLONIAL DR USTs: 2
ORLANDO, FL 32820 Mineral Acid Tanks: 0
Latitude: 28° 33' 40.9193"
Longitude: 81° 7' 47.5484"
LL Method: DPHO

Inspection Result:

Result : Minor Out of Compliance
Description: Facility is Minor Out of Compliance.

Financial Responsibility

Financial Responsibility: INSURANCE
Insurance Carrier: IRONSHORE SPECIALTY INSURANCE CO
Effective Date: 12/01/2013 Expiration Date: 12/01/2014

Findings:

Class A Owner Training Certificates are present.
Class B Maintenance Training Certificates are present.
Class C Operator Training Certificates are present.

Signatures:

TKOREP - ORANGE CNTY ENVIRONMENTAL PROTECTION DIVISION

Storage Tank Program Office

(407) 836-1400

Storage Tank Program Office Phone Number

Facility ID: 9101787

Steve A. Cottrell

Tim Norman, Tech, Envirotrac

INSPECTOR NAME

REPRESENTATIVE NAME



INSPECTOR SIGNATURE

REPRESENTATIVE SIGNATURE

Owners of UST facilities are reminded that the Federal Energy Policy Act of 2005 requires Operator Training at all facilities by August 8, 2012. For further information please visit:

http://www.dep.state.fl.us/waste/categories/tanks/pages/op_train.htm

System Tests

Type	Date Completed	Results	Reviewed	Next Due Date	Comment
------	----------------	---------	----------	---------------	---------

Completed Tests

Annual Inline Leak Detector Test	07/16/2013	Passed	03/31/2014	07/16/2014	By Valley
Annual Operability Test	07/16/2013	Passed	03/31/2014	07/16/2014	By Valley

Reviewed Records

Record Category	Record Type	From Date	To Date	Reviewed Record Comment
Life Time	Written Release Detection Response Level Info	03/26/2014	03/26/2014	
Two Years	Monthly Maint. Visual Examinations and Results	09/28/2012	03/26/2014	
Two Years	Certificate of Financial Responsibility	12/01/2012	03/26/2014	
Two Years	Electronic Release Detection Equip. Monthly Checks	09/28/2012	03/26/2014	

New Violations

Type: Violation
Significance Name: Minor
Rule: 62-761.640(4)(a)4., 62-761.640(4)(a)3., 62-761.640(4)(a)2., 62-761.640(4)(a)1.
Violation Text: UST line leak detector cannot detect a 3.0 gph discharge; not tested annually.
Explanation: PLLDs show no data for 0.2 gph test.
Line Leak Detectors 0.2 gph test not being performed as required.
Corrective Action: Within 30 days, provide proof that the 0.2 gph test of the Line Leak Detectors are being performed OR provide proof that the due to the configuration of the Leak Detection System the test is not required. Send documentation to the Inspector at steve.cottrell@ocfl.net or by fax at 407-836-1417.

Type: Violation
Significance Name: Minor

Facility ID: 9101787
Rule: 62-761.600(1)(a)2.
Violation Text: Not installed, calibrated, operated, and maintained per manufacturer's specifications.
Explanation: PUL fill sump has communication alarm, sensor may be bad, no liquid in sump.
Corrective Action: Within 30 days, have the sensor checked for operability, repaired and needed and the alarm cleared. When the work is complete, contact the Inspector at 407-558-0744 or at steve.cottrell@ocfl.net to schedule a re-inspection.

Type: Violation
Significance Name: Minor
Rule: 62-761.700(1)(a)3.c., 62-761.700(1)(a)3.b., 62-761.700(1)(a)3.a.
Violation Text: Not repaired per NFPA 30 or other applicable standards.
Explanation: RUL STP head, riser, pipe fittings and conduit are severely corroded.
Corrective Action: Within 30 days, have the corrosion treated and the STP heads, risers, pipe fittings and conduit painted to control corrosion. When the work is complete, contact the Inspector at 407-558-0744 or at steve.cottrell@ocfl.net to schedule a re-inspection.

Violation Photos

Added Date 03/31/2014

2014-03-26 RUL STP corrosion Circle K #8972



Type: Violation
Significance Name: Minor
Rule: 62-761.710(2)(h), 62-761.710(2)(g), 62-761.710(2)(f), 62-761.710(2)(e), 62-761.710(2)(d), 62-761.710(2)(c), 62-761.710(2)(b), 62-761.710(2)(a)
Violation Text: Records requiring 2 year documentation period not kept by facility.
Explanation: Monthly records prior to September 2012 not available, no records from previous Owner Operator.
Corrective Action: For future inspections, always maintain a minimum of two years of records for review by the Inspector.

Inspection Comments

03/31/2014

Annual Compliance Inspection
Arrival time: 0900 hrs

Inspection Comments

At the time of inspection:

Current Placard available

Cover page information verified.

Lat-Lon coordinates verified.

Current and previous years Financial Responsibility are available

Current and previous years Certification of Financial Responsibility are available.

Written Release Detection Response Level available

Release detection is monthly electronic and visual inspections

Monthly records available and recorded correctly, except monthly records prior to September 2012 not available, no records from previous Owner Operator.

Current and previous years Annual Operability of the Leak Monitor and Line Leak Detector test records are available, all passed.

PLLDs show monthly passing of 3.0 gph but no data for 0.2 gph test.

Tank interstitials are brine-filled, Breach of Integrity exempt.

Fill port covers are properly marked.

Spill buckets are mostly dry and in good condition. Secondaries appear to have proper integrity.

Drop tubes are present and equipped with ball float valves for overflow protection.

Piping sumps are mostly dry and clean, sensors are in correct position.

RUL STP heads, risers, pipe fittings and conduit are severely corroded.

Dispenser sumps are mostly dry and clean.

Shear valves appear to be properly anchored.

All fuel hoses and breakaways are in good condition.

Tank monitor is a Veeder-Root, all sensors show Normal, except PUL fill sump has communication alarm, sensor may be bad, no liquid in sump.

NOTE: All access to dispensers, piping sumps, spill buckets, etc. was provide by Tim Norman, Site Representative for Circle K.

Signed Report sent on March 31, 2014 via e-mail to:

Fran Franconi at: ffrancon@circlek.com



ENVIRONMENTAL PROTECTION DIVISION
Lori Cunniff, CEP, CHMM, Deputy Director
Community, Environmental and Development Services Department
800 Mercy Drive, Suite 4
Orlando, FL 32808-7896
407-836-1400 • Fax 407-836-1499
www.ocfl.net

March 31, 2015

BY Electronic Mail
ffrancon@circlek.com

Frances Franconi
Circle K Stores, Inc.
12911 N Telecom Pkwy
Tampa, Florida 33637

RE: Chapter 62-761, F.A.C., Non-Compliance Letter
Orange County – Regulated Storage Tanks
CIRCLE K #2708972
16891 E COLONIAL DR
ORLANDO, FL 32820
DEP Facility # 48/9101787

Dear Ms. Frances Franconi:

The Orange County Environmental Protection Division is contracted with the Florida Department of Environmental Protection (Department) to conduct the Storage Tank System Compliance Verification Program for facilities located in Orange County. On March 26, 2015, a storage tank Annual Compliance inspection was conducted at the above referenced facility. A copy of the inspection report is enclosed for your review. Based on the inspection, you may not be operating in compliance with the requirements of Chapter 62-761, Florida Administrative Code (F.A.C.).

Any noncompliance items must be corrected immediately. Please provide a written response to this office within 30 days of receipt of this letter and provide documentation to show that the issues addressed in the enclosed report and in this letter have been resolved. Please include the facility identification number on all correspondence. Your failure to timely respond may result in further enforcement action.

Please be aware that violations of Chapter 62-761, F.A.C., may subject you to penalties of up to \$10,000.00 per day per violation, in addition to investigative costs. These penalties and costs may be imposed in accordance with Chapters 376 and 403, Florida Statutes.

If you have any questions please contact Steve Cottrell at 407-558-0744 or by E-mail at steve.cottrell@ocfl.net.

Sincerely,

Steve Cottrell
Senior Environmental Specialist

Enclosure

APPENDIX J

Physical Setting Report



Property Information

Order Number:	21091000565p
Date Completed:	September 12, 2021
Project Number:	Y20-830
Project Property:	Chuluota Road RCA Chuluota Rd Florida FL
Coordinates:	
Latitude:	28.57406914
Longitude:	-81.12497575
UTM Northing:	3160801.0558 Meters
UTM Easting:	487787.241022 Meters
UTM Zone:	UTM Zone 17R
Elevation:	69.29 ft
Slope Direction:	W

Topographic Information.....	2
Hydrologic Information.....	12
Geologic Information.....	21
Soil Information.....	25
Wells and Additional Sources.....	38
Summary.....	43
Detail Report.....	48
Radon Information.....	150
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Liability Notice.....	154

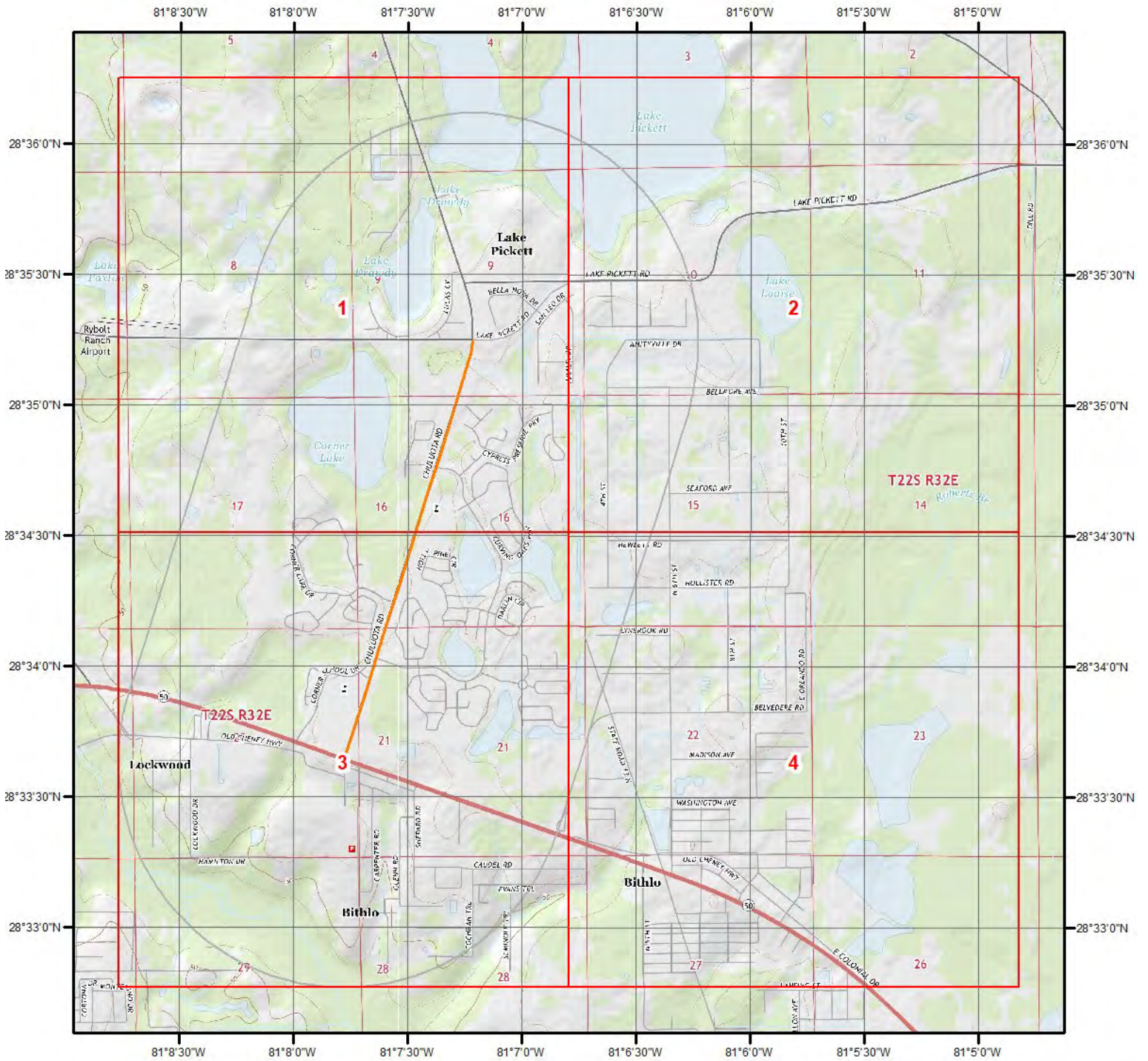
The ERIS **Physical Setting Report - PSR** provides comprehensive information about the physical setting around a site and includes a complete overview of topography and surface topology, in addition to hydrologic, geologic and soil characteristics. The location and detailed attributes of oil and gas wells, water wells, public water systems and radon are also included for review.

The compilation of both physical characteristics of a site and additional attribute data is useful in assessing the impact of migration of contaminants and subsequent impact on soils and groundwater.

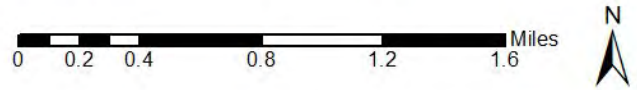
Disclaimer

This Report does not provide a full environmental evaluation for the site or adjacent properties. Please see the terms and disclaimer at the end of the Report for greater detail.

Topographic Information



Current USGS Topo (2015)

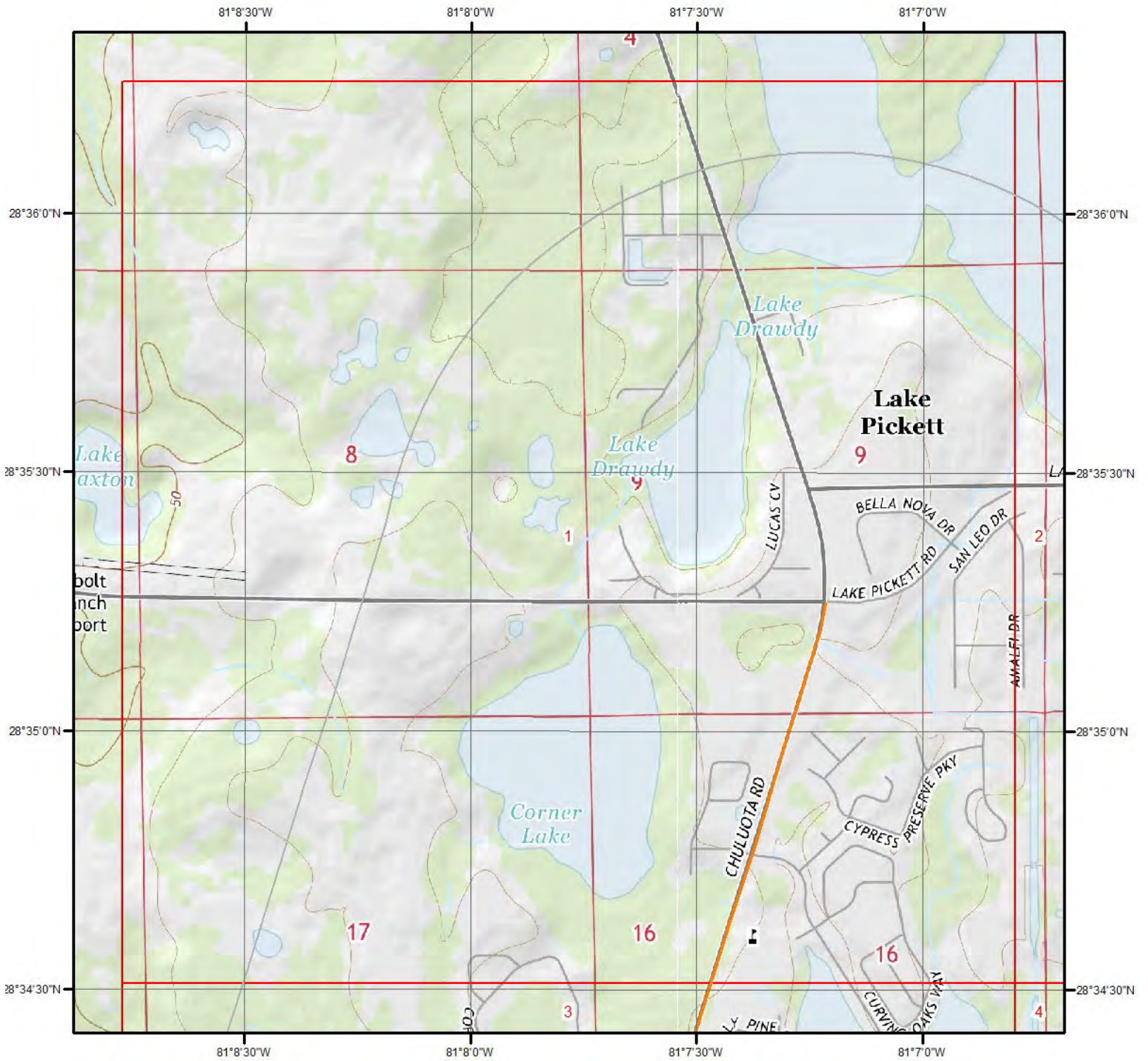


Quadrangle(s): Bithlo,FL; Geneva,FL; Narcoossee NE,FL; Narcoossee NW,FL; Oviado,FL; Oviado SW,FL

Source: USGS 7.5 Minute Topographic Map



Topographic Information



Current USGS Topo - Page 1

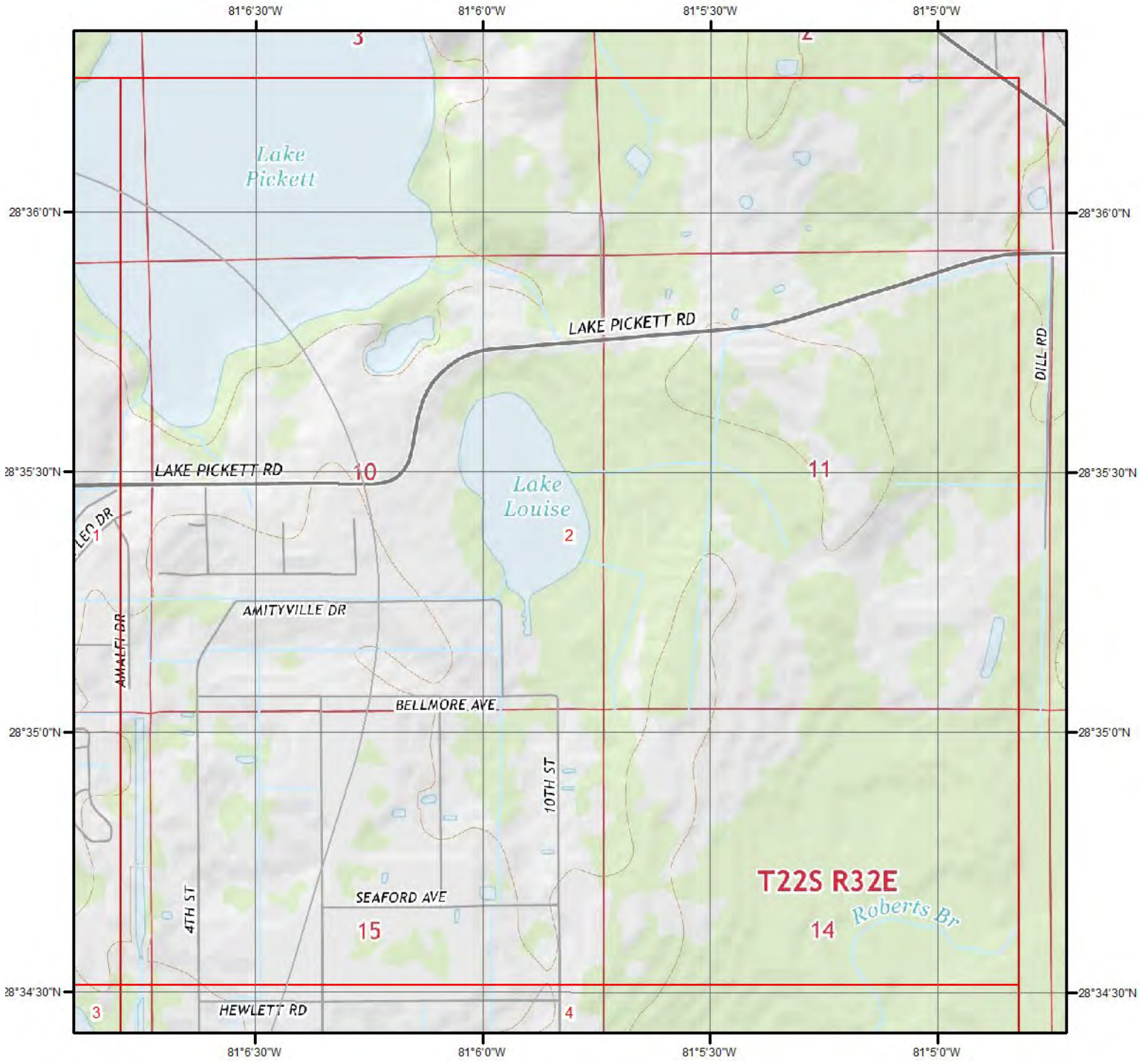


Quadrangle(s): Bithlo,FL; Oviedo SW,FL

Source: USGS 7.5 Minute Topographic Map



Topographic Information



Current USGS Topo - Page 2

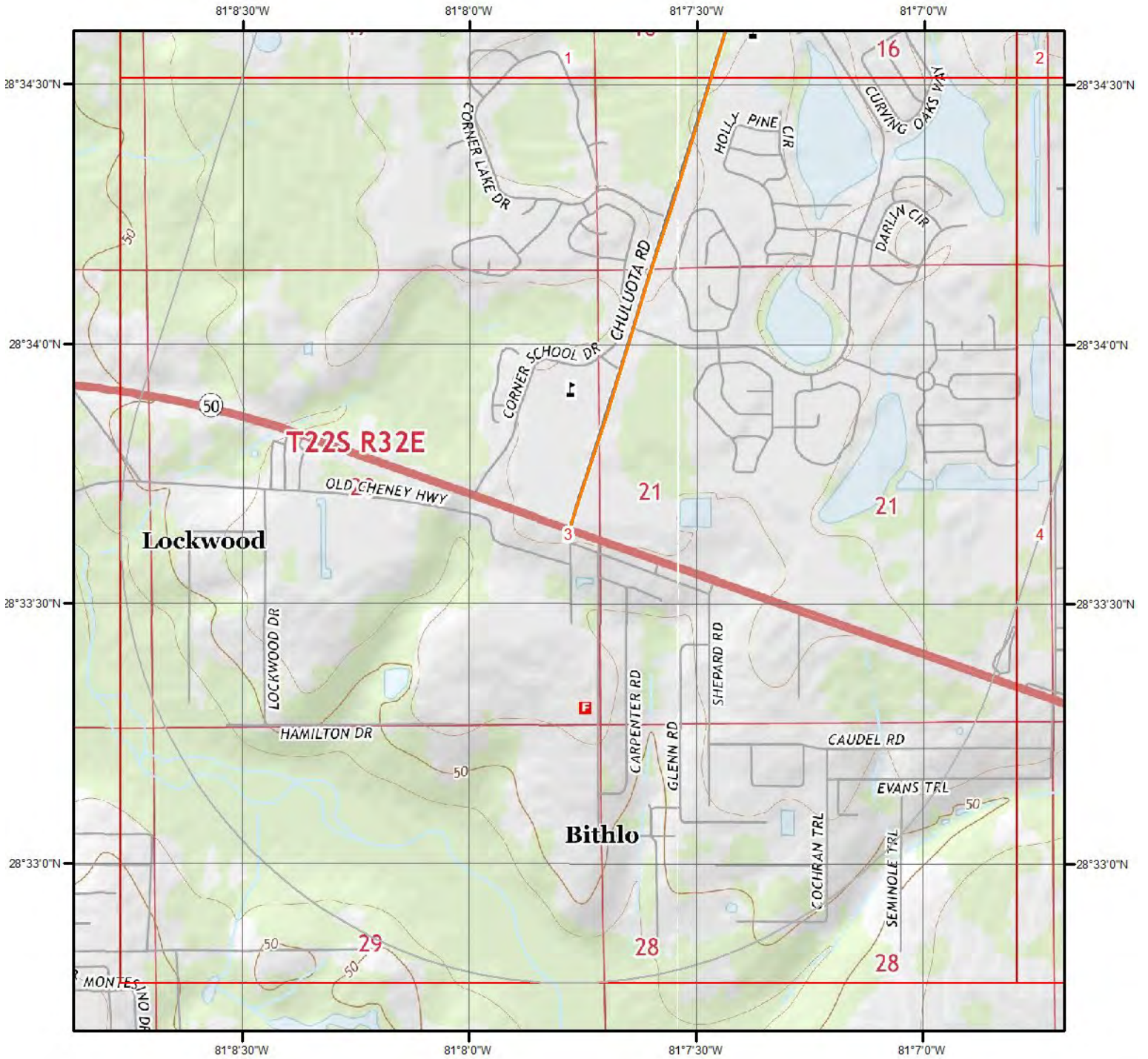


Quadrangle(s): Bithlo,FL

Source: USGS 7.5 Minute Topographic Map



Topographic Information



Current USGS Topo - Page 3

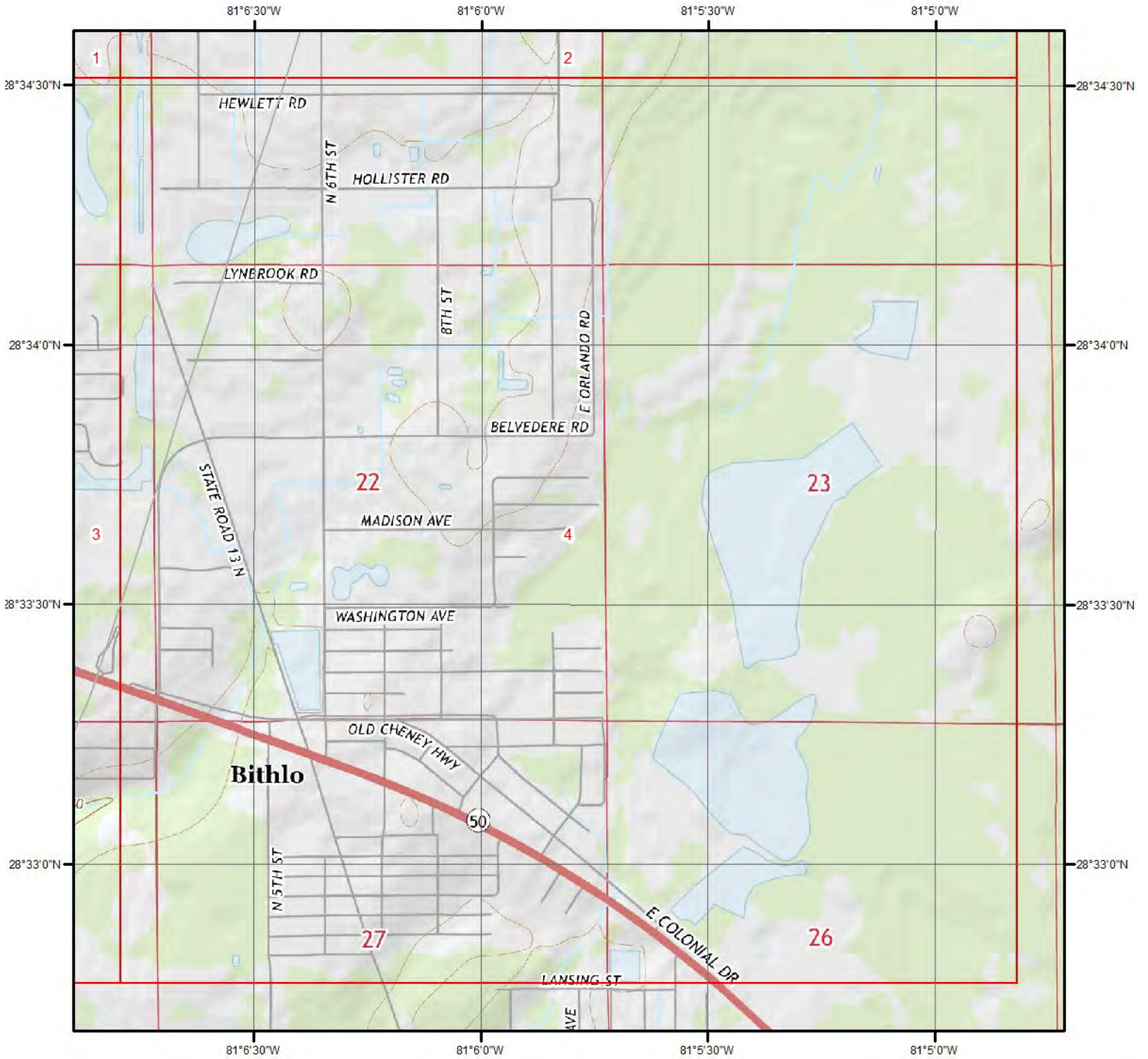


Quadrangle(s): Bithlo,FL; Oviedo SW,FL

Source: USGS 7.5 Minute Topographic Map



Topographic Information



Current USGS Topo - Page 4



Quadrangle(s): Bithlo, FL

Source: USGS 7.5 Minute Topographic Map

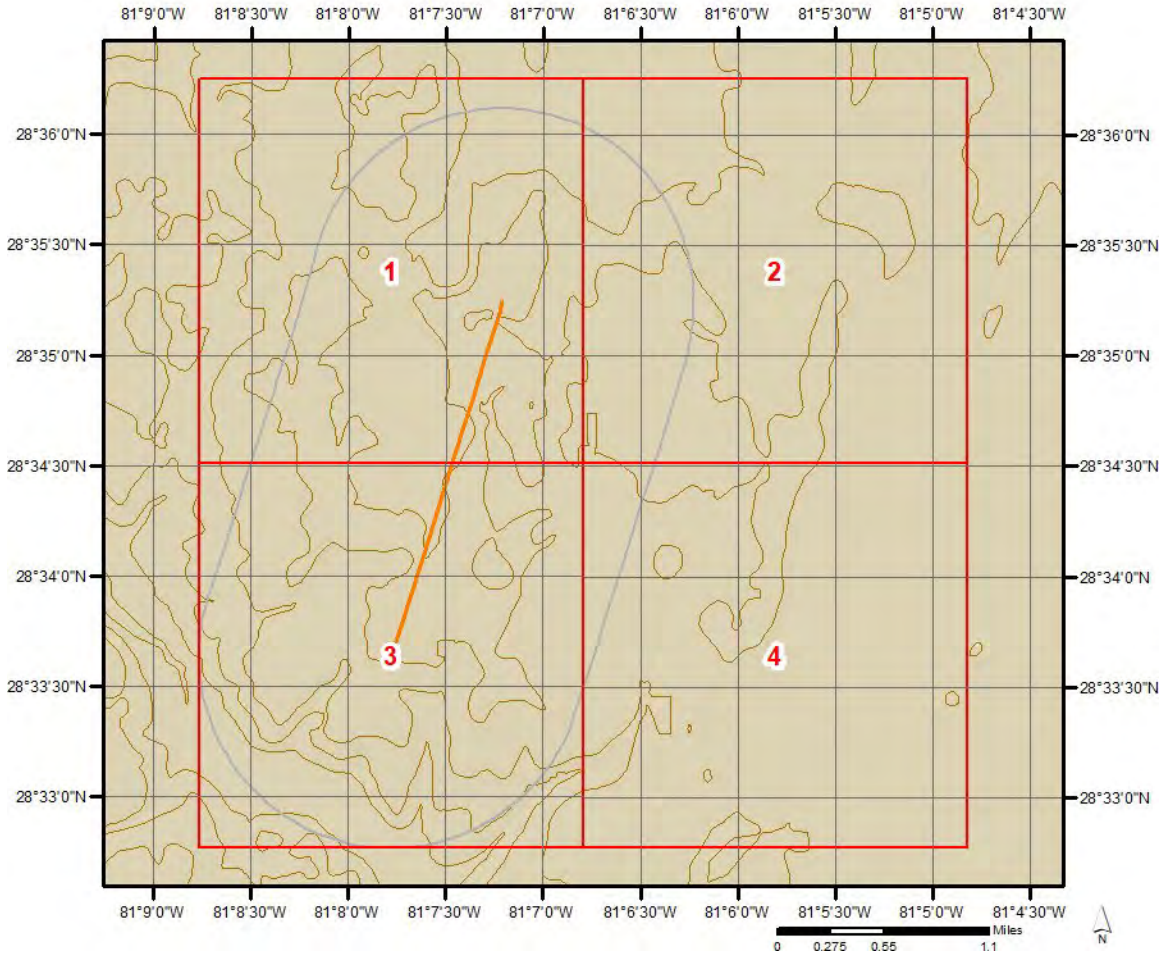


Topographic Information

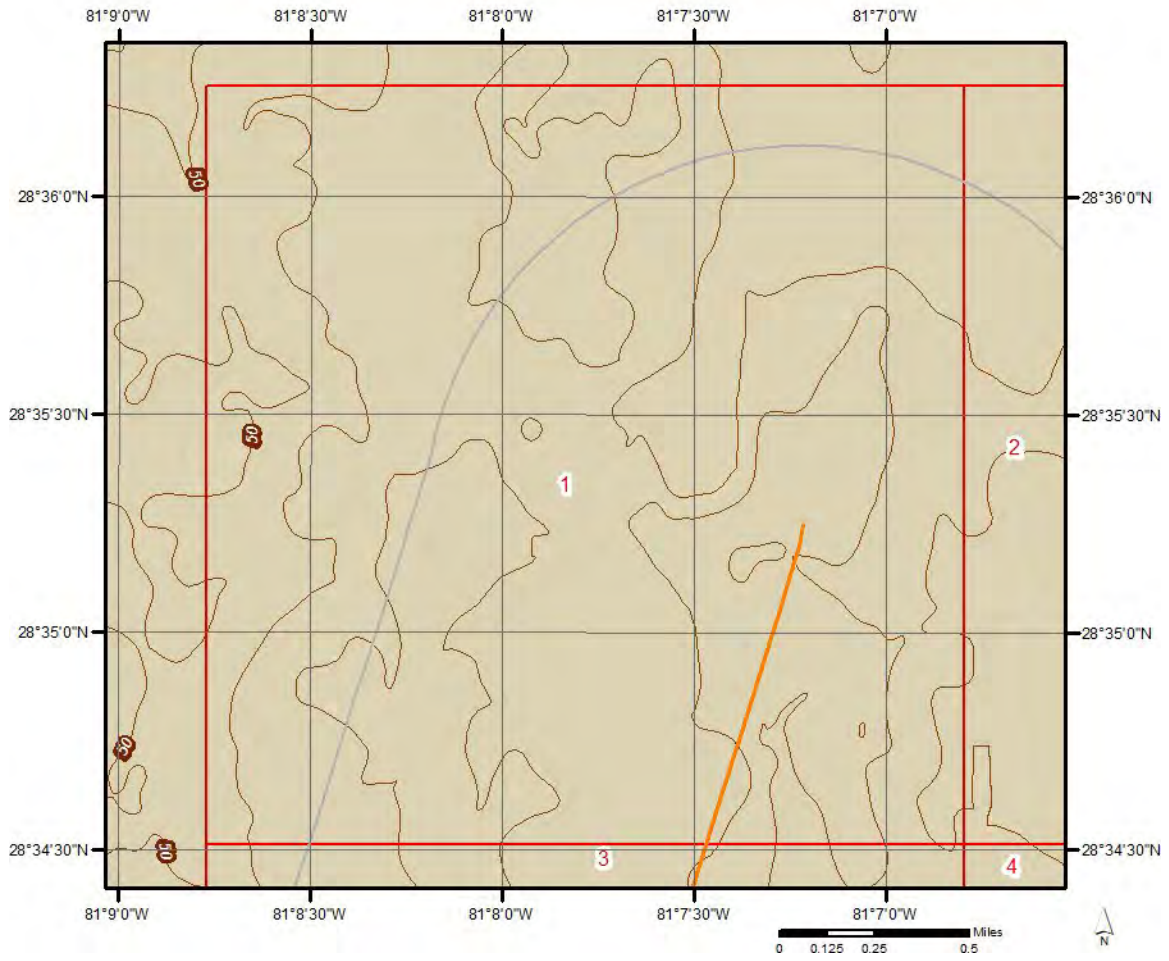
The previous topographic map(s) are created by seamlessly merging and cutting current USGS topographic data. Below are shaded relief map(s), derived from USGS elevation data to show surrounding topography in further detail.

Topographic information at project property:

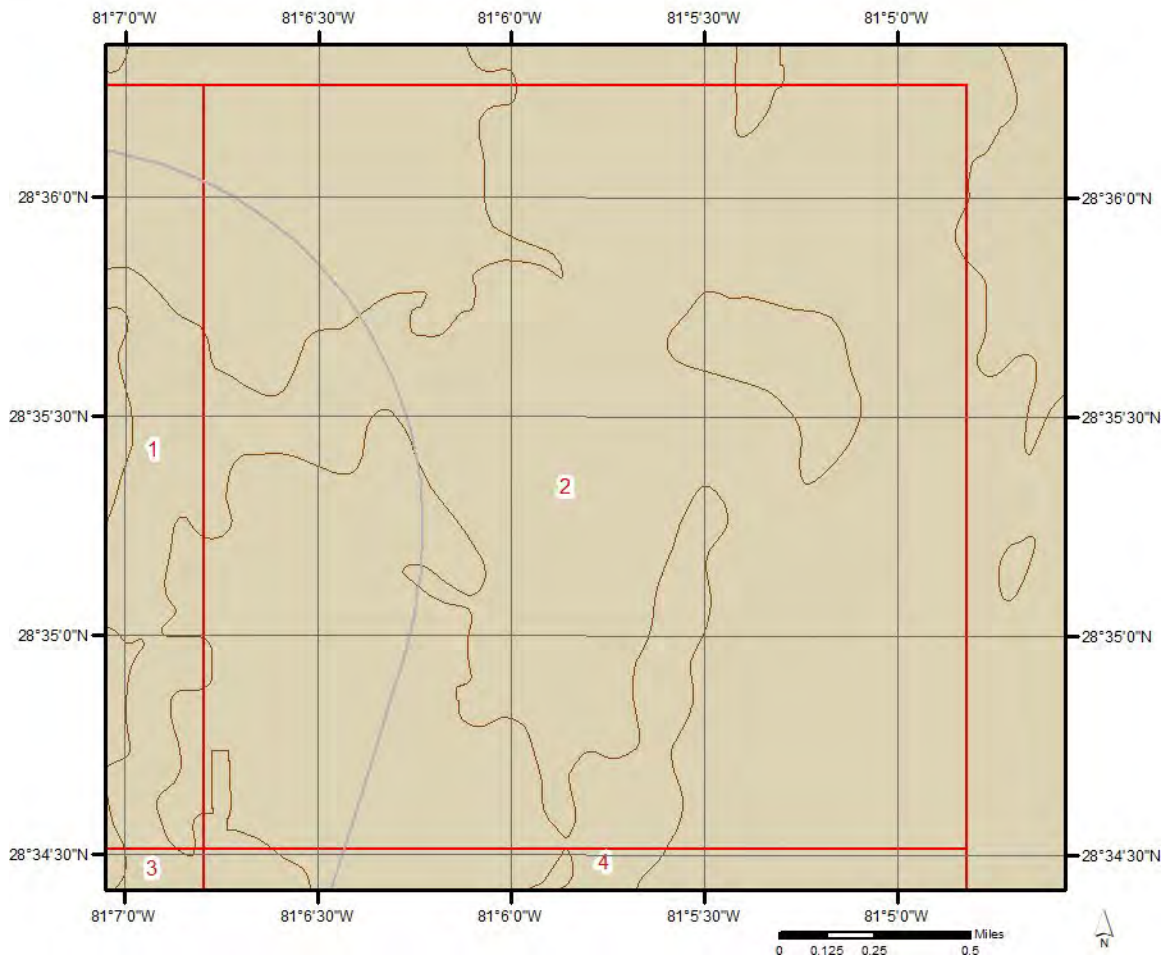
Elevation: 69.29 ft
Slope Direction: W



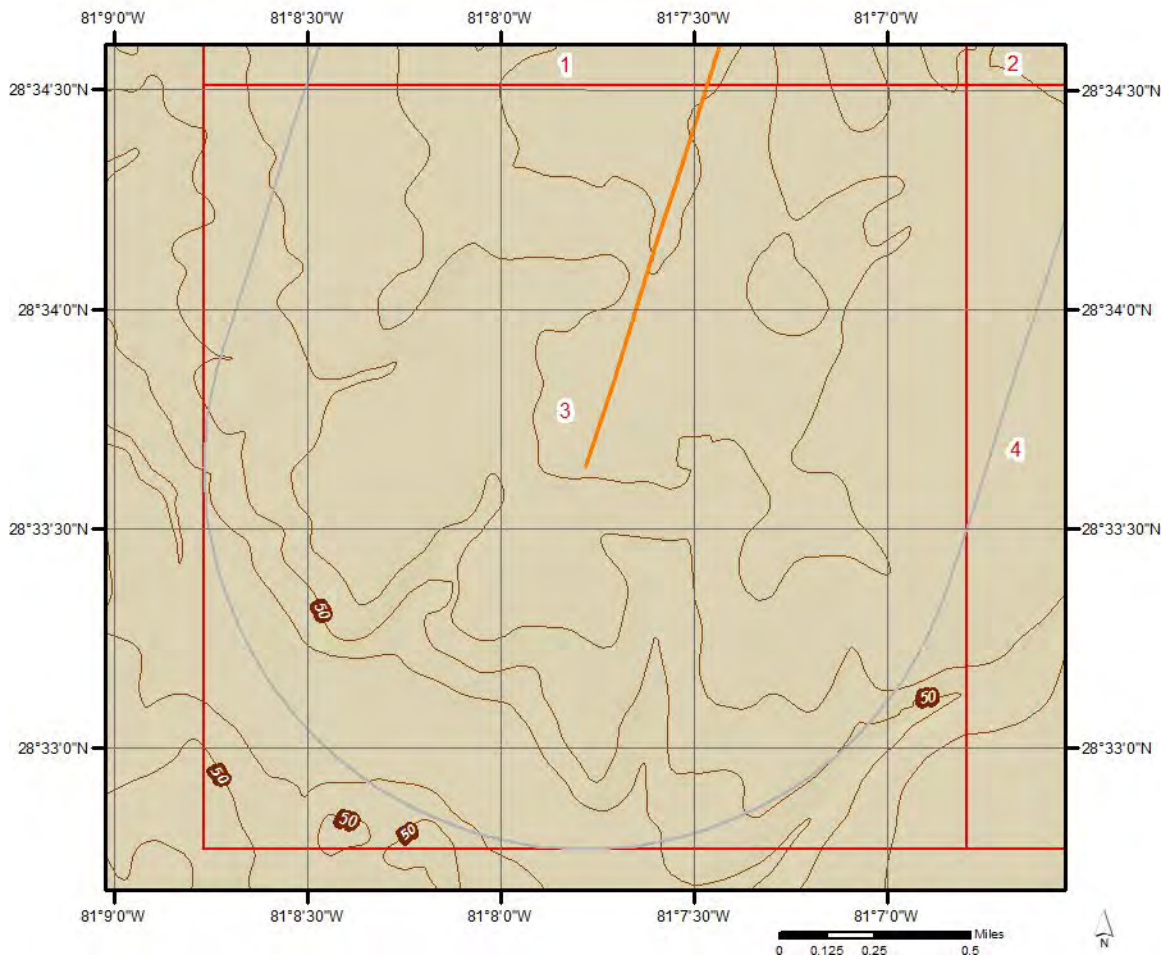
Topographic Information



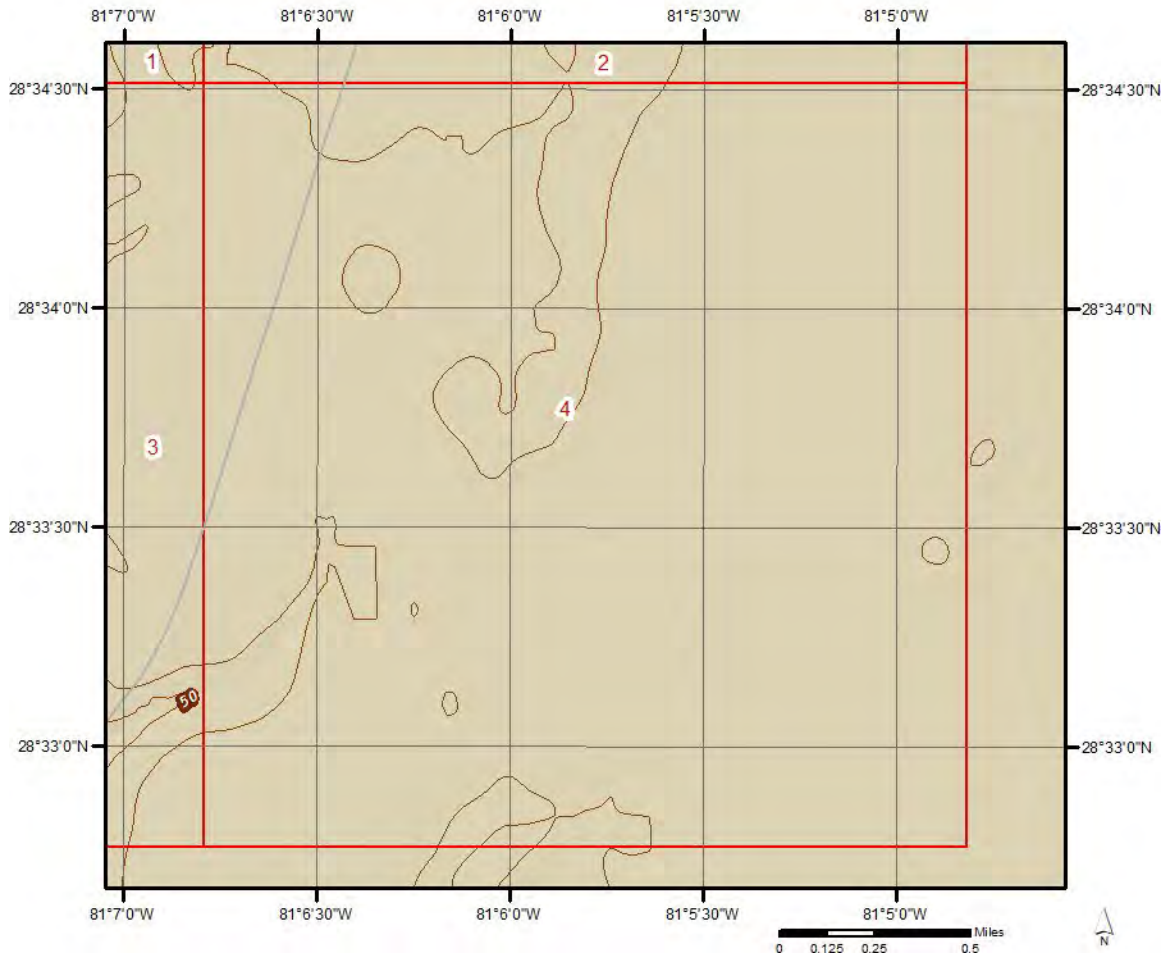
Topographic Information



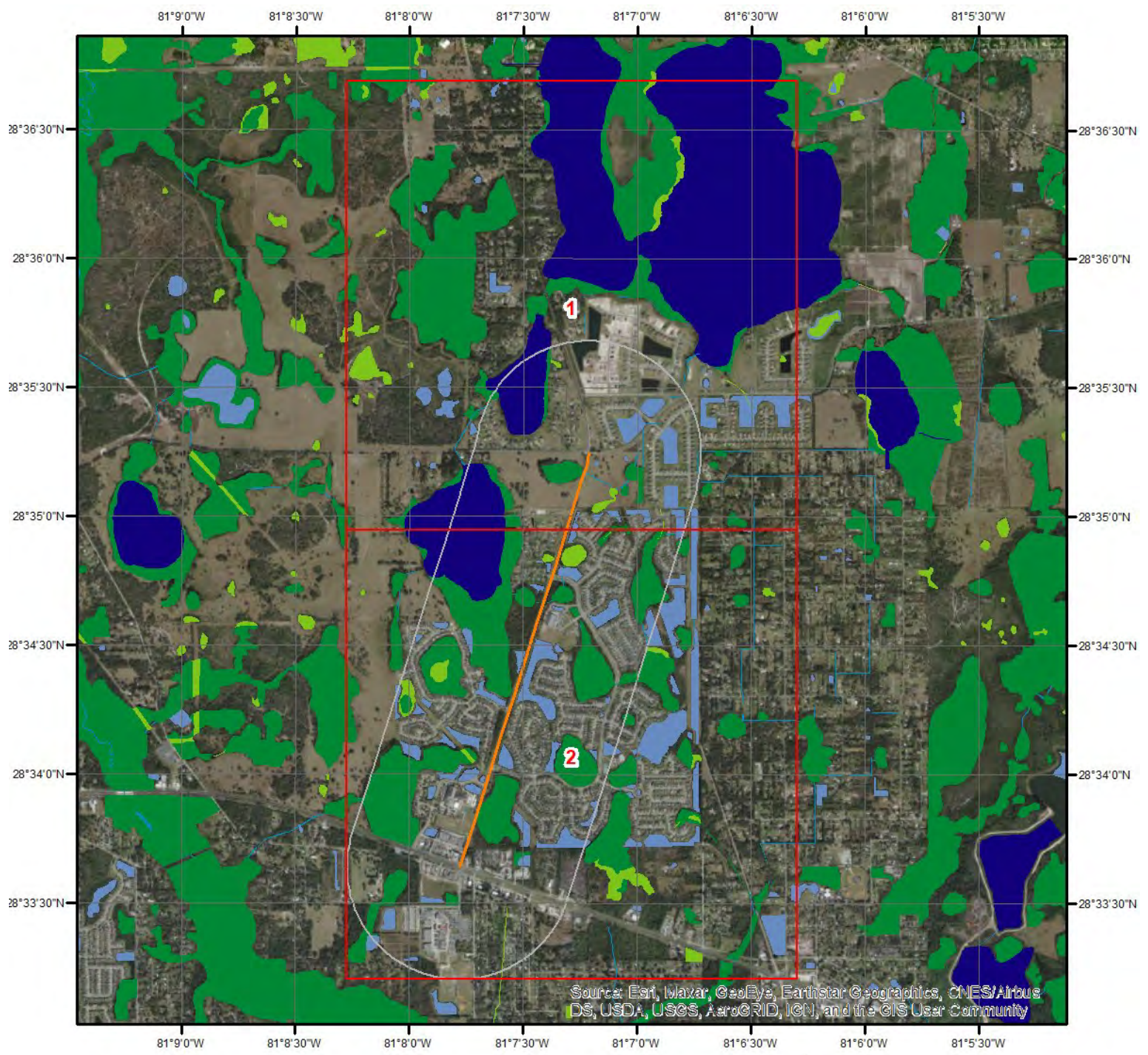
Topographic Information



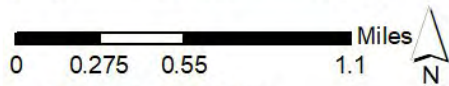
Topographic Information



Hydrologic Information



Wetland



This map shows wetland existence using data from US Fish & Wildlife. Data coverage is shown to the right. Gray indicates no data available in the area.

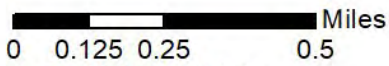
- | | |
|---|---|
|  Estuarine and Marine Deepwater |  Freshwater Pond |
|  Estuarine and Marine Wetland |  Lake |
|  Freshwater Emergent Wetland |  Other |
|  Freshwater Forested/Shrub Wetland |  Riverine |



Hydrologic Information



Wetland Type - Page 1

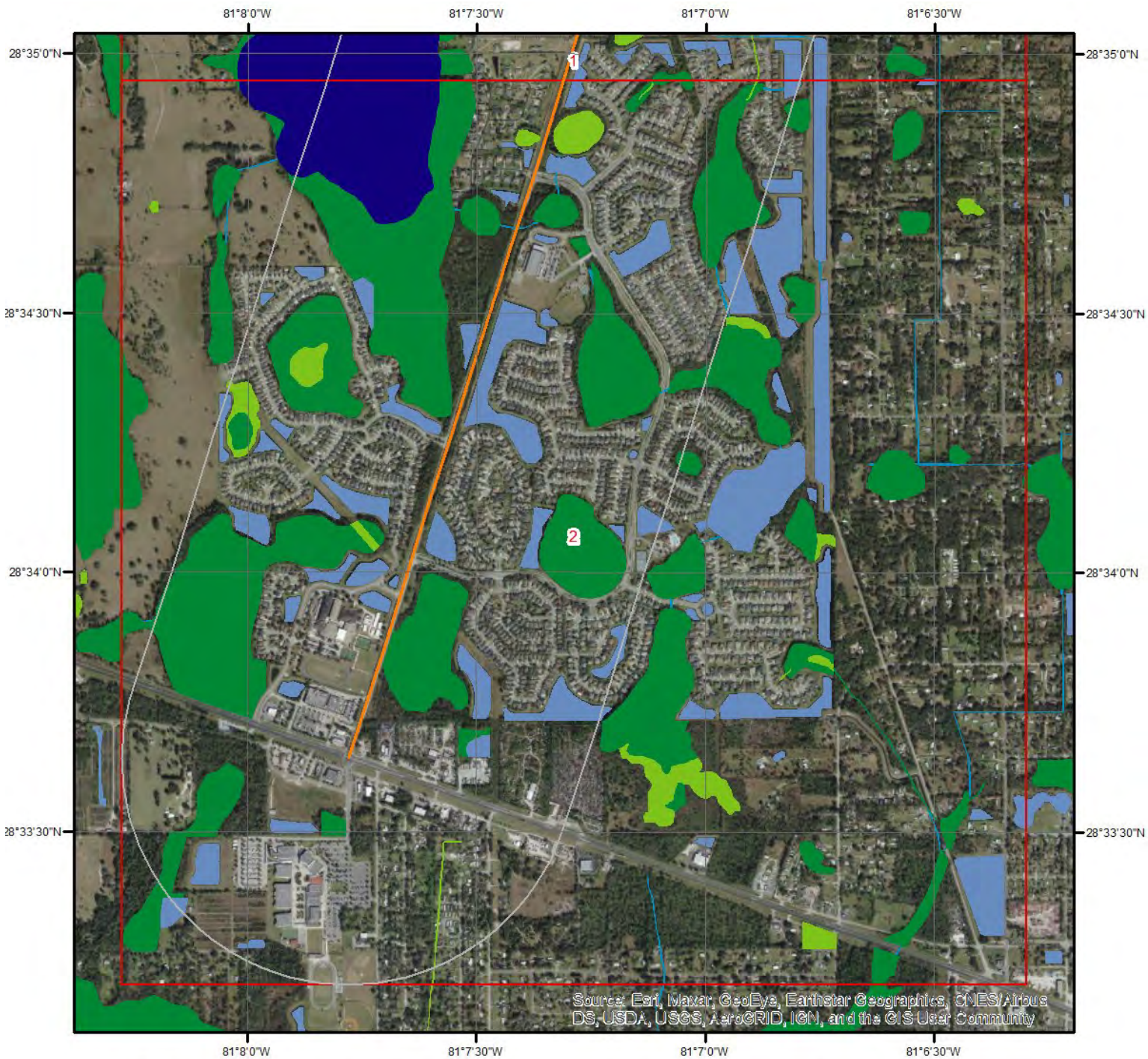


This map shows wetland existence using data from US Fish & Wildlife. Data coverage is shown to the right. Gray indicates no data available in the area.

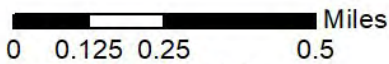
- | | |
|---|---|
|  Estuarine and Marine Deepwater |  Freshwater Pond |
|  Estuarine and Marine Wetland |  Lake |
|  Freshwater Emergent Wetland |  Other |
|  Freshwater Forested/Shrub Wetland |  Riverine |



Hydrologic Information




Wetland Type - Page 2



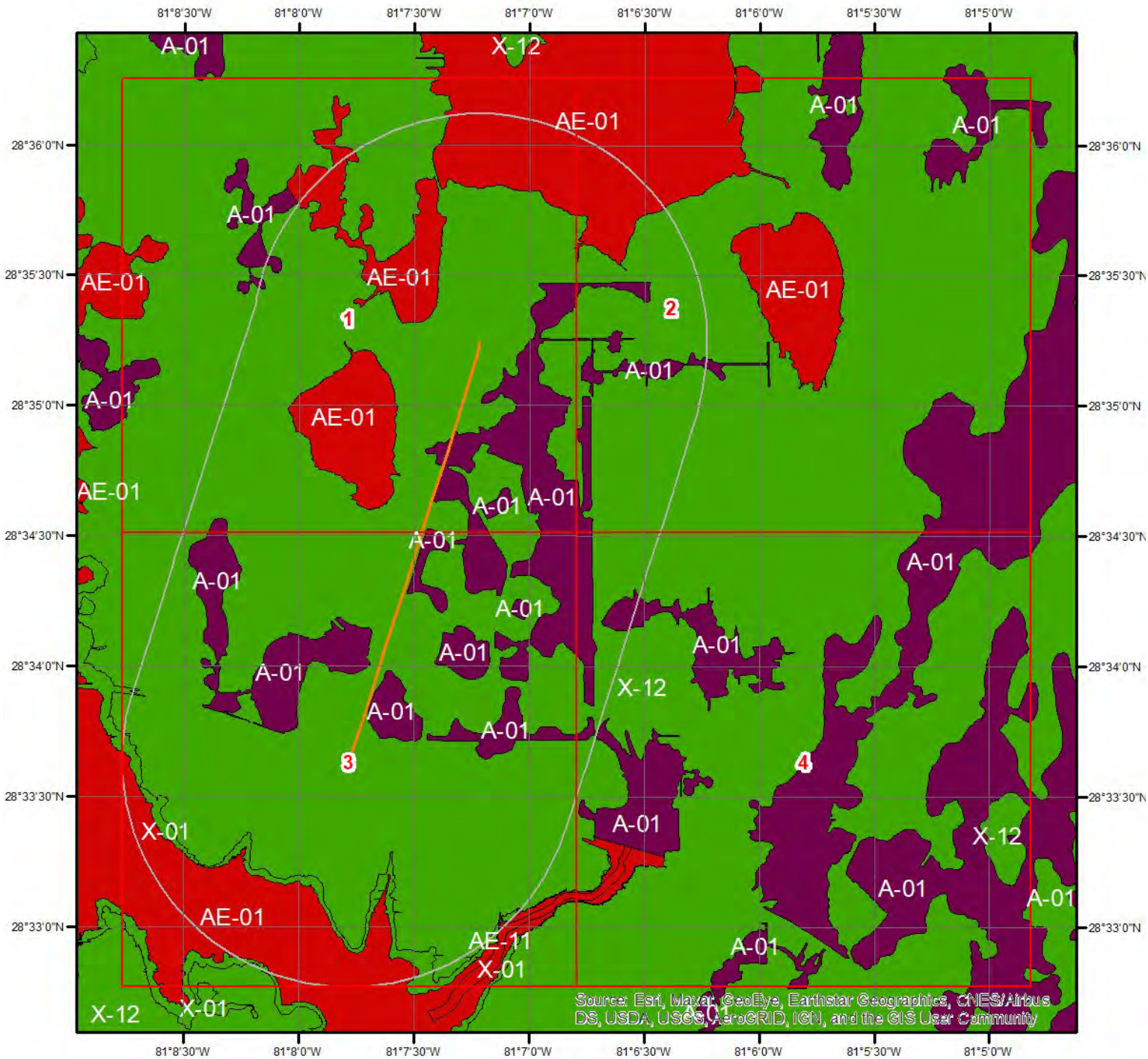
This map shows wetland existence using data from US Fish & Wildlife. Data coverage is shown to the right. Gray indicates no data available in the area.



- | | |
|---|---|
|  Estuarine and Marine Deepwater |  Freshwater Pond |
|  Estuarine and Marine Wetland |  Lake |
|  Freshwater Emergent Wetland |  Other |
|  Freshwater Forested/Shrub Wetland |  Riverine |



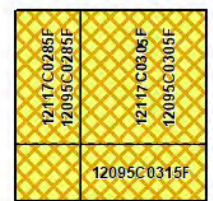
Hydrologic Information



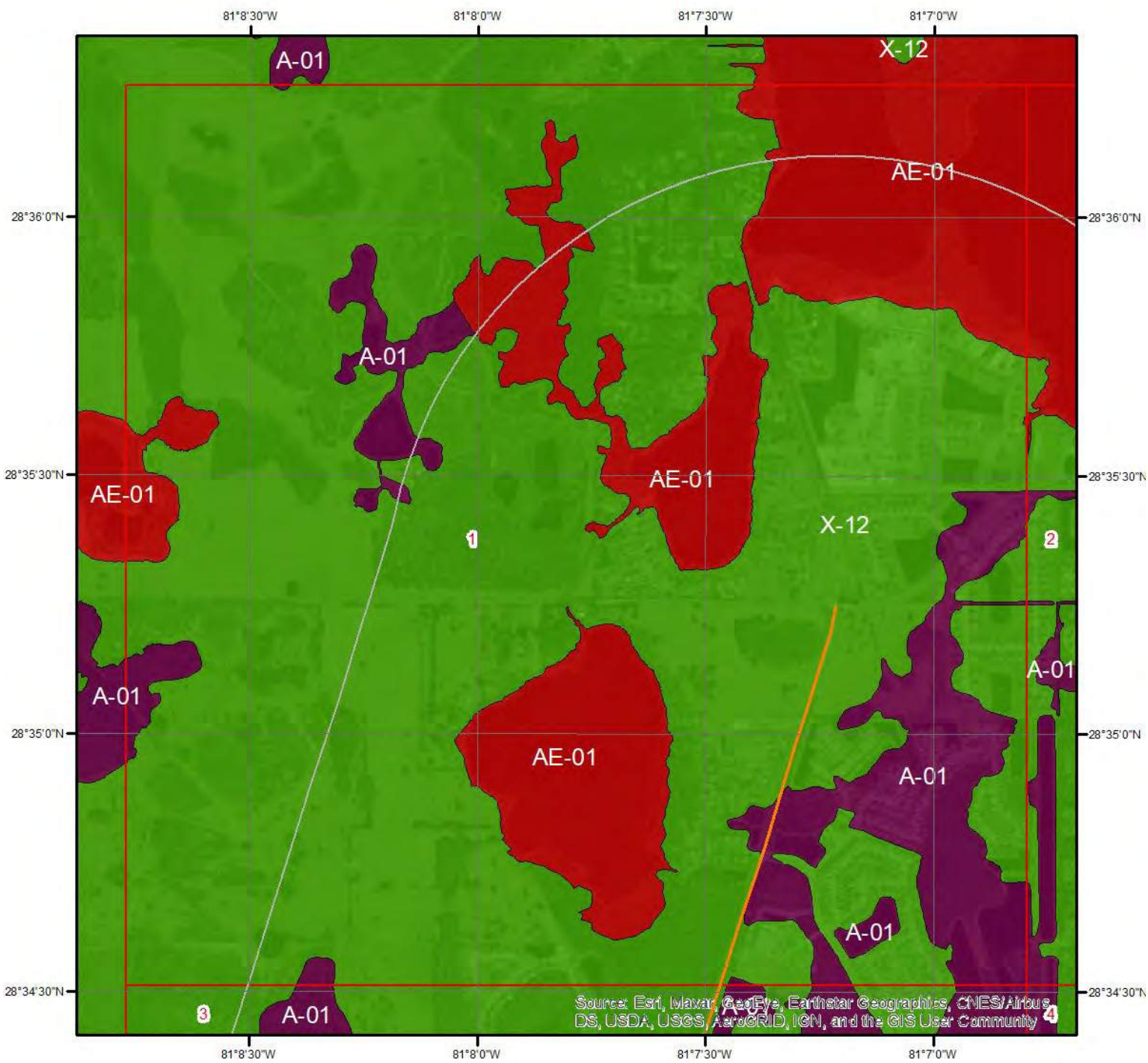
Flood Hazard Zones

This map shows FEMA flood hazard zones. FIRM panels are shown to the right, and blank indicates no data is available.

- | | | |
|---|---|---|
|  |  |  |
| A | AO | X |
|  |  |  |
| A99 | V | OPEN WATER |
|  |  |  |
| AE | VE | NOT POPULATED |
|  |  |  |
| AH | D | AREA NOT INCLUDED |



Hydrologic Information

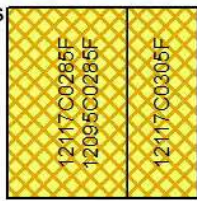


Source: Eris, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

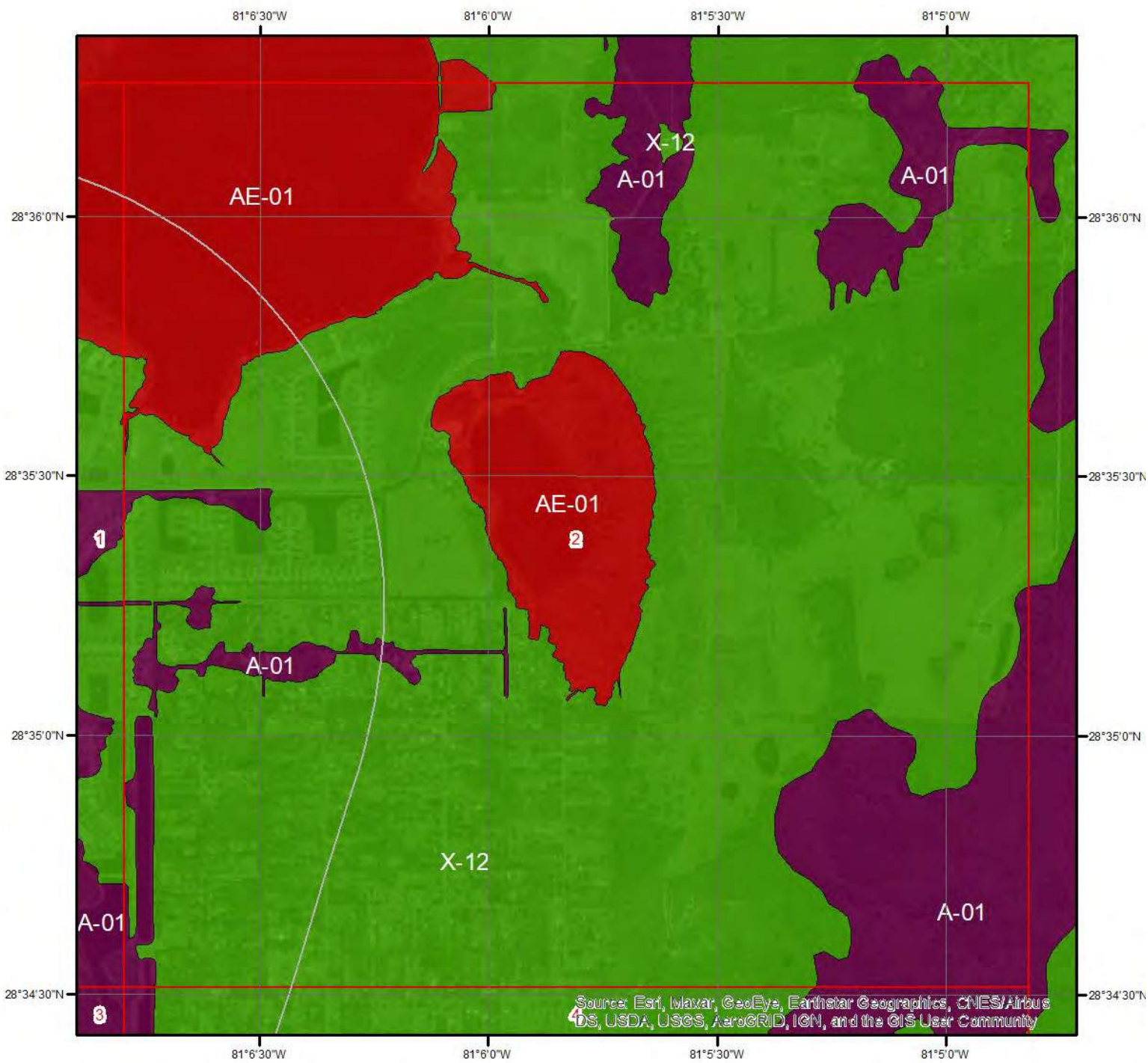
Flood Hazard Zones - Page 1

This map shows FEMA flood hazard zones. FIRM panels are shown to the right, and blank indicates no data is available.

- | | | |
|---|--|---|
| A | AO | X |
| A99 | V | OPEN WATER |
| AE | VE | NOT POPULATED |
| AH | D | AREA NOT INCLUDED |



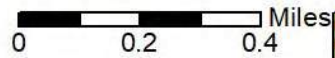
Hydrologic Information



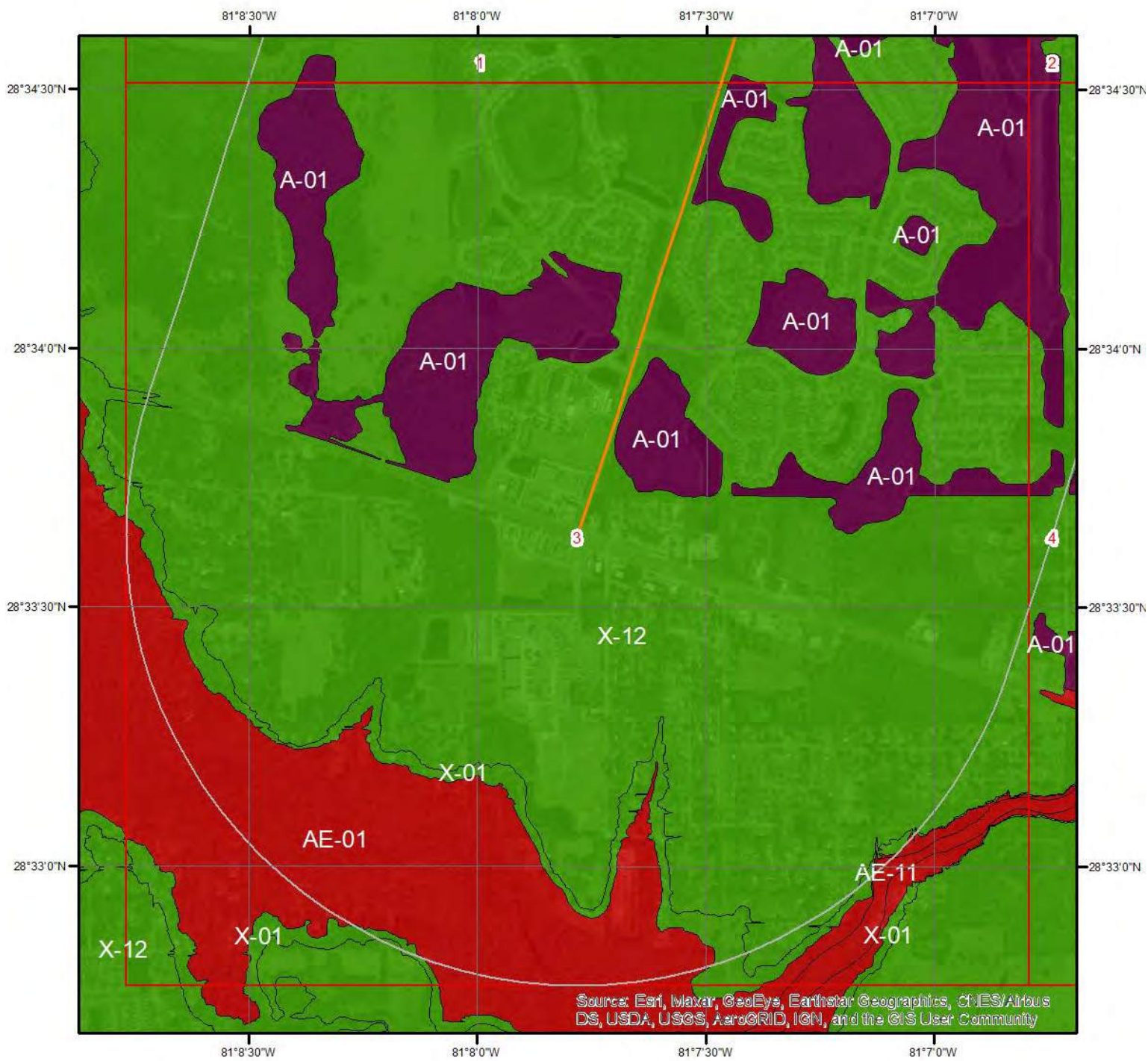
Flood Hazard Zones - Page 2

This map shows FEMA flood hazard zones. FIRM panels are shown to the right, and blank indicates no data is available.

- | | | |
|-----|----|-------------------|
| A | AO | X |
| A99 | V | OPEN WATER |
| AE | VE | NOT POPULATED |
| AH | D | AREA NOT INCLUDED |















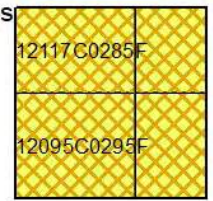
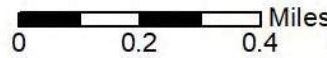
Hydrologic Information



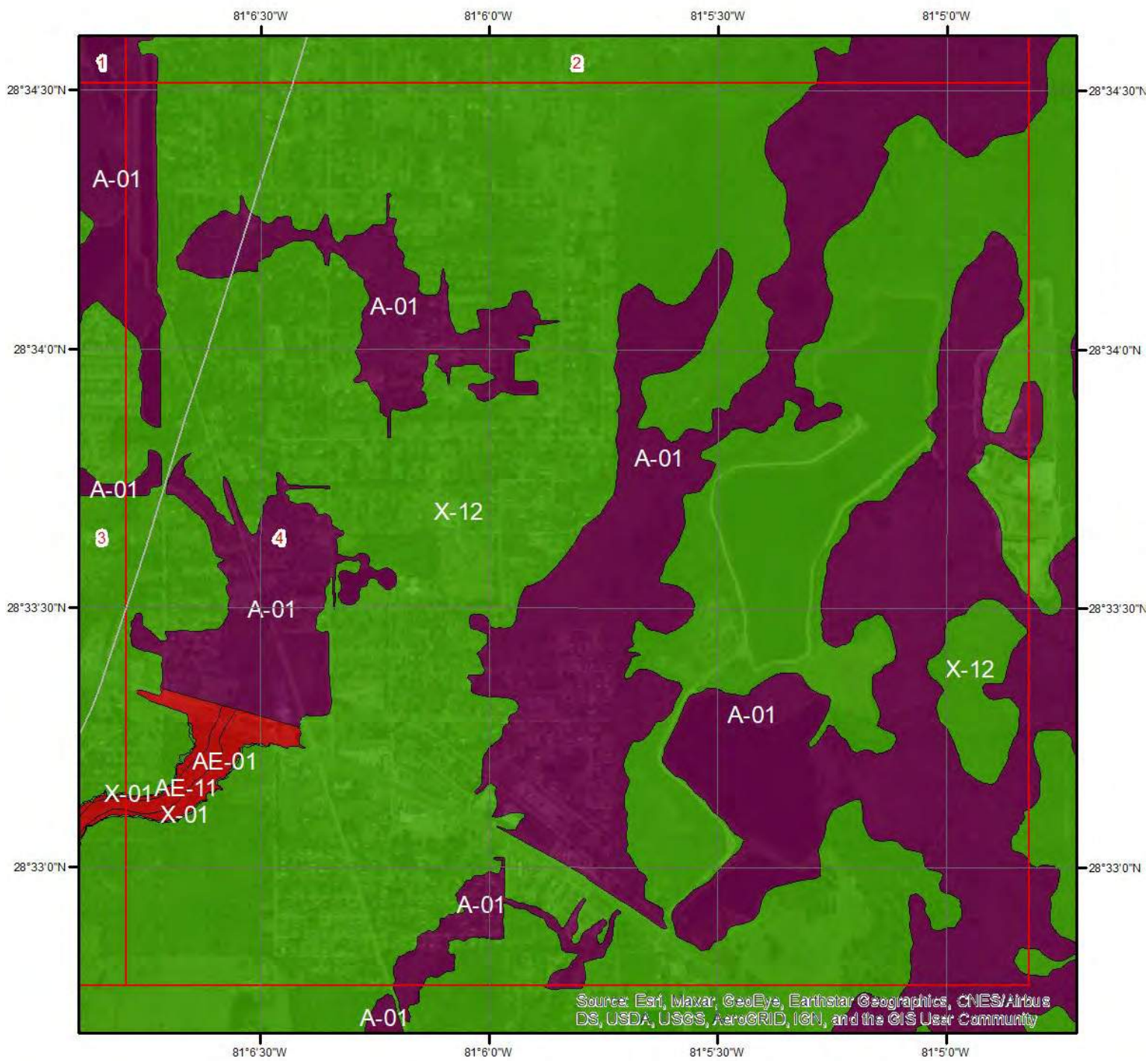
Flood Hazard Zones - Page 3

This map shows FEMA flood hazard zones. FIRM panels are shown to the right, and blank indicates no data is available.

- | | | |
|---|--|---|
|  A |  AO |  X |
|  A99 |  V |  OPEN WATER |
|  AE |  VE |  NOT POPULATED |
|  AH |  D |  AREA NOT INCLUDED |















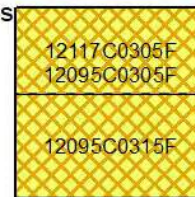
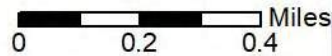
Hydrologic Information



Flood Hazard Zones - Page 4

This map shows FEMA flood hazard zones. FIRM panels are shown to the right, and blank indicates no data is available.

- | | | |
|---|--|---|
|  A |  AO |  X |
|  A99 |  V |  OPEN WATER |
|  AE |  VE |  NOT POPULATED |
|  AH |  D |  AREA NOT INCLUDED |



Hydrologic Information

The Wetland Type map shows wetland existence overlaid on an aerial imagery. The Flood Hazard Zones map shows FEMA flood hazard zones overlaid on an aerial imagery. Relevant FIRM panels and detailed zone information is provided below.

Available FIRM Panels in area: 12095C0285F(effective:2009-09-25) 12095C0295F(effective:2009-09-25)
12095C0315F(effective:2009-09-25) 12095C0305F(effective:2009-09-25)
12117C0285F(effective:2007-09-28) 12117C0305F(effective:2007-09-28)

Flood Zone A-01

Zone: A
Zone subtype:

Flood Zone AE-01

Zone: AE
Zone subtype:

Flood Zone AE-11

Zone: AE
Zone subtype: FLOODWAY

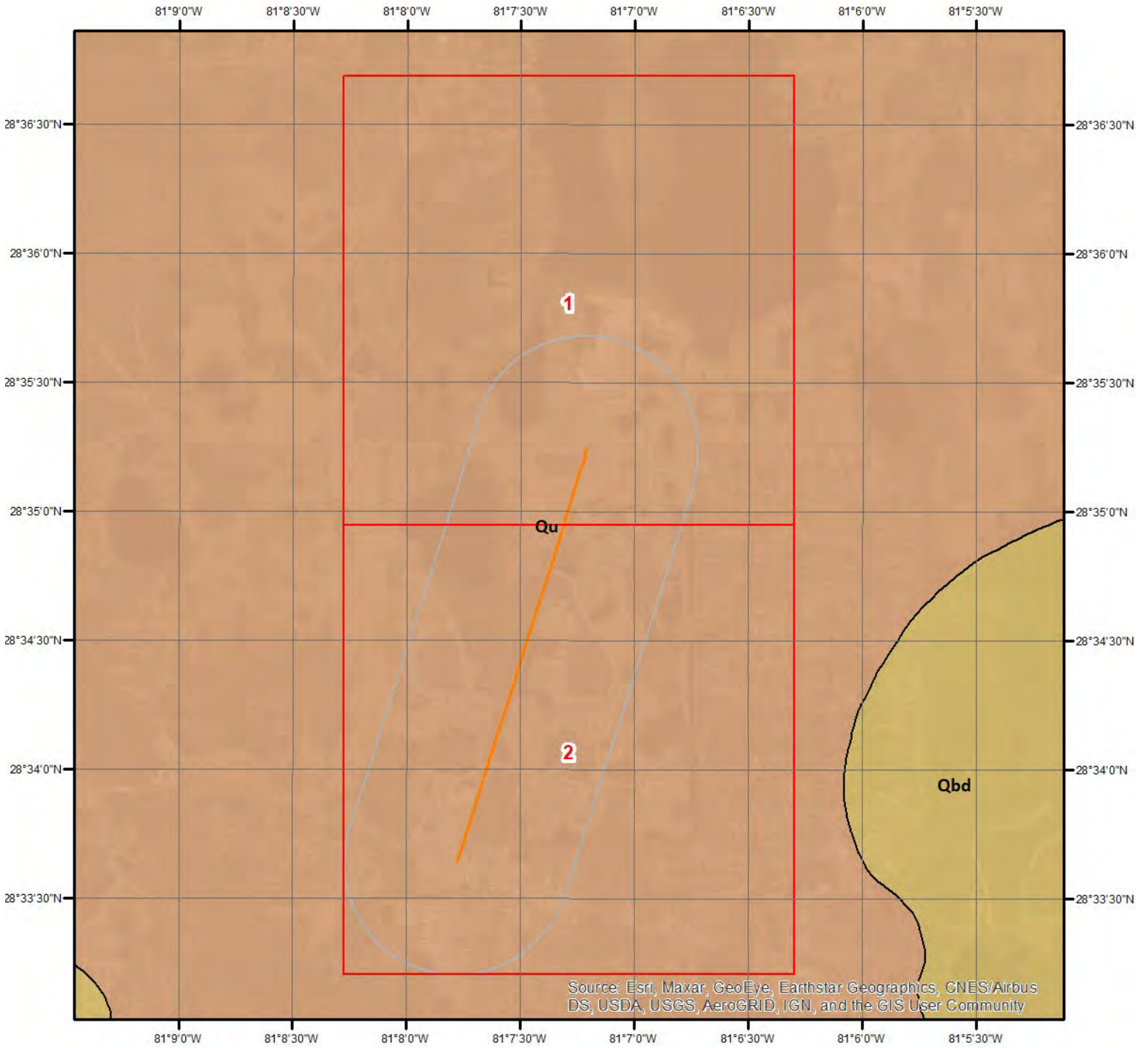
Flood Zone X-01

Zone: X
Zone subtype: 0.2 PCT ANNUAL CHANCE FLOOD HAZARD

Flood Zone X-12

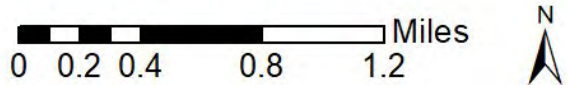
Zone: X
Zone subtype: AREA OF MINIMAL FLOOD HAZARD

Geologic Information

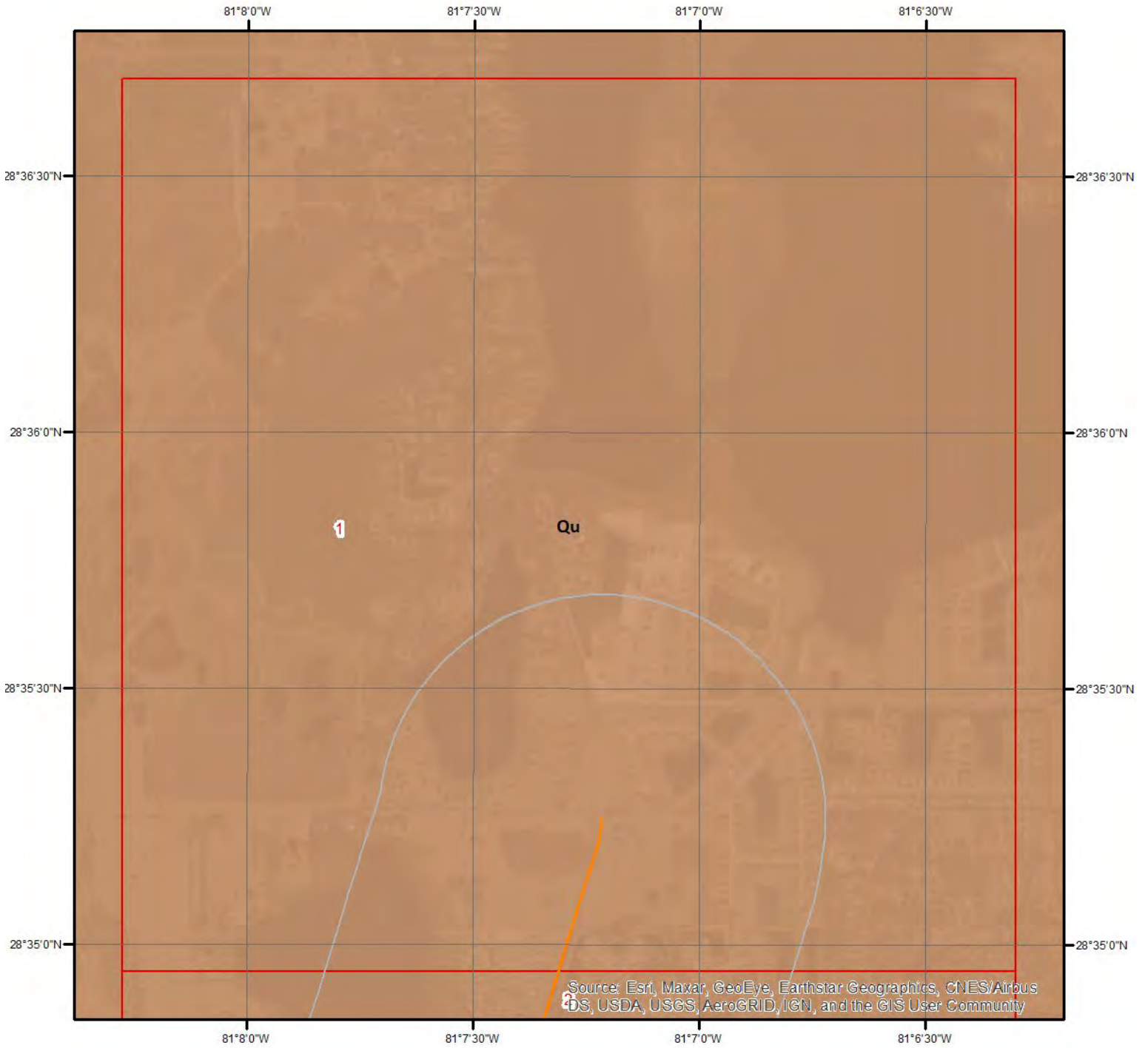


Geologic Units

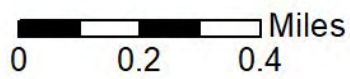
This maps shows geologic units in the area. Please refer to the report for detailed descriptions.



Geologic Information



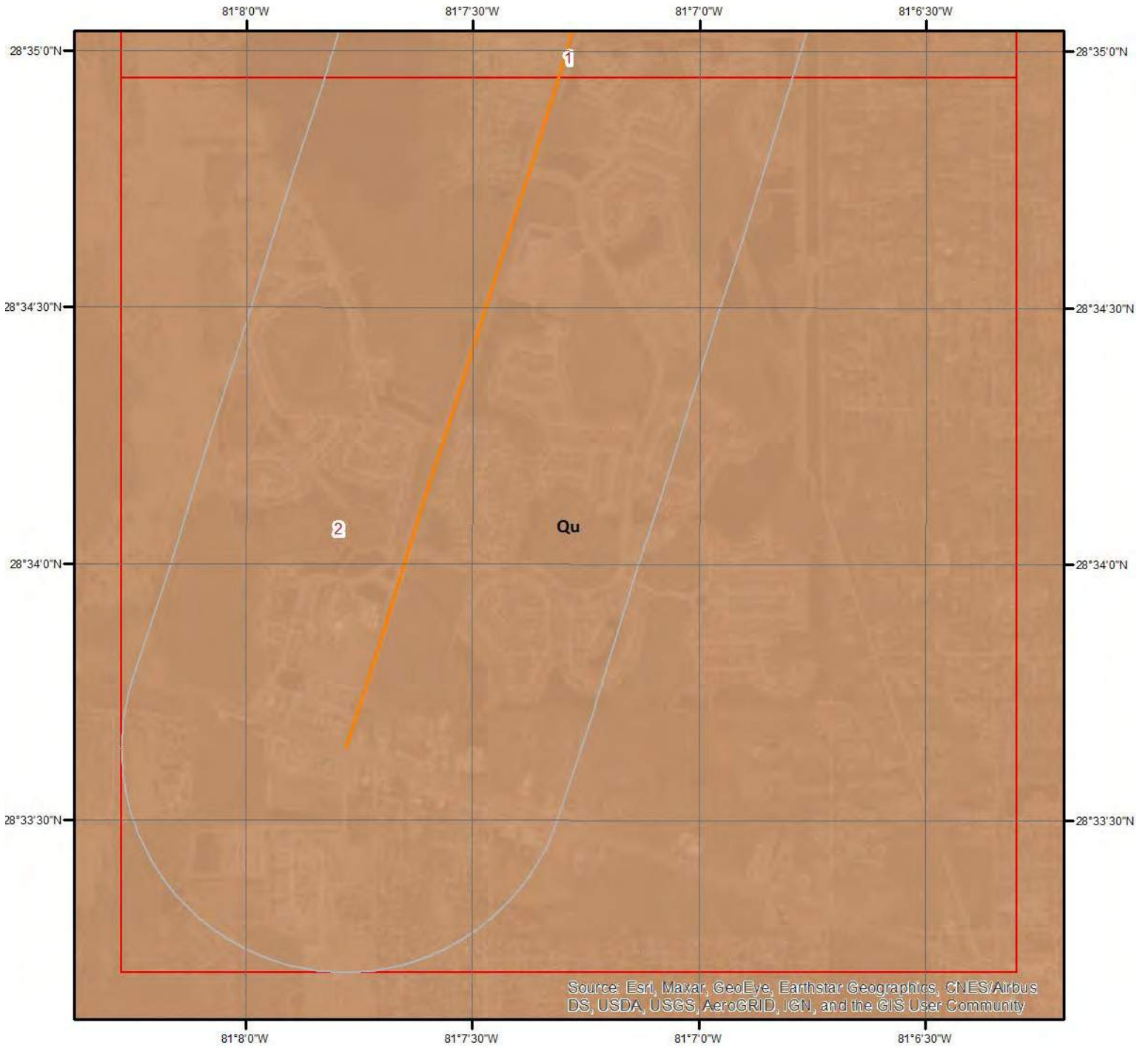
Geologic Units - Page 1



This maps shows geologic units in the area. Please refer to the report for detailed descriptions.

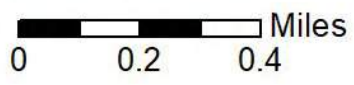


Geologic Information



Geologic Units - Page 2

This maps shows geologic units in the area. Please refer to the report for detailed descriptions.



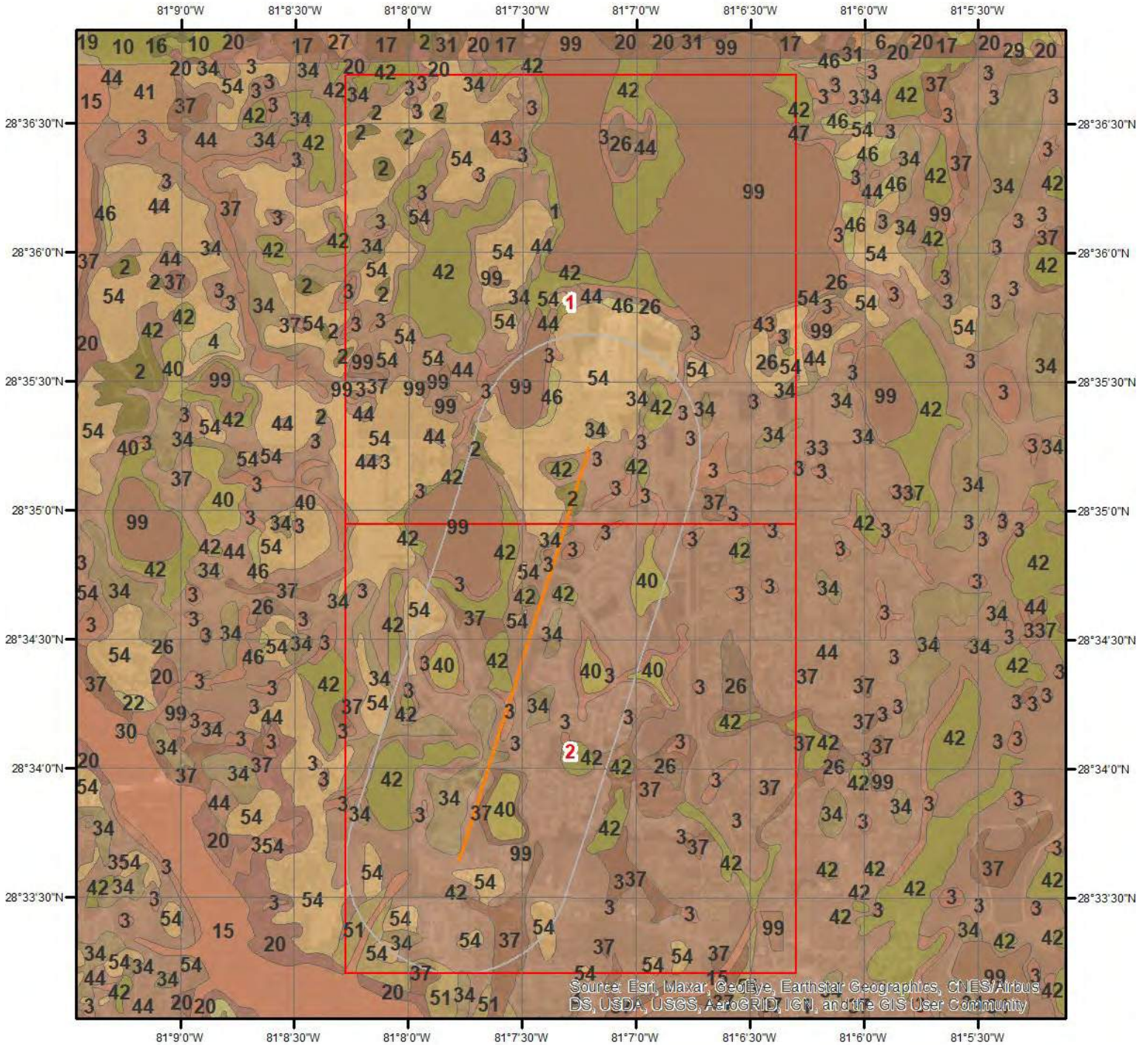
Geologic Information

The previous page shows USGS geology information. Detailed information about each unit is provided below.

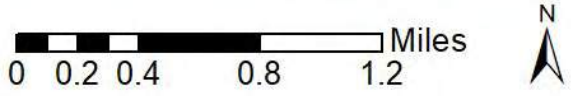
Geologic Unit Qu

Unit Name:	Undifferentiated sediments
Unit Age:	Pleistocene/Holocene
Primary Rock Type:	clay or mud
Secondary Rock Type:	beach sand
Unit Description:	<p>Undifferentiated sediments - Undifferentiated Quaternary Sediments - Much of Florida's surface is covered by a varying thickness of undifferentiated sediments consisting of siliciclastics, organics and freshwater carbonates. Where these sediments exceed 20 feet (6.1 meters) thick, they were mapped as discrete units. In an effort to subdivide the undifferentiated sediments, those sediments occurring in flood plains were mapped as alluvial and flood plain deposits (Qal). Sediments showing surficial expression of beach ridges and dunes were mapped separately (Qbd) as were the sediments composing Trail Ridge (Qtr). Terrace sands were not mapped (refer to Healy [1975] for a discussion of the terraces in Florida). The subdivisions of the Undifferentiated Quaternary Sediments (Qu) are not lithostratigraphic units but are utilized in order to facilitate a better understanding of the State's geology. The siliciclastics are light gray, tan, brown to black, unconsolidated to poorly consolidated, clean to clayey, silty, unfossiliferous, variably organic-bearing sands to blue green to olive green, poorly to moderately consolidated, sandy, silty clays. Gravel is occasionally present in the panhandle. Organics occur as plant debris, roots, disseminated organic matrix and beds of peat. Freshwater carbonates, often referred to as marls in the literature, are scattered over much of the State. In southern Florida, freshwater carbonates are nearly ubiquitous in the Everglades. These sediments are buff colored to tan, unconsolidated to poorly consolidated, fossiliferous carbonate muds. Sand, silt and clay may be present in limited quantities. These carbonates often contain organics. The dominant fossils in the freshwater carbonates are mollusks.</p>

Soil Information



SSURGO Soils



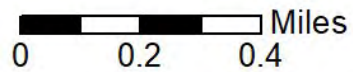
This maps shows SSURGO soil units around the target property. Please refer to the report for detailed soil descriptions.



Soil Information



SSURGO Soils - Page 1



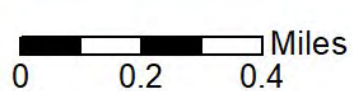
This maps shows SSURGO soil units around the target property. Please refer to the report for detailed soil descriptions.



Soil Information



SSURGO Soils - Page 2



This maps shows SSURGO soil units around the target property. Please refer to the report for detailed soil descriptions.



Soil Information

The previous page shows a soil map using SSURGO data from USDA Natural Resources Conservation Service. Detailed information about each unit is provided below.

Map Unit 15 (23.9%)

Map Unit Name:	Felda fine sand, frequently flooded
Bedrock Depth - Min:	
Watertable Depth - Annual Min:	0cm
Drainage Class - Dominant:	Poorly drained
Hydrologic Group - Dominant:	A/D - These soils have low runoff potential when drained and high runoff potential when undrained.

Major components are printed below

Felda(99%)	
horizon A(0cm to 8cm)	Fine sand
horizon E(8cm to 61cm)	Fine sand
horizon B(61cm to 119cm)	Sandy clay loam
horizon C(119cm to 203cm)	Fine sand

Component Description:

Minor map unit components are excluded from this report.

Map Unit: 15 - Felda fine sand, 0 to 2 percent slopes, frequently flooded

Component: Felda (83%)

The Felda, frequently flooded component makes up 83 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during July, August, September, October. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Felda (83%)

The Felda, frequently flooded component makes up 83 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during July, August, September, October. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Basinger (7%)

Generated brief soil descriptions are created for major soil components. The Basinger soil is a minor component.

Component: Floridana (6%)

Generated brief soil descriptions are created for major soil components. The Floridana soil is a minor component.

Component: Pineda (4%)

Generated brief soil descriptions are created for major soil components. The Pineda soil is a minor component.

Map Unit 2 (0.12%)

Map Unit Name:	Archbold fine sand, 0 to 5 percent slopes
Bedrock Depth - Min:	

Soil Information

Watertable Depth - Annual Min: 129cm
Drainage Class - Dominant: Moderately well drained
Hydrologic Group - Dominant: A - Soils in this group have low runoff potential when thoroughly wet. Water is transmitted freely through the soil.

Major components are printed below

Archbold(92%)

horizon A(0cm to 5cm)	Fine sand
horizon C(5cm to 203cm)	Fine sand

Component Description:

Minor map unit components are excluded from this report.

Map Unit: 2 - Archbold fine sand, 0 to 5 percent slopes

Component: Archbold (92%)

The Archbold component makes up 92 percent of the map unit. Slopes are 0 to 5 percent. This component is on knolls on marine terraces on coastal plains, ridges on marine terraces on coastal plains. The parent material consists of eolian or sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 51 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Pomello (8%)

Generated brief soil descriptions are created for major soil components. The Pomello soil is a minor component.

Map Unit 3 (1.38%)

Map Unit Name: Basinger fine sand, depressional, 0 to 1 percent slopes
Bedrock Depth - Min:
Watertable Depth - Annual Min: 0cm
Drainage Class - Dominant: Very poorly drained
Hydrologic Group - Dominant: A/D - These soils have low runoff potential when drained and high runoff potential when undrained.

Major components are printed below

Basinger(90%)

horizon A(0cm to 13cm)	Fine sand
horizon E(13cm to 36cm)	Fine sand
horizon Bh/E(36cm to 91cm)	Fine sand
horizon Cg(91cm to 203cm)	Fine sand

Component Description:

Minor map unit components are excluded from this report.

Map Unit: 3 - Basinger fine sand, frequently ponded, 0 to 1 percent slopes

Component: Basinger (90%)

The Basinger component makes up 90 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during July, August, September, October. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Smyrna (5%)

Generated brief soil descriptions are created for major soil components. The Smyrna soil is a minor component.

Soil Information

Component: Samsula (3%)

Generated brief soil descriptions are created for major soil components. The Samsula soil is a minor component.

Component: Floridana (2%)

Generated brief soil descriptions are created for major soil components. The Floridana soil is a minor component.

Map Unit 34 (1.14%)

Map Unit Name:	Pomello fine sand, 0 to 5 percent slopes
Bedrock Depth - Min:	
Watertable Depth - Annual Min:	84cm
Drainage Class - Dominant:	Moderately well drained
Hydrologic Group - Dominant:	A - Soils in this group have low runoff potential when thoroughly wet. Water is transmitted freely through the soil.

Major components are printed below

Pomello(95%)	
horizon A(0cm to 10cm)	Fine sand
horizon E(10cm to 119cm)	Fine sand
horizon Bh(119cm to 147cm)	Fine sand
horizon Bw(147cm to 165cm)	Fine sand
horizon C(165cm to 203cm)	Fine sand

Component Description:

Minor map unit components are excluded from this report.

Map Unit: 34 - Pomello fine sand, 0 to 5 percent slopes

Component: Pomello (95%)

The Pomello component makes up 95 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges, coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 33 inches during July, August, September, October, November. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 0 within 30 inches of the soil surface.

Component: Smyrna (3%)

Generated brief soil descriptions are created for major soil components. The Smyrna soil is a minor component.

Component: Bulow (1%)

Generated brief soil descriptions are created for major soil components. The Bulow soil is a minor component.

Component: Tavares (1%)

Generated brief soil descriptions are created for major soil components. The Tavares soil is a minor component.

Map Unit 37 (1.27%)

Map Unit Name:	St. Johns fine sand
Bedrock Depth - Min:	
Watertable Depth - Annual Min:	15cm
Drainage Class - Dominant:	Poorly drained
Hydrologic Group - Dominant:	B/D - These soils have moderately low runoff potential when drained and high runoff potential when undrained.

Major components are printed below

St. Johns(60%)	
horizon A(0cm to 30cm)	Fine sand
horizon E(30cm to 61cm)	Fine sand

Soil Information

horizon Bh(61cm to 112cm)	Fine sand
horizon C(112cm to 203cm)	Fine sand
St. Johns(30%)	
horizon A(0cm to 30cm)	Fine sand
horizon E(30cm to 61cm)	Fine sand
horizon Bh(61cm to 112cm)	Fine sand
horizon C(112cm to 203cm)	Fine sand

Component Description:

Minor map unit components are excluded from this report.

Map Unit: 37 - St. Johns fine sand

Component: St. Johns (60%)

The St. Johns, non-hydric component makes up 60 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 8 inches during July, August, September. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: St. Johns (30%)

The St. Johns, hydric component makes up 30 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during July, August, September. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Wabasso (5%)

Generated brief soil descriptions are created for major soil components. The Wabasso soil is a minor component.

Component: Immokalee (5%)

Generated brief soil descriptions are created for major soil components. The Immokalee, non-hydric soil is a minor component.

Map Unit 40 (0.61%)

Map Unit Name: Samsula muck

Bedrock Depth - Min:

Watertable Depth - Annual Min: 0cm

Drainage Class - Dominant: Very poorly drained

Hydrologic Group - Dominant: A/D - These soils have low runoff potential when drained and high runoff potential when undrained.

Major components are printed below

Samsula(50%)

horizon Oa(0cm to 102cm)	Muck
horizon C(102cm to 203cm)	Fine sand

Samsula(38%)

horizon Oa(0cm to 102cm)	Muck
horizon C(102cm to 203cm)	Fine sand

Component Description:

Minor map unit components are excluded from this report.

Map Unit: 40 - Samsula muck, frequently ponded, 0 to 1 percent slopes

Soil Information

Component: Samsula (85%)

The Samsula component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of herbaceous organic material over sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 75 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Myakka (3%)

Generated brief soil descriptions are created for major soil components. The Myakka soil is a minor component.

Component: Basinger (3%)

Generated brief soil descriptions are created for major soil components. The Basinger soil is a minor component.

Component: Kaliga (3%)

Generated brief soil descriptions are created for major soil components. The Kaliga soil is a minor component.

Component: Floridana (2%)

Generated brief soil descriptions are created for major soil components. The Floridana soil is a minor component.

Component: Anclote (2%)

Generated brief soil descriptions are created for major soil components. The Anclote soil is a minor component.

Component: Sanibel (2%)

Generated brief soil descriptions are created for major soil components. The Sanibel soil is a minor component.

Map Unit 42 (1.14%)

Map Unit Name:	Sanibel muck
Bedrock Depth - Min:	
Watertable Depth - Annual Min:	0cm
Drainage Class - Dominant:	Very poorly drained
Hydrologic Group - Dominant:	A/D - These soils have low runoff potential when drained and high runoff potential when undrained.

Major components are printed below

Sanibel(65%)

horizon Oa(0cm to 28cm)	Muck
horizon A(28cm to 38cm)	Fine sand
horizon C(38cm to 203cm)	Fine sand

Sanibel(25%)

horizon Oa(0cm to 28cm)	Muck
horizon A(28cm to 38cm)	Fine sand
horizon C(38cm to 203cm)	Fine sand

Component Description:

Minor map unit components are excluded from this report.

Map Unit: 42 - Sanibel muck

Component: Sanibel (65%)

The Sanibel, undrained component makes up 65 percent of the map unit. Slopes are 0 to 1 percent. This component is on marshes on marine terraces on coastal plains. The parent material consists of thin organic material over sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 35 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Soil Information

Component: Sanibel (25%)

The Sanibel, drained component makes up 25 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on marine terraces on coastal plains. The parent material consists of thin organic material over sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 18 inches (depth from the mineral surface is 7 inches) during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 35 percent. Nonirrigated land capability classification is 3w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Hontoon (5%)

Generated brief soil descriptions are created for major soil components. The Hontoon, undrained soil is a minor component.

Component: Samsula (5%)

Generated brief soil descriptions are created for major soil components. The Samsula soil is a minor component.

Map Unit 44 (64.65%)

Map Unit Name:	Smyrna-Smyrna, wet, fine sand, 0 to 2 percent slopes
Bedrock Depth - Min:	
Watertable Depth - Annual Min:	8cm
Drainage Class - Dominant:	Poorly drained
Hydrologic Group - Dominant:	A/D - These soils have low runoff potential when drained and high runoff potential when undrained.

Major components are printed below

Smyrna(76%)

horizon A(0cm to 10cm)	Fine sand
horizon E(10cm to 43cm)	Fine sand
horizon Bh(43cm to 69cm)	Loamy fine sand
horizon C(69cm to 203cm)	Fine sand

Smyrna(20%)

horizon A(0cm to 10cm)	Fine sand
horizon E(10cm to 43cm)	Fine sand
horizon Bh(43cm to 69cm)	Loamy fine sand
horizon C(69cm to 203cm)	Fine sand

Component Description:

Minor map unit components are excluded from this report.

Map Unit: 44 - Smyrna-Smyrna, wet, fine sand, 0 to 2 percent slopes

Component: Smyrna (76%)

The Smyrna, non-hydric component makes up 76 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September. Organic matter content in the surface horizon is about 7 percent. Nonirrigated land capability classification is 4w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 0 within 30 inches of the soil surface.

Component: Smyrna (20%)

The Smyrna, hydric component makes up 20 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during June, July, August, September. Organic matter content in the surface horizon is about 7 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. There are no

Soil Information

saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 0 within 30 inches of the soil surface.

Component: Basinger (2%)

Generated brief soil descriptions are created for major soil components. The Basinger, depressional soil is a minor component.

Component: EauGallie (1%)

Generated brief soil descriptions are created for major soil components. The EauGallie, hydric soil is a minor component.

Component: Pomona (1%)

Generated brief soil descriptions are created for major soil components. The Pomona, non-hydric soil is a minor component.

Map Unit 46 (0.05%)

Map Unit Name: Tavares fine sand, 0 to 5 percent slopes

Bedrock Depth - Min:

Watertable Depth - Annual Min: 145cm

Drainage Class - Dominant: Moderately well drained

Hydrologic Group - Dominant: A - Soils in this group have low runoff potential when thoroughly wet. Water is transmitted freely through the soil.

Major components are printed below

Tavares(86%)

horizon A(0cm to 15cm) Fine sand

horizon C(15cm to 203cm) Fine sand

Component Description:

Minor map unit components are excluded from this report.

Map Unit: 46 - Tavares fine sand, 0 to 5 percent slopes

Component: Tavares (85%)

The Tavares component makes up 85 percent of the map unit. Slopes are 0 to 5 percent. This component is on ridges on marine terraces on coastal plains. The parent material consists of eolian or sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 50 inches during June, July, August, September, October. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Candler (5%)

Generated brief soil descriptions are created for major soil components. The Candler soil is a minor component.

Component: Apopka (4%)

Generated brief soil descriptions are created for major soil components. The Apopka soil is a minor component.

Component: Zolfo (3%)

Generated brief soil descriptions are created for major soil components. The Zolfo soil is a minor component.

Component: Narcoossee (3%)

Generated brief soil descriptions are created for major soil components. The Narcoossee soil is a minor component.

Map Unit 51 (0.6%)

Map Unit Name: Wabasso fine sand

Bedrock Depth - Min:

Watertable Depth - Annual Min: 31cm

Drainage Class - Dominant: Poorly drained

Soil Information

Hydrologic Group - Dominant:

C/D - These soils have moderately high runoff potential when drained and high runoff potential when undrained.

Major components are printed below

Wabasso(98%)

horizon A(0cm to 8cm)	Fine sand
horizon E(8cm to 46cm)	Fine sand
horizon Bh(46cm to 53cm)	Fine sand
horizon Btg(53cm to 178cm)	Sandy clay loam
horizon C(178cm to 203cm)	Loamy sand

Component Description:

Minor map unit components are excluded from this report.

Map Unit: 51 - Wabasso fine sand, 0 to 2 percent slopes

Component: Wabasso (85%)

The Wabasso component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Myakka (4%)

Generated brief soil descriptions are created for major soil components. The Myakka soil is a minor component.

Component: Riviera (4%)

Generated brief soil descriptions are created for major soil components. The Riviera soil is a minor component.

Component: Basinger (3%)

Generated brief soil descriptions are created for major soil components. The Basinger soil is a minor component.

Component: Malabar (2%)

Generated brief soil descriptions are created for major soil components. The Malabar soil is a minor component.

Component: Felda (1%)

Generated brief soil descriptions are created for major soil components. The Felda soil is a minor component.

Component: Pinellas (1%)

Generated brief soil descriptions are created for major soil components. The Pinellas soil is a minor component.

Map Unit 53 (0.01%)

Map Unit Name:

Wauberg fine sand

Bedrock Depth - Min:

Watertable Depth - Annual Min:

7cm

Drainage Class - Dominant:

Poorly drained

Hydrologic Group - Dominant:

D - Soils in this group have high runoff potential when thoroughly wet. Water movement through the soil is restricted or very restricted.

Major components are printed below

Wauberg(94%)

horizon A(0cm to 21cm)	Fine sand
horizon E(21cm to 71cm)	Fine sand
horizon B(71cm to 152cm)	Sandy clay loam
horizon C(152cm to 203cm)	Sandy clay

Component Description:

Soil Information

Minor map unit components are excluded from this report.

Map Unit: 53 - Wauberg fine sand

Component: Wauberg (94%)

The Wauberg component makes up 94 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces on coastal plains. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during July, August. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Wabasso (6%)

Generated brief soil descriptions are created for major soil components. The Wabasso soil is a minor component.

Map Unit 54 (3.88%)

Map Unit Name: Zolfo fine sand

Bedrock Depth - Min:

Watertable Depth - Annual Min: 84cm

Drainage Class - Dominant: Somewhat poorly drained

Hydrologic Group - Dominant: A - Soils in this group have low runoff potential when thoroughly wet. Water is transmitted freely through the soil.

Major components are printed below

Zolfo(86%)

horizon A(0cm to 13cm) Fine sand

horizon E(13cm to 140cm) Fine sand

horizon Bh(140cm to 203cm) Fine sand

Component Description:

Minor map unit components are excluded from this report.

Map Unit: 54 - Zolfo fine sand, 0 to 2 percent slopes

Component: Zolfo (85%)

The Zolfo component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on flatwoods on marine terraces on coastal plains. The parent material consists of sandy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 30 inches during June, July, August, September, October, November. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface. The soil has a maximum sodium adsorption ratio of 1 within 30 inches of the soil surface.

Component: Myakka (5%)

Generated brief soil descriptions are created for major soil components. The Myakka soil is a minor component.

Component: Millhopper (4%)

Generated brief soil descriptions are created for major soil components. The Millhopper soil is a minor component.

Component: Tavares (4%)

Generated brief soil descriptions are created for major soil components. The Tavares soil is a minor component.

Component: Malabar (2%)

Generated brief soil descriptions are created for major soil components. The Malabar soil is a minor component.

Soil Information

Map Unit 99 (1.24%)

Map Unit Name: Water

No more attributes available for this map unit

Component Description:

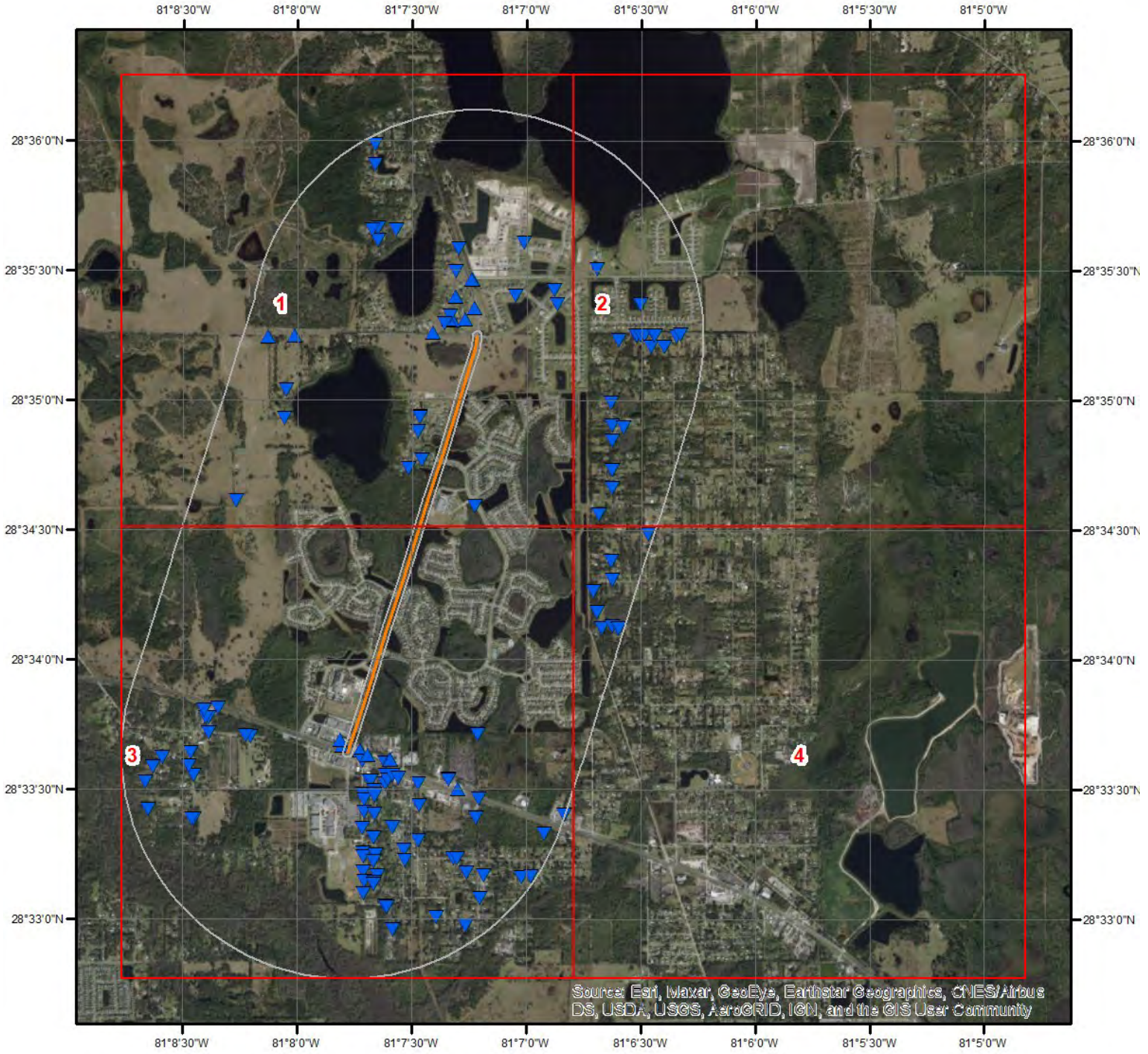
Minor map unit components are excluded from this report.

Map Unit: 99 - Water

Component: Water (100%)

Generated brief soil descriptions are created for major soil components. The Water is a miscellaneous area.

Wells and Additional Sources



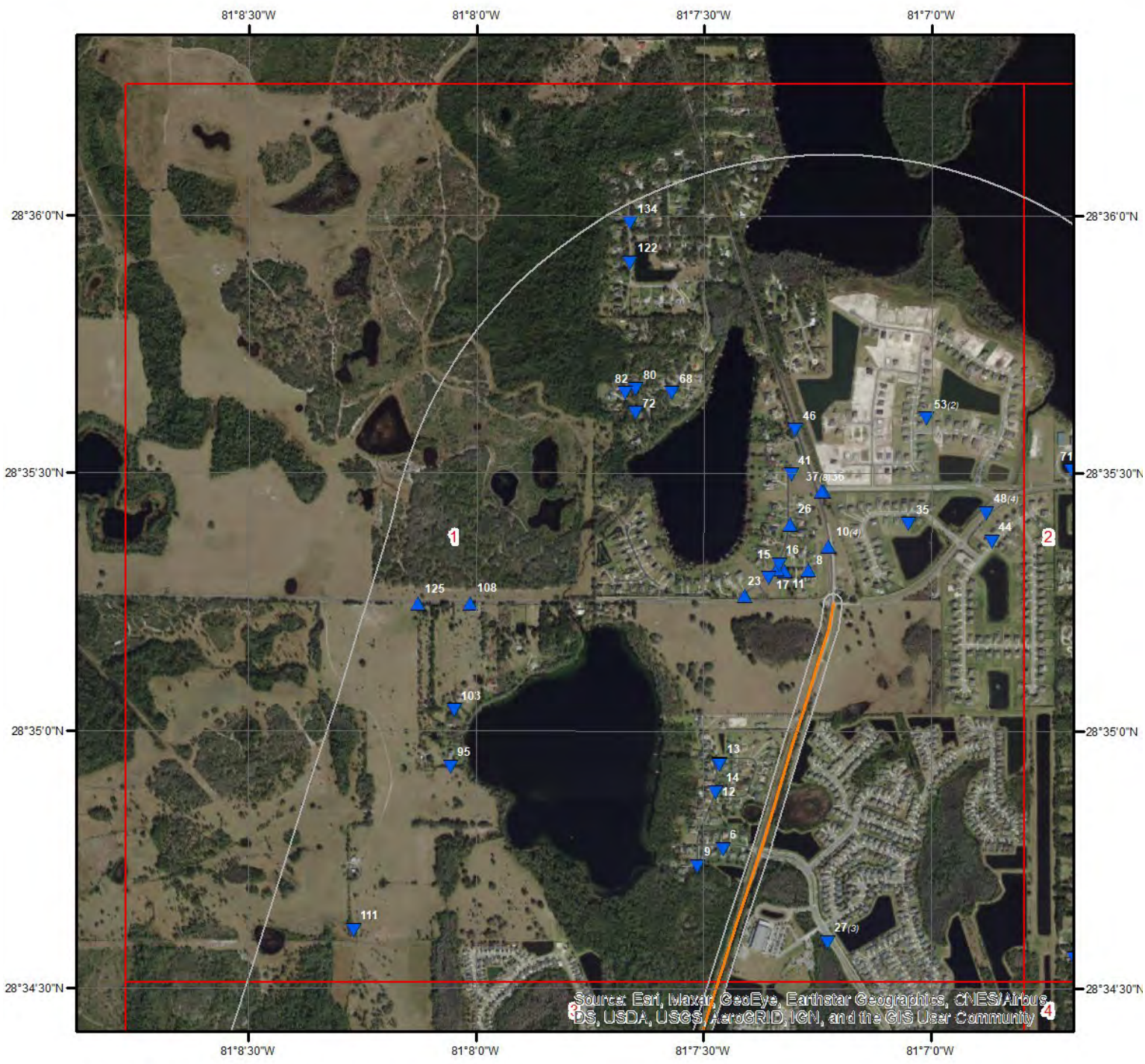
Wells & Additional Sources



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| ▲ Sites with Higher Elevation | ▲ OGW Sites with Higher Elevation |
| ■ Sites with Same Elevation | ■ OGW Sites with Same Elevation |
| ▼ Sites with Lower Elevation | ▼ OGW Sites with Lower Elevation |
| ○ Sites with Unknown Elevation | ● OGW Sites with Unknown Elevation |



Wells and Additional Sources



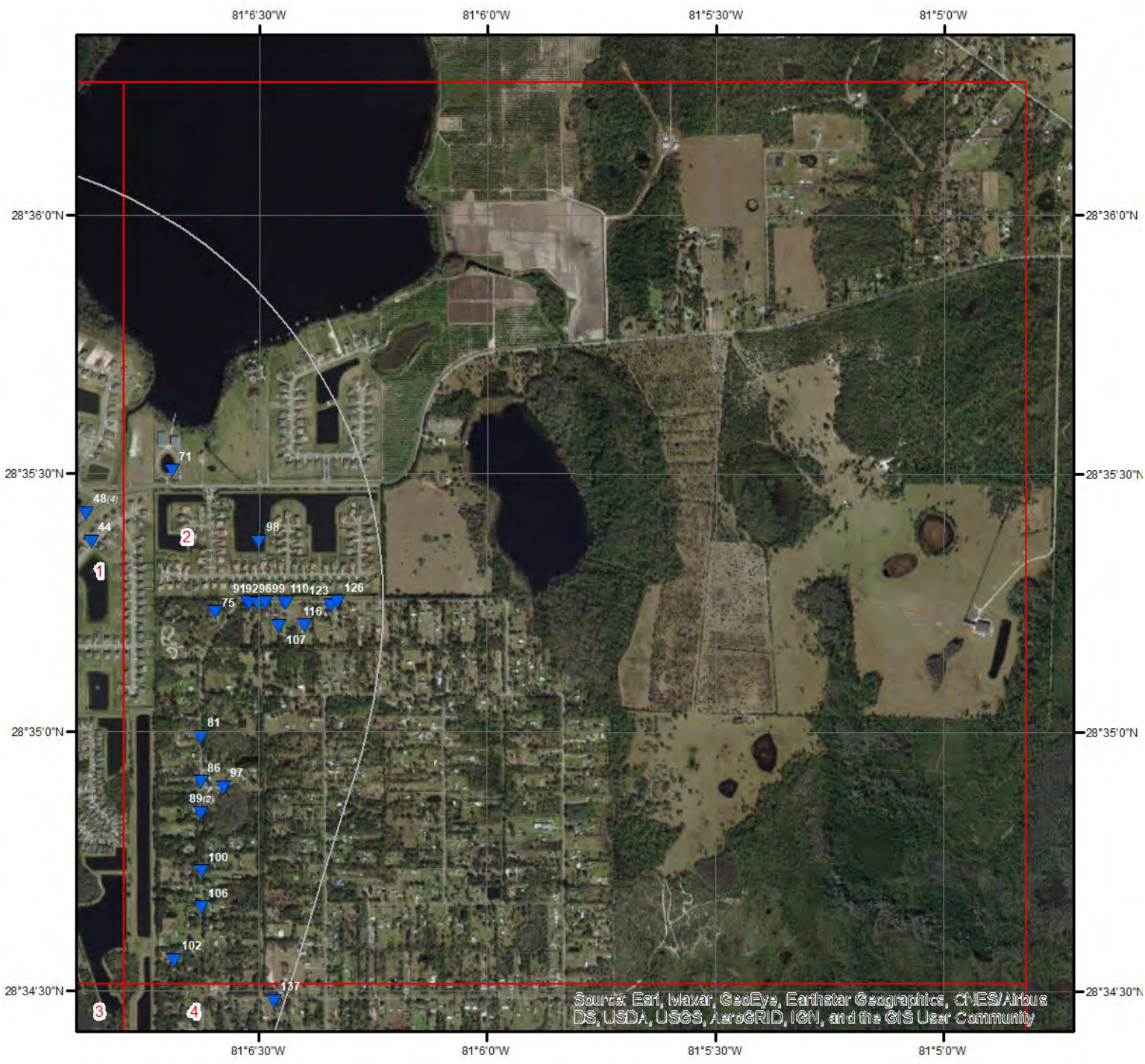
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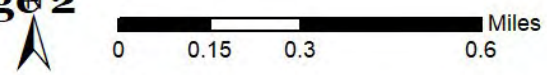
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| ▲ Sites with Higher Elevation | ▲ OGW Sites with Higher Elevation |
| ■ Sites with Same Elevation | ■ OGW Sites with Same Elevation |
| ▼ Sites with Lower Elevation | ▼ OGW Sites with Lower Elevation |
| ○ Sites with Unknown Elevation | ● OGW Sites with Unknown Elevation |



Wells and Additional Sources



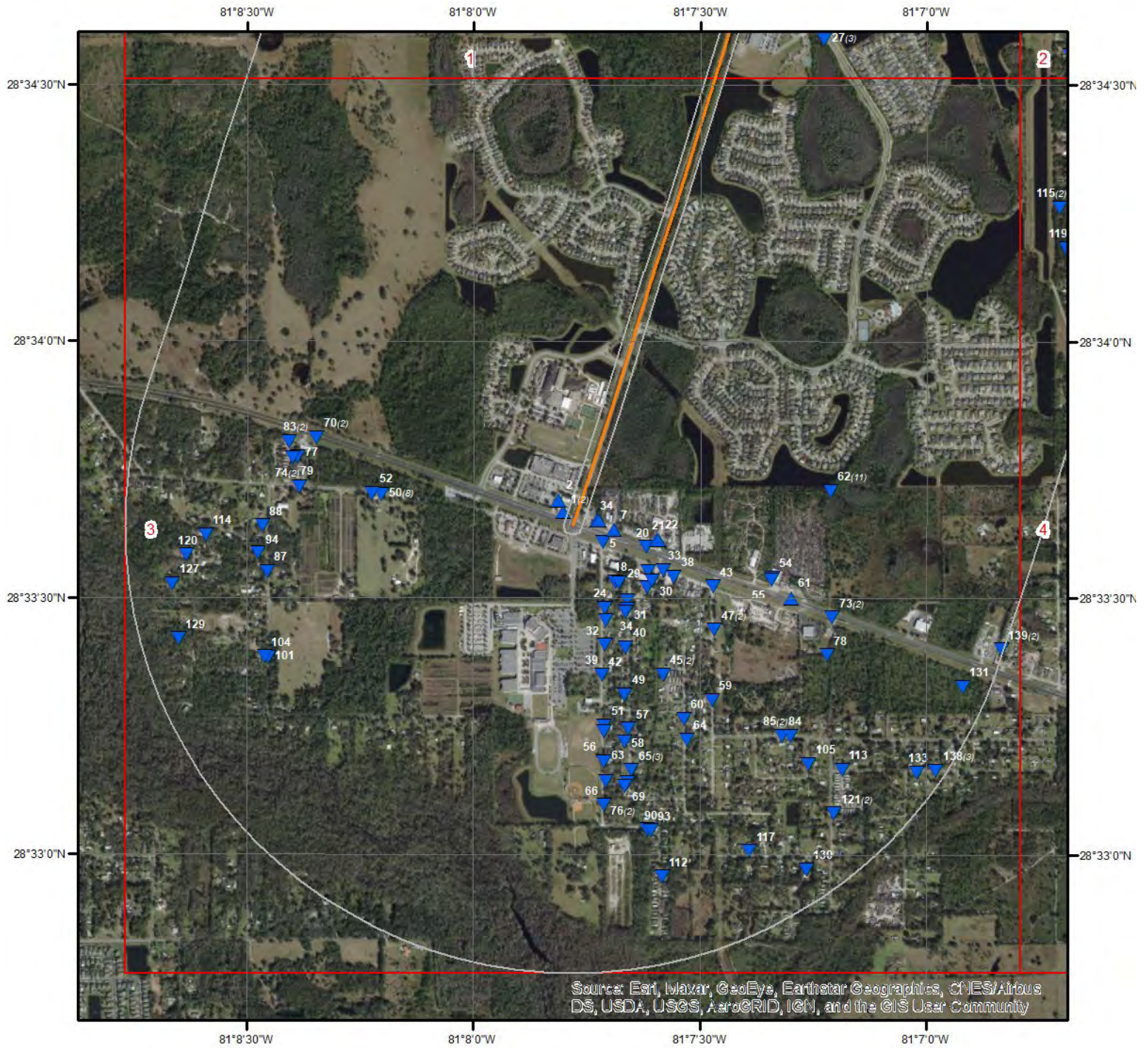
Wells & Additional Sources - Page 2



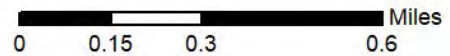
- | | |
|--------------------------------|------------------------------------|
| ▲ Sites with Higher Elevation | ▲ OGW Sites with Higher Elevation |
| ■ Sites with Same Elevation | ■ OGW Sites with Same Elevation |
| ▼ Sites with Lower Elevation | ▼ OGW Sites with Lower Elevation |
| ○ Sites with Unknown Elevation | ● OGW Sites with Unknown Elevation |



Wells and Additional Sources



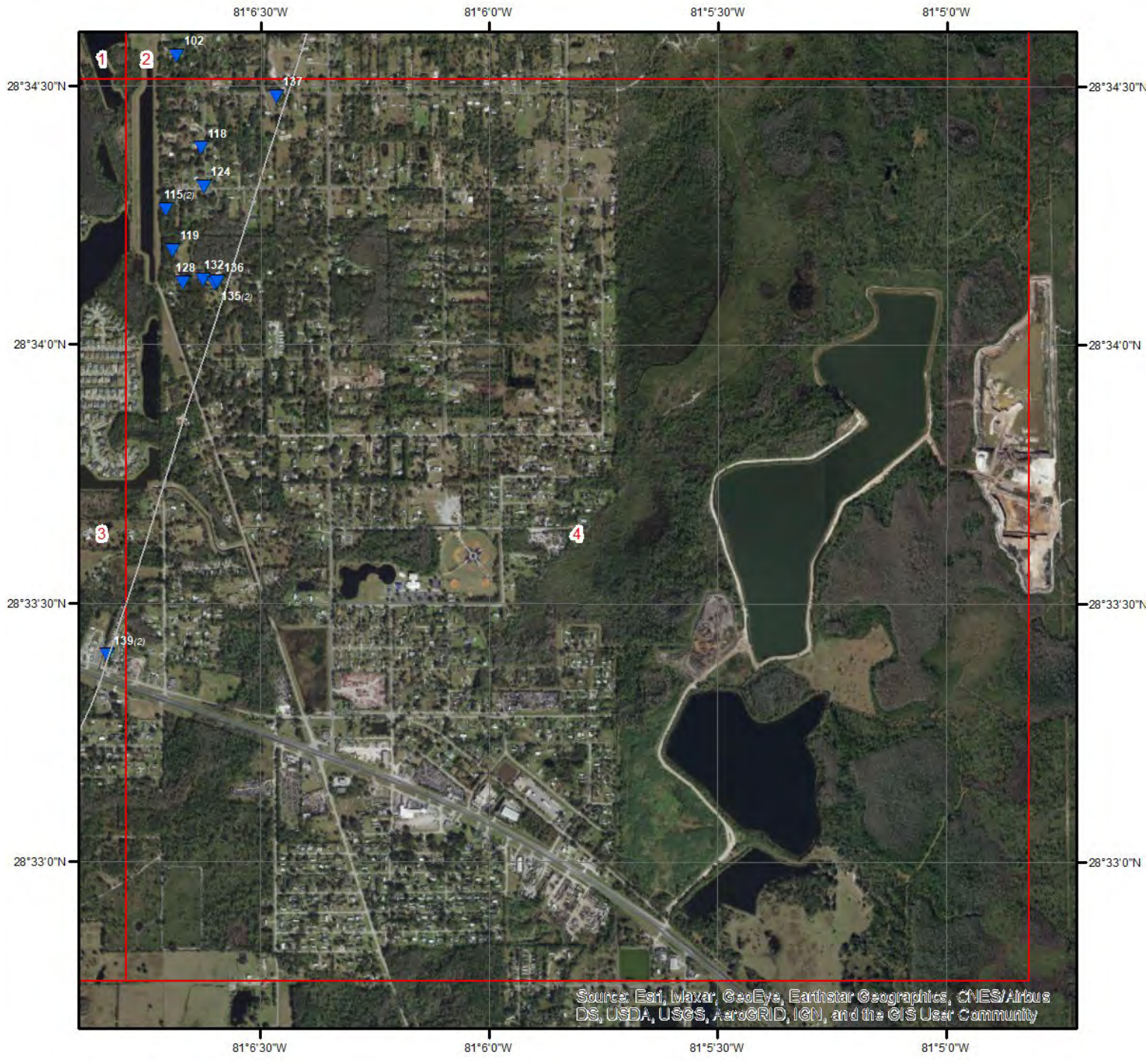
Wells & Additional Sources - Page 3



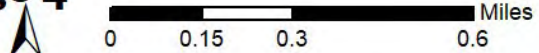
- | | |
|--------------------------------|------------------------------------|
| ▲ Sites with Higher Elevation | ▲ OGW Sites with Higher Elevation |
| ■ Sites with Same Elevation | ■ OGW Sites with Same Elevation |
| ▼ Sites with Lower Elevation | ▼ OGW Sites with Lower Elevation |
| ○ Sites with Unknown Elevation | ● OGW Sites with Unknown Elevation |



Wells and Additional Sources



Wells & Additional Sources - Page 4



- | | |
|--------------------------------|------------------------------------|
| ▲ Sites with Higher Elevation | ▲ OGW Sites with Higher Elevation |
| ■ Sites with Same Elevation | ■ OGW Sites with Same Elevation |
| ▼ Sites with Lower Elevation | ▼ OGW Sites with Lower Elevation |
| ○ Sites with Unknown Elevation | ● OGW Sites with Unknown Elevation |



Wells and Additional Sources Summary

Federal Sources

Public Water Systems Violations and Enforcement Data

Map Key	PWS ID	Distance (ft)	Direction
1	FL3484269	157.04	SSW
20	FL3484294	904.88	S
33	FL3484217	1188.29	S
61	FL3480586	2713.90	S
70	FL3484296	3195.86	SW
73	FL3481067	3249.72	SSE
74	FL3484366	3259.83	SW
76	FL3484351	3319.62	S
83	FL3480226	3491.37	SW

Safe Drinking Water Information System (SDWIS)

Map Key	PWS ID	Distance (ft)	Direction
1	FL3484269	157.04	SSW
70	FL3484296	3195.86	SW
73	FL3481067	3249.72	SSE
74	FL3484366	3259.83	SW
76	FL3484351	3319.62	S
83	FL3480226	3491.37	SW
112	FL3484129	4281.27	S

USGS National Water Information System

Map Key	ID	Distance (ft)	Direction
No records found			

State Sources

Florida Subsidence Incident Reports

Map Key	ID	Distance (ft)	Direction
No records found			

Oil and Gas Wells

Map Key	ID	Distance (ft)	Direction
No records found			

Public Water Supply Wells

Map Key	PWS ID	Distance (ft)	Direction
3	3484215	259.84	SSW
45	3484129	2061.01	S
54	3480586	2432.16	S

Wells and Additional Sources Summary

79	3480226	3397.24	SW
93	3481016	3720.56	S
121	3480555	4594.56	S
139	3480321	5263.16	SSE

Underground Injection Control Wells

Map Key	ID	Distance (ft)	Direction
No records found			

Water Use Permits Sites - South Florida Water Management District

Map Key	ID	Distance (ft)	Direction
No records found			

Water Well Completions - Northwest Florida Water Management District

Map Key	ID	Distance (ft)	Direction
No records found			

Water Well Completions - St. Johns River Water Management District

Map Key	Permit	Distance (ft)	Direction
5	-	402.24	SSW
6	-	418.22	N
8	-	478.58	NNE
9	-	638.89	N
10	-	666.18	NNE
10	-	666.18	NNE
10	-	666.18	NNE
10	-	666.18	NNE
11	-	675.31	N
12	-	701.95	N
13	-	751.90	N
14	-	752.68	N
15	-	765.93	N
16	-	776.19	N
17	-	804.38	N
23	-	1036.27	N
26	-	1051.11	N
27	-	1094.41	ENE
27	-	1094.41	ENE
27	-	1094.41	ENE
36	-	1314.74	NNE
37	-	1316.84	NNE
37	-	1316.84	NNE
37	-	1316.84	NNE
37	-	1316.84	NNE
37	-	1316.84	NNE
37	-	1316.84	NNE
37	-	1316.84	NNE
37	-	1316.84	NNE
37	-	1316.84	NNE
41	-	1580.84	N
43	-	1808.97	S
46	-	2072.43	N
47	-	2079.48	S
47	-	2079.48	S
48	-	2087.56	NNE

Wells and Additional Sources Summary

48	-	2087.56	NNE
48	-	2087.56	NNE
48	-	2087.56	NNE
50	-	2285.84	SW
50	-	2285.84	SW
50	-	2285.84	SW
50	-	2285.84	SW
50	-	2285.84	SW
50	-	2285.84	SW
50	-	2285.84	SW
50	-	2285.84	SW
50	-	2285.84	SW
52	-	2395.45	SW
53	148092-1	2425.45	NNE
53	148092-1	2425.45	NNE
57	-	2490.04	S
59	-	2636.99	S
60	-	2638.53	S
62	-	2765.68	SSE
62	-	2765.68	SSE
62	-	2765.68	SSE
62	-	2765.68	SSE
62	-	2765.68	SSE
62	-	2765.68	SSE
62	-	2765.68	SSE
62	-	2765.68	SSE
62	-	2765.68	SSE
62	-	2765.68	SSE
62	-	2765.68	SSE
62	-	2765.68	SSE
62	-	2765.68	SSE
65	-	2971.47	S
65	-	2971.47	S
65	-	2971.47	S
68	-	3107.87	N
69	-	3137.27	S
72	-	3220.82	N
80	-	3409.98	N
81	-	3427.25	NE
82	-	3465.16	N
84	-	3502.41	S
85	-	3574.24	S
85	-	3574.24	S
86	-	3587.07	ENE
87	-	3642.72	SW
88	-	3661.00	SW
89	-	3698.36	ENE
89	-	3698.36	ENE
91	-	3704.47	NE
96	-	3816.99	NE
100	-	3903.12	ENE
101	-	3911.58	SW
105	-	3960.38	S
106	-	4028.36	ENE
108	-	4112.96	NNW
113	-	4293.12	SSE
122	-	4655.53	N
124	-	4682.17	E
125	-	4697.35	NW
128	-	4790.36	ESE
133	-	5002.17	SSE
134	-	5056.65	N
135	-	5138.75	ESE
135	-	5138.75	ESE
136	-	5163.25	ESE
137	-	5165.37	E
138	-	5173.36	SSE
138	-	5173.36	SSE
138	-	5173.36	SSE

Wells and Additional Sources Summary

Water Well Completions - Suwanee River Water Management District

Map Key	ID	Distance (ft)	Direction
No records found			

Water Well Construction Permits

Map Key	Permit No	Distance (ft)	Direction
35	111143-1	1278.45	NNE
44	111190-1	2000.88	NNE
98	111276-1	3894.76	NE

Water Well Construction Permits - Southwest Florida Water Management District

Map Key	ID	Distance (ft)	Direction
No records found			

Water Wells - Suwanee River Water Management District

Map Key	ID	Distance (ft)	Direction
No records found			

Well Surveillance Program Water Wells

Map Key	Permit No	Distance (ft)	Direction
2	3484269	250.92	SSW
4	3484215	276.15	SSW
7		477.23	SSW
18		828.12	S
19		866.47	S
21		995.75	S
22		1008.15	S
24		1043.46	SSW
25	3484143	1050.34	S
28		1097.21	S
29		1142.81	S
30		1144.67	S
31		1175.51	S
32		1186.73	S
34		1195.35	S
38		1339.96	S
39		1459.51	S
40		1572.70	S
42		1801.40	S
45	3484129	2061.01	S
49		2092.18	S
51		2393.13	S
55		2435.47	S
56		2463.74	S
58		2623.89	S
63		2815.48	S
64		2864.37	S
66		3050.23	S
67		3105.50	S
71		3205.67	NE

Wells and Additional Sources Summary

75		3314.62	NE
77	3484296	3345.39	SW
78	3484389	3372.43	SSE
90	3481016	3701.76	S
92		3719.59	NE
94	AAH8601	3722.21	SW
95		3762.45	NW
97	AAH8602	3857.78	ENE
99		3902.45	NE
102		3911.77	E
103		3923.57	NW
104		3955.40	SW
107		4072.51	NE
109		4124.78	NE
110		4151.73	NE
111		4269.50	WNW
114		4328.49	SW
115		4339.08	ESE
115		4339.08	ESE
116		4369.28	NE
117		4376.25	S
118		4517.45	E
119		4558.58	ESE
120		4566.87	SW
121	3480555	4594.56	S
123		4666.38	NE
126		4743.98	NE
127		4771.11	SW
129		4838.45	SW
130		4909.73	S
131		4982.27	SSE
132		4999.48	ESE
139	3480321	5263.16	SSE

Wells and Additional Sources Detail Report

Public Water Systems Violations and Enforcement Data

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
1	SSW	0.03	157.04	70.52	PWSV

Address Line 2:
 State Code: FL
 Zip Code: 32833
 City Name: BITHLO
 Address Line 1: 16891 E COLONIAL DR
 PWS ID: FL3484269
 PWS Type Code: TNCWS
 PWS Type Description: Transient Non-Community Water System
 Primary Source Code: GW
 Primary Source Desc: Groundwater
 PWS Activity Code: I
 PWS Activity Description: Inactive
 PWS Deactivation Date: 05/07/2002
 Phone Number: 407-366-3380

--Details--

Population Served Count: 25
 City Served: BITHLO
 County Served:
 State Served: FL
 Zip Code Served:

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
20	S	0.17	904.88	68.84	PWSV

Address Line 2: 17105 E. COLONIAL DRIVE
 State Code: FL
 Zip Code: 32820
 City Name: ORLANDO
 Address Line 1:
 PWS ID: FL3484294
 PWS Type Code: TNCWS
 PWS Type Description: Transient Non-Community Water System
 Primary Source Code: GW
 Primary Source Desc: Groundwater
 PWS Activity Code: I
 PWS Activity Description: Inactive
 PWS Deactivation Date: 03/08/1995
 Phone Number: 407-568-2131

Wells and Additional Sources Detail Report

--Details--

Population Served Count: 26
 City Served:
 County Served:
 State Served: FL
 Zip Code Served:

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
33	S	0.23	1,188.29	67.04	PWSV

Address Line 2: 17142 E COLONIAL DR
 State Code: FL
 Zip Code: 32833
 City Name: ORLANDO
 Address Line 1:
 PWS ID: FL3484217
 PWS Type Code: TNCWS
 PWS Type Description: Transient Non-Community Water System
 Primary Source Code: GW
 Primary Source Desc: Groundwater
 PWS Activity Code: I
 PWS Activity Description: Inactive
 PWS Deactivation Date: 21/05/1993
 Phone Number:

--Details--

Population Served Count: 25
 City Served:
 County Served:
 State Served: FL
 Zip Code Served:

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
61	S	0.51	2,713.90	69.46	PWSV

Address Line 2:
 State Code: FL
 Zip Code: 32820
 City Name: ORLANDO
 Address Line 1: 17433 EAST COLONIAL DRIVE
 PWS ID: FL3480586
 PWS Type Code: TNCWS
 PWS Type Description: Transient Non-Community Water System
 Primary Source Code: GW
 Primary Source Desc: Groundwater
 PWS Activity Code: A

Wells and Additional Sources Detail Report

PWS Activity Description: Active
 PWS Deactivation Date:
 Phone Number: 407-568-6998

--Details--

Population Served Count: 25
 City Served: ORLANDO
 County Served: Orange
 State Served: FL
 Zip Code Served:

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
70	SW	0.61	3,195.86	61.05	PWSV

Address Line 2:
 State Code: FL
 Zip Code: 32820-1001
 City Name: ORLANDO
 Address Line 1: 16300 E COLONIAL DR
 PWS ID: FL3484296
 PWS Type Code: TNCWS
 PWS Type Description: Transient Non-Community Water System
 Primary Source Code: GW
 Primary Source Desc: Groundwater
 PWS Activity Code: I
 PWS Activity Description: Inactive
 PWS Deactivation Date: 13/07/2012
 Phone Number: 407-568-2570

--Details--

Population Served Count: 25
 City Served: ORLANDO
 County Served: Orange
 State Served: FL
 Zip Code Served:

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
73	SSE	0.62	3,249.72	69.23	PWSV

Address Line 2: 17502 E.COLONIAL DR.
 State Code: FL
 Zip Code: 32820
 City Name: ORLANDO
 Address Line 1:
 PWS ID: FL3481067
 PWS Type Code: TNCWS

Wells and Additional Sources Detail Report

PWS Type Description: Transient Non-Community Water System
 Primary Source Code: GW
 Primary Source Desc: Groundwater
 PWS Activity Code: I
 PWS Activity Description: Inactive
 PWS Deactivation Date: 15/08/1996
 Phone Number: 407-568-4310

--Details--

Population Served Count: 120
 City Served:
 County Served:
 State Served: FL
 Zip Code Served:

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
74	SW	0.62	3,259.83	64.34	PWSV

Address Line 2:
 State Code: FL
 Zip Code: 32833
 City Name: ORLANDO
 Address Line 1: 16290 OLD CHENEY HWY.
 PWS ID: FL3484366
 PWS Type Code: TNCWS
 PWS Type Description: Transient Non-Community Water System
 Primary Source Code: GW
 Primary Source Desc: Groundwater
 PWS Activity Code: I
 PWS Activity Description: Inactive
 PWS Deactivation Date: 08/01/2000
 Phone Number:

--Details--

Population Served Count: 200
 City Served: ORLANDO
 County Served:
 State Served: FL
 Zip Code Served:

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
76	S	0.63	3,319.62	53.61	PWSV

Address Line 2: 267 STORY PARTIN ROAD
 State Code: FL
 Zip Code: 32833

Wells and Additional Sources Detail Report

City Name: BITHLO
 Address Line 1:
 PWS ID: FL3484351
 PWS Type Code: NTNCWS
 PWS Type Description: Non-Transient Non-Community Water System
 Primary Source Code: GW
 Primary Source Desc: Groundwater
 PWS Activity Code: I
 PWS Activity Description: Inactive
 PWS Deactivation Date: 06/05/1993
 Phone Number: 407-568-2419

--Details--

Population Served Count: 45
 City Served:
 County Served:
 State Served: FL
 Zip Code Served:

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
83	SW	0.66	3,491.37	59.98	PWSV

Address Line 2:
 State Code: FL
 Zip Code: 32833-2708
 City Name: ORLANDO
 Address Line 1: 1042 PARRY LN
 PWS ID: FL3480226
 PWS Type Code: CWS
 PWS Type Description: Community Water System
 Primary Source Code: GW
 Primary Source Desc: Groundwater
 PWS Activity Code: A
 PWS Activity Description: Active
 PWS Deactivation Date:
 Phone Number: 407-574-1088

--Details--

Population Served Count: 90
 City Served: ORLANDO
 County Served: Orange
 State Served: FL
 Zip Code Served:

Safe Drinking Water Information System (SDWIS)

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
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Wells and Additional Sources Detail Report

1 SSW 0.03 157.04 70.52 SDWIS

PWS ID: FL3484269
PWS Type: Transient non-community system
No of Facilities: 2
No of Violations: 0
No of Site Visits: 6
Cities Served: BITHLO
Counties Served: Orange
Population Served Count: 25
Primacy Agency: Florida
EPA Region: Region 4

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
70	SW	0.61	3,195.86	61.05	SDWIS

PWS ID: FL3484296
PWS Type: Transient non-community system
No of Facilities: 2
No of Violations: 4
No of Site Visits: 12
Cities Served: ORLANDO
Counties Served: Orange
Population Served Count: 25
Primacy Agency: Florida
EPA Region: Region 4

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
73	SSE	0.62	3,249.72	69.23	SDWIS

PWS ID: FL3481067
PWS Type: Transient non-community system
No of Facilities: 2
No of Violations: 5
No of Site Visits: 8
Cities Served: -
Counties Served: Orange
Population Served Count: 120
Primacy Agency: Florida
EPA Region: Region 4

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
74	SW	0.62	3,259.83	64.34	SDWIS

PWS ID: FL3484366

Wells and Additional Sources Detail Report

PWS Type: Transient non-community system
 No of Facilities: 2
 No of Violations: 0
 No of Site Visits: 6
 Cities Served: ORLANDO
 Counties Served: Orange
 Population Served Count: 200
 Primacy Agency: Florida
 EPA Region: Region 4

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
76	S	0.63	3,319.62	53.61	SDWIS

PWS ID: FL3484351
 PWS Type: Non-Transient non-community system
 No of Facilities: 2
 No of Violations: 4
 No of Site Visits: 1
 Cities Served: -
 Counties Served: Orange
 Population Served Count: 45
 Primacy Agency: Florida
 EPA Region: Region 4

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
83	SW	0.66	3,491.37	59.98	SDWIS

PWS ID: FL3480226
 PWS Type: Community water system
 No of Facilities: 2
 No of Violations: 25
 No of Site Visits: 21
 Cities Served: ORLANDO
 Counties Served: Orange
 Population Served Count: 90
 Primacy Agency: Florida
 EPA Region: Region 4

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
112	S	0.81	4,281.27	47.42	SDWIS

PWS ID: FL3484129
 PWS Type: Transient non-community system
 No of Facilities: 2
 No of Violations: 32

Wells and Additional Sources Detail Report

No of Site Visits: 18
 Cities Served: ORLANDO
 Counties Served: Orange
 Population Served Count: 25
 Primacy Agency: Florida
 EPA Region: Region 4

Public Water Supply Wells

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
3	SSW	0.05	259.84	70.35	PWSW

PWS ID:	3484215	System Type:	
PWS Status:	A	PWS Type:	N
PWS Sta Desc:	Active	PWS Type Desc:	Transient Noncommunity
Plant Num:	1	Pop Served:	25
Plant Name:	CIRCLE K #7502/BITHLO	Plant St:	A
Bact Freq:		Well Number:	1
Bact Date:		Well Name:	WELL
Sec Date:		FI Well NO:	AAC0792
Inorg Date:		SDWIS NO:	69466799
Soc Date:		Well St:	A
Rads Date:		Grouted:	Y
Voc Date:		Water Source:	Floridan Aquifer
Fee Group:		Availability:	PERMANENT
Fee Amount:		Year Drilled:	
Balance Due:		Depth Drilled:	
Balance Date:		Drill Method:	
County:	ORANGE	ASR:	N
Email:		Normal Yield:	
Zip4:		IC Material:	
IC Dia Max:		Phone:	
Phone Ext:		IC Dia Min:	
Contact:		Owner City:	
IC Length Min:		Owner State:	
IC Depth Max:		Owner Zip:	
IC Depth Min:		Owner Type:	
OC Material:	BLACKSTEEL	Pop Served:	
OC Dia Min:		Sells To Pop:	
District:		Design Cap:	
Office:		Svc Connect:	
Zone Infl Radius:			
OC Dia Max:	4		
Sys Source Type:	GROUND		
Well Protected Apron:	Y		
Under Direct Infl:	N		
Date Under Infl:			

Wells and Additional Sources Detail Report

Ever Contaminated: N
 Created By Program: N
 Depth Drilled Min:
 Intake Depth Max:
 Intake Depth Min:
 Static Water Depth:
 OC Length Max:
 OC Length Min:
 OC Depth Max:
 OC Depth Min:
 Surface Source:
 Ground Source:
 Contact Phone:
 Contact Phone Ext:
 Owner:
 Number Plants:
 Owner Address1:
 Last Inspect:
 Owner Address2:
 Last San Survey:
 Number Bact Req:
 Number Bact Taken:
 Owner Zip4:
 System Str1:
 Owner Phone:
 System Str2:
 Owner Phone Ext:
 City:
 State:
 Zip:
 IC Length Max:

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
45	S	0.39	2,061.01	53.36	PWSW

PWS ID:	3484129	System Type:	
PWS Status:	A	PWS Type:	N
PWS Sta Desc:	Active	PWS Type Desc:	Transient Noncommunity
Plant Num:	1	Pop Served:	25
Plant Name:	GLENN ROAD MHP	Plant St:	A
Bact Freq:		Well Number:	1
Bact Date:		Well Name:	GLENN ROAD MHP WELL
Sec Date:		FI Well NO:	AAH7370
Inorg Date:		SDWIS NO:	68476698
Soc Date:		Well St:	A
Rads Date:		Grouted:	Y

Wells and Additional Sources Detail Report

Voc Date:		Water Source:	Floridan Aquifer
Fee Group:		Availability:	PERMANENT
Fee Amount:		Year Drilled:	1964
Balance Due:		Depth Drilled:	285
Balance Date:		Drill Method:	CABLE TOOL
County:	ORANGE	ASR:	
Email:		Normal Yield:	
Zip4:		IC Material:	
IC Dia Max:		Phone:	
Phone Ext:		IC Dia Min:	32
Contact:		Owner City:	
IC Length Min:	6416	Owner State:	
IC Depth Max:	6416	Owner Zip:	
IC Depth Min:	6416	Owner Type:	
OC Material:	BLACKSTEEL	Pop Served:	
OC Dia Min:	32	Sells To Pop:	
District:		Design Cap:	
Office:		Svc Connect:	
Zone Infl Radius:	16416		
OC Dia Max:	4		
Sys Source Type:	GROUND		
Well Protected Apron:	Y		
Under Direct Infl:	N		
Date Under Infl:			
Ever Contaminated:			
Created By Program:	N		
Depth Drilled Min:			
Intake Depth Max:	285		
Intake Depth Min:			
Static Water Depth:	46		
OC Length Max:	275		
OC Length Min:	6416		
OC Depth Max:	6416		
OC Depth Min:	6416		
Surface Source:			
Ground Source:			
Contact Phone:			
Contact Phone Ext:			
Owner:			
Number Plants:			
Owner Address1:			
Last Inspect:			
Owner Address2:			
Last San Survey:			
Number Bact Req:			
Number Bact Taken:			
Owner Zip4:			

Wells and Additional Sources Detail Report

System Str1:
 Owner Phone:
 System Str2:
 Owner Phone Ext:
 City:
 State:
 Zip:
 IC Length Max: 6416

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
54	S	0.46	2,432.16	67.93	PWSW

PWS ID:	3480586	System Type:	
PWS Status:	A	PWS Type:	N
PWS Sta Desc:	Active	PWS Type Desc:	Transient Noncommunity
Plant Num:	1	Pop Served:	25
Plant Name:	KLEM'S SMOKEHOUSE	Plant St:	A
Bact Freq:		Well Number:	1
Bact Date:		Well Name:	WELL 1
Sec Date:		FI Well NO:	AAC0823
Inorg Date:		SDWIS NO:	65466384
Soc Date:		Well St:	A
Rads Date:		Grouted:	Y
Voc Date:		Water Source:	Floridan Aquifer
Fee Group:		Availability:	PERMANENT
Fee Amount:		Year Drilled:	
Balance Due:		Depth Drilled:	180
Balance Date:		Drill Method:	
County:	ORANGE	ASR:	N
Email:		Normal Yield:	
Zip4:		IC Material:	
IC Dia Max:		Phone:	
Phone Ext:		IC Dia Min:	
Contact:		Owner City:	
IC Length Min:		Owner State:	
IC Depth Max:		Owner Zip:	
IC Depth Min:		Owner Type:	
OC Material:	BLACKSTEEL	Pop Served:	
OC Dia Min:		Sells To Pop:	
District:		Design Cap:	
Office:		Srvc Connect:	
Zone Infl Radius:			
OC Dia Max:	2		
Sys Source Type:	GROUND		
Well Protected Apron:	Y		
Under Direct Infl:	N		

Wells and Additional Sources Detail Report

Date Under Infl:
 Ever Contaminated: N
 Created By Program: N
 Depth Drilled Min:
 Intake Depth Max:
 Intake Depth Min:
 Static Water Depth:
 OC Length Max:
 OC Length Min:
 OC Depth Max:
 OC Depth Min:
 Surface Source:
 Ground Source:
 Contact Phone:
 Contact Phone Ext:
 Owner:
 Number Plants:
 Owner Address1:
 Last Inspect:
 Owner Address2:
 Last San Survey:
 Number Bact Req:
 Number Bact Taken:
 Owner Zip4:
 System Str1:
 Owner Phone:
 System Str2:
 Owner Phone Ext:
 City:
 State:
 Zip:
 IC Length Max:

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
79	SW	0.64	3,397.24	63.83	PWSW

PWS ID:	3480226	System Type:	
PWS Status:	A	PWS Type:	C
PWS Sta Desc:	Active	PWS Type Desc:	Community
Plant Num:	1	Pop Served:	90
Plant Name:	COLLEGE MOBILE HOME PARK	Plant St:	A
Bact Freq:		Well Number:	1
Bact Date:		Well Name:	COLLEGE MOBILE HOM WELL 01
Sec Date:		FI Well NO:	AAC0820
Inorg Date:		SDWIS NO:	64846313
Soc Date:		Well St:	A

Wells and Additional Sources Detail Report

Rads Date:		Grouted:	Y
Voc Date:		Water Source:	Floridan Aquifer
Fee Group:		Availability:	PERMANENT
Fee Amount:		Year Drilled:	1974
Balance Due:		Depth Drilled:	420
Balance Date:		Drill Method:	
County:	ORANGE	ASR:	
Email:		Normal Yield:	
Zip4:		IC Material:	
IC Dia Max:		Phone:	
Phone Ext:		IC Dia Min:	
Contact:		Owner City:	
IC Length Min:		Owner State:	
IC Depth Max:		Owner Zip:	
IC Depth Min:		Owner Type:	
OC Material:	BLACKSTEEL	Pop Served:	
OC Dia Min:		Sells To Pop:	
District:		Design Cap:	
Office:		Svc Connect:	
Zone Infl Radius:			
OC Dia Max:	4		
Sys Source Type:	GROUND		
Well Protected Apron:	Y		
Under Direct Infl:	N		
Date Under Infl:			
Ever Contaminated:			
Created By Program:	Y		
Depth Drilled Min:			
Intake Depth Max:			
Intake Depth Min:			
Static Water Depth:	11		
OC Length Max:	240		
OC Length Min:			
OC Depth Max:			
OC Depth Min:			
Surface Source:			
Ground Source:			
Contact Phone:			
Contact Phone Ext:			
Owner:			
Number Plants:			
Owner Address1:			
Last Inspect:			
Owner Address2:			
Last San Survey:			
Number Bact Req:			
Number Bact Taken:			

Wells and Additional Sources Detail Report

Owner Zip4:
 System Str1:
 Owner Phone:
 System Str2:
 Owner Phone Ext:
 City:
 State:
 Zip:
 IC Length Max:

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
93	S	0.70	3,720.56	44.42	PWSW

PWS ID:	3481016	System Type:	
PWS Status:	A	PWS Type:	C
PWS Sta Desc:	Active	PWS Type Desc:	Community
Plant Num:	1	Pop Served:	127
Plant Name:	PINE ISLE MOBILE VILLA	Plant St:	A
Bact Freq:		Well Number:	1
Bact Date:		Well Name:	PINE ISLE MOBILE V WELL
Sec Date:		FI Well NO:	AAH7369
Inorg Date:		SDWIS NO:	66446485
Soc Date:		Well St:	A
Rads Date:		Grouted:	
Voc Date:		Water Source:	Floridan Aquifer
Fee Group:		Availability:	PERMANENT
Fee Amount:		Year Drilled:	1972
Balance Due:		Depth Drilled:	219
Balance Date:		Drill Method:	ROTARY DRILL
County:	ORANGE	ASR:	N
Email:		Normal Yield:	
Zip4:		IC Material:	
IC Dia Max:		Phone:	
Phone Ext:		IC Dia Min:	
Contact:		Owner City:	
IC Length Min:		Owner State:	
IC Depth Max:		Owner Zip:	
IC Depth Min:		Owner Type:	
OC Material:	BLACKSTEEL	Pop Served:	
OC Dia Min:		Sells To Pop:	
District:		Design Cap:	
Office:		Srvc Connect:	
Zone Infl Radius:			
OC Dia Max:	6		
Sys Source Type:	GROUND		
Well Protected Apron:	Y		

Wells and Additional Sources Detail Report

Under Direct Infl: N
 Date Under Infl:
 Ever Contaminated: N
 Created By Program: Y
 Depth Drilled Min:
 Intake Depth Max:
 Intake Depth Min:
 Static Water Depth:
 OC Length Max: 170
 OC Length Min:
 OC Depth Max:
 OC Depth Min:
 Surface Source:
 Ground Source:
 Contact Phone:
 Contact Phone Ext:
 Owner:
 Number Plants:
 Owner Address1:
 Last Inspect:
 Owner Address2:
 Last San Survey:
 Number Bact Req:
 Number Bact Taken:
 Owner Zip4:
 System Str1:
 Owner Phone:
 System Str2:
 Owner Phone Ext:
 City:
 State:
 Zip:
 IC Length Max:

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
121	S	0.87	4,594.56	59.37	PWSW

PWS ID:	3480555	System Type:	
PWS Status:	A	PWS Type:	C
PWS Sta Desc:	Active	PWS Type Desc:	Community
Plant Num:	1	Pop Served:	78
Plant Name:	HOLIDAY ACRES MOBILE HOME PARK	Plant St:	A
Bact Freq:		Well Number:	1
Bact Date:		Well Name:	HOLIDAY ACRES MHP WELL
Sec Date:		FI Well NO:	AAH7368
Inorg Date:		SDWIS NO:	65416379

Wells and Additional Sources Detail Report

Soc Date:		Well St:	A
Rads Date:		Grouted:	Y
Voc Date:		Water Source:	Floridan Aquifer
Fee Group:		Availability:	PERMANENT
Fee Amount:		Year Drilled:	1972
Balance Due:		Depth Drilled:	305
Balance Date:		Drill Method:	CABLE TOOL
County:	ORANGE	ASR:	
Email:		Normal Yield:	
Zip4:		IC Material:	
IC Dia Max:		Phone:	
Phone Ext:		IC Dia Min:	
Contact:		Owner City:	
IC Length Min:		Owner State:	
IC Depth Max:		Owner Zip:	
IC Depth Min:		Owner Type:	
OC Material:	BLACKSTEEL	Pop Served:	
OC Dia Min:		Sells To Pop:	
District:		Design Cap:	
Office:		Svc Connect:	
Zone Infl Radius:	16416		
OC Dia Max:	6		
Sys Source Type:	GROUND		
Well Protected Apron:	Y		
Under Direct Infl:	N		
Date Under Infl:			
Ever Contaminated:			
Created By Program:	N		
Depth Drilled Min:			
Intake Depth Max:	305		
Intake Depth Min:			
Static Water Depth:	35		
OC Length Max:	137		
OC Length Min:			
OC Depth Max:			
OC Depth Min:			
Surface Source:			
Ground Source:			
Contact Phone:			
Contact Phone Ext:			
Owner:			
Number Plants:			
Owner Address1:			
Last Inspect:			
Owner Address2:			
Last San Survey:			
Number Bact Req:			

Wells and Additional Sources Detail Report

Number Bact Taken:
 Owner Zip4:
 System Str1:
 Owner Phone:
 System Str2:
 Owner Phone Ext:
 City:
 State:
 Zip:
 IC Length Max:

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
139	SSE	1.00	5,263.16	65.05	PWSW

PWS ID:	3480321	System Type:	
PWS Status:	A	PWS Type:	N
PWS Sta Desc:	Active	PWS Type Desc:	Transient Noncommunity
Plant Num:	1	Pop Served:	25
Plant Name:	VILLAGE INN MOTEL	Plant St:	A
Bact Freq:		Well Number:	1
Bact Date:		Well Name:	VILLAGE INN MOTEL WELL 01
Sec Date:		FI Well NO:	AAH7363
Inorg Date:		SDWIS NO:	65036341
Soc Date:		Well St:	A
Rads Date:		Grouted:	
Voc Date:		Water Source:	Floridan Aquifer
Fee Group:		Availability:	PERMANENT
Fee Amount:		Year Drilled:	1972
Balance Due:		Depth Drilled:	125
Balance Date:		Drill Method:	
County:	ORANGE	ASR:	N
Email:		Normal Yield:	
Zip4:		IC Material:	
IC Dia Max:		Phone:	
Phone Ext:		IC Dia Min:	
Contact:		Owner City:	
IC Length Min:		Owner State:	
IC Depth Max:		Owner Zip:	
IC Depth Min:		Owner Type:	
OC Material:	GALVANIZED	Pop Served:	
OC Dia Min:		Sells To Pop:	
District:		Design Cap:	
Office:		Svc Connect:	
Zone Infl Radius:			
OC Dia Max:	2		
Sys Source Type:	GROUND		

Wells and Additional Sources Detail Report

Well Protected Apron: N
 Under Direct Infl: N
 Date Under Infl:
 Ever Contaminated: N
 Created By Program: Y
 Depth Drilled Min:
 Intake Depth Max:
 Intake Depth Min:
 Static Water Depth:
 OC Length Max:
 OC Length Min:
 OC Depth Max:
 OC Depth Min:
 Surface Source:
 Ground Source:
 Contact Phone:
 Contact Phone Ext:
 Owner:
 Number Plants:
 Owner Address1:
 Last Inspect:
 Owner Address2:
 Last San Survey:
 Number Bact Req:
 Number Bact Taken:
 Owner Zip4:
 System Str1:
 Owner Phone:
 System Str2:
 Owner Phone Ext:
 City:
 State:
 Zip:
 IC Length Max:

Water Well Completions - St. Johns River Water Management District

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
5	SSW	0.08	402.24	69.14	WATER WELLS

Permit:	-	Static Water Lvl Ft:	0
Legacy No:	-	Contractor License:	-
Station ID:	105755	Contractor Name:	-
Compliance No:	761287	Driller Name:	-
Well Use:	Other	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	84	Section:	28

Wells and Additional Sources Detail Report

Total Depth:	92	Township:	22S
Diameter:	2	Range:	32E
Completion Date:	10/28/1988	Latitude:	283336.45882
Issue Date:	-	Longitude:	810742.935376
Well Street Address:	Story Pattin Rd		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1480679		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
6	N	0.08	418.22	69.12	WATER WELLS

Permit:	-	Static Water Lvl Ft:	40
Legacy No:	-	Contractor License:	-
Station ID:	235170	Contractor Name:	-
Compliance No:	903805	Driller Name:	Timothy Myers?
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	16
Total Depth:	63	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	-	Latitude:	283446.114896
Issue Date:	-	Longitude:	810727.45984
Well Street Address:	17166 Long Boat Ln		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1609669		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
8	NNE	0.09	478.58	69.53	WATER WELLS

Permit:	-	Static Water Lvl Ft:	8
Legacy No:	-	Contractor License:	-
Station ID:	222078	Contractor Name:	-
Compliance No:	887569	Driller Name:	Cory Ratchford
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	120	Section:	9
Total Depth:	135	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	12/15/2002	Latitude:	283518.684744
Issue Date:	-	Longitude:	810716.160772
Well Street Address:	17332 Johnnathen Lucar Ct		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1609669		

Wells and Additional Sources Detail Report

on=Web&dDocName=EREG_1597791

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
9	N	0.12	638.89	66.86	WATER WELLS

Permit:	-	Static Water Lvl Ft:	35
Legacy No:	-	Contractor License:	-
Station ID:	220399	Contractor Name:	-
Compliance No:	885711	Driller Name:	Timothy Myers
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	138	Section:	16
Total Depth:	200	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	04/08/2005	Latitude:	283444.139972
Issue Date:	-	Longitude:	810730.794556
Well Street Address:	2750 Lee Shore Lane		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1599844		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
10	NNE	0.13	666.18	70.01	WATER WELLS

Permit:	-	Static Water Lvl Ft:	40
Legacy No:	-	Contractor License:	-
Station ID:	90924	Contractor Name:	-
Compliance No:	542213	Driller Name:	GRIMMER MAPP?
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	156	Section:	20
Total Depth:	0	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	06/13/2001	Latitude:	283521.461928
Issue Date:	-	Longitude:	810713.510632
Well Street Address:	3500 CHULUOTA RD.		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1475483		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
10	NNE	0.13	666.18	70.01	WATER WELLS

Permit:	-	Static Water Lvl Ft:	7
Legacy No:	-	Contractor License:	-

Wells and Additional Sources Detail Report

Station ID:	90927	Contractor Name:	-
Compliance No:	542216	Driller Name:	GRIMMER MAPP?
Well Use:	Monitoring	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	18	Section:	20
Total Depth:	0	Township:	22S
Diameter:	2	Range:	32E
Completion Date:	06/13/2001	Latitude:	283521.461928
Issue Date:	-	Longitude:	810713.510632
Well Street Address:	3500 CHULUOTA RD.		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1469277		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
10	NNE	0.13	666.18	70.01	WATER WELLS

Permit:	-	Static Water Lvl Ft:	40
Legacy No:	-	Contractor License:	-
Station ID:	90920	Contractor Name:	-
Compliance No:	542209	Driller Name:	GRIMMER MAPP?
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	152	Section:	20
Total Depth:	0	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	06/13/2001	Latitude:	283521.461928
Issue Date:	-	Longitude:	810713.510632
Well Street Address:	3500 CHULUOTA RD.		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1469102		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
10	NNE	0.13	666.18	70.01	WATER WELLS

Permit:	-	Static Water Lvl Ft:	6
Legacy No:	-	Contractor License:	-
Station ID:	90925	Contractor Name:	-
Compliance No:	542214	Driller Name:	GRIMMER MAPP?
Well Use:	Monitoring	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	17	Section:	20
Total Depth:	0	Township:	22S
Diameter:	2	Range:	32E

Wells and Additional Sources Detail Report

Completion Date:	06/13/2001	Latitude:	283521.461928
Issue Date:	-	Longitude:	810713.510632
Well Street Address:	3500 CHULUOTA RD.		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1474146		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
11	N	0.13	675.31	69.36	WATER WELLS

Permit:	-	Static Water Lvl Ft:	40
Legacy No:	-	Contractor License:	-
Station ID:	213674	Contractor Name:	-
Compliance No:	879678	Driller Name:	Timothy Myers?
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	109	Section:	9
Total Depth:	165	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	08/18/2004	Latitude:	283518.58452
Issue Date:	-	Longitude:	810719.265772
Well Street Address:	17314 Jonathan Lakes		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1590107		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
12	N	0.13	701.95	69.14	WATER WELLS

Permit:	-	Static Water Lvl Ft:	44
Legacy No:	-	Contractor License:	-
Station ID:	221376	Contractor Name:	-
Compliance No:	886781	Driller Name:	Jimmy Trentham
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	141	Section:	16
Total Depth:	220	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	04/12/2006	Latitude:	283452.687128
Issue Date:	-	Longitude:	810728.463484
Well Street Address:	2908 Lee Swore Loop		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1600945		

Wells and Additional Sources Detail Report

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
13	N	0.14	751.90	69.12	WATER WELLS

Permit:	-	Static Water Lvl Ft:	35
Legacy No:	-	Contractor License:	-
Station ID:	221365	Contractor Name:	-
Compliance No:	886770	Driller Name:	Jimmy Trentham
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	134	Section:	16
Total Depth:	200	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	03/10/2006	Latitude:	283456.086572
Issue Date:	-	Longitude:	810727.880752
Well Street Address:	3006 Lee Swore Loop		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1597134		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
14	N	0.14	752.68	69.14	WATER WELLS

Permit:	-	Static Water Lvl Ft:	44
Legacy No:	-	Contractor License:	-
Station ID:	221383	Contractor Name:	-
Compliance No:	886788	Driller Name:	Jimmy Trentham
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	224	Section:	16
Total Depth:	240	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	04/11/2006	Latitude:	283455.924716
Issue Date:	-	Longitude:	810727.94548
Well Street Address:	2932 Lee Swore Loop		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1597140		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
15	N	0.15	765.93	69.30	WATER WELLS

Permit:	-	Static Water Lvl Ft:	35
Legacy No:	-	Contractor License:	-
Station ID:	213941	Contractor Name:	-

Wells and Additional Sources Detail Report

Compliance No:	879977	Driller Name:	Timothy Myers?
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	116	Section:	9
Total Depth:	120	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	01/23/2004	Latitude:	283518.814236
Issue Date:	-	Longitude:	810720.30484
Well Street Address:	3338 Lukas Cove		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1587623		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
16	N	0.15	776.19	69.28	WATER WELLS

Permit:	-	Static Water Lvl Ft:	38
Legacy No:	-	Contractor License:	-
Station ID:	220374	Contractor Name:	-
Compliance No:	885686	Driller Name:	Timothy Myers
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	123	Section:	9
Total Depth:	140	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	06/23/2005	Latitude:	283519.299336
Issue Date:	-	Longitude:	810720.083368
Well Street Address:	Lukas Cove		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1593386		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
17	N	0.15	804.38	69.29	WATER WELLS

Permit:	-	Static Water Lvl Ft:	28
Legacy No:	-	Contractor License:	-
Station ID:	85600	Contractor Name:	-
Compliance No:	534057	Driller Name:	TIMOTHY MYERS
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	94	Section:	9
Total Depth:	110	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	10/26/2003	Latitude:	283517.6811

Wells and Additional Sources Detail Report

Issue Date: - Longitude: 810721.405612
 Well Street Address: 3332 LUKAS COVE
 Documents: Well Completion Report
 Documents URL: https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1463404

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
23	N	0.20	1,036.27	69.37	WATER WELLS

Permit: -	Static Water Lvl Ft: 28
Legacy No: -	Contractor License: -
Station ID: 222073	Contractor Name: -
Compliance No: 887564	Driller Name: Keith Ratchford
Well Use: Domestic	County: Orange
Type of Work: -	Location State: -
Casing Depth: 130	Section: 9
Total Depth: 195	Township: 22S
Diameter: 4	Range: 32E
Completion Date: 08/20/2002	Latitude: 283515.706176
Issue Date: -	Longitude: 810724.578436
Well Street Address: 3308 Lucas	
Documents: Well Completion Report	
Documents URL: https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1600734	

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
26	N	0.20	1,051.11	70.71	WATER WELLS

Permit: -	Static Water Lvl Ft: 28
Legacy No: -	Contractor License: -
Station ID: 220390	Contractor Name: -
Compliance No: 885702	Driller Name: Cory Ratchford
Well Use: Domestic	County: Orange
Type of Work: -	Location State: -
Casing Depth: 107	Section: 9
Total Depth: 180	Township: 22S
Diameter: 4	Range: 32E
Completion Date: 05/15/2005	Latitude: 283524.059112
Issue Date: -	Longitude: 810718.524172
Well Street Address: 3356 Lukas Cove	
Documents: Well Completion Report	
Documents URL: https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1598811	

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
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Wells and Additional Sources Detail Report

27 ENE 0.21 1,094.41 68.88 WATER WELLS

Permit:	-	Static Water Lvl Ft:	20
Legacy No:	-	Contractor License:	-
Station ID:	351182	Contractor Name:	-
Compliance No:	1068566	Driller Name:	?
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	16
Total Depth:	74	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	12/27/1991	Latitude:	283435.273064
Issue Date:	-	Longitude:	810713.614996
Well Street Address:	-		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1874302		

Map Key Direction Distance (mi) Distance (ft) Elevation (ft) DB

27 ENE 0.21 1,094.41 68.88 WATER WELLS

Permit:	-	Static Water Lvl Ft:	16
Legacy No:	-	Contractor License:	-
Station ID:	174127	Contractor Name:	-
Compliance No:	839231	Driller Name:	Peter Lankenaw
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	63	Section:	16
Total Depth:	75	Township:	22S
Diameter:	2	Range:	32E
Completion Date:	05/23/2000	Latitude:	283435.273064
Issue Date:	-	Longitude:	810713.614996
Well Street Address:	23027 For Tchristnas		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderition=Web&dDocName=EREG_1548244		

Map Key Direction Distance (mi) Distance (ft) Elevation (ft) DB

27 ENE 0.21 1,094.41 68.88 WATER WELLS

Permit:	-	Static Water Lvl Ft:	45
Legacy No:	-	Contractor License:	-
Station ID:	221501	Contractor Name:	-
Compliance No:	886906	Driller Name:	Timothy Myers
Well Use:	-	County:	Orange

Wells and Additional Sources Detail Report

Type of Work:	-	Location State:	-
Casing Depth:	126	Section:	16
Total Depth:	160	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	12/19/2006	Latitude:	283435.273064
Issue Date:	-	Longitude:	810713.614996
Well Street Address:	cong Boat Ln		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1600852		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
36	NNE	0.25	1,314.74	69.84	WATER WELLS

Permit:	-	Static Water Lvl Ft:	30
Legacy No:	-	Contractor License:	-
Station ID:	107066	Contractor Name:	-
Compliance No:	763398	Driller Name:	Jerry E Thompson Jr
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	132	Section:	9
Total Depth:	145	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	11/24/1999	Latitude:	283527.86082
Issue Date:	-	Longitude:	810714.154312
Well Street Address:	2510 Cr 419		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1504316		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
37	NNE	0.25	1,316.84	69.83	WATER WELLS

Permit:	-	Static Water Lvl Ft:	27
Legacy No:	-	Contractor License:	-
Station ID:	117782	Contractor Name:	-
Compliance No:	775524	Driller Name:	Jim Dodge?
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	163	Section:	9
Total Depth:	210	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	07/15/1997	Latitude:	283527.863628
Issue Date:	-	Longitude:	810714.38302
Well Street Address:	3757 Lk Drawdy		

Wells and Additional Sources Detail Report

Documents: Well Completion Report
 Documents URL: https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1496072

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
37	NNE	0.25	1,316.84	69.83	WATER WELLS

Permit:	-	Static Water Lvl Ft:	20
Legacy No:	-	Contractor License:	-
Station ID:	351169	Contractor Name:	-
Compliance No:	1068553	Driller Name:	?
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	9
Total Depth:	63	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	08/29/1991	Latitude:	283527.863628
Issue Date:	-	Longitude:	810714.38302
Well Street Address:	Lot 23 Lk Dowdy Rd		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1874289		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
37	NNE	0.25	1,316.84	69.83	WATER WELLS

Permit:	-	Static Water Lvl Ft:	28
Legacy No:	-	Contractor License:	-
Station ID:	213882	Contractor Name:	-
Compliance No:	879918	Driller Name:	Keith?
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	112	Section:	9
Total Depth:	225	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	01/01/2004	Latitude:	283527.863628
Issue Date:	-	Longitude:	810714.38302
Well Street Address:	3350 Lucaccors		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1592909		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
37	NNE	0.25	1,316.84	69.83	WATER WELLS

Wells and Additional Sources Detail Report

Permit:	-	Static Water Lvl Ft:	34
Legacy No:	-	Contractor License:	-
Station ID:	220366	Contractor Name:	-
Compliance No:	885678	Driller Name:	Reggie Reis
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	92	Section:	9
Total Depth:	223	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	-	Latitude:	283527.863628
Issue Date:	-	Longitude:	810714.38302
Well Street Address:	16808 Ur Pick St		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1598379		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
37	NNE	0.25	1,316.84	69.83	WATER WELLS

Permit:	-	Static Water Lvl Ft:	18
Legacy No:	-	Contractor License:	-
Station ID:	220332	Contractor Name:	-
Compliance No:	885644	Driller Name:	Cory Ratchford
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	126	Section:	9
Total Depth:	180	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	11/11/2005	Latitude:	283527.863628
Issue Date:	-	Longitude:	810714.38302
Well Street Address:	17145 Dreyway Ct		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1601715		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
37	NNE	0.25	1,316.84	69.83	WATER WELLS

Permit:	-	Static Water Lvl Ft:	20
Legacy No:	-	Contractor License:	-
Station ID:	310323	Contractor Name:	-
Compliance No:	1027625	Driller Name:	Darren T Norvin
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	FL

Wells and Additional Sources Detail Report

Casing Depth:	0	Section:	9
Total Depth:	135	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	03/28/1990	Latitude:	283527.863628
Issue Date:	-	Longitude:	810714.38302
Well Street Address:	1117 Lk Doudy Court, Orlando, FL		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1832891		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
37	NNE	0.25	1,316.84	69.83	WATER WELLS

Permit:	-	Static Water Lvl Ft:	26
Legacy No:	-	Contractor License:	-
Station ID:	222096	Contractor Name:	-
Compliance No:	887587	Driller Name:	Timothy Myers
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	105	Section:	9
Total Depth:	240	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	10/09/2002	Latitude:	283527.863628
Issue Date:	-	Longitude:	810714.38302
Well Street Address:	3703 Lake Drawdy		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1597556		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
37	NNE	0.25	1,316.84	69.83	WATER WELLS

Permit:	-	Static Water Lvl Ft:	31
Legacy No:	-	Contractor License:	-
Station ID:	255529	Contractor Name:	-
Compliance No:	972722	Driller Name:	?
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	9
Total Depth:	126	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	06/18/1996	Latitude:	283527.863628
Issue Date:	-	Longitude:	810714.38302
Well Street Address:	-		
Documents:	Well Completion Report		

Wells and Additional Sources Detail Report

Documents URL: https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1778456

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
41	N	0.30	1,580.84	68.96	WATER WELLS

Permit:	-	Static Water Lvl Ft:	35
Legacy No:	-	Contractor License:	-
Station ID:	213653	Contractor Name:	-
Compliance No:	879657	Driller Name:	Isaac Gallant?
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	135	Section:	9
Total Depth:	135	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	03/04/2004	Latitude:	283529.757192
Issue Date:	-	Longitude:	810718.491808
Well Street Address:	3386 Lukas Cove		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1589383		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
43	S	0.34	1,808.97	63.71	WATER WELLS

Permit:	-	Static Water Lvl Ft:	0
Legacy No:	-	Contractor License:	-
Station ID:	106918	Contractor Name:	-
Compliance No:	763250	Driller Name:	C.R. Christopher?
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	27
Total Depth:	96	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	02/28/1998	Latitude:	283331.228452
Issue Date:	-	Longitude:	810728.276536
Well Street Address:	18603 Old Cheney Hwy		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1485652		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
46	N	0.39	2,072.43	65.52	WATER WELLS

Wells and Additional Sources Detail Report

Permit:	-	Static Water Lvl Ft:	32
Legacy No:	-	Contractor License:	-
Station ID:	174006	Contractor Name:	-
Compliance No:	839110	Driller Name:	Keith Ratchford?
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	330	Section:	4
Total Depth:	330	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	05/01/2000	Latitude:	283534.937304
Issue Date:	-	Longitude:	810717.90904
Well Street Address:	3724 Chuluoto Rd		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1545397		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
47	S	0.39	2,079.48	62.69	WATER WELLS

Permit:	-	Static Water Lvl Ft:	0
Legacy No:	-	Contractor License:	-
Station ID:	351214	Contractor Name:	-
Compliance No:	1068598	Driller Name:	-
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	FL
Casing Depth:	0	Section:	28
Total Depth:	0	Township:	22S
Diameter:	2	Range:	32E
Completion Date:	10/15/1991	Latitude:	283326.161236
Issue Date:	-	Longitude:	810728.115868
Well Street Address:	685 Shepherd Ave, Orlando, FL 32820		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1874334		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
47	S	0.39	2,079.48	62.69	WATER WELLS

Permit:	-	Static Water Lvl Ft:	25
Legacy No:	-	Contractor License:	-
Station ID:	351213	Contractor Name:	-
Compliance No:	1068597	Driller Name:	-
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	FL
Casing Depth:	0	Section:	28

Wells and Additional Sources Detail Report

Total Depth:	115	Township:	22S
Diameter:	2	Range:	32E
Completion Date:	10/15/1991	Latitude:	283326.161236
Issue Date:	-	Longitude:	810728.115868
Well Street Address:	685 Shepherd Ave, Orlando, FL 32820		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1874333		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
48	NNE	0.40	2,087.56	65.59	WATER WELLS

Permit:	-	Static Water Lvl Ft:	0
Legacy No:	-	Contractor License:	-
Station ID:	106756	Contractor Name:	-
Compliance No:	763053	Driller Name:	Dau Kuhus?
Well Use:	Monitoring	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	2	Section:	17
Total Depth:	12	Township:	22S
Diameter:	2	Range:	32E
Completion Date:	05/27/1998	Latitude:	283525.276668
Issue Date:	-	Longitude:	810652.704576
Well Street Address:	Lake Pickett Rd		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1482142		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
48	NNE	0.40	2,087.56	65.59	WATER WELLS

Permit:	-	Static Water Lvl Ft:	0
Legacy No:	-	Contractor License:	-
Station ID:	106746	Contractor Name:	-
Compliance No:	763043	Driller Name:	Dau Kuhuo?
Well Use:	Monitoring	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	2	Section:	17
Total Depth:	12	Township:	22S
Diameter:	2	Range:	32E
Completion Date:	05/27/1998	Latitude:	283525.276668
Issue Date:	-	Longitude:	810652.704576
Well Street Address:	Lake Pickett Rd.		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1482142		

Wells and Additional Sources Detail Report

on=Web&dDocName=EREG_1480488

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
48	NNE	0.40	2,087.56	65.59	WATER WELLS

Permit:	-	Static Water Lvl Ft:	0
Legacy No:	-	Contractor License:	-
Station ID:	106750	Contractor Name:	-
Compliance No:	763047	Driller Name:	Dau Kuhus?
Well Use:	Monitoring	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	2	Section:	17
Total Depth:	12	Township:	22S
Diameter:	2	Range:	32E
Completion Date:	05/27/1998	Latitude:	283525.276668
Issue Date:	-	Longitude:	810652.704576
Well Street Address:	Lake Pickett Rd.		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1480490		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
48	NNE	0.40	2,087.56	65.59	WATER WELLS

Permit:	-	Static Water Lvl Ft:	0
Legacy No:	-	Contractor License:	-
Station ID:	106737	Contractor Name:	-
Compliance No:	763034	Driller Name:	?
Well Use:	Monitoring	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	20	Section:	17
Total Depth:	25	Township:	22S
Diameter:	2	Range:	32E
Completion Date:	05/27/1998	Latitude:	283525.276668
Issue Date:	-	Longitude:	810652.704576
Well Street Address:	Lake Pickett Rd.		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1505836		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
50	SW	0.43	2,285.84	65.87	WATER WELLS

Permit:	-	Static Water Lvl Ft:	25
Legacy No:	-	Contractor License:	-

Wells and Additional Sources Detail Report

Station ID:	351185	Contractor Name:	-
Compliance No:	1068569	Driller Name:	-
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	20
Total Depth:	210	Township:	22S
Diameter:	8	Range:	32E
Completion Date:	06/05/1991	Latitude:	283342.019596
Issue Date:	-	Longitude:	810812.183324
Well Street Address:	Corner S.r. 50 And S.r. 419, FL		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1874305		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
50	SW	0.43	2,285.84	65.87	WATER WELLS

Permit:	-	Static Water Lvl Ft:	0
Legacy No:	-	Contractor License:	-
Station ID:	351187	Contractor Name:	-
Compliance No:	1068571	Driller Name:	-
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	20
Total Depth:	50	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	01/22/1991	Latitude:	283342.019596
Issue Date:	-	Longitude:	810812.183324
Well Street Address:	-		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1874307		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
50	SW	0.43	2,285.84	65.87	WATER WELLS

Permit:	-	Static Water Lvl Ft:	15
Legacy No:	-	Contractor License:	-
Station ID:	394756	Contractor Name:	-
Compliance No:	1112156	Driller Name:	-
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	20
Total Depth:	50	Township:	22S
Diameter:	2	Range:	32E

Wells and Additional Sources Detail Report

Completion Date:	04/06/1989	Latitude:	283342.019596
Issue Date:	-	Longitude:	810812.183324
Well Street Address:	-		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1917374		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
50	SW	0.43	2,285.84	65.87	WATER WELLS

Permit:	-	Static Water Lvl Ft:	45
Legacy No:	-	Contractor License:	-
Station ID:	222171	Contractor Name:	-
Compliance No:	888238	Driller Name:	?
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	20
Total Depth:	65	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	08/21/2002	Latitude:	283342.019596
Issue Date:	-	Longitude:	810812.183324
Well Street Address:	16885 Coloriac		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1596291		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
50	SW	0.43	2,285.84	65.87	WATER WELLS

Permit:	-	Static Water Lvl Ft:	25
Legacy No:	-	Contractor License:	-
Station ID:	351186	Contractor Name:	-
Compliance No:	1068570	Driller Name:	-
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	FL
Casing Depth:	0	Section:	20
Total Depth:	210	Township:	22S
Diameter:	8	Range:	32E
Completion Date:	06/05/1991	Latitude:	283342.019596
Issue Date:	-	Longitude:	810812.183324
Well Street Address:	Corner S.r. 50 And S.r. 419, Bithlo, FL		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1874306		

Wells and Additional Sources Detail Report

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
50	SW	0.43	2,285.84	65.87	WATER WELLS

Permit:	-	Static Water Lvl Ft:	5	
Legacy No:	-	Contractor License:	-	
Station ID:	394757	Contractor Name:	-	
Compliance No:	1112157	Driller Name:	-	
Well Use:	-	County:	Orange	
Type of Work:	-	Location State:	-	
Casing Depth:	0	Section:	20	
Total Depth:	41	Township:	22S	
Diameter:	0	Range:	32E	
Completion Date:	01/21/1986	Latitude:	283342.019596	
Issue Date:	-	Longitude:	810812.183324	
Well Street Address:	-			
Documents:	Well Completion Report			
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1917375			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
50	SW	0.43	2,285.84	65.87	WATER WELLS

Permit:	-	Static Water Lvl Ft:	58	
Legacy No:	-	Contractor License:	-	
Station ID:	287821	Contractor Name:	-	
Compliance No:	1005089	Driller Name:	Hugh Eldridge	
Well Use:	-	County:	Orange	
Type of Work:	-	Location State:	-	
Casing Depth:	0	Section:	20	
Total Depth:	235	Township:	22S	
Diameter:	0	Range:	32E	
Completion Date:	09/03/1993	Latitude:	283342.019596	
Issue Date:	-	Longitude:	810812.183324	
Well Street Address:	Old Cheney Highway & E. Hwy 50 Swq S. R 419			
Documents:	Well Completion Report			
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderition=Web&dDocName=EREG_1810668			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
50	SW	0.43	2,285.84	65.87	WATER WELLS

Permit:	-	Static Water Lvl Ft:	15	
Legacy No:	-	Contractor License:	-	
Station ID:	394755	Contractor Name:	-	

Wells and Additional Sources Detail Report

Compliance No:	1112155	Driller Name:	?
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	20
Total Depth:	67	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	08/21/1987	Latitude:	283342.019596
Issue Date:	-	Longitude:	810812.183324
Well Street Address:	-		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1917373		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
52	SW	0.45	2,395.45	65.71	WATER WELLS

Permit:	-	Static Water Lvl Ft:	35
Legacy No:	-	Contractor License:	-
Station ID:	220384	Contractor Name:	-
Compliance No:	885696	Driller Name:	Timothy Myers
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	116	Section:	20
Total Depth:	160	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	01/04/2005	Latitude:	283342.1731
Issue Date:	-	Longitude:	810813.400808
Well Street Address:	16402 Old Cheney		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1598809		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
53	NNE	0.46	2,425.45	68.91	WATER WELLS

Permit:	148092-1	Static Water Lvl Ft:	25
Legacy No:	-	Contractor License:	-
Station ID:	460989	Contractor Name:	-
Compliance No:	1317877	Driller Name:	-
Well Use:	Irrigation - Agricultural	County:	Orange
Type of Work:	Abandonment	Location State:	FL
Casing Depth:	250	Section:	9
Total Depth:	400	Township:	22S
Diameter:	4	Range:	Orange
Completion Date:	-	Latitude:	283536.31

Wells and Additional Sources Detail Report

Issue Date: 11/18/2016 Longitude: 810700.65
 Well Street Address: -
 Documents: Application
 Documents URL: https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_6449736

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
53	NNE	0.46	2,425.45	68.91	WATER WELLS

Permit:	148092-1	Static Water Lvl Ft:	25
Legacy No:	-	Contractor License:	-
Station ID:	460989	Contractor Name:	-
Compliance No:	1317877	Driller Name:	-
Well Use:	Irrigation - Agricultural	County:	Orange
Type of Work:	Abandonment	Location State:	FL
Casing Depth:	250	Section:	9
Total Depth:	400	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	-	Latitude:	283536.31
Issue Date:	11/18/2016	Longitude:	810700.65
Well Street Address:	-		
Documents:	Map		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_6449737		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
57	S	0.47	2,490.04	54.50	WATER WELLS

Permit:	-	Static Water Lvl Ft:	0
Legacy No:	-	Contractor License:	-
Station ID:	351191	Contractor Name:	-
Compliance No:	1068575	Driller Name:	?
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	21
Total Depth:	100	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	08/14/1991	Latitude:	283314.633964
Issue Date:	-	Longitude:	810739.464076
Well Street Address:	406 Carpanter Rd, Bithlo		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1874311		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
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Wells and Additional Sources Detail Report

59 S 0.50 2,636.99 59.82 WATER WELLS

Permit:	-	Static Water Lvl Ft:	26
Legacy No:	-	Contractor License:	-
Station ID:	117691	Contractor Name:	-
Compliance No:	775433	Driller Name:	Keith Barnes
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	63	Section:	28
Total Depth:	71	Township:	22S
Diameter:	2	Range:	32E
Completion Date:	05/30/1997	Latitude:	283317.988552
Issue Date:	-	Longitude:	810728.43112
Well Street Address:	514 Sheppard Dr.		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1494084		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
60	S	0.50	2,638.53	53.49	WATER WELLS

Permit:	-	Static Water Lvl Ft:	20
Legacy No:	-	Contractor License:	-
Station ID:	90933	Contractor Name:	-
Compliance No:	542222	Driller Name:	BILL PENTZ
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	120	Section:	28
Total Depth:	120	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	10/26/2001	Latitude:	283315.754608
Issue Date:	-	Longitude:	810732.121948
Well Street Address:	450 GLEN RD		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1473762		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
62	SSE	0.52	2,765.68	68.74	WATER WELLS

Permit:	-	Static Water Lvl Ft:	0
Legacy No:	-	Contractor License:	-
Station ID:	394759	Contractor Name:	-
Compliance No:	1112159	Driller Name:	-
Well Use:	-	County:	Orange

Wells and Additional Sources Detail Report

Type of Work:	-	Location State:	FL
Casing Depth:	0	Section:	21
Total Depth:	100	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	02/24/1988	Latitude:	283342.454152
Issue Date:	-	Longitude:	810712.711828
Well Street Address:	341 Altesos Baphre Lot # 39, Orlando, FL 32820		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1917377		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
62	SSE	0.52	2,765.68	68.74	WATER WELLS

Permit:	-	Static Water Lvl Ft:	28
Legacy No:	-	Contractor License:	-
Station ID:	351192	Contractor Name:	-
Compliance No:	1068576	Driller Name:	?
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	21
Total Depth:	94	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	08/28/1991	Latitude:	283342.454152
Issue Date:	-	Longitude:	810712.711828
Well Street Address:	-		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1874312		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
62	SSE	0.52	2,765.68	68.74	WATER WELLS

Permit:	-	Static Water Lvl Ft:	32
Legacy No:	-	Contractor License:	-
Station ID:	107152	Contractor Name:	-
Compliance No:	763483	Driller Name:	Keith Barnes?
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	21
Total Depth:	92	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	01/07/1998	Latitude:	283342.454152
Issue Date:	-	Longitude:	810712.711828
Well Street Address:	990 Belvis Pere		

Wells and Additional Sources Detail Report

Documents: Well Completion Report
 Documents URL: https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1504305

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
62	SSE	0.52	2,765.68	68.74	WATER WELLS

Permit:	-	Static Water Lvl Ft:	19
Legacy No:	-	Contractor License:	-
Station ID:	247144	Contractor Name:	-
Compliance No:	964337	Driller Name:	?
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	21
Total Depth:	73	Township:	22S
Diameter:	2	Range:	32E
Completion Date:	01/05/1994	Latitude:	283342.454152
Issue Date:	-	Longitude:	810712.711828
Well Street Address:	-		

Documents: Well Completion Report
 Documents URL: https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1770252

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
62	SSE	0.52	2,765.68	68.74	WATER WELLS

Permit:	-	Static Water Lvl Ft:	5
Legacy No:	-	Contractor License:	-
Station ID:	394758	Contractor Name:	-
Compliance No:	1112158	Driller Name:	?
Well Use:	Monitoring	County:	Orange
Type of Work:	-	Location State:	FL
Casing Depth:	0	Section:	21
Total Depth:	10	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	05/18/1987	Latitude:	283342.454152
Issue Date:	-	Longitude:	810712.711828
Well Street Address:	18515 E Cdonial Drive, Bithlo, FL		

Documents: Well Completion Report
 Documents URL: https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1917376

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
62	SSE	0.52	2,765.68	68.74	WATER WELLS

Wells and Additional Sources Detail Report

Permit:	-	Static Water Lvl Ft:	21
Legacy No:	-	Contractor License:	-
Station ID:	291897	Contractor Name:	-
Compliance No:	1009167	Driller Name:	?
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	21
Total Depth:	83	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	09/21/1992	Latitude:	283342.454152
Issue Date:	-	Longitude:	810712.711828
Well Street Address:	-		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1814722		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
62	SSE	0.52	2,765.68	68.74	WATER WELLS

Permit:	-	Static Water Lvl Ft:	27
Legacy No:	-	Contractor License:	-
Station ID:	394760	Contractor Name:	-
Compliance No:	1112160	Driller Name:	-
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	21
Total Depth:	91	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	03/12/1986	Latitude:	283342.454152
Issue Date:	-	Longitude:	810712.711828
Well Street Address:	-		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1917378		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
62	SSE	0.52	2,765.68	68.74	WATER WELLS

Permit:	-	Static Water Lvl Ft:	0
Legacy No:	-	Contractor License:	-
Station ID:	351189	Contractor Name:	-
Compliance No:	1068573	Driller Name:	?
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-

Wells and Additional Sources Detail Report

Casing Depth:	0	Section:	21
Total Depth:	71	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	02/19/1981	Latitude:	283342.454152
Issue Date:	-	Longitude:	810712.711828
Well Street Address:	-		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1874309		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
62	SSE	0.52	2,765.68	68.74	WATER WELLS

Permit:	-	Static Water Lvl Ft:	18
Legacy No:	-	Contractor License:	-
Station ID:	291896	Contractor Name:	-
Compliance No:	1009166	Driller Name:	C. R. Christopher?
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	21
Total Depth:	84	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	01/14/1992	Latitude:	283342.454152
Issue Date:	-	Longitude:	810712.711828
Well Street Address:	-		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1814721		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
62	SSE	0.52	2,765.68	68.74	WATER WELLS

Permit:	-	Static Water Lvl Ft:	0
Legacy No:	-	Contractor License:	-
Station ID:	351188	Contractor Name:	-
Compliance No:	1068572	Driller Name:	?
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	21
Total Depth:	92	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	04/25/1991	Latitude:	283342.454152
Issue Date:	-	Longitude:	810712.711828
Well Street Address:	-		
Documents:	Well Completion Report		

Wells and Additional Sources Detail Report

Documents URL: https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1874308

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
62	SSE	0.52	2,765.68	68.74	WATER WELLS

Permit:	-	Static Water Lvl Ft:	0
Legacy No:	-	Contractor License:	-
Station ID:	222782	Contractor Name:	-
Compliance No:	888936	Driller Name:	R T Vermeulen?
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	21
Total Depth:	0	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	03/09/1998	Latitude:	283342.454152
Issue Date:	-	Longitude:	810712.711828
Well Street Address:	-		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1600326		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
65	S	0.56	2,971.47	50.93	WATER WELLS

Permit:	-	Static Water Lvl Ft:	12
Legacy No:	-	Contractor License:	-
Station ID:	105789	Contractor Name:	-
Compliance No:	761321	Driller Name:	Bill Pentz?
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	84	Section:	27
Total Depth:	95	Township:	22S
Diameter:	2	Range:	32E
Completion Date:	05/15/1991	Latitude:	283309.797508
Issue Date:	-	Longitude:	810739.082692
Well Street Address:	331 Carpenter Rd		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1484233		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
65	S	0.56	2,971.47	50.93	WATER WELLS

Wells and Additional Sources Detail Report

Permit:	-	Static Water Lvl Ft:	12
Legacy No:	-	Contractor License:	-
Station ID:	351190	Contractor Name:	-
Compliance No:	1068574	Driller Name:	-
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	21
Total Depth:	95	Township:	22S
Diameter:	2	Range:	32E
Completion Date:	05/15/1991	Latitude:	283309.797508
Issue Date:	-	Longitude:	810739.082692
Well Street Address:	331 Carpenter Rd		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1874310		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
65	S	0.56	2,971.47	50.93	WATER WELLS

Permit:	-	Static Water Lvl Ft:	12
Legacy No:	-	Contractor License:	-
Station ID:	106866	Contractor Name:	-
Compliance No:	763198	Driller Name:	Tom E Sobey?
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	84	Section:	27
Total Depth:	95	Township:	22S
Diameter:	2	Range:	32E
Completion Date:	05/15/1991	Latitude:	283309.797508
Issue Date:	-	Longitude:	810739.082692
Well Street Address:	331 Carpenter Rd		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1504755		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
68	N	0.59	3,107.87	59.39	WATER WELLS

Permit:	-	Static Water Lvl Ft:	29
Legacy No:	-	Contractor License:	-
Station ID:	85664	Contractor Name:	-
Compliance No:	534121	Driller Name:	JIMMY TRENTHAM
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	147	Section:	9

Wells and Additional Sources Detail Report

Total Depth:	180	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	01/27/2003	Latitude:	283539.275628
Issue Date:	-	Longitude:	810734.226364
Well Street Address:	3655 LAKE DRAWDY DR.		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1465378		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
69	S	0.59	3,137.27	51.51	WATER WELLS

Permit:	-	Static Water Lvl Ft:	14
Legacy No:	-	Contractor License:	-
Station ID:	351212	Contractor Name:	-
Compliance No:	1068596	Driller Name:	?
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	28
Total Depth:	140	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	09/15/1991	Latitude:	283307.952112
Issue Date:	-	Longitude:	810739.924444
Well Street Address:	309 Carpenter Rd, Bithlo		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1874332		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
72	N	0.61	3,220.82	58.99	WATER WELLS

Permit:	-	Static Water Lvl Ft:	0
Legacy No:	-	Contractor License:	-
Station ID:	343313	Contractor Name:	-
Compliance No:	1060696	Driller Name:	?
Well Use:	Other	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	9
Total Depth:	0	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	09/06/2007	Latitude:	283537
Issue Date:	-	Longitude:	810739
Well Street Address:	3632 Lake Draudy Dr		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1874332		

Wells and Additional Sources Detail Report

ame=EREG_1866481

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
80	N	0.65	3,409.98	59.17	WATER WELLS

Permit:	-	Static Water Lvl Ft:	45
Legacy No:	-	Contractor License:	-
Station ID:	90861	Contractor Name:	-
Compliance No:	542150	Driller Name:	CORY RATCHFORD
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	95	Section:	9
Total Depth:	140	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	11/06/2001	Latitude:	283539.66414
Issue Date:	-	Longitude:	810738.9532
Well Street Address:	17125 DRAWDY COURT		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1473752		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
81	NE	0.65	3,427.25	68.88	WATER WELLS

Permit:	-	Static Water Lvl Ft:	37
Legacy No:	-	Contractor License:	-
Station ID:	221981	Contractor Name:	-
Compliance No:	887472	Driller Name:	Mike Burk
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	163	Section:	15
Total Depth:	235	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	11/04/2002	Latitude:	283459.32416
Issue Date:	-	Longitude:	810637.666188
Well Street Address:	2966 4th St		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1593212		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
82	N	0.66	3,465.16	59.07	WATER WELLS

Permit:	-	Static Water Lvl Ft:	28
Legacy No:	-	Contractor License:	-

Wells and Additional Sources Detail Report

Station ID:	90899	Contractor Name:	-
Compliance No:	542188	Driller Name:	TIMOTHY MYERS?
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	96	Section:	9
Total Depth:	200	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	05/09/2001	Latitude:	283539.243264
Issue Date:	-	Longitude:	810740.34532
Well Street Address:	17109 DRAWDY CT		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1475480		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
84	S	0.66	3,502.41	65.38	WATER WELLS

Permit:	-	Static Water Lvl Ft:	20
Legacy No:	-	Contractor License:	-
Station ID:	90889	Contractor Name:	-
Compliance No:	542178	Driller Name:	BILL PENTZ?
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	146	Section:	28
Total Depth:	160	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	12/14/2001	Latitude:	283313.77972
Issue Date:	-	Longitude:	810719.204068
Well Street Address:	17401 CAUDEL RD		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1469095		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
85	S	0.68	3,574.24	65.47	WATER WELLS

Permit:	-	Static Water Lvl Ft:	30
Legacy No:	-	Contractor License:	-
Station ID:	351211	Contractor Name:	-
Compliance No:	1068595	Driller Name:	-
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	FL
Casing Depth:	0	Section:	28
Total Depth:	120	Township:	22S
Diameter:	2	Range:	32E

Wells and Additional Sources Detail Report

Completion Date:	08/05/1991	Latitude:	283313.77972
Issue Date:	-	Longitude:	810718.070932
Well Street Address:	17409 Caudell Dr, Orl, FL		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1874331		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
85	S	0.68	3,574.24	65.47	WATER WELLS

Permit:	-	Static Water Lvl Ft:	30
Legacy No:	-	Contractor License:	-
Station ID:	106935	Contractor Name:	-
Compliance No:	763267	Driller Name:	-
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	100	Section:	28
Total Depth:	120	Township:	22S
Diameter:	2	Range:	32E
Completion Date:	08/05/1991	Latitude:	283313.77972
Issue Date:	-	Longitude:	810718.070932
Well Street Address:	17409 Caudell Dr.		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderition=Web&dDocName=EREG_1482006		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
86	ENE	0.68	3,587.07	68.88	WATER WELLS

Permit:	-	Static Water Lvl Ft:	45
Legacy No:	-	Contractor License:	-
Station ID:	394725	Contractor Name:	-
Compliance No:	1112125	Driller Name:	-
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	FL
Casing Depth:	0	Section:	15
Total Depth:	170	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	12/28/1989	Latitude:	283454.111684
Issue Date:	-	Longitude:	810637.633824
Well Street Address:	2832 4th Str, Bithlo, FL		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1917343		

Wells and Additional Sources Detail Report

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
87	SW	0.69	3,642.72	64.21	WATER WELLS

Permit:	-	Static Water Lvl Ft:	35
Legacy No:	-	Contractor License:	-
Station ID:	222110	Contractor Name:	-
Compliance No:	888177	Driller Name:	Cory Ratchford
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	119	Section:	20
Total Depth:	140	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	08/28/2002	Latitude:	283333.002064
Issue Date:	-	Longitude:	810827.2697
Well Street Address:	818 Lockwood Road		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1597554		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
88	SW	0.69	3,661.00	64.26	WATER WELLS

Permit:	-	Static Water Lvl Ft:	8
Legacy No:	-	Contractor License:	-
Station ID:	351184	Contractor Name:	-
Compliance No:	1068568	Driller Name:	-
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	FL
Casing Depth:	0	Section:	20
Total Depth:	85	Township:	22S
Diameter:	2	Range:	32E
Completion Date:	11/04/1991	Latitude:	283338.320416
Issue Date:	-	Longitude:	810827.937464
Well Street Address:	16217 Morris Dr, Orlando, FL 32820		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1874304		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
89	ENE	0.70	3,698.36	68.88	WATER WELLS

Permit:	-	Static Water Lvl Ft:	30
Legacy No:	-	Contractor License:	-
Station ID:	221997	Contractor Name:	-

Wells and Additional Sources Detail Report

Compliance No:	887488	Driller Name:	-
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	120	Section:	27
Total Depth:	120	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	09/10/2002	Latitude:	283450.48562
Issue Date:	-	Longitude:	810637.601424
Well Street Address:	2808 4th Street		
Documents:			
Documents URL:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
89	ENE	0.70	3,698.36	68.88	WATER WELLS

Permit:	-	Static Water Lvl Ft:	35
Legacy No:	-	Contractor License:	-
Station ID:	394762	Contractor Name:	-
Compliance No:	1112162	Driller Name:	-
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	FL
Casing Depth:	0	Section:	22
Total Depth:	87	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	12/19/1986	Latitude:	283450.48562
Issue Date:	-	Longitude:	810637.601424
Well Street Address:	2808 4th St, Bithlo, FL		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1917380		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
91	NE	0.70	3,704.47	68.93	WATER WELLS

Permit:	-	Static Water Lvl Ft:	0
Legacy No:	-	Contractor License:	-
Station ID:	117770	Contractor Name:	-
Compliance No:	775512	Driller Name:	C. R. Christopher?
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	15
Total Depth:	105	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	09/26/1997	Latitude:	283514.83206
Issue Date:	-	Longitude:	810631.38534
Well Street Address:	18206 Amity Ville Dr		

Wells and Additional Sources Detail Report

Documents: Well Completion Report
 Documents URL: https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1494536

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
96	NE	0.72	3,816.99	69.01	WATER WELLS

Permit:	-	Static Water Lvl Ft:	28
Legacy No:	-	Contractor License:	-
Station ID:	351181	Contractor Name:	-
Compliance No:	1068565	Driller Name:	-
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	FL
Casing Depth:	0	Section:	15
Total Depth:	120	Township:	22S
Diameter:	2	Range:	32E
Completion Date:	07/01/1991	Latitude:	283514.864424
Issue Date:	-	Longitude:	810630.122676
Well Street Address:	18210 Amityville Rd, Bithlo, FL		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1874301		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
100	ENE	0.74	3,903.12	68.88	WATER WELLS

Permit:	-	Static Water Lvl Ft:	20
Legacy No:	-	Contractor License:	-
Station ID:	90880	Contractor Name:	-
Compliance No:	542169	Driller Name:	BILL PENTZ?
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	120	Section:	15
Total Depth:	138	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	12/14/2001	Latitude:	283443.751496
Issue Date:	-	Longitude:	810637.536696
Well Street Address:	2654 4TH ST.		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1475476		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
101	SW	0.74	3,911.58	56.49	WATER WELLS

Wells and Additional Sources Detail Report

Permit:	-	Static Water Lvl Ft:	18
Legacy No:	-	Contractor License:	-
Station ID:	394754	Contractor Name:	-
Compliance No:	1112154	Driller Name:	?
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	20
Total Depth:	170	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	12/23/1987	Latitude:	283323.006736
Issue Date:	-	Longitude:	810827.128076
Well Street Address:	606 Lockwood Lot # 28, Bithlo		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1917372		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
105	S	0.75	3,960.38	63.69	WATER WELLS

Permit:	-	Static Water Lvl Ft:	15
Legacy No:	-	Contractor License:	-
Station ID:	287827	Contractor Name:	-
Compliance No:	1005095	Driller Name:	?
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	28
Total Depth:	120	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	02/15/1993	Latitude:	283310.509768
Issue Date:	-	Longitude:	810715.642768
Well Street Address:	368 Alison-daphne		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderition=Web&dDocName=EREG_1810674		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
106	ENE	0.76	4,028.36	68.88	WATER WELLS

Permit:	-	Static Water Lvl Ft:	18
Legacy No:	-	Contractor License:	-
Station ID:	174040	Contractor Name:	-
Compliance No:	839144	Driller Name:	Bill Pentz
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-

Wells and Additional Sources Detail Report

Casing Depth:	105	Section:	15
Total Depth:	110	Township:	22S
Diameter:	2	Range:	32E
Completion Date:	02/20/2000	Latitude:	283439.575028
Issue Date:	-	Longitude:	810637.504296
Well Street Address:	2518 4th St		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1553097		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
108	NNW	0.78	4,112.96	71.54	WATER WELLS

Permit:	-	Static Water Lvl Ft:	40
Legacy No:	-	Contractor License:	-
Station ID:	247138	Contractor Name:	-
Compliance No:	964331	Driller Name:	Michael E Burk?
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	9
Total Depth:	165	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	05/03/1994	Latitude:	283514.864424
Issue Date:	-	Longitude:	810800.806712
Well Street Address:	16700 Lake Pickett Rd., Chuluota		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1770246		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
113	SSE	0.81	4,293.12	63.18	WATER WELLS

Permit:	-	Static Water Lvl Ft:	8
Legacy No:	-	Contractor License:	-
Station ID:	85625	Contractor Name:	-
Compliance No:	534082	Driller Name:	KEITH RATCHFORD?
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	190	Section:	28
Total Depth:	195	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	04/10/2003	Latitude:	283309.831564
Issue Date:	-	Longitude:	810711.20998
Well Street Address:	17501 EVANS TRAIL DR.		
Documents:	Well Completion Report		

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Documents URL: https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1467578

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
122	N	0.88	4,655.53	60.08	WATER WELLS

Permit:	-	Static Water Lvl Ft:	35
Legacy No:	-	Contractor License:	-
Station ID:	247135	Contractor Name:	-
Compliance No:	964328	Driller Name:	?
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	4
Total Depth:	173	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	11/28/1994	Latitude:	283554.45978
Issue Date:	-	Longitude:	810739.762588
Well Street Address:	4014 Sunnybrook Ct. Lot # 17		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1770243		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
124	E	0.89	4,682.17	68.18	WATER WELLS

Permit:	-	Static Water Lvl Ft:	35
Legacy No:	-	Contractor License:	-
Station ID:	394723	Contractor Name:	-
Compliance No:	1112123	Driller Name:	?
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	15
Total Depth:	95	Township:	22S
Diameter:	2	Range:	32E
Completion Date:	12/29/1988	Latitude:	283418.270984
Issue Date:	-	Longitude:	810637.47294
Well Street Address:	4th St, Bithlo		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1917341		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
125	NW	0.89	4,697.35	74.45	WATER WELLS

Wells and Additional Sources Detail Report

Permit:	-	Static Water Lvl Ft:	3.5
Legacy No:	-	Contractor License:	-
Station ID:	106817	Contractor Name:	-
Compliance No:	763114	Driller Name:	-
Well Use:	Monitoring	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	2	Section:	8
Total Depth:	12	Township:	22S
Diameter:	2	Range:	32E
Completion Date:	01/26/1998	Latitude:	283514.78958
Issue Date:	-	Longitude:	810807.697364
Well Street Address:	16600 Lk Pickett Rd		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1505606		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
128	ESE	0.91	4,790.36	68.41	WATER WELLS

Permit:	-	Static Water Lvl Ft:	26
Legacy No:	-	Contractor License:	-
Station ID:	351196	Contractor Name:	-
Compliance No:	1068580	Driller Name:	?
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	FL
Casing Depth:	0	Section:	22
Total Depth:	120	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	02/07/1991	Latitude:	283407.102308
Issue Date:	-	Longitude:	810640.126752
Well Street Address:	18113 Lynbrook Ave, Bithlo, FL 32820		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1874316		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
133	SSE	0.95	5,002.17	61.20	WATER WELLS

Permit:	-	Static Water Lvl Ft:	30
Legacy No:	-	Contractor License:	-
Station ID:	221987	Contractor Name:	-
Compliance No:	887478	Driller Name:	Bill Pentz
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	28

Wells and Additional Sources Detail Report

Total Depth:	63	Township:	22S
Diameter:	0	Range:	32E
Completion Date:	05/30/2002	Latitude:	283309.538524
Issue Date:	-	Longitude:	810701.268004
Well Street Address:	17676 Evans Tr		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1593214		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
134	N	0.96	5,056.65	60.30	WATER WELLS

Permit:	-	Static Water Lvl Ft:	28
Legacy No:	-	Contractor License:	-
Station ID:	247134	Contractor Name:	-
Compliance No:	964327	Driller Name:	?
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	0	Section:	4
Total Depth:	170	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	10/28/1994	Latitude:	283559.024724
Issue Date:	-	Longitude:	810739.762588
Well Street Address:	4111 Sunnybrook Ct Lot # 8		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1770242		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
135	ESE	0.97	5,138.75	67.84	WATER WELLS

Permit:	-	Static Water Lvl Ft:	12
Legacy No:	-	Contractor License:	-
Station ID:	221438	Contractor Name:	-
Compliance No:	886843	Driller Name:	Kevith Ratchford?
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	83	Section:	22
Total Depth:	115	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	10/14/2006	Latitude:	283406.972816
Issue Date:	-	Longitude:	810636.079776
Well Street Address:	18144 Lynbrook Rd		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1770242		

Wells and Additional Sources Detail Report

on=Web&dDocName=EREG_1594507

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
135	ESE	0.97	5,138.75	67.84	WATER WELLS

Permit:	-	Static Water Lvl Ft:	10
Legacy No:	-	Contractor License:	-
Station ID:	220356	Contractor Name:	-
Compliance No:	885668	Driller Name:	Keith Rathchford
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	73	Section:	15
Total Depth:	105	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	02/02/2006	Latitude:	283406.972816
Issue Date:	-	Longitude:	810636.079776
Well Street Address:	18144 Lymbrook		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1601720		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
136	ESE	0.98	5,163.25	67.85	WATER WELLS

Permit:	-	Static Water Lvl Ft:	38
Legacy No:	-	Contractor License:	-
Station ID:	222055	Contractor Name:	-
Compliance No:	887546	Driller Name:	Rickey Parker
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	244	Section:	22
Total Depth:	320	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	02/04/2002	Latitude:	283407.167072
Issue Date:	-	Longitude:	810635.723664
Well Street Address:	18133 Lynbrook Rd		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&Renderit on=Web&dDocName=EREG_1595513		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
137	E	0.98	5,165.37	68.92	WATER WELLS

Permit:	-	Static Water Lvl Ft:	31
Legacy No:	-	Contractor License:	-

Wells and Additional Sources Detail Report

Station ID:	221354	Contractor Name:	-
Compliance No:	886759	Driller Name:	Miks Sikes?
Well Use:	Domestic	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	126	Section:	15
Total Depth:	126	Township:	22S
Diameter:	4	Range:	32E
Completion Date:	-	Latitude:	283428.7292
Issue Date:	-	Longitude:	810627.985896
Well Street Address:	18282 Hewlott Rd		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1600940		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
138	SSE	0.98	5,173.36	62.40	WATER WELLS

Permit:	-	Static Water Lvl Ft:	30
Legacy No:	-	Contractor License:	-
Station ID:	351215	Contractor Name:	-
Compliance No:	1068599	Driller Name:	-
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	FL
Casing Depth:	0	Section:	28
Total Depth:	120	Township:	22S
Diameter:	2	Range:	32E
Completion Date:	07/01/1991	Latitude:	283309.732744
Issue Date:	-	Longitude:	810658.775076
Well Street Address:	17705 Evans Trail, Orl, FL		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwmd.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&dDocName=EREG_1874335		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
138	SSE	0.98	5,173.36	62.40	WATER WELLS

Permit:	-	Static Water Lvl Ft:	30
Legacy No:	-	Contractor License:	-
Station ID:	106834	Contractor Name:	-
Compliance No:	763166	Driller Name:	?
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	105	Section:	28
Total Depth:	120	Township:	22S
Diameter:	2	Range:	32E

Wells and Additional Sources Detail Report

Completion Date:	07/01/1991	Latitude:	283309.732744
Issue Date:	-	Longitude:	810658.775076
Well Street Address:	17705 Evans Trail		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1485643		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
138	SSE	0.98	5,173.36	62.40	WATER WELLS

Permit:	-	Static Water Lvl Ft:	30
Legacy No:	-	Contractor License:	-
Station ID:	105774	Contractor Name:	-
Compliance No:	761306	Driller Name:	-
Well Use:	-	County:	Orange
Type of Work:	-	Location State:	-
Casing Depth:	105	Section:	28
Total Depth:	120	Township:	22S
Diameter:	2	Range:	32E
Completion Date:	07/01/1991	Latitude:	283309.732744
Issue Date:	-	Longitude:	810658.775076
Well Street Address:	17705 Evans Trail		
Documents:	Well Completion Report		
Documents URL:	https://permitting.sjrwm.com/apps/idcplg?IdcService=GET_FILE&coreContentOnly=1&RevisionSelectionMethod=Latest&allowInterrupt=1&RenderItem=Web&dDocName=EREG_1485928		

Water Well Construction Permits

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
35	NNE	0.24	1,278.45	69.28	WELL CONST PERM

Permit No:	111143-1	County Name:	Orange
Permit Type:	Water Well Construction	Parcel ID:	NULL
Permit Status:	Active	Section ID:	9
Cur Permit Iss Dt:	5/22/2007	Township ID:	22S
Latitude:	283524	Range ID:	32E
Longitude:	810703		
Project Description:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
44	NNE	0.38	2,000.88	67.24	WELL CONST PERM

Permit No:	111190-1	County Name:	Orange
Permit Type:	Water Well Construction	Parcel ID:	NULL

Wells and Additional Sources Detail Report

Permit Status:	Active	Section ID:	9
Cur Permit Iss Dt:	5/22/2007	Township ID:	22S
Latitude:	283522	Range ID:	32E
Longitude:	810652		
Project Description:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
98	NE	0.74	3,894.76	69.14	WELL CONST PERM

Permit No:	111276-1	County Name:	Orange
Permit Type:	Water Well Construction	Parcel ID:	NULL
Permit Status:	Active	Section ID:	10
Cur Permit Iss Dt:	5/22/2007	Township ID:	22S
Latitude:	283522	Range ID:	32E
Longitude:	810630		
Project Description:			

Well Surveillance Program Water Wells

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
2	SSW	0.05	250.92	70.76	WATER WELLS

FLUW ID:	AAC0793	Property ID:	
Permit No:	3484269	Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	284288
Req No:		GPS ID:	284288
Status:	ABANDONED	Resident Type:	
Well Type Code:	41	Name:	BP CONNECT #60558
Well Type:	Non-Community PWS	First Name:	
Well Depth:		Last Name:	
Potable Status:	NON-POTABLE	Phone:	
Action:		Phone Ext:	
Casing Material:		County:	ORANGE
Length:		Height Abv Ellipsoid:	0
Diameter:		Longitude:	-81.1302
Sanitary Seal:		Latitude:	28.5615
Agency:		Datum:	WS1984
Large PWS:	NO	GPS Date:	
PWS Design:	14400	Loc Method Code:	Unknown
PWS Verify:	0	Loc Method:	
Insp F Name:		Software:	
Insp L Name:		Streetside:	
Insp CHD:			
Address:	16891 E COLONIAL DR		
City:	BITHLO		

Wells and Additional Sources Detail Report

Comment: This store now connected to community H20.

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
4	SSW	0.05	276.15	70.35	WATER WELLS

FLUW ID:	AAC0792	Property ID:	
Permit No:	3484215	Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	284286
Req No:	47678	GPS ID:	284286
Status:	ACTIVE	Resident Type:	OWNER
Well Type Code:	41	Name:	CIRCLE K
Well Type:	Non-Community PWS	First Name:	
Well Depth:	0	Last Name:	
Potable Status:	POTABLE	Phone:	
Action:		Phone Ext:	
Casing Material:	BLACK STEEL	County:	ORANGE
Length:	0	Height Abv Ellipsoid:	23.06
Diameter:	4	Longitude:	-81.128714
Sanitary Seal:	Yes	Latitude:	28.560847
Agency:	DOH	Datum:	WS1984
Large PWS:	NO	GPS Date:	1/9/2009 0:00:00
PWS Design:	14400	Loc Method Code:	DGPS
PWS Verify:	0	Loc Method:	Differentially Corrected GPS
Insp F Name:	GINGER	Software:	Well_Solo_v2
Insp L Name:	HANCOCK	Streetside:	No
Insp CHD:	VOLUSIA		
Address:	16959 E COLONIAL DR		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
7	SSW	0.09	477.23	69.77	WATER WELLS

FLUW ID:	AAB0355	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:	480365601	Project ID:	ANDREW
Other ID:		Loc ID:	282750
Req No:		GPS ID:	282750
Status:	ACTIVE	Resident Type:	
Well Type Code:	42	Name:	EAST COLONIAL AUTO PARTS
Well Type:	Limited Use PWS	First Name:	
Well Depth:		Last Name:	
Potable Status:	POTABLE	Phone:	
Action:	NO ACTION AT THIS TIME	Phone Ext:	
Casing Material:	Galvanized	County:	ORANGE

Wells and Additional Sources Detail Report

Length:		Height Abv Ellipsoid:	-11.91
Diameter:	2	Longitude:	-81.128166
Sanitary Seal:	Yes	Latitude:	28.560547
Agency:		Datum:	WS1984
Large PWS:	NO	GPS Date:	2/29/2000 8:14:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:	0	Loc Method:	Differentially Corrected GPS
Insp F Name:		Software:	
Insp L Name:		Streetside:	
Insp CHD:			
Address:	16969 E COLONIAL DR		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
18	S	0.16	828.12	63.71	WATER WELLS

FLUW ID:	AAB0356	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	282752
Req No:		GPS ID:	282752
Status:	ACTIVE	Resident Type:	
Well Type Code:	43	Name:	BASS
Well Type:	Private	First Name:	
Well Depth:		Last Name:	
Potable Status:	POTABLE	Phone:	
Action:		Phone Ext:	
Casing Material:	Galvanized	County:	ORANGE
Length:		Height Abv Ellipsoid:	-6.04
Diameter:	2	Longitude:	-81.128131
Sanitary Seal:	Yes	Latitude:	28.558852
Agency:		Datum:	WS1984
Large PWS:	NO	GPS Date:	2/29/2000 8:29:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:	0	Loc Method:	Differentially Corrected GPS
Insp F Name:		Software:	
Insp L Name:		Streetside:	
Insp CHD:			
Address:	725 STORY PARTIN RD		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
19	S	0.16	866.47	63.88	WATER WELLS

Wells and Additional Sources Detail Report

FLUW ID:	AAB0357	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	282754
Req No:		GPS ID:	282754
Status:	ACTIVE	Resident Type:	
Well Type Code:	43	Name:	CORNELISON
Well Type:	Private	First Name:	
Well Depth:		Last Name:	
Potable Status:	POTABLE	Phone:	
Action:		Phone Ext:	
Casing Material:	Galvanized	County:	ORANGE
Length:		Height Abv Ellipsoid:	-11.01
Diameter:	2	Longitude:	-81.127989
Sanitary Seal:	Yes	Latitude:	28.558816
Agency:		Datum:	WS1984
Large PWS:	NO	GPS Date:	2/29/2000 8:46:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:	0	Loc Method:	Differentially Corrected GPS
Insp F Name:		Software:	
Insp L Name:		Streetside:	
Insp CHD:			
Address:	17044 GRISSOM RD		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
21	S	0.19	995.75	69.57	WATER WELLS

FLUW ID:	AAJ1024	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:	480434501	Project ID:	SUPER
Other ID:		Loc ID:	980704
Req No:		GPS ID:	980704
Status:	ACTIVE	Resident Type:	OWNER
Well Type Code:	42	Name:	J & B AUTO
Well Type:	Limited Use PWS	First Name:	
Well Depth:	0	Last Name:	
Potable Status:	POTABLE	Phone:	407-568-2131
Action:	UNFILTERED	Phone Ext:	
Casing Material:	GALVANIZED	County:	ORANGE
Length:	0	Height Abv Ellipsoid:	26.72
Diameter:	2	Longitude:	-81.126594
Sanitary Seal:	Yes	Latitude:	28.560201
Agency:	DOH	Datum:	
Large PWS:		GPS Date:	2/4/2009 0:00:00

Wells and Additional Sources Detail Report

PWS Design:		Loc Method Code:	DGPS
PWS Verify:		Loc Method:	Differentially Corrected GPS
Insp F Name:	GINGER	Software:	Well_Solo_v2
Insp L Name:	HANCOCK	Streetside:	No
Insp CHD:	VOLUSIA		
Address:	17105 E COLONIAL DR		
City:	ORLANDO		
Comment:	This is 2nd well on property; Main well. 10 wells already sampled.		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
22	S	0.19	1,008.15	69.61	WATER WELLS

FLUW ID:	AAG2664	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:	480069101	Project ID:	ANDREW
Other ID:		Loc ID:	462254
Req No:		GPS ID:	462254
Status:	INACTIVE	Resident Type:	
Well Type Code:	43	Name:	NORMAN C. HORTON SR.
Well Type:	Private	First Name:	
Well Depth:		Last Name:	
Potable Status:	POTABLE	Phone:	
Action:	NEW WELL	Phone Ext:	
Casing Material:		County:	ORANGE
Length:		Height Abv Ellipsoid:	
Diameter:	0	Longitude:	-81.126547
Sanitary Seal:		Latitude:	28.560218
Agency:		Datum:	WS1984
Large PWS:	NO	GPS Date:	
PWS Design:		Loc Method Code:	DGPS
PWS Verify:	0	Loc Method:	Differentially Corrected GPS
Insp F Name:		Software:	
Insp L Name:		Streetside:	
Insp CHD:			
Address:	17105 E COLONIAL DR		
City:	ORLANDO		
Comment:	No power to well; pump being replaced. New well AAJ1024. 10 wells already sampled.		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
24	SSW	0.20	1,043.46	58.49	WATER WELLS

FLUW ID:	AAM2310	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	979300
Req No:	47678	GPS ID:	979300

Wells and Additional Sources Detail Report

Status:	ACTIVE	Resident Type:	OWNER
Well Type Code:	43	Name:	
Well Type:	Private	First Name:	JOSEPHINE
Well Depth:	0	Last Name:	HUDSON
Potable Status:	POTABLE	Phone:	
Action:		Phone Ext:	
Casing Material:	GALVANIZED	County:	ORANGE
Length:	0	Height Abv Ellipsoid:	-21.17
Diameter:	2	Longitude:	-81.128519
Sanitary Seal:	Yes	Latitude:	28.557991
Agency:	DOH	Datum:	
Large PWS:		GPS Date:	1/9/2009 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:		Loc Method:	Differentially Corrected GPS
Insp F Name:	GINGER	Software:	Well_Solo_v2
Insp L Name:	HANCOCK	Streetside:	No
Insp CHD:	VOLUSIA		
Address:	701 STORY PARTIN LN		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
25	S	0.20	1,050.34	66.28	WATER WELLS

FLUW ID:	AAB0352	Property ID:	
Permit No:	3484143	Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	282744
Req No:		GPS ID:	282744
Status:	ABANDONED	Resident Type:	
Well Type Code:	46	Name:	OLD CHENEY MHP
Well Type:	Small (<150,000 gpd) Community PWS	First Name:	
Well Depth:		Last Name:	
Potable Status:	NON-POTABLE	Phone:	
Action:		Phone Ext:	
Casing Material:	Other	County:	ORANGE
Length:		Height Abv Ellipsoid:	-1.52
Diameter:	4	Longitude:	-81.126895
Sanitary Seal:	Yes	Latitude:	28.55916
Agency:		Datum:	WS1984
Large PWS:	NO	GPS Date:	2/28/2000 7:19:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:	0	Loc Method:	Differentially Corrected GPS
Insp F Name:		Software:	
Insp L Name:		Streetside:	
Insp CHD:			

Wells and Additional Sources Detail Report

Address: 17102 E COLONIAL DR
 City: ORLANDO
 Comment: This well is COMPLETELY dismantled.

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
28	S	0.21	1,097.21	60.67	WATER WELLS

FLUW ID: AAH9448
 Permit No:
 WSRP ID:
 Other ID:
 Req No:
 Status: ACTIVE
 Well Type Code: 43
 Well Type: Private
 Well Depth:
 Potable Status: POTABLE
 Action:
 Casing Material: PVC
 Length:
 Diameter: 2
 Sanitary Seal: Yes
 Agency:
 Large PWS: NO
 PWS Design:
 PWS Verify: 0
 Insp F Name:
 Insp L Name:
 Insp CHD:
 Address: 724 CARPENTER
 City: ORLANDO
 Comment:

Property ID:
 Parcel ID:
 Project ID: SUPER
 Loc ID: 156928
 GPS ID: 156928
 Resident Type:
 Name: BEASLEY
 First Name:
 Last Name:
 Phone:
 Phone Ext:
 County: ORANGE
 Height Abv Ellipsoid: 21.65
 Longitude: -81.127689
 Latitude: 28.55822
 Datum: WS1984
 GPS Date: 5/19/2004 0:00:00
 Loc Method Code: DGPS
 Loc Method: Differentially Corrected GPS
 Software:
 Streetside:

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
29	S	0.22	1,142.81	64.15	WATER WELLS

FLUW ID: AAM2312
 Permit No:
 WSRP ID:
 Other ID:
 Req No: 50928
 Status: ACTIVE
 Well Type Code: 41
 Well Type: Non-Community PWS
 Well Depth: 0
 Potable Status: POTABLE

Property ID:
 Parcel ID:
 Project ID: SUPER
 Loc ID: 979296
 GPS ID: 979296
 Resident Type: OWNER
 Name: CARPENTER MHP
 First Name:
 Last Name:
 Phone:

Wells and Additional Sources Detail Report

Action:		Phone Ext:	
Casing Material:	BLACK STEEL	County:	ORANGE
Length:	0	Height Abv Ellipsoid:	20.6
Diameter:	4	Longitude:	-81.126954
Sanitary Seal:	Yes	Latitude:	28.558653
Agency:	DOH	Datum:	
Large PWS:		GPS Date:	6/2/2010 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:		Loc Method:	Differentially Corrected GPS
Insp F Name:	LEE	Software:	Well_Solo_v2
Insp L Name:	JACKSON	Streetside:	No
Insp CHD:	VOLUSIA		
Address:	CARPENTER RD		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
30	S	0.22	1,144.67	65.27	WATER WELLS

FLUW ID:	AAG2738	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:	480440701	Project ID:	SUPER
Other ID:		Loc ID:	331636
Req No:		GPS ID:	331636
Status:	ACTIVE	Resident Type:	
Well Type Code:	42	Name:	AMERICAN LEGION
Well Type:	Limited Use PWS	First Name:	
Well Depth:		Last Name:	
Potable Status:	POTABLE	Phone:	
Action:	NO ACTION AT THIS TIME	Phone Ext:	
Casing Material:	PVC	County:	ORANGE
Length:		Height Abv Ellipsoid:	36.15
Diameter:	4	Longitude:	-81.126758
Sanitary Seal:	Yes	Latitude:	28.558871
Agency:		Datum:	WS1984
Large PWS:	NO	GPS Date:	4/1/2004 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:	0	Loc Method:	Differentially Corrected GPS
Insp F Name:		Software:	
Insp L Name:		Streetside:	
Insp CHD:			
Address:	17142 E COLONIAL		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
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Wells and Additional Sources Detail Report

31 S 0.22 1,175.51 59.69 WATER WELLS

FLUW ID:	AAN2432	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	1000134
Req No:	50928	GPS ID:	1000134
Status:	ACTIVE	Resident Type:	OWNER
Well Type Code:	43	Name:	
Well Type:	Private	First Name:	CATHERINE
Well Depth:	0	Last Name:	BEERY
Potable Status:	POTABLE	Phone:	407-535-6462
Action:		Phone Ext:	
Casing Material:	GALVANIZED	County:	ORANGE
Length:	0	Height Abv Ellipsoid:	22.45
Diameter:	2	Longitude:	-81.127677
Sanitary Seal:	Yes	Latitude:	28.557966
Agency:	DOH	Datum:	
Large PWS:		GPS Date:	6/2/2010 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:		Loc Method:	Differentially Corrected GPS
Insp F Name:	LEE	Software:	Well_Solo_v2
Insp L Name:	JACKSON	Streetside:	No
Insp CHD:	VOLUSIA		
Address:	716 CARPENTER RD		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
32	S	0.22	1,186.73	57.59	WATER WELLS

FLUW ID:	AAG2739	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	331638
Req No:		GPS ID:	331638
Status:	ACTIVE	Resident Type:	
Well Type Code:	43	Name:	VIOLA RHEAUME
Well Type:	Private	First Name:	
Well Depth:		Last Name:	
Potable Status:	POTABLE	Phone:	
Action:		Phone Ext:	
Casing Material:	PVC	County:	ORANGE
Length:		Height Abv Ellipsoid:	40.3
Diameter:	2	Longitude:	-81.128464
Sanitary Seal:	Yes	Latitude:	28.557589

Wells and Additional Sources Detail Report

Agency:		Datum:	WS1984
Large PWS:	NO	GPS Date:	4/1/2004 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:	0	Loc Method:	Differentially Corrected GPS
Insp F Name:		Software:	
Insp L Name:		Streetside:	
Insp CHD:			
Address:	635 STORY PARTIN		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
34	S	0.23	1,195.35	59.07	WATER WELLS

FLUW ID:	AAN2431	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	1000132
Req No:	50928	GPS ID:	1000132
Status:	ACTIVE	Resident Type:	OWNER
Well Type Code:	43	Name:	
Well Type:	Private	First Name:	VIOLA
Well Depth:	0	Last Name:	RHEAUME
Potable Status:	POTABLE	Phone:	407-568-3627
Action:		Phone Ext:	
Casing Material:	GALVANIZED	County:	ORANGE
Length:	0	Height Abv Ellipsoid:	22.4
Diameter:	2	Longitude:	-81.127731
Sanitary Seal:	Yes	Latitude:	28.557871
Agency:	DOH	Datum:	
Large PWS:		GPS Date:	6/2/2010 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:		Loc Method:	Differentially Corrected GPS
Insp F Name:	LEE	Software:	Well_Solo_v2
Insp L Name:	JACKSON	Streetside:	No
Insp CHD:	VOLUSIA		
Address:	708 CARPENTER RD		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
38	S	0.25	1,339.96	66.11	WATER WELLS

FLUW ID:	AAB0358	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:		Project ID:	SUPER

Wells and Additional Sources Detail Report

Other ID:	Loc ID:	282756
Req No:	GPS ID:	282756
Status: ACTIVE	Resident Type:	
Well Type Code: 42	Name:	QUALITY AUTO WORKS
Well Type: Limited Use PWS	First Name:	
Well Depth:	Last Name:	
Potable Status: POTABLE	Phone:	
Action:	Phone Ext:	
Casing Material: Other	County:	ORANGE
Length:	Height Abv Ellipsoid:	-14.95
Diameter: 4	Longitude:	-81.125967
Sanitary Seal: Yes	Latitude:	28.558993
Agency:	Datum:	WS1984
Large PWS: NO	GPS Date:	2/29/2000 9:03:00
PWS Design:	Loc Method Code:	DGPS
PWS Verify: 0	Loc Method:	Differentially Corrected GPS
Insp F Name:	Software:	
Insp L Name:	Streetside:	
Insp CHD:		
Address: 17146 E COLONIAL DR		
City: ORLANDO		
Comment:		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
39	S	0.28	1,459.51	59.32	WATER WELLS

FLUW ID: AAM2311	Property ID:
Permit No:	Parcel ID:
WSRP ID:	Project ID: SUPER
Other ID:	Loc ID: 979298
Req No: 47678	GPS ID: 979298
Status: ACTIVE	Resident Type: OWNER
Well Type Code: 43	Name:
Well Type: Private	First Name: JAMES
Well Depth: 0	Last Name: LOWE
Potable Status: POTABLE	Phone:
Action:	Phone Ext:
Casing Material: GALVANIZED	County: ORANGE
Length: 0	Height Abv Ellipsoid: 19.49
Diameter: 2	Longitude: -81.128492
Sanitary Seal: Yes	Latitude: 28.556796
Agency: DOH	Datum:
Large PWS:	GPS Date: 1/9/2009 0:00:00
PWS Design:	Loc Method Code: DGPS
PWS Verify:	Loc Method: Differentially Corrected GPS
Insp F Name: GINGER	Software: Well_Solo_v2

Wells and Additional Sources Detail Report

Insp L Name:	HANCOCK	Streetside:	No
Insp CHD:	VOLUSIA		
Address:	619 STORY PARTIN DR		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
40	S	0.30	1,572.70	56.81	WATER WELLS

FLUW ID:	AAN2430	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	1000130
Req No:	50928	GPS ID:	1000130
Status:	ACTIVE	Resident Type:	OWNER
Well Type Code:	43	Name:	
Well Type:	Private	First Name:	JAY
Well Depth:	0	Last Name:	MAGUIRE
Potable Status:	POTABLE	Phone:	407-443-3638
Action:		Phone Ext:	
Casing Material:	GALVANIZED	County:	ORANGE
Length:	0	Height Abv Ellipsoid:	21.23
Diameter:	2	Longitude:	-81.127733
Sanitary Seal:	Yes	Latitude:	28.556702
Agency:	DOH	Datum:	
Large PWS:		GPS Date:	6/2/2010 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:		Loc Method:	Differentially Corrected GPS
Insp F Name:	LEE	Software:	Well_Solo_v2
Insp L Name:	JACKSON	Streetside:	No
Insp CHD:	VOLUSIA		
Address:	622 CARPENTER RD		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
42	S	0.34	1,801.40	60.40	WATER WELLS

FLUW ID:	AAN2439	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	1000124
Req No:	50928	GPS ID:	1000124
Status:	ACTIVE	Resident Type:	OWNER
Well Type Code:	43	Name:	
Well Type:	Private	First Name:	TERRY

Wells and Additional Sources Detail Report

Well Depth:	0	Last Name:	COOPER
Potable Status:	POTABLE	Phone:	321-804-4706
Action:		Phone Ext:	
Casing Material:	GALVANIZED	County:	ORANGE
Length:	0	Height Abv Ellipsoid:	26.91
Diameter:	2	Longitude:	-81.128607
Sanitary Seal:	Yes	Latitude:	28.555807
Agency:	DOH	Datum:	
Large PWS:		GPS Date:	6/2/2010 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:		Loc Method:	Differentially Corrected GPS
Insp F Name:	LEE	Software:	Well_Solo_v2
Insp L Name:	JACKSON	Streetside:	Yes
Insp CHD:	VOLUSIA		
Address:	537 STORY PARTIN RD		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
45	S	0.39	2,061.01	53.36	WATER WELLS

FLUW ID:	AAH7370	Property ID:	
Permit No:	3484129	Parcel ID:	
WSRP ID:	480435601	Project ID:	DEP
Other ID:		Loc ID:	153770
Req No:		GPS ID:	153770
Status:	ACTIVE	Resident Type:	
Well Type Code:	41	Name:	BOWDEN TRAILER PARK
Well Type:	Non-Community PWS	First Name:	
Well Depth:	0	Last Name:	
Potable Status:	POTABLE	Phone:	
Action:	UNFILTERED	Phone Ext:	
Casing Material:		County:	ORANGE
Length:		Height Abv Ellipsoid:	0
Diameter:		Longitude:	-81.126362
Sanitary Seal:		Latitude:	28.555818
Agency:		Datum:	WS1984
Large PWS:	NO	GPS Date:	12/21/2002 0:00:00
PWS Design:	15840	Loc Method Code:	DGPS
PWS Verify:	0	Loc Method:	Differentially Corrected GPS
Insp F Name:		Software:	
Insp L Name:		Streetside:	
Insp CHD:			
Address:	514 GLEN RD		
City:	ORLANDO		
Comment:	DATUM 84		

Wells and Additional Sources Detail Report

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
49	S	0.40	2,092.18	57.43	WATER WELLS

FLUW ID:	AAN2429	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	1000128
Req No:	50928	GPS ID:	1000128
Status:	ACTIVE	Resident Type:	OWNER
Well Type Code:	43	Name:	
Well Type:	Private	First Name:	TONYA
Well Depth:	0	Last Name:	DAVIS
Potable Status:	POTABLE	Phone:	772-519-4601
Action:		Phone Ext:	
Casing Material:	GALVANIZED	County:	ORANGE
Length:	0	Height Abv Ellipsoid:	23.1
Diameter:	2	Longitude:	-81.127765
Sanitary Seal:	Yes	Latitude:	28.55517
Agency:	DOH	Datum:	
Large PWS:		GPS Date:	6/2/2010 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:		Loc Method:	Differentially Corrected GPS
Insp F Name:	LEE	Software:	Well_Solo_v2
Insp L Name:	JACKSON	Streetside:	No
Insp CHD:	VOLUSIA		
Address:	520 CARPENTER RD		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
51	S	0.45	2,393.13	59.55	WATER WELLS

FLUW ID:	AAN2438	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	1000122
Req No:	50928	GPS ID:	1000122
Status:	ACTIVE	Resident Type:	OWNER
Well Type Code:	43	Name:	
Well Type:	Private	First Name:	BILL
Well Depth:	0	Last Name:	PEACHER
Potable Status:	POTABLE	Phone:	407-579-9175
Action:		Phone Ext:	
Casing Material:	GALVANIZED	County:	ORANGE
Length:	0	Height Abv Ellipsoid:	32.56

Wells and Additional Sources Detail Report

Diameter:	2	Longitude:	-81.128524
Sanitary Seal:	Yes	Latitude:	28.554167
Agency:	DOH	Datum:	
Large PWS:		GPS Date:	6/2/2010 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:		Loc Method:	Differentially Corrected GPS
Insp F Name:	LEE	Software:	Well_Solo_v2
Insp L Name:	JACKSON	Streetside:	No
Insp CHD:	VOLUSIA		
Address:	425 STORY PARTIN RD		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
55	S	0.46	2,435.47	67.93	WATER WELLS

FLUW ID:	AAC0823	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	284334
Req No:		GPS ID:	284334
Status:	ACTIVE	Resident Type:	OWNER
Well Type Code:	42	Name:	ALL FOREIGN & DOMESTIC USED AUTO
Well Type:	Limited Use PWS	First Name:	
Well Depth:	0	Last Name:	
Potable Status:	POTABLE	Phone:	
Action:		Phone Ext:	
Casing Material:	GALVANIZED	County:	ORANGE
Length:	0	Height Abv Ellipsoid:	23.39
Diameter:	2	Longitude:	-81.122359
Sanitary Seal:	Yes	Latitude:	28.558891
Agency:	DOH	Datum:	WS1984
Large PWS:	NO	GPS Date:	7/14/2009 0:00:00
PWS Design:	10800	Loc Method Code:	DGPS
PWS Verify:	0	Loc Method:	Differentially Corrected GPS
Insp F Name:	GINGER	Software:	Well_Solo_v2
Insp L Name:	HANCOCK	Streetside:	No
Insp CHD:	VOLUSIA		
Address:	17421 E COLONIAL DR		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
56	S	0.47	2,463.74	59.28	WATER WELLS

Wells and Additional Sources Detail Report

FLUW ID:	AAN2435	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:	480436801	Project ID:	SUPER
Other ID:		Loc ID:	1000120
Req No:	50928	GPS ID:	1000120
Status:	ACTIVE	Resident Type:	OWNER
Well Type Code:	43	Name:	
Well Type:	Private	First Name:	DOROTHY
Well Depth:	0	Last Name:	FRANKLIN
Potable Status:	POTABLE	Phone:	407-361-6681
Action:	UNFILTERED	Phone Ext:	
Casing Material:	GALVANIZED	County:	ORANGE
Length:	0	Height Abv Ellipsoid:	31.58
Diameter:	2	Longitude:	-81.128542
Sanitary Seal:	Yes	Latitude:	28.553968
Agency:	DOH	Datum:	
Large PWS:		GPS Date:	6/2/2010 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:		Loc Method:	Differentially Corrected GPS
Insp F Name:	LEE	Software:	Well_Solo_v2
Insp L Name:	JACKSON	Streetside:	No
Insp CHD:	VOLUSIA		
Address:	321 STORY PARTIN RD		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
58	S	0.50	2,623.89	54.50	WATER WELLS

FLUW ID:	AAN2428	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	1000126
Req No:	50928	GPS ID:	1000126
Status:	ACTIVE	Resident Type:	OWNER
Well Type Code:	43	Name:	
Well Type:	Private	First Name:	ROBERT
Well Depth:	0	Last Name:	BRANTLY
Potable Status:	POTABLE	Phone:	407-657-4742
Action:		Phone Ext:	
Casing Material:	GALVANIZED	County:	ORANGE
Length:	0	Height Abv Ellipsoid:	30.24
Diameter:	2	Longitude:	-81.127773
Sanitary Seal:	Yes	Latitude:	28.553652
Agency:	DOH	Datum:	
Large PWS:		GPS Date:	6/2/2010 0:00:00

Wells and Additional Sources Detail Report

PWS Design:	Loc Method Code:	DGPS
PWS Verify:	Loc Method:	Differentially Corrected GPS
Insp F Name: LEE	Software:	Well_Solo_v2
Insp L Name: JACKSON	Streetside:	No
Insp CHD: VOLUSIA		
Address: 402 CARPENTER RD		
City: ORLANDO		
Comment:		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
63	S	0.53	2,815.48	56.31	WATER WELLS

FLUW ID: AAN2436	Property ID:
Permit No:	Parcel ID:
WSRP ID:	Project ID: SUPER
Other ID:	Loc ID: 1000118
Req No: 50928	GPS ID: 1000118
Status: ACTIVE	Resident Type: OWNER
Well Type Code: 43	Name:
Well Type: Private	First Name: JOSEPH
Well Depth: 0	Last Name: DIDDLE
Potable Status: POTABLE	Phone: 407-247-9127
Action:	Phone Ext:
Casing Material: GALVANIZED	County: ORANGE
Length: 0	Height Abv Ellipsoid: 30.26
Diameter: 2	Longitude: -81.128531
Sanitary Seal: Yes	Latitude: 28.552992
Agency: DOH	Datum:
Large PWS:	GPS Date: 6/2/2010 0:00:00
PWS Design:	Loc Method Code: DGPS
PWS Verify:	Loc Method: Differentially Corrected GPS
Insp F Name: LEE	Software: Well_Solo_v2
Insp L Name: JACKSON	Streetside: Yes
Insp CHD: VOLUSIA	
Address: 313 STORY PARTIN RD	
City: ORLANDO	
Comment:	

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
64	S	0.54	2,864.37	55.21	WATER WELLS

FLUW ID: AAJ1031	Property ID:
Permit No:	Parcel ID:
WSRP ID:	Project ID: SUPER
Other ID:	Loc ID: 981418
Req No: 55555	GPS ID: 981418

Wells and Additional Sources Detail Report

Status:	ACTIVE	Resident Type:	OWNER
Well Type Code:	43	Name:	
Well Type:	Private	First Name:	MICHAEL
Well Depth:	0	Last Name:	WALDROP
Potable Status:	POTABLE	Phone:	
Action:		Phone Ext:	
Casing Material:	GALVANIZED	County:	ORANGE
Length:	0	Height Abv Ellipsoid:	20.97
Diameter:	2	Longitude:	-81.125496
Sanitary Seal:	Yes	Latitude:	28.553712
Agency:	DOH	Datum:	
Large PWS:		GPS Date:	2/17/2009 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:		Loc Method:	Differentially Corrected GPS
Insp F Name:	GINGER	Software:	Well_Solo_v2
Insp L Name:	HANCOCK	Streetside:	No
Insp CHD:	VOLUSIA		
Address:	429 GLEN RD		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
66	S	0.58	3,050.23	55.06	WATER WELLS

FLUW ID:	AAN2437	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	1000116
Req No:	50928	GPS ID:	1000116
Status:	ACTIVE	Resident Type:	OWNER
Well Type Code:	43	Name:	
Well Type:	Private	First Name:	NORMAN
Well Depth:	0	Last Name:	HITT
Potable Status:	POTABLE	Phone:	321-202-6684
Action:		Phone Ext:	
Casing Material:	GALVANIZED	County:	ORANGE
Length:	0	Height Abv Ellipsoid:	28.64
Diameter:	2	Longitude:	-81.128476
Sanitary Seal:	Yes	Latitude:	28.552347
Agency:	DOH	Datum:	
Large PWS:		GPS Date:	6/2/2010 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:		Loc Method:	Differentially Corrected GPS
Insp F Name:	LEE	Software:	Well_Solo_v2
Insp L Name:	JACKSON	Streetside:	No
Insp CHD:	VOLUSIA		

Wells and Additional Sources Detail Report

Address: 301 STORY PARTIN RD
 City: ORLANDO
 Comment:

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
67	S	0.59	3,105.50	50.89	WATER WELLS

FLUW ID: AAN2434	Property ID:
Permit No:	Parcel ID:
WSRP ID:	Project ID: SUPER
Other ID:	Loc ID: 1000114
Req No: 50928	GPS ID: 1000114
Status: ACTIVE	Resident Type: OWNER
Well Type Code: 43	Name:
Well Type: Private	First Name: PAMALA
Well Depth: 0	Last Name: CAPPS
Potable Status: POTABLE	Phone: 407-568-6328
Action:	Phone Ext:
Casing Material: GALVANIZED	County: ORANGE
Length: 0	Height Abv Ellipsoid: 24.69
Diameter: 2	Longitude: -81.127681
Sanitary Seal: Yes	Latitude: 28.552312
Agency: DOH	Datum:
Large PWS:	GPS Date: 6/2/2010 0:00:00
PWS Design:	Loc Method Code: DGPS
PWS Verify:	Loc Method: Differentially Corrected GPS
Insp F Name: LEE	Software: Well_Solo_v2
Insp L Name: JACKSON	Streetside: No
Insp CHD: VOLUSIA	
Address: 322 CARPENTER RD	
City: ORLANDO	
Comment:	

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
71	NE	0.61	3,205.67	65.10	WATER WELLS

FLUW ID: AAM1825	Property ID:
Permit No:	Parcel ID:
WSRP ID: 480432301	Project ID: SUPER
Other ID:	Loc ID: 987436
Req No: 49550	GPS ID: 987436
Status: ACTIVE	Resident Type: OWNER
Well Type Code: 42	Name: U.C.F. ROWING FACILITY
Well Type: Limited Use PWS	First Name:
Well Depth: 0	Last Name:
Potable Status: POTABLE	Phone: 407-823-4299

Wells and Additional Sources Detail Report

Action:	UNFILTERED	Phone Ext:	
Casing Material:	BLACK STEEL	County:	ORANGE
Length:	0	Height Abv Ellipsoid:	22.68
Diameter:	4	Longitude:	-81.111513
Sanitary Seal:	Yes	Latitude:	28.591723
Agency:	DOH	Datum:	
Large PWS:		GPS Date:	7/14/2009 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:		Loc Method:	Differentially Corrected GPS
Insp F Name:	GINGER	Software:	Well_Solo_v2
Insp L Name:	HANCOCK	Streetside:	No
Insp CHD:	VOLUSIA		
Address:	18011 LAKE PICKET RD		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
75	NE	0.63	3,314.62	68.88	WATER WELLS

FLUW ID:	AAH8754	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:	480353001	Project ID:	SUPER
Other ID:		Loc ID:	467672
Req No:	49550	GPS ID:	467672
Status:	ACTIVE	Resident Type:	OWNER
Well Type Code:	43	Name:	
Well Type:	Private	First Name:	M. GENE
Well Depth:	0	Last Name:	BOWLES
Potable Status:	POTABLE	Phone:	
Action:	UNFILTERED	Phone Ext:	
Casing Material:	GALVANIZED	County:	ORANGE
Length:	0	Height Abv Ellipsoid:	15.11
Diameter:	2	Longitude:	-81.109939
Sanitary Seal:	Yes	Latitude:	28.587165
Agency:	DOH	Datum:	WS1984
Large PWS:	NO	GPS Date:	8/26/2009 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:	0	Loc Method:	Differentially Corrected GPS
Insp F Name:	GINGER	Software:	Well_Solo_v2
Insp L Name:	HANCOCK	Streetside:	No
Insp CHD:	VOLUSIA		
Address:	3140 4TH ST		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
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Wells and Additional Sources Detail Report

77	SW	0.63	3,345.39	64.03	WATER WELLS
FLUW ID:	AAC0820	Property ID:			
Permit No:	3484296	Parcel ID:			
WSRP ID:		Project ID:	SUPER		
Other ID:		Loc ID:	284330		
Req No:		GPS ID:	284330		
Status:	ACTIVE	Resident Type:			
Well Type Code:	41	Name:	BOB'S MARKET		
Well Type:	Non-Community PWS	First Name:			
Well Depth:		Last Name:			
Potable Status:	POTABLE	Phone:			
Action:		Phone Ext:			
Casing Material:		County:	ORANGE		
Length:		Height Abv Ellipsoid:	0		
Diameter:		Longitude:	-81.1398		
Sanitary Seal:		Latitude:	28.5629		
Agency:		Datum:	WS1984		
Large PWS:	NO	GPS Date:			
PWS Design:	6480	Loc Method Code:	Unknown		
PWS Verify:	0	Loc Method:			
Insp F Name:		Software:			
Insp L Name:		Streetside:			
Insp CHD:					
Address:					
City:	ORLANDO				
Comment:					

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
78	SSE	0.64	3,372.43	67.95	WATER WELLS

FLUW ID:	AAC3026	Property ID:			
Permit No:	3484389	Parcel ID:			
WSRP ID:		Project ID:	DEP		
Other ID:		Loc ID:	107684		
Req No:		GPS ID:	107684		
Status:	ACTIVE	Resident Type:			
Well Type Code:	41	Name:	BOTTLE CAPS BAR & GRILL		
Well Type:	Non-Community PWS	First Name:			
Well Depth:	143	Last Name:			
Potable Status:	POTABLE	Phone:			
Action:		Phone Ext:			
Casing Material:		County:	ORANGE		
Length:		Height Abv Ellipsoid:	0		
Diameter:		Longitude:	-81.120328		
Sanitary Seal:		Latitude:	28.556447		

Wells and Additional Sources Detail Report

Agency:		Datum:	WS1984
Large PWS:	NO	GPS Date:	12/21/2002 0:00:00
PWS Design:	5760	Loc Method Code:	DGPS
PWS Verify:	0	Loc Method:	Differentially Corrected GPS
Insp F Name:		Software:	
Insp L Name:		Streetside:	
Insp CHD:			
Address:	17502 E COLONIAL DR		
City:	ORLANDO		
Comment:	DATUM 84		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
90	S	0.70	3,701.76	43.82	WATER WELLS

FLUW ID:	AAH7369	Property ID:	
Permit No:	3481016	Parcel ID:	
WSRP ID:		Project ID:	DEP
Other ID:		Loc ID:	153768
Req No:		GPS ID:	153768
Status:	ACTIVE	Resident Type:	
Well Type Code:	46	Name:	PINE ISLE MOBILE VILLA
Well Type:	Small (<150,000 gpd) Community PWS	First Name:	
Well Depth:	0	Last Name:	
Potable Status:	POTABLE	Phone:	
Action:		Phone Ext:	
Casing Material:		County:	ORANGE
Length:		Height Abv Ellipsoid:	0
Diameter:		Longitude:	-81.126921
Sanitary Seal:		Latitude:	28.550783
Agency:		Datum:	WS1984
Large PWS:	NO	GPS Date:	12/21/2002 0:00:00
PWS Design:	97200	Loc Method Code:	DGPS
PWS Verify:	0	Loc Method:	Differentially Corrected GPS
Insp F Name:		Software:	
Insp L Name:		Streetside:	
Insp CHD:			
Address:	607 N PINE ISLE DR		
City:	ORLANDO		
Comment:	DATUM 84		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
92	NE	0.70	3,719.59	68.96	WATER WELLS

FLUW ID:	AAH8755	Property ID:	
Permit No:		Parcel ID:	

Wells and Additional Sources Detail Report

WSRP ID:	480353101	Project ID:	SUPER
Other ID:		Loc ID:	467674
Req No:	49550	GPS ID:	467674
Status:	ACTIVE	Resident Type:	OWNER
Well Type Code:	43	Name:	
Well Type:	Private	First Name:	
Well Depth:	0	Last Name:	
Potable Status:	POTABLE	Phone:	
Action:	UNFILTERED	Phone Ext:	
Casing Material:	UNKNOWN	County:	ORANGE
Length:	0	Height Abv Ellipsoid:	27.51
Diameter:		Longitude:	-81.108671
Sanitary Seal:	Yes	Latitude:	28.587477
Agency:	DOH	Datum:	WS1984
Large PWS:	NO	GPS Date:	10/4/2009 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:	0	Loc Method:	Differentially Corrected GPS
Insp F Name:	GINGER	Software:	Well_Solo_v2
Insp L Name:	HANCOCK	Streetside:	Yes
Insp CHD:	VOLUSIA		
Address:	18206 AMITYVILLE DR		
City:	ORLANDO		
Comment:	NO PERMISSION TO SAMPLE.		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
94	SW	0.70	3,722.21	63.82	WATER WELLS

FLUW ID:	AAH8601	Property ID:	
Permit No:	AAH8601	Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	327246
Req No:		GPS ID:	327246
Status:	ACTIVE	Resident Type:	
Well Type Code:	43	Name:	REESE
Well Type:	Private	First Name:	
Well Depth:		Last Name:	
Potable Status:	POTABLE	Phone:	
Action:		Phone Ext:	
Casing Material:	Black Steel	County:	ORANGE
Length:		Height Abv Ellipsoid:	16.89
Diameter:	4	Longitude:	-81.141239
Sanitary Seal:	Yes	Latitude:	28.559765
Agency:		Datum:	WS1984
Large PWS:	NO	GPS Date:	12/9/2003 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:	0	Loc Method:	Differentially Corrected GPS

Wells and Additional Sources Detail Report

Insp F Name: Software:
 Insp L Name: Streetside:
 Insp CHD:
 Address: 840 LOCKWOOD
 City: ORLANDO
 Comment:

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
95	NW	0.71	3,762.45	68.07	WATER WELLS

FLUW ID: AAE8492	Property ID:
Permit No:	Parcel ID:
WSRP ID:	Project ID: SUPER
Other ID:	Loc ID: 306334
Req No:	GPS ID: 306334
Status: ACTIVE	Resident Type:
Well Type Code: 43	Name: CAL PARIS
Well Type: Private	First Name:
Well Depth:	Last Name:
Potable Status: POTABLE	Phone:
Action:	Phone Ext:
Casing Material: Other	County: ORANGE
Length:	Height Abv Ellipsoid: 28.55
Diameter: 4	Longitude: -81.134276
Sanitary Seal: Yes	Latitude: 28.582135
Agency:	Datum: WS1984
Large PWS: NO	GPS Date: 2/13/2001 11:38:00
PWS Design:	Loc Method Code: DGPS
PWS Verify: 0	Loc Method: Differentially Corrected GPS
Insp F Name:	Software:
Insp L Name:	Streetside:
Insp CHD:	
Address: 16692 LAKE PICKETT RD	
City: ORLANDO	
Comment:	

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
97	ENE	0.73	3,857.78	68.88	WATER WELLS

FLUW ID: AAH8602	Property ID:
Permit No: AAH8602	Parcel ID:
WSRP ID:	Project ID: SUPER
Other ID:	Loc ID: 327248
Req No:	GPS ID: 327248
Status: ACTIVE	Resident Type:
Well Type Code: 43	Name: HORTON

Wells and Additional Sources Detail Report

Well Type:	Private	First Name:	
Well Depth:		Last Name:	
Potable Status:	POTABLE	Phone:	
Action:		Phone Ext:	
Casing Material:	Black Steel	County:	ORANGE
Length:		Height Abv Ellipsoid:	27.26
Diameter:	4	Longitude:	-81.10963
Sanitary Seal:	Yes	Latitude:	28.581528
Agency:		Datum:	WS1984
Large PWS:	NO	GPS Date:	12/9/2003 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:	0	Loc Method:	Differentially Corrected GPS
Insp F Name:		Software:	
Insp L Name:		Streetside:	
Insp CHD:			
Address:	2827 4TH ST		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
99	NE	0.74	3,902.45	69.05	WATER WELLS

FLUW ID:	AAM8476	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	989368
Req No:	49550	GPS ID:	989368
Status:	ACTIVE	Resident Type:	OWNER
Well Type Code:	43	Name:	
Well Type:	Private	First Name:	
Well Depth:	0	Last Name:	
Potable Status:	POTABLE	Phone:	
Action:		Phone Ext:	
Casing Material:	UNKNOWN	County:	ORANGE
Length:	0	Height Abv Ellipsoid:	24.1
Diameter:		Longitude:	-81.108101
Sanitary Seal:	Yes	Latitude:	28.587473
Agency:	DOH	Datum:	
Large PWS:		GPS Date:	8/26/2009 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:		Loc Method:	Differentially Corrected GPS
Insp F Name:	GINGER	Software:	Well_Solo_v2
Insp L Name:	HANCOCK	Streetside:	Yes
Insp CHD:	VOLUSIA		
Address:	18222 AMITYVILLE DR		
City:	ORLANDO		

Wells and Additional Sources Detail Report

Comment: NO PERMISSION TO SAMPLE.

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
102	E	0.74	3,911.77	68.88	WATER WELLS

FLUW ID:	AAJ2177	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	757698
Req No:		GPS ID:	757698
Status:	ACTIVE	Resident Type:	
Well Type Code:	43	Name:	LISA TRAIL
Well Type:	Private	First Name:	
Well Depth:		Last Name:	
Potable Status:	POTABLE	Phone:	
Action:		Phone Ext:	
Casing Material:	Galvanized	County:	ORANGE
Length:		Height Abv Ellipsoid:	-0.13
Diameter:	2	Longitude:	-81.111402
Sanitary Seal:	Yes	Latitude:	28.57595
Agency:	DOH	Datum:	
Large PWS:	NO	GPS Date:	11/3/2005 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:	0	Loc Method:	Differentially Corrected GPS
Insp F Name:	KARLA	Software:	Well_Solo_v1
Insp L Name:	GOODMAN	Streetside:	
Insp CHD:	ORANGE		
Address:	2432 4TH ST		
City:	ORLANDO		
Comment:	Well points for reimbursement		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
103	NW	0.74	3,923.57	66.38	WATER WELLS

FLUW ID:	AAE8493	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	306336
Req No:		GPS ID:	306336
Status:	ACTIVE	Resident Type:	
Well Type Code:	43	Name:	RESIDENT
Well Type:	Private	First Name:	
Well Depth:		Last Name:	
Potable Status:	POTABLE	Phone:	
Action:		Phone Ext:	
Casing Material:	Other	County:	ORANGE

Wells and Additional Sources Detail Report

Length:		Height Abv Ellipsoid:	28.47
Diameter:	4	Longitude:	-81.134149
Sanitary Seal:	Yes	Latitude:	28.583972
Agency:		Datum:	WS1984
Large PWS:	NO	GPS Date:	2/13/2001 11:59:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:	0	Loc Method:	Differentially Corrected GPS
Insp F Name:		Software:	
Insp L Name:		Streetside:	
Insp CHD:			
Address:	16680 LAKE PICKETT RD		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
104	SW	0.75	3,955.40	55.56	WATER WELLS

FLUW ID:	AAM8436	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:	480433401	Project ID:	TOX-HSET
Other ID:		Loc ID:	989640
Req No:		GPS ID:	989640
Status:	ACTIVE	Resident Type:	OWNER
Well Type Code:	43	Name:	
Well Type:	Private	First Name:	KARL
Well Depth:	0	Last Name:	CHUBB
Potable Status:	POTABLE	Phone:	407-443-8734
Action:	UNFILTERED	Phone Ext:	
Casing Material:	BLACK STEEL	County:	ORANGE
Length:	0	Height Abv Ellipsoid:	21.55
Diameter:	4	Longitude:	-81.141024
Sanitary Seal:	Yes	Latitude:	28.556404
Agency:	DOH	Datum:	
Large PWS:		GPS Date:	9/7/2009 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:		Loc Method:	Differentially Corrected GPS
Insp F Name:	GINGER	Software:	Well_Solo_v2
Insp L Name:	HANCOCK	Streetside:	No
Insp CHD:	VOLUSIA		
Address:	606 LOCKWOOD DR		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
107	NE	0.77	4,072.51	68.92	WATER WELLS

Wells and Additional Sources Detail Report

FLUW ID:	AAM8499	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	989370
Req No:	49550	GPS ID:	989370
Status:	ACTIVE	Resident Type:	OWNER
Well Type Code:	43	Name:	
Well Type:	Private	First Name:	ROB
Well Depth:	0	Last Name:	BURWELL
Potable Status:	POTABLE	Phone:	
Action:		Phone Ext:	
Casing Material:	GALVANIZED	County:	ORANGE
Length:	0	Height Abv Ellipsoid:	20.71
Diameter:	2	Longitude:	-81.1076
Sanitary Seal:	Yes	Latitude:	28.58671
Agency:	DOH	Datum:	
Large PWS:		GPS Date:	8/26/2009 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:		Loc Method:	Differentially Corrected GPS
Insp F Name:	GINGER	Software:	Well_Solo_v2
Insp L Name:	HANCOCK	Streetside:	No
Insp CHD:	VOLUSIA		
Address:	18224 AMITYVILLE DR		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
109	NE	0.78	4,124.78	69.08	WATER WELLS

FLUW ID:	AAG3100	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:	480320001	Project ID:	SUPER
Other ID:		Loc ID:	467012
Req No:	49550	GPS ID:	467012
Status:	ACTIVE	Resident Type:	OWNER
Well Type Code:	43	Name:	
Well Type:	Private	First Name:	
Well Depth:	0	Last Name:	
Potable Status:	POTABLE	Phone:	
Action:	UNFILTERED	Phone Ext:	
Casing Material:	UNKNOWN	County:	ORANGE
Length:	0	Height Abv Ellipsoid:	22.8
Diameter:		Longitude:	-81.107408
Sanitary Seal:	Yes	Latitude:	28.587475
Agency:	DOH	Datum:	WS1984
Large PWS:	NO	GPS Date:	10/4/2009 0:00:00

Wells and Additional Sources Detail Report

PWS Design:		Loc Method Code:	DGPS
PWS Verify:	0	Loc Method:	Differentially Corrected GPS
Insp F Name:	GINGER	Software:	Well_Solo_v2
Insp L Name:	HANCOCK	Streetside:	Yes
Insp CHD:	VOLUSIA		
Address:	18238 AMITYVILLE DR		
City:	ORLANDO		
Comment:	NO PERMISSION TO SAMPLE.		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
110	NE	0.79	4,151.73	69.11	WATER WELLS

FLUW ID:	AAG5300	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:	480320101	Project ID:	SUPER
Other ID:		Loc ID:	467014
Req No:	49550	GPS ID:	467014
Status:	ACTIVE	Resident Type:	OWNER
Well Type Code:	43	Name:	
Well Type:	Private	First Name:	
Well Depth:	0	Last Name:	
Potable Status:	POTABLE	Phone:	
Action:	UNFILTERED	Phone Ext:	
Casing Material:	UNKNOWN	County:	ORANGE
Length:	0	Height Abv Ellipsoid:	8.47
Diameter:		Longitude:	-81.107324
Sanitary Seal:	Yes	Latitude:	28.587468
Agency:	DOH	Datum:	WS1984
Large PWS:	NO	GPS Date:	10/4/2009 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:	0	Loc Method:	Differentially Corrected GPS
Insp F Name:	GINGER	Software:	Well_Solo_v2
Insp L Name:	HANCOCK	Streetside:	Yes
Insp CHD:	VOLUSIA		
Address:	18246 AMITYVILLE HWY		
City:	ORLANDO		
Comment:	NO PERMISSION TO SAMPLE.		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
111	WNW	0.81	4,269.50	69.05	WATER WELLS

FLUW ID:	480038501	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:	480038501	Project ID:	ANDREW
Other ID:		Loc ID:	461666
Req No:		GPS ID:	461666

Wells and Additional Sources Detail Report

Status:	ACTIVE	Resident Type:	
Well Type Code:	43	Name:	
Well Type:	Private	First Name:	
Well Depth:		Last Name:	
Potable Status:	POTABLE	Phone:	
Action:	UNFILTERED	Phone Ext:	
Casing Material:		County:	ORANGE
Length:		Height Abv Ellipsoid:	
Diameter:	0	Longitude:	-81.137821
Sanitary Seal:		Latitude:	28.576861
Agency:		Datum:	WS1984
Large PWS:	NO	GPS Date:	
PWS Design:		Loc Method Code:	MMAP
PWS Verify:	0	Loc Method:	
Insp F Name:		Software:	
Insp L Name:		Streetside:	
Insp CHD:			
Address:	3827 N TANNER RD		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
114	SW	0.82	4,328.49	55.01	WATER WELLS

FLUW ID:	AAB0304	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	282664
Req No:		GPS ID:	282664
Status:	ACTIVE	Resident Type:	
Well Type Code:	43	Name:	LORI COOK
Well Type:	Private	First Name:	
Well Depth:		Last Name:	
Potable Status:	POTABLE	Phone:	
Action:		Phone Ext:	
Casing Material:	Galvanized	County:	ORANGE
Length:		Height Abv Ellipsoid:	-9.31
Diameter:	2	Longitude:	-81.143169
Sanitary Seal:	Yes	Latitude:	28.560352
Agency:		Datum:	WS1984
Large PWS:	NO	GPS Date:	11/30/1999 5:33:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:	0	Loc Method:	Differentially Corrected GPS
Insp F Name:		Software:	
Insp L Name:		Streetside:	
Insp CHD:			

Wells and Additional Sources Detail Report

Address: 863 HAMILTON
 City: ORLANDO
 Comment:

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
115	ESE	0.82	4,339.08	68.35	WATER WELLS

FLUW ID: 320239801
 Permit No:
 WSRP ID: 320239801
 Other ID:
 Req No: none
 Status:
 Well Type Code: 42
 Well Type: Limited Use PWS
 Well Depth:
 Potable Status: POTABLE
 Action: UNFILTERED
 Casing Material:
 Length:
 Diameter: 0
 Sanitary Seal:
 Agency: DOH
 Large PWS: NO
 PWS Design:
 PWS Verify: 0
 Insp F Name: BRENDA
 Insp L Name: ACEVEDO-VAZ
 Insp CHD: ORANGE
 Address: 18006 6TH ST
 City: ORLANDO
 Comment:

Property ID:
 Parcel ID:
 Project ID: SUPER
 Loc ID: 788786
 GPS ID: 788786
 Resident Type:
 Name:
 First Name:
 Last Name:
 Phone:
 Phone Ext:
 County: ORANGE
 Height Abv Ellipsoid: 20.57
 Longitude: -81.111788
 Latitude: 28.571004
 Datum: WS1984
 GPS Date: 3/1/2007 0:00:00
 Loc Method Code: DGPS
 Loc Method: Differentially Corrected GPS
 Software: Well_Solo_v2
 Streetside: No

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
115	ESE	0.82	4,339.08	68.35	WATER WELLS

FLUW ID: AAK8570
 Permit No:
 WSRP ID:
 Other ID:
 Req No: none
 Status: ACTIVE
 Well Type Code: 43
 Well Type: Private
 Well Depth: 0
 Potable Status: POTABLE

Property ID:
 Parcel ID:
 Project ID: SUPER
 Loc ID: 788786
 GPS ID: 788786
 Resident Type: OWNER
 Name:
 First Name:
 Last Name:
 Phone:

Wells and Additional Sources Detail Report

Action:		Phone Ext:	
Casing Material:	PVC	County:	ORANGE
Length:	0	Height Abv Ellipsoid:	20.57
Diameter:	2	Longitude:	-81.111788
Sanitary Seal:	Yes	Latitude:	28.571004
Agency:	DOH	Datum:	WS1984
Large PWS:	NO	GPS Date:	3/1/2007 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:	0	Loc Method:	Differentially Corrected GPS
Insp F Name:	BRENDA	Software:	Well_Solo_v2
Insp L Name:	ACEVEDO-VAZ	Streetside:	No
Insp CHD:	ORANGE		
Address:	18006 6TH ST		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
116	NE	0.83	4,369.28	68.88	WATER WELLS

FLUW ID:	AAM8495	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	989360
Req No:	49550	GPS ID:	989360
Status:	ACTIVE	Resident Type:	OWNER
Well Type Code:	43	Name:	
Well Type:	Private	First Name:	BILL
Well Depth:	0	Last Name:	ANDERSON
Potable Status:	POTABLE	Phone:	
Action:		Phone Ext:	
Casing Material:	GALVANIZED	County:	ORANGE
Length:	0	Height Abv Ellipsoid:	21.18
Diameter:	2	Longitude:	-81.106671
Sanitary Seal:	Yes	Latitude:	28.586738
Agency:	DOH	Datum:	
Large PWS:		GPS Date:	8/26/2009 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:		Loc Method:	Differentially Corrected GPS
Insp F Name:	GINGER	Software:	Well_Solo_v2
Insp L Name:	HANCOCK	Streetside:	No
Insp CHD:	VOLUSIA		
Address:	18308 AMITYVILLE RD		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
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Wells and Additional Sources Detail Report

117 S 0.83 4,376.25 53.13 WATER WELLS

FLUW ID:	AAN4993	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	1001046
Req No:		GPS ID:	1001046
Status:	ACTIVE	Resident Type:	OWNER
Well Type Code:	43	Name:	
Well Type:	Private	First Name:	TAMMY
Well Depth:	0	Last Name:	SIKISH
Potable Status:	POTABLE	Phone:	321-804-4195
Action:		Phone Ext:	
Casing Material:	PVC	County:	ORANGE
Length:	0	Height Abv Ellipsoid:	22.76
Diameter:	2	Longitude:	-81.123192
Sanitary Seal:	Yes	Latitude:	28.550083
Agency:	DOH	Datum:	
Large PWS:		GPS Date:	5/26/2010 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:		Loc Method:	Differentially Corrected GPS
Insp F Name:	MARK	Software:	Well_Solo_v2
Insp L Name:	SPRINGER	Streetside:	No
Insp CHD:	ORANGE		
Address:	17301 MONROE PARTIN TRL		
City:	ORLANDO		
Comment:	complaint sample		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
118	E	0.86	4,517.45	68.49	WATER WELLS

FLUW ID:	AAE8474	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	306298
Req No:		GPS ID:	306298
Status:	ACTIVE	Resident Type:	
Well Type Code:	43	Name:	THAMES
Well Type:	Private	First Name:	
Well Depth:		Last Name:	
Potable Status:	POTABLE	Phone:	
Action:		Phone Ext:	
Casing Material:	PVC	County:	ORANGE
Length:		Height Abv Ellipsoid:	23.89
Diameter:	2	Longitude:	-81.110513
Sanitary Seal:	Yes	Latitude:	28.572976

Wells and Additional Sources Detail Report

Agency:		Datum:	WS1984
Large PWS:	NO	GPS Date:	1/29/2001 9:34:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:	0	Loc Method:	Differentially Corrected GPS
Insp F Name:		Software:	
Insp L Name:		Streetside:	
Insp CHD:			
Address:	2234 4TH ST		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
119	ESE	0.86	4,558.58	68.32	WATER WELLS

FLUW ID:	AAH8648	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	327326
Req No:		GPS ID:	327326
Status:	ACTIVE	Resident Type:	
Well Type Code:	43	Name:	GARY BENDER
Well Type:	Private	First Name:	
Well Depth:		Last Name:	
Potable Status:	POTABLE	Phone:	
Action:		Phone Ext:	
Casing Material:	Galvanized	County:	ORANGE
Length:		Height Abv Ellipsoid:	22.18
Diameter:	2	Longitude:	-81.111537
Sanitary Seal:	Yes	Latitude:	28.56968
Agency:		Datum:	WS1984
Large PWS:	NO	GPS Date:	8/20/2003 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:	0	Loc Method:	Differentially Corrected GPS
Insp F Name:		Software:	
Insp L Name:		Streetside:	
Insp CHD:			
Address:	18101 LYNBROOK ST		
City:	ORLANDO		
Comment:	Complaint #03-0493		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
120	SW	0.86	4,566.87	51.37	WATER WELLS

FLUW ID:	AAE8491	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:		Project ID:	SUPER

Wells and Additional Sources Detail Report

Other ID:	Loc ID:	306332
Req No:	GPS ID:	306332
Status: ACTIVE	Resident Type:	
Well Type Code: 43	Name:	DITTMER
Well Type: Private	First Name:	
Well Depth:	Last Name:	
Potable Status: POTABLE	Phone:	
Action:	Phone Ext:	
Casing Material: PVC	County:	ORANGE
Length:	Height Abv Ellipsoid:	37.68
Diameter: 2	Longitude:	-81.143874
Sanitary Seal: Yes	Latitude:	28.559699
Agency:	Datum:	WS1984
Large PWS: NO	GPS Date:	2/8/2001 12:21:00
PWS Design:	Loc Method Code:	DGPS
PWS Verify: 0	Loc Method:	Differentially Corrected GPS
Insp F Name:	Software:	
Insp L Name:	Streetside:	
Insp CHD:		
Address: 840 HAMILTON DR		
City: ORLANDO		
Comment: COMPLAINT		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
121	S	0.87	4,594.56	59.37	WATER WELLS

FLUW ID: AAH7368	Property ID:
Permit No: 3480555	Parcel ID:
WSRP ID: 480429301	Project ID: DEP
Other ID:	Loc ID: 153766
Req No:	GPS ID: 153766
Status: ACTIVE	Resident Type:
Well Type Code: 46	Name: HOLIDAY ACRES MOBILE HOME PARK
Well Type: Small (<150,000 gpd) Community PWS	First Name:
Well Depth: 0	Last Name:
Potable Status: POTABLE	Phone:
Action: UNFILTERED	Phone Ext:
Casing Material:	County: ORANGE
Length:	Height Abv Ellipsoid: 0
Diameter:	Longitude: -81.120069
Sanitary Seal:	Latitude: 28.551314
Agency:	Datum: WS1984
Large PWS: NO	GPS Date: 12/21/2002 0:00:00
PWS Design: 27360	Loc Method Code: DGPS
PWS Verify: 0	Loc Method: Differentially Corrected GPS
Insp F Name:	Software:

Wells and Additional Sources Detail Report

Insp L Name: Streetside:
 Insp CHD:
 Address: 333 HOLIDAY ACRES DR
 City: ORLANDO
 Comment: DATUM 84

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
123	NE	0.88	4,666.38	69.18	WATER WELLS

FLUW ID:	AAG5301	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:	480320201	Project ID:	SUPER
Other ID:		Loc ID:	467016
Req No:	49550	GPS ID:	467016
Status:	ACTIVE	Resident Type:	OWNER
Well Type Code:	43	Name:	
Well Type:	Private	First Name:	WILLIAM
Well Depth:	0	Last Name:	DUDLEY
Potable Status:	POTABLE	Phone:	
Action:	UNFILTERED	Phone Ext:	
Casing Material:	GALVANIZED	County:	ORANGE
Length:	0	Height Abv Ellipsoid:	25.8
Diameter:	2	Longitude:	-81.10572
Sanitary Seal:	Yes	Latitude:	28.5874
Agency:	DOH	Datum:	WS1984
Large PWS:	NO	GPS Date:	8/26/2009 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:	0	Loc Method:	Differentially Corrected GPS
Insp F Name:	GINGER	Software:	Well_Solo_v2
Insp L Name:	HANCOCK	Streetside:	No
Insp CHD:	VOLUSIA		
Address:	18328 AMITYVILLE DR		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
126	NE	0.90	4,743.98	69.25	WATER WELLS

FLUW ID:	AAM8494	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	989362
Req No:	49550	GPS ID:	989362
Status:	ACTIVE	Resident Type:	OWNER
Well Type Code:	43	Name:	
Well Type:	Private	First Name:	

Wells and Additional Sources Detail Report

Well Depth:	0	Last Name:	
Potable Status:	POTABLE	Phone:	
Action:		Phone Ext:	
Casing Material:	UNKNOWN	County:	ORANGE
Length:	0	Height Abv Ellipsoid:	13.95
Diameter:		Longitude:	-81.105478
Sanitary Seal:	Yes	Latitude:	28.587511
Agency:	DOH	Datum:	
Large PWS:		GPS Date:	8/26/2009 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:		Loc Method:	Differentially Corrected GPS
Insp F Name:	GINGER	Software:	Well_Solo_v2
Insp L Name:	HANCOCK	Streetside:	Yes
Insp CHD:	VOLUSIA		
Address:	18334 AMITYVILLE DR		
City:	ORLANDO		
Comment:	NO PERMISSION TO SAMPLE.		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
127	SW	0.90	4,771.11	46.73	WATER WELLS

FLUW ID:	DAA0553	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:		Project ID:	TOX_DCEH
Other ID:		Loc ID:	1157584
Req No:		GPS ID:	1157584
Status:	ACTIVE	Resident Type:	owner
Well Type Code:	43	Name:	
Well Type:	Private	First Name:	Christian
Well Depth:		Last Name:	Paris
Potable Status:	POTABLE	Phone:	407-947-9246
Action:		Phone Ext:	
Casing Material:	BLACK_STEEL	County:	ORANGE
Length:		Height Abv Ellipsoid:	
Diameter:	4	Longitude:	-81.144397
Sanitary Seal:		Latitude:	28.558774
Agency:	FDOH	Datum:	
Large PWS:		GPS Date:	8/20/2019 13:42:00
PWS Design:		Loc Method Code:	GPS (VERIFIED)
PWS Verify:		Loc Method:	
Insp F Name:	Amanda	Software:	Well_Survey123
Insp L Name:	Chase	Streetside:	no
Insp CHD:	ORANGE		
Address:	802 Hamilton DR		
City:	Orlando		
Comment:			

Wells and Additional Sources Detail Report

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
129	SW	0.92	4,838.45	38.56	WATER WELLS

FLUW ID:	AAJ2111	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:	480403001	Project ID:	SUPER
Other ID:		Loc ID:	757700
Req No:		GPS ID:	757700
Status:	ACTIVE	Resident Type:	
Well Type Code:	43	Name:	
Well Type:	Private	First Name:	
Well Depth:		Last Name:	
Potable Status:	POTABLE	Phone:	
Action:	UNFILTERED	Phone Ext:	
Casing Material:	Other	County:	ORANGE
Length:		Height Abv Ellipsoid:	15.59
Diameter:	2	Longitude:	-81.14417
Sanitary Seal:	Yes	Latitude:	28.556975
Agency:	DOH	Datum:	
Large PWS:	NO	GPS Date:	11/3/2005 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:	0	Loc Method:	Differentially Corrected GPS
Insp F Name:	KARLA	Software:	Well_Solo_v1
Insp L Name:	GOODMAN	Streetside:	
Insp CHD:	ORANGE		
Address:	730 HAMILTON DR		
City:	ORLANDO		
Comment:	Well points for reimbursement		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
130	S	0.93	4,909.73	54.85	WATER WELLS

FLUW ID:	AAG2749	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	142500
Req No:		GPS ID:	142500
Status:	ACTIVE	Resident Type:	
Well Type Code:	43	Name:	TAYLOR
Well Type:	Private	First Name:	
Well Depth:		Last Name:	
Potable Status:	POTABLE	Phone:	
Action:		Phone Ext:	
Casing Material:	PVC	County:	ORANGE
Length:		Height Abv Ellipsoid:	27.22

Wells and Additional Sources Detail Report

Diameter:	2	Longitude:	-81.12109
Sanitary Seal:	Yes	Latitude:	28.549496
Agency:		Datum:	WS1984
Large PWS:	NO	GPS Date:	5/19/2004 0:00:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:	0	Loc Method:	Differentially Corrected GPS
Insp F Name:		Software:	
Insp L Name:		Streetside:	
Insp CHD:			
Address:	17452 MONROE PARTIN		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
131	SSE	0.94	4,982.27	67.12	WATER WELLS

FLUW ID:	AAB0354	Property ID:	
Permit No:		Parcel ID:	
WSRP ID:		Project ID:	SUPER
Other ID:		Loc ID:	282748
Req No:		GPS ID:	282748
Status:	ACTIVE	Resident Type:	
Well Type Code:	43	Name:	J AND B
Well Type:	Private	First Name:	
Well Depth:		Last Name:	
Potable Status:	POTABLE	Phone:	
Action:		Phone Ext:	
Casing Material:	Galvanized	County:	ORANGE
Length:		Height Abv Ellipsoid:	-4.11
Diameter:	2	Longitude:	-81.115338
Sanitary Seal:	Yes	Latitude:	28.555432
Agency:		Datum:	WS1984
Large PWS:	NO	GPS Date:	2/29/2000 7:54:00
PWS Design:		Loc Method Code:	DGPS
PWS Verify:	0	Loc Method:	Differentially Corrected GPS
Insp F Name:		Software:	
Insp L Name:		Streetside:	
Insp CHD:			
Address:	17105 COLONIAL DR		
City:	ORLANDO		
Comment:			

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
132	ESE	0.95	4,999.48	67.98	WATER WELLS

FLUW ID:	AAG2746	Property ID:	
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Wells and Additional Sources Detail Report

Permit No:	Parcel ID:	
WSRP ID:	Project ID:	SUPER
Other ID:	Loc ID:	331336
Req No:	GPS ID:	331336
Status: ACTIVE	Resident Type:	
Well Type Code: 43	Name:	BARBARA CATANZARO
Well Type: Private	First Name:	
Well Depth:	Last Name:	
Potable Status: POTABLE	Phone:	
Action:	Phone Ext:	
Casing Material: Galvanized	County:	ORANGE
Length:	Height Abv Ellipsoid:	30.42
Diameter: 2	Longitude:	-81.110429
Sanitary Seal: Yes	Latitude:	28.568739
Agency:	Datum:	WS1984
Large PWS: NO	GPS Date:	4/27/2004 0:00:00
PWS Design:	Loc Method Code:	DGPS
PWS Verify: 0	Loc Method:	Differentially Corrected GPS
Insp F Name:	Software:	
Insp L Name:	Streetside:	
Insp CHD:		
Address: 18121 LYNBROOK RD		
City: ORLANDO		
Comment:		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
139	SSE	1.00	5,263.16	65.05	WATER WELLS

FLUW ID: AAH7363	Property ID:	
Permit No: 3480321	Parcel ID:	
WSRP ID:	Project ID:	DEP
Other ID:	Loc ID:	153756
Req No:	GPS ID:	153756
Status: ACTIVE	Resident Type:	
Well Type Code: 41	Name:	VILLAGE INN MOTEL
Well Type: Non-Community PWS	First Name:	
Well Depth: 0	Last Name:	
Potable Status: POTABLE	Phone:	
Action:	Phone Ext:	
Casing Material:	County:	ORANGE
Length:	Height Abv Ellipsoid:	0
Diameter:	Longitude:	-81.113922
Sanitary Seal:	Latitude:	28.556639
Agency:	Datum:	WS1984
Large PWS: NO	GPS Date:	12/21/2002 0:00:00
PWS Design: 6480	Loc Method Code:	DGPS

Wells and Additional Sources Detail Report

PWS Verify:	0	Loc Method:	Differentially Corrected GPS
Insp F Name:		Software:	
Insp L Name:		Streetside:	
Insp CHD:			
Address:	17883 E COLONIAL DR		
City:	ORLANDO		
Comment:	DATUM 84		

Radon Information

This section lists any relevant radon information found for the target property.

Federal EPA Radon Zone for *ORANGE* County: **3**

Zone 1: Counties with predicted average indoor radon screening levels greater than 4 pCi/L

Zone 2: Counties with predicted average indoor radon screening levels from 2 to 4 pCi/L

Zone 3: Counties with predicted average indoor radon screening levels less than 2 pCi/L

Federal Area Radon Information for *ORANGE* County

No Measures/Homes:	157
Arithmetic Mean:	0.5
Standard Deviation:	0.7
Maximum:	4.6
% >4 pCi/L:	1.9*
% >8 pCi/L:	-
% >12 pCi/L:	-
Notes on Data Table:	TABLE 2. Indoor radon results from the Florida population-based radon survey, by county.

Federal Sources

FEMA National Flood Hazard Layer

FEMA FLOOD

The National Flood Hazard Layer (NFHL) data incorporates Flood Insurance Rate Map (FIRM) databases published by the Federal Emergency Management Agency (FEMA), and any Letters Of Map Revision (LOMRs) that have been issued against those databases since their publication date. The FIRM Database is the digital, geospatial version of the flood hazard information shown on the published paper FIRMs. The FIRM Database depicts flood risk information and supporting data used to develop the risk data. The FIRM Database is derived from Flood Insurance Studies (FISs), previously published FIRMs, flood hazard analyses performed in support of the FISs and FIRMs, and new mapping data, where available.

Indoor Radon Data

INDOOR RADON

Indoor radon measurements tracked by the Environmental Protection Agency(EPA) and the State Residential Radon Survey.

Public Water Systems Violations and Enforcement Data

PWSV

List of drinking water violations and enforcement actions from the Safe Drinking Water Information System (SDWIS) made available by the Drinking Water Protection Division of the US EPA's Office of Groundwater and Drinking Water. Enforcement sensitive actions are not included in the data released by the EPA. Address information provided in SWDIS may correspond either with the physical location of the water system, or with a contact address.

Radon Zone Level

RADON ZONE

Areas showing the level of Radon Zones (level 1, 2 or 3) by county. This data is maintained by the Environmental Protection Agency (EPA).

Safe Drinking Water Information System (SDWIS)

SDWIS

The Safe Drinking Water Information System (SDWIS) contains information about public water systems as reported to US Environmental Protection Agency (EPA) by the states. Addresses may correspond with the location of the water system, or with a contact address.

Soil Survey Geographic database

SSURGO

The Soil Survey Geographic database (SSURGO) contains information about soil as collected by the National Cooperative Soil Survey at the Natural Resources Conservation Service (NRCS). Soil maps outline areas called map units. The map units are linked to soil properties in a database. Each map unit may contain one to three major components and some minor components.

U.S. Fish & Wildlife Service Wetland Data

US WETLAND

The U.S. Fish & Wildlife Service Wetland layer represents the approximate location and type of wetlands and deepwater habitats in the United States.

USGS Current Topo

US TOPO

US Topo topographic maps are produced by the National Geospatial Program of the U.S. Geological Survey (USGS). The project was launched in late 2009, and the term "US Topo" refers specifically to quadrangle topographic maps published in 2009 and later.

USGS Geology

US GEOLOGY

Seamless maps depicting geological information provided by the United States Geological Survey (USGS).

USGS National Water Information System

FED USGS

The U.S. Geological Survey (USGS)'s National Water Information System (NWIS) is the nation's principal repository of water resources data. This database includes comprehensive information of well-construction details, time-series data for gage height, streamflow, groundwater level, and precipitation and water use data.

State Sources

Florida Subsidence Incident Reports

SINKHOLES

A list of Florida Subsidence Incidents made available by the Florida Department of Environmental

Appendix

Protection (DEP) and maintained by the Florida Geological Survey. Sinkholes are closed depressions in areas underlain by soluble rock such as limestone, dolostone, and in some states gypsum and salt. Other subterranean events can cause holes, depressions, or subsidence of the land surface that may mimic sinkhole activity. Commonly, a reported depression is not verified by a licensed professional geologist to be a true sinkhole, and the cause of subsidence is not known. Such an event is called a subsidence incident.

Oil and Gas Wells

OGW

The Oil and Gas Program is the permitting authority within the Florida Department of Environmental Protection's Mining and Minerals Regulation Program. Companies interested in exploration or production of hydrocarbons in Florida are regulated by the Oil and Gas Program. This data is made available by Florida Department of Environmental Protection's Oil and Gas program.

Public Water Supply Wells

PWSW

The Public Water Supply Wells (PWSW) data consist of public water supply facilities and their wells in Florida. This data is made available by Florida Department of Environmental Protection, Water Compliance Assurance Program.

Underground Injection Control Wells

UIC

Class I Underground Injection Control (UIC) wells that are currently or were previously active, as well as proposed sites, regulated by the Florida Department of Environmental Protection (FDEP). Class I UIC wells are used to inject nonhazardous waste, hazardous waste (new hazardous waste wells were banned in 1983), or municipal waste below the lowermost underground source of drinking water.

Water Use Permits Sites - South Florida Water Management District

WELLS

List of Water Use Permitting Facilities consisting of wells, pumps and culverts, made available by the South Florida Water Management District. The facilities represent a subset of all wells, pumps and culverts associated with Water Use Permits. A Water Use Permit is required for all water uses except single family and duplex use and fire fighting.

Water Well Completions - Northwest Florida Water Management District

WATER WELLS

A list of existing well permits provided by the Northwest Florida Water Management District, representing records for wells permitted for construction/repair/abandonment beginning in the year 1976; does not typically contain data on wells constructed prior to 1976. The data provided may therefore only represent a fraction of existing wells. The data are provided by water well contractors on completion reports and, in most cases, has not been verified by District staff.

Water Well Completions - St. Johns River Water Management District

WATER WELLS

A list of wells in the Water Well Completion Report database made available by the St. Johns River Water Management District (SJRWMD). The SJRWMD advises that data reported in the Water Well Completion Report are obtained from multiple sources, including SJRWMD, delegated counties, and other regulatory agencies; that they cannot assure that contributors have used consistent measurement techniques or adhered to approved quality control standards; and that, although the SJRWMD has made reasonable attempts to assure the quality of the data contained herein, in most cases, the information is reported as received.

Water Well Completions - Suwanee River Water Management District

WELLS

A list of wells in the Water Well Completion Report database made available by the Suwanee River Water Management District department (SRWMD). The SRWMD advises that data reported in the Water Well Completion Report are obtained from multiple sources, including SRWMD, delegated counties, and other regulatory agencies; that they cannot assure that contributors have used consistent measurement techniques or adhered to approved quality control standards; and that, although the SRWMD has made reasonable attempts to assure the quality of the data contained herein, in most cases, the information is reported as received.

Water Well Construction Permits

WELL CONST PERM

A list of water well construction permits issued by the St. Johns River Water Management District (SJRWMD).

Water Well Construction Permits - Southwest Florida Water Management District

WATER WELLS

Locations of well construction sites permitted within the District, including historical sites. A Well Construction Permit is required prior to installation of a water well within the District. The permits ensure that wells are constructed by qualified contractors and meet rigid safety and durability standards.

Water Wells - Suwanee River Water Management District

WATER WELLS

A list of water wells made available by the Suwanee River Water Management District department (SRWMD). The SRWMD advises that data are obtained from multiple sources including SRWMD, delegated counties, and other regulatory agencies; that they cannot assure that contributors have used consistent measurement techniques or adhered to approved quality control standards; and that, although the SRWMD has made reasonable attempts to assure the quality of the data contained herein, in most cases, the information is reported as received.

Well Surveillance Program Water Wells

WATER WELLS

A list of privately and publicly owned potable wells from the Florida Department of Health's (DOH) Well Surveillance Program.

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APPENDIX K

Netronline Environmental Report

Chuluota Road

28.574583971459802, -81.12458658218429

prepared for: Godwin Nnadi

Ref: Chuluota Road and SR 50

August 25, 2021

Environmental Radius Report

Summary

Summary

	< 1/4	1/4 - 1/2	1/2 - 1
National Priorities List (NPL)			
CERCLIS List			
CERCLIS NFRAP			
RCRA CORRACTS Facilities			
RCRA non-CORRACTS TSD Facilities			
Federal Institutional Control / Engineering Control Registry			
Emergency Response Notification System (ERNS)			
US Toxic Release Inventory			
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US ACRES (Brownfields)			
US NPDES		3	12
US Air Facility System (AIRS / AFS)			
FL Storage Tanks			5
FL Leaking Storage Tanks			
FL Brownfield Sites			
EPA Superfund - National Priorities List			
FL Solid Waste Facilities			
FL Dry Cleaning Program Sites			
FL Groundwater Contamination Areas			
FL State Cleanup Sites			
FL Fuel Facilities			2
FL Activity Use Restrictions			

National Priorities List (NPL)

This database includes Proposed Sites, Final Sites and Deleted NPL Sites. The Superfund Program, administered under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) is an EPA Program to locate, investigate, and clean up the worst hazardous waste sites throughout the United States. The NPL (National Priorities List) is the list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The NPL is intended primarily to guide the EPA in determining which sites warrant further investigation.

The boundaries of an NPL site are not tied to the boundaries of the property on which a facility is located. The release may be contained within a single property's boundaries or may extend across property boundaries onto other properties. The boundaries can, and often do change as further information on the extent and degree of contamination is obtained.

This database returned no results for your area

CERCLIS List

The United States Environmental Protection Agency (EPA) investigates known or suspected uncontrolled or abandoned hazardous substance facilities under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). EPA maintains a comprehensive list of these facilities in a database known as the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS). These sites have either been investigated or are currently under investigation by the EPA for release or threatened release of hazardous substances. Once a site is placed in CERCLIS, it may be subjected to several levels of review and evaluation and ultimately placed on the National Priority List (NPL).

CERCLIS sites designated as "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund Action or NPL consideration.

This database returned no results for your area

CERCLIS NFRAP

As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" NFRAP have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the site being placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed these NFRAP sites from CERCLIS to lift unintended barriers to the redevelopment of these properties. This policy change is part of EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens promote economic redevelopment of unproductive urban sites.

This database returned no results for your area

RCRA CORRACTS Facilities

The United States Environmental Protection Agency (EPA) regulates hazardous waste under the Resource Conservation and Recovery Act (RCRA). The EPA maintains the Corrective Action Report (CORRACTS) database of Resource Conservation and Recovery Act (RCRA) facilities that are undergoing "corrective action." A "corrective action order" is issued pursuant to RCRA Section 3008(h) when there has been a release of hazardous waste or constituents into the environment from a RCRA facility. Corrective actions may be required beyond the facility's boundary and can be required regardless of when the release occurred, even if it predated RCRA.

This database returned no results for your area

RCRA non-CORRACTS TSD Facilities

The United States Environmental Protection Agency (EPA) regulates hazardous waste under the Resource Conservation and Recovery Act (RCRA). The EPA's RCRA Program identifies and tracks hazardous waste from the point of generation to the point of disposal. The RCRA Facilities database is a compilation by the EPA of facilities that report generation, storage, transportation, treatment, or disposal of hazardous waste. RCRA Permitted Treatment, Storage, Disposal Facilities (RCRA-TSD) are facilities which treat, store and/or dispose of hazardous waste.

This database returned no results for your area

Federal Institutional Control / Engineering Control Registry

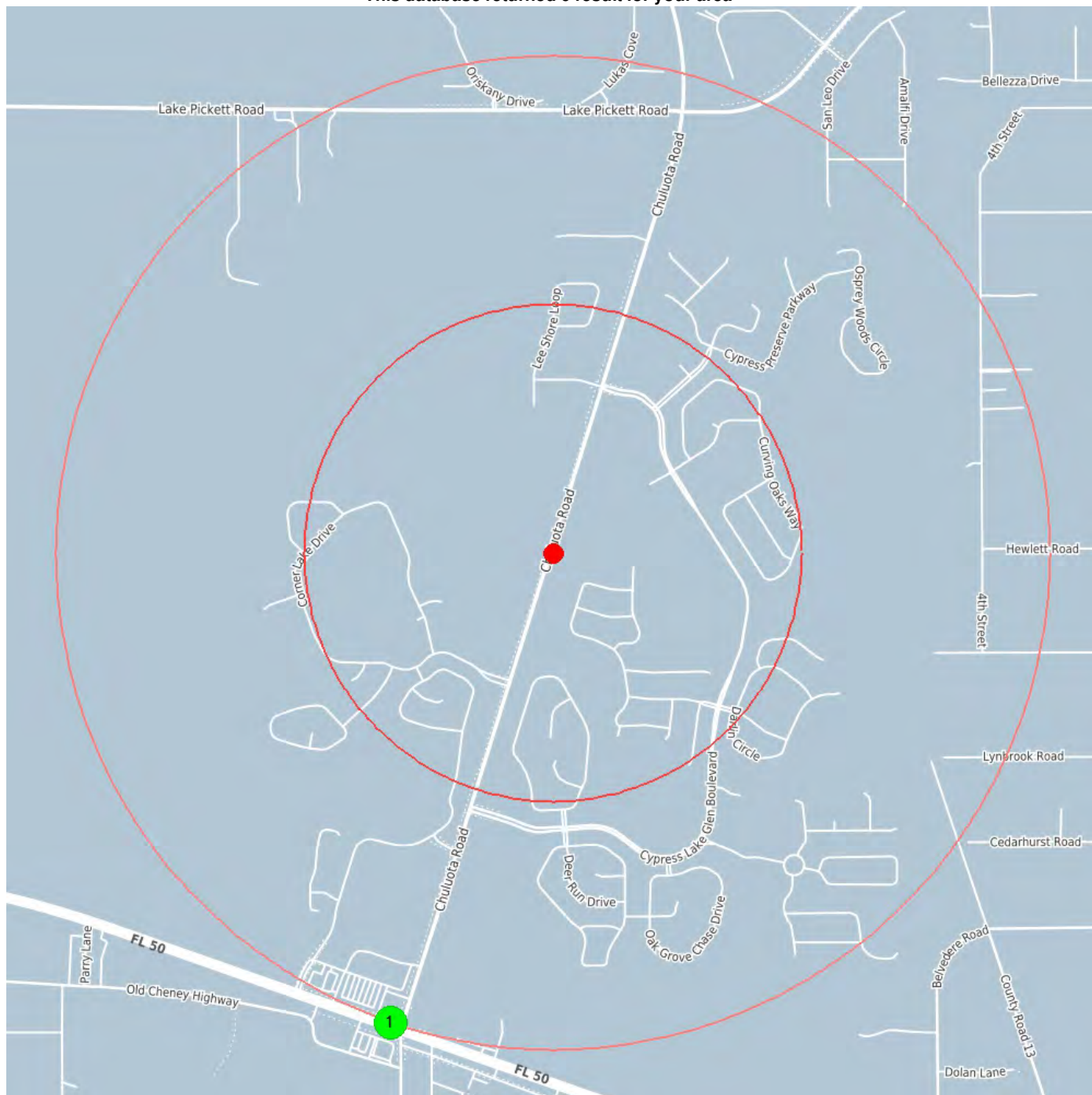
Federal Institutional Control / Engineering Control Registry

This database returned no results for your area

Emergency Response Notification System (ERNS)

The Emergency Response Notification System (ERNS) is a national computer database used to store information on unauthorized releases of oil and hazardous substances. The program is a cooperative effort of the Environmental Protection Agency, the Department of Transportation Research and Special Program Administration's John Volpe National Transportation System Center and the National Response Center. There are primarily five Federal statutes that require release reporting: the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) section 103; the Superfund Amendments and Reauthorization Act(SARA) Title III Section 304; the Clean Water Act of 1972(CWA) section 311(b)(3); and the Hazardous Material Transportation Act of 1974(HMTA section 1808(b).

This database returned 0 result for your area



center 28.57458397146 -81.124586582184

0.5 mile

1.0 mile

Emergency Response Notification System (ERNS)



Coordinates
Distance to site

28.560899868608, -81.129967644811
5281 ft / 1.000 mi S

Incident	CALLER IS REPORTING THAT A TRUCK DUMPED HYDRAULIC OIL AND DIESEL ONTO THE LOWLANDS NEAR THE ECONLOCKHATCHEE RIVER. CALLER STATED THAT THE SUSPECTED RESPONSIBLE PARTY DUMPS REGULARLY AND HAS BEEN TOLD IN THE PAST THAT THEY CANNOT. IT IS UNKNOWN IF ANY MATERIALS REACHED THE RIVER.
Incident Date	3/3/2009 21:00
Year Reported	2009
Address	16877 E COLONIAL
City	ORLANDO
State	FL
County	ORANGE

US Toxic Release Inventory

The Toxics Release Inventory (TRI) is a publicly available EPA database that contains information on toxic chemical releases and other waste management activities reported annually by certain covered industry groups as well as federal facilities. TRI reporters for all reporting years are provided in the file.

This database returned no results for your area

US RCRA Generators (CESQG, SQG, LQG)

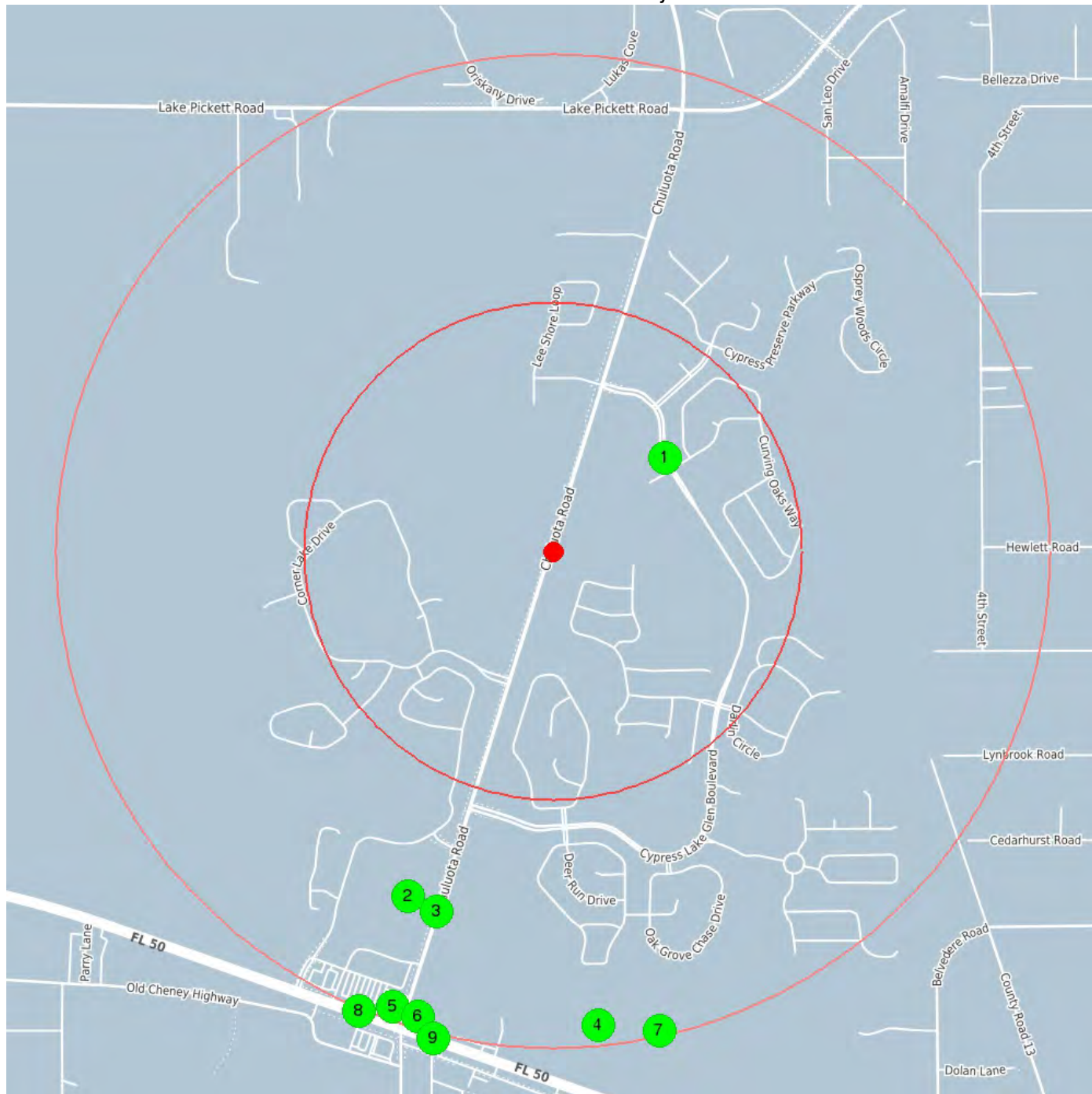
The United States Environmental Protection Agency (EPA) regulates hazardous waste under the Resource Conservation and Recovery Act (RCRA). EPA maintains a database of facilities, which generate hazardous waste or treat, store, and/or dispose of hazardous wastes.

Conditionally Exempt Small Quantity Generators (CESQG) generate 100 kilograms or less per month of hazardous waste, or 1 kilogram or less per month of acutely hazardous waste.

Small Quantity Generators (SQG) generate more than 100 kilograms, but less than 1,000 kilograms, of hazardous waste per month.

Large Quantity Generators (LQG) generate 1,000 kilograms per month or more of hazardous waste, or more than 1 kilogram per month of acutely hazardous waste.

This database returned 7 results for your area



center 28.57458397146 -81.124586582184

0.5 mile

1.0 mile

US RCRA Generators (CESQG, SQG, LQG)



Coordinates 28.57732, -81.12088
Distance to site 1551 ft / 0.294 mi NE

Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110028291854
EPA Identifier	110028291854
Primary Name	COLUMBIA ELEMENTARY SCHOOL
Address	18501 CYPRESS LAKE GLEN BLVD
City	ORLANDO
County	ORANGE
State	FL
Zipcode	32820
NAICS Codes	611110
Programs	FDM:76720, NPDES:FLR10EI88, RCRAINFO:FLR000157024
Program Interests	CESQG, ICIS-NPDES NON-MAJOR, STATE MASTER, STORM WATER CONSTRUCTION
Updated On	05-MAR-2013 10:27:24
Recorded On	26-MAR-2007 16:04:09
NAICS Descriptions	ELEMENTARY AND SECONDARY SCHOOLS.



Coordinates 28.564547, -81.129402
Distance to site 3973 ft / 0.752 mi SW

Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110036555395
EPA Identifier	110036555395
Primary Name	CORNER LAKE MIDDLE SCHOOL
Address	1700 CHULUOTA RD
City	ORLANDO
County	ORANGE
State	FL
Zipcode	32820-1401
NAICS Codes	611110
Programs	NPDES:FLR10RY06, RCRAINFO:FLR000156539
Program Interests	CESQG, ICIS-NPDES NON-MAJOR
Updated On	17-OCT-2017 12:20:18
Recorded On	19-JUN-2008 21:14:09
NAICS Descriptions	ELEMENTARY AND SECONDARY SCHOOLS.



Coordinates 28.5641, -81.12843
Distance to site 4017 ft / 0.761 mi S

Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110035551006
EPA Identifier	110035551006
Primary Name	ORANGE COUNTY SOLID WASTE
Address	1700 CHULUOTA RD
City	ORLANDO
County	ORANGE
State	FL
Zipcode	328201401
Programs	FDM:68077, RCRAINFO:FLT990063778
Program Interests	CESQG, STATE MASTER
Updated On	28-MAR-2014 21:58:36
Recorded On	23-APR-2008 15:29:42

US RCRA Generators (CESQG, SQG, LQG)

4	Coordinates	28.560767, -81.12309
	Distance to site	5063 ft / 0.959 mi S
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110006158692	
EPA Identifier	110006158692	
Primary Name	JOE'S TRUCK PARTS INC	
Address	17361 E US HWY 50	
City	ORLANDO	
County	ORANGE	
State	FL	
Zipcode	32820	
NAICS Codes	423140, 425110, 425120, 441310	
SIC Codes	5015	
SIC Descriptions	MOTOR VEHICLE PARTS, USED	
Programs	FDM:22900, NPDES:FLR05A765, RCRAINFO:FLR000059956	
Program Interests	CESQG, ICIS-NPDES NON-MAJOR, STATE MASTER, STORM WATER INDUSTRIAL	
Updated On	07-OCT-2016 16:46:19	
Recorded On	01-MAR-2000 00:00:00	
NAICS Descriptions	AUTOMOTIVE PARTS AND ACCESSORIES STORES., BUSINESS TO BUSINESS ELECTRONIC MARKETS., MOTOR VEHICLE PARTS (USED) MERCHANT WHOLESALERS, WHOLESALE TRADE AGENTS AND BROKERS.	

5	Coordinates	28.561308, -81.129915
	Distance to site	5135 ft / 0.973 mi S
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110018876082	
EPA Identifier	110018876082	
Primary Name	AMOCO OIL STATION #60558	
Address	16891 E COLONIAL DR	
City	ORLANDO	
County	ORANGE	
State	FL	
Zipcode	328201910	
NAICS Codes	562998	
Programs	FDM:3615, RCRAINFO:FLR000111187	
Program Interests	STATE MASTER, UNSPECIFIED UNIVERSE	
Updated On	03-DEC-2014 15:34:27	
Recorded On	08-NOV-2004 07:27:49	
NAICS Descriptions	ALL OTHER MISCELLANEOUS WASTE MANAGEMENT SERVICES.	

6	Coordinates	28.56105, -81.129061
	Distance to site	5141 ft / 0.974 mi S
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110006389354	
EPA Identifier	110006389354	
Primary Name	CIRCLE K STORE #7502	
Address	16959 E HWY 50	
City	ORLANDO	
County	ORANGE	
State	FL	
Zipcode	32820	
Programs	FDM:30199, NPDES:FLG912141, RCRAINFO:FLD984251470	
Program Interests	CESQG, ICIS-NPDES NON-MAJOR, STATE MASTER	
Updated On	05-MAR-2013 10:22:01	
Recorded On	01-MAR-2000 00:00:00	

US RCRA Generators (CESQG, SQG, LQG)

7	Coordinates	28.560622, -81.12104
	Distance to site	5218 ft / 0.988 mi S
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110005658074	
EPA Identifier	110005658074	
Primary Name	ALL FOREIGN & DOMESTIC USED AUTO PARTS	
Address	17421 EAST COLONIAL DRIVE	
City	ORLANDO	
County	ORANGE	
State	FL	
Zipcode	32820-2210	
NAICS Codes	423140, 425110, 425120, 441310	
SIC Codes	5015	
SIC Descriptions	MOTOR VEHICLE PARTS, USED	
Programs	FDM:7949, NPDES:FLR05F555, RCRAINFO:FLR000059121	
Program Interests	CESQG, ICIS-NPDES NON-MAJOR, STATE MASTER, STORM WATER INDUSTRIAL	
Updated On	07-OCT-2016 15:48:21	
Recorded On	01-MAR-2000 00:00:00	
NAICS Descriptions	AUTOMOTIVE PARTS AND ACCESSORIES STORES., BUSINESS TO BUSINESS ELECTRONIC MARKETS., MOTOR VEHICLE PARTS (USED) MERCHANT WHOLESALERS, WHOLESALE TRADE AGENTS AND BROKERS.	

8	Coordinates	28.561188, -81.13103
	Distance to site	5304 ft / 1.005 mi SW
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110060286612	
EPA Identifier	110060286612	
Primary Name	TRACTOR SUPPLY COMPANY #560	
Address	16849 E COLONIAL DR	
City	ORLANDO	
County	ORANGE	
State	FL	
Zipcode	32820-1910	
NAICS Codes	453998	
Programs	RCRAINFO:FLR000210625	
Program Interests	CESQG	
Updated On	17-OCT-2017 12:10:24	
Recorded On	26-AUG-2014 14:38:57	
NAICS Descriptions	ALL OTHER MISCELLANEOUS STORE RETAILERS (EXCEPT TOBACCO STORES).	

9	Coordinates	28.56042, -81.12852
	Distance to site	5318 ft / 1.007 mi S
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110005654933	
EPA Identifier	110005654933	
Primary Name	ECO GREEN AUTO PARTS	
Address	16969 EAST COLONIAL DRIVE	
City	ORLANDO	
County	ORANGE	
State	FL	
Zipcode	32820-1912	
NAICS Codes	423140, 425110, 425120, 441310	
SIC Codes	5015	
SIC Descriptions	MOTOR VEHICLE PARTS, USED	
Programs	FDM:1501, NPDES:FLR05G750, NPDES:FLU009074, RCRAINFO:FLR000053637	
Program Interests	CESQG, ICIS-NPDES NON-MAJOR, ICIS-NPDES UNPERMITTED, STATE MASTER, STORM WATER INDUSTRIAL	
Updated On	07-OCT-2016 17:17:42	
Recorded On	01-MAR-2000 00:00:00	
NAICS Descriptions	AUTOMOTIVE PARTS AND ACCESSORIES STORES., BUSINESS TO BUSINESS ELECTRONIC MARKETS., MOTOR VEHICLE PARTS (USED) MERCHANT WHOLESALERS, WHOLESALE TRADE AGENTS AND BROKERS.	

US ACRES (Brownfields)

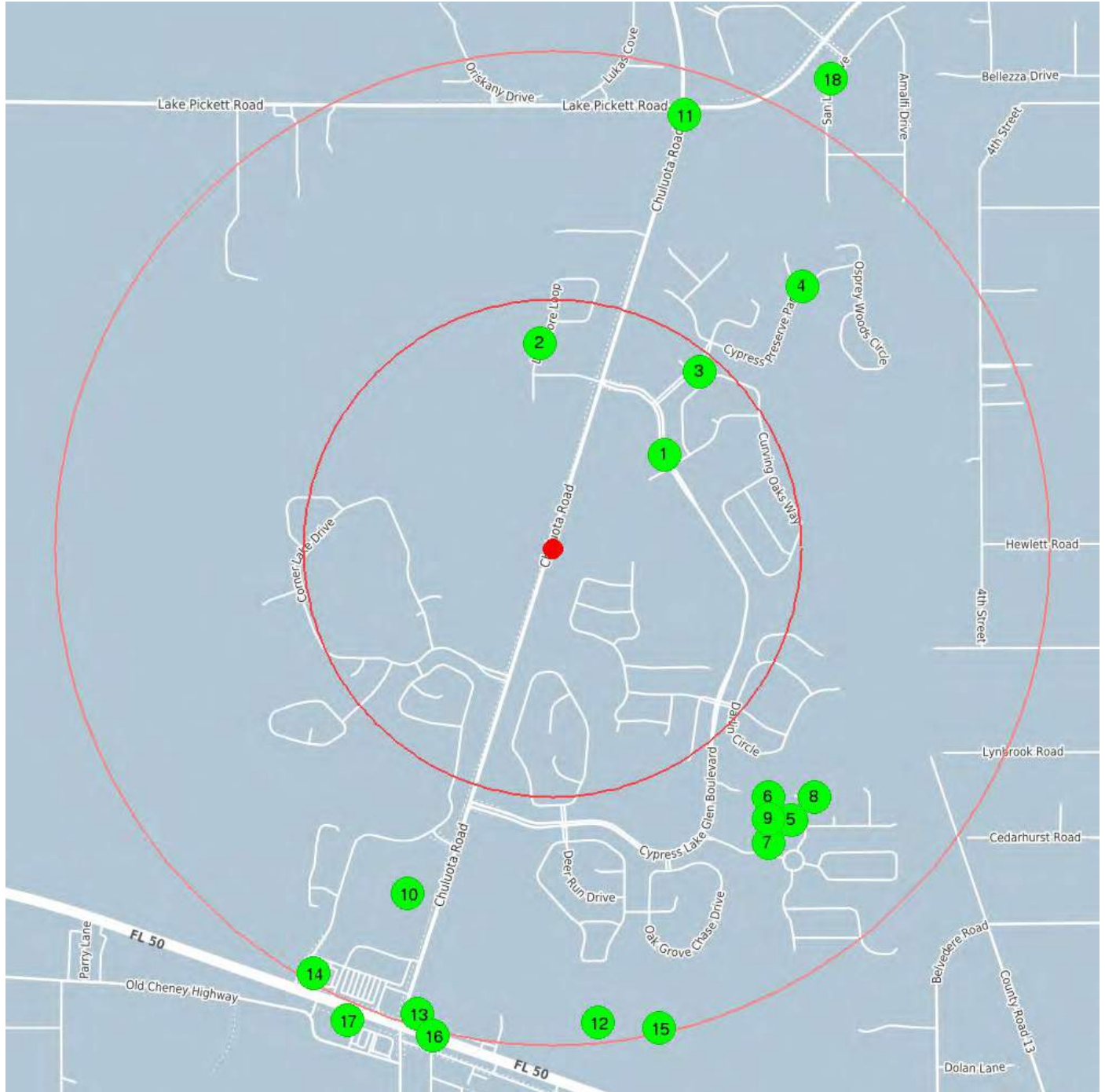
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties protects the environment, reduces blight, and takes development pressures off greenspaces and working lands. The Assessment, Cleanup and Redevelopment Exchange System (ACRES) is an online database for Brownfields Grantees to electronically submit data directly to The United States Environmental Protection Agency (EPA)

This database returned no results for your area

US NPDES

The NPDES module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

This database returned 15 results for your area



center 28.57458397146 -81.124586582184

0.5 mile

1.0 mile

US NPDES

1	Coordinates	28.57732, -81.12088
	Distance to site	1551 ft / 0.294 mi NE
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110028291854	
EPA Identifier	110028291854	
Primary Name	COLUMBIA ELEMENTARY SCHOOL	
Address	18501 CYPRESS LAKE GLEN BLVD	
City	ORLANDO	
County	ORANGE	
State	FL	
Zipcode	32820	
NAICS Codes	611110	
Programs	FDM:76720, NPDES:FLR10EI88, RCRAINFO:FLR000157024	
Program Interests	CESQG, ICIS-NPDES NON-MAJOR, STATE MASTER, STORM WATER CONSTRUCTION	
Updated On	05-MAR-2013 10:27:24	
Recorded On	26-MAR-2007 16:04:09	
NAICS Descriptions	ELEMENTARY AND SECONDARY SCHOOLS.	

2	Coordinates	28.580556, -81.125
	Distance to site	2182 ft / 0.413 mi N
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110015624993	
EPA Identifier	110015624993	
Primary Name	COUNTRY LAKE SUBDIVISION	
Address	SEC 16, TWSHP 22S, RANGE 32E	
City	ORLANDO	
County	ORANGE	
State	FL	
Zipcode	32820	
Programs	FDM:7926, NPDES:FLR10K783	
Program Interests	ICIS-NPDES NON-MAJOR, STATE MASTER, STORM WATER CONSTRUCTION	
Updated On	05-MAR-2013 10:27:24	
Recorded On	21-AUG-2003 20:34:32	

3	Coordinates	28.579722, -81.119722
	Distance to site	2437 ft / 0.462 mi NE
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110039143192	
EPA Identifier	110039143192	
Primary Name	CYPRESS LAKES PARCELS J & K	
Address	SE OF CHULUTOA RD & LAKE PICKE	
City	ORLANDO	
County	ORANGE	
State	FL	
Zipcode	32820	
Programs	NPDES:FLR10IL67	
Program Interests	ICIS-NPDES NON-MAJOR, STORM WATER CONSTRUCTION	
Updated On	11-JAN-2016 07:29:10	
Recorded On	18-AUG-2009 13:57:32	

4	Coordinates	28.5822, -81.1163
	Distance to site	3842 ft / 0.728 mi NE
Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110037473855	
EPA Identifier	110037473855	
Primary Name	CYPRESS LAKES PD PARCEL J & K	
Address	UNKNOWN	
City	ORLANDO	
County	ORANGE	
State	FL	
Zipcode	32820	
Programs	NPDES:FLR10GY04, NPDES:FLR10JE09, NPDES:FLR10KN64	
Program Interests	ICIS-NPDES NON-MAJOR, STORM WATER CONSTRUCTION	
Updated On	08-OCT-2016 10:23:41	
Recorded On	18-DEC-2008 06:45:54	

US NPDES

5

Coordinates 28.566667, -81.116667
Distance to site 3844 ft / 0.728 mi SE

Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110032763686
EPA Identifier	110032763686
Primary Name	CYPRESS LAKES NORTH ENTRY AND
Address	EAST OF CR419 AND NORTH OF SR5
City	ORLANDO
County	ORANGE
State	FL
Zipcode	32820
Programs	NPDES:FLR10AO13
Program Interests	ICIS-NPDES NON-MAJOR, STORM WATER CONSTRUCTION
Updated On	05-MAR-2013 10:26:01
Recorded On	02-DEC-2007 15:58:25

6

Coordinates 28.566667, -81.116667
Distance to site 3844 ft / 0.728 mi SE

Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110020525546
EPA Identifier	110020525546
Primary Name	CYPRESS LAKES PHASE III PARCEL
Address	EAST OF CR 419 & NORTH OF SR 5
City	ORLANDO
County	ORANGE
State	FL
Zipcode	32820
Programs	NPDES:FLR10N886
Program Interests	ICIS-NPDES NON-MAJOR, STORM WATER CONSTRUCTION
Updated On	05-MAR-2013 10:28:01
Recorded On	25-JAN-2005 07:06:34

7

Coordinates 28.566667, -81.116667
Distance to site 3844 ft / 0.728 mi SE

Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110020165355
EPA Identifier	110020165355
Primary Name	CYPRESS LAKES PHASE IV (PARCE
Address	E OF CR 419, N OF SR 50
City	ORLANDO
County	ORANGE
State	FL
Zipcode	32820
Programs	FDM:24183, NPDES:FLR10W958
Program Interests	ICIS-NPDES NON-MAJOR, STATE MASTER, STORM WATER CONSTRUCTION
Updated On	05-MAR-2013 10:24:33
Recorded On	30-DEC-2004 16:54:53

8

Coordinates 28.566667, -81.116667
Distance to site 3844 ft / 0.728 mi SE

Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110015619008
EPA Identifier	110015619008
Primary Name	CYPRESS LAKES PHASES II AND II
Address	EAST OF CR 419 AND NORTH OF SR
City	ORLANDO
County	ORANGE
State	FL
Zipcode	32820
Programs	NPDES:FLR10L495
Program Interests	ICIS-NPDES NON-MAJOR, STORM WATER CONSTRUCTION
Updated On	18-AUG-2015 09:44:37
Recorded On	21-AUG-2003 19:26:21

US NPDES



Coordinates 28.566667, -81.116667
Distance to site 3844 ft / 0.728 mi SE

Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110020718507
EPA Identifier	110020718507
Primary Name	CYPRESS LAKES ENTRY AND SCHOOL
Address	EAST OF CR419 AND NORTH OF SR5
City	ORLANDO
County	ORANGE
State	FL
Zipcode	32820
Programs	NPDES:FLR10Z063
Program Interests	ICIS-NPDES NON-MAJOR, STORM WATER CONSTRUCTION
Updated On	05-MAR-2013 10:23:45
Recorded On	01-MAR-2005 15:06:33



Coordinates 28.564547, -81.129402
Distance to site 3973 ft / 0.752 mi SW

Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110036555395
EPA Identifier	110036555395
Primary Name	CORNER LAKE MIDDLE SCHOOL
Address	1700 CHULUOTA RD
City	ORLANDO
County	ORANGE
State	FL
Zipcode	32820-1401
NAICS Codes	611110
Programs	NPDES:FLR10RY06, RCRAINFO:FLR000156539
Program Interests	CESQG, ICIS-NPDES NON-MAJOR
Updated On	17-OCT-2017 12:20:18
Recorded On	19-JUN-2008 21:14:09
NAICS Descriptions	ELEMENTARY AND SECONDARY SCHOOLS.



Coordinates 28.5872, -81.1202
Distance to site 4812 ft / 0.911 mi N

Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110056345192
EPA Identifier	110056345192
Primary Name	CHULUOTA RD AT LAKE PICKETT RD
Address	UNKNOWN
City	ORLANDO
County	ORANGE
State	FL
Zipcode	32820
Programs	NPDES:FLR10NH07
Program Interests	ICIS-NPDES NON-MAJOR
Updated On	11-JAN-2016 17:20:33
Recorded On	09-DEC-2013 07:13:37

US NPDES

12

Coordinates 28.560767, -81.12309
Distance to site 5063 ft / 0.959 mi S

Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110006158692
EPA Identifier	110006158692
Primary Name	JOE'S TRUCK PARTS INC
Address	17361 E US HWY 50
City	ORLANDO
County	ORANGE
State	FL
Zipcode	32820
NAICS Codes	423140, 425110, 425120, 441310
SIC Codes	5015
SIC Descriptions	MOTOR VEHICLE PARTS, USED
Programs	FDM:22900, NPDES:FLR05A765, RCRAINFO:FLR000059956
Program Interests	CESQG, ICIS-NPDES NON-MAJOR, STATE MASTER, STORM WATER INDUSTRIAL
Updated On	07-OCT-2016 16:46:19
Recorded On	01-MAR-2000 00:00:00
NAICS Descriptions	AUTOMOTIVE PARTS AND ACCESSORIES STORES., BUSINESS TO BUSINESS ELECTRONIC MARKETS., MOTOR VEHICLE PARTS (USED) MERCHANT WHOLESALERS, WHOLESALE TRADE AGENTS AND BROKERS.

13

Coordinates 28.56105, -81.129061
Distance to site 5141 ft / 0.974 mi S

Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110006389354
EPA Identifier	110006389354
Primary Name	CIRCLE K STORE #7502
Address	16959 E HWY 50
City	ORLANDO
County	ORANGE
State	FL
Zipcode	32820
Programs	FDM:30199, NPDES:FLG912141, RCRAINFO:FLD984251470
Program Interests	CESQG, ICIS-NPDES NON-MAJOR, STATE MASTER
Updated On	05-MAR-2013 10:22:01
Recorded On	01-MAR-2000 00:00:00

14

Coordinates 28.562222, -81.1325
Distance to site 5173 ft / 0.980 mi SW

Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110064767499
EPA Identifier	110064767499
Primary Name	VERIZON / HEARTLAND DENTAL @ CORNER LAKES PLAZA
Address	UNKNOWN
City	ORLANDO
State	FL
Zipcode	32802
Programs	NPDES:FLR10PK60
Program Interests	ICIS-NPDES NON-MAJOR, STORM WATER CONSTRUCTION
Updated On	03-SEP-2016 11:58:06
Recorded On	11-SEP-2015 15:06:25

US NPDES

15

Coordinates 28.560622, -81.12104
Distance to site 5218 ft / 0.988 mi S

Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110005658074
EPA Identifier	110005658074
Primary Name	ALL FOREIGN & DOMESTIC USED AUTO PARTS
Address	17421 EAST COLONIAL DRIVE
City	ORLANDO
County	ORANGE
State	FL
Zipcode	32820-2210
NAICS Codes	423140, 425110, 425120, 441310
SIC Codes	5015
SIC Descriptions	MOTOR VEHICLE PARTS, USED
Programs	FDM:7949, NPDES:FLR05F555, RCRAINFO:FLR000059121
Program Interests	CESQG, ICIS-NPDES NON-MAJOR, STATE MASTER, STORM WATER INDUSTRIAL
Updated On	07-OCT-2016 15:48:21
Recorded On	01-MAR-2000 00:00:00
NAICS Descriptions	AUTOMOTIVE PARTS AND ACCESSORIES STORES., BUSINESS TO BUSINESS ELECTRONIC MARKETS., MOTOR VEHICLE PARTS (USED) MERCHANT WHOLESALERS, WHOLESALE TRADE AGENTS AND BROKERS.

16

Coordinates 28.56042, -81.12852
Distance to site 5318 ft / 1.007 mi S

Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110005654933
EPA Identifier	110005654933
Primary Name	ECO GREEN AUTO PARTS
Address	16969 EAST COLONIAL DRIVE
City	ORLANDO
County	ORANGE
State	FL
Zipcode	32820-1912
NAICS Codes	423140, 425110, 425120, 441310
SIC Codes	5015
SIC Descriptions	MOTOR VEHICLE PARTS, USED
Programs	FDM:1501, NPDES:FLR05G750, NPDES:FLU009074, RCRAINFO:FLR000053637
Program Interests	CESQG, ICIS-NPDES NON-MAJOR, ICIS-NPDES UNPERMITTED, STATE MASTER, STORM WATER INDUSTRIAL
Updated On	07-OCT-2016 17:17:42
Recorded On	01-MAR-2000 00:00:00
NAICS Descriptions	AUTOMOTIVE PARTS AND ACCESSORIES STORES., BUSINESS TO BUSINESS ELECTRONIC MARKETS., MOTOR VEHICLE PARTS (USED) MERCHANT WHOLESALERS, WHOLESALE TRADE AGENTS AND BROKERS.

17

Coordinates 28.560833, -81.131389
Distance to site 5469 ft / 1.036 mi SW

Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110032784752
EPA Identifier	110032784752
Primary Name	FIFTH THIRD BANK
Address	SWC OF E HWY 50 & CHULUOTA RD
City	ORLANDO
County	ORANGE
State	FL
Zipcode	32820
Programs	FDM:79386, NPDES:FLR10FD90
Program Interests	ICIS-NPDES NON-MAJOR, STATE MASTER, STORM WATER CONSTRUCTION
Updated On	05-MAR-2013 10:27:36
Recorded On	02-DEC-2007 16:21:12

US NPDES

18

Coordinates 28.58827, -81.11537
Distance to site 5800 ft / 1.099 mi NE

Info URL	http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110046321495
EPA Identifier	110046321495
Primary Name	MANDALAY
Address	3133 SAN LEO DR
City	ORLANDO
County	ORANGE
State	FL
Zipcode	32820
Programs	NPDES:FLR10LN99
Program Interests	ICIS-NPDES NON-MAJOR, STORM WATER CONSTRUCTION
Updated On	07-OCT-2016 16:32:10
Recorded On	31-JUL-2012 11:52:40

US Air Facility System (AIRS / AFS)

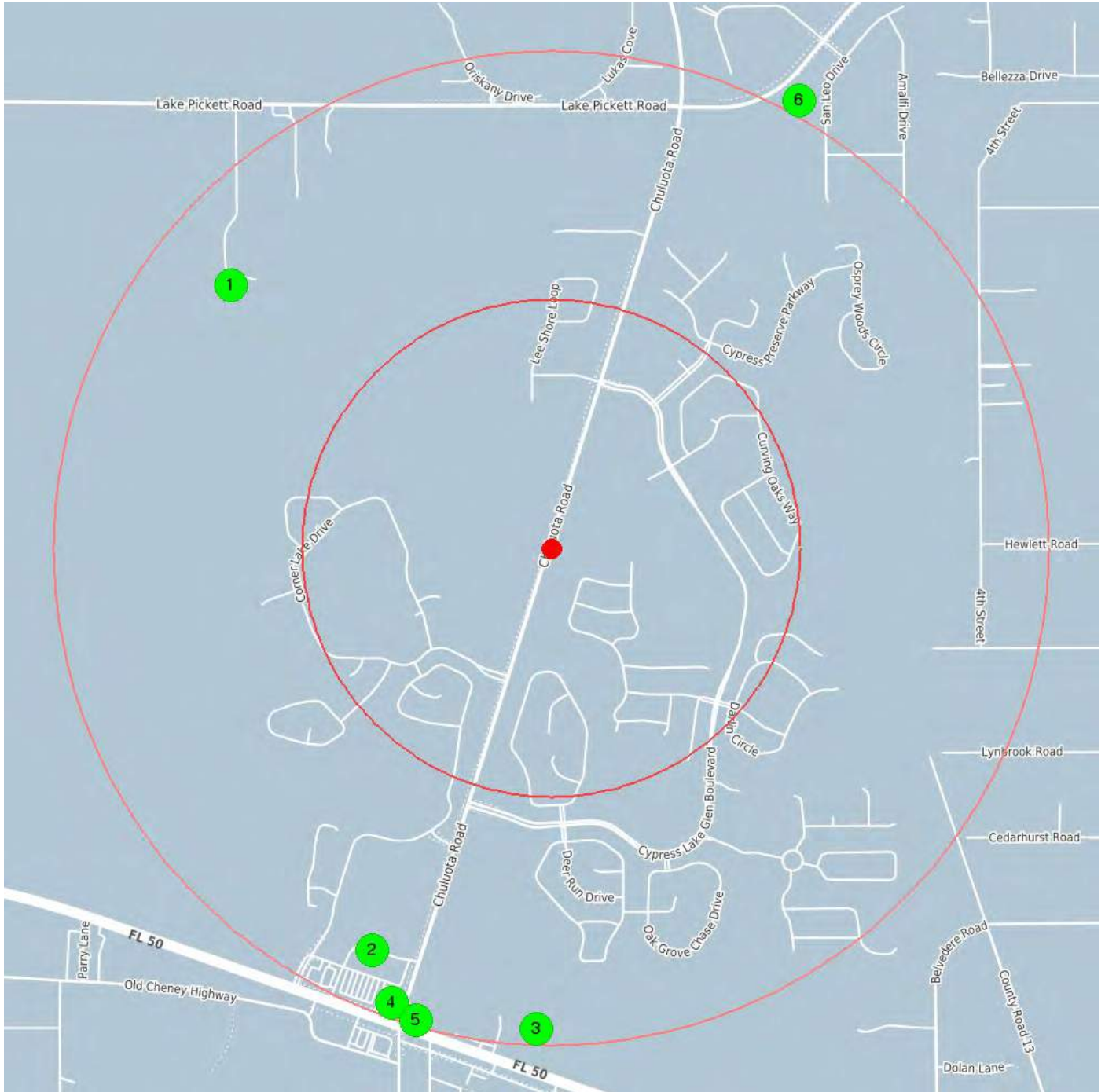
The Air Facility System (AIRS / AFS) contains compliance and permit data for stationary sources of air pollution (such as electric power plants, steel mills, factories, and universities) regulated by EPA, state and local air pollution agencies. The information in AFS is used by the states to prepare State Implementation Plans (SIPs) and to track the compliance status of point sources with various regulatory programs under Clean Air Act.

This database returned no results for your area

FL Storage Tanks

Underground Storage Tanks (UST) containing hazardous or petroleum substances are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The Florida Department of Environmental Protection, Division of Waste Management, Bureau of Petroleum Storage Systems regulates (permitting, compliance, enforcement) the design, construction, operation and maintenance of Petroleum Facilities Storage Tanks.

This database returned 5 results for your area



center 28.57458397146 -81.124586582184

0.5 mile

1.0 mile

FL Storage Tanks

1	Coordinates	28.5822506935161, -81.1351896867737
	Distance to site	4399 ft / 0.833 mi NW
Facility ID	9701278	
Facility Name	LAKE PICKET PROPERTY	
Address	LAKE PICKET RD	
City	OVIEDO	
Facility Type	Fuel user/Non-retail	
Facility Status	CLOSED	

2	Coordinates	28.5628711872554, -81.130515336319
	Distance to site	4675 ft / 0.886 mi SW
Facility ID	9810114	
Facility Name	PUBLIX SUPER MARKET #897	
Address	16825 E COLONIAL DR	
City	ORLANDO	
Facility Type	Fuel user/Non-retail	
Facility Status	OPEN	

3	Coordinates	28.5605806473364, -81.1250603899085
	Distance to site	5110 ft / 0.968 mi S
Facility ID	9063976	
Facility Name	TARMAC BITHLO RMC PLANT	
Address	17237 E SR 50	
City	BITHLO	
Facility Type	Fuel user/Non-retail	
Facility Status	OPEN	

4	Coordinates	28.5613664709885, -81.1298745530601
	Distance to site	5110 ft / 0.968 mi S
Facility ID	9101787	
Facility Name	BP AMOCO #60558	
Address	16891 E COLONIAL DR	
City	ORLANDO	
Facility Type	Retail Station	
Facility Status	OPEN	

5	Coordinates	28.5608343893858, -81.129047102864
	Distance to site	5215 ft / 0.988 mi S
Facility ID	8521400	
Facility Name	CIRCLE K #7502	
Address	16959 E COLONIAL DR (E HWY 50)	
City	ORLANDO	
Facility Type	Retail Station	
Facility Status	OPEN	

6	Coordinates	28.5876361059131, -81.1163861219787
	Distance to site	5437 ft / 1.030 mi NE
Facility ID	9101710	
Facility Name	NELSON & CO	
Address	HWY 419	
City	BITHLO	
Facility Type	Agricultural	
Facility Status	CLOSED	

FL Leaking Storage Tanks

This database returned no results for your area

FL Brownfield Sites

Brownfields are defined by the Florida Department of Environmental Protection (FDEP) as abandoned, idled, or underused industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination. The primary goals of Florida's Brownfields Redevelopment Act (Ch. 97-277, Laws of Florida, codified at ss. 376.77-.85, F.S.) are to reduce health and environmental hazards on existing commercial and industrial sites that are abandoned or underused due to these hazards and create financial and regulatory incentives to encourage voluntary cleanup and redevelopment of sites. After a local municipality in Florida designates an area as a brownfield to encourage redevelopment and focus upon revitalization, a resolution is passed and property owners within that designated area optionally may remediate or redevelop their property.

Executed Brownfield Site Rehabilitation Agreements (BSRAs) are voluntary cleanup agreements between a responsible party and FDEP or a delegated local pollution control program. This agreement provides the FDEP and the public assurance that site rehabilitation will be conducted in accordance with the statute and the Brownfields Cleanup Criteria rule (Ch. 62-785), and provides liability protection for the responsible person. The agreement contains various commitments by the responsible person, including milestones for completion of site rehabilitation tasks and submittal of technical reports and plans as agreed to by the responsible person and the DEP. It also contains a commitment by the FDEP to review technical reports according to an agreed upon schedule.

This layer provides a polygon representation of the boundaries of sites within a designated Brownfield Area within Florida where BSRAs have been executed between FDEP and a responsible party.

This database returned no results for your area

EPA Superfund - National Priorities List

The Florida Department of Environmental Protection created US Environmental Protection Agency National Priorities List (NPL) site polygons. The purpose was to improve the location of sites proposed, listed or delisted from NPL from point data to a polygon. This database does not include sites added to the final NPL in the last two or three years, i.e. Flash Cleaners, Arkla Terra, Raleigh St. Dump, JJ Seifert & Kerr McGee

This database returned no results for your area

FL Solid Waste Facilities

The Florida Department of Environmental Protection (FDEP), Bureau of Solid and Hazardous Waste - Section of Solid Waste compile facility specific information on Solid Waste Management facilities statewide and monitor their potential to impact ground water. The Solid Waste Program regulates (permitting, compliance, enforcement) the design, construction, operation and maintenance of Solid Waste Facilities. It ensures the proper closure and long-term monitoring and maintenance of those facilities which have concluded useful production, or which are otherwise required by rule to be closed. The program also administers financial responsibility requirements designed to guarantee that owners/operators have the financial ability to properly close and manage the Solid Waste Facilities

This database returned no results for your area

FL Dry Cleaning Program Sites

The Florida Department of Environmental Protection (FDEP) tracks information regarding sites in the state Dry Cleaning cleanup program. These drycleaning sites are eligible for a state funded program (Drycleaning Solvent Cleanup Program) to cleanup properties that are contaminated as a result of the operations of a drycleaning facility or a wholesale supply company (Chapter 376, Florida Statutes). A fund has been established to pay for the costs related to the cleanup of these properties. Drycleaners applied to participate in this program from 1995 (when the law was passed) to December 31, 1998. All sites have confirmed contamination above Contamination Target Levels and have complied with conditions set in the law.

This database returned no results for your area

FL Groundwater Contamination Areas

This GIS layer represents approximately 427,897 acres in 38 counties in Florida that have been delineated for groundwater contamination. Of these areas, the majority are delineated for EDB (EDB is mainly used in anti-knock (leaded) gasoline mixtures, particularly in aviation fuel) with a few additional areas delineated for solvents and gasoline. However, this GIS layer does not represent all known sources of groundwater contamination for the state of Florida.

This database returned no results for your area

FL State Cleanup Sites

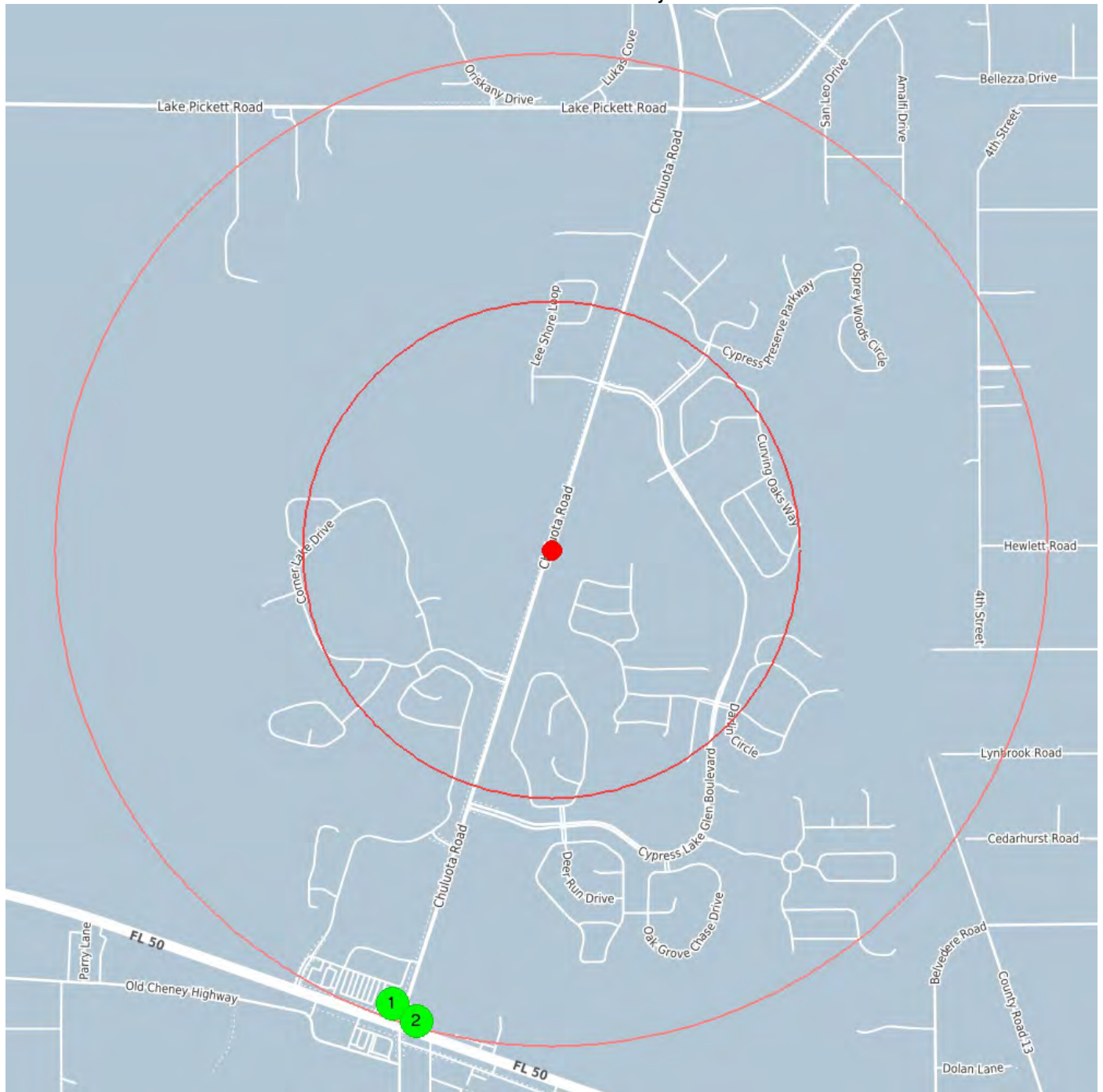
Florida Department of Environmental Protection (FDEP) State-Funded Hazardous Waste Cleanup Site polygons (does not include Drycleaning Solvent Cleanup Program, Department of Defense sites, National Priority List (NPL) sites or PSRP cleanups under District Office supervision)

This database returned no results for your area

FL Fuel Facilities

The Florida Department of Environmental Protection, Division of Waste Management, Bureau of Petroleum Storage Systems regulates (permitting, compliance, enforcement) the design, construction, operation and maintenance of Petroleum Facilities. This layer identifies active fuel facilities and facility characteristics.

This database returned 2 results for your area



center 28.57458397146 -81.124586582184

0.5 mile

1.0 mile

FL Fuel Facilities



Coordinates 28.5613664717814, -81.1298745530601
Distance to site 5110 ft / 0.968 mi S

Name	BP AMOCO #60558
Facility ID	9101787
Address	16891 E COLONIAL DR
City	ORLANDO
Zip Code	32820
County	ORANGE
Number of Gas Tanks	2.0000000000
Capacity in Gallons	35000.0000000000
Number of Diesel Tanks	0.0000000000
Capacity in Gallons	0.0000000000
Total Tanks	2.0000000000
Total Capacity in Gallons	35000.0000000000



Coordinates 28.5608343901787, -81.129047102864
Distance to site 5215 ft / 0.988 mi S

Name	CIRCLE K #7502
Facility ID	8521400
Address	16959 E COLONIAL DR (E HWY 50)
City	ORLANDO
Zip Code	32820
County	ORANGE
Number of Gas Tanks	3.0000000000
Capacity in Gallons	30000.0000000000
Number of Diesel Tanks	1.0000000000
Capacity in Gallons	10000.0000000000
Total Tanks	4.0000000000
Total Capacity in Gallons	40000.0000000000

FL Activity Use Restrictions

Activity and Use Limitations (AULs), also known as Environmental Land-Use Controls (LUCs) – An AUL is a restriction, covenant or notice concerning the use of real property, which is imposed on real property. AULs and LUCs are further categorized as Institutional Controls (ICs) and Engineering Controls (ECs). An IC is a legal or regulatory restriction on the use of a property, limiting the use of groundwater and excavations or preventing such businesses as day care centers or schools on the property. An EC involves physical means of restricting site access or use in order to prevent the spreading or exposure of a contaminant. Frequently implemented engineering controls include requiring black top on the surface, building of structures to prevent exposure or even notices to the public that are posted on the grounds warning of contaminants.

This database returned no results for your area