

COLUMBIA COUNTY
NORTH FLORIDA MEGA INDUSTRIAL PARK (NFMIP)
WASTEWATER TREATMENT FACILITY (WWTF)
BID NO. 2022-1

Jones Edmunds Project No. 03780-001-01

ADDENDUM NO. 4

Wednesday, May 4, 2022

BIDS DUE DATE EXTENDED: 2:00 PM (Local Time), Tuesday, May 17, 2022

TO ALL CONTRACTORS BIDDING ON THIS PROJECT:

The changes, additions, substitutions, and/or deletions contained in Addendum No. 4 are hereby made part of the Contract Documents fully and completely for the construction of the North Florida Mega Industrial Park (NFMIP) Wastewater Treatment Facility (WWTF), Jones Edmunds & Associates, Inc., Project No. 03780-001-01 for the Columbia County, dated April 2022.

GENERAL NOTE:

The Bid due date has been changed from Tuesday, May 10, 2022 at 2:00PM to Tuesday, May 17, 2022 at 2:00PM.

The due date for questions has not been extended. Any questions received after April 30, 2022 will not be included in this Addendum No. 4.

ATTACHMENTS

ATTACHMENT A	RESPONSES TO BIDDERS' QUESTIONS
ATTACHMENT B	PRE-BID SIGN-IN SHEET
ATTACHMENT C	SHEET M19 (REVISED) W/ GORPHER TORTOISE LOCATIONS
ATTACHMENT D	SHEET M32 (REVISED) W/ ARV FOR FORCEMAINS
ATTACHMENT E	GSE GEOTECH REPORT 14978C FOR NEW SPRAYFIELDS
ATTACHMENT F	INSTRUMENT SCHEDULE (TO BE REPLACE IN ENTIRETY)

END OF ADDENDUM

ATTACHMENT A

RESPONSES TO BIDDERS' QUESTIONS

RESPONSES TO BIDDERS' QUESTIONS

Q1. What is the contract duration and liquidated damages for the project?

A1. See response to Addendum No. 2

Q2. Is there a prebid sign-in sheet available?

A2. See Attachment B.

Q3. The Leachate biological nutrient removal (BNR) tanks are called to be welded but do not have a material specification. Will Glass-fused-to-steel be applicable for these tanks?

A3. The Leachate Tanks shall be Glass-fused to steel, bolted tanks per Specification Section 13201.

Q4. Can we request a copy of the list of attendees for the pre-bid meeting that occurred on 4/19?

A4. See Attachment B.

Q5. Regarding the upcoming bid for the North Florida Mega Industrial Park WWTP Project, Section 09900 "Painting & Coating", Page 13, Paragraph 2.01 J. 1. c. and on Page 14, Paragraph 2.01 J. 2. d. shown below which is currently out to bid. It cannot be bid by a contractor as written.

A5. For System No. 41 and System No. 45 replace reference to Thoroseal with MasterSeal 581. For System No. 45 delete reference to SureCoat.

Q6. REF: Sheet M20, Note 4 – Please confirm if the contractor to is responsible for the layout of spray heads on 120 x 120 grids at all 6 zones?

A6. The Contractor is responsible for the layout of the Sprayheads for the Six Zones (Zones A, B, C, D, E and G) in grids of approximately 120' x 120'. The goal of each sprayfield irrigation zone is to achieve a relatively uniform coverage over sprayfield zone. Alternative layouts will be considered if they meet the requirements of the drawings, specifications, and the FDEP Permit.

Q7. REF: Sheet M20, Note 3 – Please confirm the spray field survey and stake will be included in Bid Item 6 Allowance.

A7. Sheet M20, Note 3 – Shall be included in Bid Item A.6, and not in Bid Item 6. Bid Item 6 is for development and completion of facility Record Drawings.

Q8. REF: Sheet M19 & Bid Item A.6 – Please confirm to what extent the 6 spray fields are to be cleared, grubbed, re-filled and re-grassed. Will it require any additional earthwork to

complete the construction of the spray fields? Will the trees and brush removed from the spray fields need to be hauled away? Will there be any clearing work required at the future spray fields?

- A8. Weyerhaeuser, the site Land Owner has two options to clear the underbrush prior to construction of the spray irrigation zones. Option A is a “Controlled Burn” and Option B is mowing. The selected Contractor will coordinate with the County and Weyerhaeuser on a schedule to perform this work. No additional earthwork outside of that shown on the drawings to install the 12-inch FM and associated piping is anticipated, and clearing work for the future sprayfields is not included in this project.**
- Q9. REF: Sheet M20, Note 9D – This note mentions gopher tortoise locations are shown on Sheet M19. We can not find these. Confirm if the contractor will be responsible for gopher tortoise relocating.*
- A9. Sheet M19 was reissued (See Attachment C) showing gopher tortoise burrow locations. The intent is to not disturb these burrows during sprayfield construction. Gopher tortoise relocation is not required as part of this Contract.**
- Q10. REF: Sheet M20 – Will the assembled spray field piping lay on top of the ground and will it require support for thrust?*
- A10. The assembled sprayfield piping distribution system with sprinkler risers will lay on the ground and be restrained at each of the fence posts installed at each sprinkler riser as shown on Detail 1 of Sheet M21.**
- Q11. REF: Sheet M19 and C16 – Furnish a detail for the air/vacuum relief valve assembly and containment structure.*
- A11. See Detail 2 on reissued Sheet M32 (See ATTACHMENT D). The ARV Enclosure shall be color Pantone Purple or equivalent for reclaim water.**
- Q12. REF: Construction Agreement – Substantial completion and final completion are not enough time for us and our subcontractors to build this project and procure all materials. We would anticipate in excess of 540 days for substantial completion. In addition, with the addendum #3 being sent to us on 4/22/22 we would like for the bid date to be set for a later date so that we have ample time to put together a competitive bid.*
- A12. The Bid Date is extended to May 17, 2022, at 2:00 PM. The time for additional questions is not extended. The County desires that the WWTF be Substantially Complete in 365-days to allow facility startup and operation. The County understands the recent constraints with equipment and materials, and is open to negotiation on project schedule, as necessary, with the selected lowest responsible bidder if a mutually agreeable solution can be reached.**

- Q13. REF: Section 01355, Par. 1.16 – States that the contractor is to pay the cost for building permits, but the Agreement, Section 23 say the owner will pay for County permits. If the contractor is to pay for building permits please publish what the cost will be.*
- A13. Contractor is responsible for acquiring all permits in accordance with County Contract and Section 01355. Contractor is not responsible for paying for permits issued by the County, in accordance with County Contract.**
- Q14. REF: Section 02230 – Will the owner pay for the cost for site preparation, clearing and tree removal permits?*
- A14. The site preparation and clearing items are paid for under Bid Item 3. Permits are addressed in Section 01355, County Contract, and throughout Division 00, 01, and 02.**
- Q15. REF: Section 01450 – This section says the contractor is to pay for testing costs. Confirm the testing will be paid from the \$20,000 allowance.*
- A15. The soils and concrete testing referenced in Specification Section 01450 will be paid under Bid Item 5 Testing Allowance.**
- Q16. REF: Section 01000, Par. 1.06 – Confirm the work in this section will be included in the Bid Item 6 Allowance.*
- A16. Section 01000, Paragraph 1.06 LINES AND GRADES is not included in Bid Item 6 Allowance. The work for Section 01000, Paragraph 1.06 is to be included and paid under Bid Item 1.**
- Q17. REF: Section 01325 – Please confirm that the owner wants monthly aerial photos and videos for this project with 20 photos and videos from each flight. Confirm drones will be allowed to fly in the area near the Correctional Institution.*
- A17. Monthly aerial photos and videos for this project are required to document monthly work progress. The 20 photos can be selected from the drone video to show the work progress for that month. Contractor is required to secure all approvals and/or permits per Specification 01325, 3.03.B.**
- Q18. REF: Section 01755, Par. 3.02 – Will the owner plan on witnessing of any factory performance testing? If so, please identify which tests will be witnessed so that the travel costs can be included in the bid.*
- A18. No factory witness performance testing is required for equipment under this Contract.**
- Q19. REF: Section 01720 – Confirm the work in this section, other than paragraph 1.01.B.2 will be paid from the Bid Item 6 Allowance.*

- A19. Bid Item 6 Allowance is for maintain As-Built Red Line Markup during construction and final Record Drawings preparation and submission once the project is completed. Field engineering or survey services required to layout and construct the project should be included under Bid Item 1, not Bid Item 6.**
- Q20. REF: Section 01750 – Can the owner identify which wastewater plant nearby will be used for loading seed sludge?*
- A20. The City of Lake City, Florida located in Columbia County has two regional wastewater treatment facilities (WWTF) – The Kicklighter and St. Margarets WWTF that can provide waste sludge seed for this facility during startup.**
- Q21. REF: Section 01755, Par. 3.03 – Will the owner’s operating personnel and the contractor need to be on site 24 hours/ day during the start-up period? Confirm the major equipment suppliers and subcontractors listed in paragraph 3.03.C.5 will all need to be on site at the same time for 7 consecutive 8 hour days.*
- A21. Specification Section 11000 -General Equipment Requirements and Table 11000-1 Equipment Testing and Training Requirements outline the number of hours required for the major equipment suppliers to be on-site to get all the equipment properly installed, tested, training complete and certified by each Manufacturer prior to the WWTP start-up. In regards to the intent of Specification Section 01755, 3.03 – the Contractor’s Superintendent and service personal need to be local and available during the start-up period so that they can react in a responsive manner to WWTP alarms, failures or equipment shut-downs for that period and timeframe specified. They do not have to be on-site 24-hours per day.**
- Q22. REF: Section 01785 – Confirm the work in this section will be included in the Bid Item 6 Allowance.*
- A22. The work in this section is the work for maintaining As-Builts and developing and submitting final Record Drawings and this work is included in the Bid Item 6 Allowance.**
- Q23. REF: Section 01810 – Will the 1.5MG storage pond require water tightness testing? If so, will the owner provide the water for testing?*
- A23. As listed in Section 01810, 3.05., Item 10: The Effluent Storage Pond is required to be tested for water tightness. The Owner is providing potable water for testing all water holding structures. The intent is that the water will be pumped through the plant by the Contractor to test all the water holding structures.**
- Q24. REF: Drawing G5 – RCW-3 indicates System 2 paint coating. Is this correct?*
- A24. RCW-3 is HDPE or C-900 PVC reclaim water piping. It should not be painted, and for buried piping it is required to have a purple stripe manufactured into piping for identification as reclaimed water.**

- Q25. REF: Section 15146, Par.2.01.B – The specifications call for SDR 17 for pipe larger than 8” and SDR 11 for piping 8” & smaller. The Pipe Schedule on G5 shows DR17-21. Please confirm which is correct.*
- A25. The Pipe Schedule on G5 should be revised to reference piping larger than 8” shall be DR17, and pipe 8” and smaller shall be DR11.**
- Q26. REF: Sheet C-19 – The effluent storage pond note says to furnish a primary, secondary and clay layer protective liner. Confirm the requirement for a clay liner. Also, the geotechnical report says to use a 40 mil liner, sheet M-18 says to use a 60 mil liner. Please confirm what type of liner is to be used.*
- A26. For the effluent storage pond, Sheet M-18 calls out the proper details including a 60 MIL HDPE Liner, 12 Oz. geotextile, structural fill and compacted subgrade. A clay liner is not required.**
- Q27. REF: Prebid meeting – Will there be a requirement to pre-load the soils beneath the new tanks? If so, please give requirements, and duration for the preloading activity.*
- A27. See Structural Sheet SG1, Foundation Note 5 for details and duration for pre-loading the area under the BNR tanks. See Sheet C8 for extent of area to pre-load under BNR tanks using soil and material stripped and stockpiled during site work and preparation.**
- Q28. How is the Contractor to handle the current force majeure and market pricing conditions for this bid? Please address these specific issues: material shortages, unknown product availability dates, potential project delays and pricing escalations. Currently, some vendors will not hold pricing. They require paying the actual pricing when material is released. Please provide specific direction on how to account for these issues in the bid.*
- A28. Stored materials can be invoiced in accordance with Division 00 (Including, but not limited to EJCDC General Conditions 15.01.B.2, Supplemental Conditions SC-15.01.B.3, and the County’s Contract Bid Template) and in the Measurement and Payment, Section 1.08. The County understands the current issues, and will work closely with the selected, lowest responsive bidder to procure equipment and materials early for this project.**
- Q29. REF: Section 13201 – After discussing this project with Florida Aquastore, they informed us that the price they quote to us will only be good for 30 days from the date of quote.*
- A29. We called Florida Aquastore and they noted that their material supply-chain issues are much improved and that they are not limiting pricing to 30-days.**
- Q30. REF: Prebid meeting – Will the engineer make available to the contractors CAD files?*

- A30. The lowest responsive bidder selected by the County for this project will receive CAD files as requested for use on this project.**
- Q31. REF: Measurement and Payment Item A.5a & A.5b – Confirm these items include all of the 12” RCW-3 piping and accessories from the chlorine contact tank to spray field Zone A.*
- A31. Bid Item A.5.a and A.5.b are alternate bid items to allow comparison of forcemain pipe material options – HDPE versus C-900 PVC. To clarify, the 12-inch RCW-3 piping and accessories include from the chlorine contact tank to sprayfield Zone G. Since sprayfield Zones F, H and I will not be constructed in this phase, the 12-inch RCW-3 forcemain will extend only to Zone G. After the 12” x 8” Tee install a plug to allow future 12-inch RCW-3 connection.**
- Q32. REF: Measurement and Payment Item A.6 – Confirm this item includes the 12” RCW-3 piping from spray field Zone A to spray field Zone I. Confirm if this piping is HDPE or PVC. Confirm where the ARV stations are located for this item. Confirm what are the diffusers.*
- A32. See answer to Question A31. The option to use HDPE or C-900 PVC will be determined by Owner/Engineer following award of Contract. ARV stations to be located every 1,500-feet on forcemain or at high points to be field verified with engineer. Replace “diffusers” with “fittings and valves.”**
- Q33. REF: Section 15146 – Does this specification for HDPE pipe match the specification on Drawing M20, Note 7?*
- A33. Drawing M20, Note 7 should be revised to read “...2-inch to 8-inch shall be DR 11....” and “...HDPE Pipe 12-inch shall DR 17..”**
- Q34. REF: Sheet C8 – Shows a designated stockpile area at the tanks. Please identify why a stockpile area is shown here.*
- A34. See answer to Q27.**
- Q35. REF: Section 03490 Par.1.01.B – The spec references polymer concrete manholes intended for use in sanitary sewers, storm sewers, and water lines where corrosion resistance is required. Are the storm structures on this project intended to be polymer concrete or standard precast structures?*
- A35. Contract Documents reflect storm structures as standard precast structures.**
- Q36. REF: Section 02920 Par.2.02.D&E – The spec lists Argentine Bahia to be used for seeding and sodding. On sheet C-1 of the drawings under the stabilization note 5, lists all sod to be Centipede. Which type of seed and sod will be required for this project?*
- A36. Argentine Bahia shall be used for all seed and sod.**

Q37. REF: Section 11356 – Can you add Moyno Pumps as an approved manufacturer for progressive cavity pumps?

A37. **Named or pre-approved equals will not be added during bidding. If the manufacturer believes they meet the requirements of the specification “or-equals” may be submitted by the lowest responsive bidder for review during the submittal process.**

Q38. REF: Section 11260 – Can you add Carl Eric Johnson as an approved metering pump manufacturer using Grundfos Pumps?

A38. **Named or pre-approved equals will not be added during bidding. If the manufacturer believes they meet the requirements of the specification “or-equals” may be submitted by the lowest responsive bidder for review during the submittal process.**

Q39. Can you please provide clarification on what pressure for each application that the blowers should be sized for? Both discharge pressure or differential pressure could be interpreted as the pressure requirement for the blower sizing. See highlighted below. Please indicate which one should be used for the sizing of the blower. I would recommend removing the differential pressure then stating the discharge pressure in PSIG. This way, every blower manufacturer is sizing to the same pressure requirement without question. Let me know if this makes sense or if you need further explanation.

C. Process Performance Requirements

I. PD Blowers – (Aeration and Aerobic Digester with Fine Bubble Diffusers)
(Four: Two Duty and Two Swing):

a.	Delivered Airflow (SCFM):	950
b.	Inlet Pressure (psia):	14.63
c.	Discharge Pressure (psia):	10
d.	Differential Pressure (psi):	4.63
e.	Maximum Horsepower (hp):	75
f.	Maximum Blower Speed (RPM):	3,100
g.	Maximum Motor Speed (RPM):	1,800
h.	Minimum Efficiency (%):	50
i.	Sound Pressure Level with Enclosure (dB(A)): (Estimated sound pressure level at 1 meter, free field with soundproof piping.)	<75
j.	Voltage	230/460V
k.	Phase	3
l.	Hertz	60
m.	Installation Location:	As shown on the Drawings.

psia = pounds per square inch absolute; psi = pounds per square inch;
RPM = revolutions per minute; dB(A) = A-weighted decibels.

A39. **Specification 11378, remove any references to Differential Pressure. Discharge Pressures are in psig, not psia.**

Q40. *For clarification on this question, the prior design discharge pressures considered the values shown in the “discharge pressure” row (10 psi for the EQ blowers, 10 psia for the aeration & digester blowers, and 12 psia for the leachate tank blowers). Please confirm this is still the case.*

A40. Discharge Pressures are in psig, not psia.

Q41. *Also, please confirm who is responsible for providing the VFD for the blowers.*

A41. The VFDs for the blowers and provided by the Electrical Contractor.

Q42. *Spec 11390, section 2.01 C.2.c – Please clarify that a design 0.5 mg/L effluent ammonia limit will be acceptable*

A42. For Specification Section 11390, 2.01 C.2.c, revise the value for Effluent NH3-N (mg/L) to 0.5

Q43. *If the influent box with manual screen is to be provided, please provide details on how the rotating drum screens will be bypassed to utilize the manual screens. We would suggest installing valves and fittings at ground level with individual riser pipes for the drum screens and manual screens. We suggest installing an isolation valve just ahead of each screen to allow for maintenance.*

A43. Detail 3 on Sheet M31 shows the design intent schematic for the influent and manual screen piping and valves. This shows the valving required to allow flow to influent screens or to the bypass with manual screens. Installing the valves at ground level is an acceptable alternative and exact locations will be coordinated during shop drawing submission phase as part of Construction and should not impact Bid.

Q44. *We could not find details for how the effluent piping from the drum screens connects/discharges to the EQ basins. There’s a general configuration shown on M31. However, the elevations of these pipes make a difference in how they penetrate/enter the eq tanks. Please clarify design intent.*

A44. Design intent is for drum screen effluent piping to enter the EQ Basin over the top of the tank wall. Exact locations may be coordinated in the field as part of Construction.

Q45. *Plansheet M7 - Please provide dimensions of the baffle walls. These are needed to design the aeration system layout.*

A45. The design intent for the baffle wall is as follows: Install a maximum height of 6-inches below the basin water level to allow floating scum to pass thru tank and not be trapped. In addition, each baffle wall shall have a 4’ x 6’ opening to allow flow to pass and maintenance staff to walk-thru and perform work in basin. Alternate the 4’ x 6” openings in each baffle wall.

Q46. *Spec 11390, section 2.04 F – Please clarify that the influent box is to be constructed from 304SS and not the platform for the screens. The platform for the screens is proposed to be coated carbon steel.*

A46. Galvanized carbon steel will be allowed for the tank and screen platform. See answer to Q47 regarding the influent box.

Q47. *Spec 11390, section 2.05 B. - Please verify that an EQ flow regulator box is not required. The plans show a flow meter, and the EQ pumps are on VFDs. A flow regulator box is not required if the flow rate can be controlled with the flow meter and VFDs.*

A47. An EQ flow regulator box is no longer required as noted above.

Q48. *Spec 11390, sections 2.06 B & 1.01 C.3 – Please confirm that a mixer is not required for the 7,000-gallon pre-anoxic mixing zone.*

A48. A mixer is not required in the 7,000-gallon pre-anoxic mixing zone since this box receives flow from the EQ basin pumps, IR pumps and the RAS air lift pump which is sufficient flow to mix these three flows together in this small basin.

Q49. *Sheet S4 – Plan Note 5 – If a concrete tank is provided, Evoqua requires manways to access the EQ basin, digester, and aeration zones. Evoqua also requires 4” drains for each zone through the sidewall or the bottom slab.*

A49. On Sheet S4 Delete “Plan Note 1 and all remaining note references allowing prestressed concrete outer wall design.” Prestressed concrete outer wall design is not approved.

Q50. *Spec 11390, section 2.04 L & M – The diffusers described in this section will be provided by Evoqua for the EQ basin and digester tankage. We request to use these same coarse bubble diffusers for the leachate tanks.*

A50. A shop drawing submittal will be required for approval by the lowest responsive of bidder to confirm the Type 304 SS materials of construction for diffusers and air piping in accordance with Specification 11550 for the leachate tank coarse bubble diffusers.

Q51. *A foundation plan for the influent structures is needed.*

A51. BNR tank and influent and screen platform shall be the responsibility of the BNR tank equipment manufacturer. Once the location and number of columns is provided our structural engineer will coordinate column pad and reinforcement detail for Contractor.

Q52. *Please verify size of base channels for BNR Tanks, Dwg S5 detail 1 & 2 shows a C12” x 25 and spec 11390, section 2.04 A, General Component Construction calls for C8” X 18.75. Evoqua’s standard is C8”x18.75.*

A52. Revise Drawing S5 detail 1 & 2 to Evoqua’s standard C8” x 18.75.

Q53. Please verify paint system required on the BNR Plant. Spec section 11390 for the BNR has a painting section 3.02 A & B and there is one referenced in paint spec 09900. Evoqua’s standard coating system is listed in section 11390.

A53. Paint system for BNR Plant shall be as specified in Section 11390, 3.02 A & B.

Q54. Are there any drawings showing the BNR Plant drain piping?

A54. BNR Tank Manufacturer to provide standard drain connections, valves, and quick coupling connectors for each tank section as well as appropriate bolted manways for tank access. BNR Tanks can be drained with hoses coupled to drains and flow by gravity to sewer manholes strategically placed near the BNR tanks.

Q55. The base channel drawings for BNR Plant needs to show the base channel hooks that weld to the base channels.

A55. BNR tank manufacturer to provide details to Contractor during shop drawing submittal as appropriate for their package plant tank.

Q56. Can you provide copies of the grant agreements that are funding the project?

A56. Applicable grant agreements may be provided to the lowest responsive bidder as part of Contract Award.

Q57. Will the County and grant agencies allow for stored materials to be invoiced? Is there guidance on a procedure for invoicing stored materials?

A57. Stored materials can be invoiced in accordance with Division 00 (Including, but not limited to EJCDC General Conditions 15.01.B.2, Supplemental Conditions SC-15.01.B.3, and the County’s Contract Bid Template) and in the Measurement and Payment, Section 1.08.

Q58. Will weekend work be permitted for the field erected treatment plant? None of this work is concealed.

A58. Working hours are as defined in Specification 01100, Section 1.04. Work outside of normal working hours may be approved on a case-by-case basis.

Q59. Will provisions or guidelines be provided for price escalations? Prices have been increasing dramatically in the last two years. Further price increases due to supply chain disruptions and events outside of the contractor’s control present a risk to this project.

A59. See response to Q28.

Q60. *Sheet M9, Influent Screens and Conveyor Detail 1 – The drawing appears to show extensions to the legs of the screens. These are not standard items from the manufacturer and are not desirable. We would recommend a platform be used for elevating and providing access to the screens. Alternatively, the conveyor could be located at ground level with chutes from the screen to the conveyor. Pedestals may be required at ground level to ensure conveyor can discharge to dumpster. Please provide clarification on the desired layout/configuration.*

A60. An elevating platform shall be provided by screen manufacturer in lieu of screen leg extensions. Detail 3 on Sheet M31 shows the design intent schematic for the influent and manual screen piping and valves. This shows the valving required to allow flow to influent screens or to the bypass with manual screens. Exact locations may be coordinated in the field as part of Construction and should not impact Bid.

Q61. *Spec 11390, section 2.06 B/C – We would recommend that the local control panel for the mixers be provided by the electrical contractor. Evoqua will provide the mixer only.*

A61. BNR tank manufacturer shall supply the mixer control panels as specified in Section 11390.

Q62. *Spec 11500, section 2.03 – Can the air piping, fittings, hardware, and diffuser equipment for the leachate tanks be fabricated from 316SS?*

A62. 316 SS will be allowed for air piping, fittings, hardware, and diffuser equipment for the leachate tanks.

Q63. *Can the bid date be extended to May 17, 2022?*

A63. The Bid Date is revised and extended to May 17, 2022 at 2:00 PM.

Q64. *1.09 Qualifications
(C) Electrical holiday testing of the finished sheet should be done with a 67.5 Volt wet sponge test in accordance with AWWA D103-19 Sec 12.9 standards (Holiday Testing) instead of a 1,000 dry test (attached for reference).*

A64. This should not impact the Bid and can be coordinated as part of Construction.

Q65. *1.11 Design Criteria
(C) materials, fabrication, and erection of the bolted tanks shall conform to AWWA D103-19 which is the latest version.
(F) Site Class, S_s, S₁, and TL should be provided if available
(F) (3) Should reference latest Florida Building Code (FBC 2020)*

A65. This should not impact the Bid and can be coordinated as part of Construction.

Q66. *2.01 (A), (2), (F)*

In the last sentence Engineered Storage Solutions should be replaced with CST Industries Inc, as this is the current name of the company as of 2010.

A66. This should not impact the Bid and can be coordinated as part of Construction.

Q67. 2.02 (I)

In the last sentence Engineered Storage Solutions should be replaced with CST Industries Inc, as this is the current name of the company as of 2010.

A67. This should not impact the Bid and can be coordinated as part of Construction.

Q68. 3.02 Foundation

*(C) In the first sentence it should be corrected to read, “The tank manufacturer shall design the tank **foundation** ~~footing ring wall~~.”*

A68. This should not impact the Bid and can be coordinated as part of Construction.

Q69. REF: GSE Engineering Geotechnical Report 14987A, Par. 1.2 – The report says there is a second geotechnical report 14978 for the spray fields. We cannot find that report.

A69. GSE Project No. 14987C is the Geotechnical Site Exploration Report for the New Sprayfield (See ATTACHMENT E).

Q70. REF: Section 15146 – Will other manufacturers for HDPE pipe be approved other than Drisco Plex?

A70. HDPE pipe manufacturers that meet Specification Section 15146 and related Contract Document requirements may be approved.

Q71. REF: Section 15146, Par. 1.02.D – Will the general contractors bidding this project be required to comply with the 10,000 feet of HDPE installation experience requirement?

A71. No. The purpose of this reference is for the installing subcontractor to show relative experience and references for this experience requirement.

Q72. REF: Drawing Sheet C-19 – Sheet C-19 appears to show the Effluent Storage Pond as a different shape than what is shown on sheets M-1 and M-2. Which dimensions will be required?

A72. The Effluent Storage Pond shall be constructed based on the dimensions shown on Sheet C-19.

Q73. REF: Drawing Sheets C-11 & M-40. On sheet C-11 there is a note that says Cantilevered Gate (See Jones Edmunds Plans For Details), the cantilevered gate detail on sheet M-40 says that width is as shown on plans. Can you provide the desired gate width?

A73. Sheet M-40, the “Opening Width” for the Cantilevered Gate shall by 20-feet.

Q74. REF: Drawing Sheet M-29. Are the precast catch basins that are located at the washdown pad area and the loading pad inlets intended to be polymer concrete or standard precast?

A74. The precast basins for the washdown and loading pad areas on M-29 are intended to be standard precast concrete.

END OF QUESTIONS

ATTACHMENT B

PRE-BID SIGN-IN SHEET

JonesEdmunds

• Gainesville • Jacksonville • Sarasota • Tampa • Titusville • West Palm Beach • Winter Haven

ATTENDEE SIGN-IN SHEET

PURPOSE OF MEETING: Pre-Bid Meeting (NON-MANDATORY) DATE: 04/19/2022

LOCATION OF MEETING: In-Person (Duval Place, 971 West Duval Street, Suite 150, Lake City, FL 32055) TIME: 1:15 PM

PROJECT NAME: North Florida Mega Industrial Park (NFMIP) Wastewater Treatment Facility (WWTF)

NAME	ORGANIZATION	PHONE NUMBER AND EMAIL
David Kraus	Columbia County	PHONE: EMAIL: david_kraus@columbiacountyfla.com
Chad Williams <i>[Signature]</i>	Columbia County	PHONE: EMAIL: chad_williams@columbiacountyfla.com
Mike Null	Columbia County	PHONE: EMAIL: BCCpurchasing@columbiacountyfla.com
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PURPOSE OF MEETING: Pre-Bid Meeting (NON-MANDATORY) DATE: 04/19/2022

LOCATION OF MEETING: In-Person (Duval Place, 971 West Duval Street, Suite 150, Lake City, FL 32055) TIME: 1:15 PM

PROJECT NAME: North Florida Mega Industrial Park (NFMIP) Wastewater Treatment Facility (WWTF)

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PURPOSE OF MEETING: Pre-Bid Meeting (NON-MANDATORY) DATE: 04/19/2022

LOCATION OF MEETING: In-Person (Duval Place, 971 West Duval Street, Suite 150, Lake City, FL 32055) TIME: 1:15 PM

PROJECT NAME: North Florida Mega Industrial Park (NFMIP) Wastewater Treatment Facility (WWTF)

NAME AND TITLE	ORGANIZATION	PHONE NUMBER AND EMAIL
		PHONE: ----- EMAIL:

JonesEdmunds

• Gainesville • Jacksonville • Sarasota • Tampa • Titusville • West Palm Beach • Winter Haven

ATTENDEE SIGN-IN SHEET

PURPOSE OF MEETING: Pre-Bid Meeting (NON-MANDATORY) DATE: 04/19/2022

LOCATION OF MEETING: In-Person (Duval Place, 971 West Duval Street, Suite 150, Lake City, FL 32055) TIME: 1:15 PM

PROJECT NAME: North Florida Mega Industrial Park (NFMIP) Wastewater Treatment Facility (WWTF)

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PURPOSE OF MEETING: Pre-Bid Meeting (NON-MANDATORY) DATE: 04/19/2022

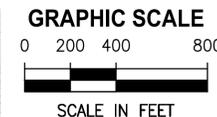
LOCATION OF MEETING: In-Person (Duval Place, 971 West Duval Street, Suite 150, Lake City, FL 32055) TIME: 1:15 PM

PROJECT NAME: North Florida Mega Industrial Park (NFMIP) Wastewater Treatment Facility (WWTF)

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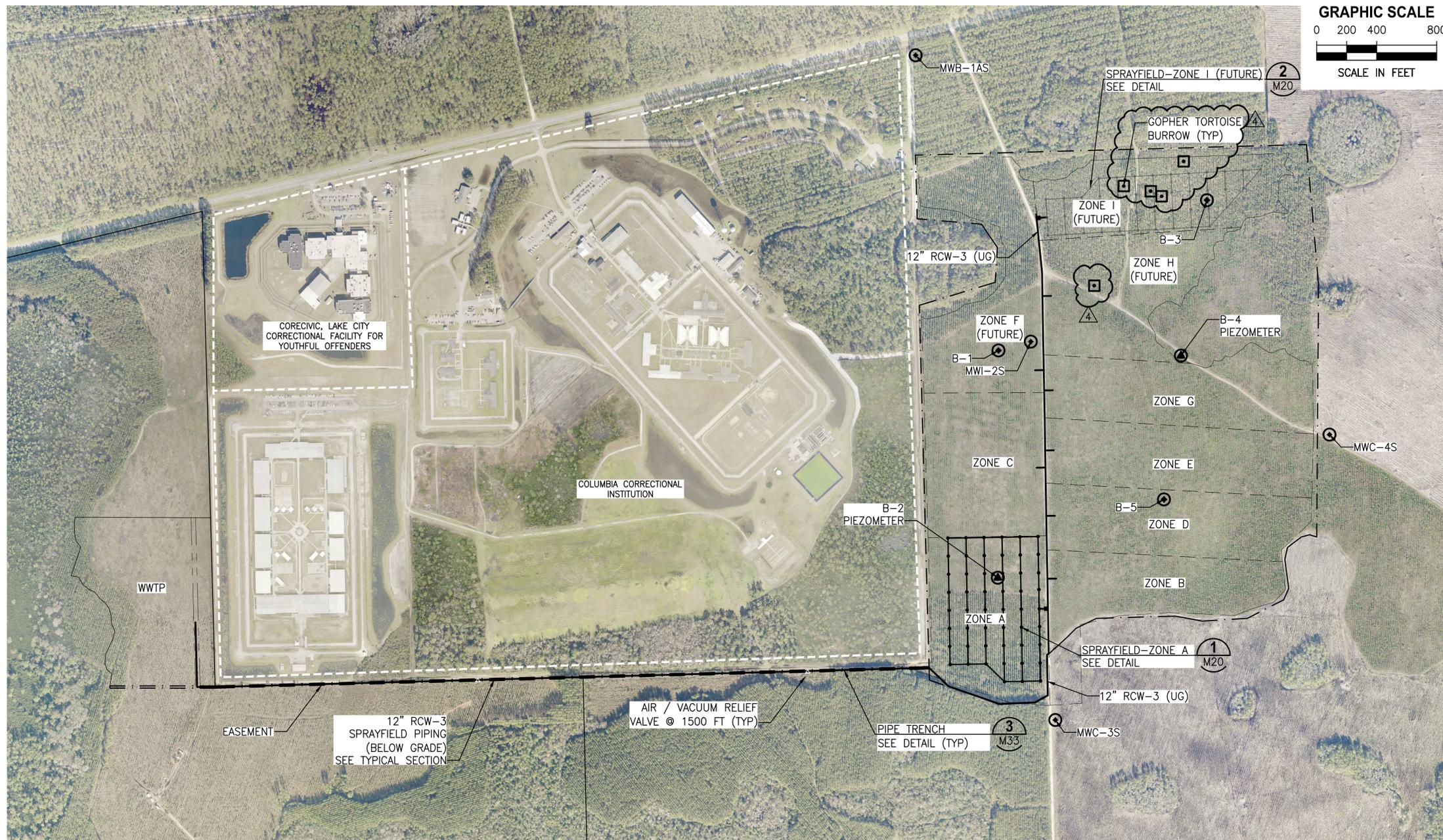
ATTACHMENT C

**SHEET M19 (REVISED) WITH GOPHER TORTOISE
LOCATIONS**



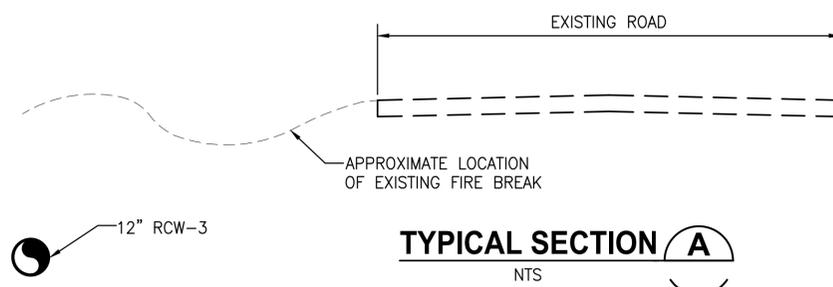
NOTES:

1. THERE ARE FOUR MONITORING WELLS (MWB-1AS, MWI-2S, MWC-3S, AND MWC-4S) TO BE INSTALLED. THERE ARE TWO PIEZOMETERS TO BE ABANDONED. ALL LOCATIONS ARE SHOWN ON THIS SHEET.
2. BEFORE THE PROPOSED MONITORING WELLS ARE INSTALLED, AN SPT BORING WILL BE PERFORMED TO ACCURATELY DETERMINE THE LITHOLOGY OF THE ZONE TO BE MONITORED. TEST BORING METHODOLOGY SHOULD BE IN ACCORDANCE WITH ASTM D1586. THE SPT BOREHOLE WILL BE USED FOR INSTALLING THE WELLS.
3. THE WELLS WILL BE INSTALLED BY A LICENSED WATER-WELL CONTRACTOR AND THE INSTALLATION SUPERVISED BY A GEOLOGIST OR ENGINEER. WE RECOMMEND INSTALLING THE WELLS USING HOLLOW-STEM AUGERS. BEFORE THE WELLS ARE DRILLED OR INSTALLED, ALL DRILLING EQUIPMENT WILL BE DECONTAMINATED BY STEAM CLEANING.
4. THE WELLS WILL BE 2 INCHES IN DIAMETER AND WILL BE CONSTRUCTED USING SCHEDULE 40 PVC PIPE WITH THREADED COUPLINGS. THE WELL SCREEN WILL CONSIST OF APPROXIMATELY 10 FEET OF 0.010-INCH SLOTTED PVC SCREEN. THE TOTAL DEPTH OF THE WELL SHOULD BE APPROXIMATELY 20 TO 30 FT-BLS.
5. THE ANNULAR SPACE FOR THE WELLS WILL BE PACKED WITH 20/30 SILICA FILTER SAND THAT SHOULD EXTEND AT LEAST 2 FEET ABOVE THE TOP OF THE WELL SCREEN. A 30/60 FINE-SILICA-SAND SEAL AND/OR BENTONITE SEAL WILL BE PLACED ABOVE THE FILTER PACK TO A MINIMUM THICKNESS OF 2 FEET. THE REMAINING ANNULAR SPACE ABOVE THE SEAL SHOULD BE GROUTED WITH CEMENT/BENTONITE GROUT (MAXIMUM 4-PERCENT BENTONITE) TO A MINIMUM OF 1 FT-BLS.
6. THE WELLS CASING SHOULD EXTEND APPROXIMATELY 2.5 FEET ABOVE GROUND SURFACE, AND A 1/8-INCH VENT HOLE SHOULD BE DRILLED AT THE TOP OF EACH WELL CASING. A LOCKING PROTECTIVE COVER AND CONCRETE PAD MEASURING 2 FEET BY 2 FEET BY 6 INCHES WILL BE INSTALLED AROUND THE WELL HEAD. TWO BOLLARDS SHALL BE INSTALLED IN FRONT OF EACH INSTALLATION. ALL WELLS SHALL BE LABELED. THE TOC ELEVATION AND HORIZONTAL LOCATION WILL BE SURVEYED BY A FLORIDA-REGISTERED SURVEYOR. THE MONITORING WELL WILL BE DEVELOPED USING THE PUMP-AND-SURGE METHOD UNTIL THE WELL PRODUCES CLEAN, CLEAR, SAND-FREE WATER.
7. THE TWO PIEZOMETERS SHALL BE PLUGGED IN ACCORDANCE WITH F.A.C. 40B-3 BY FILLING THEM FROM BOTTOM TO TOP WITH GROUT. THE PLUGGING SHALL BE TO RESTORE OR IMPROVE THE HYDROLOGIC CONDITIONS WHICH EXISTED BEFORE THE WELL WAS CONSTRUCTED. THE WORK SHALL BE ACCOMPLISHED BY A LICENSED WATER WELL CONTRACTOR.
8. CONTRACTOR TO PROVIDE FOUR ADVISORY SIGNS TO DESIGNATE PROJECT IS A "PART II RESTRICTED ACCESS RECLAIM WATER SPRAYFIELD." POST AND INSTALL SIGNS AT SITE BOUNDARIES/ROADWAY ENTRANCES. CONSULT WITH ENGINEER FOR FINAL LOCATION.



SPRAYFIELD PLAN

1"=400'



TYPICAL SECTION A

NTS

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BID SUBMITTAL

DESIGNED	TFRIEDRICH
DRAWN	JKRAMER
CHECKED	SMENARD
LTR.	DATE
5/3/22	ADDENDUM 4
JTK	TWF
BY	APPRD.

JonesEdmunds
 730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821

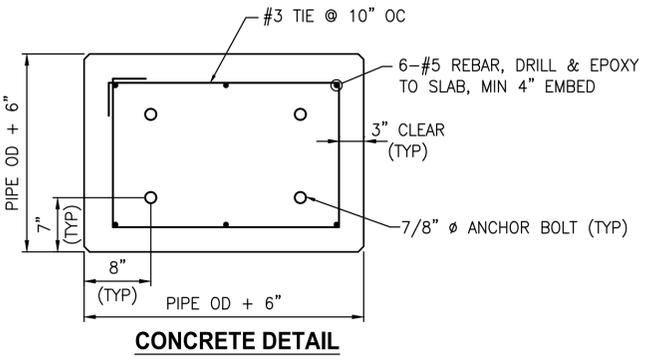
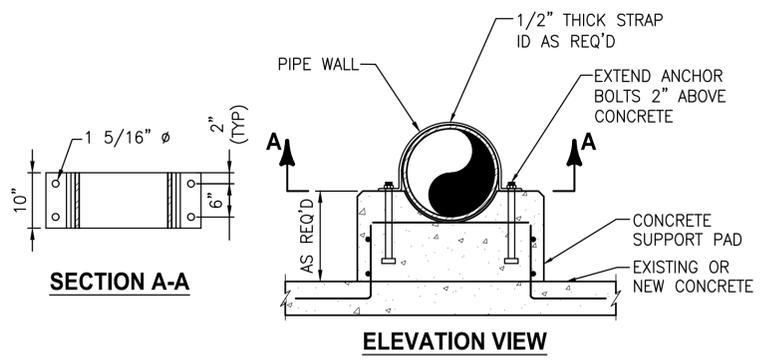
**NORTH FLORIDA MEGA INDUSTRIAL PARK
 WASTEWATER TREATMENT PLANT
 COLUMBIA COUNTY, FLORIDA**

SPRAYFIELD PLAN

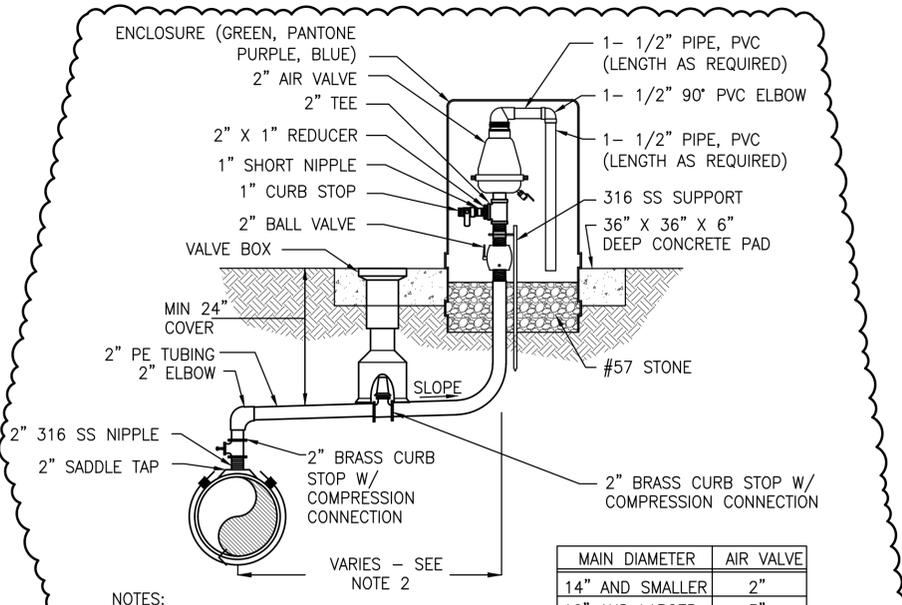
Thomas W. Friedrich, State of Florida, Professional Engineer, License No. 61281	PROJECT NO: 03780-001-01	DATE: APRIL 2022
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ATTACHMENT D

SHEET M32 (REVISED) WITH ARV FOR FORCEMAINS

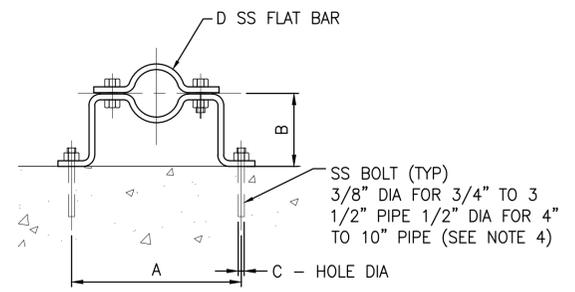


TYPICAL CONCRETE PIPE SUPPORT DETAIL 1
NTS



- NOTES:**
- OFFSET DISTANCE TO BE FIELD DETERMINED AND AS CLOSE TO THE R/W LINE AS POSSIBLE.
 - ADJUST HORIZONTAL LOCATION OF SIDEWALK, AS REQUIRED TO AVOID ENCLOSURE.
 - LOCATE ARV ENCLOSURE WITHIN 6" OF R/W LINE.
 - ABOVE DETAIL IS BASED ON 2" AIR RELIEF VALVE. CHANGE PIPE AND FITTINGS ACCORDINGLY FOR OTHER VALVE SIZES AND TYPES. VALVE SIZES AND NUMBERS TO BE DETERMINED BY THE ENGINEER AND APPROVED BY OWNER PRIOR TO INSTALLATION.

OFFSET AIR VALVE DETAIL 2
NTS

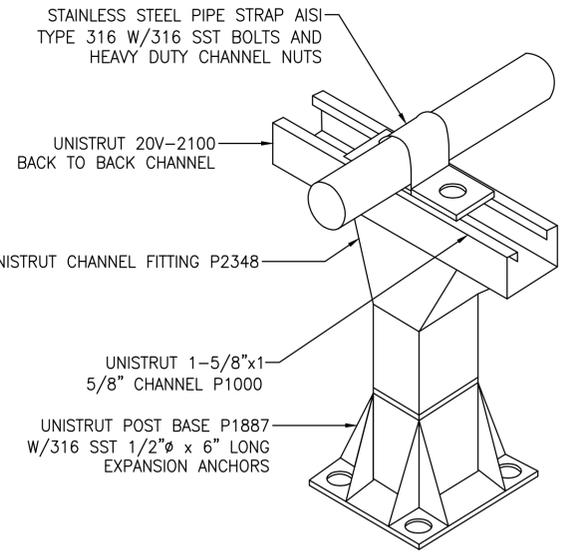


PIPE SIZE	A	B	C	FLAT BAR SIZE	LOAD RATING LBS *
3/4	5 15/16	2 1/2	7/16	3/16 x 1 1/4	190
1	6 1/4	2 5/8	7/16	3/16 x 1 1/4	-
1 1/4	6 11/16	2 3/4	7/16	3/16 x 1 1/4	-
1 1/2	6 15/16	3	7/16	3/16 x 1 1/4	190
2	8 5/16	3 3/16	7/16	1/4 x 1 1/4	420
2 1/2	8 7/8	3 7/16	7/16	1/4 x 1 1/4	-
3	9 1/8	3 3/4	7/16	1/4 x 1 1/4	420
3 1/2	10 1/16	4	7/16	1/4 x 1 1/4	610
4	10 9/16	4 1/4	9/16	1/4 x 1 1/4	-
5	11 3/4	4 3/4	9/16	1/4 x 1 1/4	610
6	14 3/8	5 5/16	9/16	3/8 x 1 1/2	870
8	16 5/8	6 5/16	9/16	3/8 x 1 1/2	870

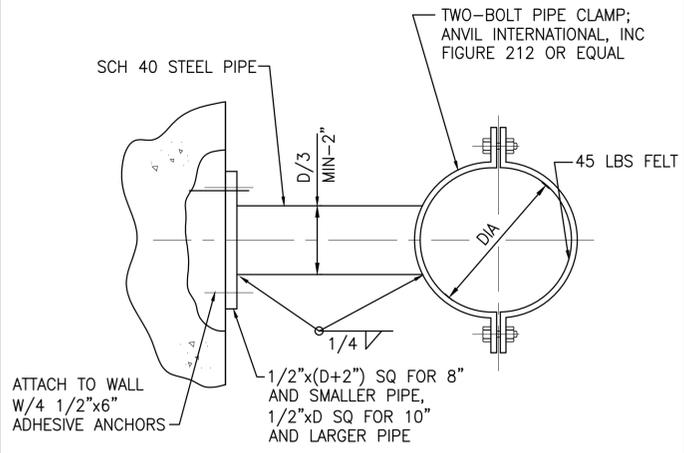
* SAFETY FACTOR OF 5

- NOTES:**
- WHEN USED WITH PVC PIPE, PROVIDE 18 GA PAINTED SHEET STEEL SLEEVE 6" LONG W/STAINLESS STEEL HOSE CLAMPS AROUND PIPE AT CLAMP WITH LOOSE FIT. WRAP COPPER TUBES W/2" STRIP OF RUBBER FABRIC.
 - FOR FLANGED PIPING INCREASE B DIMENSION A REQUIRED.
 - PAINT PIPE SUPPORT SAME AS PIPE.
 - USE ADHESIVE ANCHORS FOR MOUNTING ON CONCRETE.
 - ALL MOUNTING HARDWARE SHALL BE AISI THDE 304 UNO.
 - PIPE SUPPORT SHALL BE BY ANVIL FIGURE NO. 103 OFFSET PIPE CLAMP OR EQUAL.

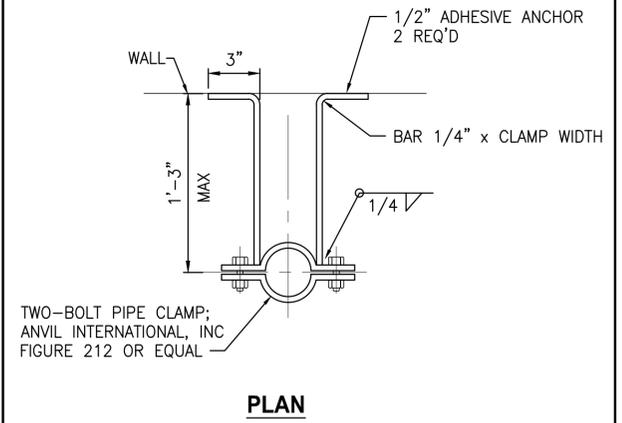
TYPICAL PIPE SUPPORT DETAIL 3
NTS



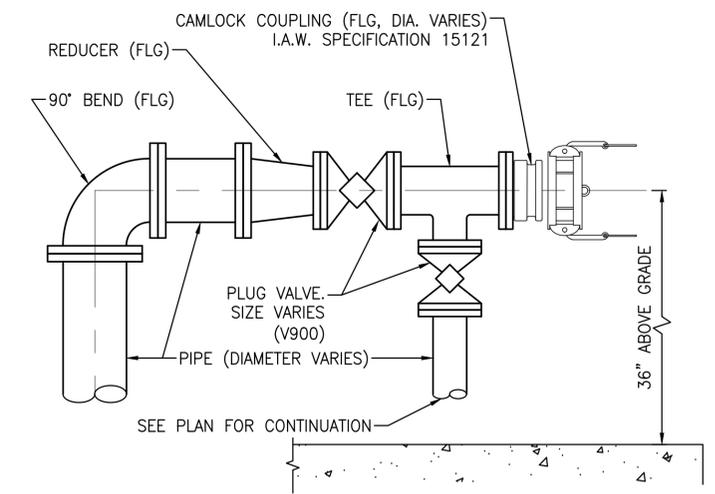
TYPICAL CHANNEL STRUT PIPE SUPPORT DETAIL 4
NTS



TYPICAL SWAY BRACE (TYPE A) DETAIL 5
NTS



TYPICAL SWAY BRACE (TYPE B) DETAIL 6
NTS



CAMLOCK COUPLING (ABOVE GRADE) DETAIL (TYP) 7
NTS

SAVED: 5/2/2022 10:08 AM JKRAMER Y:\03780-COLUMBIACOUNTY\PROJECTS\001-01 NFMP WWTF\CAD\DWGS\MECH\03780001-M32.DWG

DESIGNED	TFRIEDRICH
DRAWN	JKRAMER
CHECKED	SMENARD
LTR.	DATE
5/2/22	
ADDENDUM #	JTK TWF
REVISIONS	BY APPRD.



**NORTH FLORIDA MEGA INDUSTRIAL PARK
WASTEWATER TREATMENT PLANT
COLUMBIA COUNTY, FLORIDA**

MECHANICAL DETAILS

Thomas W. Friedrich, State of Florida, Professional Engineer, License No. 61281	PROJECT NO: 03780-001-01	DATE: APRIL 2022
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BID SUBMITTAL

ATTACHMENT E

**GSE GEOTECH REPORT 14978C FOR NEW
SPRAYFIELDS**



Engineering & Consulting, Inc.

**SUMMARY REPORT OF A
GEOTECHNICAL SITE EXPLORATION**

**COLUMBIA COUNTY, NORTH FLORIDA MEGA INDUSTRIAL PARK –
NEW SPRAY FIELD
LAKE CITY, COLUMBIA COUNTY, FLORIDA**

GSE PROJECT NO. 14987C

Prepared For:

JONES EDMUNDS, INC.

MAY 2021

Certificate of Authorization No. 27430



May 17, 2021

Thomas W. Friedrich, PE, BCEE
Senior Consultant / Vice President
Jones Edmunds, Inc.
324 South Hyde Park Avenue
Tampa, Florida 33606

Subject: Summary Report of a Geotechnical Site Exploration
Columbia County, North Florida Mega Industrial Park – New Spray Field
Lake City, Columbia County, Florida
GSE Project No. 14987C

Dear Mr. Friedrich:

GSE Engineering & Consulting, Inc. (GSE) is pleased to submit this geotechnical site exploration report for the above referenced project.

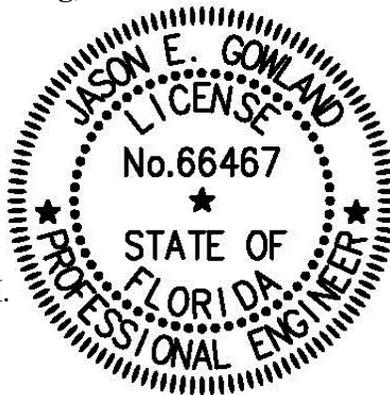
Presented herein are the findings and conclusions of our exploration, including the geotechnical parameters and recommendations to assist in the spray field site designs.

GSE appreciates this opportunity to have assisted you on this project. If you have any questions or comments concerning this report, please contact us.

Sincerely,

GSE Engineering & Consulting, Inc.

Cassandra R. Lindeman, E.I.
Staff Engineer



This item has been digitally signed and sealed by

on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Jason E. Gowland, P.E.
Senior Engineer
Florida Registration No. 66467

CRL/JEG:maj

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1. Project Site Location Map
2. Site Plan Showing Approximate Locations of Field Tests

1.0 INTRODUCTION

1.1 General

GSE Engineering & Consulting, Inc. (GSE) has completed this geotechnical exploration for the proposed Columbia County, North Florida Mega Industrial Park – New Spray Field located in Lake City, Columbia County, Florida. This exploration was performed in accordance with GSE Proposal No. 2021-205 dated April 6, 2021. Mr. Stanley F. Ferreira, Jr., P.E., President and CEO, of Jones Edmunds & Associates, Inc. authorized our services on April 15, 2021.

1.2 Project Description

This project will consist of a new waste water treatment facility and spray irrigation site located in Lake City, Columbia County, Florida (Figure 1). GSE previously performed a site exploration and issued a report for the initial spray field location (GSE Project No. 14987) dated March 31, 2021. Please refer to this report for additional background information. Since that report was issued, the design has progressed and you are considering an alternate spray field location. The alternate spray irrigation site will be located on the east side of the Columbia Correctional Institute.

You provided information about the project and site plans illustrating the locations of the proposed alternate spray irrigation site.

A recent aerial photograph of the site was obtained and reviewed. The site plan and aerial photograph were used in preparation of this exploration and report.

1.3 Purpose

The purpose of this geotechnical exploration was to determine the general subsurface conditions, evaluate these conditions with respect to the proposed construction, and prepare geotechnical parameters and recommendations to assist with spray irrigation site designs.

2.0 FIELD AND LABORATORY TESTS

2.1 General Description

The procedures used for field sampling and testing are in general accordance with industry standards of care and established geotechnical engineering practices for this geographic region. This exploration consisted of performing three (3) Standard Penetration Test (SPT) borings to a depth of 25 feet below land surface (bls) and two (2) SPT borings to a depth of 50 feet bls at the spray irrigation site. In addition, two (2) piezometers were installed to depths of 15 feet bls at the site.

The soil borings were performed at the approximate locations as shown on Figure 2. The borings were located at the site using the provided site plan, Global Positioning System (GPS) coordinates, and obvious site features as reference. The boring locations should be considered approximate. The soil borings were performed from April 28 through April 29, 2021.

2.2 Standard Penetration Test Borings

The soil borings were performed with a drill rig employing mud rotary auger drilling techniques and Standard Penetration Testing (SPT) in accordance with ASTM D1586. The SPTs were performed continuously to 10 feet and at 5-foot intervals thereafter. Soil samples were obtained at the depths where the SPTs were performed. The soil samples were classified in the field, placed in sealed containers, and returned to our laboratory for further evaluation.

After drilling to the sampling depth and flushing the borehole, the standard two-inch O.D. split-barrel sampler was seated by driving it 6 inches into the undisturbed soil. Then the sampler was driven an additional 12 inches by blows of a 140-pound hammer falling 30 inches. The number of blows required to produce the next 12 inches of penetration were recorded as the penetration resistance (N-value). These values and the complete SPT boring logs are provided in Section 5.1.

Upon completion of the sampling, the boreholes were abandoned in accordance with Water Management District guidelines.

2.3 Piezometers

A total of two (2) piezometers were installed at the site. The piezometer locations and depths are illustrated on Figure 2. The 2-inch diameter piezometers were installed by performing a mud rotary boring to depth. A specialized biodegradable drilling mud was used to advance the borehole. The piezometers included 10 feet of screened pipe at the bottom. The void around the pipe was backfilled with coarse 20-30 silica sand until at least 5 feet above the screened section of pipe. The remaining voids were backfilled with bentonite.

2.4 Soil Laboratory Tests

The soil samples recovered from the soil borings were returned to our laboratory and examined to confirm the field descriptions. Representative samples were then selected for laboratory testing. Shelby tube samples were performed; however, samples were not obtained at the depths and locations performed. The laboratory tests consisted of four (4) percent soil fines passing the No. 200 sieve determinations and four (4) natural moisture content determinations. These tests were performed in order to aid in classifying the soils and to further evaluate their engineering properties. The laboratory tests are provided in Section 5.2.

3.0 FINDINGS

3.1 Surface Conditions

Ms. Cassandra Lindeman, E.I. with GSE visited the site on April 21, 2021 to observe the site conditions and mark the boring locations. Mr. Jason Kite with Jason Kite, LLC was retained by GSE to clear lanes to allow access to the boring locations for drilling equipment.

The site contains planted pines with underbrush. The Columbia County Correctional Institute borders the site to the west and undeveloped land consisting of planted pines borders the site on the remaining sides. The Columbia County Soil Survey mapped several wet spots on the southern portion of the site.

The topography at the site is gently sloping down from the north to the south. Regional topography can be characterized as gently to moderately sloping. The Olustee USGS Topographic Map indicates the ground surface elevations at the site are near 170 to 190 feet¹ NAVD88.

3.2 Subsurface Conditions

The locations of the SPT borings are provided on Figure 2. Complete logs for the borings are provided in Section 5.1. Descriptions for the soils encountered are accompanied by the Unified Soil Classification System symbol (SM, SP-SM, etc.) and are based on visual examination of the recovered soil samples and the laboratory tests performed. Stratification boundaries between the soil types should be considered approximate, as the actual transition between soil types may be gradual.

The SPT borings across the spray irrigation site encountered relatively consistent soil conditions. Generally, the borings encountered interbedded layers of poorly graded sand (SP), sand with silt (SP-SM), and silty sand (SM) to the explored depths of 25 and 50 feet bls. Boring B-4 encountered silty clay with sand (CL/CH) from 38 to 41 feet bls.

The poorly graded sand (SP), sand with silt (SP-SM), and silty sand (SM) layers are generally in a very loose to very dense condition with N-values ranging from 2 to 59 blows per foot. The silty clay with sand (CL/CH) encountered in boring B-4 is generally in a firm condition with an N-value of 6 blows per foot.

The groundwater table was encountered in the SPT borings at depths of approximately 1.5 to 2 feet bls at the time of our investigation.

3.3 Review of Published Data

The majority of the site is mapped as two soil series by the Soil Conservation Service (SCS) Soil Survey for Columbia County². The following soil descriptions are from the Soil Survey.

Leon fine sand, 0 to 2 percent slopes – This is a poorly drained, nearly level soil in broad flatwoods and in areas adjacent to wet depressions and drainageways on the uplands. The areas range from 2 to 900 acres and are irregularly shaped. The slope ranges from 0 to 2 percent.

¹ United States Geological Survey, Olustee Quadrangle, 2021.

² Soil Survey of Columbia County, Florida. Soil Conservation Service, U.S. Department of Agriculture.

Typically, the surface layer is black fine sand about 8 inches thick. The fine sand subsurface layer extends to a depth of 19 inches and is gray. The fine sand subsoil extends to a depth of 80 inches or more. The upper part of the subsoil extends to a depth of 27 inches. The upper 4 inches is black, and the next 4 inches is very dark brown. This layer is coated with organic matter. The lower part of the subsoil is dark yellowish brown to a depth of 54 inches and, below that, dark brown fine sand over black fine sand that is coated with organic matter.

Included with this soil in mapping are small areas of Electra Variant, Mascotte, Sapelo, Plummer, and Hurricane soils. Also included are small areas of soils that are similar to the Leon soil, but some are in higher positions on the landscape and are better drained and some soils are ponded during wet periods. The included soils make up less than 15 percent of the map unit.

This Leon soil has a water table at a depth of 10 to 40 inches for more than 9 months in most years. The water table is at a depth of less than 10 inches for 1 to 4 months during periods of heavy rains but recedes to a depth of more than 40 inches during very dry seasons. The available water capacity is high in the surface layer, very low in the subsurface layer, medium in the layer between the upper and lower parts of the subsoil, and low in the upper and lower parts of the subsoil.

Permeability is rapid in the surface layer and moderate to moderately rapid in the rest of the soil. Natural fertility is low. The organic matter content is high in the surface layer, moderately low in the subsurface layer, and moderate in the subsoil.

Mandarin fine sand, 0 to 2 percent slopes – This is a somewhat poorly drained, nearly level soil in slightly elevated flatwood areas. The individual areas are mostly irregular in shape and range from 20 to 200 acres. The slope ranges from 0 to 2 percent.

Typically, the surface layer is gray fine sand about 5 inches thick. The subsurface layer is light gray fine sand about 11 inches thick. The upper part of the subsoil is very dark brown, dark reddish brown, and dark brown fine sand that extends to a depth of 26 inches. The sand grains in this layer are well coated with organic matter. The next 7 inches is dark yellowish brown fine sand, and below that, there is light yellowish brown, light gray, and below that, there is light yellowish brown, light gray, and grayish brown fine sand to a depth of 64 inches. The lower part of the subsoil extends to a depth of 80 inches. It is very dark brown fine sand, and the sand grains are coated with organic matter.

Included with this soil in mapping are small areas of Albany, Chipley, Leon, Mascotte, Pelham, Plummer, Hurricane, and Sapelo soils. These soils make up about 15 percent of the map unit.

The water table is at a depth of 20 to 40 inches for 4 to 6 months and at a depth of more than 40 inches for 6 to 8 months. The water table may rise above 20 inches during rainy periods. Permeability is rapid in the surface and subsurface layers and in the layer between the upper and lower parts of the subsoil. It is moderate in the subsoil. The available water capacity and the organic matter content are very low in the surface and subsurface layers and moderate in the subsoil. Natural fertility is very low.

3.4 Laboratory Soil Analysis

Selected soil samples recovered from the soil borings were analyzed for the percent soil fines passing the No. 200 sieve, natural moisture content, Atterberg Limits, and hydraulic conductivity. Samples selected for laboratory testing were collected at depths ranging from 2.5 to 10 feet bls. These tests were performed to confirm visual soil classification and evaluate their engineering properties. The complete laboratory report is provided in Section 5.2.

The laboratory tests indicate the tested soils consist of sand with silt (SP-SM) and silty sand (SM). The tested sand with silt contains approximately 5.5 to 8 percent soil fines passing the No. 200 sieve with a natural moisture content of about 21 percent. The tested silty sand contains approximately 12 percent soil fines passing the No. 200 sieve with a natural moisture content of about 26 percent.

4.0 SITE EVALUATION AND RECOMMENDATIONS

4.1 Spray Field Site Evaluation and Recommendations

Shallow groundwater was encountered across the site in the boring locations at depths of 1.5 to 2 feet bls. Standing water was also observed throughout the site at various locations. GSE anticipates the seasonal high groundwater table to be at depths of approximately 0.5 to 1.5 feet below existing grade. Based on the Soil Survey, the hydraulic conductivity values of site soils range from 10.6 to 24.6 feet per day. This is generally consistent with the tested soils containing 5.5 to 12 percent soil fines passing the No. 200 sieve encountered in the borings. Clayey soils and other clay-rich materials were not encountered in the borings at the site. In general, confining soils were not encountered within the depths explored in the borings performed at the site with the exception of the silty clay with sand (CL/CH) encountered in boring B-4 from approximately 38 to 41 feet bls.

5.0 FIELD DATA

5.1 Standard Penetration Test Soil Boring Logs



GSE Engineering & Consulting, Inc.
 5590 SW 64th St.
 Gainesville, FL 32608
 Telephone: (352) 377-3233
 Fax: (352) 377-0335

BORING NUMBER B-1

CLIENT Jones Edmunds, Inc. **PROJECT NAME** Columbia County, North Florida Mega Industrial Park
PROJECT NUMBER 14987C **PROJECT LOCATION** Lake City, Columbia County, Florida
DATE STARTED 4/28/21 **COMPLETED** 4/28/21 **GROUND ELEVATION** _____ **HOLE SIZE** _____
DRILLING CONTRACTOR Whitaker Drilling, Inc. **GROUND WATER LEVELS:**
DRILLING METHOD Flight Auger **▼ AT TIME OF DRILLING** 1.5 ft
LOGGED BY WDI **CHECKED BY** CRL **▽ ESTIMATED SEASONAL HIGH** 0.5 ft
NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	CONTACT DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX	PERCENT PASS NO. 200 SIEVE	MOISTURE CONTENT, %	▲ SPT N VALUE ▲								
											20	40	60	80					
0		▽ (SP-SM) Loose brown and orange SAND with silt																	
2.5		▼ (SP) Loose gray and pale brown SAND	2.5	SPT 1	3-3-4 (7)														
4.5		(SP-SM) Loose to medium dense dark brown SAND with silt	4.5	SPT 2	4-4-4 (8)				5.5	21									
5		(SP-SM) Loose to medium dense dark brown SAND with silt		SPT 3	2-3-2 (5)														
				SPT 4	2-2-3 (5)														
				SPT 5	3-4-6 (10)														
8.5		(SP-SM) Medium dense gray and brown SAND with silt	8.5	SPT 6	5-6-7 (13)														
10																			
15				SPT 7	5-7-7 (14)														
17		(SP-SM) Medium dense dark brown SAND with silt	17																
20				SPT 8	9-11-10 (21)														
23		(SP-SM) Dense brown and orange SAND with silt	23																
25				SPT 9	9-12-19 (31)														

(Continued Next Page)

SPT BORINGS - GINT STD US_GDT - 5/12/21 17:32 - Q:\PROJECTS\14987C COLUMBIA COUNTY, N FL MEGA INDUSTRIAL PARK - NEW SPRAYFIELD\14987C BORINGS\14987C BORINGS.GPJ



GSE Engineering & Consulting, Inc.
 5590 SW 64th St.
 Gainesville, FL 32608
 Telephone: (352) 377-3233
 Fax: (352) 377-0335

BORING NUMBER B-2

CLIENT Jones Edmunds, Inc. **PROJECT NAME** Columbia County, North Florida Mega Industrial Park

PROJECT NUMBER 14987C **PROJECT LOCATION** Lake City, Columbia County, Florida

DATE STARTED 4/29/21 **COMPLETED** 4/29/21 **GROUND ELEVATION** _____ **HOLE SIZE** _____

DRILLING CONTRACTOR Whitaker Drilling, Inc. **GROUND WATER LEVELS:**

DRILLING METHOD Flight Auger **▼ AT TIME OF DRILLING** 1.7 ft

LOGGED BY WDI **CHECKED BY** CRL **▽ ESTIMATED SEASONAL HIGH** 0.5 ft

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	CONTACT DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX	PERCENT PASS NO. 200 SIEVE	MOISTURE CONTENT, %	▲ SPT N VALUE ▲								
											20	40	60	80					
0		▽ (SP-SM) Medium dense gray SAND with silt																	
		▼ (SP-SM) Medium dense brown and orange SAND with silt	2	SPT 1	5-7-4 (11)														
		(SP) Loose to medium dense pale brown and gray SAND	2.5	SPT 2	3-4-5 (9)														
5				SPT 3	6-6-7 (13)														
			7.5	SPT 4	4-4-5 (9)														
		(SP-SM) Medium dense brown SAND with silt		SPT 5	4-7-8 (15)														
			9	SPT 6	7-6-8 (14)				12	26									
10		(SM) Medium dense gray silty SAND																	
			12																
		(SP-SM) Medium dense dark brown SAND with silt		SPT 7	7-8-11 (19)														
15																			
			17																
		(SM) Medium dense brown silty SAND		SPT 8	12-10-14 (24)														
20																			
			22																
		(SM) Dense brown and orange silty SAND		SPT 9	6-13-17 (30)														
25		Bottom of borehole at 25.0 feet.	25																

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GSE Engineering & Consulting, Inc.
 5590 SW 64th St.
 Gainesville, FL 32608
 Telephone: (352) 377-3233
 Fax: (352) 377-0335

BORING NUMBER B-3

CLIENT Jones Edmunds, Inc. **PROJECT NAME** Columbia County, North Florida Mega Industrial Park

PROJECT NUMBER 14987C **PROJECT LOCATION** Lake City, Columbia County, Florida

DATE STARTED 4/29/21 **COMPLETED** 4/29/21 **GROUND ELEVATION** _____ **HOLE SIZE** _____

DRILLING CONTRACTOR Whitaker Drilling, Inc. **GROUND WATER LEVELS:**

DRILLING METHOD Flight Auger **▼ AT TIME OF DRILLING** 2.0 ft

LOGGED BY WDI **CHECKED BY** CRL **▽ ESTIMATED SEASONAL HIGH** 1.0 ft

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	CONTACT DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX	PERCENT PASS NO. 200 SIEVE	MOISTURE CONTENT, %	▲ SPT N VALUE ▲								
											20	40	60	80					
0		(SP-SM) Medium dense gray SAND with silt																	
	▽																		
	▼	(SP-SM) Loose to medium dense brown and orange SAND with silt	2	SPT 1	4-6-5 (11)														
		(SP) Loose pale brown and orange SAND	3	SPT 2	4-4-5 (9)														
		(SP) Loose to medium dense pale gray SAND	4	SPT 3	4-4-5 (9)														
5		(SP-SM) Medium dense dark brown SAND with silt	6	SPT 4	4-5-6 (11)				8.0	21									
				SPT 5	7-12-12 (24)														
				SPT 6	12-14-13 (27)														
10		(SM) Medium dense black silty SAND	12																
				SPT 7	7-10-15 (25)														
15		(SP-SM) Medium dense to very dense brown and orange SAND with silt	17																
				SPT 8	10-12-14 (26)														
20																			
				SPT 9	18-23-30 (53)														
25		Bottom of borehole at 25.0 feet.	25																

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GSE Engineering & Consulting, Inc.
 5590 SW 64th St.
 Gainesville, FL 32608
 Telephone: (352) 377-3233
 Fax: (352) 377-0335

BORING NUMBER B-4

CLIENT Jones Edmunds, Inc. **PROJECT NAME** Columbia County, North Florida Mega Industrial Park

PROJECT NUMBER 14987C **PROJECT LOCATION** Lake City, Columbia County, Florida

DATE STARTED 4/28/21 **COMPLETED** 4/28/21 **GROUND ELEVATION** _____ **HOLE SIZE** _____

DRILLING CONTRACTOR Whitaker Drilling, Inc. **GROUND WATER LEVELS:**

DRILLING METHOD Flight Auger **▼ AT TIME OF DRILLING** 1.7 ft

LOGGED BY WDI **CHECKED BY** CRL **▽ ESTIMATED SEASONAL HIGH** 0.5 ft

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	CONTACT DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX	PERCENT PASS NO. 200 SIEVE	MOISTURE CONTENT, %	▲ SPT N VALUE ▲								
											20	40	60	80					
0		▽ (SP-SM) Loose dark gray SAND with silt and roots																	
2.5		▼ (SM) Loose to medium dense pale brown and orange silty SAND with roots	2.5	SPT 1	2-3-4 (7)														
4.5		(SM) Loose gray and brown silty SAND	4.5	SPT 2	5-6-6 (12)														
6		(SP-SM) Loose to medium dense pale brown and orange SAND with silt	6	SPT 3	6-4-4 (8)														
8.5		(SM) Medium dense dark gray silty SAND	8.5	SPT 4	3-4-5 (9)														
10		(SM) Medium dense dark gray silty SAND	10	SPT 5	4-4-5 (9)														
12		(SM) Medium dense dark gray silty SAND	12	SPT 6	5-6-5 (11)														
15		(SP-SM) Medium dense dark brown and gray SAND with silt	15	SPT 7	9-11-15 (26)														
17		(SM) Very dense dark brown silty SAND	17	SPT 8	20-24-30 (54)														
20		(SM) Dense brown and orange silty SAND	20	SPT 9	13-18-17 (35)														
22		(SM) Dense brown and orange silty SAND	22																
25																			

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GSE Engineering & Consulting, Inc.
 5590 SW 64th St.
 Gainesville, FL 32608
 Telephone: (352) 377-3233
 Fax: (352) 377-0335

BORING NUMBER B-5

CLIENT Jones Edmunds, Inc. **PROJECT NAME** Columbia County, North Florida Mega Industrial Park

PROJECT NUMBER 14987C **PROJECT LOCATION** Lake City, Columbia County, Florida

DATE STARTED 4/28/21 **COMPLETED** 4/28/21 **GROUND ELEVATION** _____ **HOLE SIZE** _____

DRILLING CONTRACTOR Whitaker Drilling, Inc. **GROUND WATER LEVELS:**

DRILLING METHOD Flight Auger **▼ AT TIME OF DRILLING** 1.5 ft

LOGGED BY WDI **CHECKED BY** CRL **▽ ESTIMATED SEASONAL HIGH** 0.5 ft

NOTES _____

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	CONTACT DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX	PERCENT PASS NO. 200 SIEVE	MOISTURE CONTENT, %	▲ SPT N VALUE ▲								
											20	40	60	80					
0		▽ (SM) Loose gray brown silty SAND																	
2.5			2.5	SPT 1	2-2-6 (8)														
5		(SP-SM) Very loose to medium dense pale brown and orange SAND with silt		SPT 2	5-5-7 (12)				5.6	21									
6			6	SPT 3	4-4-4 (8)														
8.5		(SM) Very loose dark brown silty SAND		SPT 4	1-1-1 (2)														
8.5			8.5	SPT 5	1-1-2 (3)														
10		(SM) Loose to dense dark gray silty SAND		SPT 6	2-2-3 (5)														
17			17	SPT 7	12-16-20 (36)														
17		(SM) Medium dense to dense brown and orange silty SAND		SPT 8	12-18-32 (50)														
25			25	SPT 9	7-7-12 (19)														
25		Bottom of borehole at 25.0 feet.																	

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5.2 Laboratory Results



Engineering & Consulting, Inc.

SUMMARY REPORT OF LABORATORY TEST RESULTS

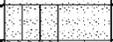
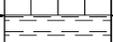
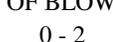
Project Number: 14987C

Project Name: Columbia County NFMIP - New Spray Field

Boring Number	Depth (ft)	Soil Description	Natural Moisture Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	Percent Passing No. 200 Sieve	Organic Content (%)	Hydraulic Conductivity (ft/day)	Unified Soil Classification
B-1	4 - 5.5	Dark brown SAND with silt	21				5.5			SP-SM
B-2	8.5 - 10	Gray silty SAND	26				12			SM
B-3	5.5 - 7	Dark brown SAND with silt	21				8.0			SP-SM
B-5	2.5 - 4	Pale brown and orange SAND with silt	21				5.6			SP-SM

5.3 Key to Soil Classification

KEY TO SOIL CLASSIFICATION CHART

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests				SYMBOLS		GROUP NAME	
				GRAPHIC	LETTER		
COARSE-GRAINED SOILS More than 50% retained on No. 200 sieve	Gravels	Clean Gravels	$Cu \geq 4$ and $1 \leq Cc \leq 3$		GW	Well graded GRAVEL	
	More than 50% of coarse fraction retained on No. 4 sieve	Less than 5% fines	$Cu < 4$ and/or $1 > Cc > 3$		GP	Poorly graded GRAVEL	
		Gravels with fines	Fines classify as ML or MH		GM	Silty GRAVEL	
		More than 12% fines	Fines classify as CL or CH		GC	Clayey GRAVEL	
		Sands	Clean Sands	$Cu \geq 6$ and $1 \leq Cc \leq 3$		SW	Well graded SAND
	50% or more of coarse fraction passes No. 4 sieve	Less than 5% fines	$Cu < 6$ and/or $1 > Cc > 3$		SP	Poorly graded SAND	
		Sand with fines	Fines classify as ML or MH		SP-SM	SAND with silt	
		5% ≤ fines < 12%	Fines classify as CL or CH		SP-SC	SAND with clay	
		Sand with fines	Fines classify as ML or MH		SM	Silty SAND	
		12% ≤ fines < 30%	Fines classify as CL or CH		SC	Clayey SAND	
		Sand with fines	Fines classify as ML or MH		SM	Very silty SAND	
		30% fines or more	Fines classify as CL or CH		SC	Very clayey SAND	
		FINE-GRAINED SOILS 50% or more passes the No. 200 sieve	Clays	inorganic	$50\% \leq \text{fines} < 70\%$		CL/CH
	$70\% \leq \text{fines} < 85\%$				CL/CH	CLAY with sand	
$\text{fines} \geq 85\%$				CL/CH	CLAY		
Silts and Clays Liquid Limit less than 50	inorganic		$PI > 7$ and plots on/above "A" line		CL	Lean CLAY	
	$PI < 4$ or plots below "A" line			ML	SILT		
	organic		Liquid Limit - oven dried < 0.75		OL	Organic clay	
	Liquid Limit - not dried			OL	Organic silt		
Silts and Clays Liquid Limit 50 or more	inorganic		PI plots on or above "A" line		CH	Fat CLAY	
	PI plots below "A" line			MH	Elastic SILT		
	organic		Liquid Limit - oven dried < 0.75		OH	Organic clay	
	Liquid Limit - not dried		OH	Organic silt			
HIGHLY ORGANIC SOILS	Primarily organic matter, dark in color, and organic odor				PT	PEAT	

CORRELATION OF PENETRATION RESISTANCE WITH RELATIVE DENSITY AND CONSISTENCY

No. OF BLOWS, N	RELATIVE DENSITY	No. OF BLOWS, N	CONSISTENCY
0 - 4	Very Loose	0 - 2	Very Soft
5 - 10	Loose	3 - 4	Soft
SANDS:	11 - 30	Medium dense	SILTS & CLAYS: 5 - 8 Firm
	31 - 50	Dense	9 - 15 Stiff
OVER 50	Very Dense	16 - 30	Very Stiff
		31 - 50	Hard
		OVER 50	Very Hard

No. OF BLOWS, N	RELATIVE DENSITY
0 - 8	Very Soft
9 - 18	Soft
LIMESTONE: 19 - 32	Moderately Hard
33 - 50	Hard
OVER 50	Very Hard

SAMPLE GRAPHIC TYPE LEGEND



Location of SPT Sample



Location of Auger Sample

PARTICLE SIZE IDENTIFICATION

BOULDERS:	Greater than 300 mm
COBBLES:	75 mm to 300 mm
GRAVEL:	Coarse - 19.0 mm to 75 mm
	Fine - 4.75 mm to 19.0 mm
SANDS:	Coarse - 2.00 mm to 4.75 mm
	Medium - 0.425 mm to 2.00 mm
	Fine - 0.075 mm to 0.425 mm
SILTS & CLAYS:	Less than 0.075 mm

LABORATORY TEST LEGEND

LL =	Liquid Limit, %
PL =	Plastic Limit, %
PI =	Plasticity Index, %
% PASS - 200 =	Percent Passing the No. 200 Sieve
MC =	Moisture Content, %
ORG =	Organic Content, %
k_h =	Horizontal Hydraulic Conductivity, ft/day

6.0 LIMITATIONS

6.1 Warranty

This report has been prepared for our client for his exclusive use, in accordance with generally accepted soil and foundation engineering practices, and makes no other warranty either expressed or implied as to the professional advice provided in the report.

6.2 SPT Borings

The determination of soil type and conditions was performed from the ground surface to the maximum depth of the borings, only. Any changes in subsurface conditions that occur between or below the borings would not have been detected or reflected in this report.

Soil classifications that were made in the field are based upon identifiable textural changes, color changes, changes in composition or changes in resistance to penetration in the intervals from which the samples were collected. Abrupt changes in soil type, as reflected in boring logs and/or cross sections may not actually occur, but instead, be transitional.

Depth to the water table is based upon observations made during the performance of the SPT borings. This depth is an estimate and does not reflect the annual variations that would be expected in this area due to fluctuations in rainfall and rates of evapotranspiration.

6.3 Site Figures

The measurements used for the preparation of the figures in this report were made using the provided site plan and by estimating distances from existing structures and site features. Figures in this report were not prepared by a licensed land surveyor and should not be interpreted as such.

6.4 Unanticipated Soil Conditions

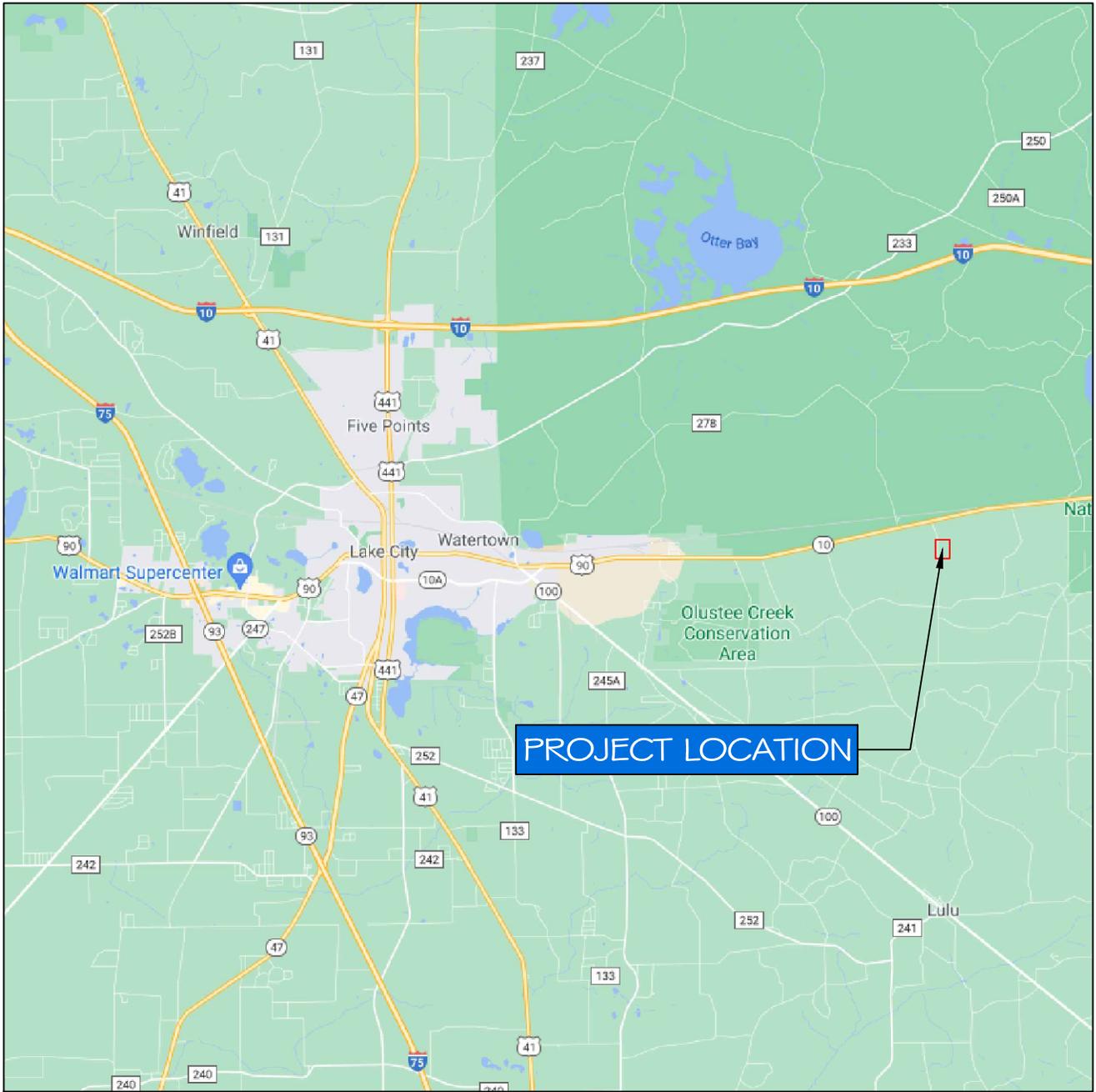
The analysis and recommendations submitted in this report are based upon the data obtained from soil borings performed at the locations indicated on Figure 2. This report does not reflect any variations that may occur between these borings.

The nature and extent of variations between borings may not become known until excavation begins. If variations appear, we may have to re-evaluate our recommendations after performing on-site observations and noting the characteristics of any variations.

6.5 Misinterpretation of Soil Engineering Report

GSE Engineering & Consulting, Inc. is responsible for the conclusions and opinions contained within this report based upon the data relating only to the specific project and location discussed herein. If others make the conclusions or recommendations based upon the data presented, those conclusions or recommendations are not the responsibility of GSE.

FIGURES



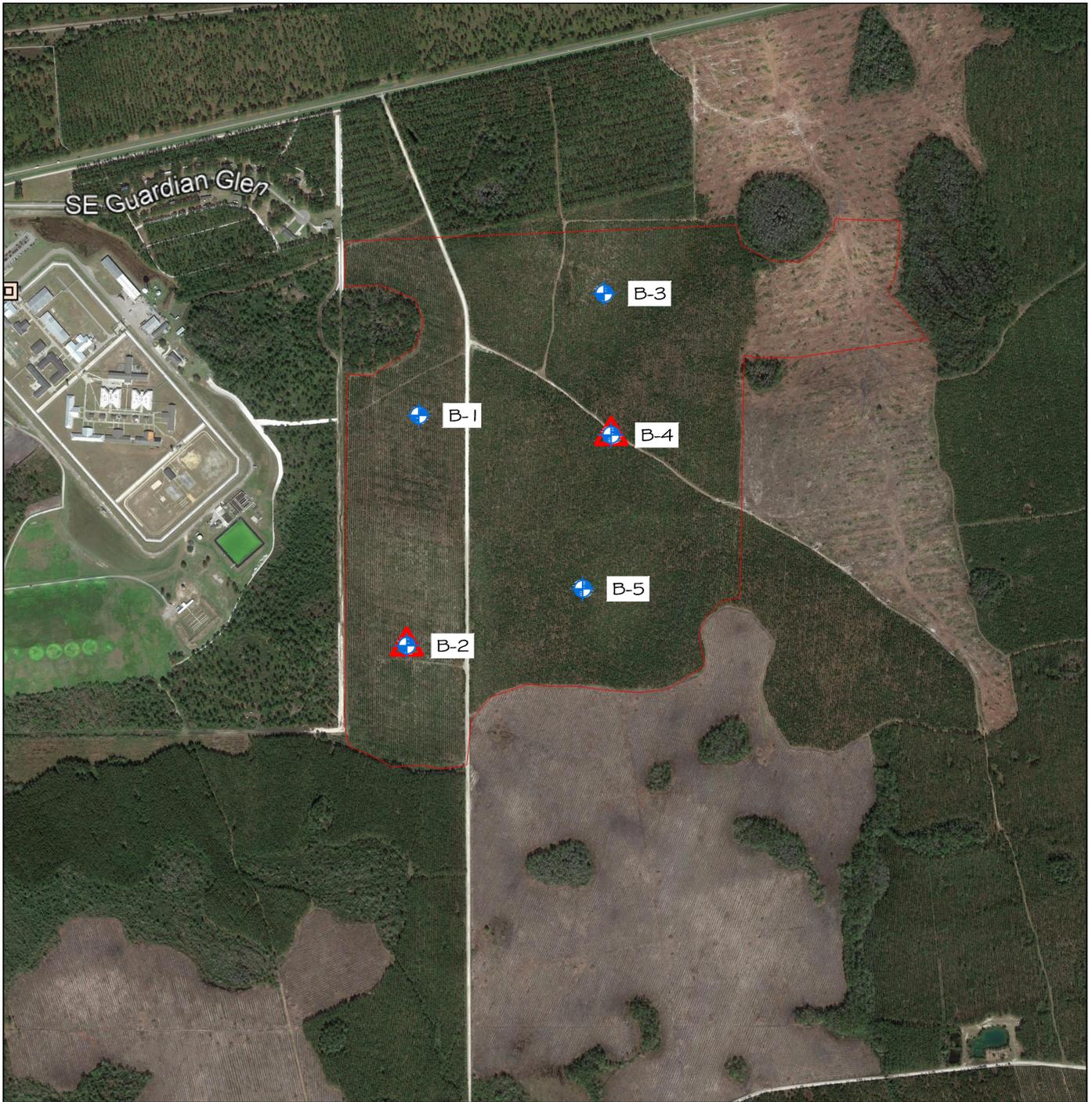
COLUMBIA COUNTY, NORTH FLORIDA MEGA
 INDUSTRIAL PARK
 LAKE CITY, COLUMBIA COUNTY, FLORIDA
 GSE PROJECT NO. 14987C

PROJECT SITE LOCATION MAP

DESIGNED BY : CRL
 CHECKED BY : JEG
 DRAWN BY : AXL

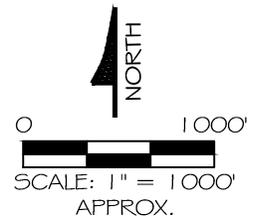


FIGURE
 1



LEGEND:

-  SPT BORING
-  PIEZOMETER



COLUMBIA COUNTY, NORTH FLORIDA MEGA INDUSTRIAL PARK
 LAKE CITY, COLUMBIA COUNTY, FLORIDA
 GSE PROJECT NO. 14987C

AERIAL PHOTOGRAPH SHOWING APPROXIMATE LOCATIONS OF FIELD TESTS

DESIGNED BY : CRL
 CHECKED BY : JEG
 DRAWN BY : AXL



FIGURE
 2

ATTACHMENT F
INSTRUMENT SCHEDULE

13080-A Instrument Device Schedule - Legend/Description Sheet

Item.	This is an arbitrary sequential number which is for reference only.
P&ID Tag.	This is the P&ID (ISA or similar alpha) tag representing the function of the instrument.
PLC.	This is the PLC location ID where the designated instrument signal is connected.
Service Description.	This is the description of the instrument service (i.e. Pump Discharge Pressure).
Device Type & Size.	This is the instrument device type and should match the description as listed in the specification. Where appropriate, the size of the device (such as diameter of flowmeters) will be listed.
Output Type.	This generally will be '4-20 mA' or 'Dry Contact'. It could also be a serial output for smart devices (such as HART or FLD-BUS) but only if the serial output is the primary I/O interface.
Output Range.	This is the calibrated range for analog devices or the trip point(s) for discrete devices.
Device Power.	This will typically be either 24 VDC or 115 VAC for dry contact sense voltage, or 115 VAC for AC powered devices. Loop-powered devices will be designated as 2-wire, 24 VDC.
Comments/Notes.	This column may include a cross reference to another specification section where applicable, or to a note which provides additional information. Notes are appended to the end of the device schedule listings. If applicable, may include a reference to the applicable installation detail on the drawings.

Item	Equipment Tag	SCADA PNL	Service Description	Device Type & Size	Output Range	Device Power	Specification
Sheet I-04							
1	FE/FIT-110	PLC-A	Influent Flow Meter	Mag. Meter -8"	0-800 gpm	120VAC	2.05
2	AE/AIT-101	PLC-A	Influent Conductivity	Inline Flow	0-200mS	120VAC	2.07
3	AE/AIT-102	PLC-A	Influent pH	Inline Electrode	0-14	120VAC	2.08
Sheet I-05							
1	FE/FIT-156	PLC-A	Leachate Flow to Storage	Mag. Meter -8"	0-800 gpm	120VAC	2.05
2	FE/FIT-157	PLC-A	Leachate Flow from to Influent Pump Station	Mag. Meter -3/4"	0-5 gpm	120VAC	2.05
3	LE/LIT-151A	PLC-A	Leachate Tank #1 Level	Ultrasonic	0-25'	120VAC	2.04
4	LE/LIT-151B	PLC-A	Leachate Tank #2 Level	Ultrasonic	0-25'	120VAC	2.04
5	LSH-151A	PLC-A	Leachate Tank #1 High Level	Float	24'	120VAC	2.06
6	LSL-151A	PLC-A	Leachate Tank #1 Low Level	Float	2'	120VAC	2.06
7	LSH-151B	PLC-A	Leachate Tank #2 High Level	Float	24'	120VAC	2.06
8	LSL-151B	PLC-A	Leachate Tank #2 Low Level	Float	2'	120VAC	2.06
Sheet I-06							
1	PS-202	PLC-A	PW Booster Pump Pressure	Bourdon Tube	0-100	120VAC	2.09
Sheet I-07							
1	FE/FIT-230A	PLC-A	Plant A Recycle Flow	Mag. Meter -6"	0-1400 gpm	120VAC	2.05
2	FE/FIT-230B	PLC-A	Plant B Recycle Flow	Mag. Meter -6"	0-1400 gpm	120VAC	2.05
3	FE/FIT-246	PLC-A	Truck Fill Flow	Mag. Meter -6"	0-1400 gpm	120VAC	2.05
Sheet I-09							
1	LE/LIT-206A	PLC-A	Digester Tank #1 Level	Ultrasonic	0-20'	120VAC	2.04
2	LE/LIT-206B	PLC-A	Digester Tank #2 Level	Ultrasonic	0-20'	120VAC	2.04
3	LSH-206A	PLC-A	Digester Tank #1 High Level	Float	19'	120VAC	2.06
4	LSL-206A	PLC-A	Digester Tank #1 Low Level	Float	2'	120VAC	2.06
5	LSH-206B	PLC-A	Digester Tank #2 High Level	Float	19'	120VAC	2.06
6	LSL-206B	PLC-A	Digester Tank #2 Low Level	Float	2'	120VAC	2.06

Item	Equipment Tag	SCADA PNL	Service Description	Device Type & Size	Output Range	Device Power	Specification
7	FE/FIT-206A	PLC-A	Digester Tank #1 Flow	Mag. Meter -6"	0-500 gpm	120VAC	2.05
8	FE/FIT-206B	PLC-A	Digester Tank #2 Flow	Mag. Meter -6"	0-500 gpm	120VAC	2.05
Sheet I-11							
1	AE/AIT-215A	PLC-A	Plant A DO Level	Fluorescent	0-10ppm	120VAC	2.10
2	AE/AIT-215B	PLC-A	Plant B DO Level	Fluorescent	0-10ppm	120VAC	2.10
Sheet I-14							
1	LE/LIT-246A	PLC-A	Digester Tank #1 Level	Ultrasonic	0-20'	120VAC	2.04
2	LE/LIT-246B	PLC-A	Digester Tank #2 Level	Ultrasonic	0-20'	120VAC	2.04
3	LSH-246A	PLC-A	Digester Tank #1 High Level	Float	19'	120VAC	2.06
4	LSL-246A	PLC-A	Digester Tank #1 Low Level	Float	2'	120VAC	2.06
5	LSH-246B	PLC-A	Digester Tank #2 High Level	Float	19'	120VAC	2.06
6	LSL-246B	PLC-A	Digester Tank #2 Low Level	Float	2'	120VAC	2.06
Sheet I-15							
1	AE/AIT-675A	PLC-B	CCC Effluent CL2 Residual	Ampereometric	0-10ppm	120VAC	2.03
2	AE/AIT-675B	PLC-B	CCC Effluent pH	Inline Electrode	0-14	120VAC	2.08
3	AE/AIT-675C	PLC-B	CCC Influent CL2 Residual	Ampereometric	0-10ppm	120VAC	2.03
4	FE/FIT-610	PLC-B	Effluent Flow Meter	Parshall Flume	0-800 gpm	120VAC	2.04 & 2.12
Sheet I-16							
1	LE/LIT-700A	PLC-B	Wetwell #1 Level	Ultrasonic	0-20'	120VAC	2.04
2	LE/LIT-700B	PLC-B	Wetwell #2 Level	Ultrasonic	0-20'	120VAC	2.04
3	LSH-700A	PLC-B	Wetwell #1 High Level	Float	19'	120VAC	2.06
4	LSL-700A	PLC-B	Wetwell #1 Low Level	Float	2'	120VAC	2.06
5	LSH-700B	PLC-B	Wetwell #2 High Level	Float	19'	120VAC	2.06
6	LSL-700B	PLC-B	Wetwell #2 Low Level	Float	2'	120VAC	2.06
7	FE/FIT-705	PLC-B	Sprayfield Flow Meter	Mag. Meter -8"	0-2000 gpm	120VAC	2.05
8	PE/PIT-705	PLC-B	Sprayfield Pressure		0-100psi	24VDC	2.11
Sheet I-17							

Item	Equipment Tag	SCADA PNL	Service Description	Device Type & Size	Output Range	Device Power	Specification
1	FE/FIT-715	PLC-B	Reject Flow Meter	Mag. Meter -8"	0-1500 gpm	120VAC	2.05
Sheet I-18							
1	LE/LIT-650A	PLC-B	CL2 Tank #1 Level	Ultrasonic	0-10'	120VAC	2.04
2	LE/LIT-650B	PLC-B	CI2 Tank #2 Level	Ultrasonic	0-10'	120VAC	2.04
3	LSH-650	PLC-B	Containment High Level	Float	4'	120VAC	2.06