

Issued: 7/16/2021

Addendum No. 1
BID NO. 20/21-53, Construction of Clay County Gun Range

Due Date: Thursday, July 26, 2021

Open Date: Friday, July 27, 2021

The items of this Addendum shall modify and become part of the contractual documents for this project as of this date. Receipt of and incorporation of this Addendum must be acknowledged in the bid on [page 25](#). Failure to acknowledge this addendum will be grounds for rejection of proposal.

1. **QUESTION:** Are there specifications detailing the target system that is needed for the Sheriff's Office or have they already purchased a system for the range?
ANSWER: No. Clay County Sheriff's office will provide their own targets. The firing line is designed to accommodate those targets.
2. **QUESTION:** Can you tell me if the optional pavilion is strictly over the firing line or the entire range? Again, does it need to meet OSHA guidelines for noise exposure limits or local noise ordinances? If yes, could you provide us with your local noise ordinance?
ANSWER: The shooting pavilion is over the firing line only, it was designed to meet FDLE requirements. There are no problems or concerns related to local noise ordinances. – See attached for Local Noise Ordinance.
3. **QUESTION:** Could you please tell me if there is a canopy, or if there are baffles in this range? Is it an indoor or outdoor range?
ANSWER: This an outdoor range with a shooting pavilion over the firing line. There are no baffles in the range.
4. **QUESTION:** Will this range be used by the general public or will employees be using the range? The reason I ask is that acoustics are typically required to meet OSHA noise exposure limits at a minimum if employees are using the range.
ANSWER: This is a multiuser and multipurpose range. Law enforcement and the public may use this range.
5. **QUESTION:** Will high performance acoustics be required to meet the OSHA noise exposure limits and/or the shooting range minimum industry standard of an RT60 of 1.3 seconds reverb time across all 1/3 octaves from 125 z to 8000 Hz at all firing positons in the range? Or will acoustics be necessary to meet local noise ordinances? If required, could you provide a copy or link to that ordinance?

ANSWER: All proper Personal Protective Equipment (PPE) will be a requirement for all on the shooting line, in the shooting area, and any other area deemed necessary.

6. **QUESTION:** Can you provide a CAD file for the civil engineering?

ANSWER: See CAD File attached in email.

7. **QUESTION:** Will additional time be given if the alternates are awarded.

ANSWER: Project Completion date will remain the same for both Base Bid and or Alternates.

8. **QUESTION:** Pole base detail shown on drawing E6.00 calls for poured in place bases with a structural engineers signed and sealed drawing. Will precast engineered pole bases be acceptable? Same detail calls for coated rigid conduit in the bases, will PVC be acceptable?

ANSWER: Yes, precast engineered pole bases is acceptable – the material used needs to be equal or better than what is currently called for. Yes, PVC is acceptable.

9. **QUESTION:** Note 2 drawing E2.02 calls for in ground traffic rated boxes next to the poles for fusible links. Can these boxes be eliminated and the fusible links installed in the hand hole of the pole?

ANSWER: No. Bid as is.

10. **QUESTION:** What is the governing standard/spec for the earthwork, road, and drainage portion of proposed work?

ANSWER: FDOT Standard Specifications for Road & Bridge Construction (current edition)

11. **QUESTION:** Will a Geotech report be provided?

ANSWER: See Attachment A

12. **QUESTION:** Please specify which drainage runs are to be included in the base bid and which runs are to be included in Alternate items.

ANSWER: See Attachment C

13. **QUESTION:** Will we be able to burn or mulch the vegetation on site, or will we be required to haul the cleared and grubbed vegetation off site?

ANSWER:

You can either haul the mulch or burn it if the proper permit is issued – if you choose to burn it you must take the required steps to obtain a permit from Florida Forest Services (904-266-8351)

14. **QUESTION:** Would you reiterate how you would like the bid form to be filled out with regard to phasing and alternates.

ANSWER: **We have provided a revised base bid/alternates Price Sheet. See Attachment C**

15. **QUESTION:** Civil drawing C-2, note 5 under 'Clearing and Grubbing' states "refer to landscape plans, by others". Please provide.

ANSWER: **No landscaping will be done at this time. Disregard the reference to "landscape plans by others".**

16. **QUESTION:** Is the parking lot to be constructed as the same as the road per 'Typical Road Section' detail on sheet C-9.1? If not, can you provide a section detail of the parking lot?

ANSWER: **Yes.**

17. **QUESTION:** Sheet C-5.2, Are there curbs around the parking lot?

ANSWER: **No.**

18. **QUESTION:** Will sod go in the islands at the parking lot?

ANSWER: **Yes.**

19. **QUESTION:** How far out will sod be required around the parking lot?

ANSWER: **24 inches**

20. **QUESTION:** The Drawings for the Crow's Nest shows an opening that is 6'x3' and another opening the is 3'x3'.

- a. Are there any other openings in the Crow's Nest besides these and the door?
- b. Are these two openings to be windows?
- c. If so, what are the specs for the glassing and frame?

ANSWER:

- **Two 3'x3' Window, one 6'x3' Window, and one door.**
- **Yes**
- **Laminated Safety Glass, 1/2" minimum thickness**

21. **QUESTION:** What type of siding will be required for the Crow's Nest?

- a. Material Type
- b. Material Dimensions
- c. Color

ANSWER:

- Vinyl Siding
- 8" x 12'
- Gray

22. **QUESTION:** Is there going to be a temporary sidewalk if restrooms are not installed at alt. 1 time of construction from range to parking area?

ANSWER: No.

23. **QUESTION:** Are we to remove beaver dam?

ANSWER: No dam removal will be necessary.

24. **QUESTION:** Targets we are only installing the 4" SDR 26 PVC not the target?

ANSWER: Yes

25. **QUESTION:** Are we installing lane numbers or the A and B signs?

ANSWER: Both will need to be installed.

26. **QUESTION:** Drainage is alt. 4, it must be installed in alt. 1 on back of range to pond and in the road (Better detail for drainage per alternate).

ANSWER: We have provided a revised base bid/alternates Price Sheet. See Attachment C

27. **QUESTION:** Specs. on well, depth size motor and type. Filter system?

ANSWER: There is no spec for a filter system – this system will have to be sized by the contractor. There is no current filter system.

28. **QUESTION:** Specs on wire mesh, what gauge.

ANSWER: Welded Wire-12 ga. Black PVC-Coating

29. **QUESTION:** Wire mesh go all the way around crows nest to the building portion?

ANSWER: Yes.

30. **QUESTION:** Change electrical to 200-amp main breaker panel with 2-100 amp breakers to save cost instead of buss kit with gutter system.

ANSWER: No. Bid per plans.

31. **QUESTION:** 4" drain pipe what's the spacing between them. Between ballistic sand and backstop and verify that this is completed in alt. 1.

ANSWER: The spacing between the 4" pipes is one between every other target (20 ft spacing). The 4" drain pipe is flush with the backstop berm. This is to be completed in the base bid.

32. **QUESTION:** The wire mesh on the stairs, does the squares parallel the stairs or level?
ANSWER: Parallel stairs is acceptable.
33. **QUESTION:** If the funds are available to build the building is there going to be more time allocated due to material availability.
ANSWER: Documentation of lead time will be required and provided to the County for evaluation.
34. **QUESTION:** If specified material is not readily available can we use alternates?
ANSWER: Pricing for spec materials must be included in the bid. Any alternates due to availability will be considered and discussed with the awarded Contractor. A negotiation would then take place and a Change Order would occur.

ATTACHMENTS

1. GEOTECH REPORT – A
2. GOPHER TORTOISE SURVEY – B
3. REVISED BASE BID AND ALTERNATES – C
4. CC NOISE ORDINANCE – D
5. FLORIDA STATUTES CHAPTER 823.16 – E
6. **The CAD File was provided via email** with the Addendum. If you have not received the CAD File please email Alyssa.Hamilton@claycountygov.com or Purchasing@Claycountygov.com for this information.

ATTACHMENT A

Final Report of Geotechnical Exploration For

Proposed Clay County Shooting Range
Middleburg, Clay County, Florida

*MAE Project No. 0072-0004
February 25, 2021*

Prepared for:



Prepared by:



3728 Philips Highway, Suite 208
Jacksonville, Florida 32207
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JBI 2020 50 FASTEST GROWING COMPANIES

February 25, 2021

WGI
4371 US Highway 17, Suite 203
Fleming Island, Florida 32003

Attention: Mr. William Stewart, P.E.
Reference: Final Report of Geotechnical Exploration
Proposed Clay County Shooting Range
Middleburg, Clay County, Florida
MAE Project No. 0072-0004

Dear Mr. Stewart:

Meskel & Associates Engineering, PLLC (MAE) has completed a geotechnical exploration for the subject project. Our work was performed in general accordance with our proposal dated June 14, 2019, revised on March 12, 2020. The geotechnical exploration was performed to evaluate the general subsurface conditions encountered within the area for the proposed construction, and to provide recommendations to support design of the proposed building, berm embankment, pavement design and site preparation. This report has been updated to include comments received from WGI.

As further discussed in this report, the borings generally encountered fine sands to fine sands with silt (SP, SP-SM, A-3), silty fine sands (SM, A-2-4), occasional clayey to very clayey fine sands (SC, A-2-6, A-6), and occasional clays (CH, A-6, A-7-6). The relative densities of the encountered sand soils ranged from very loose to very dense. The relative consistency of the clay soils was generally stiff. Groundwater, where encountered across the project area, was measured at the time of drilling between depths of 5 feet and 6 feet 5 inches below existing grade.

Based on our evaluation of the encountered subsurface conditions, it is our opinion that the soils encountered are adaptable to support the proposed building, berm embankment and pavements, provided the site preparation recommendations detailed in this report are followed.

We appreciate this opportunity to be of service as your geotechnical consultant on this phase of the project. If you have any questions, or if we may be of any further service, please contact us.

Sincerely,

MESKEL & ASSOCIATES ENGINEERING, PLLC

MAE FL Registry No. 28142

Philip R Mank Digitally signed by Philip R Mank
Date: 2021.02.25 17:08:34 -05'00'

P. Rodney Mank, P.E.
Principal Engineer
Licensed, Florida No. 41986

P. Rodney Mank, State of Florida, Professional Engineer, License No. 41986. This item has been electronically signed and sealed by P. Rodney Mank, P.E. on 02/25/2021 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Distribution: Mr. William Stewart, P.E. – WGI

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FIGURES

- Figure 1. Site Location Map
- Figure 2. Boring Location Plan
- Figures 3-10. Generalized Soil Profiles

APPENDICES

- Appendix A. Soil Boring Logs
 - Field Exploration Procedures
 - Key to Boring Logs
 - Key to Soil Classification
- Appendix B. Summary of Laboratory Index Test Results
 - Laboratory Test Procedures
- Appendix C. Slope Stability Analysis Results

1.0 PROJECT INFORMATION

1.1 General

Project information was provided to us by Mr. William Stewart, P.E., with WGI via several electronic correspondences. We were provided with an aerial map of the vicinity of the project, and site aerial showing a sketch of the proposed project.

1.2 Project Description

The site for the subject project is located on the south side of County Road (CR) 215, southeast of Middleburg near Camp Blanding in Clay County. The entrance to the property is approximately 0.5 miles southeast of Juniper Road. The general site location is shown in Figure 1.

Based on the provided information and our discussion with Mr. Stewart, it is our understanding that the proposed Shooting Range will consist of a 2-lane entrance road off CR 215, approximately 3,000 feet in length, leading to a 50-space parking area and an adjacent building. We understand the proposed building will house storage and restrooms and be a single-story structure with a monolithic, turned-down-edge floor slab, approximately 1,000 square feet in plan area. We also understand there will be a 20-bay shooting range with berms on both sides and along the back of the range. The berms will be 15 to 20 feet in height with a 6-foot-wide crest and side slopes of 1.5:1 Horizontal:Vertical on the outside face of the berm and 2H:1V Horizontal:Vertical on the inside face of the berm. There will also be 3 wet detention stormwater ponds on the site. The pond adjacent to the berm to the south will be lined as it will be storing runoff from the shooting range that may include lead from the bullets embedded within the berm.

If the project details vary from those given above, then the recommendations in this report may need to be re-evaluated. Any changes in these details should be provided so the need for re-evaluation of our recommendations can be assessed prior to final design.

2.0 FIELD EXPLORATION

A field exploration was performed during the period of August 26 through 31, 2020. The boring locations were determined by us, and the GPS coordinates were obtained by overlaying the provided plan in Google Earth. Our field personnel then located each boring location using a Garmin GPSMAP 78 hand-held GPS receiver. A utility locate request was submitted to the Sunshine State One-Call Center, and once the site utilities were located and marked, our field crew mobilized to the site. The final boring locations, as shown on Figure 2, should be considered accurate only to the degree implied by the method of layout used.

2.1 Standard Penetration Test Borings

To explore the subsurface conditions within the areas of the proposed construction, we located and performed 12 Standard Penetration Tests (SPT). Two SPT borings were drilled within each of the proposed building and parking areas to depths of approximately 20 and 10 feet below the existing grade, respectively. Four SPT borings were drilled within each of the proposed berm area and proposed pond areas to depths of approximately 50 and 20 feet below the existing grade, respectively. The borings were continuously sampled to a depth of 10 feet, and thereafter sampled every 5 feet in general accordance with the methodology outlined in ASTM D 1586. Split-spoon soil samples recovered during performance of the borings were described in the field by the field crew, and representative portions of the samples were transported to our laboratory for classification and testing. A summary of the field procedures used

for the SPT borings is included in Appendix A.

2.2 Auger Borings

To explore the subsurface conditions within the areas of the proposed access road, we located and performed 15 Auger borings. Each of the borings was advanced to a depth of approximately 6 feet below the existing grade, in general accordance with the methodology outlined in ASTM D 1452. Soil samples recovered during performance of the borings were described in the field by the field crew, and representative portions of the samples were transported to our laboratory for classification and testing. A summary of the field procedures used for the Auger borings is included in Appendix A.

3.0 LABORATORY TESTING

Representative soil samples obtained during our field exploration were visually classified by a geotechnical engineer using the *Unified Soil Classification System (USCS)* in general accordance with ASTM D 2488, and the *AASHTO Soil Classification System* in general accordance with ASTM D3282. A key to each of the Soil Classification Systems is included in Appendix A.

Quantitative laboratory testing was performed on selected samples of the soils encountered during the field exploration to better define the composition of the soils encountered and to provide data for correlation to their anticipated strength and compressibility characteristics. The laboratory testing determined the Atterberg limits, natural moisture content, and the percent material finer than the U.S. No. 200 sieve (percent fines) of the selected soil samples. The results of the laboratory testing are shown in the *Summary of Laboratory Index Test Results* table included in Appendix B. Also, these results are shown on the *Generalized Soil Profiles* sheets as Figures 3 through 10, and on the Log of Boring records at the respective depths from which the tested samples were recovered. A summary of the laboratory test procedures is included in Appendix B.

4.0 GENERAL SUBSURFACE CONDITIONS

4.1 General Soil Profile

Graphical presentation of the generalized subsurface conditions is presented on the *Generalized Soil Profiles* sheets, Figures 3 through 10. Detailed boring logs are included in Appendix A. When reviewing the soil profiles sheets and the boring logs, it should be understood that the soil conditions will vary between the boring locations.

In general, the SPT soil borings performed in the proposed building area encountered fine sands to fine sands with silt (SP, SP-SM) beginning at the existing ground surface to a depth of about 2 feet, underlain by loose to medium dense very clayey fine sands (SC) to a depth of about 8 feet. Underlying the clayey soils were silty fine sands (SM), medium dense to dense fine sands (SP) and medium dense fine sands with silt (SP-SM) to the boring termination depth of 20 feet below existing grade.

The SPT soil borings performed in the proposed parking area encountered fine sands to fine sands with silt (A-3) at the ground surface to a depth of about 2 feet. Below these sands, boring B-1 encountered loose to medium dense clayey fine sands (A-2-6) to a depth of about 6 feet, underlain by medium dense fine sands with silt (A-3) to the boring termination depth of 10 feet. Boring B-2 encountered loose fine sands with silt (A-3) below the surficial sand soil to a depth of 4 feet, underlain by medium dense silty fine sands (A-2-4) to the boring termination depth of 10 feet.

The SPT soil borings located within the proposed berm area generally encountered very loose to very dense fine sands (SP), fine sands with silt (SP-SM) and silty fine sands (SM) from the ground surface to depths of 23 to 32 feet below the existing ground surface. Underlying these non-plastic sandy soils were loose clayey fine sands (SC) to a depth of about 43 to 48 feet below existing grade. These clayey sands continued to the terminating depth of 50 feet at boring B-5. Borings B-6, B-7 and B-8 encountered dense to very dense clayey to very clayey fine sands with varying amounts of gravel, possibly the top of the regional limestone stratum, to the terminating depth of 50 feet below existing grade. As an exception, stiff clay was encountered at boring B-8 from approximately 33.5 to 43.5 feet below the existing grade.

The SPT soil borings performed within the proposed the north pond area (borings PB-1 and PB-2) generally encountered fine sands (A-3) from the ground surface to a depth of about 6 feet below existing grade, underlain by medium dense clayey to very clayey fine sand (A-2-6, A-6) and stiff clay (A-7-6) to the boring termination depth of 20 feet below existing grade. The other 2 pond borings (PB-3 and PB-4) encountered similar subsurface conditions. Loose fine sands to fine sands with silt (A-3) were encountered from the existing ground surface to depths of about 19 feet. Underlying these A-3 soils, both borings encountered loose to medium dense silty fine sands (A-2-4) to the terminating depth of 20 feet below existing grade. feet (boring PB-3) and 13 feet (boring PB-4) below existing grade.

The auger borings located along the proposed access road area generally encountered fine sands to fine sands with silt (A-3), silty fine sands (A-2-4), and clayey to very clayey fine sands (A-2-6) to the boring termination depth of 6 feet below the existing grade. As an exception, sandy clay was encountered at boring A-12 from 5 to 6 feet below the existing grade.

4.2 Groundwater Level

Groundwater was encountered at all SPT boring locations and measured at the time of drilling between depths of 5 feet and 6 feet, 5 inches below the existing ground surface. Groundwater was not encountered at the auger boring locations located along the access road. However, that does not mean that groundwater does not exist at these locations, or that groundwater would not be encountered at these locations within the vertical reaches of these borings at another date.

It should be anticipated that the groundwater levels will fluctuate seasonally and with changes in climate. As such, we recommend that the water table be remeasured prior to construction. Measured groundwater levels are shown the boring profiles and boring logs.

4.3 Review of the USDA Web Soil Survey Map

The results of a review of the USDA Soil Survey Conservation Service (SSCS) Web Soil Survey of Clay County are shown in the table below. There are 8 predominant soil map units at the project site. The soil drainage class, hydrological group, and estimated seasonal high groundwater levels reported in the Soil Survey are as follows:

| Map Unit Symbol | Map Unit Name | Drainage Class | Hydrologic Group | Depth to the Water Table ⁽¹⁾ (inches) |
|-----------------|--|-------------------------|------------------|--|
| 2 | Blanton fine sand, 0 to 5 percent slopes | Well drained | A | 60 to 72 |
| 3 | Hurricane fine sand, 0 to 5 percent slopes | Somewhat poorly drained | A | 12 to 42 |

| Map Unit | Map Unit Name | Drainage Class | Hydrologic Group | Depth to the Water Table ⁽¹⁾ |
|----------|--|-------------------------|------------------|---|
| 7 | Centenary fine sand, 0 to 5 percent slopes | Moderately well drained | A | 42 to 60 |
| 9 | Leon fine sand, 0 to 2 percent slopes | Poorly drained | A/D | 6 to 18 |
| 10 | Ortega fine sand, 0 to 5 percent slopes | Moderately well drained | A | 42 to 60 |
| 20 | Scranton fine sand | Somewhat poorly drained | A/D | 6 to 18 |
| 31 | Pottsburg fine sand | Poorly drained | A/D | 6 to 18 |
| 42 | Osier fine sand, occasionally flooded | Poorly drained | A/D | 6 to 18 |

⁽¹⁾The “Water table” above refers to a saturated zone in the soil which occurs during specified months, typically the summer wet season. Estimates of the upper limit shown in the Web Soil Survey are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

4.4 Seasonal High Groundwater Level

In estimating seasonal high groundwater level, a number of factors are taken into consideration including antecedent rainfall, soil redoximorphic features (i.e., soil mottling), stratigraphy (including presence of hydraulically restrictive layers), vegetative indicators, effects of development, and relief points such as drainage ditches, low-lying areas, etc.

Based on our interpretation of the current site conditions, including the boring logs and review of published data, we estimate the seasonal high groundwater levels at the site to be generally 2 to 3 feet above the water levels measured at the time of our field work.

It is possible that higher groundwater levels may exceed the estimated seasonal high groundwater level as a result of significant or prolonged rains. Therefore, we recommend that design drawings and specifications account for the possibility of groundwater level variations, and construction planning should be based on the assumption that such variations will occur.

5.0 DESIGN RECOMMENDATIONS

5.1 General

The following evaluation and recommendations are based on the provided project information as presented in this report, the results of the field exploration and laboratory testing performed, and the construction techniques recommended in Section 6.0 below. If the described project conditions are incorrect or changed after this report, or if subsurface conditions encountered during construction are different from those reported, then MAE should be notified so that these recommendations can be re-evaluated and revised, if necessary. We recommend that MAE be allowed to review the construction plans and earthwork specifications to verify that the recommendations in this report have been properly interpreted and implemented.

5.2 Building Foundation Design Recommendations

Based on the results of our exploration, we consider the subsurface conditions at the site adaptable for support of the proposed structure when constructed on a properly designed shallow foundation system. Provided the site preparation and earthwork construction recommendations outlined in Section 6.0 of this report are performed, the following parameters may be used for foundation design.

5.2.1 Bearing Pressure

The maximum allowable net soil bearing pressure for use in shallow foundation design should not exceed 2,000 psf. Net bearing pressure is defined as the soil bearing pressure at the foundation bearing level in excess of the natural overburden pressure at that level. The foundations should be designed based on the maximum load that could be imposed by all loading conditions.

5.2.2 Foundation Size

The minimum width recommended for the turned-down-edge portion of the floor slab should be 12 inches. Even though the maximum allowable soil bearing pressure may not be achieved, these width recommendations should control the size of the foundations.

5.2.3 Bearing Depth

The exterior foundations should bear at a depth of at least 12 inches below the exterior final grades to provide confinement to the bearing level soils. It is recommended that stormwater be diverted away from the building exterior to reduce the possibility of erosion beneath the exterior footings.

5.2.4 Bearing Material

The foundations should bear within either the compacted fine sand with silt (SP-SM) soils as encountered at the boring locations, or within compacted structural fill. We do not recommend bearing within the clayey sands (SC) beginning at a depth of 2 feet below existing grade as encountered at the boring locations. Clayey sands that are within 24 inches of the bottom of the turned-down edges should be excavated and replaced with suitable compacted sand fill as discussed in Section 6.0 below. The bearing level soils, after compaction, should exhibit densities equivalent to 95 percent of the modified Proctor maximum dry density (ASTM D 1557), to a depth of at least one foot below the foundation bearing levels.

5.2.5 Settlement Estimates

Post-construction settlements of the structure will be influenced by several interrelated factors, such as (1) subsurface stratification and strength/compressibility characteristics; (2) footing size, bearing level, applied loads, and resulting bearing pressures beneath the foundations; and (3) site preparation and earthwork construction techniques used by the contractor. Our settlement estimates for the structure are based on the use of site preparation/earthwork construction techniques as recommended in Section 6.0 of this report. Any deviation from these recommendations could result in an increase in the estimated post-construction settlements of the structure.

Due to the sandy nature of the near-surface soils, we expect the majority of settlement to occur in an elastic manner and fairly rapidly during construction. Using the recommended maximum bearing pressure, the supplied/assumed maximum structural loads, and the field and laboratory test data that we have correlated to geotechnical strength and compressibility characteristics of the subsurface soils, we estimate that total settlements of the structure could be on the order of one inch or less.

Differential settlements result from differences in applied bearing pressures and variations in the compressibility characteristics of the subsurface soils. Because of the general uniformity of the subsurface conditions and the recommended site preparation and earthwork construction techniques outlined in Section 6.0, we anticipate that differential settlements of the structure should be 0.5-inch or less.

5.2.6 Floor Slab

The floor slab for the proposed building can be constructed as a slab-on-ground, provided unsuitable organic materials are removed and replaced with compacted structural fill as outlined in Section 6.0. Any clayey soils that are within 24 inches of the bottom of the floor slab should be excavated and replaced with suitable compacted sand fill as discussed in Section 6.0 below. It is recommended that the floor slab bearing soils be covered with an impervious membrane to reduce moisture entry and floor dampness. A 6-mil thick plastic membrane is commonly used for this purpose. Care should be exercised not to tear large sections of the membrane during placement of reinforcing steel and concrete. In addition, we recommend that a minimum separation of 2 feet be maintained between the finished floor levels and the estimated normal seasonal high groundwater level.

5.2.7 Miscellaneous Grade-Supported Slabs

Any grade-supported slabs, such as equipment slabs, pavilions, and sidewalks, can be constructed as slabs-on-ground provided unsuitable organic materials are removed and replaced with compacted structural fill as outlined in Section 6.0. Any clayey soils that are within 24 inches of the bottom of the slabs should be excavated and replaced with suitable compacted sand fill as discussed in Section 6.0 below.

5.3 Pavement Considerations

The soil borings along most of the Access Road, or from its connection with CR 215 to boring location A-11, encountered sand soils (A-3) to the terminating depth of the borings. Borings B-12 through B-14, and boring B-1 in the Parking Area, encountered clayey soils beginning at the ground surface (B-13) and at a depth of 2 feet (borings B-12, B-14 and B-1). For satisfactory pavement performance, we recommend a minimum separation of 24 inches between the pavement base course and the top of the clay soils. This may require excavation of the clay soil and replacement with compacted fill as discussed in Section 6.0 below.

Based on the results of our exploration, we consider the subsurface conditions at the site adaptable for support of a flexible pavement section for the Access Road and parking area, when constructed on properly prepared subgrade soils as outlined in Section 6.0 of this report. Typical pavement sections used in northeast Florida are shown on the following table. If requested, we can prepare a project-specific pavement design if specific traffic data is provided.

| TYPICAL ASPHALT PAVEMENT SECTION | | |
|---|------------------------------|-------------|
| Pavement Layer | Auto Parking & Traffic Lanes | Truck Areas |
| Asphaltic Concrete Wearing Surface | 1.5" | 2.5" |
| Base ⁽¹⁾ | 6" | 8" |
| Stabilized Subgrade ⁽¹⁾ | 12" | 12" |
| ⁽¹⁾ Groundwater should be maintained at least 2 feet below the bottom of the base course if a limerock material is used. If a more water-tolerant base course material is used, such as Graded Aggregate Base or Recycled Concrete Aggregate, then this separation should be one foot. | | |

5.3.1 Wearing Surface

The wearing surface should consist of Florida Department of Transportation (FDOT) Superpave Type SP-12.5 or SP-9.5 asphaltic concrete. Concrete pavement should have a minimum 28-day strength of 4,000 psi. Specific requirements for asphaltic concrete wearing surfaces are outlined in the latest edition of the *Florida Department of Transportation, Standard Specifications for Road and Bridge Construction*.

5.3.2 Base and Stabilized Subgrade

The base course may consist of a commercially produced limerock material that should have a minimum Limerock Bearing Ratio (LBR) value of 100. Alternatively, a Graded Aggregate Base or a Recycled Concrete Aggregate (RCA) material could be used, which should meet the specifications as noted in the latest edition of the FDOT's *Standard Specifications for Road and Bridge Construction*. The base material should be compacted to 100 percent of the modified Proctor maximum dry density (AASHTO T-180) value.

The subgrade soil should be stabilized with approved stabilizer material to have a minimum LBR value of 40. The stabilized subgrade should be compacted to 98 percent of the modified Proctor maximum dry density (AASHTO T-180) value.

5.3.3 Underdrains

Satisfactory pavement life is dependent on dry/strong pavement support provided by the base and subgrade courses. Accordingly, a minimum clearance of 2.5 feet must be maintained between the estimated seasonal high groundwater table and the pavement surface. Depending on final pavement grades, subsurface drains may be required to maintain dry base and subgrade materials. Once the final paving and drainage plans are prepared, we would be pleased to review them and the need for underdrains.

5.4 Berm Embankment Recommendations

5.4.1 Slope Stability of Proposed Berm Embankment

Based on the results of our exploration, we understand there will be a 20-bay shooting range with berms along the 2 sides and back of the range. The berms will be 15 to 20 feet in height with a 6-foot wide crest. The outside face will be sloped at 1.5:1 Horizontal:Vertical, and the inside face will be sloped at 2:1 Horizontal:Vertical. We understood that a lesser factor of safety was acceptable for the outside face. Slope stability analyses were performed using the computer program Slide2. Our analyses assumed that the berm will be constructed in accordance with our recommendations in Section 6.0. We also assumed the groundwater level at the existing ground surface. Our analyses resulted in a factor of safety against slope failure of 1.3 or greater for the outside face of the slope of the proposed berm. Stability analyses on the inside slope resulted in a factor of safety of 1.5 or greater. Output of our analyses for boring B-8 for the outside and inside slopes are included in Appendix C.

5.4.2 Berm Embankment Settlement Estimates

Post-construction settlements of the structure will be influenced by several interrelated factors, such as (1) subsurface stratification and strength/ compressibility characteristics; (2) embankment size, bearing level, applied loads, and resulting bearing pressures beneath the embankment; and (3) site preparation and earthwork construction techniques used by the contractor. Our settlement estimates for the structure are based on the use of site preparation/ earthwork construction techniques as recommended in Section 6.0 of this report. Any deviation from these recommendations could result in an increase in the estimated post-construction settlements of the structure.

Based on the encountered subsurface conditions, we estimate the majority of settlement to occur in an elastic manner as the load is applied. Using a soil unit weight for the berm soils of 110 pcf, the proposed embankment height and geometry, and the field and laboratory test data that we have correlated to geotechnical strength and compressibility characteristics of the subsurface soils, we estimate that maximum total settlement of the berm to be on the order of 8 inches or less.

Differential settlements result from differences in applied bearing pressures and variations in the compressibility characteristics of the subsurface soils. Because of the general uniformity of the subsurface conditions and the recommended site preparation and earthwork construction techniques outlined in Section 6.0, we estimate that differential settlements of the berm to be about one to 2 inches along the center of the berm.

5.4.3 Embankment Design Issues

As discussed above, the slope stability analyses of the proposed embankment design shows the embankment meets minimum factor of safety. However, some sloughing of this slope may occur due to erosion caused by rainfall and other environmental effects. Therefore, we recommend that the berm slopes and crest be sodded to help reduce this potential. We do not recommend the growth of trees or other such vegetation as the roots penetrate much deeper into the embankment and can serve as conduits for moisture, reducing the soil strength in the embankment over time.

We recommend that the berm be constructed with soils having at least 10 percent plastic fines but no more than 20 percent plastic fines so that compaction can be achieved. The clayey sands (SC, A-2-6) as encountered over much of the site and within the pond borings PB-1 and PB-2 should be blended with the fine sands and fine sands with silt (SP, SP-SM, A-3 soils) to achieve the desired embankment fill soil. We recommend the embankment crest be graded to allow for surface water to drain off of the crest and not be allowed to infiltrate into the berm.

The proposed pond to the south of the berm should be located such that the top of the north pond slope be at least 30 feet from the toe of the outside face of the berm. This is to prevent failure of the berm slope due to loss of soil support from the pond excavation. We also recommend that stormwater not be allowed to pond at the toe of the berm. The area adjacent to the berm should be graded to route stormwater away from the berm.

5.5 Pond Considerations

5.5.1 Borrow Suitability

Based on the boring results and classification of the soil samples, the fine sands and fine sands with silt (A-3), as encountered at the boring locations, are considered suitable for use as fill soil for proposed access road construction. The fine sands, fine sands with silt, and silty fine sands (A-3, A-2-4) as encountered at the boring locations, are considered suitable for use as fill soil for the proposed building. Clayey sands (A-2-6) encountered at PB-1 and PB-2 are considered suitable for use as fill soil for the proposed berms. However, it should be noted that the A-2-4 and A-2-6 soils (i.e., soils with more than 10 to 12 percent passing the No. 200 sieve) will be more difficult to compact due to their natural tendency to retain soil moisture and will require drying. It should be anticipated that if the A-2-4 and A-2-6 soils are not properly dewatered prior to excavation, drying of these soils to obtain the proper moisture content for compaction may take approximately 2 to 3 weeks, if weather permits. Blending of these soils with the cleaner A-3 soils will help make these soils more workable. Depending on the anticipated time for completing the site work portion of the project and the drying time required to preclude pumping and yielding of these soils

during placement and compaction operations, these soils may be considered unsuitable for use as fill material.

The soils containing surficial organic material (topsoil) will require removal and are considered unsuitable for use as structural fill. The organic soils could be used in landscape berms.

It should be anticipated the soils in the proposed pond area that are below the groundwater level will have moisture contents in excess of the modified Proctor optimum moisture content and will require stockpiling or spreading to bring the moisture content within two percent of the soil's optimum moisture content corresponding to the required degree of compaction.

5.5.2 Pond Liner

We understand that the pond to the south of the backstop berm (boring PB-4 location) will be lined to prevent infiltration of possibly lead-contaminated stormwater. The possible liners include a compacted clay soil as excavated from the ponds onsite, a plastic liner and a Geosynthetic Clay Liner (GCL). Based on the results of our soil exploration, it is our opinion that the clay soils as encountered will not provide the expected 10^{-8} cm/sec or less permeability rate that is typically specified for retention pond clay liners. A plastic liner, typically a reinforced polyethylene or polypropylene liner, is used. A GCL typically consists of a geosynthetic material that sandwiches a bentonite clay core. GCL's are generally more expensive than plastic liners but can provide superior performance against leakage.

6.0 SITE PREPARATION AND EARTHWORK RECOMMENDATIONS

Site preparation as outlined in this section should be performed to provide more uniform foundation bearing conditions, to reduce the potential for post-construction settlements of the planned structure(s) and to maintain the integrity of a flexible pavement section.

6.1 Clearing

Prior to construction, the location of existing underground utility lines within the construction area should be established. Provisions should then be made to relocate interfering utilities to appropriate locations. It should be noted that, if underground pipes are not properly removed or plugged, they may serve as conduits for subsurface erosion, which may subsequently lead to excessive settlement of overlying structures.

The "footprint" of the proposed building plus a minimum additional margin of 5 feet, the parking/drive area and the access road plus a minimum additional margin of 3 feet, and the berm area plus a minimum margin of 5 feet, should be stripped of all surface vegetation, stumps, debris, organic topsoil, or other deleterious materials. During grubbing operations, roots with a diameter greater than 0.5-inch, stumps, or small roots in a concentrated state, should be grubbed and completely removed.

Based on the results of our field exploration, it should be anticipated that 6 to 12 inches of topsoil and soils containing significant amounts of organic materials may be encountered across the site. The actual depths of unsuitable soils and materials should be determined by MAE using visual observation and judgment during earthwork operations. Any topsoils removed from the building and parking/drive areas can be stockpiled and used subsequently in areas to be grassed.

6.2 Temporary Groundwater Control

The groundwater level, where encountered, was measured at depths varying from 5 feet to 6 feet 5 inches below the existing ground surface at the time of our exploration. Based on the measured groundwater

levels, groundwater control may not be necessary. However, it may be necessary to install temporary groundwater control measures to dewater the area to facilitate compaction of the surface soils that overlie shallow clayey soils that may have caused groundwater levels to be within 2 feet below the stripped and grubbed surface at the time of construction following recent heavy or prolonged rainfall events. Should groundwater control measures become necessary, dewatering methods should be determined by the contractor. We recommend the groundwater control measures, if necessary, remain in place until compaction of the existing soils is completed. The dewatering method should be maintained until backfilling has reached a height of 2 feet above the groundwater level at the time of construction. The site should be graded to direct surface water runoff from the construction area.

Note that discharge of produced groundwater to surface waters of the state from dewatering operations or other site activities is regulated and requires a permit from the State of Florida Department of Environmental Protection (FDEP). This permit is termed a *Generic Permit for the Discharge of Produced Groundwater From Any Non-Contaminated Site Activity*. If discharge of produced groundwater is anticipated, we recommend sampling and testing of the groundwater early in the site design phase to prevent project delays during construction. MAE can provide the sampling, testing, and professional consulting required to evaluate compliance with the regulations.

6.3 Compaction

After completing the clearing and stripping operations and installing the temporary groundwater control measures (if required), any excavation needed to achieve the floor slab subgrade elevation of the proposed structures or grade-supported slabs may commence. Once this elevation is achieved, any clayey soils as encountered in the borings within 24 inches of the slab bearing level should be removed and replaced with compacted structural fill as defined in Section 6.4 below. In addition, any clayey soils within 24 inches of the roadway base course should also be removed and replaced with compacted structural fill. The sand fill should be placed and compacted as discussed below.

Once the clayey soils within 24 inches within 24 inches of the slab and roadway base course have been removed and replaced with compacted structural fill, then the exposed surface areas should be compacted with a vibratory drum roller. This includes the area of the proposed berm. Several passes should be made in both directions to achieve a uniform soil subgrade. Any areas with pumping or yielding soils should be excavated to remove the wet soils and replaced with structural fill. Compaction should continue until the subgrade soils achieve at least 95 percent of the soils modified Proctor maximum dry density (ASTM D-1557) to a depth of 24 inches below the compacted surface. Temporary groundwater control measures may be necessary to control groundwater so that this level of compaction can be achieved.

Should the bearing level soils experience pumping and soil strength loss during the compaction operations, compaction work should be immediately terminated. The disturbed soils should be removed and backfilled with dry structural fill soils, which are then compacted, or the excess moisture content within the disturbed soils should be allowed to dissipate before recompacting.

Care should be exercised to avoid damaging any nearby structures while the compaction operation is underway. Prior to commencing compaction, occupants of adjacent structures should be notified, and the existing conditions of the structures should be documented with photographs and survey, if deemed necessary. Compaction should cease if deemed detrimental to adjacent structures, and MAE should be contacted immediately. It is recommended that the vibratory roller operate in the static mode within a distance of 50 feet from existing structures. Alternatively, a track-mounted bulldozer may also be used.

6.4 Structural Backfill and Fill Soils

Any structural backfill or fill required for site development should be placed in loose lifts not exceeding 12 inches in thickness and compacted by the use of the above described vibratory drum roller. The lift thickness should be reduced to 8 inches if the roller operates in the static mode or if track-mounted compaction equipment is used. If hand-held compaction equipment is used, the lift thickness should be further reduced to 6 inches.

Structural fill is defined as a non-plastic, inorganic, granular soil having less than 10 percent material passing the No. 200 mesh sieve and containing less than 4 percent organic material. The fine sand and slightly silty or clayey fine sand, without roots, as encountered in the borings, are suitable as fill materials and, with proper moisture control, should densify using conventional compaction methods. It should be noted that soils with more than 10 to 12 percent passing the No. 200 sieve will be more difficult to compact, due to their nature to retain soil moisture, and may require drying. Typically, the material should exhibit moisture contents within ± 2 percent of the modified Proctor optimum moisture content (ASTM D 1557) during the compaction operations. Compaction should continue until densities of at least 95 percent of the modified Proctor maximum dry density (ASTM D 1557) have been achieved within each lift of the compacted structural fill.

Because the clayey soils (SC, CH) have excessive fines contents, and a tendency to retain moisture which makes these soils very difficult to dry and compact, we consider these soils unsuitable for use as structural backfill.

6.5 Embankment Fill Soil and Compaction

We recommend that the proposed embankment be constructed with clayey soils using the soils excavated from proposed pond locations. The embankment fill for the berm should consist of sands having at least 10 percent plastic fines but no more than 20 percent plastic fines to control compaction. The soils will generally consist of clayey sands, based on the results of the SPT borings located on the proposed pond areas.

Once the surface subgrade soils in the area of the proposed embankment have been prepared as noted in Section 6.3 above, the embankment fill should be placed in loose lifts no more than 6 to 12 inches in thickness. Each lift should be compacted with a Sheepsfoot roller or a non-vibratory smooth drum roller to at least 95 percent of the soils standard Proctor (ASTM D 698) maximum dry density. The soils should be placed at, or no more than 2 percent above, the soils Optimum Moisture Content as determined by the Proctor test.

Should the berm embankment fill soils experience pumping and soil strength loss during the compaction operation, compaction work should be immediately terminated, and the affected soils should be scarified to promote drying to below the soil's Optimum Moisture Content before recompacting. Alternatively, the wet soils can be removed and replaced with dryer fill soil.

6.6 Pavement Areas

After completing the clearing/stripping operations in the pavement areas, any underlying clayey sands and sandy clays that are within 2 feet of the bottom of the pavement base should be over-excavated from within the pavement areas. Structural backfill and fill required to achieve the finish pavement grades then can be placed and compacted as described Section 6.3 above. As an exception, densities of at least 98 percent of the modified Proctor maximum dry density (ASTM D1557) should be obtained within the upper one foot of the materials immediately below the proposed base course.

7.0 QUALITY CONTROL TESTING

A representative number of field in-place density tests should be made in the upper 2 feet of compacted natural soils, in each lift of compacted backfill and fill, and in the upper 12 inches below the bearing levels in the footing excavations. The density tests are considered necessary to verify that satisfactory compaction operations have been performed. We recommend density testing be performed as listed below:

- One location for every 1,000 square feet of building area, minimum of 2.
- One location for every 5,000 square feet of pavement area in the parking area, minimum of 2, and every 200 feet along the proposed Access Road.

8.0 REPORT LIMITATIONS

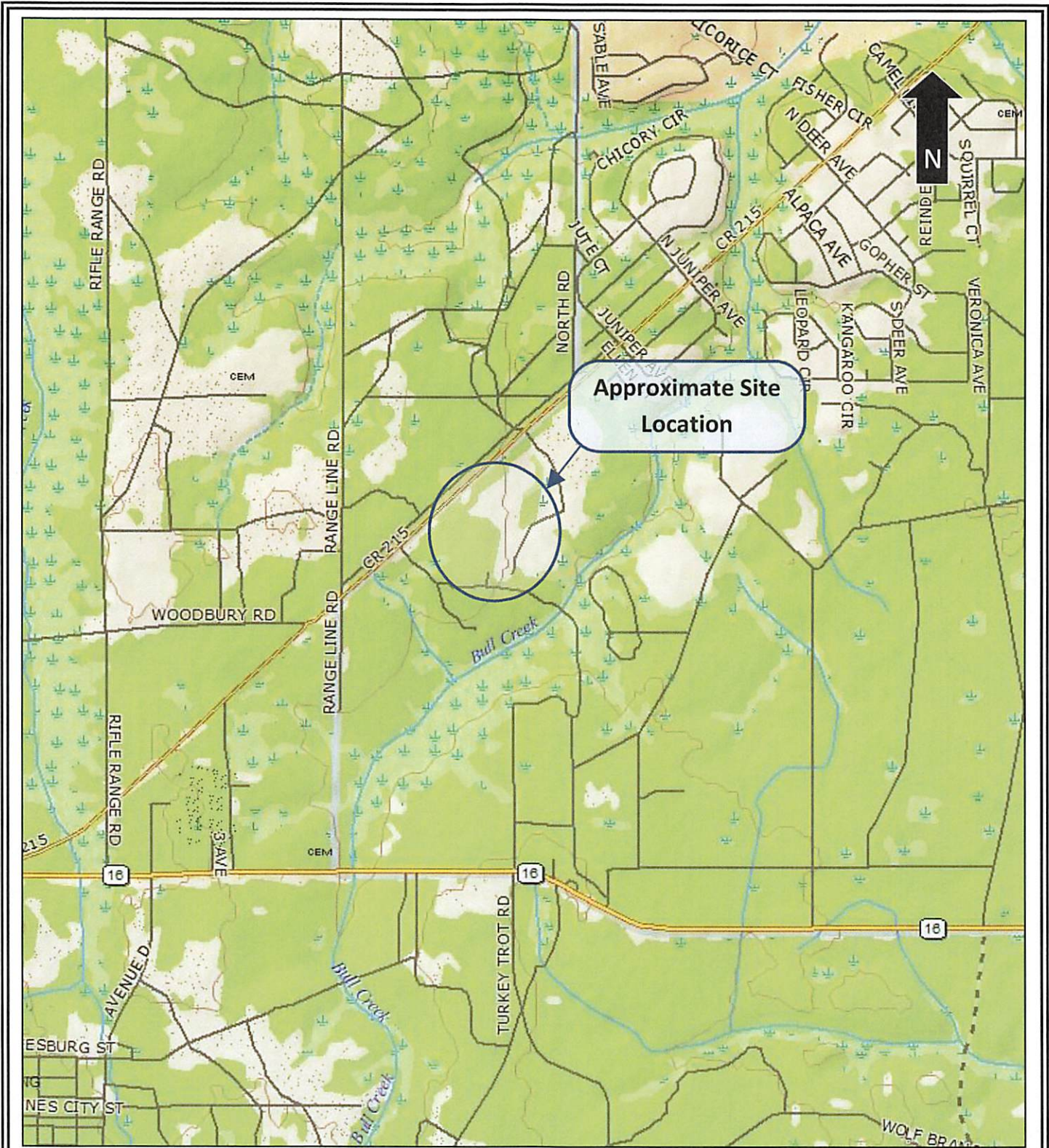
This report has been prepared for the exclusive use of WGI and their clients for specific application to the design and construction of the Proposed Clay County Shooting Range project. An electronically signed and sealed version, and a version of our report that is signed and sealed in blue ink, may be considered an original of the report. Copies of an original should not be relied on unless specifically allowed by MAE in writing. Our work for this project was performed in accordance with generally accepted geotechnical engineering practice. No warranty, express or implied, is made.

The analyses and recommendations contained in this report are based on the data obtained from this project. This testing indicates subsurface conditions only at the specific locations and times, and only to the depths explored. These results do not reflect subsurface variations that may exist away from the boring locations and/or at depths below the boring termination depths. Subsurface conditions and water levels at other locations may differ from conditions occurring at the tested locations. In addition, it should be understood that the passage of time may result in a change in the conditions at the tested locations. If variations in subsurface conditions from those described in this report are observed during construction, the recommendations in this report must be re-evaluated.


The scope of our services did not include any environmental assessment or testing for the presence or absence of hazardous or toxic materials in the soil, groundwater, or surface water within or beyond the subject site. Any statements made in this report, and/or notations made on the generalized soil profiles or boring logs, regarding odors or other potential environmental concerns are based on observations made during execution of our scope of services and as such are strictly for the information of our client. No opinion of any environmental concern of such observations is made or implied. Unless complete environmental information regarding the site is already available, an environmental assessment is recommended.

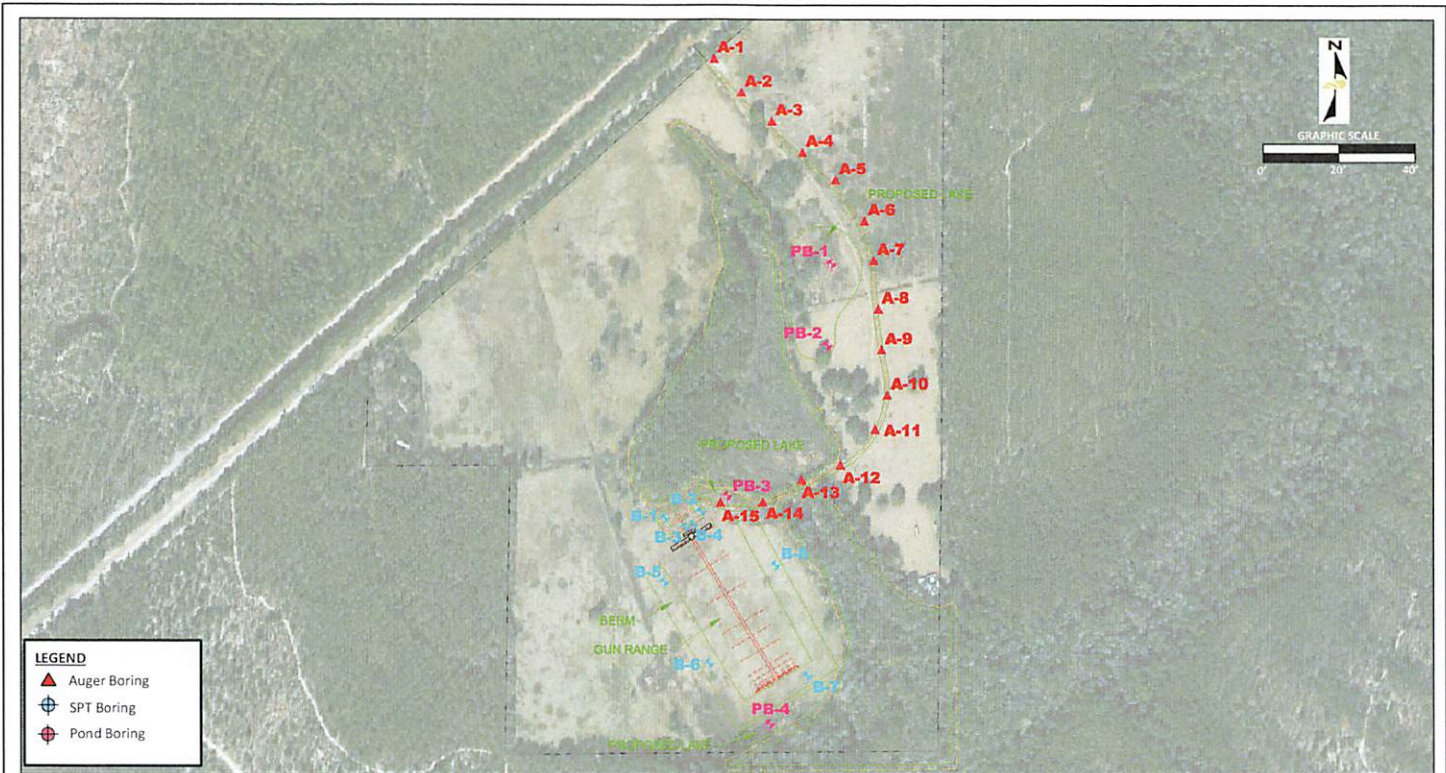
If changes in the project design occur, then the conclusions and recommendations contained in this report may need to be modified. We recommend that these changes be provided to us for our consideration. MAE is not responsible for conclusions, interpretations, opinions or recommendations made by others based on the data contained in this report.

Figures



Site Location Map

| | | |
|---|--|-----------------|
| PREPARED BY | PROJECT NAME | |
|  | Clay County Shooting Range Middleburg, Clay County, Florida | |
| | REFERENCE Delorme XMap 7.0 | SCALE NTS |
| PREPARED FOR Wantman Group, Inc. | MAE PROJECT NO. 0072-0004 | FIGURE NO. 1 |



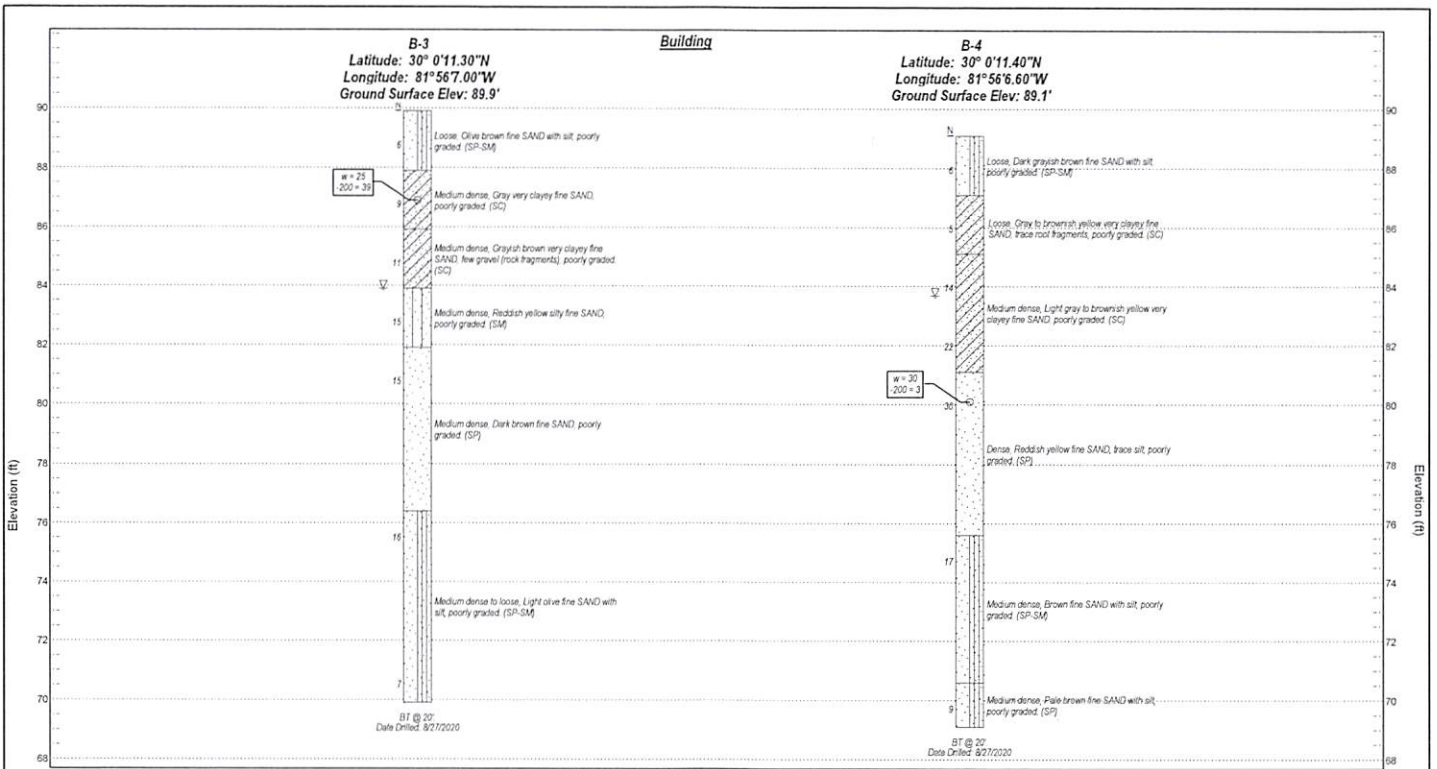
NOTES: 1. Conceptual Site Plan 02 dated 8/14/2200 as provided by Wantman Group, Inc.
 2. The boring locations as shown are based on the recorded GPS coordinates and accurate to within +/- 10 feet.

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|------------------|-----|--------------|---------------|
| Project Manager: | PRM | Project No.: | 0072-0004 |
| Drawn by: | MCV | Scale: | AS SHOWN |
| Checked by: | MCV | File Name: | 0072-0004.BLP |
| Approved by: | KAP | Date: | 2/25/2021 |



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| | | |
|--|--|---------|
| BORING LOCATION PLAN | | FIG NO. |
| CLAY COUNTY SHOOTING RANGE MIDDLEBURG, CLAY COUNTY, FLORIDA | | 2 |



Legend

| | | | | | | | | | | | |
|--|---------------------|--|------------------|--|-----------------|--|---|--|---|--|---------------------------------------|
| | Fine Sand with Silt | | Clayey Fine Sand | | Silty Fine Sand | | Standard Penetration Resistance (SP) Blow/Foot | | Unified Soil Classification System (USCS) | | Natural Moisture Content (w) |
| | Fine Sand | | | | | | Boring Terminated at Depth Below Existing Grade | | Depth to Groundwater at Time of Drilling | | % Passing No. 200 U.S. Standard Sieve |

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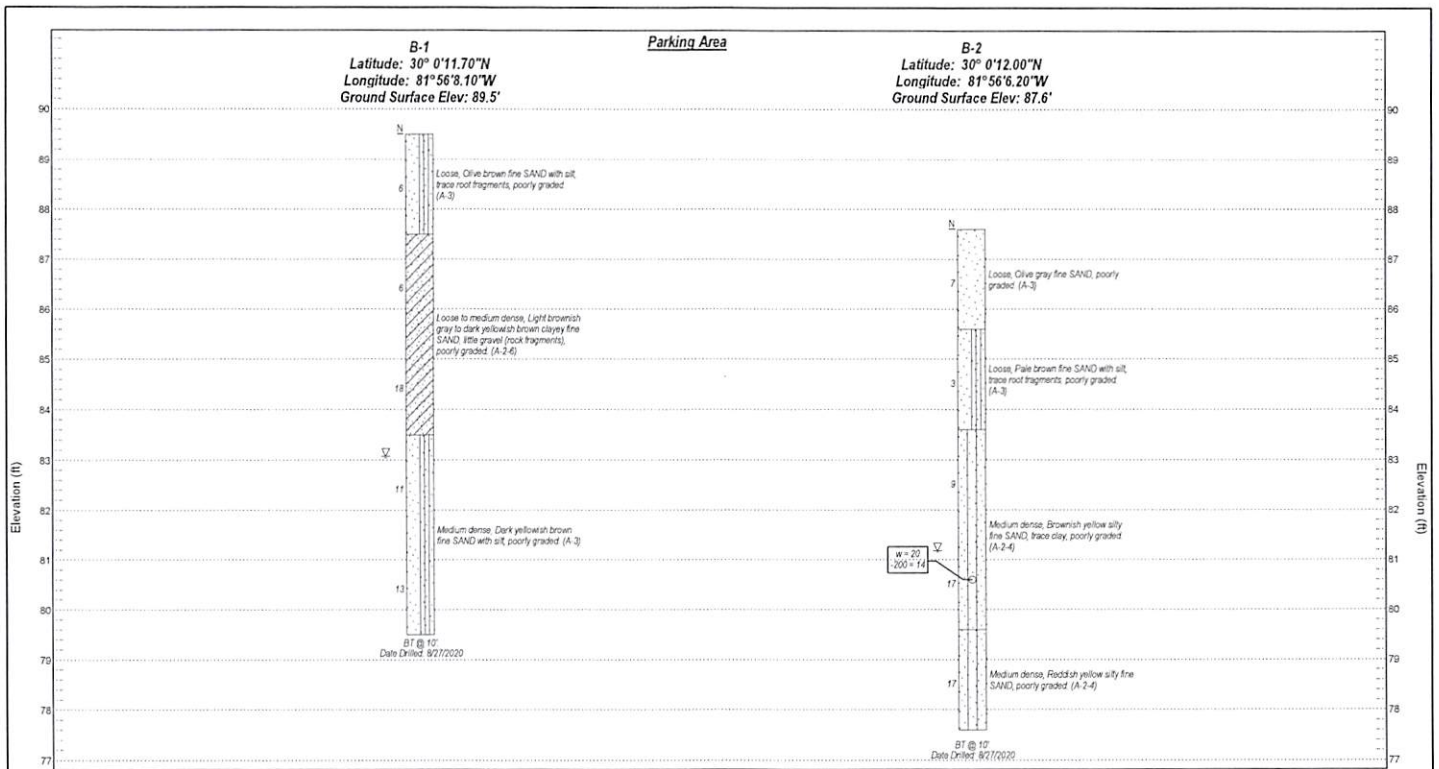
Wantman Group, Inc.

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| 2/25/2021 | 0072-0004 |

Sheet No. **3**

Generalized Soil Profiles

Clay County Shooting Range
 Middleburg, Clay County, Florida



Legend

| | | | | | | | | |
|--|--|--|----|---|-------|--|------|---------------------------------------|
| | | | N | Standard Penetration Resistance (Blow/foot) | (A-3) | AASHTO Soil Classification System | w | Natural Moisture Content (%) |
| | | | BT | Boring Terminated at Depth Below Grade | ∇ | Depth to Groundwater at Time of Drilling | -200 | % Passing No. 200 U.S. Standard Sieve |

| REVISIONS | | | | | |
|-----------|----|-------------|------|----|-------------|
| DATE | BY | DESCRIPTION | DATE | BY | DESCRIPTION |
| | | | | | |

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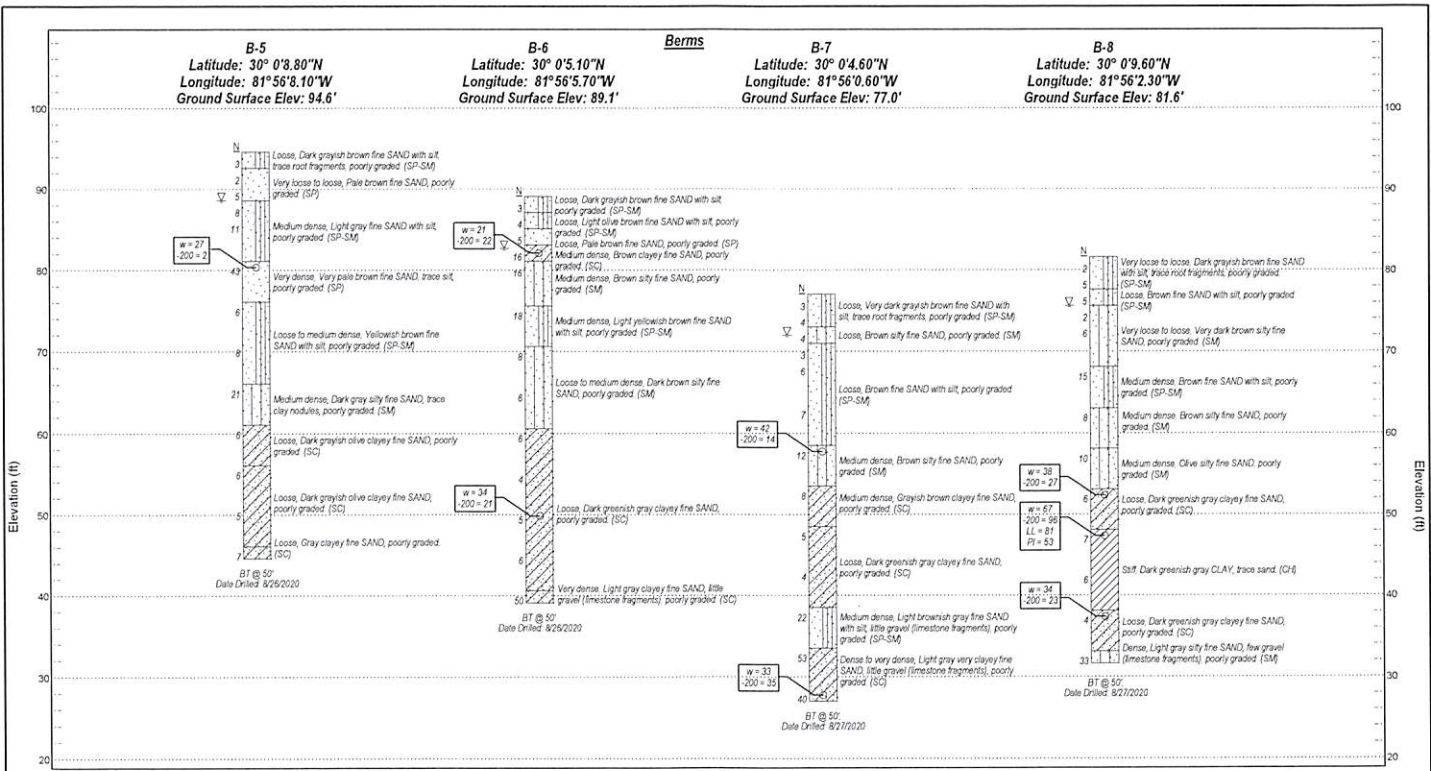
Wantman Group, Inc.

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| DATE | MAE PROJECT NO. |
| 2/25/2021 | 0072-0004 |

Generalized Soil Profiles

Clay County Shooting Range
 Middleburg, Clay County, Florida

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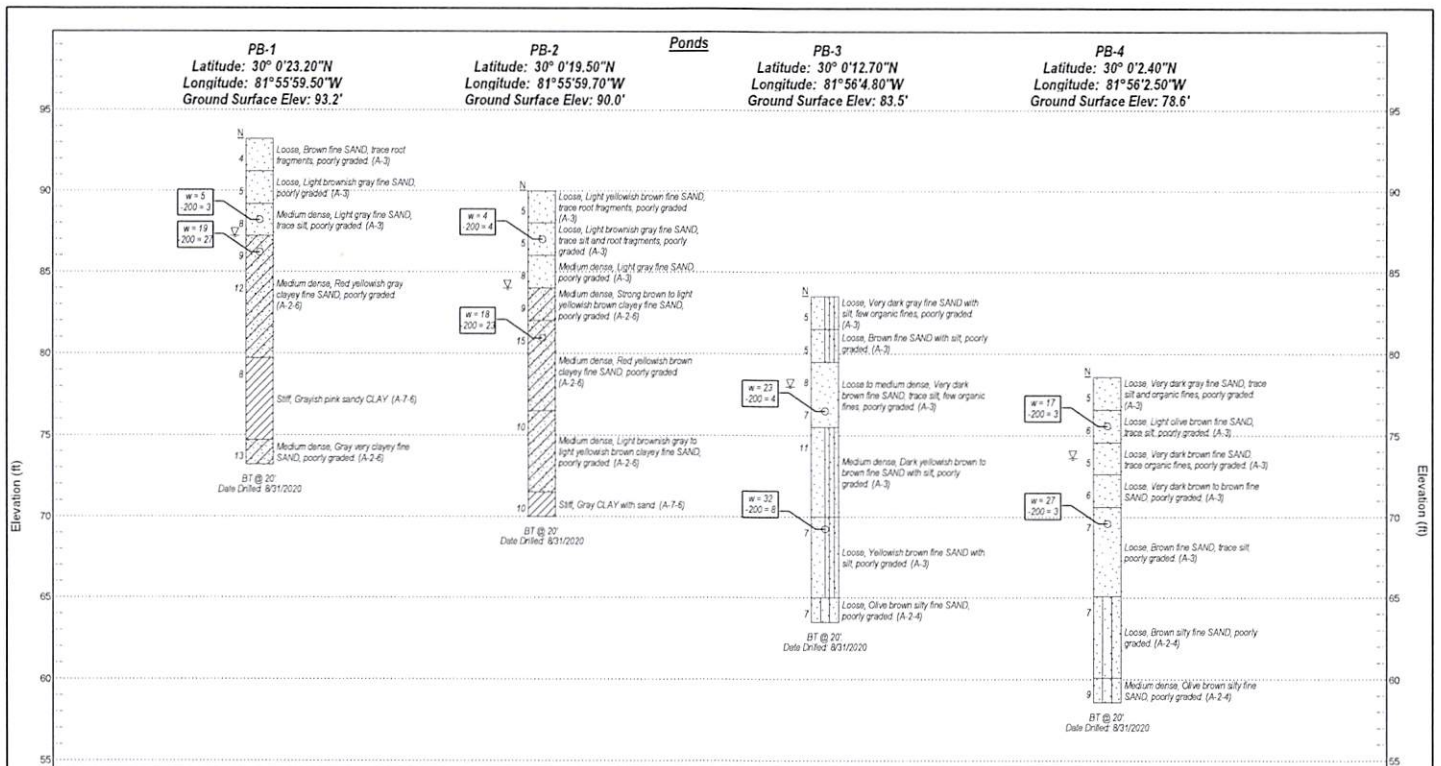


Legend

| | | | | | | | | | | | | | |
|--|---------------------|--|-----------------------|--|---|--|--|--|---|--|------------------------------|--|--------------|
| | Fine Sand with Silt | | Fine Sand | | Silty Fine Sand | | Standard Penetration Resistance Blows/foot | | Unified Soil Classification System (USCS) | | Natural Moisture Content (%) | | Liquid Limit |
| | Clayey Fine Sand | | Clay, High Plasticity | | Boring Terminated at Depth Below Existing Grade | | Depth to Groundwater at Time of Drilling | | % Passing No. 200 U.S. Standard Sieve | | Plasticity Index | | |

| REVISIONS | | | | | | P. ROONEY MAE, P.E. P.E. NO. 4396 | | Wantman Group, Inc. | | SHEET TITLE | |
|-----------|----|-------------|------|----|-------------|-----------------------------------|-----------------|---|---------------------------|-------------|-----------|
| DATE | BY | DESCRIPTION | DATE | BY | DESCRIPTION | DATE | MAE PROJECT NO. | PROJECT NAME | Generalized Soil Profiles | | PILOT NO. |
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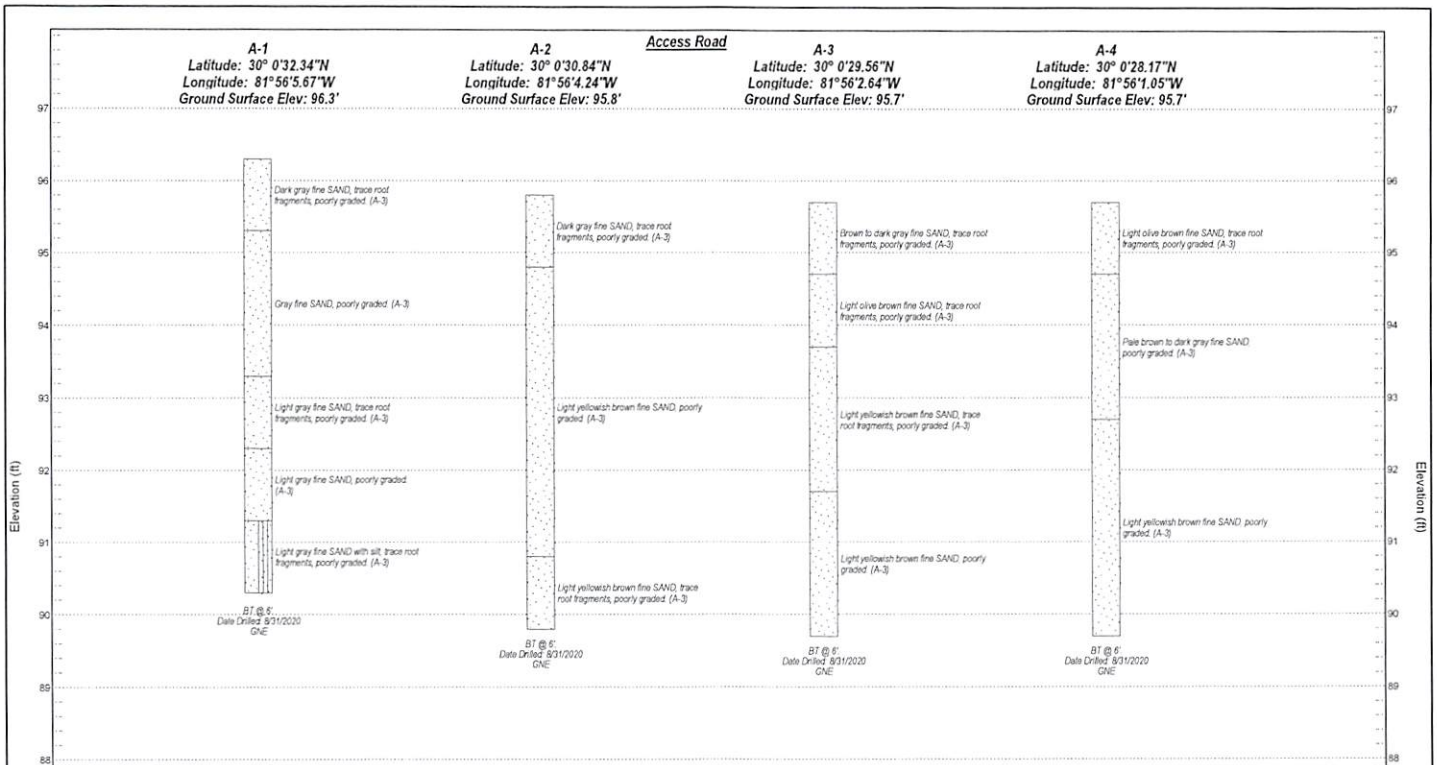




Legend

- Fine Sand
- Clayey Fine Sand
- Clay High Plasticity
- Fine Sand with Silt
- Silty Fine Sand
- Standard Penetration Resistance (Blow)/Foot
- AASHTO Soil Classification System
- Natural Moisture Content (%)
- Boring Terminated at Depth Below Grade
- Depth to Groundwater at Time of Drilling
- % Passing No. 200 U.S. Standard Sieve

| REVISIONS | | | | WANTMAN GROUP, INC. | | GENERALIZED SOIL PROFILES | |
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| DATE | BY | DESCRIPTION | DATE | BY | DESCRIPTION | DATE | PROJECT NO. |
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| | | | | | | | SHEET NO. 6 |

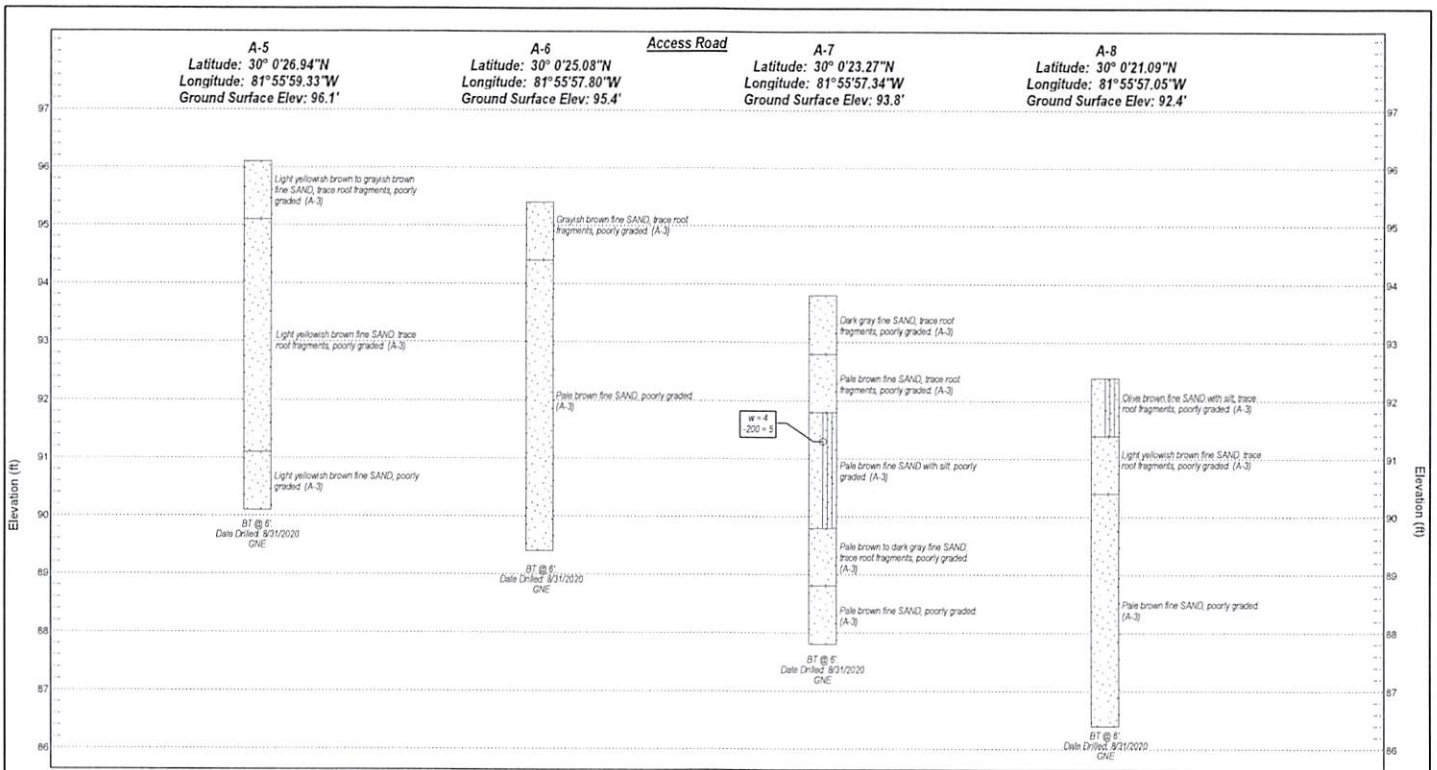


Legend

- Fine Sand
- Fine Sand with Silt
- (A-3) AASHTO Soil Classification System
- ∇ Depth to Groundwater at Time of Drilling
- BT Boring Terminated at Depth Below Existing Grade
- GNE Groundwater Level Not Encountered at Time of Drilling

| REVISIONS | | | | P. ROONEY M.A.S.E., P.E., No. 6196 | | Wantman Group, Inc. | | Generalized Soil Profiles | |
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| DATE | BY | DESCRIPTION | DATE | BY | DESCRIPTION | DATE | MAE PROJECT NO. | PROJECT NAME | FIGURE NO. |
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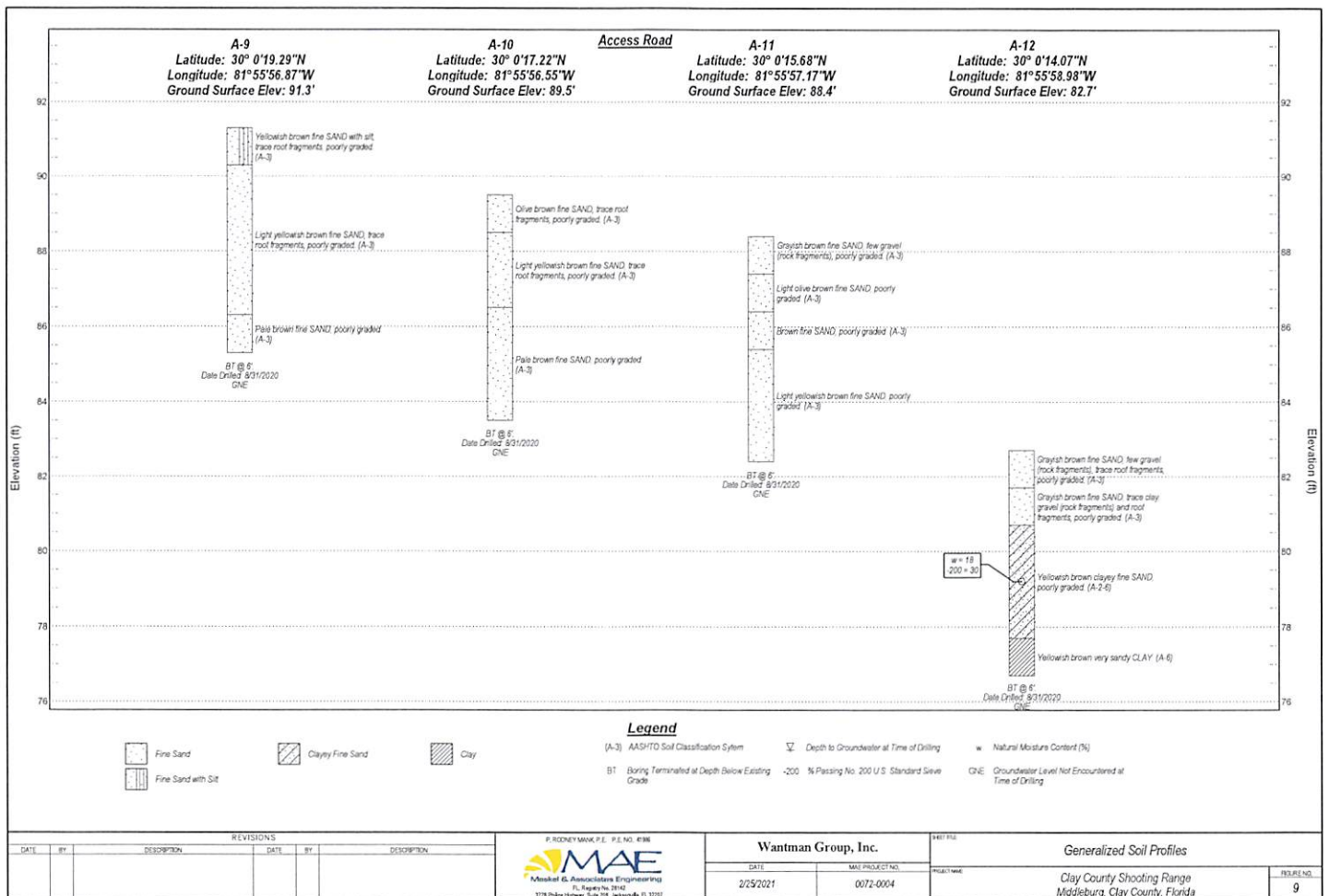


Legend

- Fine Sand
- Fine Sand with Silt
- (A-3) AASHTO Soil Classification System
- Depth to Groundwater at Time of Drilling
- w Natural Moisture Content (%)
- BT Boring Terminated at Depth Below Existing Grade
- 200 % Passing No. 200 U.S. Standard Sieve
- CNE Groundwater Level Not Encountered at Time of Drilling

| REVISIONS | | | | | | Wantman Group, Inc. | | Generalized Soil Profiles | |
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| REVISIONS | | | | | |
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| DATE | BY | DESCRIPTION | DATE | BY | DESCRIPTION |
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P. RODNEY MAN, P.E. P.E. NO. 4386

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Wantman Group, Inc.

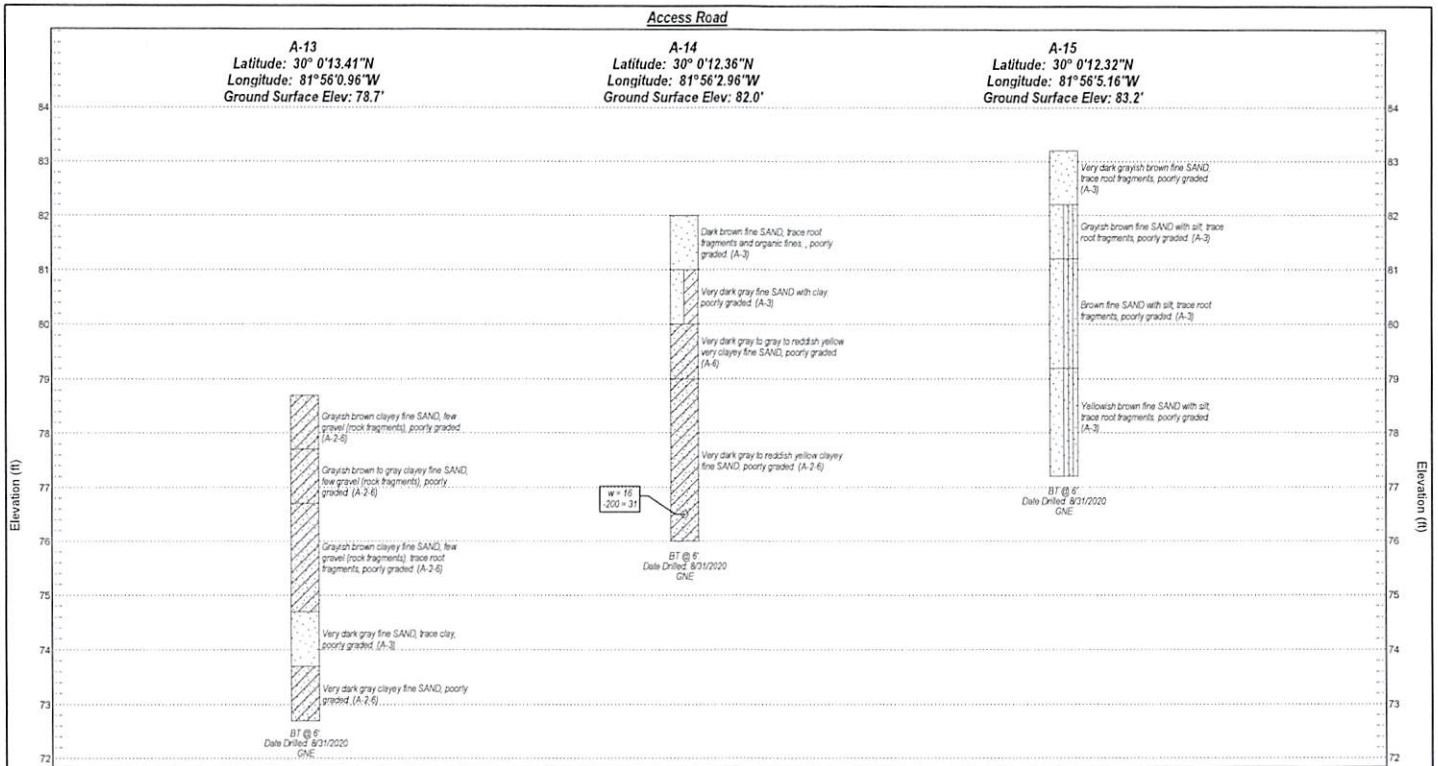
DATE: 2/25/2021
 MAX PROJECT NO.: 0072-0004

Generalized Soil Profiles

Clay County Shooting Range
 Middleburg, Clay County, Florida

SHEET NO. 9

Access Road



Legend

- Clayey Fine Sand
- Fine Sand
- Fine Sand with Clay
- (A-3) AASHTO Soil Classification System
- Depth to Groundwater at Time of Drilling
- w Natural Moisture Content (%)
- BT Boring Terminated at Depth Below Existing Grade
- 200 % Passing No. 200 U.S. Standard Sieve
- GNE Groundwater Level Not Encountered at Time of Drilling

| REVISIONS | | | | | | P. RODNEY MAX, P.E. P.E. NO. 4136 | | Wantman Group, Inc. | | GENERALIZED SOIL PROFILES | |
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Appendix A

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BORING B-1

PAGE 1 OF 1

PROJECT NO. 0072-0004

PROJECT NAME Clay County Shooting Range
 PROJECT LOCATION Middleburg, Clay County, Florida CLIENT Wantman Group, Inc.
 DATE STARTED 8/27/2020 COMPLETED 8/27/2020 LATITUDE 30° 0'11.70"N LONGITUDE 81°56'8.10"W
 DRILLING CONTRACTOR Independent Drilling, Inc. DRILLING METHOD Standard Penetration Test
 LOGGED BY M. Beedgood CHECKED BY K. Purani GROUND ELEVATION 89.5 ft HAMMER TYPE Automatic

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | AASHTO | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS |
|----------------|---------------------|---|--------|-------------|--------------------|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|
| | 1 | Loose, Olive brown fine SAND with silt, trace root fragments, poorly graded. | A-3 | | 2 3 3 2 | 6 | | | | | | | | |
| | 2 | Loose to medium dense, Light brownish gray to dark yellowish brown clayey fine SAND, little gravel (rock fragments), poorly graded. | A-2-6 | | 3 3 3 3 | 6 | | | | | | | | |
| 85 | 3 | | | | 10 11 7 8 | 18 | | | | | | | | |
| | 4 | Medium dense, Dark yellowish brown fine SAND with silt, poorly graded. | A-3 | | 4 6 5 5 | 11 | | | | | | | | |
| | 5 | | | | 5 7 6 5 | 13 | | | | | | | | |
| | | Bottom of borehole at EL 79.5 feet. | | | | | | | | | | | | |

NEW:MAE LAT/LONG AASHTO-ELEV - NEW TEMPLATE 7-30-12.GDT - 10/23/20 16:21 - F:\GINT\GINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS
 ∇ AT TIME OF DRILLING 6.42 ft / Elev 83.08 ft * ∇ AFTER DRILLING ---

Meskel & Associates Engineering, PLLC
 FL Registry No. 28142
 3728 Philips Highway, Suite 208
 Jacksonville, FL 32207
 P: (904)519-6990 F: (904)519-6992



BORING B-2

PAGE 1 OF 1

PROJECT NO. 0072-0004

PROJECT NAME Clay County Shooting Range
 PROJECT LOCATION Middleburg, Clay County, Florida CLIENT Wantman Group, Inc.
 DATE STARTED 8/27/2020 COMPLETED 8/27/2020 LATITUDE 30° 0'12.00"N LONGITUDE 81°56'6.20"W
 DRILLING CONTRACTOR Independent Drilling, Inc. DRILLING METHOD Standard Penetration Test
 LOGGED BY M.Beedgood CHECKED BY K. Purani GROUND ELEVATION 87.6 ft HAMMER TYPE Automatic

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | AASHTO | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS |
|----------------|---------------------|---|--------|-------------|--------------------|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|
| 85 | 1 | Loose, Olive gray fine SAND, poorly graded. | A-3 | | 3 4 3 2 | 7 | | | | | | | | |
| | 2 | Loose, Pale brown fine SAND with silt, trace root fragments, poorly graded. | A-3 | | 2 1 2 2 | 3 | | | | | | | | |
| | 3 | Medium dense, Brownish yellow silty fine SAND, trace clay, poorly graded. | A-2-4 | | 2 4 5 5 | 9 | | | | | | | | |
| 80 | 4 | | | | 5 7 10 10 | 17 | 20 | 14 | | | | | | |
| | 5 | Medium dense, Reddish yellow silty fine SAND, poorly graded. | A-2-4 | | 6 9 8 9 | 17 | | | | | | | | |
| | | Bottom of borehole at EL 77.6 feet. | | | | | | | | | | | | |

NEW MAE LAT/LONG AASHTO-ELEV - NEW TEMPLATE 7-30-12.GDT - 10/23/20 16:21 - F:\GINT\GINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS
 ∇ AT TIME OF DRILLING 6.42 ft / Elev 81.18 ft *∇ AFTER DRILLING ---

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 Jacksonville, FL 32207
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BORING B-3

PAGE 1 OF 1

PROJECT NO. 0072-0004

PROJECT NAME Clay County Shooting Range
 PROJECT LOCATION Middleburg, Clay County, Florida CLIENT Wantman Group, Inc.
 DATE STARTED 8/27/20 COMPLETED 8/27/20 LATITUDE 30° 0'11.30"N LONGITUDE 81°56'7.00"W
 DRILLING CONTRACTOR Independent Drilling, Inc. DRILLING METHOD Standard Penetration Test
 LOGGED BY M. Beedgood CHECKED BY K. Purani APPROX. GROUND ELEVATION 89.9 ft HAMMER TYPE Automatic

NEW MAE LAT/LONG USCS-ELEV - NEW TEMPLATE 7-30-12.GDT - 10/23/20 16:30 - F:\GINTGINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | USCS | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS |
|--|---------------------|--|-------|-------------|-----------------------|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|
| | 1 | Loose, Olive brown fine SAND with silt, poorly graded. | SP-SM | | 2 3 3 3 3 | 6 | | | | | | | | |
| | 2 | Medium dense, Gray very clayey fine SAND, poorly graded. | SC | | 3 5 4 3 | 9 | 25 | 39 | | | | | | |
| 85 | 3 | Medium dense, Grayish brown very clayey fine SAND, few gravel (rock fragments), poorly graded. | SC | | 4 6 5 6 | 11 | | | | | | | | |
| | 4 | Medium dense, Reddish yellow silty fine SAND, poorly graded. | SM | | 6 6 9 8 | 15 | | | | | | | | |
| 80 | 5 | Medium dense, Dark brown fine SAND, poorly graded. | SP | | 5 7 8 10 | 15 | | | | | | | | |
| | 6 | Medium dense to loose, Light olive fine SAND with silt, poorly graded. | SP-SM | | 7 7 9 | 16 | | | | | | | | |
| | 7 | Medium dense to loose, Light olive fine SAND with silt, poorly graded. | SP-SM | | 4 4 3 | 7 | | | | | | | | |
| Bottom of borehole at EL 69.9 feet. | | | | | | | | | | | | | | |
| NOTES <u>Boring backfilled with soil cuttings.</u> | | | | | | | | | | | | | | |
| GROUND WATER LEVELS | | | | | | | | | | | | | | |
| ∇ AT TIME OF DRILLING <u>6.00 ft / Elev 83.90 ft</u> * ∇ AFTER DRILLING <u>---</u> | | | | | | | | | | | | | | |



PROJECT NAME Clay County Shooting Range
 PROJECT LOCATION Middleburg, Clay County, Florida CLIENT Wantman Group, Inc.
 DATE STARTED 8/27/20 COMPLETED 8/27/20 LATITUDE 30° 0'11.40"N LONGITUDE 81°56'6.60"W
 DRILLING CONTRACTOR Independent Drilling, Inc. DRILLING METHOD Standard Penetration Test
 LOGGED BY M. Beedgood CHECKED BY K. Purani APPROX. GROUND ELEVATION 89.1 ft HAMMER TYPE Automatic

NEW MAE LAT/LONG USCS-ELEV - NEW TEMPLATE 7-30-12.GDT - 10/23/20 16:30 - F:\GINT\GINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | USCS | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS |
|--|---------------------|--|-------|-------------|--|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|
| 85 | 1 | Loose, Dark grayish brown fine SAND with silt, poorly graded. | SP-SM | | 2 3 3 2 | 6 | | | | | | | | |
| | 2 | Loose, Gray to brownish yellow very clayey fine SAND, trace root fragments, poorly graded. | SC | | 2 2 3 3 | 5 | | | | | | | | |
| | 3 | ∇ Medium dense, Light gray to brownish yellow very clayey fine SAND, poorly graded. | SC | | 5 7 7 9 | 14 | | | | | | | | |
| | 4 | | | | 7 10 12 15 | 22 | | | | | | | | |
| 80 | 5 | Dense, Reddish yellow fine SAND, trace silt, poorly graded. | SP | | 19 16 14 17 | 30 | 30 | 3 | | | | | | |
| 75 | 6 | Medium dense, Brown fine SAND with silt, poorly graded. | SP-SM | | 9 10 7 | 17 | | | | | | | | |
| 70 | 7 | Medium dense, Pale brown fine SAND with silt, poorly graded. | SP | | 3 5 4 | 9 | | | | | | | | |
| Bottom of borehole at EL 69.1 feet. | | | | | | | | | | | | | | |
| NOTES <u>Boring backfilled with soil cuttings.</u> | | | | | GROUND WATER LEVELS | | | | | | | | | |
| | | | | | ∇ AT TIME OF DRILLING <u>5.42 ft / Elev 83.68 ft</u> * ∇ AFTER DRILLING <u>---</u> | | | | | | | | | |



PROJECT NAME Clay County Shooting Range
 PROJECT LOCATION Middleburg, Clay County, Florida CLIENT Wantman Group, Inc.
 DATE STARTED 8/26/20 COMPLETED 8/26/20 LATITUDE 30° 0'8.80"N LONGITUDE 81°56'8.10"W
 DRILLING CONTRACTOR Independent Drilling, Inc. DRILLING METHOD Standard Penetration Test
 LOGGED BY M. Beedgood CHECKED BY K. Purani APPROX. GROUND ELEVATION 94.6 ft HAMMER TYPE Automatic

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | USCS | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS | |
|----------------|---------------------|---|-------|-------------|------------------|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|--|
| | 1 | Loose, Dark grayish brown fine SAND with silt, trace root fragments, poorly graded. | SP-SM | | 2 1 2 2 | 3 | | | | | | | | | |
| | 2 | Very loose to loose, Pale brown fine SAND, poorly graded. | SP | | 2 1 1 2 | 2 | | | | | | | | | |
| 90 | 3 | | | | 2 2 3 3 | 5 | | | | | | | | | |
| | 4 | Medium dense, Light gray fine SAND with silt, poorly graded. | SP-SM | | 3 4 4 5 | 8 | | | | | | | | | |
| | 5 | | | | 4 6 5 6 | 11 | | | | | | | | | |
| 85 | 6 | | | | 12 19 24 | 43 | 27 | 2 | | | | | | | |
| | 7 | Very dense, Very pale brown fine SAND, trace silt, poorly graded. | SP | | 2 3 3 | 6 | | | | | | | | | |
| 75 | 8 | | | | 5 3 5 | 8 | | | | | | | | | |
| | | Loose to medium dense, Yellowish brown fine SAND with silt, poorly graded. | SP-SM | | | | | | | | | | | | |
| 70 | | | | | | | | | | | | | | | |

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS
 ∇ AT TIME OF DRILLING 6.00 ft / Elev 88.60 ft *∇ AFTER DRILLING ---







NEW MAE LAT/LONG USCS-ELEV - NEW TEMPLATE 7-30-12.GDT - 10/23/20 16.31 - F:\GINT\GINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ

PROJECT NAME Clay County Shooting Range

PROJECT LOCATION Middleburg, Clay County, Florida

CLIENT Wantman Group, Inc.

NEW MAE LAT/LONG USCS-ELEV - NEW TEMPLATE 7-30-12.GDT - 10/23/20 16:31 - F:\GINTGINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | USCS | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS |
|----------------|---------------------|---|-------|---|--------------|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|
| | | Loose to medium dense, Yellowish brown fine SAND with silt, poorly graded. | SP-SM |  | | | | | | | | | | |
| 65 | 9 | Medium dense, Dark gray silty fine SAND, trace clay nodules, poorly graded. | SM |  | 5 9 12 | 21 | | | | | | | | |
| 60 | 10 | Loose, Dark grayish olive clayey fine SAND, poorly graded. | SC |  | 3 3 3 | 6 | | | | | | | | |
| 55 | 11 | Loose, Dark grayish olive clayey fine SAND, poorly graded. | SC |  | 2 3 3 | 6 | | | | | | | | |
| 50 | 12 | Loose, Dark grayish olive clayey fine SAND, poorly graded. | SC |  | 3 2 3 | 5 | | | | | | | | |
| 45 | 13 | Loose, Gray clayey fine SAND, poorly graded. | SC |  | 2 3 4 | 7 | | | | | | | | |

Bottom of borehole at EL 44.6 feet.

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

∇ AT TIME OF DRILLING 6.00 ft / Elev 88.60 ft *∇ AFTER DRILLING ---



PROJECT NAME Clay County Shooting Range
 PROJECT LOCATION Middleburg, Clay County, Florida CLIENT Wantman Group, Inc.
 DATE STARTED 8/26/20 COMPLETED 8/26/20 LATITUDE 30° 0'5.10"N LONGITUDE 81°56'5.70"W
 DRILLING CONTRACTOR Independent Drilling, Inc. DRILLING METHOD Standard Penetration Test
 LOGGED BY M. Beedgood CHECKED BY K. Purani APPROX. GROUND ELEVATION 89.1 ft HAMMER TYPE Automatic

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | USCS | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS |
|--|---------------------|---|-------|-------------|--|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|
| 85 | 1 | Loose, Dark grayish brown fine SAND with silt, poorly graded. | SP-SM | | 2 1 2 3 | 3 | | | | | | | | |
| | 2 | Loose, Light olive brown fine SAND with silt, poorly graded. | SP-SM | | 2 2 2 2 | 4 | | | | | | | | |
| | 3 | Loose, Pale brown fine SAND, poorly graded. | SP | | 2 2 3 4 | 5 | | | | | | | | |
| | 4 | Medium dense, Brown clayey fine SAND, poorly graded. | SC | | 5 6 10 10 | 16 | 21 | 22 | | | | | | |
| 80 | 5 | Medium dense, Brown silty fine SAND, poorly graded. | SM | | 6 8 8 11 | 16 | | | | | | | | |
| 75 | 6 | Medium dense, Light yellowish brown fine SAND with silt, poorly graded. | SP-SM | | 5 7 11 | 18 | | | | | | | | |
| 70 | 7 | Loose to medium dense, Dark brown silty fine SAND, poorly graded. | SM | | 4 4 4 | 8 | | | | | | | | |
| 65 | 8 | | | | 3 2 4 | 6 | | | | | | | | |
| NOTES <u>Boring backfilled with soil cuttings.</u> | | | | | GROUND WATER LEVELS | | | | | | | | | |
| | | | | | ▽ AT TIME OF DRILLING <u>6.42 ft / Elev 82.68 ft</u> * ▽ AFTER DRILLING <u>---</u> | | | | | | | | | |

NEW MAE LAT/LONG USCS-ELEV - NEW TEMPLATE 7-30-12.GDT - 10/23/20 16:31 - F:\CINT\GINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ

PROJECT NAME Clay County Shooting Range

PROJECT LOCATION Middleburg, Clay County, Florida

CLIENT Wantman Group, Inc.

NEW:MAE:LAT/LONG USCS-ELEV - NEW TEMPLATE 7-30-12.GDT - 10/23/20 16:31 - F:\GINT\GINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | USCS | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS |
|----------------|---------------------|--|------|-------------|---------------|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|
| 60 | 9 | Loose to medium dense, Dark brown silty fine SAND, poorly graded. | SM | | 2 3 3 | 6 | | | | | | | | |
| 55 | 10 | | | | 2 2 2 | 4 | | | | | | | | |
| 50 | 11 | Loose, Dark greenish gray clayey fine SAND, poorly graded. | SC | | 3 2 3 | 5 | 34 | 21 | | | | | | |
| 45 | 12 | | | | 2 3 3 | 6 | | | | | | | | |
| 40 | 13 | Very dense, Light gray clayey fine SAND, little gravel (limestone fragments), poorly graded. | SC | | 22 50 0 | 50 | | | | | | | | |

Bottom of borehole at EL 39.1 feet.

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

∇ AT TIME OF DRILLING 6.42 ft / Elev 82.68 ft * ∇ AFTER DRILLING ---

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BORING B-7

PAGE 1 OF 2

PROJECT NO. 0072-0004

PROJECT NAME Clay County Shooting Range
 PROJECT LOCATION Middleburg, Clay County, Florida CLIENT Wantman Group, Inc.
 DATE STARTED 8/27/20 COMPLETED 8/27/20 LATITUDE 30° 0'4.60"N LONGITUDE 81°56'0.60"W
 DRILLING CONTRACTOR Independent Drilling, Inc. DRILLING METHOD Standard Penetration Test
 LOGGED BY M. Beedgood CHECKED BY K. Purani APPROX. GROUND ELEVATION 77 ft HAMMER TYPE Automatic

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | USCS | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS |
|----------------|---------------------|--|-------|-------------|-------------|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|
| | | | | | | | | | | | | | | |
| 75 | 1 | Loose, Very dark grayish brown fine SAND with silt, trace root fragments, poorly graded. | SP-SM | | 2 | 3 | | | | | | | | |
| | 2 | | | | 2 | | | | | | | | | |
| | 3 | | | | 2 | | | | | | | | | |
| | 3 | ▽ Loose, Brown silty fine SAND, poorly graded. | SM | | 2 | 4 | | | | | | | | |
| | 4 | | | | 2 | | | | | | | | | |
| | 5 | | | | 2 | | | | | | | | | |
| | 6 | | | | 2 | | | | | | | | | |
| 70 | 4 | Loose, Brown fine SAND with silt, poorly graded. | SP-SM | | 2 | 3 | | | | | | | | |
| | 5 | | | | 3 | | | | | | | | | |
| | 6 | | | | 3 | | | | | | | | | |
| | 7 | | | | 3 | | | | | | | | | |
| | 8 | | | | 3 | | | | | | | | | |
| | 9 | | | | 2 | | | | | | | | | |
| 65 | 6 | Medium dense, Brown silty fine SAND, poorly graded. | SM | | 2 | 7 | | | | | | | | |
| | 7 | | | | 3 | | | | | | | | | |
| | 8 | | | | 4 | | | | | | | | | |
| 60 | 7 | Medium dense, Grayish brown clayey fine SAND, poorly graded. | SC | | 3 | 12 | 42 | 14 | | | | | | |
| | 8 | | | | 5 | | | | | | | | | |
| | 9 | | | | 7 | | | | | | | | | |
| 55 | 8 | | | | 3 | 8 | | | | | | | | |




NEW:MAE:LONG:USCS-ELEV - NEW TEMPLATE 7-30-12.GDT - 10/23/20 16.31 - F:\GINT\GINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS
 ▽ AT TIME OF DRILLING 5.00 ft / Elev 72.00 ft * ▽ AFTER DRILLING ---

PROJECT NAME Clay County Shooting Range

PROJECT LOCATION Middleburg, Clay County, Florida CLIENT Wantman Group, Inc.

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | USCS | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS | |
|----------------|---------------------|--|-------|---|----------------|----------------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|--|
| 50 | | Medium dense, Grayish brown clayey fine SAND, poorly graded. | SC |  | | | | | | | | | | | |
| | 9 | | | | | 3 2 3 | 5 | | | | | | | | |
| 45 | | Loose, Dark greenish gray clayey fine SAND, poorly graded. | SC | | | 2 2 2 | 4 | | | | | | | | |
| 40 | | | | | | | | | | | | | | | |
| | 11 | Medium dense, Light brownish gray fine SAND with silt, little gravel (limestone fragments), poorly graded. | SP-SM |  | 10 10 12 | 22 | | | | | | | | | |
| 35 | | | | | | | | | | | | | | | |
| | 12 | | |  | 20 23 30 | 53 | | | | | | | | | |
| 30 | | Dense to very dense, Light gray very clayey fine SAND, little gravel (limestone fragments), poorly graded. | SC | | | | | | | | | | | | |
| | 13 | | | | | 18 20 20 | 40 | 33 | 35 | | | | | | |

Bottom of borehole at EL 27.0 feet.

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

∇ AT TIME OF DRILLING 5.00 ft / Elev 72.00 ft * ∇ AFTER DRILLING ---

NEW MAE LAT/LONG USCS-ELEV - NEW TEMPLATE 7-30-12.GDT - 10/23/20 16:31 - FIGINTGINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ



PROJECT NAME Clay County Shooting Range
 PROJECT LOCATION Middleburg, Clay County, Florida CLIENT Wantman Group, Inc.
 DATE STARTED 8/27/20 COMPLETED 8/27/20 LATITUDE 30° 0'9.60"N LONGITUDE 81°56'2.30"W
 DRILLING CONTRACTOR Independent Drilling, Inc. DRILLING METHOD Standard Penetration Test
 LOGGED BY M.Beedgood CHECKED BY K. Purani APPROX. GROUND ELEVATION 81.6 ft HAMMER TYPE Automatic

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | USCS | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS |
|----------------|---------------------|---|-------|-------------|-------------|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|
| 80 | 1 | Very loose to loose, Dark grayish brown fine SAND with silt, trace root fragments, poorly graded. | SP-SM | | 2 | 2 | | | | | | | | |
| | 2 | | | | 3 | | | | | | | | | |
| | 3 | | | | 3 | | | | | | | | | |
| | 3 | Loose, Brown fine SAND with silt, poorly graded. | SP-SM | | 2 | 5 | | | | | | | | |
| | 2 | | | | 2 | | | | | | | | | |
| | 3 | | | | 3 | | | | | | | | | |
| 75 | 4 | Very loose to loose, Very dark brown silty fine SAND, poorly graded. | SM | | 2 | 2 | | | | | | | | |
| | 5 | | | | 2 | | | | | | | | | |
| | 3 | | | | 3 | | | | | | | | | |
| 70 | 6 | Medium dense, Brown fine SAND with silt, poorly graded. | SP-SM | | 4 | 15 | | | | | | | | |
| | 7 | | | | 7 | | | | | | | | | |
| | 8 | | | | 8 | | | | | | | | | |
| 65 | 7 | Medium dense, Brown silty fine SAND, poorly graded. | SM | | 3 | 8 | | | | | | | | |
| | 3 | | | | 3 | | | | | | | | | |
| | 5 | | | | 5 | | | | | | | | | |
| 60 | 8 | Medium dense, Olive silty fine SAND, poorly graded. | SM | | 4 | 10 | | | | | | | | |
| | 5 | | | | 5 | | | | | | | | | |
| | 5 | | | | 5 | | | | | | | | | |

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS
 ∇ AT TIME OF DRILLING 6.00 ft / Elev 75.60 ft * ∇ AFTER DRILLING ---

NEW MAE LAT/LONG USCS-ELEV - NEW TEMPLATE 7-30-12.GDT - 10/23/20 16:31 - F:\GINT\GINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ



PROJECT NAME Clay County Shooting Range

PROJECT LOCATION Middleburg, Clay County, Florida CLIENT Wantman Group, Inc.

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | USCS | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS |
|----------------|---------------------|---|------|-------------|-------------|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|
| 55 | | Medium dense, Olive silty fine SAND, poorly graded. | SM | | | | | | | | | | | |
| | 9 | Loose, Dark greenish gray clayey fine SAND, poorly graded. | SC | | 3 | 6 | 38 | 27 | | | | | | |
| | | | | | 3 | | | | | | | | | |
| 50 | | Stiff, Dark greenish gray CLAY, trace sand. | CH | | 3 | 7 | 67 | 96 | | 81 | 53 | | | |
| | | | | | 4 | | | | | | | | | |
| | 10 | | | | 3 | | | | | | | | | |
| 45 | | Loose, Dark greenish gray clayey fine SAND, poorly graded. | SC | | 2 | 4 | 34 | 23 | | | | | | |
| | | | | | 2 | | | | | | | | | |
| | 12 | | | | 2 | | | | | | | | | |
| 40 | | Dense, Light gray silty fine SAND, few gravel (limestone fragments), poorly graded. | SM | | 13 | 33 | | | | | | | | |
| | | | | | 17 | | | | | | | | | |
| | 13 | | | | 16 | | | | | | | | | |

Bottom of borehole at EL 31.6 feet.

NOTES Boring backfilled with soil cuttings.

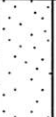
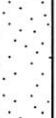
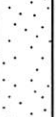




GROUND WATER LEVELS

∇ AT TIME OF DRILLING 6.00 ft / Elev 75.60 ft *∇ AFTER DRILLING ---

NEW MAE LAT/LONG USCS-ELEV - NEW TEMPLATE 7-30-12.GDT - 10/23/20 16:31 - F:\GINT\GINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ

PROJECT NAME Clay County Shooting Range
 PROJECT LOCATION Middleburg, Clay County, Florida CLIENT Wantman Group, Inc.
 DATE STARTED 8/31/2020 COMPLETED 8/31/2020 LATITUDE 30° 0'23.20"N LONGITUDE 81°55'59.50"W
 DRILLING CONTRACTOR Independent Drilling, Inc. DRILLING METHOD Standard Penetration Test
 LOGGED BY Trevor CHECKED BY K. Purani GROUND ELEVATION 93.2 ft HAMMER TYPE Automatic

NEW:MAE:LAT:LONG:AASHTO:ELEV.-NEW:TEMPLATE:7-30-12.GDT.-10/23/20:16:21.-F:\GINT\GINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | AASHTO | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS |
|--|---------------------|---|--------|---|---|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|
| | 1 | Loose, Brown fine SAND, trace root fragments, poorly graded. | A-3 |  | 2 2 3 | 4 | | | | | | | | |
| 90 | 2 | Loose, Light brownish gray fine SAND, poorly graded. | A-3 |  | 3 2 3 | 5 | | | | | | | | |
| | 3 | Medium dense, Light gray fine SAND, trace silt, poorly graded. | A-3 |  | 3 4 4 | 8 | 5 | 3 | | | | | | |
| | 4 | Medium dense, Red yellowish gray clayey fine SAND, poorly graded. | A-2-6 |  | 4 5 4 | 9 | 19 | 27 | | | | | | |
| 85 | 5 | Medium dense, Red yellowish gray clayey fine SAND, poorly graded. | A-2-6 |  | 5 6 6 | 12 | | | | | | | | |
| | 6 | Stiff, Grayish pink sandy CLAY. | A-7-6 |  | 4 3 5 | 8 | | | | | | | | |
| 80 | | | | | | | | | | | | | | |
| | 7 | Medium dense, Gray very clayey fine SAND, poorly graded. | A-2-6 |  | 6 6 7 | 13 | | | | | | | | |
| | | Bottom of borehole at EL 73.2 feet. | | | | | | | | | | | | |
| NOTES <u>Boring backfilled with soil cuttings.</u> | | | | | GROUND WATER LEVELS | | | | | | | | | |
| | | | | | ▽ AT TIME OF DRILLING <u>6.00 ft / Elev 87.20 ft</u> *▽ AFTER DRILLING <u>---</u> | | | | | | | | | |

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BORING PB-2

PAGE 1 OF 1

PROJECT NO. 0072-0004

PROJECT NAME Clay County Shooting Range
 PROJECT LOCATION Middleburg, Clay County, Florida CLIENT Wantman Group, Inc.
 DATE STARTED 8/31/2020 COMPLETED 8/31/2020 LATITUDE 30° 0'19.50"N LONGITUDE 81°55'59.70"W
 DRILLING CONTRACTOR Independent Drilling, Inc. DRILLING METHOD Standard Penetration Test
 LOGGED BY Trevor CHECKED BY K. Purani GROUND ELEVATION 90 ft HAMMER TYPE Automatic

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | AASHTO | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS |
|----------------|---------------------|---|--------|------------------|------------------|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|
| | | | | | | | | | | | | | | |
| 85 | 1 | Loose, Light yellowish brown fine SAND, trace root fragments, poorly graded. | A-3 | [Dotted pattern] | 2 3 2 2 | 5 | | | | | | | | |
| | 2 | Loose, Light brownish gray fine SAND, trace silt and root fragments, poorly graded. | A-3 | [Dotted pattern] | 2 2 3 3 | 5 | 4 | 4 | | | | | | |
| | 3 | Medium dense, Light gray fine SAND, poorly graded. | A-3 | [Dotted pattern] | 3 4 4 3 | 8 | | | | | | | | |
| | 4 | Medium dense, Strong brown to light yellowish brown clayey fine SAND, poorly graded. | A-2-6 | [Diagonal lines] | 4 3 6 6 | 9 | | | | | | | | |
| | 5 | Medium dense, Red yellowish brown clayey fine SAND, poorly graded. | A-2-6 | [Diagonal lines] | 7 8 7 7 | 15 | 18 | 23 | | | | | | |
| 80 | | | | | | | | | | | | | | |
| | 6 | Medium dense, Light brownish gray to light yellowish brown clayey fine SAND, poorly graded. | A-2-6 | [Diagonal lines] | 4 5 5 | 10 | | | | | | | | |
| 75 | | | | | | | | | | | | | | |
| | 7 | Stiff, Gray CLAY with sand. | A-7-6 | [Diagonal lines] | 4 5 5 | 10 | | | | | | | | |
| 70 | | | | | | | | | | | | | | |

NEW MAE LAT/LONG AASHTO-ELEV - NEW TEMPLATE 7-30-12.GDT - 10/23/20 16.21 - F:\GINT\GINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ

Bottom of borehole at EL 70.0 feet.
 NOTES Boring backfilled with soil cuttings.
 GROUND WATER LEVELS
 ∇ AT TIME OF DRILLING 6.00 ft / Elev 84.00 ft *∇ AFTER DRILLING ---

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BORING PB-3

PAGE 1 OF 1

PROJECT NO. 0072-0004

PROJECT NAME Clay County Shooting Range
 PROJECT LOCATION Middleburg, Clay County, Florida CLIENT Wantman Group, Inc.
 DATE STARTED 8/31/2020 COMPLETED 8/31/2020 LATITUDE 30° 0'12.70"N LONGITUDE 81°56'4.80"W
 DRILLING CONTRACTOR Independent Drilling, Inc. DRILLING METHOD Standard Penetration Test
 LOGGED BY Trevor CHECKED BY K. Purani GROUND ELEVATION 83.5 ft HAMMER TYPE Automatic

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | AASHTO | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS |
|--|---------------------|---|--------|-------------|--|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|
| | 1 | Loose, Very dark gray fine SAND with silt, few organic fines, poorly graded. | A-3 | | 2 2 3 3 | 5 | | | | | | | | |
| 80 | 2 | Loose, Brown fine SAND with silt, poorly graded. | A-3 | | 2 3 2 3 | 5 | | | | | | | | |
| | 3 | ▽ Loose to medium dense, Very dark brown fine SAND, trace silt, few organic fines, poorly graded. | A-3 | | 3 4 4 5 | 8 | | | | | | | | |
| | 4 | | | | 4 3 4 4 | 7 | 23 | 4 | | | | | | |
| 75 | 5 | Medium dense, Dark yellowish brown to brown fine SAND with silt, poorly graded. | A-3 | | 5 6 5 5 | 11 | | | | | | | | |
| 70 | 6 | Loose, Yellowish brown fine SAND with silt, poorly graded. | A-3 | | 4 4 3 | 7 | 32 | 8 | | | | | | |
| 65 | 7 | Loose, Olive brown silty fine SAND, poorly graded. | A-2-4 | | 3 3 4 | 7 | | | | | | | | |
| Bottom of borehole at EL 63.5 feet. | | | | | | | | | | | | | | |
| NOTES <u>Boring backfilled with soil cuttings.</u> | | | | | GROUND WATER LEVELS | | | | | | | | | |
| | | | | | ▽ AT TIME OF DRILLING <u>5.50 ft / Elev 78.00 ft</u> * ▽ AFTER DRILLING <u>---</u> | | | | | | | | | |

NEW:MAE:LAT:LONG:AASHTO:ELEV.-NEW:TEMPLATE:7-30-12.GDT-10/23/20:16:21-F:\GINT\GINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ

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BORING PB-4

PAGE 1 OF 1

PROJECT NO. 0072-0004

PROJECT NAME Clay County Shooting Range
 PROJECT LOCATION Middleburg, Clay County, Florida CLIENT Wantman Group, Inc.
 DATE STARTED 8/31/2020 COMPLETED 8/31/2020 LATITUDE 30° 0'2.40"N LONGITUDE 81°56'2.50"W
 DRILLING CONTRACTOR Independent Drilling, Inc. DRILLING METHOD Standard Penetration Test
 LOGGED BY Trevor CHECKED BY K. Purani GROUND ELEVATION 78.6 ft HAMMER TYPE Automatic

NEW.MAE.LAT/LONG.AASHTO-ELEV.-NEW.TEMPLATE.7-30-12.GDT.-10/23/20.16.21-F:\GINT\GINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | AASHTO | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS |
|----------------|---------------------|---|--------|-------------|------------------|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|
| 75 | 1 | Loose, Very dark gray fine SAND, trace silt and organic fines, poorly graded. | A-3 | | 2 3 2 2 | 5 | | | | | | | | |
| | 2 | Loose, Light olive brown fine SAND, trace silt, poorly graded. | A-3 | | 2 3 3 3 | 6 | 17 | 3 | | | | | | |
| | 3 | Loose, Very dark brown fine SAND, trace organic fines, poorly graded. | A-3 | | 4 2 3 2 | 5 | | | | | | | | |
| | 4 | Loose, Very dark brown to brown fine SAND, poorly graded. | A-3 | | 3 3 3 4 | 6 | | | | | | | | |
| 70 | 5 | Loose, Brown fine SAND, trace silt, poorly graded. | A-3 | | 4 3 4 4 | 7 | 27 | 3 | | | | | | |
| | 6 | Loose, Brown silty fine SAND, poorly graded. | A-2-4 | | 3 3 4 | 7 | | | | | | | | |
| 60 | 7 | Medium dense, Olive brown silty fine SAND, poorly graded. | A-2-4 | | 3 4 5 | 9 | | | | | | | | |

Bottom of borehole at EL 58.6 feet.

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

∇ AT TIME OF DRILLING 5.00 ft / Elev 73.60 ft *∇ AFTER DRILLING ---

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BORING A-1

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PROJECT NO. 0072-0004

PROJECT NAME Clay County Shooting Range
 PROJECT LOCATION Middleburg, Clay County, Florida CLIENT Wantman Group, Inc.
 DATE STARTED 8/31/2020 COMPLETED 8/31/2020 LATITUDE 30° 0'32.34"N LONGITUDE 81°56'5.67"W
 DRILLING CONTRACTOR Independent Drilling, Inc. DRILLING METHOD Hand Auger
 LOGGED BY Trevor CHECKED BY K. Purani GROUND ELEVATION 96.3 ft HAMMER TYPE ---

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | AASHTO | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS |
|----------------|---------------------|--|--------|-------------|-------------|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|
| | 1 | Dark gray fine SAND, trace root fragments, poorly graded. | A-3 | | | | | | | | | | | |
| 95.0 | 2 | Gray fine SAND, poorly graded. | A-3 | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | |
| | 4 | Light gray fine SAND, trace root fragments, poorly graded. | A-3 | | | | | | | | | | | |
| 92.5 | 5 | Light gray fine SAND, poorly graded. | A-3 | | | | | | | | | | | |
| | 6 | Light gray fine SAND with silt, trace root fragments, poorly graded. | A-3 | | | | | | | | | | | |
| | | Bottom of borehole at EL 90.3 feet. | | | | | | | | | | | | |

NEW:MAE LAT/LONG AASHTO-ELEV - NEW TEMPLATE 7-30-12.GDT - 10/23/20 16:13 - F:\GINTGINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ

NOTES Boring backfilled with soil cuttings.
GNE-Groundwater Level Not Encountered at Time of Drilling.

GROUND WATER LEVELS

AT TIME OF DRILLING --- GNE END OF DAY ---

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BORING A-2

PAGE 1 OF 1

PROJECT NO. 0072-0004

PROJECT NAME Clay County Shooting Range
 PROJECT LOCATION Middleburg, Clay County, Florida CLIENT Wantman Group, Inc.
 DATE STARTED 8/31/2020 COMPLETED 8/31/2020 LATITUDE 30° 0'30.84"N LONGITUDE 81°56'4.24"W
 DRILLING CONTRACTOR Independent Drilling, Inc. DRILLING METHOD Hand Auger
 LOGGED BY Trevor CHECKED BY K. Purani GROUND ELEVATION 95.8 ft HAMMER TYPE ---

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | AASHTO | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS | |
|----------------|---------------------|---|--------|-------------|-------------|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|--|
| 95.0 | 1 | Dark gray fine SAND, trace root fragments, poorly graded. | A-3 | | | | | | | | | | | | |
| | 2 | Light yellowish brown fine SAND, poorly graded. | A-3 | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | | |
| 92.5 | 4 | | | | | | | | | | | | | | |
| | 5 | | | | | | | | | | | | | | |
| 90.0 | 6 | Light yellowish brown fine SAND, trace root fragments, poorly graded. | A-3 | | | | | | | | | | | | |
| | | Bottom of borehole at EL 89.8 feet. | | | | | | | | | | | | | |

NOTES Boring backfilled with soil cuttings.
GNE-Groundwater Level Not Encountered at Time of Drilling.

GROUND WATER LEVELS
 AT TIME OF DRILLING --- GNE END OF DAY ---

NEW:MAE LAT/LONG AASHTO-ELEV.-NEW TEMPLATE 7-30-12.GDT - 10/23/20 16:13 - F:\GINT\GINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ

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BORING A-3

PROJECT NO. 0072-0004

PROJECT NAME Clay County Shooting Range
 PROJECT LOCATION Middleburg, Clay County, Florida CLIENT Wantman Group, Inc.
 DATE STARTED 8/31/2020 COMPLETED 8/31/2020 LATITUDE 30° 0'29.56"N LONGITUDE 81°56'2.64"W
 DRILLING CONTRACTOR Independent Drilling, Inc. DRILLING METHOD Hand Auger
 LOGGED BY Trevor CHECKED BY K. Purani GROUND ELEVATION 95.7 ft HAMMER TYPE ---

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | AASHTO | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS | |
|----------------|---------------------|---|--------|-------------|-------------|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|--|
| 95.0 | 1 | Brown to dark gray fine SAND, trace root fragments, poorly graded. | A-3 | | | | | | | | | | | | |
| | 2 | Light olive brown fine SAND, trace root fragments, poorly graded. | A-3 | | | | | | | | | | | | |
| | 3 | Light yellowish brown fine SAND, trace root fragments, poorly graded. | A-3 | | | | | | | | | | | | |
| 92.5 | 4 | | | | | | | | | | | | | | |
| | 5 | Light yellowish brown fine SAND, poorly graded. | A-3 | | | | | | | | | | | | |
| 90.0 | 6 | | | | | | | | | | | | | | |
| | | Bottom of borehole at EL 89.7 feet. | | | | | | | | | | | | | |

NEW MAE LAT/LONG AASHTO-ELEV - NEW TEMPLATE 7-30-12.GDT - 10/23/20 16:13 - F:\GINT\GINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ

NOTES Boring backfilled with soil cuttings.
GNE-Groundwater Level Not Encountered at Time of Drilling.

GROUND WATER LEVELS
 AT TIME OF DRILLING --- GNE --- END OF DAY ---

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BORING A-4

PROJECT NO. 0072-0004

PROJECT NAME Clay County Shooting Range
 PROJECT LOCATION Middleburg, Clay County, Florida CLIENT Wantman Group, Inc.
 DATE STARTED 8/31/2020 COMPLETED 8/31/2020 LATITUDE 30° 0'28.17"N LONGITUDE 81°56'1.05"W
 DRILLING CONTRACTOR Independent Drilling, Inc. DRILLING METHOD Hand Auger
 LOGGED BY Trevor CHECKED BY K. Purani GROUND ELEVATION 95.7 ft HAMMER TYPE _____

NEW MAE LAT/LONG AASHTO-ELEV. - NEW TEMPLATE 7-30-12.GDT - 10/23/20 16:13 - FIGINTGINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | AASHTO | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS |
|----------------|---------------------|---|--------|-------------|-------------|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|
| 95.0 | 1 | Light olive brown fine SAND, trace root fragments, poorly graded. | A-3 | | | | | | | | | | | |
| | 2 | Pale brown to dark gray fine SAND, poorly graded. | A-3 | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | |
| 92.5 | 4 | Light yellowish brown fine SAND, poorly graded. | A-3 | | | | | | | | | | | |
| | 5 | | | | | | | | | | | | | |
| 90.0 | 6 | | | | | | | | | | | | | |
| | | Bottom of borehole at EL 89.7 feet. | | | | | | | | | | | | |

NOTES Boring backfilled with soil cuttings.
GNE-Groundwater Level Not Encountered at Time of Drilling.

GROUND WATER LEVELS
 AT TIME OF DRILLING --- GNE --- END OF DAY ---

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BORING A-5

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PROJECT NO. 0072-0004

PROJECT NAME Clay County Shooting Range
 PROJECT LOCATION Middleburg, Clay County, Florida CLIENT Wantman Group, Inc.
 DATE STARTED 8/31/2020 COMPLETED 8/31/2020 LATITUDE 30° 0'26.94"N LONGITUDE 81°55'59.33"W
 DRILLING CONTRACTOR Independent Drilling, Inc. DRILLING METHOD Hand Auger
 LOGGED BY Trevor CHECKED BY K. Purani GROUND ELEVATION 96.1 ft HAMMER TYPE ---

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | AASHTO | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS | | |
|----------------|---------------------|--|--------|-------------|-------------|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|--|--|
| 95.0 | 1 | Light yellowish brown to grayish brown fine SAND, trace root fragments, poorly graded. | A-3 | | | | | | | | | | | | | |
| | 2 | Light yellowish brown fine SAND, trace root fragments, poorly graded. | A-3 | | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | | | | |
| 92.5 | 5 | | | | | | | | | | | | | | | |
| | 6 | Light yellowish brown fine SAND, poorly graded. | A-3 | | | | | | | | | | | | | |
| | | Bottom of borehole at EL 90.1 feet. | | | | | | | | | | | | | | |

NEW MAE LAT/LONG AASHTO-ELEV - NEW TEMPLATE 7-30-12.GDT - 10/23/20 16:13 - F:\GINTGINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ

NOTES Boring backfilled with soil cuttings.
GNE-Groundwater Level Not Encountered at Time of Drilling.

GROUND WATER LEVELS
 AT TIME OF DRILLING --- GNE END OF DAY ---

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BORING A-6

PROJECT NO. 0072-0004

PROJECT NAME Clay County Shooting Range
 PROJECT LOCATION Middleburg, Clay County, Florida CLIENT Wantman Group, Inc.
 DATE STARTED 8/31/2020 COMPLETED 8/31/2020 LATITUDE 30° 0'25.08"N LONGITUDE 81°55'57.80"W
 DRILLING CONTRACTOR Independent Drilling, Inc. DRILLING METHOD Hand Auger
 LOGGED BY Trevor CHECKED BY K. Purani GROUND ELEVATION 95.4 ft HAMMER TYPE ---

NEW:MAE:LAT:LONG:AASHTO:ELEV.-NEW:TEMPLATE:7-30-12.GDT-10/23/20:16:13-F:\GINT\GINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | AASHTO | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS | |
|----------------|---------------------|---|--------------------------------------|-------------|-------------|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|-----|
| 95.0 | 1 | Grayish brown fine SAND, trace root fragments, poorly graded. | A-3 | | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | | |
| 92.5 | 4 | | Pale brown fine SAND, poorly graded. | | | | | | | | | | | | A-3 |
| | 5 | | | | | | | | | | | | | | |
| 90.0 | 6 | | | | | | | | | | | | | | |
| | | Bottom of borehole at EL 89.4 feet. | | | | | | | | | | | | | |

NOTES Boring backfilled with soil cuttings.
GNE-Groundwater Level Not Encountered at Time of Drilling.

GROUND WATER LEVELS
 AT TIME OF DRILLING --- GNE END OF DAY ---

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BORING A-7

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PROJECT NO. 0072-0004

PROJECT NAME Clay County Shooting Range
 PROJECT LOCATION Middleburg, Clay County, Florida CLIENT Wantman Group, Inc.
 DATE STARTED 8/31/2020 COMPLETED 8/31/2020 LATITUDE 30° 0'23.27"N LONGITUDE 81°55'57.34"W
 DRILLING CONTRACTOR Independent Drilling, Inc. DRILLING METHOD Hand Auger
 LOGGED BY Trevor CHECKED BY K. Purani GROUND ELEVATION 93.8 ft HAMMER TYPE ---

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | AASHTO | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS |
|----------------|---------------------|---|--------|-------------|-------------|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|
| | 1 | Dark gray fine SAND, trace root fragments, poorly graded. | A-3 | | | | | | | | | | | |
| 92.5 | 2 | Pale brown fine SAND, trace root fragments, poorly graded. | A-3 | | | | | | | | | | | |
| | 3 | Pale brown fine SAND with silt, poorly graded. | A-3 | | | | 4 | 5 | | | | | | |
| | 4 | | | | | | | | | | | | | |
| 90.0 | 5 | Pale brown to dark gray fine SAND, trace root fragments, poorly graded. | A-3 | | | | | | | | | | | |
| | 6 | Pale brown fine SAND, poorly graded. | A-3 | | | | | | | | | | | |
| | | Bottom of borehole at EL 87.8 feet. | | | | | | | | | | | | |

NOTES Boring backfilled with soil cuttings.
GNE-Groundwater Level Not Encountered at Time of Drilling.

GROUND WATER LEVELS
 AT TIME OF DRILLING --- GNE END OF DAY ---

NEW MAE LAT/LONG AASHTO-ELEV. - NEW TEMPLATE 7-30-12.GDT - 10/23/20 16:13 - F:\GINT\GINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ

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BORING A-8

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PROJECT NO. 0072-0004

PROJECT NAME Clay County Shooting Range
 PROJECT LOCATION Middleburg, Clay County, Florida CLIENT Wantman Group, Inc.
 DATE STARTED 8/31/2020 COMPLETED 8/31/2020 LATITUDE 30° 0'21.09"N LONGITUDE 81°55'57.05"W
 DRILLING CONTRACTOR Independent Drilling, Inc. DRILLING METHOD Hand Auger
 LOGGED BY Trevor CHECKED BY K. Purani GROUND ELEVATION 92.4 ft HAMMER TYPE ---

NEW MAE LAT/LONG AASHTO-ELEV - NEW TEMPLATE 7-30-12.GDT - 10/23/20 16:13 - FIGINTGINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | AASHTO | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS |
|----------------|---------------------|---|--------|-------------|-------------|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|
| | 1 | Olive brown fine SAND with silt, trace root fragments, poorly graded. | A-3 | | | | | | | | | | | |
| | 2 | Light yellowish brown fine SAND, trace root fragments, poorly graded. | A-3 | | | | | | | | | | | |
| 90.0 | 3 | Pale brown fine SAND, poorly graded. | A-3 | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | | |
| | 5 | | | | | | | | | | | | | |
| 87.5 | 6 | | | | | | | | | | | | | |
| | | Bottom of borehole at EL 86.4 feet. | | | | | | | | | | | | |

NOTES Boring backfilled with soil cuttings.
GNE-Groundwater Level Not Encountered at Time of Drilling.

GROUND WATER LEVELS

AT TIME OF DRILLING --- GNE END OF DAY ---

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 PAGE 1 OF 1
 PROJECT NO. 0072-0004

PROJECT NAME Clay County Shooting Range
 PROJECT LOCATION Middleburg, Clay County, Florida CLIENT Wantman Group, Inc.
 DATE STARTED 8/31/2020 COMPLETED 8/31/2020 LATITUDE 30° 0'17.22"N LONGITUDE 81°55'56.55"W
 DRILLING CONTRACTOR Independent Drilling, Inc. DRILLING METHOD Hand Auger
 LOGGED BY Trevor CHECKED BY K. Purani GROUND ELEVATION 89.5 ft HAMMER TYPE —

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | AASHTO | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS | |
|----------------|---------------------|---|--------|-------------|-------------|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|--|
| | 1 | Olive brown fine SAND, trace root fragments, poorly graded. | A-3 | | | | | | | | | | | | |
| | 2 | Light yellowish brown fine SAND, trace root fragments, poorly graded. | A-3 | | | | | | | | | | | | |
| 87.5 | 3 | | | | | | | | | | | | | | |
| | 4 | Pale brown fine SAND, poorly graded. | A-3 | | | | | | | | | | | | |
| 85.0 | 5 | | | | | | | | | | | | | | |
| | 6 | | | | | | | | | | | | | | |
| | | Bottom of borehole at EL 83.5 feet. | | | | | | | | | | | | | |

NEW:MAE LAT/LONG AASHTO-ELEV - NEW TEMPLATE 7-30-12.GDT - 10/23/20 16:13 - F:\GINT\GINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ

NOTES Boring backfilled with soil cuttings.
GNE-Groundwater Level Not Encountered at Time of Drilling.

GROUND WATER LEVELS
 AT TIME OF DRILLING --- GNE END OF DAY ---

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BORING A-11

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PROJECT NO. 0072-0004

PROJECT NAME Clay County Shooting Range
 PROJECT LOCATION Middleburg, Clay County, Florida CLIENT Wantman Group, Inc.
 DATE STARTED 8/31/2020 COMPLETED 8/31/2020 LATITUDE 30° 0'15.68"N LONGITUDE 81°55'57.17"W
 DRILLING CONTRACTOR Independent Drilling, Inc. DRILLING METHOD Hand Auger
 LOGGED BY Trevor CHECKED BY K. Purani GROUND ELEVATION 88.4 ft HAMMER TYPE ---

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | AASHTO | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS |
|----------------|---------------------|--|--------|-------------|-------------|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|
| 87.5 | 1 | Grayish brown fine SAND, few gravel (rock fragments), poorly graded. | A-3 | | | | | | | | | | | |
| | 2 | Light olive brown fine SAND, poorly graded. | A-3 | | | | | | | | | | | |
| | 3 | Brown fine SAND, poorly graded. | A-3 | | | | | | | | | | | |
| 85.0 | 4 | Light yellowish brown fine SAND, poorly graded. | A-3 | | | | | | | | | | | |
| | 5 | | | | | | | | | | | | | |
| | 6 | | | | | | | | | | | | | |
| 82.5 | | Bottom of borehole at EL 82.4 feet. | | | | | | | | | | | | |

NEW MAE LAT/LONG-AASHTO-ELEV - NEW TEMPLATE 7-30-12.GDT - 10/23/20 16:13 - F:\GINT\GINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ

NOTES Boring backfilled with soil cuttings.
GNE-Groundwater Level Not Encountered at Time of Drilling.

GROUND WATER LEVELS
 AT TIME OF DRILLING --- GNE --- END OF DAY ---

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BORING A-12

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PROJECT NO. 0072-0004

PROJECT NAME Clay County Shooting Range
 PROJECT LOCATION Middleburg, Clay County, Florida CLIENT Wantman Group, Inc.
 DATE STARTED 8/31/2020 COMPLETED 8/31/2020 LATITUDE 30° 0'14.07"N LONGITUDE 81°55'58.98"W
 DRILLING CONTRACTOR Independent Drilling, Inc. DRILLING METHOD Hand Auger
 LOGGED BY Trevor CHECKED BY K. Purani GROUND ELEVATION 82.7 ft HAMMER TYPE ---

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | AASHTO | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS |
|----------------|---------------------|---|--------|-------------|-------------|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|
| 82.5 | 1 | Grayish brown fine SAND, few gravel (rock fragments), trace root fragments, poorly graded. | A-3 | | | | | | | | | | | |
| | 2 | Grayish brown fine SAND, trace clay, gravel (rock fragments) and root fragments, poorly graded. | A-3 | | | | | | | | | | | |
| 80.0 | 3 | Yellowish brown clayey fine SAND, poorly graded. | A-2-6 | | | | 18 | 30 | | | | | | |
| | 4 | | | | | | | | | | | | | |
| | 5 | | | | | | | | | | | | | |
| 77.5 | 6 | Yellowish brown very sandy CLAY. | A-6 | | | | | | | | | | | |
| | | Bottom of borehole at EL 76.7 feet. | | | | | | | | | | | | |

NEW:MAE:LAT:LONG:AASHTO:ELEV.-NEW:TEMPLATE:7-30-12:GDT.-10/23/20:16:13-F:\GINT\GINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ

NOTES Boring backfilled with soil cuttings.
GNE-Groundwater Level Not Encountered at Time of Drilling.

GROUND WATER LEVELS

AT TIME OF DRILLING --- GNE --- END OF DAY ---

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BORING A-13

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PROJECT NO. 0072-0004

PROJECT NAME Clay County Shooting Range
 PROJECT LOCATION Middleburg, Clay County, Florida CLIENT Wantman Group, Inc.
 DATE STARTED 8/31/2020 COMPLETED 8/31/2020 LATITUDE 30° 0'13.41"N LONGITUDE 81°56'0.96"W
 DRILLING CONTRACTOR Independent Drilling, Inc. DRILLING METHOD Hand Auger
 LOGGED BY Trevor CHECKED BY K. Purani GROUND ELEVATION 78.7 ft HAMMER TYPE ---

NEW MAE LAT/LONG AASHTO-ELEV - NEW TEMPLATE 7-30-12.GDT - 10/23/20 16:13 - F:\GINT\GINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | AASHTO | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS | |
|----------------|---------------------|---|--------|-------------|-------------|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|--|
| | 1 | Grayish brown clayey fine SAND, few gravel (rock fragments), poorly graded. | A-2-6 | | | | | | | | | | | | |
| 77.5 | 2 | Grayish brown to gray clayey fine SAND, few gravel (rock fragments), poorly graded. | A-2-6 | | | | | | | | | | | | |
| | 3 | Grayish brown clayey fine SAND, few gravel (rock fragments), trace root fragments, poorly graded. | A-2-6 | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | | | |
| 75.0 | 5 | Very dark gray fine SAND, trace clay, poorly graded. | A-3 | | | | | | | | | | | | |
| | 6 | Very dark gray clayey fine SAND, poorly graded. | A-2-6 | | | | | | | | | | | | |
| | | Bottom of borehole at EL 72.7 feet. | | | | | | | | | | | | | |

NOTES Boring backfilled with soil cuttings.
GNE-Groundwater Level Not Encountered at Time of Drilling.

GROUND WATER LEVELS

AT TIME OF DRILLING --- GNE END OF DAY ---

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BORING A-14

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PROJECT NO. 0072-0004

PROJECT NAME Clay County Shooting Range
 PROJECT LOCATION Middleburg, Clay County, Florida CLIENT Wantman Group, Inc.
 DATE STARTED 8/31/2020 COMPLETED 8/31/2020 LATITUDE 30° 0'12.36"N LONGITUDE 81°56'2.96"W
 DRILLING CONTRACTOR Independent Drilling, Inc. DRILLING METHOD Hand Auger
 LOGGED BY Trevor CHECKED BY K. Purani GROUND ELEVATION 82 ft HAMMER TYPE ---

NEW MAE LAT/LONG AASHTO-ELEV - NEW TEMPLATE 7-30-12.GDT - 10/23/20 16:13 - F:\GINT\GINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | AASHTO | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS |
|----------------|-------------------------------------|--|--------|-------------|-------------|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|
| | 1 | Dark brown fine SAND, trace root fragments and organic fines, , poorly graded. | A-3 | | | | | | | | | | | |
| | 2 | Very dark gray fine SAND with clay, poorly graded. | A-3 | | | | | | | | | | | |
| 80.0 | 3 | Very dark gray to gray to reddish yellow very clayey fine SAND, poorly graded. | A-6 | | | | | | | | | | | |
| | 4 | Very dark gray to reddish yellow clayey fine SAND, poorly graded. | A-2-6 | | | | 16 | 31 | | | | | | |
| | 5 | | | | | | | | | | | | | |
| 77.5 | 6 | | | | | | | | | | | | | |
| | Bottom of borehole at EL 76.0 feet. | | | | | | | | | | | | | |

NOTES Boring backfilled with soil cuttings.
GNE-Groundwater Level Not Encountered at Time of Drilling.

GROUND WATER LEVELS

AT TIME OF DRILLING --- GNE END OF DAY ---

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BORING A-15

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PROJECT NO. 0072-0004

PROJECT NAME Clay County Shooting Range
 PROJECT LOCATION Middleburg, Clay County, Florida CLIENT Wantman Group, Inc.
 DATE STARTED 8/31/2020 COMPLETED 8/31/2020 LATITUDE 30° 0'12.32"N LONGITUDE 81°56'5.16"W
 DRILLING CONTRACTOR Independent Drilling, Inc. DRILLING METHOD Hand Auger
 LOGGED BY Trevor CHECKED BY K. Purani GROUND ELEVATION 83.2 ft HAMMER TYPE ---

| ELEVATION (ft) | SAMPLE DEPTH NUMBER | MATERIAL DESCRIPTION | AASHTO | GRAPHIC LOG | BLOW COUNTS | N-VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | LIQUID LIMIT | PLASTICITY INDEX | POCKET PEN. (tsf) | RECOVERY % (RQD) | REMARKS |
|----------------|---------------------|---|--------|-------------|-------------|---------|----------------------|-------------------|---------------------|--------------|------------------|-------------------|------------------|---------|
| 82.5 | 1 | Very dark grayish brown fine SAND, trace root fragments, poorly graded. | A-3 | | | | | | | | | | | |
| | 2 | Grayish brown fine SAND with silt, trace root fragments, poorly graded. | A-3 | | | | | | | | | | | |
| | 3 | Brown fine SAND with silt, trace root fragments, poorly graded. | A-3 | | | | | | | | | | | |
| 80.0 | 4 | | | | | | | | | | | | | |
| | 5 | Yellowish brown fine SAND with silt, trace root fragments, poorly graded. | A-3 | | | | | | | | | | | |
| 77.5 | 6 | | | | | | | | | | | | | |
| | | Bottom of borehole at EL 77.2 feet. | | | | | | | | | | | | |

NEW:MAE LAT/LONG AASHTO-ELEV.-NEW TEMPLATE 7-30-12.GDT - 10/23/20 16:13 - F:\GINT\GINT FILES\PROJECTS\0072-0004\CLAY COUNTY SHOOTING RANGE.GPJ

NOTES Boring backfilled with soil cuttings.
GNE-Groundwater Level Not Encountered at Time of Drilling.

GROUND WATER LEVELS
 AT TIME OF DRILLING --- GNE END OF DAY ---

FIELD EXPLORATION PROCEDURES

Standard Penetration Test (SPT) Borings

The Standard Penetration Test (SPT) boring(s) were performed in general accordance with the latest revision of ASTM D 1586, "Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils." The borings were advanced by rotary drilling techniques. A split-barrel sampler was inserted to the borehole bottom and driven 18 to 24 inches into the soil using a 140-pound hammer falling an average of 30 inches per hammer blow. The number of hammer blows for the final 12 inches of penetration (18" sample) or for the sum of the middle 12 inches of penetration (24" sample) is termed the "penetration resistance, blow count, or N-value." This value is an index to several in-situ geotechnical properties of the material tested, such as relative density and Young's Modulus.

After driving the sampler, it was retrieved from the borehole and representative samples of the material within the split-barrel were containerized and sealed. After completing the drilling operations, the samples for each boring were transported to the laboratory where they were examined by a geotechnical engineer to verify the field descriptions and classify the soil, and to select samples for laboratory testing.

Hand Auger Boring

The auger boring(s) were performed manually by the use of a hand-held bucket auger in general accordance with the latest revision of ASTM D 1452, "Standard Practice for Soil Exploration and Sampling by Auger Borings." Representative samples of the soils brought to the ground surface by the auger were placed in sealed containers and transported to our laboratory where they were examined by a geotechnical engineer to verify the field descriptions and classify the soil, and to select samples for laboratory testing.

KEY TO BORING LOGS – USCS/AASHTO

Soil Classification

Soil classification of samples obtained at the boring locations is based on the Unified Soil Classification System (USCS) or the American Association of State Highway and Transportation Officials (AASHTO) classification system. Coarse grained soils have more than 50% of their dry weight retained on a #200 sieve. Their principal descriptors are: sand, cobbles and boulders. Fine grained soils have less than 50% of their dry weight retained on a #200 sieve. They are principally described as clays if they are plastic and silts if they are slightly to non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

| BORING LOG LEGEND | |
|-------------------|--|
| Symbol | Description |
| N | Standard Penetration Resistance, the number of blows required to advance a standard spoon sampler 12" when driven by a 140-lb hammer dropping 30". |
| WOR | Split Spoon sampler advanced under the weight of the drill rods |
| WOH | Split Spoon sampler advanced under the weight of the SPT hammer |
| 50/2" | Indicates 50 hammer blows drove the split spoon 2 inches; 50 Hammer blows for less than 6-inches of split spoon driving is considered "Refusal". |
| (SP) | Unified Soil Classification System |
| -200 | Fines content, % Passing No. 200 U.S. Standard Sieve |
| w | Natural Moisture Content (%) |
| OC | Organic Content (%) |
| LL | Liquid Limit |
| PI | Plasticity Index |
| NP | Non-Plastic |
| PP | Pocket Penetrometer in tons per square foot (tsf) |

| MODIFIERS | |
|---|------------------|
| SECONDARY CONSTITUENTS (Sand, Silt or Clay) | |
| Trace | Less than 5% |
| With | 5% to 12% |
| Sandy, Silty or Clayey | 12% to 35% |
| Very Sandy, Very Silty or Very Clayey | 35% to 50% |
| ORGANIC CONTENT | |
| Trace | Less than 5% |
| Organic Soils | 5% to 20% |
| Highly Organic Soils (Muck) | 20% to 75% |
| PEAT | Greater than 75% |
| MINOR COMPONENTS (Shell, Rock, Debris, Roots, etc.) | |
| Trace | Less than 5% |
| Few | 5% to 10% |
| Little | 15% to 25% |
| Some | 30% to 45% |

| RELATIVE DENSITY (Coarse-Grained Soils) | |
|---|-----------------|
| Relative Density | N-Value * |
| Very Loose | Less than 3 |
| Loose | 3 to 8 |
| Medium Dense | 8 to 24 |
| Dense | 24 to 40 |
| Very Dense | Greater than 40 |
| CONSISTENCY (Fine-Grained Soils) | |
| Consistency | N-Value * |
| Very Soft | Less than 1 |
| Soft | 1 to 3 |
| Firm | 3 to 6 |
| Stiff | 6 to 12 |
| Very Stiff | 12 to 24 |
| Hard | Greater than 24 |
| RELATIVE HARDNESS (Limestone) | |
| Relative Hardness | N-Value * |
| Soft | Less than 50 |
| Hard | Greater than 50 |

* Using Automatic Hammer

AASHTO Soil Classification System (from AASHTO M 145 or ASTM D 3282)

| General Classification | Granular Materials (35% or less passing the 0.075 mm sieve) | | | | | | | Silt-Clay Materials (>35% passing the 0.075 mm sieve) | | | |
|---|--|--------|-----------|---------------------------------|--------|--------|--------|--|--------|--------------|--------|
| | A-1 | | A-3 | A-2 | | | | A-4 | A-5 | A-6 | A-7 |
| Group Classification | A-1-a | A-1-b | | A-2-4 | A-2-5 | A-2-6 | A-2-7 | | | | A-7-5* |
| Sieve Analysis, % passing: | | | | | | | | | | | |
| 2.00 mm (No. 10) | 50 max | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 0.425 (No. 40) | 30 max | 50 max | 51 min | ... | ... | ... | ... | ... | ... | ... | ... |
| 0.075 (No. 200) | 15 max | 25 max | 10 max | 35 max | 35 max | 35 max | 35 max | 36 min | 36 min | 36 min | 36 min |
| Characteristics of fraction passing 0.425 mm (No. 40): | | | | | | | | | | | |
| Liquid Limit | ... | ... | 40 max | 41 min | 40 max | 41 min | 40 max | 41 min | 40 max | 41 min | 41 min |
| Plasticity Index | 6 max | N.P. | 10 max | 10 max | 11 min | 11 min | 10 max | 10 max | 11 min | 11 min | 11 min |
| Usual types of significant constituent materials | stone fragments, gravel and sand | | fine sand | silty or clayey gravel and sand | | | | silty soils | | clayey soils | |
| General <i>local</i> ** rating as a subgrade | excellent to good | | | fair to poor | | | | | | | |

* Plasticity index of A-7-5 subgroup is equal to or less than the LL - 30. Plasticity index of A-7-6 subgroup is greater than LL - 30

** Northeast Florida

Unified Soil Classification System (USCS) (from ASTM D 2487)

| Major Divisions | | Group Symbol | Typical Names |
|---|--|---|--|
| Coarse-Grained Soils More than 50% retained on the 0.075 mm (No. 200) sieve | Gravels 50% or more of coarse fraction retained on the 4.75 mm (No. 4) sieve | Clean Gravels | GW Well-graded gravels and gravel-sand mixtures, little or no fines |
| | | | GP Poorly graded gravels and gravel-sand mixtures, little or no fines |
| | | Gravels with Fines | GM Silty gravels, gravel-sand-silt mixtures |
| | | | GC Clayey gravels, gravel-sand-clay mixtures |
| | Sands 50% or more of coarse fraction passes the 4.75 mm (No. 4) sieve | Clean Sands | SW Well-graded sands and gravelly sands, little or no fines |
| | | | SP Poorly graded sands and gravelly sands, little or no fines |
| | | Sands with Fines | SM Silty sands, sand-silt mixtures |
| | | | SC Clayey sands, sand-clay mixtures |
| Fine-Grained Soils More than 50% passes the 0.075 mm (No. 200) sieve | Silts and Clays Liquid Limit 50% or less | ML Inorganic silts, very fine sands, rock flour, silty or clayey fine sands | |
| | | CL Inorganic clays of low to medium plasticity, gravelly/sandy/silty/lean clays | |
| | | OL Organic silts and organic silty clays of low plasticity | |
| | Silts and Clays Liquid Limit greater than 50% | MH Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts | |
| | | CH Inorganic clays or high plasticity, fat clays | |
| | | OH Organic clays of medium to high plasticity | |
| | | PT Peat, muck, and other highly organic soils | |
| Highly Organic Soils | | | |

Prefix: G = Gravel, S = Sand, M = Silt, C = Clay, O = Organic

Suffix: W = Well Graded, P = Poorly Graded, M = Silty, L = Clay, LL < 50%, H = Clay, LL > 50%

Appendix B

Summary of Laboratory Index Test Results
Clay County Shooting Range
MAE Project No.:0072-0004

| Boring No. | Sample No. | Approximate Test Depth ⁽¹⁾ (ft) | No. 200 | Natural Moisture Content, % | Organic Content (%) | Liquid Limit | Plastic Limit | Plasticity Index | AASHTO/USCS Classification |
|------------|------------|--|---------|-----------------------------|---------------------|--------------|---------------|------------------|----------------------------|
| B-2 | 4 | 6 to 8 | 14 | 20 | --- | --- | --- | --- | A-2-4 |
| B-3 | 2 | 2 to 4 | 39 | 25 | --- | --- | --- | --- | SC |
| B-4 | 5 | 8 to 10 | 3 | 30 | --- | --- | --- | --- | SP |
| B-5 | 6 | 13.5 to 15 | 2 | 27 | --- | --- | --- | --- | SP |
| B-6 | 4 | 6 to 8 | 22 | 21 | --- | --- | --- | --- | SC |
| B-6 | 11 | 38.5 to 40 | 21 | 34 | --- | --- | --- | --- | SC |
| B-7 | 7 | 18.5 to 20 | 14 | 42 | --- | --- | --- | --- | SM |
| B-7 | 13 | 48.5 to 50 | 35 | 33 | --- | --- | --- | --- | SC |
| B-8 | 9 | 28.5 to 30 | 27 | 38 | --- | --- | --- | --- | SC |
| B-8 | 10 | 33.5 to 35 | 96 | 67 | --- | 81 | 28 | 53 | CH |
| B-8 | 12 | 43.5 to 45 | 23 | 34 | --- | --- | --- | --- | SC |
| PB-1 | 3 | 4 to 6 | 3 | 5 | --- | --- | --- | --- | A-3 |
| PB-1 | 4 | 6 to 8 | 28 | 19 | --- | --- | --- | --- | A-2-6 |
| PB-2 | 2 | 2 to 4 | 4 | 4 | --- | --- | --- | --- | A-3 |
| PB-2 | 5 | 8 to 10 | 23 | 18 | --- | --- | --- | --- | A-2-6 |
| PB-3 | 4 | 6 to 8 | 4 | 23 | --- | --- | --- | --- | A-3 |
| PB-3 | 6 | 13.5 to 15 | 8 | 32 | --- | --- | --- | --- | A-3 |
| PB-4 | 2 | 2 to 4 | 3 | 17 | --- | --- | --- | --- | A-3 |
| PB-4 | 5 | 8 to 10 | 3 | 27 | --- | --- | --- | --- | A-3 |
| A-7 | 3 | 2 to 3 | 5 | 4 | --- | --- | --- | --- | A-3 |
| A-12 | 4 | 3 to 4 | 30 | 18 | --- | --- | --- | --- | A-2-6 |
| A-14 | 6 | 5 to 6 | 31 | 16 | --- | --- | --- | --- | A-2-6 |

⁽¹⁾ Feet below existing ground surface.

LABORATORY TEST PROCEDURES

Percent Fines Content

The percent fines or material passing the No. 200 mesh sieve of the sample tested was determined in general accordance with the latest revision of ASTM D 1140. The percent fines are the soil particles in the silt and clay size range.

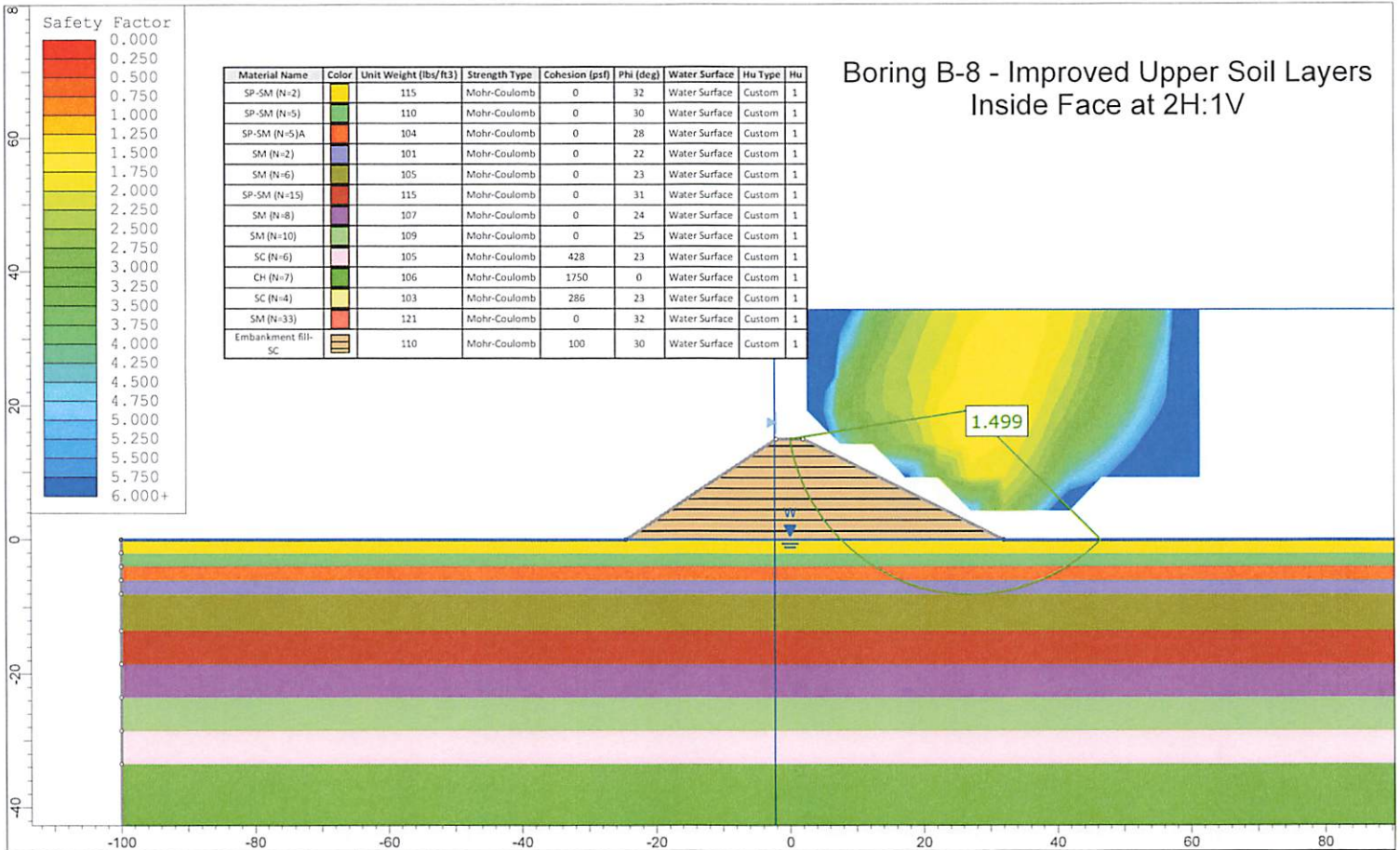
Natural Moisture Content

The water content of the tested sample was determined in general accordance with the latest revision of ASTM D 2216. The water content is defined as the ratio of “pore” or “free” water in a given mass of material to the mass of solid material particles.

Atterberg Limits

The Atterberg Limits consist of the Liquid Limit (LL) and the Plastic Limit (PL). The LL and PL were determined in general accordance with the latest revision of ASTM D 4318. The LL is the water content of the material denoting the boundary between the liquid and plastic states. The PL is the water content denoting the boundary between the plastic and semi-solid states. The Plasticity Index (PI) is the range of water content over which a soil behaves plastically and is denoted numerically by the difference between the LL and the PL. The water content of the sample tested was determined in general accordance with the latest revision of ASTM D 2216. The water content is defined as the ration of “pore” or “free” water in a given mass of material to the mass of solid material particles.

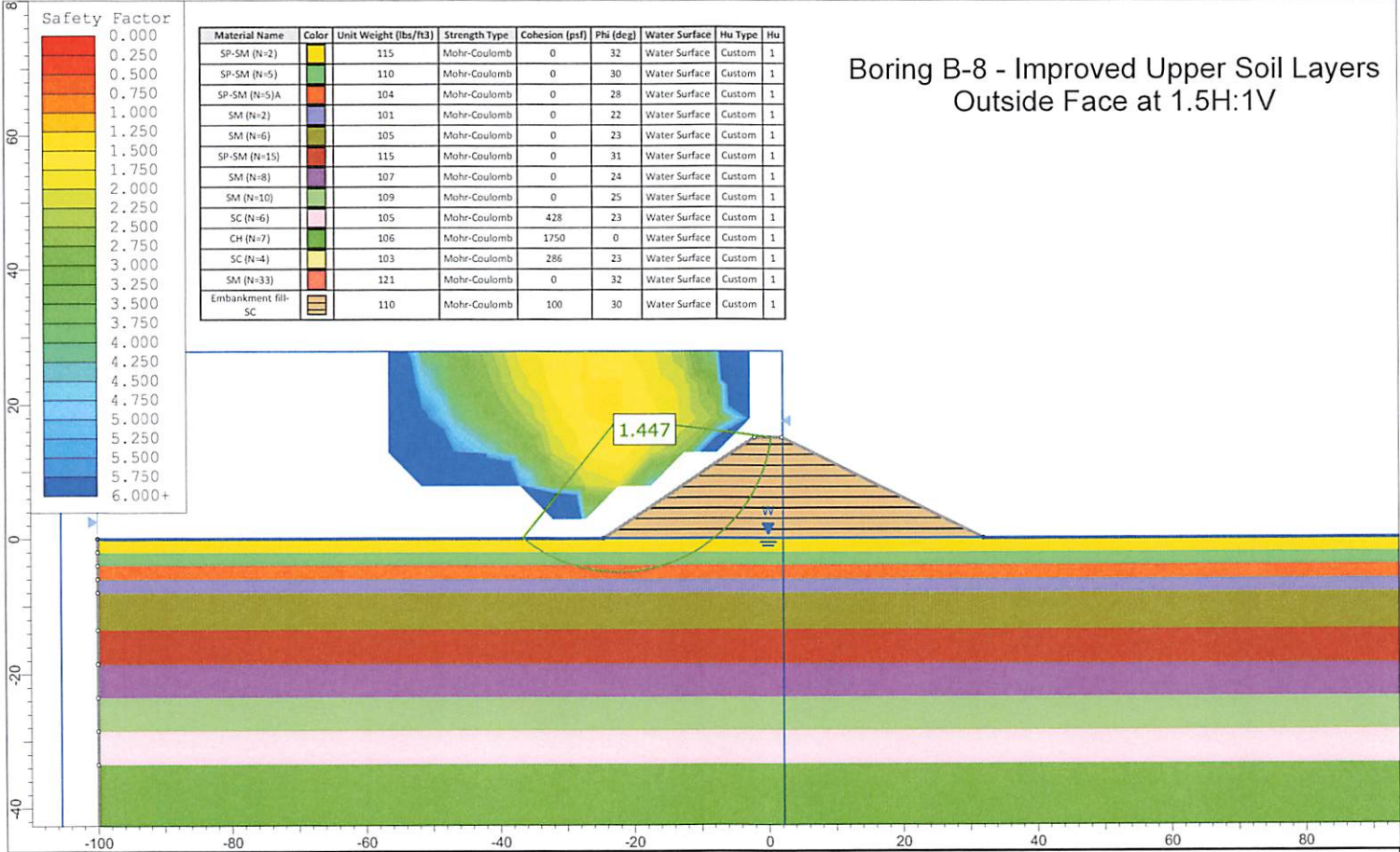
Appendix C



| | | | | | |
|----------|-------------------|--|----------------------------|---------------------------------------|--|
| Project | | | Clay County Shooting Range | | |
| Group | Boring B-8 | | Scenario | | |
| Drawn By | | | Company | | |
| Date | February 25, 2021 | | File Name | slide Slope Stability B-8-kp_wjm.sldm | |

SLIDEINTERPRET 9.025

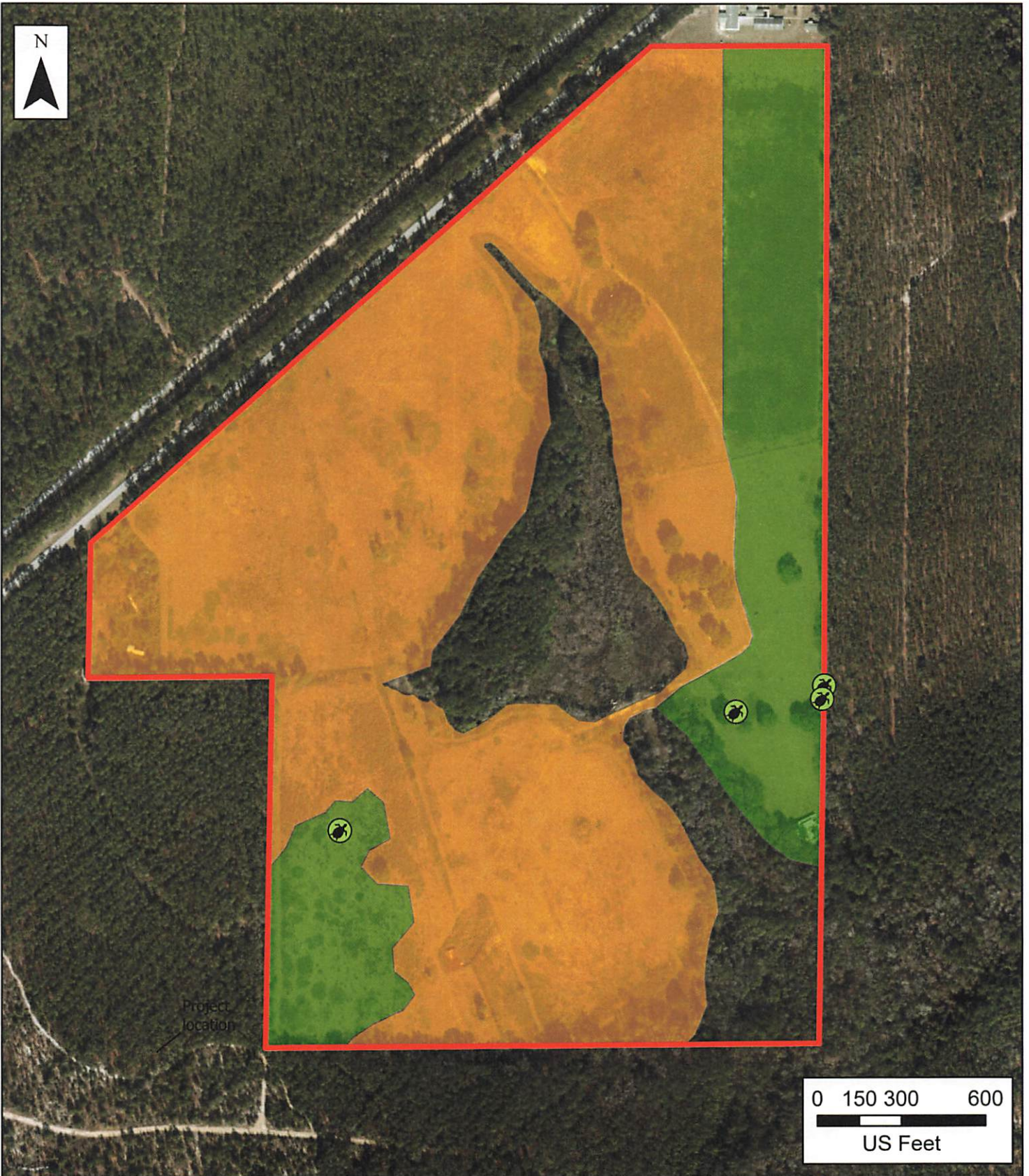
Boring B-8 - Improved Upper Soil Layers Outside Face at 1.5H:1V



| Material Name | Color | Unit Weight (lbs/ft ³) | Strength Type | Cohesion (psf) | Phi (deg) | Water Surface | Hu Type | Hu |
|--------------------|---------------|------------------------------------|---------------|----------------|-----------|---------------|---------|----|
| SP-SM (N-2) | [Yellow] | 115 | Mohr-Coulomb | 0 | 32 | Water Surface | Custom | 1 |
| SP-SM (N-5) | [Green] | 110 | Mohr-Coulomb | 0 | 30 | Water Surface | Custom | 1 |
| SP-SM (N-5)A | [Orange] | 104 | Mohr-Coulomb | 0 | 28 | Water Surface | Custom | 1 |
| SM (N-2) | [Blue] | 101 | Mohr-Coulomb | 0 | 22 | Water Surface | Custom | 1 |
| SM (N-6) | [Purple] | 105 | Mohr-Coulomb | 0 | 23 | Water Surface | Custom | 1 |
| SP-SM (N-15) | [Red] | 115 | Mohr-Coulomb | 0 | 31 | Water Surface | Custom | 1 |
| SM (N-8) | [Brown] | 107 | Mohr-Coulomb | 0 | 24 | Water Surface | Custom | 1 |
| SM (N-10) | [Light Green] | 109 | Mohr-Coulomb | 0 | 25 | Water Surface | Custom | 1 |
| SC (N-6) | [White] | 105 | Mohr-Coulomb | 428 | 23 | Water Surface | Custom | 1 |
| CH (N-7) | [Light Green] | 106 | Mohr-Coulomb | 1750 | 0 | Water Surface | Custom | 1 |
| SC (N-4) | [Yellow] | 103 | Mohr-Coulomb | 286 | 23 | Water Surface | Custom | 1 |
| SM (N-33) | [Red] | 121 | Mohr-Coulomb | 0 | 32 | Water Surface | Custom | 1 |
| Embankment fill-SC | [Brown] | 110 | Mohr-Coulomb | 100 | 30 | Water Surface | Custom | 1 |



| | | | | | |
|----------|-------------------|-----------|---------------------------------------|--|--|
| Project | | | Clay County Shooting Range | | |
| Group | Boring B-8 | Scenario | | | |
| Drawn By | | Company | | | |
| Date | February 25, 2021 | File Name | slide Slope Stability B-8-kp_wjm.slmd | | |



Potentially Occupied Gopher
Tortoise Burrow Map
Clay County Gun Range
Clay County, Florida

- Potentially Occupied Burrows
- Project Limits
- Highly Suitable Habitat
- Low Suitable Habitat

Figure 5

Map prepared by WGI, March 19, 2021; Coordinate System used: NAD 1983 Florida State Plane East FIPS 0901 Feet. Data Source: Project limits provided by WGI, Soils data provided by National Resources Conservation Service (NRCS), World Basemap provided by ESRI Online Services.

Maps are for graphical purposes only. They do not represent a legal survey. While every effort has been made to ensure that these data are accurate and reliable within the limits of the process, WGI cannot assume liability for any damages caused by any errors or omissions in the data. WGI makes no warranty, expressed or implied, nor does the fact of distribution constitute such a warranty.

ATTACHMENT C

Revised Bid Price Sheet

| | Description | Cost |
|----|--|-----------|
| 1 | Mobilization | \$ |
| 2 | Maintenance of Traffic (MOT) | \$ |
| 3 | Erosion Control | \$ |
| 4 | Demolition | \$ |
| 5 | Structures (Pavilion and Tower) | \$ |
| 6 | Well | \$ |
| 7 | Lighting / Electrical | \$ |
| 8 | Sod | \$ |
| 9 | Grading and stabilization of access road over culvert crossing and ponds. Roadway Sta 9+00 to 28+40. | \$ |
| 10 | Earthwork (All ponds included) | \$ |
| 11 | Drainage System, Str 9,10, Outfalls 7,8 & CS 3& pipes | \$ |
| 12 | Engineering, Testing & Survey | \$ |
| 13 | Gopher Tortoise Survey | \$ |
| 14 | NPDES Compliance | \$ |
| | | |
| | TOTAL OF ITEMS 1 – 14: | \$ |

Bid will be awarded based upon the total above (items 1-14)

Bids require a five (5%) percent bid bond and may not be

withdrawn after the scheduled opening time for a period of thirty (30) days.

The County reserves the right to request a more defined schedule of values from contractors.

ALTERNATES

| | |
|---|----|
| Bid Alternate #1: Restroom/Utility building, Septic system, water line from well, electrical connection. | \$ |
| Bid Alternate #2: Parking lot with lighting, Str 7,8, CS 2, Outfall 5,6 & piping | \$ |
| Bid Alternate #3: Paving of all roadway and stabilization of roadway from (CR 215) Sta 0+00 to 9+00, with all remaining drainage systems. | \$ |

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Sec. 15-5. - Disturbing the peace.

(a) Definitions. As used in this section and unless the context clearly requires otherwise, the terms and phrases defined in [section 15-20](#) of this Code shall have the meanings therein ascribed, and the following terms and phrases shall have the meanings herein ascribed:

(1) Alcoholic beverage establishment shall mean a place, business or other establishment holding a non-temporary license for the consumption of alcoholic beverages thereon.

(2) Artificially amplified sound or noise shall mean any of the following:

a. Any sound or noise caused by or for which the intensity is increased through the use or operation of any electronic sound amplifying device.

b. And any sound or noise caused by or produced through the use or operation of any media player, radio device or sound producing instrument.

(3) Completely enclosed with respect to the passenger compartment of a motor vehicle shall mean completely and entirely enclosed in glass, fiberglass, metal and other rigid materials with all windows completely closed, all doors securely shut and all removable tops latched in place.

(4) Dog shall mean any single dog or group or pack of dogs.

(5) Farm operation shall mean a farm operation as defined in Section 823.14, Florida Statutes (2000).

(6) Intermittently shall mean occurring on any three (3) distinct occasions, with the second and third such occasions being separated from the first and second such occasions, respectively, by intervals of not less than one (1) minute in duration.

(7) Keep and all tenses, participles, gerunds, infinitives and other forms and derivations thereof shall mean keep, house, board, control or maintain and all corresponding tenses, participles, gerunds, infinitives and other forms and derivations thereof.

(8) Media player shall mean any electronic device used in whole or in part for the playing, production or reproduction of any sound or noise from any form of recorded medium or digital data.

(9) Motor vehicle shall mean a motor vehicle as defined in Section 316.003(21), Florida Statutes (2000), that is powered or propelled by an internal combustion engine.

(10) Muffler shall mean an internal combustion engine's muffling device that for purposes of engine noise abatement functions at least as effectively as the original equipment installed by the manufacturer.

(11) Nonresidential property shall mean a parcel of real property developed, improved or used primarily for nonresidential activities and purposes.

(12) Percussion instrument shall mean any musical instrument, including, but not limited to, any drum, cymbal, gong, chime, bell, tambourine, triangle, glockenspiel, xylophone, piano, or maraca, from which sound is produced by the striking, rubbing or scraping of one (1) object with another or by being shaken.

(13) Percussive sound or noise shall mean any sound or noise caused by the use of a percussion instrument, whether amplified or unamplified.

(14) Premises shall mean the curtilage of and all improvements on a parcel of real property, and shall include any leasehold interest.

(15) Racing vehicle shall mean an unmuffled motor vehicle used or operated or designed or intended to be used or operated in professional or amateur motor vehicle racing competition.

(16) Radio device shall mean any radio, television or other electronic device that receives transmissions of electromagnetic signals and converts the same to sound.

(17) Residence shall mean a permanent structure used or intended to be used primarily for nontemporary single-family or multifamily dwelling purposes.

(18) Sound producing instrument shall mean any electronic device for the production of any sound or noise through the direct playing, manipulation, activation, use or operation thereof, including, but not limited to, any electric or electronic musical instrument, but excluding any alarm, doorbell, chime, pager, telephone or cellular phone, and any warning or emergency signal device such as a siren, yelper, beeper, chime, horn or bell when utilized for its intended purpose.

(19) Uninterruptedly shall mean occurring without any noticeable cessation.

(20) Unmuffled motor vehicle shall mean a motor vehicle lacking a muffler.

(b) Barking dogs.

(1) Prohibition in general. It shall be unlawful and a violation of this subsection for a person to keep a dog that by barking, howling, baying or whining shall utter any sound that shall disturb the peace, quiet and repose of any other person of reasonable and ordinary sensibilities.

(2) Prohibition in particular. It shall be unlawful and a violation of this subsection for a person to keep on any premises a dog that has uttered any sound by barking, howling, baying or whining, whether uninterruptedly or intermittently, during any period of five

(5) consecutive minutes that is heard or capable of being heard by a person of ordinary hearing ability at any boundary line of such premises.

(3) Responsibilities of owners and leaseholders. Any owner in possession or holder of a leasehold interest of any premises upon which any violation of this subsection is alleged to have occurred, and the on-premises manager or agent of such owner or holder, shall be deemed to be the keeper of the dog that is alleged to have been the cause of the violation.

(c) Artificially amplified sound or noise.

(1) Prohibition in general. It shall be unlawful and a violation of this subsection for a person to make or cause or to permit if within his or her control the making or causing of any artificially amplified sound or noise of a continuous duration which shall disturb the peace, quiet and repose of any other person of reasonable and ordinary sensibilities.

(2) Prohibition in particular. It shall be unlawful and a violation of this subsection for a person on any premises to make or cause or to permit if within his or her control the making or causing of any artificially amplified sound or noise, whether uninterruptedly or intermittently, during any period of five (5) consecutive minutes that is heard or capable of being heard from within an occupied residence not the residence of such person by a person of ordinary hearing ability; provided, the provisions of this paragraph (2) shall not apply to artificially amplified sound or noise coming from the premises of an alcoholic beverage establishment between the hours of 7:00 a.m. and 12:00 a.m.

(3) Prohibition as to alcoholic beverage establishment. It shall be unlawful and a violation of this subsection for a person on the premises of any alcoholic beverage establishment to make or cause or to permit if within his or her control the making or causing of any artificially amplified sound or noise between the hours of 12:00 a.m. and 7:00 a.m. that is heard or capable of being heard by a person of ordinary hearing ability at any boundary line of such premises.

(4) Prohibition as to vehicle. It shall be unlawful and a violation of this subsection for a person operating a motor vehicle upon any public or private road or right-of-way to use or operate or to permit to be used or operated within or upon such motor vehicle any media player, radio device or sound producing instrument that produces any sound or noise that is heard by a person of ordinary hearing ability within the completely enclosed passenger compartment of any other motor vehicle operated upon any public or private road or right-of-way.

(5) Responsibilities of owners and leaseholders. Any owner in possession or holder of a leasehold interest of any premises upon which any violation of this subsection is alleged to have occurred, and the on-premises manager or agent of such owner or holder, shall be deemed to be exercising control under this subsection in the permitting of the making or causing of any artificially amplified sound or noise, unless any third-party invitee or licensee is directly responsible for the making or causing thereof, and the exerciser of control has made all reasonable and lawful attempts to abate the sound or noise, and, if

necessary, to remove the third party from the premises by summoning the appropriate law enforcement agency, if necessary; provided, however, that such manager or agent of such owner or holder shall not be responsible for the actions of any trespassers.

(d) Unmuffled motor vehicles.

(1) Unmuffled motor vehicle prohibition. It shall be unlawful and a violation of this subsection for a person to use or operate an unmuffled motor vehicle.

(2) Racing vehicle prohibition. At any time that a racing vehicle is located on a public or private road or right-of-way, or on a residentially developed lot or parcel of land, or on a lot or parcel of land immediately adjacent to a residentially developed lot or parcel of land, it shall be unlawful and a violation of this subsection for a person to use or operate such racing vehicle, or to run or to permit, suffer or cause to be run the engine of such racing vehicle.

(e) Percussive sound.

(1) Prohibition in general. It shall be unlawful and a violation of this subsection for a person to make or cause or to permit if within his or her control the making or causing of any percussive sound or noise of a continuous duration which shall disturb the peace, quiet and repose of any other person of reasonable and ordinary sensibilities.

(2) Prohibition in particular. It shall be unlawful and a violation of this subsection for a person on any premises to make or cause or to permit if within his or her control the making or causing of any percussive sound or noise, whether uninterruptedly or intermittently, during any period of five (5) consecutive minutes that is heard or capable of being heard from within an occupied residence not the residence of such person by a person of ordinary hearing ability; provided, the provisions of this paragraph (2) shall not apply to percussive sound or noise coming from the premises of an alcoholic beverage establishment between the hours of 7:00 a.m. and 12:00 a.m.

(3) Prohibition as to alcoholic beverage establishment. It shall be unlawful and a violation of this subsection for a person on the premises of any alcoholic beverage establishment to make or cause or to permit if within his or her control the making or causing of any percussive sound or noise between the hours of 12:00 a.m. and 7:00 a.m. that is heard or capable of being heard by a person of ordinary hearing ability at any boundary line of such premises.

(4) Responsibilities of owners and leaseholders. Any owner in possession or holder of a leasehold interest of any premises upon which any violation of this subsection is alleged to have occurred, and the on-premises manager or agent of such owner or holder, shall be deemed to be exercising control under this subsection in the permitting of the making or causing of any percussive sound or noise, unless any third-party invitee or licensee is directly responsible for the making or causing thereof, and the exerciser of control has made all reasonable and lawful attempts to abate the sound or noise, and, if necessary, to

remove the third party from the premises by summoning the appropriate law enforcement agency, if necessary; provided, however, that such manager or agent of such owner or holder shall not be responsible for the actions of any trespassers.

(f) Exceptions.

(1) As to dogs. The provisions of subsection (b) shall not apply to the following:

- a. Law enforcement and hunting. The barking, howling, baying or whining of a dog utilized and engaged in law enforcement activities or under the direct supervision and control of the keeper thereof while lawfully engaged in a hunting activity or exhibition.
- b. Supervision. The barking, howling, baying or whining of a dog while outside of any enclosed and habitable structure and under the direct supervision and control of the keeper thereof if such keeper immediately and effectively abates such barking, howling, baying or whining. An enclosed and habitable structure does not include a dog house or a dog run.
- c. Board-operated facility. The barking, howling, baying or whining of a dog kept at any facility operated by the board for animal control purposes.
- d. Farm operation. The barking, howling, baying or whining of a dog kept on any premises actually used in connection with a bona fide farm operation.
- e. Security dog. With respect to any dog kept for security purposes on the premises of any nonresidential property, the barking, howling, baying or whining thereof in direct response to such dog's detection of a person who has entered or attempted to enter such premises during any period of time that such premises are unattended, so long as such barking, howling, baying or whining has abated within a period of five (5) minutes immediately following the departure of the person so entering or attempting to enter such premises.
- f. Commercial kennel. The barking, howling, baying or whining of a dog kept on any premises actually used in connection with a bona fide commercial kennel lawfully operating as a nonconforming or conditional use therefor under the zoning provisions of the county's land development regulations applicable thereto.

(2) As to artificially amplified sound. The provisions of subsection (c) shall not apply to the following:

- a. Government property. Artificially amplified sound or noise caused or made on premises owned or leased by any governmental entity if caused or made in connection with any activity or event occurring thereon with the express permission of such governmental entity through its authorized agents.

b. Official business. Artificially amplified sound or noise caused or made by an officer, employee, contractor or agent of any public or private utility, emergency services provider or governmental entity in the performance of his or her official duties.

(3) As to vehicles. The provisions of subsection (d) shall not apply to the following:

a. Repair. The use or operation of an unmuffled motor vehicle between the hours of 7:00 a.m. and 9:00 p.m. while being repaired or serviced at a commercial, governmental or institutional automotive repair facility.

b. Delivery for repair. The use or operation of an unmuffled motor vehicle other than a racing vehicle while being delivered to a commercial, governmental or institutional automotive repair facility for muffler repair work.

c. Racing event. The use or operation of a racing vehicle while engaged in a professional or amateur sanctioned, competitive sports event for which an admission or entry fee is charged, in practice or time trials for and at the site of such event, or in preparation for such event, practice or time trials at the site of such event.

d. Grace period. The use or operation of an unmuffled motor vehicle other than a racing vehicle within a period of seventy-two (72) hours immediately following the failure of its muffler to function so as to abate engine noise at least as effectively as the original equipment installed by the manufacturer.

e. Manufacturer testing. The use or operation of a motor vehicle in connection with engineering, design or equipment testing activities by or on behalf of the manufacturer thereof.

f. Certain equipment. The use or operation of any construction or agricultural equipment either on a job site or while traveling on any public or private road or right-of-way.

(g) Non-availability of certain defenses. The following circumstances shall not give rise to or constitute a defense to the prosecution of a violation of this section as a misdemeanor under subsection (i) or as a civil infraction under subsection (j):

(1) Non-ownership of dog. The keeper of the dog that is alleged to have been the cause of any violation of subsection (b) is not the owner thereof.

(2) Absence as to dog. The keeper of the dog that is alleged to have been the cause of any violation of subsection (b) was absent from the place of the alleged violation during the violation.

(3) Absence as to artificially amplified sound or noise. The owner or leaseholder of the premises or the on-premises manager or agent of such owner or leaseholder of the premises under subsection (c)(5) was absent from the place of an alleged violation of subsection (c)(2) or (c)(3) during the violation.

(4) Non-ownership of vehicle. The operator of the motor vehicle or racing vehicle that is alleged to have been the cause of any violation of subsection (d) is not the owner thereof.

(5) Absence as to percussive sound or noise. The owner or leaseholder of the premises or the on-premises manager or agent of such owner or leaseholder of the premises under subsection (e)(4) was absent from the place of an alleged violation of subsection (e)(2) or (e)(3) during the violation.

- (h) Multiple dogs. If more than one (1) dog is kept at the same premises upon which any violation of subsection (b) is alleged to have occurred, proof of which dog or dogs were the cause of the violation shall not be required nor shall any evidence distinguishing one (1) dog from another in the causation of the violation be deemed relevant in the prosecution of a violation of this section as a misdemeanor under subsection (i) or as a civil infraction under subsection (j).
- (i) Violation prosecuted as misdemeanor. A person committing a violation under this section that would be deemed a habitual violation as defined in [section 15-20](#) of this Code if charged as a civil infraction shall be guilty of an offense that, pursuant to Section 125.69, Florida Statutes (2000), and any successor thereto, shall be prosecuted in the same manner as misdemeanors are prosecuted, and upon conviction, shall be punished by a fine not to exceed five hundred dollars (\$500.00) or by imprisonment in the county jail, not to exceed sixty (60) days, or by both such fine and imprisonment, if such violation and the second violation by which such violation would be deemed a habitual violation are committed within a period of one hundred eighty (180) days following the commission of the prior violation applicable to such second violation.
- (j) Violation prosecuted as civil infraction. The provisions of [section 15-20](#) of this Code may be used to enforce subsection (b)(1), (b)(2), (c)(1), (c)(2), (c)(3), (c)(4), (d)(1), (d)(2), (e)(1), (e)(2) or (e)(3) as an nonexclusive alternative to enforcement by any other means authorized by law. The violation of subsection (b)(2) on the premises of a residence or the violation of subsection (b)(1), (c)(1), (c)(2), (c)(4), (e)(1) or (e)(2) shall constitute a civil infraction that, for purposes of [section 15-20](#) of this Code and the civil penalties provided thereunder, is designated as a category 1 civil infraction for an initial violation, as a category 3 civil infraction for a second violation, and as a category 6 civil infraction for a habitual violation. The violation of subsection (b)(2) on the premises of nonresidential property or the violation of subsection (c)(3), (d)(1), (d)(2) or (e)(3) shall constitute a civil infraction that, for purposes of [section 15-20](#) of this Code and the civil penalties provided thereunder, is designated as a category 1 civil infraction for an initial violation, as a category 6 civil infraction for a second violation, and as a category 10 civil infraction for a habitual violation.

(k) Nuisance. Any person who has committed or is responsible for the commission or causing of a violation under this section that constitutes a habitual violation as defined in [section 15-20](#) of this Code shall be deemed guilty of maintaining a nuisance within the meaning of Section 823.05, Florida Statutes (2000), if such habitual violation is committed within a period of one hundred eighty (180) days following the commission of the first of the predicate violations therefor. Such nuisance, the premises upon which the same is maintained and the person responsible for causing the same shall be subject to abatement and injunction as provided in Sections 60.05 and 60.06, Florida Statutes (2000).

(l) Applicability. The provisions of this section shall be applicable throughout the unincorporated area of the county.

(Ord. No. 88-19, §§ 1-10, 2-23-88; Ord. No. 2001-37, §§ 1, 3, 7-10-01; Ord. No. 2001-63, § 1, 12-11-01; Ord. No. 2009-40, § 1, 10-13-09; Ord. No. 2010-1, § 1, 1-26-10)

Editor's note— Section 3 of Ord. No. 2001-37, adopted July 10, 2001, further provided that subsection (e)(1)f. shall be repealed effective October 1, 2001.

Cross reference— Animals and fowl, [Ch. 4](#), nuisances, [Ch. 14](#).

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Florida Statutes

Chapter 823.16 Sport shooting ranges; definitions; exemption from liability; exemption from specified rules; exemption from nuisance actions; continued operation.—

(1) Definitions.—As used in this act, the following terms shall have the following meanings:

(a) "Unit of local government" means a unit of local government created or established by law, including, but not limited to, a city, consolidated government, county, metropolitan government, municipality, town, or village.

(b) "Person" means an individual, corporation, proprietorship, partnership, association, club, two or more persons having a joint or common interest, or any other legal entity.

(c) "Sport shooting range" or "range" means an area designed and operated for the use of rifles, shotguns, pistols, silhouettes, skeet, trap, black powder, or any other similar type of sport shooting.

(2) Notwithstanding any other provision of law, a person who operates or uses a sport shooting range in this state shall not be subject to civil liability or criminal prosecution in any matter relating to noise or noise pollution which results from the operation or use of a sport shooting range, if the range is in compliance with any noise control laws or ordinances adopted by a unit of local government applicable to the range and its operation at the time of construction or initial operation of the range.

(3) A person who operates or uses a sport shooting range is not subject to an action for nuisance, and a court of this state shall not enjoin the use or operation of a sport shooting range on the basis of noise or noise pollution, if the range is in compliance with any noise control laws or ordinances that applied to the range and its operation at the time of construction or initial operation of the range.

(4) Rules adopted by any state department or agency for limiting levels of noise in terms of decibel levels which may occur in the outdoor atmosphere shall not apply to a sport shooting range exempted from liability under this act.

(5) A person who acquires title to or owns real property adversely affected by the use of property with a permanently located and improved sport shooting range shall not maintain a nuisance action against the person who owns the range to restrain, enjoin, or impede the use of the range where there has not been a substantial change in the nature of the use of the range. This section does not prohibit actions for negligence or recklessness in the operation of a sport shooting range or by a person using the range.

(6) A sport shooting range that is not in violation of existing law at the time of the enactment of an ordinance applicable to the sport shooting range shall be permitted to continue in operation even if the operation of the sport shooting range does not conform to the new ordinance or an amendment to an existing ordinance, provided the range was not in violation of any law when the range was constructed and provided that the range continues to conform to current National Rifle Association gun safety and shooting range standards.

(7) Except as otherwise provided in this act, this act shall not prohibit a local government from regulating the location and construction of a sport shooting range after the effective date of this act.